

Four Star Fuel Supply Monitoring Well Installation and Groundwater Monitoring Event

> Four Star Supply, Inc. 355 NW State Street Pullman, Washington

Project Number: 233516.01

Date: October 4, 2023

Prepared for:

Four Star Supply Attn: Kevin McDonnell 355 NW State Street Pullman, Washington 99163

Prepared by:

Fulcrum Environmental Consulting, Inc. 207 West Boone Avenue Spokane, Washington 99201

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spokane, washington 509.459.9220



Report Title:	Four Star Fuel Spill Groundwater Monitoring June 2023 Sampling Report
Project Number:	223516.01
Date:	October 4, 2023
Site:	Four Star Supply, Inc. 355 NW State Street Pullman, Washington
Prepared for:	Four Star Supply, Inc. 355 NW State Street Pullman, Washington
Prepared by:	Fulcrum Environmental Consulting, Inc. 207 West Boone Avenue Spokane, Washington 99201 509.459.9220

The professionals who completed site services and prepared and reviewed this report include, but are not limited to:

Authored by: _

_____Date: 10/4/2023

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Travis Trent, PG, CIH

Principal

Date: 10/4/2023



Reviewed by:

Date: 10/4/2023 251





Report Integrity

Fulcrum Environmental Consulting, Inc.'s scope of service for this project was limited to those services as established in the proposal, contract, verbal direction, and/or agreement. This report is subject to applicable federal, state, and local regulations governing project-specific conditions and was performed using recognized procedures and standards of the industry. Scientific data collected in situ may document conditions that may be specific to the time and day of service, and subject to change as a result of conditions beyond Fulcrum's control or knowledge. Fulcrum makes no warranties, expressed or implied, as to the accuracy or completeness of other's work included herein. Fulcrum has performed these services in accordance with generally accepted environmental science standards of care at the time of the inspection. No warranty, expressed or implied, is made.



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1.0 INTRODUCTION

On June 8th and 9th of, 2023, Fulcrum Environmental Consulting, Inc. (Fulcrum) oversaw the installation of three (3) groundwater monitoring wells at Four Star Fuel Supply, Inc. (Four Star) located at 355 NW State Street in Pullman, Washington. The monitoring wells were installed to evaluate potential residual petroleum hydrocarbon impact to site groundwater associated with a diesel release identified in April of 2022. Figure 1 presents a general Site Location Map.

Following monitoring well installation and development, Fulcrum conducted the first quarterly groundwater monitoring event for the three (3) onsite monitoring wells on June 29,



Four Star Fuel Supply 355 NW State Street, Pullman, Washington

2023. Results documented detectable concentrations of gasoline, benzene, ethylbenzene, and xylene in one (1) of the three (3) wells, all at concentrations below applicable regulatory standards.

Site services were completed by Scott Groat, a Washington State Licensed Geologist with Fulcrum, assisted by Ethan Ducken, a Washington State recognized Geologist-in-Training, and Abby Whitmore, an Environmental Technician both with Fulcrum. The work was completed under the direction of Travis Trent, a Washington State Licensed Hydrogeologist and Principal with Fulcrum. Relevant professional certifications are presented in Appendix A. Well installation services were conducted by Anderson Environmental Contracting, LLC (AEC) a Washington State Licensed driller.

1.1 Scope of Services

Fulcrum was retained by Four Star to oversee groundwater monitoring well installation and to conduct quarterly groundwater sampling services at the Four Star site located at 355 NW State Street in Pullman, Washington. The three (3) installed groundwater monitoring wells were designated MW-01, MW-02, and MW-03 (see Figure 3 for a Site Diagram Map).

Following monitoring well installation and development, Fulcrum conducted an initial quarterly sampling event which consisted of the measurement of water depths of the three (3) onsite groundwater monitoring wells followed by collection of water samples from each well. All samples were collected in accordance with industry standard of care and were submitted under a standard chain of custody to TestAmerica Laboratory, a Washington State accredited laboratory.



Samples were analyzed for benzene, toluene, ethyl benzene, xylene (BTEX), gasoline-range extended organics, diesel-range extended organics, and heavy oil-range extended organics. Documentation of the June 2023 monitoring well installation activities and results from the groundwater investigation and testing on June 29th, 2023, are presented in this summary report.

1.2 Site Description

The site is identified as parcel 10850058130001 and is located on the corner of Poplar Street and Northwest State Street in Pullman, Washington directly adjacent to the South Fork Palouse River (SFPR). The subject site historically was used for bulk fuel storage with six (6) above ground storage tanks (AST) containing gasoline and diesel fuel all located within a concrete secondary containment.

Prior to remediation, the property was observed to be covered by concrete or gravel. Beneath the paved surface was approximately 8 feet (ft) of nonnative fill material consisting of basalt boulders and cobbles intermixed with sand/silt. Soil transitioned into clayey sand from approximately 8-ft below ground surface (bgs) to 16-ft bgs. A compact clay layer was encountered at



View looking southwest at the site, the six historic AST's can be seen in the background and the SFPR can be seen in the foreground

approximately 22 ft bgs. Bedrock was not encountered during site excavations. Groundwater was encountered in limited amounts at depths below 18 ft bgs measured from road grade during excavation activities. Groundwater was encountered at approximately 13 ft bgs measure from road grade during groundwater monitoring.

During site remediation, site soils were removed to a depth of approximately 22-feet bgs and replaced with clean fill. The site was left as a vacant gravel lot brought to road grade.

1.3 Site Hydrogeology

The site is located at approximately 2,332 feet above mean sea level (MSL). Groundwater depth is anticipated to range from 10 to 20 feet below ground surface. Groundwater flow direction based on data collected during installation is to the north towards the South Fork Palouse River, with a hydraulic gradient of 0.0033.



1.4 Background

On April 25, 2022, Four Star identified a diesel fuel leak from an AST located on Parcel 10850058130001 in Pullman, Washington. The diesel leaked into a concrete secondary containment that failed resulting in discharge to site soils beneath the concrete. The leak resulted in a discernable sheen to the adjacent SFPR.

Initial response activities consisted of placement of containment booms and sorbent pads within the SFPR and the use of absorbent clay to remove free product from the secondary containment. Reported calculations indicated that approximately 400-gallons of diesel fuel were released from the failed AST. The Site is recognized on the Washington State Cleanup Program as Grange Supply Company Pullman (Cleanup Site ID 16631, Facility/Site ID 3394273, UST ID 171).

