



**2022 ANNUAL HYDRAULIC CONTROL AND  
CONTAINMENT SYSTEM OPERATIONS REPORT  
BNSF FORMER MAINTENANCE AND FUELING FACILITY  
SKYKOMISH, WASHINGTON  
CONSENT DECREE NO. 07-2-33672-9 SEA**

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## TABLE OF CONTENTS

<b>ACRONYMS AND ABBREVIATIONS.....</b>	<b>iii</b>
<b>EXECUTIVE SUMMARY .....</b>	<b>iv</b>
<b>1.0 INTRODUCTION.....</b>	<b>1-1</b>
1.1 BACKGROUND .....	1-1
1.2 REPORT ORGANIZATION.....	1-2
<b>2.0 HCC SYSTEM DESCRIPTION AND PERFORMANCE MONITORING 2-1</b>	
2.1 HCC SYSTEM DESCRIPTION.....	2-1
2.2 HCC SYSTEM OPERATIONS MONITORING.....	2-2
2.3 HCC SYSTEM GROUNDWATER MONITORING .....	2-2
2.4 RESULTS OF HCC SYSTEM OPERATIONS MONITORING .....	2-3
2.4.1 System Run-Time .....	2-3
2.4.2 Groundwater Extraction and Treated Water Discharge Flow.....	2-3
2.4.3 Tank Water Levels.....	2-4
2.4.4 Visual Inspection of Effluent Equalization Tank for Sheen .....	2-4
2.4.5 Visual Inspection of Recovery Wells and Recovery Well Oil-Skimmer Tanks for Accumulation of LNAPL .....	2-4
2.4.6 Water Treatment System Influent Monitoring.....	2-4
2.4.7 Water Treatment System Effluent Monitoring .....	2-4
2.4.8 Recovered Light Nonaqueous-Phase Liquid Volumes.....	2-5
2.4.9 Differential Groundwater Elevations Across Barrier Wall.....	2-5
2.4.10 Service Interruptions.....	2-6
2.5 RESULTS OF HCC SYSTEM GROUNDWATER MONITORING .....	2-7
2.5.1 Sentry Wells.....	2-7
2.5.2 Gate Wells.....	2-9
2.5.3 End Wells.....	2-9
2.5.4 Monitoring Wells 5-W-43, 2A-W-40, 2A-W-41, 1B-W-23, and 2A-W-42 .....	2-10
2.5.5 Piezometers .....	2-10
2.5.6 Recovery Wells.....	2-11
2.5.7 Barrier Wall Gate Oil-Water Separator Chambers .....	2-11
<b>3.0 CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>3-1</b>
<b>4.0 REFERENCES.....</b>	<b>4-1</b>



## FIGURES

- Figure 1 *Site Plan Showing 2022 HCC System Monitoring Network*  
Figure 2 *Hydraulic Control and Containment System Barrier Wall Gate Detail*  
Figure 3 *June 2022 Total Petroleum Hydrocarbons in Groundwater*  
Figure 4 *October 2022 Total Petroleum Hydrocarbons in Groundwater*  
Figure 5 *December 2022 Total Petroleum Hydrocarbons in Groundwater*  
Figure 6 *Plan View of HCC System West Gate Showing Typical Gate Construction*

## TABLES

- Table 1 *HCC Water Treatment System Discharge Flow Rates*  
Table 2 *Total Petroleum Hydrocarbon Concentrations in HCC Water Treatment System Influent and Effluent*  
Table 3 *pH in HCC Water Treatment System Effluent*  
Table 4 *Metal Concentrations in HCC Water Treatment System Effluent*  
Table 5 *HCC System Barrier Wall Groundwater Elevations*  
Table 6 *Stabilized Field Parameter Values at HCC System Monitoring Wells*  
Table 7 *Total Petroleum Hydrocarbon Concentrations in Groundwater*  
Table 8 *Groundwater Elevations and LNAPL Thicknesses*

## APPENDICES

- Appendix A *Laboratory Analytical Reports*  
Appendix B *NWTPH-Dx and NWTPH-Dx/SGC GW-3 Trend Plot*  
Appendix C *LNAPL Trend Plots*  
Appendix D *West Gate East Vault GAC Changeout Technical Memo*



## ACRONYMS AND ABBREVIATIONS

AECOM	AECOM Environment
BNSF	BNSF Railway Company
DRO	total petroleum hydrocarbons as diesel-range organics
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
Farallon	Farallon Consulting, L.L.C.
GAC	granulated activated carbon
HCC	Hydraulic Control and Containment
LNAPL	light non-aqueous phase liquid
NWTPH-Dx	the sum of diesel- and oil-range organics analyzed using Ecology Method NWTPH-Dx
NPDES	National Pollutant Discharge Elimination System
µg/l	micrograms per liter
O&M	operation and maintenance
ORO	total petroleum hydrocarbons as oil-range organics
OWS	oil-water separator
RL	remediation level
TPH	total petroleum hydrocarbons





## EXECUTIVE SUMMARY

The 2022 Annual Hydraulic Control and Containment (HCC) System Operations Report describes the HCC system operation and the performance monitoring conducted during 2022 at the BNSF Railway Company (BNSF) Former Maintenance and Fueling Facility in Skykomish, Washington (herein referred to as the Site). The cleanup objective for the HCC system is to prevent light nonaqueous-phase liquid (LNAPL) and groundwater with total petroleum hydrocarbon concentrations exceeding the Site-specific groundwater remediation level (RL) of 477 micrograms per liter ( $\mu\text{g/l}$ ) from migrating from the BNSF railyard to the Skykomish River. Approximately 8.47 million gallons of groundwater was extracted and treated in 2022. Approximately 52 gallons of LNAPL was recovered by the recovery well oil-skimmer storage tanks in 2022.

The HCC system operated in conformance with National Pollutant Discharge Elimination System Permit No. WA0032123. The reported concentrations of lead, arsenic, and total petroleum hydrocarbons (quantified as NWTPH-Dx, defined herein as the sum of total petroleum hydrocarbons as diesel- and oil-range organics) in HCC water treatment system effluent samples were less than the respective discharge limits specified in National Pollutant Discharge Elimination System Permit No. WA0032123, with the following exceptions: total petroleum hydrocarbons were detected at concentrations of 210 and 270  $\mu\text{g/l}$ , which exceeds the discharge limit of 208  $\mu\text{g/l}$  in HCC effluent samples collected on March 31 and May 16, 2022.

Liquid level gauging and groundwater sampling were performed to assess HCC system performance in March, June, October, and December 2022. North of the HCC system barrier wall, groundwater is inferred to generally flow toward the west-northwest and roughly parallel to the Skykomish River. South of the barrier wall, groundwater is inferred to generally flow toward the northwest. The inferred groundwater flow directions in 2022 were consistent with previous years following construction of the barrier wall. Based on groundwater elevations and previous HCC system pilot testing near the flow-through treatment gates in the barrier wall, groundwater is inferred to flow from south to north through three of the four gates. Previous pilot testing has shown that the Center Gate is blocked to groundwater flow due to biofouling.

LNAPL was observed in monitoring wells and piezometers up-gradient of and adjacent to the HCC system barrier wall, between the West Gate and Center Gate, which is consistent with previous years; measured LNAPL observations ranged from a light trace (i.e., less than 0.01 foot thick and thin coating of LNAPL and/or a sheen observed on the oil-water interface probe) to a heavy trace (i.e., less than 0.01 foot thick and thick coating of LNAPL observed on the oil-interface probe). Over the lifecycle of the data record, LNAPL observations and thickness measurements in monitoring wells and piezometers up-gradient of and adjacent to the HCC system barrier wall have exhibited an overall decreasing or stable trend.

Reported concentrations of NWTPH-Dx in groundwater samples collected from monitoring wells immediately north of the HCC system barrier wall were less than the Site-specific groundwater RL of 477  $\mu\text{g/l}$  and absent of sheen, with the exception of the samples collected in October and



December 2022 from monitoring well 2A-W-41, which is proximate to and down-gradient of gate well GW-3. Results from monitoring well 2A-W-41 were compared with silica gel/non-silica gel sample preparation methods and confirmed to be biased high due to biogenic and petroleum metabolite interference. Results of the samples analyzed following silica gel cleanup were less than the RL.



## 1.0 INTRODUCTION

The 2022 Annual Hydraulic Control and Containment (HCC) System Operations Report describes the HCC system operation and performance monitoring conducted during 2022 at the BNSF Railway Company (BNSF) Former Maintenance and Fueling Facility in Skykomish, Washington (herein referred to as the Site). The Site includes BNSF property and public and private properties within the Town of Skykomish in King County, Washington, and it encompasses an area of approximately 40 acres (Figure 1).

The HCC system was designed to meet the cleanup objective, as defined in the Cleanup Action Plan prepared by the Washington State Department of Ecology (Ecology), of preventing light nonaqueous-phase liquid (LNAPL) and groundwater with total petroleum hydrocarbon concentrations (quantified as the sum of diesel- and oil-range organics analyzed using Ecology Method NWTPH-Dx [NWTPH-Dx]) from exceeding the Site-specific remediation level (RL) of 477 micrograms per liter ( $\mu\text{g/l}$ ) from migrating from the BNSF railyard to the Skykomish River (Ecology 2007). NWTPH-Dx is defined herein as the sum of total petroleum hydrocarbons as diesel-range organics (DRO) and as oil-range organics (ORO), based on analysis using Ecology Method NWTPH-Dx.

Site-wide groundwater monitoring and sampling events were conducted in June and October 2022 in accordance with the Long-Term Monitoring Plan (Farallon 2020). Typically, site-wide groundwater monitoring and samples events are conducted in March and September. Due to quality control and quality assurance issues at the analytical laboratory during preparation and analysis of the March 2022 samples, the March 2022 analytical data was rejected for use. The March gauging data were used. The sentry wells were resampled in June 2022. Wildfire activity in the immediate area of the Site resulted in restricted access to the Site during September 2022 and part of October 2022. Because of the restricted access, the September sampling event was conducted in October 2022.

Quarterly HCC System groundwater monitoring was conducted in March, June, October, and December 2022 in accordance with the 2011 Operation and Maintenance Manual (AECOM 2011) and 2014 Addendum (Farallon 2014a).

Removal and replacement of the granular activated carbon (GAC)/pea gravel media in the east vault of the West Gate of the HCC system was conducted in October 2022. A copy of the technical memorandum summarizing the GAC changeout activities is provided in Appendix D.

### 1.1 BACKGROUND

The HCC system is part of an integrated and comprehensive cleanup action and is operated and maintained in accordance with the requirements of the Cleanup Action Plan (Ecology 2007). The HCC system design is documented in the Special Design Report (ENSR Corporation 2008b) and the 2008 Construction Plans and Specifications (ENSR Corporation 2008a). The HCC system was



constructed as described in the 2008 As-Built Completion Report (AECOM 2009) and the 2009 As-Built Completion Report (AECOM 2010b).