Emergency services, Department of Transportation, and Department of Ecology staff responded to the accident. Fulcrum was retained by Four Star to respond to the initial event, assist with regulatory permitting documents, oversee independent cleanup actions for the release, conduct confirmatory sampling, and to prepare a Spill Remediation Report. Able Clean-up Technologies Inc. (Able) was retained by Four Star to provide spill response and cleanup services. Plateau Archaeological Investigations, LLC (Plateau) was retained by Four Star to conduct Archaeological monitoring during excavation activities.

Remedial excavation of contaminated site soils was performed in two (2) phases. Phase I initial remedial excavation for diesel contaminated soil associated with the April 2022 fuel release and Phase II remedial excavation of historical petroleum contaminated soils. Laboratory analysis identified the contaminants of concern (COCs); gasoline, diesel, benzene, toluene, ethylbenzene, and xylenes to be above MTCA Method A Cleanup Levels throughout site soils. All current and historic contaminated soil was removed from the subject site except the stream bank. Contaminated soil remained at property margins shared with NW State Street, Poplar Street, and an adjacent building.

A compact clay barrier was placed at the north property boundary between the site and the South Fork Palouse River. The barrier extends from a native compact clay layer that was encountered across the site at approximately 20 feet bgs to approximately 3 feet bgs. It extends the full length of the bank frontage and wraps back to the south at the east and west property boundaries. Please see Figures 6, ,7 and 8 for a visual presentation of the barrier location and configuration.

Removed soil was transported to Roach Construction Land Farm located in Genesee, Idaho for treatment. A total of 4,246 cubic yards (CY) of petroleum contaminated soil (PCS) was excavated from the site.



2.0 DISCUSSION OF PERTINENT REGULATIONS AND GUIDANCE

2.1 MTCA Regulations

In March 1989, the Model Toxics Control Act (MTCA) went into effect in Washington State. The MTCA regulations, WAC 173-340, set standards to ensure quality of cleanup and protection of human health and the environment. A major portion of the MTCA regulation (completed in 1991) was the development of numerical cleanup standards and requirements for cleanup actions. Three (3) options were established under MTCA for site-specific cleanup levels: Method A, B, and C. Method A defines cleanup levels for 25 of the most common hazardous substances found at sites. Method B levels are set using a site risk assessment, which enables consideration of site-specific characteristics. Method C is similar to Method B; however, the individual substance's cancer risk portion of the assessment is set at 1 in 100,000 rather than 1 in 1,000,000.

Rule amendments to MTCA became effective August 15, 2001, and changed the cleanup levels of petroleum hydrocarbon contamination. Whereas diesel and heavy oil concentrations were increased, the MTCA Method A cleanup levels for gasoline and gasoline components Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) were lowered significantly. Updates since 2001 have been primarily administrative in nature, although review and adjustment of cleanup levels are ongoing.

2.2 MTCA Cleanup Standards

Ecology's MTCA Method A cleanup tables were developed to provide conservative cleanup levels for sites undergoing routine cleanup actions or those sites with relatively few hazardous substances. Method A cleanup levels are specifically designated as appropriate for residential facilities and are appropriate for a conservative approach at schools and public sites. Therefore, Fulcrum has determined that Ecology's MTCA Method A cleanup levels to be the most appropriate regulatory guidance for evaluating the need for site cleanup at the site.

3.0 FIELD ACTIVITIES

3.1 Monitoring Well Installation

On June 8th and 9th of 2023, Fulcrum coordinated and oversaw the installation of three (3) monitoring wells at the Four-Star site located at 355 NW State Street in Pullman, Washington.

AEC, a Washington State Licensed Driller, was retained by Fulcrum to provide the installation of three (3) monitoring wells: MW-01, MW-02, and MW-03. All monitoring wells were completed using Rotosonic methods. Each well was constructed of schedule 40 PVC casing with 10 feet of No. 10 slot screen centered on the anticipated water table.



Filter sand, consisting of 2/12 sand, was placed around the screens from the bottom of the well casing to 2-feet above the top of screen. A Schedule 40 PVC 2-inch diameter well riser pipe was installed from the top of each screen to the ground surface. The annulus between the riser pipes and the borehole walls was sealed with bentonite chips from the top of the filter sand to 2-feet bgs. A concrete surface seal was placed from 2-feet bgs to the ground surface. The wells were finished with flush monuments.

Each well was constructed down to 22-feet bgs and completed with a compression seal and "monitoring well" manhole cover. Resource Protection Well Reports prepared



View of monitoring well MW-01 being installed.

by AEC are presented in Appendix B. AEC affixed labels to each well as provided in Table 1 below.

Fulcrum Well ID	Ecology Well Tag ID
MW-01	BPE-822
MW-02	BPE-823
MW-03	BPE-824

Table 1: Ecology Well Tag IDs

3.2 Well Development

Fulcrum completed monitoring well development on June 29, 2023 in conjunction with the groundwater monitoring. Monitoring well development was completed using surging and over pumping to reduce turbidity. Purged groundwater was captured as an investigation derived waste and placed into storage barrels stored onsite pending characterization and disposal.

During development, turbidity was measured using a Hach 2100Q portable turbidimeter to monitor development progress. Fulcrum purged approximately 150 gallons from the three (3) wells and final turbidity stabilized below 10 NTU in all wells.

3.3 Surveyed Well Locations

Following installation, Fulcrum surveyed the location of the well and the elevations of the ground surface, top of the protective monument, and top of the casing. All elevation measurements were based on a United States Geological Survey (USGS) marker that was located east of the site near the railroad tracks. The site was determined to be situated at approximately 2,332 ft above mean sea level (MSL). A mark was placed at the top of each well casing for the purpose of future water depth measurements. The elevation of each marked location is summarized in Table 2.



Fulcrum Well ID	Elevation above Mean Sea Level
MW-01	2,332.77
MW-02	2,332.70
MW-03	2,332.52

Table 2: Well Elevations

3.4 Groundwater Sampling

On June 29, 2023, Fulcrum completed groundwater sampling of the following installation of three (3) monitoring wells: MW-01, MW-02, MW-03. Three (3) groundwater samples (FS-062923-MW-01, FS-062923-MW-02, and FS-062923-MW-03) and one (1) field duplicate sample (FS-062923-MW-04) were collected for a total of four (4) groundwater samples. Prior to sample collection, Fulcrum measured the depth to groundwater (DTW) and depth to bottom (DTB) utilizing an electronic water level indicator accurate to \pm 0.01 foot. Elevation corrections were made using wellhead elevation data from the subject site. Sampling activities were completed using a peristaltic pump or submersible pump and Hanna brand water quality



View of monitoring well MW-01 after completion of well installation

instruments. At each well, water was pumped until a minimum of three (3) well volumes were purged and field parameters stabilized.

Samples were placed in a pre-cooled ice chest and delivered under standard chain-of-custody for analysis to Test America Laboratories, Inc, a Washington State certified laboratory located in Spokane, Washington. Personnel conducting analysis are trained in accordance with the laboratory's internal quality assurance/quality control (QA/QC) policy. A site diagram map is presented as Figure 3.

4.0 GROUNDWATER MONITORING RESULTS

4.1 Laboratory Analytical Results

All groundwater samples were analyzed for concentrations of gasoline-range hydrocarbons by Northwest Total Petroleum Hydrocarbons as Gasoline (NWTPH-Gx), diesel-range and heavy oil-range hydrocarbons by Northwest Total Petroleum Hydrocarbons as diesel (NWTPH-Dx), and benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8260c. Table 1 summarizes sample identification, locations, and analyte concentrations, which are reported in micrograms per liter (μ g/L). Full laboratory analytical results are presented in Appendix C.



Location		Ground- water Elevation	Results (µg/L)							
	Sample Number		NWTPH- Dx		Gasoline	Benzene	Toluene	Ethylbenzene	Xylene	
			Diesel	Oil						
MW-01	FS-062923-MW01	2225 260	ND	ND	ND	ND	ND	ND	ND	
	FS-062923-MW04	2323.209	ND	ND	ND	ND	ND	ND	ND	
MW-02	FS-062923-MW02	2325.197	ND	ND	ND	ND	ND	ND	ND	
MW-03	FS-062923-MW03	2325.192	ND	ND ND		4.2	ND	29	5.3	
MTCA Cleanup Levels ¹		500)	800*	5	1,000	700	1,000		

 Table 3: Four Star Groundwater Analytical Results - June 29, 2023

ND – Nondetect, *Established cleanup level when benzene is present in groundwater.

Laboratory results reported non-detect concentrations for all analytes in MW-01 and MW-02. Analytical results identified detectable concentrations of Gasoline-range hydrocarbons, benzene, ethylbenzene, and xylene in the groundwater sample for monitoring well MW-03 at concentrations below the respective MTCA Method A Cleanup Levels

4.2 Hydraulic Results

The groundwater flow direction, as determined by this sampling and monitoring event, is north-northwest with a hydraulic gradient of 0.0033 (0.175-ft change in groundwater depth over 53.8-ft), which is consistent with anticipated site geomorphology and hydrogeology. A groundwater elevation map is presented as Figure 4.

4.3 Data Quality

Samples were shown as received by the laboratory at an acceptable temperature. The results for Fulcrum's field duplicate were within an acceptable range of variance. Qualifiers were not present in the laboratory quality control (QC) sample results report. Based on reported analytical results, identified cleanup standards, and the absence of lab data qualifiers, it is Fulcrum's opinion that field and laboratory data quality results confirm acceptable accuracy of analytical data.

5.0 DISCUSSION

Review of current groundwater analytical data indicates the following:

• **MW-01 and MW-02:** Analytical results for groundwater samples collected from MW-01 and MW-02 were reported as non-detect concentrations for diesel, oil, and gasoline-range hydrocarbons, benzene, toluene, ethyl benzene, and xylene at the laboratory method detection limit.



MW-03: Analytical results for groundwater samples collected from MW-03 reported detectable concentrations of gasoline, benzene, ethylbenzene, and xylene below MTCA Method A cleanup levels. Analytical results reported concentrations for diesel-range hydrocarbons, oil-range hydrocarbons, and toluene to be below the laboratory method of detection limit.

The June 2023 groundwater analytical data indicates contaminant concentrations in all wells to be below MTCA method A cleanup levels.

6.0 RECOMMENDATIONS

Based on the results of this investigation, Fulcrum recommends continuing quarterly monitoring of the onsite monitoring wells.



Figures



LEGEND

Site Location





Figure 1: Site Location Map

First Quarter Groundwater Sampling Event June 2023 Four Star Fuel Supply 355 NW State Street Pullman, Washington



FULCRUM ENVIRONMENTAL CONSULTING, INC. 207 W. BOONE AVENUE SPOKANE, WASHINGTON 99201 (509) 459-9220 www.efulcrum.net

MAP BY: Ethan Ducken	PROJECT NUMBER: 223516.01
DATE: August 21, 2023	REVIEWED BY: S. Groat











Confirmed petroleum contaminated soil

Undisturbed clean soil

Extent of Four Star Property

• Confirmation soil sample location

Delineation of full extent of offsite contamination was beyond the scope of work for this project

EGEND



FULCRUM ENVIRONMENTAL CONSULTING, INC. 207 W. BOONE AVENUE SPOKANE, WASHINGTON 99201 (509) 459-9220 www.efulcrum.net

Approximate Scale In Feet UPDATED: March 21, 2023

355 Northwest State Street Pullman, Washington 99163

> PROJECT NUMBER: 223516.00 REVIEWED BY: Travis Trent



LEGEND

Approximate Excavation Boundary

Clay Barriers



Figure 7: Aerial View of Engineered Clay Barriers

355 Northwest State Street Pullman, Washington 99163

> FULCRUM ENVIRONMENTAL CONSULTING, INC. 207 W. BOONE AVENUE SPOKANE, WASHINGTON 99201 (509) 459-9220 www.efulcrum.net

PROJECT NUMBER: 223516.00

MAP BY: Ethan Ducken Date: March 21 2023

REVIEWED BY: Travis Trent







APPENDIX A

Professional Certifications





Travis L Trent 1127 W 8th Ave Spokane WA 99204-3107



STATE OF WASHINGTON



SCOTT MICHAEL GROAT 99 S CEDAR ST **POST FALLS ID 83854-9740**

22034387 License Number

GEOLOGIST

11/17/2022 **Issue Date**

12/03/2023 **Expiration** Date





Teresa Berntsen, Director



STATE OF WASHINGTON

DEPARTMENT OF LICENSING – BUSINESS AND PROFESSIONS DIVISION THIS CERTIFIES THAT THE PERSON OR BUSINESS NAMED BELOW IS AUTHORIZED AS A