A 24-month HCC system passive operation pilot study was completed in December 2020 in accordance with the 2018 Pilot Study Work Plan (Farallon 2018b) and emails from Ecology regarding extending the Pilot Study through 2020 (Ecology 2020a and 2020b). Active operation of the HCC system resumed on January 4, 2021 in accordance with an October 30, 2020 email from Ecology (Ecology 2020d).

## 1.2 REPORT ORGANIZATION

The remainder of this report is organized as follows:

- **Section 2, HCC System Description and Performance Monitoring**, provides a general description of the HCC system and a summary of the performance monitoring activities conducted during 2022, including the monitoring parameters, schedule, and results;
- **Section 3, Conclusions**, presents conclusions based on the HCC system operations and groundwater monitoring activities;
- **Section 4, Proposed Passive Operations and Monitoring**, describes HCC system operation, maintenance, and monitoring activities planned for 2023; and
- **Section 5, References**, provides a list of the documents used in preparing this report.



## **2.0 HCC SYSTEM DESCRIPTION AND PERFORMANCE MONITORING**

This section provides a general description of the HCC system and a summary of the performance monitoring activities conducted during 2022, including the monitoring parameters, schedule, and results. HCC system performance monitoring is conducted to facilitate system performance, assess performance relative to the cleanup objective, and document compliance with the discharge limits specified in National Pollutant Discharge Elimination System (NPDES) Permit No. WA0032123 (NPDES Permit). The primary components of the HCC system are summarized in Section 2.1. The Passive Operation Pilot Study of the HCC System is summarized in Section 2.2. The HCC system performance monitoring activities and results are described in Sections 2.3 through 2.5.

### **2.1 HCC SYSTEM DESCRIPTION**

A detailed description of the HCC system, and figures showing the HCC system layout and process and instrumentation diagrams, are provided in the HCC Operation and Maintenance (O&M) Manual (AECOM 2011).

The HCC system comprises the following primary components:

- A 1,183-foot-long groundwater barrier wall and interception trench with four flow-through treatment gates, which contain oil-water separators (OWS) and a mixture of granular activated carbon (GAC) and pea gravel media, along the northern boundary of the BNSF railyard;
- Nine groundwater extraction/LNAPL recovery wells;
- Fourteen piezometers;
- Twenty sentry wells;
- Eleven HCC system monitoring wells;
- Two groundwater injection wells;
- A water treatment system, which includes aboveground and underground water conveyance piping, an OWS, a hydrogen peroxide disinfectant system, sand filters, GAC vessels, a pH adjustment system, and influent and effluent water storage tanks; and
- A computer-based programmable logic controller that collects system operational data and is used to monitor, control, and adjust system operating parameters.

The groundwater injection wells were used intermittently in 2009 and 2010 to inject treated groundwater into the BNSF railyard subsurface. In September 2010, the discharge of treated groundwater to the injection wells ceased, and the discharge at one of the injection wells was rerouted to an up-gradient OWS chamber in the East Gate of the barrier wall. The discharge of treated groundwater to the East Gate OWS chamber was discontinued at the end of 2012. Since the end of 2012, all groundwater treated by the HCC system has been discharged to the municipal



storm sewer system (per the NPDES Permit), which discharges to the Skykomish River (Farallon 2018a).

## **2.2 HCC SYSTEM OPERATIONS MONITORING**

HCC system operations monitoring was conducted in accordance with the HCC O&M Manual (AECOM 2011) and 2014 Addendum (Farallon 2014). HCC system operations monitoring consists of monitoring the following operational parameters and conducting inspections and sampling at the frequencies noted:

- System run-time (daily).
- Groundwater extraction and treated water discharge flow (daily).
- Influent equalization tank water level (daily).
- Effluent equalization tank water level (daily).
- Backwash-water holding tank water level (daily).
- Visual inspection of the effluent equalization tank for sheen (bimonthly).
- Visual inspection of the recovery wells and recovery well oil-skimmer storage tanks for accumulation of LNAPL (weekly through September 2022, then bimonthly).
- Water treatment system influent monitoring, which included sampling of primary and secondary GAC vessel influent (weekly through September 2022, then bimonthly). (Note: Secondary GAC vessel influent samples were collected to assess petroleum hydrocarbon loading of primary GAC vessel and are not discussed further in this report.)
- Water treatment system effluent monitoring (weekly through September 2022 then bimonthly):
  - Sampling of treatment system effluent and analysis by Ecology Method NWTPH-Dx; monitoring of treatment system effluent pH; and sampling of treatment system effluent and analysis for total lead and total arsenic by U.S. Environmental Protection Agency (EPA) Method 200.8.
- Groundwater elevations in piezometers and recovery wells (recorded daily by in-well pressure transducers and gauged by field personnel quarterly).

## **2.3 HCC SYSTEM GROUNDWATER MONITORING**

The performance of the HCC system is assessed by monitoring the following wells, piezometers, and barrier wall gate OWS chamber vaults (Figures 1 and 2):

- The 11 HCC system monitoring wells, which include:
  - Gate wells GW-1 through GW-4, installed immediately north of the barrier wall gates;



- End wells EW-1 and EW-2A, installed near the western and eastern ends of the barrier wall, respectively; and
- Monitoring wells 5-W-43, 2A-W-40, 2A-W-41, 1B-W-23, and 2A-W-42, installed along Railroad Avenue on the northern (down-gradient) side of the barrier wall;
- The 20 sentry wells (well groups S1 through S4, containing four to six wells each), installed in the GAC and pea gravel chambers of the barrier wall treatment gates;
- The six piezometer pairs (piezometers PZ-2S/PZ-2N through PZ-7S/PZ-7N), installed along the barrier wall and the two piezometers (piezometers PZ-1 and PZ-8) installed at the western and eastern ends of the barrier wall;
- The nine groundwater extraction/LNAPL recovery wells (wells RW-01 through RW-09), installed on the southern (up-gradient) side of the barrier wall; and
- The OWS chamber vaults in each vault of each barrier wall gate (Figure 2).

The HCC system monitoring wells are typically gauged and sampled quarterly in March, June, September, and December. The sentry wells are typically sampled semiannually in March and September. The piezometers, recovery wells, and barrier wall gate OWS chambers are typically gauged quarterly in March, June, September, and December for the presence or absence of LNAPL or sheen and are not sampled.

Wildfire activity in the immediate area of the Site resulted in restricted access to the Site during September 2022 and part of October 2022. Because of the restricted access, the September sampling event was conducted in October 2022.

Due to quality control and quality assurance issues at the analytical laboratory during preparation and analysis of the March 2022 samples, the March 2022 analytical data was rejected for use. The March gauging data were used. The sentry wells were resampled in June 2022.

## **2.4 RESULTS OF HCC SYSTEM OPERATIONS MONITORING**

The following sections summarize the results of the 2022 HCC system operations monitoring.

### **2.4.1 System Run-Time**

The HCC water treatment system operated for approximately 7,253 hours (302.2 days) in 2022, which equates to an annual operational efficiency of approximately 83 percent. System operations were interrupted for short periods due to power outages or to perform maintenance, change out GAC and/or sand filter media, optimize system parameters, or make repairs. The system was shut down for a total of approximately 1,507 hours (63 days).

### **2.4.2 Groundwater Extraction and Treated Water Discharge Flow**

Approximately 8.47 million gallons of groundwater was extracted and treated in 2022. All HCC system groundwater extracted and treated in 2022 was pumped from recovery wells RW-02, RW-





03, RW-04, RW-06, RW-07, and RW-08. HCC system discharge flow rate data are summarized in Table 1.

#### **2.4.3 Tank Water Levels**

Influent equalization tank, effluent equalization tank, and backwash-water holding tank water levels were maintained within normal operating ranges.

#### **2.4.4 Visual Inspection of Effluent Equalization Tank for Sheen**

Water treatment system effluent water was monitored for the presence of sheen by visually observing the water in the effluent equalization tank, either during Site visits or via a remote video camera (i.e., web cam). No sheen was observed on the water in the effluent equalization tank.

#### **2.4.5 Visual Inspection of Recovery Wells and Recovery Well Oil-Skimmer Tanks for Accumulation of LNAPL**

Recovery wells and recovery well oil-skimmer storage tanks were inspected weekly to bimonthly for accumulation of LNAPL. The recovery well oil-skimmer storage tanks were pumped out as required (see Section 2.4.8, Recovered Light Nonaqueous-Phase Liquid Volumes).

#### **2.4.6 Water Treatment System Influent Monitoring**

Water treatment system influent was sampled weekly to bimonthly at the inlet to the primary GAC vessel and analyzed for NWTPH-Dx. Reported influent NWTPH-Dx concentrations ranged from 400 to 1,780 µg/l; the average reported influent NWTPH-Dx concentration was 840 µg/l. Influent NWTPH-Dx data are summarized in Table 2; laboratory analytical reports are provided in Appendix A.

#### **2.4.7 Water Treatment System Effluent Monitoring**

Water treatment system effluent was sampled weekly to bimonthly at the outlet of the secondary GAC vessel. The effluent samples were analyzed for NWTPH-Dx; one effluent sample collected during each month through September and once in the fourth quarter 2022 also was analyzed for total lead and total arsenic. In addition, the pH of the treatment system effluent was monitored weekly to bimonthly using a digital pH meter. The results of the effluent monitoring are summarized below:

- **NWTPH-Dx:** Reported NWTPH-Dx concentrations in the weekly treatment system effluent samples were less than the NPDES Permit discharge limit of 208 µg/l with the following exceptions:
  - Total petroleum hydrocarbons (TPH) was reported at a concentration of 210 µg/l in the weekly effluent sample collected on March 31, 2022 for the week of March 27 to April 2, 2022, which slightly exceeds the discharge limit of 208 µg/l. TPH was reported as not detected at the reporting limits of 140 µg/l in the weekly effluent sample collected on March 24, 2022 for the week of March 20 to 26, 2022. TPH was reported at a concentration of 120.5 µg/l in the weekly effluent sample





collected on April 5, 2022 for the week of April 3 to 9, 2022. Based on these findings, laboratory error is suspected of the March 31, 2022 effluent sample result.

- TPH was reported at a concentration of 270 µg/l in the weekly effluent sample collected on May 16, 2022 for the week of May 15 to 21, 2022, which exceeds the discharge limit of 208 µg/l. As required by the NPDES Permit, BNSF notified Ecology of the exceedance upon receipt of the analytical results on May 31, 2022. An effluent sample was collected on May 31, 2022. The Hydraulic Control and Containment water treatment system was shut down on May 31, 2022 pending investigation of the exceedance and conducting a routine changeout of the GAC in the treatment system. In addition, Farallon reviewed the results of the effluent samples collected the previous week on May 12, 2022 and subsequent weeks on May 24 and 31, 2022, which were all less than the discharge limit. Based on those results and previously identified laboratory errors, the reported results for the May 16, 2022 effluent sample are suspected to be due to laboratory error.

Effluent NWTPH-Dx data are summarized in Table 2; laboratory analytical reports are provided in Appendix A.