GEOLOGIST IN TRAINING

ETHAN JEFFREY DUCKEN 510 E 33rd Ave Spokane WA 99203-2611

22010959 License Number 05/04/2022 Issue Date

Expiration Date

Teresa Berntsen

Teresa Berntsen, Director



APPENDIX B

Resource Protection Well Reports



Resource Protection Well Report

Resource Protection We	ll Report	Notice of Int	ent N	o. <u>RE24620</u>		
Submit one well report per well installed. See	e page two for instructions.	Type of Wel	1:			
Type of Work:		Resource Protection Well Injection Point				
Construction	0		ation	Well Grounding Well		
Fcology Well ID Tag No BPE-822	0	Geotechnical Soil Boring Ground Source Heat Pump				
Site Well Name MW-01		\square Soil- \square Vapor- \square Water-sampling				
Consulting Firm FULCRUM		Property Ow	ner <u>G</u>	GRANGER SUPPLY CO.		
Was a variance approved for this well/bo	oring? 🗆 Yes 🔳 No	Well Street A	Addre	$_{ m ss}$ _355 NW STATE STREET		
If yes, what was the variance for?	6 – –	City PULLM	AN	County WHITMAN		
		Tax Parcel N	Jo. 10	08150058130001		
		Location (see	e insti	ructions): WWM \Box or EW	M	
WELL CONSTRUCTION CERTIFICA	TION: I constructed and/or	NE 1/4-1/4	NE	$\frac{1}{4}$ Section 6 Town 14N Range	15E	
accept responsibility for construction of this well,	and its compliance with all	Latitude (Ex	ample	+ 47 12345) 46.732345		
reported are true to my best knowledge and belief.	s used and the information	Longitude (EX	Tvamr	-117.181291		
🔳 Driller 🗆 Trainee 🗆 Engineer		Longitude (L	латц	(WGS 84 Coordinate System)		
Name (Print Last, First Name) Wright, Jo	ohn	Borehole dia	meter	6 inches Casing diameter 2 in	nches	
Driller/Engineer/Trainee Signature Jak	n Wright	Borenoie dia		12.5 of the second diameter	/2023	
License No. 3356		Static water	level .	<u>12.5</u> It below top of casing Date <u>00/08</u>	/2023	
Company Name Anderson Environmenta	al Contracting LLC	□ Above-gro	ound	completion with bollards 🔲 Flush monu	ment	
If trainee box is checked, sponsor's licer	se number:	Stick-up of top of well casing ft above ground surface				
Sponsor's signature		Start Date	06/08	3/2023 Completed Date06/08/2023	3	
Construction/Design	Well Da	ata		Formation Description		
	Concrete Surface Seal	2'		0' - 22'	_	
	Depth		FI	F	1	
	Blank Casing (dia x dep)	2" x 12'		LARGE BASALT		
		SCHEDULE 40 F	vc	GRAVELS AS BACKFILL		
	Material					
	Backfill	2' - 7'	FT			
	T	Chips		-	-	
	Туре			F		
	Seal	7' - 10' _F	т			
	Gravel Back	10' -22'	т			
	Graver Fack		- 1			
	Material	Sand				
	Screen (dia y den)	2" x 10'		F	т	
		001		·		
	Slot Size	.001				
	Material	SCHEDULE 40 F	PVC			
		22' _				
	Well Depth	F	·Т			
	Backfill					
	Material					
	Total Hole Depth	22' _F	т			



Resource Protection Well Report

Resource Protection We	ll Report	Notice of	Intent N	o. <u>RE24620</u>	
Submit one well report per well installed. See	e page two for instructions.	Type of V	Vell:		
Type of Work:		Reso	urce Pro	tection Well 🔲 Injection Point	
Construction	r.	Reme	ediation	Well Grounding Well	
\square Decommission \implies Original NOI N	0	Geot	echnical	Soil Boring Ground Source Heat Pur	mp
Ecology Well ID Tag No. Di L-023				Vapor 🗆 Water sampling	
Site Well Name MW-02		Droperty ($\begin{array}{c} \text{SOII-} \\ \square \end{array}$	RANGER SUPPLY CO	
Consulting Firm FOLCROM	·	Property C	0 wher <u><</u>		
Was a variance approved for this well/bo	oring? 🗆 Yes 🔳 No	well Stre	et Addre		
If yes, what was the variance for?		City POL		County WHITMAN	
		Tax Parce	el No. $\frac{10}{10}$	08150058130001	
		Location	(see inst	ructions): $WWM \square \text{ or } EW$	М 🔳
WELL CONSTRUCTION CERTIFICA	TION: I constructed and/or		1⁄4 NE	¹ / ₄ , Section <u>6</u> Town <u>14N</u> Range <u>4</u>	,5E
accept responsibility for construction of this well, Washington well construction standards. Material	and its compliance with all s used and the information	Latitude (Example	e: 47.12345) 46.732434	
reported are true to my best knowledge and belief.		Longitude	e (Exam	ple: -120.12345)117.18134	
■ Driller □ Trainee □ Engineer		-		(WGS 84 Coordinate System)	
Name (Print Last, First Name) Wright, Jo	ohn	Borehole	diamete	r^{6} inches Casing diameter ² in	iches
Driller/Engineer/Trainee Signature <u>Jehn</u>	n Wright	Static wat	tor loval	12.7 ft halow top of casing Data 06/08/	/2023
License No. 3356		Static wat			
Company Name Anderson Environmenta	al Contracting LLC	☐ Above-	-ground	completion with bollards 🔳 Flush monur	ment
If trainee box is checked, sponsor's licer	nse number:	Stick-	-up of to	p of well casing ft above ground su	rface
Sponsor's signature		Start Date	06/0	8/2023 Completed Date 06/08/2023	3
Construction/Design	Well Da	ata		Formation Description	
	Concrete Surface Seal	2'		0' - 22'	
	Depth		FT	F	г
	Blank Casing (dia x den)	2" x 12'		LARGE BASALT	
	blank casing (ala x acp)			GRAVELS AS BACKFILL	
	Material	SCHEDULE 4	40 PVC		
		2' - 7'			
	Backfill		FI		
	Туре	Chips		F	т
		7' - 10'			
	Seal	7 - 10	FT		
	Crevel Deals	10' -22'	FT		
	Graver Pack		FI		
	Material	Sand			
		2" v 10'			
	Screen (dia x dep)	2 × 10		F	г
	Slot Size	.001			
	5101 5120				
	Material	SCHEDULE	40 PVC		
		22'			
	Well Depth		FT		
	Backfill				
	Duckin				
	Material				
↓ ↓		22'	FT		
	I otal Hole Depth		FT		



Resource Protection Well Report

Resource Protection We	ll Report	Notice of I	Intent N	o. RE24620		
Submit one well report per well installed. Se	e page two for instructions.	Type of W	ell:			
Type of Work:		Resource Protection Well Injection Point				
$\square Construction$	Remediation Well Grounding Well					
Easlagy Well ID Tag No. BPE-824	0	Geote	chnical	Soil Boring Ground Source Heat Pum	ιp	
Site Well Name MW-03		Soil Vanor Water sampling				
Consulting Firm FULCRUM		Property C)wner (GRANGER SUPPLY CO.		
Was a variance approved for this well/b	oring? 🗆 Ves 🔳 No	Well Stree	t Addre	ss 355 NW STATE STREET		
If yes what was the variance for?		City PULL	MAN	County WHITMAN		
		Tax Parcel	I No. 10	08150058130001		
		Location (see inst	ructions): WWM \Box or EWN	/	
WELL CONSTRUCTION CERTIFICA	TION: I constructed and/or	NF 1/ 1	see mst. ∠ NF	1/2 Section 6 Term 14N Barge 45	T 🔳	
accept responsibility for construction of this well,	and its compliance with all	74-7	74 <u></u>	- 47, Section Town Kange	_	
Washington well construction standards. Material reported are true to my best knowledge and belief.	s used and the information		Zxampie	-117 18144	—	
■ Driller □ Trainee □ Engineer		Longitude	(Exam]	(WCS 94 Ca and in the Southern)		
Name (Print Last, First Name) Wright, J	ohn	Dorahal-	liameter	(rr 05 of Coordinate System)	haa	
Driller/Engineer/Trainee Signature Jeh	n Wright	Dorenole o	nameter	\sim menes Casing diameter \sim inc	nes	
License No. 3356	_	Static wate	er level	12.4 ft below top of casing Date $06/09/2$	023	
Company Name Anderson Environmenta	al Contracting LLC	□ Above-	ground	completion with bollards 🔳 Flush monum	ent	
If trainee box is checked, sponsor's licer	se number:	Stick-	up of to	p of well casing ft above ground surf	àce	
Sponsor's signature		Start Date	06/09	9/2023 Completed Date06/09/2023		
Construction/Design	Well Da	ata		Formation Description		
	Concrete Surface Seal	2'		0' - 22'		
	Deptii		<u> </u>	[]		
	Blank Casing (dia x dep)	2" x 12'				
		SCHEDULE 4	0 PVC	GRAVELS AS BACKFILL		
	Material					
	Backfill	2' - 7'	FT			
	Type	Chips		FT		
		7' - 10'				
	Seal	- 10	FT			
	Gravel Pack	10' -22'	FT			
	Material	Sand				
	Screen (dia x dep)	2" x 10'		FT		
	Slot Size	.001				
	Material	SCHEDULE 4	0 PVC			
	Well Depth	22'	FT			
	Backfill					
	Material					
	Total Hole Depth	22'	FT			



APPENDIX C

Groundwater Sampling Laboratory Analytical Results



Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Scott Groat Fulcrum Environmental 207 West Boone Avenue Spokane, Washington 99201 Generated 7/11/2023 4:21:05 PM

JOB DESCRIPTION

Four Star 2023 Monitoring

JOB NUMBER

590-20923-1

Eurofins Spokane 11922 East 1st Ave Spokane WA 99206





Eurofins Spokane

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

Authorization

Cardue Aming

Generated 7/11/2023 4:21:05 PM

Authorized for release by Randee Arrington, Business Unit Manager Randee.Arrington@et.eurofinsus.com (509)924-9200

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Job ID: 590-20923-1

Laboratory: Eurofins Spokane

Narrative

Receipt

The samples were received on 6/30/2023 11:43 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.2° C.

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Fulcrum Environmental Project/Site: Four Star 2023 Monitoring

Job ID: 590-20923-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-20923-1	FS-062923-MW01	Water	06/29/23 12:13	06/30/23 11:43
590-20923-2	FS-062923-MW02	Water	06/29/23 14:06	06/30/23 11:43
590-20923-3	FS-062923-MW03	Water	06/29/23 13:45	06/30/23 11:43
590-20923-4	FS-062923-MW04	Water	06/29/23 12:13	06/30/23 11:43

Definitions/Glossary

Client: Fulcrum Environmental Project/Site: Four Star 2023 Monitoring

Job ID: 590-20923-1

Glossary		
Abbreviation	These commonly used abbreviations may or may not be present in this report.	
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	
CFL	Contains Free Liquid	5
CFU	Colony Forming Unit	J
CNF	Contains No Free Liquid	
DER	Duplicate Error Ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	
DL	Detection Limit (DoD/DOE)	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision Level Concentration (Radiochemistry)	8
EDL	Estimated Detection Limit (Dioxin)	
LOD	Limit of Detection (DoD/DOE)	9
LOQ	Limit of Quantitation (DoD/DOE)	
MCL	EPA recommended "Maximum Contaminant Level"	
MDA	Minimum Detectable Activity (Radiochemistry)	
MDC	Minimum Detectable Concentration (Radiochemistry)	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
MPN	Most Probable Number	
MQL	Method Quantitation Limit	
NC	Not Calculated	
ND	Not Detected at the reporting limit (or MDL or EDL if shown)	
NEG	Negative / Absent	
POS	Positive / Present	
PQL	Practical Quantitation Limit	
PRES	Presumptive	
QC	Quality Control	
RER	Relative Error Ratio (Radiochemistry)	

- RL Reporting Limit or Requested Limit (Radiochemistry)
- RPD Relative Percent Difference, a measure of the relative difference between two points
- TEF Toxicity Equivalent Factor (Dioxin)
- TEQ Toxicity Equivalent Quotient (Dioxin)
- TNTC Too Numerous To Count

RL

1.0

2.0

1.0

1.0

30

Limits

80 - 120

76 - 120

80 - 123

80 - 120

0.40

MDL Unit

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

D

Prepared

Prepared

Analyte

Benzene

Ethylbenzene

Xylenes, Total

Toluene-d8 (Surr)

1,2-Dichloroethane-d4 (Surr)

4-Bromofluorobenzene (Surr)

Dibromofluoromethane (Surr)

Surrogate

m,p-Xylene

o-Xylene

Toluene

Client Sample ID: FS-062923-MW01 Date Collected: 06/29/23 12:13 Date Received: 06/30/23 11:43

lob	١D·	590-20923-1	I
500	ID.	000-20020-1	1

Lab Sample ID: 590-20923-1 Matrix: Water

Analyzed

07/10/23 13:51

07/10/23 13:51

07/10/23 13:51

07/10/23 13:51

07/10/23 13:51

07/10/23 13:51

Analyzed

07/10/23 13:51

07/10/23 13:51

07/10/23 13:51

07/10/23 13:51

Lab Sample ID: 590-20923-2

Matrix: Water

Dil Fac	5
1	
1	6
1	
1	
1	
1	8
Dil Fac	
1	Ĭ
1	
1	
1	

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

%Recovery

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Result Qualifier

ND

ND

ND

ND

ND

ND

105

98

105

109

Qualifier

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			07/10/23 13:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		68.7 - 141					07/10/23 13:51	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.23		mg/L		07/03/23 11:56	07/03/23 23:35	1
Residual Range Organics (RRO) (C25-C36)	ND		0.39		mg/L		07/03/23 11:56	07/03/23 23:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	82		50 - 150				07/03/23 11:56	07/03/23 23:35	1
n-Triacontane-d62	80		50 - 150				07/03/23 11:56	07/03/23 23:35	1