- **pH:** Measured effluent pH ranged from 6.79 to 8.23 standard units; the average measured effluent pH was 7.44. The NPDES Permit discharge limit for pH is 6.5 to 8.5. Effluent pH data are summarized in Table 3.
- **Lead and Arsenic:** Reported total lead and total arsenic concentrations in the treatment system effluent samples were less than the respective NPDES Permit discharge limits of 17.5 and 360 µg/l. Effluent lead and arsenic data are summarized in Table 4; laboratory analytical reports are provided in Appendix A.

## 2.4.8 Recovered Light Nonaqueous-Phase Liquid Volumes

The belt-type oil skimmers in recovery wells RW-04, RW-07, and RW-08 were operated with approximately 2-minute run-times four to six times per day. Approximately 52 gallons of LNAPL was recovered by the recovery well oil skimmers in recovery wells RW-07 and RW-08 in 2022. No measurable LNAPL (greater than 0.01 foot thick) was observed in the oil skimmer storage tanks at recovery well RW-04.

## 2.4.9 Differential Groundwater Elevations Across Barrier Wall

Six piezometer pairs installed along the barrier wall (piezometer pairs PZ-2S/PZ-2N through PZ-7S/PZ-7N) and two single piezometers, one at each end of the barrier wall (piezometers PZ-1 and PZ-8) (Figure 1), are used to monitor groundwater elevations adjacent to the barrier wall and near the flow-through treatment gates. One piezometer of each piezometer pair is on the southern (up-gradient) side of the barrier wall (designated PZ-2S, PZ-3S, etc.), and the other piezometer is on the northern (down-gradient) side of the barrier wall (designated PZ-2N, PZ-3N, etc.). Pressure transducers are installed within the piezometers and record groundwater elevation daily.



Daily groundwater elevation differentials across the barrier wall at each piezometer pair location were calculated by subtracting the groundwater elevation measured in the northern piezometer from the groundwater elevation measured in the southern piezometer. Barrier wall groundwater elevation data for the 2022 reporting period, including calculated elevation differentials at piezometer pairs, are presented in Table 5.

The largest differential elevations between piezometer pairs generally occurred during winter (generally between November and January) during periods of higher groundwater elevations, and smaller differential elevations between piezometer pairs occurred during summer months (July through September). The differential elevations recorded during periods of high groundwater indicate that generally groundwater mounding is occurring on the southern (up-gradient) side of the barrier wall, which is expected and consistent with historical data. The differential groundwater elevation data demonstrate that the barrier wall effectively directed groundwater flow through the East Gate, West Gate, and Far West Gate during 2022. Previous pilot testing has shown that the Center Gate is blocked to groundwater flow due to the presence of iron bacteria biofouling in the up-gradient portions of the GAC and pea gravel media in this gate (Farallon 2017).

#### **2.4.10 Service Interruptions**

HCC system operations were occasionally interrupted for short periods during 2022 due to utility power outages or to perform maintenance, change out GAC and/or sand filter media, optimize system parameters, or make repairs. Five service interruptions exceeded 48 hours as summarized below:

- Manual shut-down of the HCC system occurred on May 31, 2022 following discovery of the reported detection of TPH at a concentration exceeding the discharge limit of 208  $\mu\text{g/l}$  in the effluent sample collected on May 16, 2022. TPH was detected at concentrations less than the discharge limit of the effluent samples collected in subsequent weeks on May 24 and 31, 2022. Based on those results and previously identified laboratory errors, the reported results for the May 16, 2022 effluent sample were suspected to be due to laboratory error. However, the system remained shut down pending changeout of the GAC media in the treatment system to mitigate any risk of discharge with potential concentrations of TPH in excess of the discharge limit. The GAC changeout was completed on June 15, 2022. The GAC media were allowed to soak for approximately 48 hours, and the HCC system was restarted on June 17, 2022.
- Automatic shut-down of the HCC system occurred on September 10, 2022 due to an area-wide power outage. Access to the HCC system was not available between September 10 and 30, 2022 due to nearby wildfire activity and highway closures. The HCC system was restarted remotely on September 23, 2022. NPDES compliance monitoring samples were collected on September 30, 2022 when safe access to the HCC system was restored.
- Automatic shut-down of the HCC system occurred on November 5, 2022 due to an area-wide power outage. The HCC system was restarted on November 10, 2022.



- Automatic shut-down of the HCC system occurred on November 29, 2022 due to an area-wide power outage. The HCC system was restarted on December 5, 2022.
- Automatic shut-down of the HCC System occurred on December 23, 2022 due to an area-wide power outage. The HCC System was restarted on January 3, 2023

## **2.5 RESULTS OF HCC SYSTEM GROUNDWATER MONITORING**

The results of Site-wide groundwater monitoring conducted in 2022 are presented in the 2022 Annual Long-Term Monitoring Report (Farallon 2022). The results of groundwater monitoring conducted in 2022 to assess HCC system performance are summarized below.

North of the HCC system barrier wall, groundwater flows toward the west-northwest and roughly parallel to the Skykomish River. South of the barrier wall, groundwater flows toward the northwest. The groundwater flow directions were determined in 2022 to be consistent with previous years after construction of the barrier wall. Based on groundwater elevations and previous HCC system pilot testing near the flow-through treatment gates in the barrier wall, groundwater flows from south to north through three of the four gates. Groundwater elevation contours and interpreted groundwater flow directions derived from the Site-wide groundwater monitoring data for June and October 2022 are shown on Figures 3 and 5. Groundwater elevation contours were not prepared for the December 2022 monitoring event, as a limited subset of monitoring wells are gauged for those events and do not provide an accurate representation of groundwater flow at the Site.

The groundwater monitoring results for the locations used to monitor HCC system performance are summarized below. Groundwater field parameter data are summarized in Table 6. Groundwater analytical results for DRO, ORO, and NWTPH-Dx (i.e., the sum of DRO and ORO) are summarized in Table 7. Groundwater elevation and LNAPL thickness data from the quarterly and semiannual monitoring events are summarized in Table 8. Figures 3 through 6 show reported groundwater NWTPH-Dx concentrations and measured LNAPL thicknesses at the monitoring locations used to assess HCC system performance, as described above in Section 2.3.

### **2.5.1 Sentry Wells**

The 20 sentry wells (wells S1-AU, S2-BD, etc.) were sampled during the June and October 2022 semiannual groundwater monitoring events, with the exception of sentry wells S2-BU and S2-BD, which were sampled during the June and December 2022 groundwater monitoring events.

NWTPH-Dx was not detected at concentrations exceeding the laboratory method reporting limit in 12 of 20 wells sampled. The eight sentry wells (S1-AD, S2-BU, S3-AU, S3-CD, S3-CU, S4-AU, S4-BU, and S4-CU) with reported detections during 2022 are described below:

- NWTPH-Dx was detected at a concentration of 77 µg/l in the October 2022 groundwater sample collected from down-gradient sentry well S1-AD in the west vault of the Far West Gate (Table 7; Figure 3). NWTPH-Dx was not detected at concentrations exceeding the



laboratory method reporting limits in S1-AD when the well was sampled in June 2022. NWTPH-Dx was not detected at concentrations exceeding reporting limits at the corresponding up-gradient well S1-AU during either the June or October 2022 sampling events.

- NWTPH-Dx was detected at concentrations of 79 µg/l and 550 µg/l in the June and December 2022 groundwater samples collected from up-gradient sentry well S2-BU in the east vault of the West Gate (Table 7; Figure 3). S2-BU is in the up-gradient GAC and pea gravel chamber within its vault. All up-gradient sentry wells are paired with a down-gradient sentry well located in the down-gradient GAC and pea gravel chamber in the same vault to evaluate the effectiveness of groundwater treatment. NWTPH-Dx was not detected at concentrations exceeding laboratory method reporting limits at the corresponding down-gradient well S2-BD during the June and December 2022 sampling events.
- NWTPH-Dx was detected at a concentration of 246 µg/l in the June 2022 groundwater sample collected from up-gradient sentry well S3-AU in the west vault of the Center Gate (Table 7; Figure 3). NWTPH was not detected at concentrations exceeding laboratory method reporting limits in S3-AU when the well was sampled in October 2022. NWTPH-Dx was not detected at concentrations exceeding laboratory method reporting limits at the corresponding down-gradient well S3-BD during the June or October 2022 sampling events.
- NWTPH was not detected at concentrations exceeding laboratory method reporting limits in S3-CD when the well was sampled in June 2022 (Table 7; Figure 3). NWTPH-Dx was detected at a concentration of 210 µg/l in the October 2022 groundwater sample collected from down-gradient sentry well S3-CD in the center vault of the Center Gate. NWTPH-Dx was not detected at concentrations exceeding laboratory method reporting limits at the corresponding up-gradient well S3-CU during the October 2022 sampling event.
- NWTPH-Dx was detected at a concentration of 196 µg/l in the June 2022 groundwater sample collected from up-gradient sentry well S3-CU in the center vault of the Center Gate (Table 7; Figure 3). NWTPH-Dx was not detected at concentrations exceeding laboratory method reporting limits in S3-CU when the well was sampled in October 2022. NWTPH-Dx also was detected exceeding laboratory method reporting limits at the corresponding down-gradient well S3-CD during the October 2022 sampling event.
- NWTPH-Dx was detected at a concentration of 96 µg/l in the June 2022 groundwater sample collected from up-gradient sentry well S4-AU in the west vault of the East Gate (Table 7; Figure 3). NWTPH was not detected at concentrations exceeding laboratory method reporting limits in S4-AU when the well was sampled in October 2022. NWTPH-Dx was not detected at concentrations exceeding laboratory method reporting limits at the corresponding down-gradient well S4-AD during the June or October 2022 sampling events.



- NWTPH-Dx was detected at a concentration of 76 µg/l in the October 2022 groundwater sample collected from up-gradient sentry well S4-BU in the center vault of the East Gate (Table 7; Figure 3). NWTPH was not detected at concentrations exceeding laboratory method reporting limits in S4-BU when the well was sampled in June 2022. NWTPH-Dx was not detected at concentrations exceeding laboratory method reporting limits at the corresponding down-gradient well S4-BD during the June or October 2022 sampling events.
- NWTPH-Dx was detected at a concentration of 136 µg/l in the June 2022 groundwater sample collected from up-gradient sentry well S4-CU in the east vault of the East Gate (Table 7; Figure 3). NWTPH was not detected at concentrations exceeding laboratory method reporting limits in S4-CU when the well was sampled in October 2022. NWTPH-Dx was not detected at concentrations exceeding laboratory method reporting limits at the corresponding down-gradient well S4-CD during the June or October 2022 sampling events.

### 2.5.2 Gate Wells

All four gate wells (GW-1 through GW-4) were gauged and sampled during the groundwater monitoring events in March, June, October, and December 2022. As discussed above, due to quality control and quality assurance issues at the analytical laboratory during preparation and analysis of the March 2022 samples, the March 2022 analytical data was rejected for use. Reported NWTPH-Dx concentrations in groundwater samples collected from the gate wells were less than the RL (Table 7; Figures, 3, 5, and 6). The groundwater samples from gate well GW-3 also were analyzed following a silica gel cleanup preparation process, with reported concentrations non-detect at the laboratory method reporting limit of 38, 195, and 73 µg/l, respectively. LNAPL or sheen was not observed in any of the gate wells (Table 8; Figures 3 through 6).

Gate well GW-3 is immediately north and down-gradient of the Center Gate, where substantial biofouling by iron bacteria has been observed with some degree of seasonality. Between June 2014 and December 2018, NWTPH-Dx concentrations ranged between 63 and 1,020 µg/l. Historically (between April 2009 and June 2014), NWTPH-Dx concentrations fluctuated over a smaller range of 34 to 184 µg/l. Increased concentration ranges in gate well GW-3 since June 2014 are the result of interference from biogenic substances and petroleum metabolites, as evidenced by split sampling with and without silica gel cleanup. NWTPH-Dx concentrations in all the silica gel-prepared samples were significantly less than the NWTPH-Dx concentrations in the non-silica gel-prepared samples, as shown on the trend plot included in Appendix B. These data demonstrate that the NWTPH-Dx results for the non-silica gel-prepared samples are biased high due to biogenic and petroleum metabolite interferences originating from the biofouled gate.

### 2.5.3 End Wells

The two end wells (wells EW-1 and EW-2A) were gauged and sampled during the March, June, October, and December 2022 groundwater monitoring events. As discussed above, due to quality control and quality assurance issues at the analytical laboratory during preparation and analysis of





the March 2022 samples, the March 2022 analytical data was rejected for use. NWTPH-Dx was not detected at concentrations exceeding the laboratory method reporting limit in groundwater samples collected from the end wells during the June 2022 sampling event. NWTPH-Dx was detected at concentrations exceeding the laboratory method reporting limit in groundwater samples collected from the end wells during the October and December 2022 sampling events. NWTPH-Dx was detected at concentrations of 69, 104, 237, and 114 µg/l, which are less than the RL of 477 µg/l in the groundwater samples collected from EW-1 and EW-2A during the October and December 2022 sampling events (Table 7, Figures 3 through 6). LNAPL and sheen were not observed in either of the end wells (Table 8).

#### 2.5.4 Monitoring Wells 5-W-43, 2A-W-40, 2A-W-41, 1B-W-23, and 2A-W-42

Reported NWTPH-Dx concentrations in groundwater samples collected from these wells were less than the RL, with the exception of the samples collected in October and December 2022 from monitoring well 2A-W-41, which had reported concentrations of 780 and 635 µg/l, respectively (Table 7; Figures, 3, 5, and 6). LNAPL or sheen was not observed in any of the gate wells (Table 8; Figures 3 through 6).

Between September 2013 and December 2018, reported NWTPH-Dx detections in monitoring well 2A-W-41 fluctuated over a range of 56 to 1,100 µg/l, with three values exceeding the RL. Historically (between December 2009 and September 2013), NWTPH-Dx results from monitoring well 2A-W-41 fluctuated over a smaller range of 26 to 175 µg/l. Monitoring well 2A-W-41 is west and down-gradient of gate well GW-3 and the Center Gate, and is also affected by biogenic substances and petroleum metabolites, similar to gate well GW-3. NWTPH-Dx concentrations in all the silica gel-prepared samples were significantly less than the NWTPH-Dx concentrations in the non-silica gel-prepared samples, as shown on the trend plot included in Appendix B. These data demonstrate that the NWTPH-Dx results for the non-silica gel-prepared samples are biased high due to biogenic and petroleum metabolite interferences originating from the biofouled gate.

#### 2.5.5 Piezometers

The 14 piezometers were gauged for the presence or absence of LNAPL and sheen during the March, June, October and December 2022 groundwater monitoring events. Measurable LNAPL was observed in piezometers PZ-3S, PZ-5S, and PZ-6S on the southern (up-gradient) side of the barrier wall (Table 8):

- **PZ-3S.** A light trace was observed in October 2022, and measurable LNAPL was recorded in December 2022 (0.06 foot). LNAPL was not observed in the down-gradient piezometer (PZ-3N) paired with PZ-3S.
- **PZ-5S.** Measurable LNAPL was recorded in March (5.49 feet), June (0.70 foot), October (3.23 foot), and December 2022 (3.89 foot). The measured LNAPL thicknesses in 2022 were an overall increase in LNAPL thickness compared with observations from 2021. LNAPL was not observed in the down-gradient piezometer (PZ-5N) paired with PZ-5S. The LNAPL measurement of 5.49 feet in March 2022 is suspected to be as a result of



LNAPL coating and fouling of the oil-interface probe used to measure the LNAPL thickness.

- **PZ-6S.** A heavy trace of LNAPL was observed in March and June 2022, and measurable LNAPL was recorded in October (0.18 foot) and December 2022 (0.03 foot). LNAPL observations at piezometer PZ-6S are consistent with observations from 2021. LNAPL was not observed in the down-gradient piezometer (PZ-6N) paired with PZ-6S.

LNAPL thickness trend plots for HCC system monitoring locations that historically have contained measurable LNAPL are included in Appendix C.

### 2.5.6 Recovery Wells

The nine recovery wells were gauged for the presence or absence of LNAPL and sheen during the March, June, October, and December 2022 groundwater monitoring events. There was no measurable LNAPL observed in recovery wells RW-01, RW-02, RW-03, RW-05, RW-06, and RW-09. LNAPL observed as light or heavy trace was observed in recovery wells RW-01, RW-04 through RW-08 and measurable LNAPL was observed in recovery wells RW-04, RW-07 and RW-08 (Table 8):

- **RW-04.** A light trace of LNAPL was observed in March and June and measurable LNAPL was recorded in December 2022 (0.15 foot). LNAPL thickness observation at RW-04 in 2022 was consistent with observations from 2021 with the exception of the measurable LNAPL recorded in December 2022.
- **RW-07.** Measurable LNAPL was recorded in March (0.81 foot) and June (1.51 feet) 2022. A heavy trace of LNAPL was observed in October and a light trace was observed in December 2022. LNAPL thicknesses in 2022 increased from light trace observations in 2021 to measurable LNAPL in March and June 2022, and LNAPL thickness decreased from measurable LNAPL in September and December 2021 to heavy and light trace in October and December 2022.
- **RW-08.** Measurable LNAPL was recorded in March (7.10 feet) and June (2.12 feet) 2022. A light and heavy trace of LNAPL was observed in June and December 2022. LNAPL thickness observations at RW-08 increased significantly from light trace in March 2021 to 7.10 feet in March 2022 and from 0.14 foot of measurable LNAPL in September 2021 to 2.12 feet of measurable LNAPL in October 2022. The LNAPL measurements of 7.10 feet in March 2022 and 2.12 feet in September 2022 are suspected to be as a result of LNAPL coating and fouling of the oil-interface probe used to measure the LNAPL thickness.

LNAPL thickness trend plots for HCC system monitoring locations that historically have contained measurable LNAPL are included in Appendix C.

### 2.5.7 Barrier Wall Gate Oil-Water Separator Chambers

Each flow-through treatment gate in the HCC system barrier wall consists of two or three concrete vaults. Each gate contains an OWS chamber on the up-gradient side of the gate (as shown on



Figure 6, which shows typical construction of a treatment gate). During the March, June, October, and December 2022 monitoring events, the gate OWS vaults were monitored for LNAPL and sheen (Table 8). There was no measurable LNAPL was observed in the OWS chambers in 2022 except in the north and south chambers of the west gate vault OWS.

- **West Gate East Vault.** A heavy trace of LNAPL was observed in the south chamber in March 2022 and measurable LNAPL was recorded in October (0.02 foot) 2022. Measurable LNAPL was recorded in the north chamber in October (0.02 foot) 2022. The LNAPL in the north chamber was removed using oil-absorbent booms.





### 3.0 CONCLUSIONS AND RECOMMENDATIONS

The groundwater monitoring results from 2022 and previous years indicate that the HCC system, particularly the HCC system barrier wall, continues to be effective in meeting the cleanup objective. Therefore, passive operation of the HCC system would be effective in meeting the cleanup objective for the Site.

In 2022, measured LNAPL thicknesses increased in piezometer PZ-5S, were generally stable in piezometer PZ-6S, increased slightly in recovery well RW-04, increased in recovery well RW-07, and fluctuated in recovery well RW-08 compared with observations from 2021. The elevated LNAPL thickness measurements recorded at piezometer PZ-5S and at recovery well RW-08 in March 2022 are considered inaccurate measurements due to instrumentation fouling at the time of measurement and were not included in the LNAPL thickness trend analysis. Over the lifecycle of the data record, measured LNAPL thicknesses in these piezometers and wells have exhibited an overall decreasing or stable trend, with minor variability (Appendix C). Piezometers and recovery wells will continue to be monitored for LNAPL in 2023.

Groundwater samples collected from gate well GW-3 and monitoring well 2A-W-41 will continue to be analyzed both with and without the silica gel cleanup preparation process to gain additional perspective on biogenic and petroleum metabolite interferences affecting the analytical results from these wells. Gate well GW-3 and monitoring well 2A-W-41 will continue to be monitored in 2023.

Based on the groundwater monitoring results from 2022 and the results of the Passive Operation Pilot Study completed between January 2019 and December 2020 (Farallon 2018b), it is recommended that the HCC system be operated in a passive mode with groundwater monitoring conducted in accordance with the Long-Term Monitoring Plan (Farallon 2020). The Long-Term Monitoring Plan specifies that locations down-gradient of the HCC system gates and barrier wall (gate wells GW-1 through GW-4 and monitoring well 5-W-43) be gauged and sampled for NWTPH-Dx semiannually for 2 years and annually thereafter. No changes to the Long-Term Monitoring Plan would be required to implement passive operation of the HCC system. Changes to the O&M Manual would be necessary to address passive operations, and O&M tasks specific to passive operation.

BNSF and Ecology are reviewing Consent Decree and Cleanup Action Plan amendments to include operation of the system as needed, such that free product and groundwater exceeding the 477 µg/l NWTPH-Dx remediation level does not leave the BNSF railyard facility property boundary or exit any functional gates of the containment system. Alterations of the system will require (1) approval of passive operation from Ecology; and (2) a demonstration illustrating that the proposed operation will meet the remediation level as described above.