Client Sample ID: FS-062923-MW02 Date Collected: 06/29/23 14:06 Date Received: 06/30/23 11:43

Method: SW846 8260D - Volatile Organic Compounds by GC/MS Analyte **Result Qualifier** MDL Unit RL D Prepared Analyzed Dil Fac Benzene ND 0.40 07/10/23 14:12 ug/L 1 Ethylbenzene ND 1.0 07/10/23 14:12 ug/L 1 m,p-Xylene ND 2.0 ug/L 07/10/23 14:12 1 o-Xylene ND 10 ug/L 07/10/23 14:12 1 Toluene ND 1.0 ug/L 07/10/23 14:12 1 Xylenes, Total ND 3.0 ug/L 07/10/23 14:12 1 Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 1,2-Dichloroethane-d4 (Surr) 105 80 - 120 07/10/23 14:12 1 97 76 - 120 07/10/23 14:12 4-Bromofluorobenzene (Surr) 1 Dibromofluoromethane (Surr) 106 80 - 123 07/10/23 14:12 1 Toluene-d8 (Surr) 112 80 - 120 07/10/23 14:12 1

Client: Fulcrum Environmental Project/Site: Four Star 2023 Monitoring

Client Sample ID: FS-062923-MW02 Date Collected: 06/29/23 14:06 Date Received: 06/30/23 11:43

Method: NWTPH-Gx - Nort	hwest - Volatile	e Petroleu	m Products	(GC/MS)	
Analyte	Result	Qualifier	RL	MDL	Uni
Gasoline	ND		150		ug/l
Surrogate	%Recovery	Qualifier	Limits		
4-Bromofluorobenzene (Surr)	97		68.7 - 141		

4-Bromofluorobenzene (Surr)

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

				•					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.24		mg/L		07/03/23 11:56	07/04/23 00:19	1
Residual Range Organics (RRO) (C25-C36)	ND		0.39		mg/L		07/03/23 11:56	07/04/23 00:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	89		50 - 150				07/03/23 11:56	07/04/23 00:19	1
n-Triacontane-d62	89		50 - 150				07/03/23 11:56	07/04/23 00:19	1

Client Sample ID: FS-062923-MW03 Date Collected: 06/29/23 13:45 Date Received: 06/30/23 11:43

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	4.2		0.40		ug/L			07/10/23 14:34	1
Ethylbenzene	29		1.0		ug/L			07/10/23 14:34	1
m,p-Xylene	3.8		2.0		ug/L			07/10/23 14:34	1
o-Xylene	1.5		1.0		ug/L			07/10/23 14:34	1
Toluene	ND		1.0		ug/L			07/10/23 14:34	1
Xylenes, Total	5.3		3.0		ug/L			07/10/23 14:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)			80 - 120					07/10/23 14:34	1
4-Bromofluorobenzene (Surr)	85		76 - 120					07/10/23 14:34	1
Dibromofluoromethane (Surr)	106		80 - 123					07/10/23 14:34	1
Toluene-d8 (Surr)	104		80 - 120					07/10/23 14:34	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
410		150		ug/L			07/10/23 14:34	1
%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
85		68.7 - 141					07/10/23 14:34	1
- Semi-V	olatile Pe	troleum Prod	ucts (GC	C)				
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ND		0.23		mg/L		07/03/23 11:56	07/04/23 00:41	1
ND		0.38		mg/L		07/03/23 11:56	07/04/23 00:41	1
%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
81		50 - 150				07/03/23 11:56	07/04/23 00:41	1
80		50 - 150				07/03/23 11:56	07/04/23 00:41	1
	Aresult 410 6Recovery 85 - Semi-V Result ND ND 6Recovery 81 80	Result Qualifier 410 410 6Recovery Qualifier 85 400 - Semi-Volatile Per Result Qualifier ND ND %Recovery Qualifier 81 80	Result Qualifier RL 410 150 6Recovery Qualifier Limits - Semi-Volatile Petroleum Produce 68.7 - 141 - Semi-Volatile Petroleum Produce 0.23 ND 0.23 ND 0.38 6Recovery Qualifier Limits 81 50 - 150 80 50 - 150	$\frac{\text{Result}}{410} \frac{\text{Qualifier}}{150}$ $\frac{6}{6} \frac{1}{85} \frac{\text{Qualifier}}{68.7 - 141}$ $\frac{1}{6} \frac{\text{Semi-Volatile Petroleum Products (GC)}{1} \frac{\text{Result}}{\text{ND}} \frac{\text{Qualifier}}{0.23}$ $\frac{\text{Result}}{1} \frac{\text{Qualifier}}{1} \frac{\text{RL}}{0.23}$ $\frac{1}{6} \frac{\text{MDL}}{150}$ $\frac{6}{6} \frac{1}{50 - 150}$ $\frac{1}{50} \frac{1}{50}$	ResultQualifierRLMDLUnit410150ug/L $\frac{6Recovery}{85}$ $\frac{Qualifier}{68.7 - 141}$ $\frac{Limits}{68.7 - 141}$ - Semi-Volatile Petroleum Products (GC)Result $\frac{Qualifier}{0.23}$ $\frac{MDL}{mg/L}$ ND0.23 mg/L ND0.38 mg/L $\frac{6Recovery}{81}$ $\frac{Qualifier}{50 - 150}$ $\frac{Limits}{50 - 150}$	$\frac{\text{Result}}{410} \frac{\text{Qualifier}}{150} \frac{\text{RL}}{\text{ug/L}} \frac{\text{MDL}}{\text{ug/L}} \frac{\text{Unit}}{\text{ug/L}} \frac{\text{D}}{\text{ug/L}}$ $\frac{6\text{Recovery}}{85} \frac{\text{Qualifier}}{68.7 - 141}$ $\frac{\text{Semi-Volatile Petroleum Products (GC)}}{\text{ND}} \frac{\text{Result}}{0.23} \frac{\text{Qualifier}}{\text{mg/L}} \frac{\text{RL}}{0.23} \frac{\text{MDL}}{\text{mg/L}} \frac{\text{Unit}}{\text{mg/L}} \frac{\text{D}}{0.23}$ $\frac{\text{ND}}{0.38} \text{mg/L}$ $\frac{6\text{Recovery}}{81} \frac{\text{Qualifier}}{50 - 150} \frac{\text{Limits}}{50 - 150}$	ResultQualifierRLMDLUnitDPrepared410150ug/L d	$\begin{array}{c c c c c c c c c c c c c c c c c c c $