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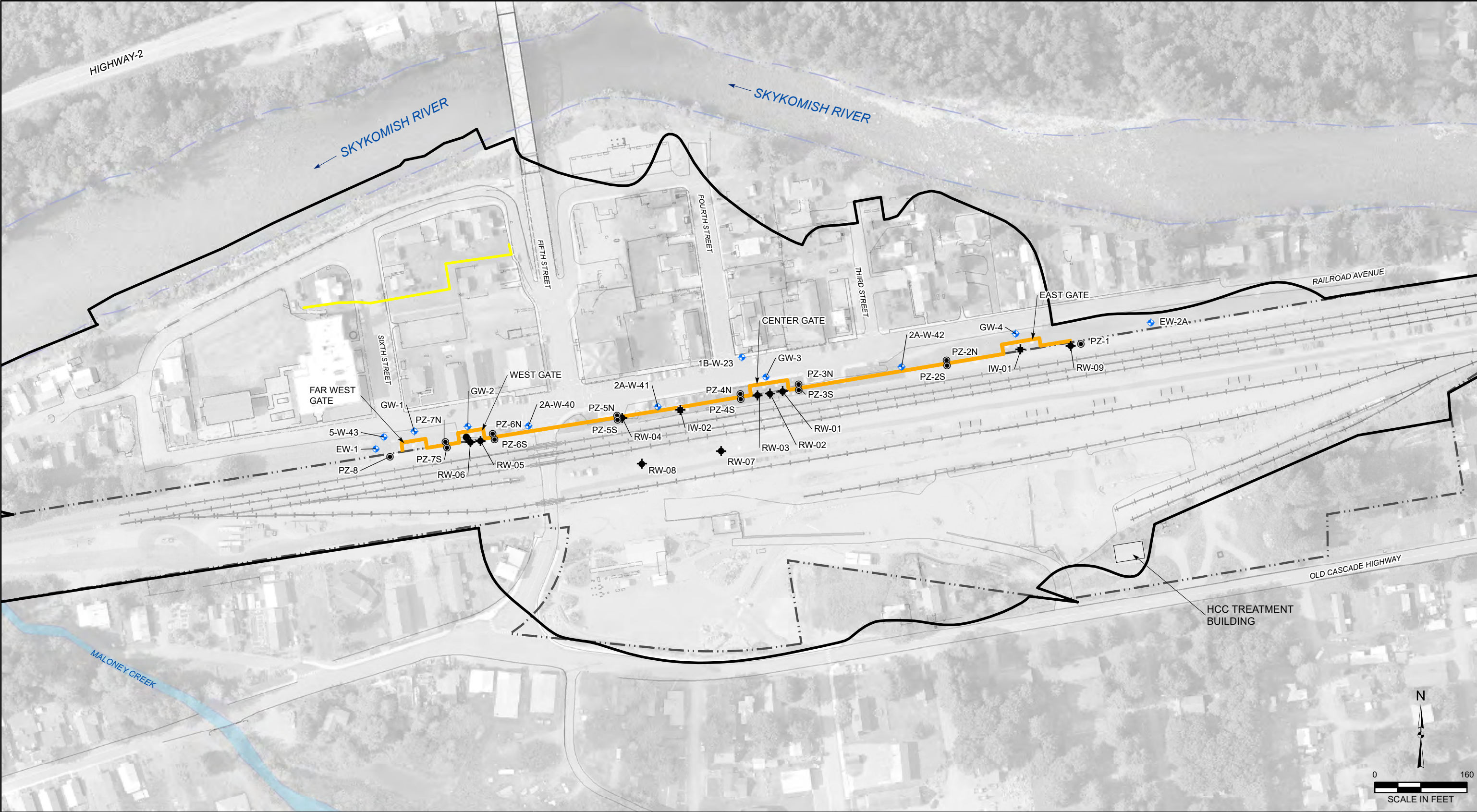
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## **FIGURES**

**2022 ANNUAL HYDRAULIC CONTROL AND CONTAINMENT SYSTEM  
OPERATIONS REPORT  
BNSF Former Maintenance and Fueling Facility  
Skykomish, Washington  
Consent Decree No. 07-2-33672-9 SEA**





**Farallon PN: 683-071**





- 2A-W-41  MONITORING WELL (SAMPLED QUARTERLY)
- RW-04  RECOVERY WELL
- PZ-5S  PIEZOMETER
- IW-02  INJECTION WELL

LEGEND

-  HYDRAULIC CONTROL AND CONTAINMENT SYSTEM SHEET PILE BARRIER WALL AND GATES
-  BNSF RAILYARD BOUNDARY
-  MECHANICALLY STABILIZED EARTH WALL
-  SITE BOUNDARY



NOTE  
HYDRAULIC CONTROL AND CONTAINMENT SYSTEM (HCC)  
SENTRY WELLS AND BARRIER WALL GATE VAULT  
LOCATIONS NOT SHOWN. SEE FIGURE 2 FOR BARRIER  
WALL GATE DETAILS.  
IMAGERY SOURCE: KING COUNTY PICTOMETRY 2015.



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Drawn By: Imurock  
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Date: 3/24/2023  
Document Path: Q:\Projects\683 BNSF\071 Groundwater\_HCC 2020\Mapfiles\HCC\_2023\HCC FIGURE 01\_TPH-GW\_2022.mxd  
Disc Reference:

**FIGURE 1**  
**SITE PLAN SHOWING 2022**  
**HCC SYSTEM MONITORING NETWORK**  
**BNSF FORMER MAINTENANCE**  
**AND FUELING FACILITY**  
**SKYKOMISH, WASHINGTON**  
FARALLON PN: 683-067





LEGEND

- RW-04 RECOVERY WELL
- PZ-5S PIEZOMETER
- IW-02 TREATED-WATER REINJECTION WELL
- WG-WV BARRIER WALL GATE VAULT
- GW-2 MONITORING WELL
- S1-AU SENTRY WELL

- HYDRAULIC CONTROL AND CONTAINMENT SYSTEM SHEET PILE BARRIER WALL AND GATE SYSTEM
- BNSF RAILYARD BOUNDARY





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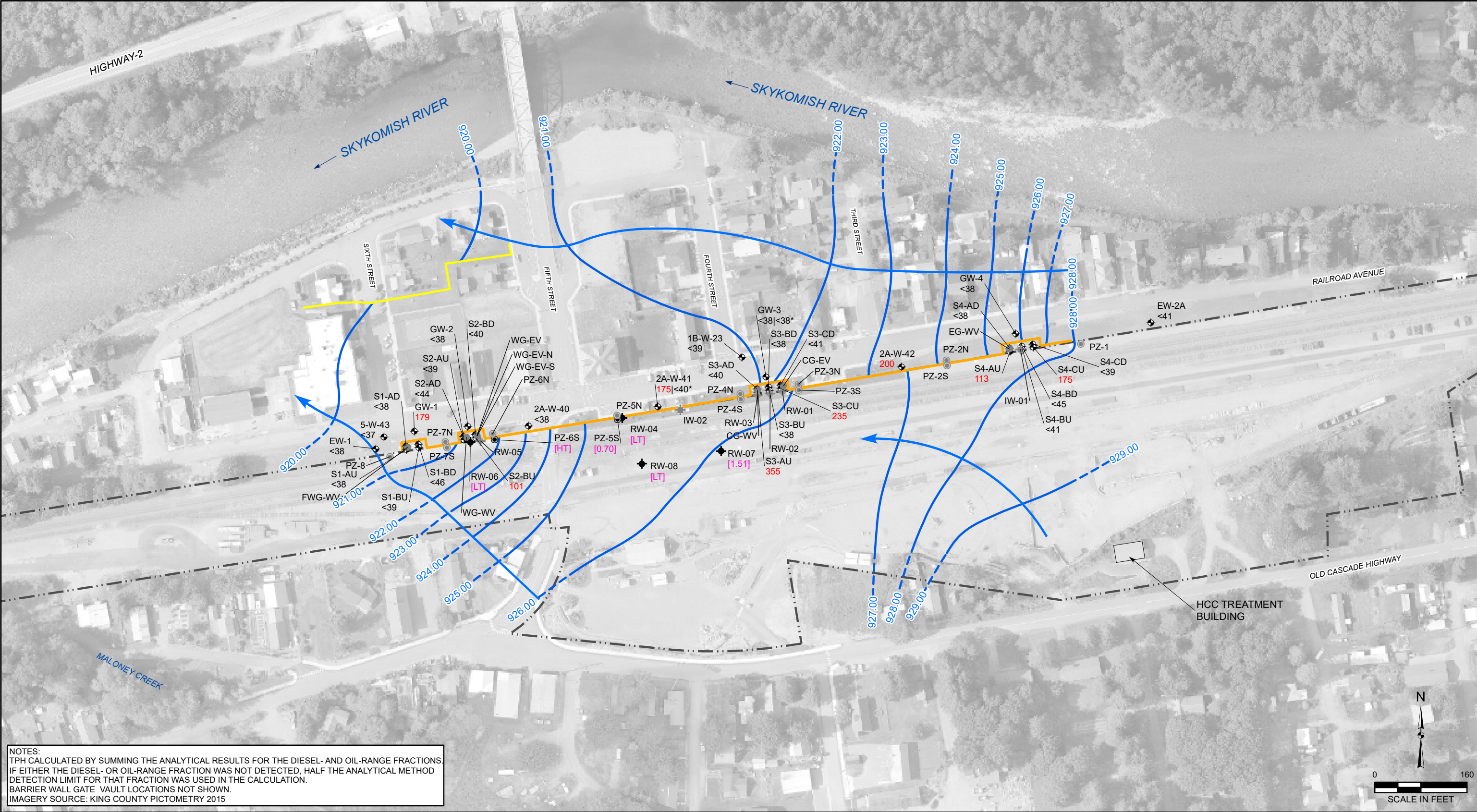
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FIGURE 2

HYDRAULIC CONTROL AND CONTAINMENT SYSTEM  
BARRIER WALL GATE DETAIL  
BNSF FORMER MAINTENANCE  
AND FUELING FACILITY  
SKYKOMISH, WASHINGTON  
FARALLON PN: 683-071



NOTES:  
TPH CALCULATED BY SUMMING THE ANALYTICAL RESULTS FOR THE DIESEL- AND OIL-RANGE FRACTIONS.  
IF EITHER THE DIESEL- OR OIL-RANGE FRACTION WAS NOT DETECTED, HALF THE ANALYTICAL METHOD  
DETECTION LIMIT FOR THAT FRACTION WAS USED IN THE CALCULATION.  
BARRIER WALL GATE VAULT LOCATIONS NOT SHOWN.  
IMAGERY SOURCE: KING COUNTY PICTOMETRY 2015

2A-W-41 MONITORING WELL

RW-04 RECOVERY WELL

PZ-5S PIEZOMETER

IW-02 INJECTION WELL

LOCATIONS SHOWN IN GRAY NOT SAMPLED IN JUNE 2022.

**LEGEND**

HYDRAULIC CONTROL AND CONTAINMENT SYSTEM SHEET PILE BARRIER WALL AND GATES

BNSF RAILYARD BOUNDARY

MECHANICALLY STABILIZED EARTH WALL

ESTIMATED EXTENT OF LNAPL AS INDICATED BY MEASURABLE LNAPL THICKNESS ON GROUNDWATER SURFACE

INTERPRETED GROUNDWATER ELEVATION CONTOUR IN FEET NAVD88 (INFERRED WHERE DASHED)

APPROXIMATE GROUNDWATER FLOW DIRECTION

355 = TOTAL PETROLEUM HYDROCARBONS (TPH) IN MICROGRAMS PER LITER  
<46 = TPH NOT DETECTED AT OR EXCEEDING THE GIVEN REPORTING LIMIT  
40\* = TPH IN MICROGRAMS PER LITER AFTER SILICA GEL CLEANUP  
[1.51] = MEASURABLE LNAPL THICKNESS IN FEET  
[LT] = LIGHT TRACE - OBSERVED ON INTERFACE PROBE BY FIELD STAFF;  
NO MEASURABLE LNAPL THICKNESS GREATER THAN 0.01 FOOT  
[HT] = HEAVY TRACE - OBSERVED ON INTERFACE PROBE BY FIELD STAFF;  
NO MEASURABLE LNAPL THICKNESS GREATER THAN 0.01 FOOT  
LNAPL = LIGHT NONAQUEOUS-PHASE LIQUID  
NAVD88 = NORTH AMERICAN VERTICAL DATUM OF 1988

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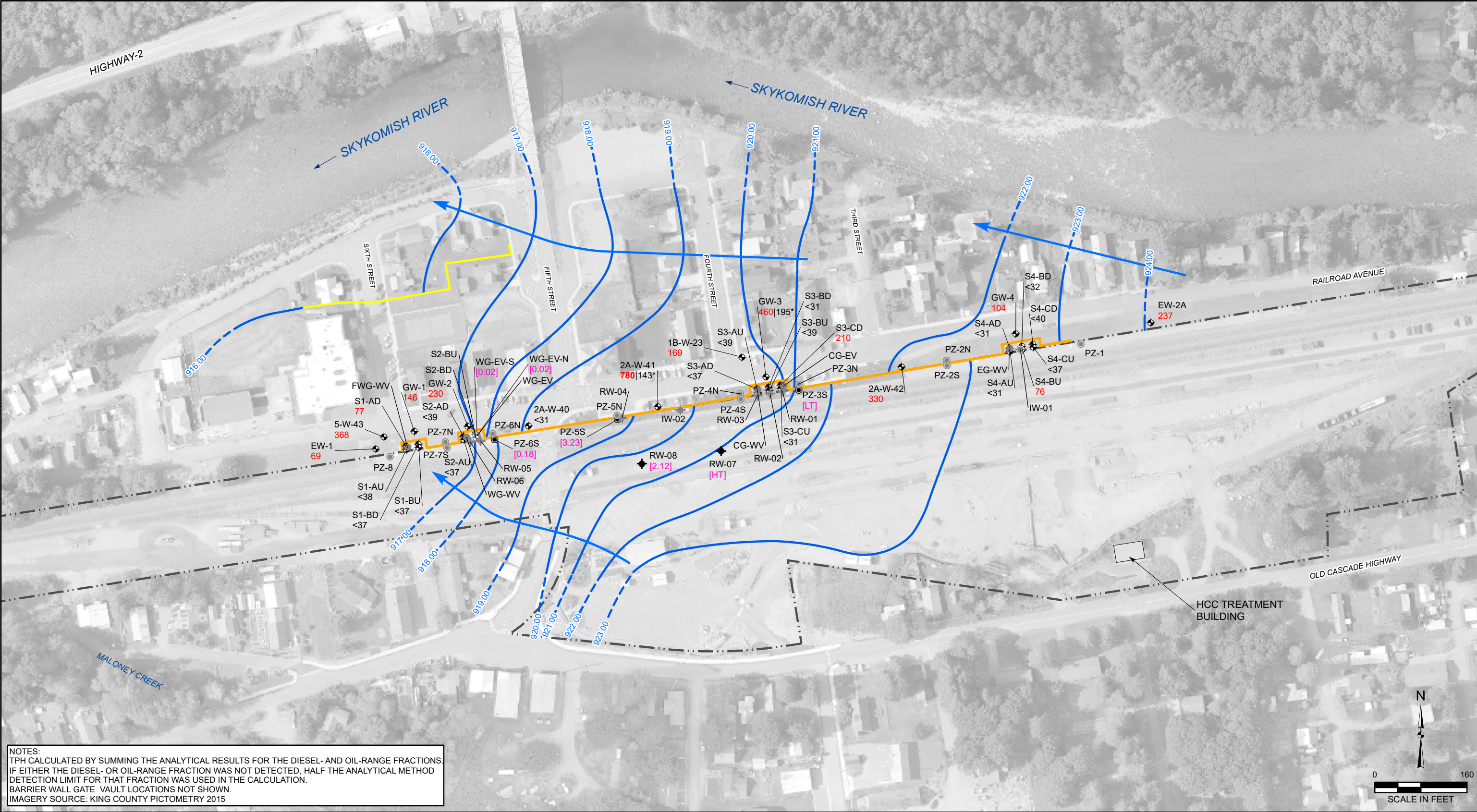
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**FIGURE 3**  
JUNE 2022 TOTAL PETROLEUM  
HYDROCARBONS IN GROUNDWATER  
BNSF FORMER MAINTENANCE  
AND FUELING FACILITY  
SKYKOMISH, WASHINGTON

FARALLON PN: 683-071





NOTES:  
TPH CALCULATED BY SUMMING THE ANALYTICAL RESULTS FOR THE DIESEL- AND OIL-RANGE FRACTIONS.  
IF EITHER THE DIESEL- OR OIL-RANGE FRACTION WAS NOT DETECTED, HALF THE ANALYTICAL METHOD  
DETECTION LIMIT FOR THAT FRACTION WAS USED IN THE CALCULATION.  
BARRIER WALL GATE VAULT LOCATIONS NOT SHOWN.  
IMAGERY SOURCE: KING COUNTY PICTOMETRY 2015

**LEGEND**

- 2A-W-41 MONITORING WELL  
RW-04 RECOVERY WELL  
PZ-5S PIEZOMETER  
IW-02 INJECTION WELL

LOCATIONS SHOWN IN GRAY NOT  
SAMPLED IN OCTOBER 2022.  
 HYDRAULIC CONTROL AND CONTAINMENT SYSTEM  
SHEET PILE BARRIER WALL AND GATES

- BNSF RAILYARD BOUNDARY  
 MECHANICALLY STABILIZED EARTH WALL  
 ESTIMATED EXTENT OF LNAPL AS INDICATED BY  
MEASURABLE LNAPL THICKNESS ON  
GROUNDWATER SURFACE  
924.00 INTERPRETED GROUNDWATER ELEVATION CONTOUR  
IN FEET NAVD88 (INFERRED WHERE DASHED)  
 APPROXIMATE GROUNDWATER FLOW DIRECTION

**BOLD** = INDICATES THAT THE TPH CONCENTRATION EXCEEDS THE 477  
MICROGRAMS PER LITER REMEDIATION LEVEL IN MONITORING WELLS  
BETWEEN THE BNSF RAILYARD AND THE SKYKOMISH RIVER.  
**460** = TOTAL PETROLEUM HYDROCARBONS (TPH) IN MICROGRAMS PER LITER  
**<40** = TPH NOT DETECTED AT OR EXCEEDING THE GIVEN REPORTING LIMIT  
**195\*** = MEASURABLE LNAPL THICKNESS IN FEET  
**[3.23]** = TPH IN MICROGRAMS PER LITER AFTER SILICA GEL CLEANUP  
**[LT]** = LIGHT TRACE - OBSERVED ON INTERFACE PROBE BY FIELD STAFF;  
NO MEASURABLE LNAPL THICKNESS GREATER THAN 0.01 FOOT  
**[HT]** = HEAVY TRACE - OBSERVED ON INTERFACE PROBE BY FIELD STAFF;  
NO MEASURABLE LNAPL THICKNESS GREATER THAN 0.01 FOOT  
LNAPL = LIGHT NONAQUEOUS-PHASE LIQUID  
NAVD88 = NORTH AMERICAN VERTICAL DATUM OF 1988

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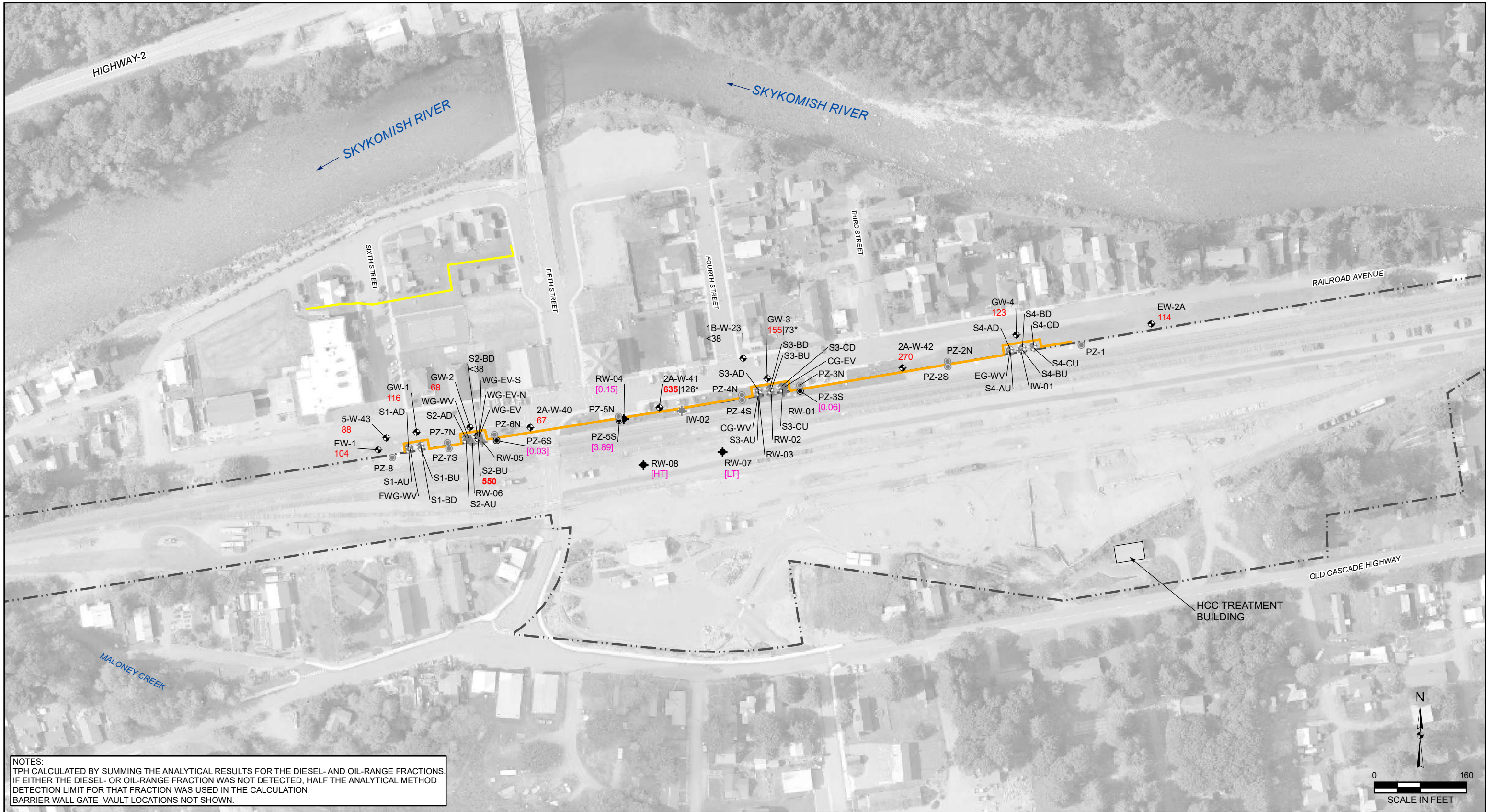
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**FIGURE 4**  
OCTOBER 2022 TOTAL PETROLEUM  
HYDROCARBONS IN GROUNDWATER  
BNSF FORMER MAINTENANCE  
AND FUELING FACILITY  
SKYKOMISH, WASHINGTON

FARALLON PN: 683-071





NOTES:  
TPH CALCULATED BY SUMMING THE ANALYTICAL RESULTS FOR THE DIESEL- AND OIL-RANGE FRACTIONS.  
IF EITHER THE DIESEL- OR OIL-RANGE FRACTION WAS NOT DETECTED, HALF THE ANALYTICAL METHOD  
DETECTION LIMIT FOR THAT FRACTION WAS USED IN THE CALCULATION.  
BARRIER WALL GATE VAULT LOCATIONS NOT SHOWN.