Lab Sample ID: 590-20923-2

Job ID: 590-20923-1

Analyzed

07/10/23 14:12

Analyzed

07/10/23 14:12

D

Prepared

Prepared

Matrix: Water

Dil Fac

Dil Fac

1

1

Lab Sample ID: 590-20923-3 **Matrix: Water**

Eurofins Spokane

o-Terphenyl

n-Triacontane-d62

Client Sample ID: FS-062923-MW04 Date Collected: 06/29/23 12:13 Date Received: 06/30/23 11:43

Lab Sample ID: 590-20923-4 Matrix: Water

07/03/23 11:56 07/04/23 01:03

07/03/23 11:56 07/04/23 01:03

1

1

Method: SW846 8260D - Vola	tile Organic	Compour	ds by GC/MS	;					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			07/10/23 14:55	1
Ethylbenzene	ND		1.0		ug/L			07/10/23 14:55	1
m,p-Xylene	ND		2.0		ug/L			07/10/23 14:55	1
o-Xylene	ND		1.0		ug/L			07/10/23 14:55	1
Toluene	ND		1.0		ug/L			07/10/23 14:55	1
Xylenes, Total	ND		3.0		ug/L			07/10/23 14:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		80 - 120					07/10/23 14:55	1
4-Bromofluorobenzene (Surr)	87		76 - 120					07/10/23 14:55	1
Dibromofluoromethane (Surr)	105		80 - 123					07/10/23 14:55	1
Toluene-d8 (Surr)	110		80 - 120					07/10/23 14:55	1
Method: NWTPH-Gx - Northy	vest - Volatile	e Petroleu	m Products (GC/MS)					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			07/10/23 14:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		68.7 - 141					07/10/23 14:55	1
Method: NWTPH-Dx - Northv	vest - Semi-V	olatile Pe	troleum Prod	ucts (G0	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.23		mg/L		07/03/23 11:56	07/04/23 01:03	1
Residual Range Organics (RRO) (C25-C36)	ND		0.39		mg/L		07/03/23 11:56	07/04/23 01:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

50 - 150

50 - 150

84

84

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 590-42331/10 Matrix: Water

Client Sample ID: Method Blank Prep Type: Total/NA

Analysis Batch: 42331 MB MB Analyte **Result Qualifier** RL MDL Unit D Prepared Analyzed Dil Fac Benzene ND 0.40 ug/L 07/10/23 13:29 1 Ethylbenzene ND 1.0 ug/L 07/10/23 13:29 1 m,p-Xylene ND 2.0 ug/L 07/10/23 13:29 1 o-Xylene ND 1.0 ug/L 07/10/23 13:29 1 Toluene ND ug/L 07/10/23 13:29 1.0 1 Xylenes, Total ND 3.0 ug/L 07/10/23 13:29 1 MR MR

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		80 - 120		07/10/23 13:29	1
4-Bromofluorobenzene (Surr)	85		76 - 120		07/10/23 13:29	1
Dibromofluoromethane (Surr)	106		80 - 123		07/10/23 13:29	1
Toluene-d8 (Surr)	112		80 - 120		07/10/23 13:29	1

Lab Sample ID: LCS 590-42331/1007 Matrix: Water Analysis Batch: 42331

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	10.0	11.1		ug/L		111	80 - 120	
Ethylbenzene	10.0	11.1		ug/L		111	80 - 122	
m,p-Xylene	10.0	10.9		ug/L		109	80 - 125	
o-Xylene	10.0	11.8		ug/L		118	80 - 130	
Toluene	10.0	11.6		ug/L		116	80 - 129	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	97		76 - 120
Dibromofluoromethane (Surr)	101		80 - 123
Toluene-d8 (Surr)	106		80 - 120

Lab Sample ID: LCSD 590-42331/8 Matrix: Water Analysis Batch: 42331

	Spike	LCSD	LCSD				%Rec		RPD
Analyte A	dded	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	10.0	11.5		ug/L		115	80 - 120	3	15
Ethylbenzene	10.0	11.7		ug/L		117	80 - 122	6	35
m,p-Xylene	10.0	11.5		ug/L		115	80 - 125	6	35
o-Xylene	10.0	13.0		ug/L		130	80 - 130	9	35
Toluene	10.0	11.8		ug/L		118	80 - 129	1	35

	LCSD	LCSD		
Surrogate	%Recovery	Qualifier	Limits	
1,2-Dichloroethane-d4 (Surr)	103		80 - 120	
4-Bromofluorobenzene (Surr)	89		76 - 120	
Dibromofluoromethane (Surr)	101		80 - 123	
Toluene-d8 (Surr)	105		80 - 120	

Client Sample ID: Lab Control Sample Prep Type: Total/NA

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

RL

150

Limits

68.7 - 141

Lab Sample ID: MB 590-42332/10

Matrix: Water

Analyte

Gasoline

Surrogate

(C10-C25)

Analysis Batch: 42332

4-Bromofluorobenzene (Surr)

Prep Type: Total/NA

Prep Type: Total/NA

RPD

7

RPD

20

Limit

Client Sample ID: Method Blank

2 3 4 5 6 7 8 9

1	MDL Unit ug/L	<u> </u>	Prepared	Analyzed 07/10/23 13:29	Dil Fac 1	6
			Prepared	Analyzed	Dil Fac	7
				07/10/23 13:29	1	8
		Clien	t Sample ID	Prep Type: To	ample otal/NA	ę
CS	LCS	11		%Rec		
47	Qualifier	ug/L	_ <u>D</u> <u>%Rec</u> _ 95	80 - 120	·	

Client Sample ID: Lab Control Sample Dup

D %Rec

89

%Rec

Limits

80 - 120

Lab Sample ID: LCS 590-42332/1009 Matrix: Water Analysis Batch: 42332

			Spike	LCS	LCS				%Rec	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline			1000	947		ug/L		95	80 - 120	
	LCS	LCS								
Surrogate	%Recovery	Qualifier	Limits							
4-Bromofluorobenzene (Surr)	93		68.7 - 141							

LCSD LCSD

887

Result Qualifier

Unit

ug/L

Spike

Added

1000

Lab Sample ID: LCSD 590-42332/1018 Matrix: Water Analysis Batch: 42332 Analyte Gasoline

Casemie			1000
	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	88		68.7 - 141