**LEGEND**

- 2A-W-41 MONITORING WELL  
RW-04 RECOVERY WELL  
PZ-5S PIEZOMETER  
IW-02 INJECTION WELL  
 LOCATIONS SHOWN IN GRAY NOT  
SAMPLED IN DECEMBER 2022.

- HYDRAULIC CONTROL AND CONTAINMENT SYSTEM  
SHEET PILE BARRIER WALL AND GATES  
 BNSF RAILYARD BOUNDARY  
 MECHANICALLY STABILIZED EARTH WALL  
 ESTIMATED EXTENT OF LNAPL AS INDICATED BY  
MEASURABLE LNAPL THICKNESS ON  
GROUNDWATER SURFACE

IMAGERY SOURCE: KING COUNTY PICTOMETRY 2015

**BOLD** = INDICATES THAT THE TPH CONCENTRATION EXCEEDS THE 477 MICROGRAMS PER LITER REMEDIATION  
LEVEL IN MONITORING WELLS BETWEEN THE BNSF RAILYARD AND THE SKYKOMISH RIVER.  
**270** = TOTAL PETROLEUM HYDROCARBONS (TPH) IN MICROGRAMS PER LITER  
**<38** = TPH NOT DETECTED AT OR EXCEEDING THE GIVEN REPORTING LIMIT  
**126\*** = TPH IN MICROGRAMS PER LITER AFTER SILICA GEL CLEANUP  
**[3.89]** = MEASURABLE LNAPL THICKNESS IN FEET  
**[LT]** = LIGHT TRACE - OBSERVED ON INTERFACE PROBE BY FIELD STAFF;  
NO MEASURABLE LNAPL THICKNESS GREATER THAN 0.01 FOOT  
**[HT]** = HEAVY TRACE - OBSERVED ON INTERFACE PROBE BY FIELD STAFF;  
NO MEASURABLE LNAPL THICKNESS GREATER THAN 0.01 FOOT  
LNAPL = LIGHT NONAQUEOUS-PHASE LIQUID  
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Document Path: Q:\Projects\683 BNSF\071 Groundwater\_HCC 2020\Mapfiles\031B\HCC\_Figure-05\_TPH-GW\_Dec\_2022.mxd

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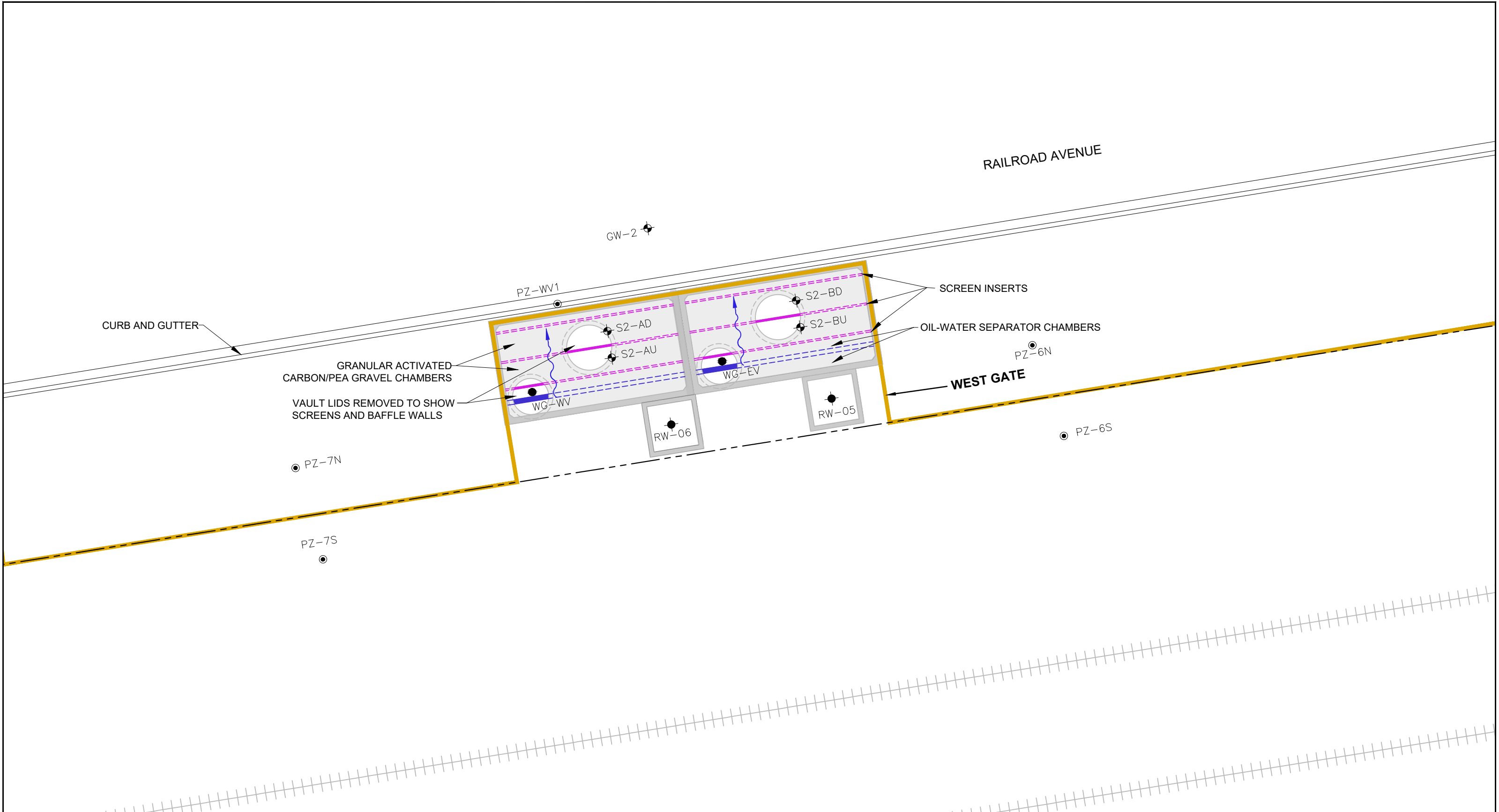
**FIGURE 5**

DECEMBER 2022 TOTAL PETROLEUM  
HYDROCARBONS IN GROUNDWATER  
BNSF FORMER MAINTENANCE  
AND FUELING FACILITY  
SKYKOMISH, WASHINGTON

FARALLON PN: 683-071







**LEGEND**

GW-2       MONITORING WELL

RW-6       RECOVERY WELL

PZ-7S       PIEZOMETER

WG-WV       BARRIER WALL GATE VAULT

   HYDRAULIC CONTROL AND CONTAINMENT (HCC) SYSTEM BARRIER WALL/GATE SYSTEM

   BNSF RAILYARD BOUNDARY

   NATURAL HYDRAULIC GRADIENT DIRECTION

   RAILROAD TRACKS

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**FIGURE 6**

PLAN VIEW OF HCC SYSTEM WEST GATE  
SHOWING TYPICAL GATE CONSTRUCTION  
BNSF FORMER MAINTENANCE AND FUELING FACILITY  
SKYKOMISH, WASHINGTON

FARALLON PN: 683-071

Drawn By: MB    Checked By: AM    Date: 1/30/2022    Disk Reference: 683-071-HCC.dwg

## **TABLES**

**2022 ANNUAL HYDRAULIC CONTROL AND CONTAINMENT SYSTEM  
OPERATIONS REPORT  
BNSF Former Maintenance and Fueling Facility  
Skykomish, Washington  
Consent Decree No. 07-2-33672-9 SEA**

**Farallon PN: 683-071**

**Table 1**  
**HCC Water Treatment System Discharge Flow Rates**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

<b>Date</b>	<b>Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)</b>	<b>Calculated Average Daily Flow Rate<sup>1</sup> (gallons per minute)</b>
1/1/2022	143,362,211	12
1/2/2022	143,379,991	12
1/3/2022	143,390,951	9
1/4/2022	143,409,247	11
1/5/2022	143,412,295	11
1/6/2022	143,412,295	0
1/7/2022	143,412,295	0
1/8/2022	143,422,963	2
1/9/2022	143,442,023	13
1/10/2022	143,461,055	13
1/11/2022	143,479,767	13
1/12/2022	143,497,519	13
1/13/2022	143,520,547	16
1/14/2022	143,542,287	15
1/15/2022	143,558,943	12
1/16/2022	143,574,643	11
1/17/2022	143,592,639	12
1/18/2022	143,612,699	14
1/19/2022	143,621,251	6
1/20/2022	143,641,767	14
1/21/2022	143,659,207	12
1/22/2022	143,677,135	12
1/23/2022	143,691,515	10
1/24/2022	143,710,339	13
1/25/2022	143,728,379	13
1/26/2022	143,729,919	1
1/27/2022	143,732,627	2
1/28/2022	143,738,135	4
1/29/2022	143,759,959	15
1/30/2022	143,782,347	16
1/31/2022	143,804,767	16
2/1/2022	143,825,051	14
2/2/2022	143,847,287	15
2/3/2022	143,869,299	15
2/4/2022	143,891,307	15
2/5/2022	143,913,451	15
2/6/2022	143,934,887	15
2/7/2022	143,949,807	10
2/8/2022	143,966,223	11
2/9/2022	143,979,279	9
2/10/2022	143,993,855	10
2/11/2022	144,011,579	12
2/12/2022	144,025,567	10
2/13/2022	144,039,551	10
2/14/2022	144,053,911	10
2/15/2022	144,069,927	11
2/16/2022	144,087,099	12
2/17/2022	144,102,199	10