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

MB MB

MB MB

Qualifier

ND

85

%Recovery

Result Qualifier

Lab Sample ID: MB 590-42279/1 Matrix: Water Analysis Batch: 42276	I-A						Cli	ent Samp	ole ID: Method Prep Type: T Prep Batch	d Blank otal/NA : 42279
•	MB	MB								
Analyte	Result	Qualifier	RL		MDL Unit	D	F	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.24		mg/L		07/0	03/23 11:56	07/03/23 22:28	1
Residual Range Organics (RRO) (C25-C36)	ND		0.40		mg/L		07/0	03/23 11:56	07/03/23 22:28	1
	МВ	MB								
Surrogate	%Recovery	Qualifier	Limits				F	Prepared	Analyzed	Dil Fac
o-Terphenyl	80		50 - 150				07/	03/23 11:56	07/03/23 22:28	1
n-Triacontane-d62	83		50 - 150				07/	03/23 11:56	07/03/23 22:28	1
Lab Sample ID: LCS 590-42279 Matrix: Water Analysis Batch: 42276	/ 2-A					Clien	it Sa	mple ID:	Lab Control S Prep Type: To Prep Batch	Sample otal/NA : 42279
-			Spike	LCS	LCS				%Rec	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	
Diesel Range Organics (DRO)			1.60	1.35		mg/L		84	50 - 150	

Eurofins Spokane

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 590-4 Matrix: Water	2279/2-A					Clie	nt Sar	mple ID	: Lab Cor Prep Ty	ntrol Sa pe: Tot	ample al/NA
Analysis Batch: 42276			Spiko	1.09	1.09				% Poc	satch: 4	42279
Analyte				Result	Qualifier	Unit	п	%Rec	/intec		
Residual Range Organics (RRO) (C25-C36)			1.60	1.34		mg/L		84	50 - 150		
	LCS	LCS									
Surrogate	%Recovery	Qualifier	Limits								
o-Terphenyl	86		50 - 150								
n-Triacontane-d62	86		50 - 150								
Lab Sample ID: LCSD 590 Matrix: Water Analysis Batch: 42276	-42279/3-A				C	Client Sa	Imple	ID: Lab	Control Prep Ty Prep E	Sample pe: Tot Batch: 4	e Dup al/NA 42279
			Spike	LCSD	LCSD		_		%Rec		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Diesel Range Organics (DRO)			1.60	1.42		mg/L		89	50 - 150	5	25
(C10-C25) Residual Range Organics (RRO) (C25-C36)			1.60	1.43		mg/L		89	50 - 150	6	25
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								
o-Terphenyl	92		50 - 150								
n-Triacontane-d62	92		50 - 150								

Client Sample ID: FS-062923-MW01 Date Collected: 06/29/23 12:13 Date Received: 06/30/23 11:43

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	43 mL	43 mL	42331	07/10/23 13:51	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	42332	07/10/23 13:51	JSP	EET SPK
Total/NA Total/NA	Prep Analysis	3510C NWTPH-Dx		1	256.2 mL 1 mL	2 mL 1 mL	42279 42276	07/03/23 11:56 07/03/23 23:35	M1V NMI	EET SPK EET SPK

Client Sample ID: FS-062923-MW02 Date Collected: 06/29/23 14:06 Date Received: 06/30/23 11:43

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	43 mL	43 mL	42331	07/10/23 14:12	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	42332	07/10/23 14:12	JSP	EET SPK
Total/NA	Prep	3510C			253.7 mL	2 mL	42279	07/03/23 11:56	M1V	EET SPK
Total/NA	Analysis	NWTPH-Dx		1	1 mL	1 mL	42276	07/04/23 00:19	NMI	EET SPK

Client Sample ID: FS-062923-MW03 Date Collected: 06/29/23 13:45 Date Received: 06/30/23 11:43

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	43 mL	43 mL	42331	07/10/23 14:34	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	42332	07/10/23 14:34	JSP	EET SPK
Total/NA	Prep	3510C			261.6 mL	2 mL	42279	07/03/23 11:56	M1V	EET SPK
Total/NA	Analysis	NWTPH-Dx		1	1 mL	1 mL	42276	07/04/23 00:41	NMI	EET SPK

Client Sample ID: FS-062923-MW04 Date Collected: 06/29/23 12:13 Date Received: 06/30/23 11:43

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	43 mL	43 mL	42331	07/10/23 14:55	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	42332	07/10/23 14:55	JSP	EET SPK
Total/NA	Prep	3510C			258.1 mL	2 mL	42279	07/03/23 11:56	M1V	EET SPK
Total/NA	Analysis	NWTPH-Dx		1	1 mL	1 mL	42276	07/04/23 01:03	NMI	EET SPK

Laboratory References:

EET SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Matrix: Water

Lab Sample ID: 590-20923-1 Matrix: Water

Lab Sample ID: 590-20923-2

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Lab Sample ID: 590-20923-3 **Matrix: Water**

Lab Sample ID: 590-20923-4

Matrix: Water

Final	Batch	Prepared		
Amount	Number	or Analyzed	Analyst	Lab
43 ml	42331	07/10/23 14:55	JSP	FET SPK

	Accreditation/C	ertification Summary		
Client: Fulcrum Environm Project/Site: Four Star 20	iental 23 Monitoring		Job ID: 590-20923-1	
	s Spokane			
- Authority	Program	Identification Number	Expiration Date	
Washington	State	C569	01-07-24	

Method Summary

Client: Fulcrum Environmental Project/Site: Four Star 2023 Monitoring

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od	Method Description	Protocol	Laboratory	3
)	Volatile Organic Compounds by GC/MS	SW846	EET SPK	-
PH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	EET SPK	
PH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	EET SPK	5
;	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET SPK	C
;	Purge and Trap	SW846	EET SPK	
otocol Re	ferences: = Northwest Total Petroleum Hydrocarbon			
SW846 =	"Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition	n, November 1986 And Its Update	es.	

Laboratory References:

Protocol References:

Method

NWTPH-Gx

NWTPH-Dx

8260D

3510C

5030C

EET SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Eurofins Spokane



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Chain of Custody Record

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Client Contact	Project Ma	nager (off Gre	vat		Site	Con	tact.						Date	Ģ	1301	ι.	5			CO	C No: I				3
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Preservation Used: 1= Ice. 2= HCI: 3= H2SO4: 4=HNO3: 5=No	oH: 6= Oth	er							+	-				1			1-			\neg						
Possible Hazard Identification Non-Hazard Flammable Skin Irritant Special Instructions/QC Requirements & Comments	Poisoi		Unknown	<u>ت</u>	,4	.7	Sai [nple Re (P	Disp eturn	To C	(Al Client	ee m	lay b	e ass] _{Dis}	posa	ed if s I By L	am, ab	oles :	are re	etain Archi	ed Io ive Fo	nger th x	ian 1 m	ionth) _Mont <u>h</u>	\$	•
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Client: Fulcrum Environmental

Login Number: 20923 List Number: 1 Creator: Morris, Mackenzie 1

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey I meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 590-20923-1

List Source: Eurofins Spokane