**Table 1**  
**HCC Water Treatment System Discharge Flow Rates**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

<b>Date</b>	<b>Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)</b>	<b>Calculated Average Daily Flow Rate<sup>1</sup> (gallons per minute)</b>
2/18/2022	144,118,975	11
2/19/2022	144,134,503	11
2/20/2022	144,146,655	8
2/21/2022	144,163,639	12
2/22/2022	144,181,639	12
2/23/2022	144,191,263	7
2/24/2022	144,191,263	0
2/25/2022	144,196,059	3
2/26/2022	144,215,995	14
2/27/2022	144,230,739	11
2/28/2022	144,249,815	13
3/1/2022	144,270,235	14
3/2/2022	144,293,919	16
3/3/2022	144,312,723	13
3/4/2022	144,330,003	12
3/5/2022	144,345,079	10
3/6/2022	144,360,435	11
3/7/2022	144,372,235	8
3/8/2022	144,383,771	8
3/9/2022	144,388,035	3
3/10/2022	144,418,111	21
3/11/2022	144,448,251	21
3/12/2022	144,478,107	21
3/13/2022	144,507,683	20
3/14/2022	144,535,343	19
3/15/2022	144,553,667	13
3/16/2022	144,578,307	17
3/17/2022	144,600,603	15
3/18/2022	144,629,239	20
3/19/2022	144,660,523	22
3/20/2022	144,682,387	15
3/21/2022	144,692,799	7
3/22/2022	144,698,687	4
3/23/2022	144,714,215	11
3/24/2022	144,731,399	12
3/25/2022	144,760,199	20
3/26/2022	144,787,055	19
3/27/2022	144,813,859	19
3/28/2022	144,840,771	19
3/29/2022	144,866,903	18
3/30/2022	144,893,659	19
3/31/2022	144,917,051	16
4/1/2022	144,945,883	20
4/2/2022	144,976,775	21
4/3/2022	145,005,263	20
4/4/2022	145,034,055	20
4/5/2022	145,047,695	9
4/6/2022	145,072,967	18

**Table 1**  
**HCC Water Treatment System Discharge Flow Rates**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

<b>Date</b>	<b>Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)</b>	<b>Calculated Average Daily Flow Rate<sup>1</sup> (gallons per minute)</b>
4/7/2022	145,090,479	12
4/8/2022	145,107,939	12
4/9/2022	145,125,239	12
4/10/2022	145,145,155	14
4/11/2022	145,162,667	12
4/12/2022	145,180,251	12
4/13/2022	145,198,119	12
4/14/2022	145,222,123	17
4/15/2022	145,252,815	21
4/16/2022	145,283,483	21
4/17/2022	145,314,755	22
4/18/2022	145,344,611	21
4/19/2022	145,374,283	21
4/20/2022	145,404,043	21
4/21/2022	145,433,511	20
4/22/2022	145,462,831	20
4/23/2022	145,491,967	20
4/24/2022	145,520,991	20
4/25/2022	145,550,727	21
4/26/2022	145,580,695	21
4/27/2022	145,609,483	20
4/28/2022	145,637,907	20
4/29/2022	145,666,711	20
4/30/2022	145,694,707	19
5/1/2022	145,722,387	19
5/2/2022	145,750,087	19
5/3/2022	145,777,611	19
5/4/2022	145,806,419	20
5/5/2022	145,833,439	19
5/6/2022	145,854,679	15
5/7/2022	145,873,571	13
5/8/2022	145,889,003	11
5/9/2022	145,915,911	19
5/10/2022	145,944,243	20
5/11/2022	145,971,723	19
5/12/2022	145,997,115	18
5/13/2022	146,025,571	20
5/14/2022	146,054,107	20
5/15/2022	146,082,599	20
5/16/2022	146,111,823	20
5/17/2022	146,140,567	20
5/18/2022	146,169,367	20
5/19/2022	146,198,103	20
5/20/2022	146,226,495	20
5/21/2022	146,249,219	19
5/22/2022	146,249,943	0
5/23/2022	146,255,599	4
5/24/2022	146,284,995	20



**Table 1**  
**HCC Water Treatment System Discharge Flow Rates**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

<b>Date</b>	<b>Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)</b>	<b>Calculated Average Daily Flow Rate<sup>1</sup> (gallons per minute)</b>
5/25/2022	146,312,867	19
5/26/2022	146,340,147	19
5/27/2022	146,363,091	16
5/28/2022	146,373,407	7
5/29/2022	146,382,923	7
5/30/2022	146,392,079	6
5/31/2022	146,401,983	7
6/1/2022	146,401,983	0
6/2/2022	146,401,983	0
6/3/2022	146,401,983	0
6/4/2022	146,401,983	0
6/5/2022	146,401,983	0
6/6/2022	146,401,983	0
6/7/2022	146,401,983	0
6/8/2022	146,401,983	0
6/9/2022	146,401,983	0
6/10/2022	146,401,983	0
6/11/2022	146,401,983	0
6/12/2022	146,401,983	0
6/13/2022	146,401,983	0
6/14/2022	146,401,983	0
6/15/2022	146,401,983	0
6/16/2022	146,401,983	0
6/17/2022	146,405,539	2
6/18/2022	146,432,191	19
6/19/2022	146,461,479	20
6/20/2022	146,490,943	20
6/21/2022	146,520,143	20
6/22/2022	146,549,211	20
6/23/2022	146,577,871	20
6/24/2022	146,605,551	19
6/25/2022	146,634,007	20
6/26/2022	146,662,323	20
6/27/2022	146,690,247	19
6/28/2022	146,718,075	19
6/29/2022	146,746,555	20
6/30/2022	146,773,983	19
7/1/2022	146,801,187	19
7/2/2022	146,828,207	19
7/3/2022	146,853,691	18
7/4/2022	146,879,039	18
7/5/2022	146,904,483	18
7/6/2022	146,934,587	21
7/7/2022	146,970,431	25
7/8/2022	147,006,147	25
7/9/2022	147,042,303	25
7/10/2022	147,078,283	25
7/11/2022	147,114,179	25

**Table 1**  
**HCC Water Treatment System Discharge Flow Rates**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

<b>Date</b>	<b>Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)</b>	<b>Calculated Average Daily Flow Rate<sup>1</sup> (gallons per minute)</b>
7/12/2022	147,153,459	27
7/13/2022	147,198,999	32
7/14/2022	147,244,311	31
7/15/2022	147,289,335	31
7/16/2022	147,334,831	32
7/17/2022	147,378,747	30
7/18/2022	147,423,139	31
7/19/2022	147,467,135	31
7/20/2022	147,510,979	30
7/21/2022	147,554,699	30
7/22/2022	147,598,151	30
7/23/2022	147,641,475	30
7/24/2022	147,684,523	30
7/25/2022	147,727,335	30
7/26/2022	147,770,111	30
7/27/2022	147,812,267	29
7/28/2022	147,854,167	29
7/29/2022	147,895,779	29
7/30/2022	147,937,891	29
7/31/2022	147,981,759	30
8/1/2022	148,025,515	30
8/2/2022	148,069,135	30
8/3/2022	148,112,803	30
8/4/2022	148,156,611	30
8/5/2022	148,200,627	31
8/6/2022	148,244,603	31
8/7/2022	148,285,939	29
8/8/2022	148,328,227	29
8/9/2022	148,372,763	31
8/10/2022	148,417,283	31
8/11/2022	148,461,607	31
8/12/2022	148,506,191	31
8/13/2022	148,550,819	31
8/14/2022	148,595,539	31
8/15/2022	148,640,367	31
8/16/2022	148,685,751	32
8/17/2022	148,727,347	29
8/18/2022	148,768,311	28
8/19/2022	148,795,191	19
8/20/2022	148,818,763	16
8/21/2022	148,844,015	18
8/22/2022	148,883,343	27
8/23/2022	148,900,079	12
8/24/2022	148,925,239	17
8/25/2022	148,959,483	29
8/26/2022	148,984,399	17
8/27/2022	149,009,075	17
8/28/2022	149,033,623	17

**Table 1**  
**HCC Water Treatment System Discharge Flow Rates**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

<b>Date</b>	<b>Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)</b>	<b>Calculated Average Daily Flow Rate<sup>1</sup> (gallons per minute)</b>
8/29/2022	149,057,951	17
8/30/2022	149,078,327	14
8/31/2022	149,108,291	21
9/1/2022	149,132,347	17
9/2/2022	149,156,427	17
9/3/2022	149,180,403	17
9/4/2022	149,215,839	25
9/5/2022	149,252,015	25
9/6/2022	149,287,875	25
9/7/2022	149,303,331	11
9/8/2022	149,330,399	19
9/9/2022	149,330,411	0
9/10/2022	149,337,051	5
9/11/2022	149,337,051	0
9/12/2022	149,337,051	0
9/13/2022	149,337,051	0
9/14/2022	149,337,051	0
9/15/2022	149,337,051	0
9/16/2022	149,337,051	0
9/17/2022	149,337,051	0
9/18/2022	149,337,051	0
9/19/2022	149,337,051	0
9/20/2022	149,337,051	0
9/21/2022	149,337,051	0
9/22/2022	149,337,051	0
9/23/2022	149,345,467	6
9/24/2022	149,386,103	28
9/25/2022	149,423,367	26
9/26/2022	149,459,963	25
9/27/2022	149,497,119	26
9/28/2022	149,529,167	22
9/29/2022	149,552,303	16
9/30/2022	149,579,787	19
10/1/2022	149,623,403	30
10/2/2022	149,665,475	29
10/3/2022	149,708,127	30
10/4/2022	149,752,115	31
10/5/2022	149,795,543	30
10/6/2022	149,836,371	28
10/7/2022	149,879,163	30
10/8/2022	149,918,187	27
10/9/2022	149,956,595	27
10/10/2022	149,994,687	26
10/11/2022	150,031,223	25
10/12/2022	150,074,591	30
10/13/2022	150,107,079	23
10/14/2022	150,139,035	22
10/15/2022	150,170,831	22

**Table 1**  
**HCC Water Treatment System Discharge Flow Rates**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

<b>Date</b>	<b>Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)</b>	<b>Calculated Average Daily Flow Rate<sup>1</sup> (gallons per minute)</b>
10/16/2022	150,202,371	22
10/17/2022	150,233,999	22
10/18/2022	150,263,419	20
10/19/2022	150,292,403	20
10/20/2022	150,318,183	18
10/21/2022	150,318,223	0
10/22/2022	150,318,223	0
10/23/2022	150,318,223	0
10/24/2022	150,411,567	20
10/25/2022	150,440,331	20
10/26/2022	150,465,691	18
10/27/2022	150,490,827	17
10/28/2022	150,518,483	19
10/29/2022	150,551,999	23
10/30/2022	150,585,515	23
10/31/2022	150,619,363	23
11/1/2022	150,652,447	23
11/2/2022	150,685,051	23
11/3/2022	150,717,103	22
11/4/2022	150,749,319	22
11/5/2022	150,758,967	20
11/6/2022	150,758,967	0
11/7/2022	150,758,967	0
11/8/2022	150,758,967	0
11/9/2022	150,758,967	0
11/10/2022	150,762,963	0
11/11/2022	150,794,643	22
11/12/2022	150,826,167	22
11/13/2022	150,857,951	22
11/14/2022	150,888,211	21
11/15/2022	150,919,031	21
11/16/2022	150,949,787	21
11/17/2022	150,980,339	21
11/18/2022	151,010,751	21
11/19/2022	151,041,283	21
11/20/2022	151,071,831	21
11/21/2022	151,102,287	21
11/22/2022	151,132,819	21
11/23/2022	151,163,635	21
11/24/2022	151,194,011	21
11/25/2022	151,224,119	21
11/26/2022	151,254,075	21
11/27/2022	151,283,447	20
11/28/2022	151,306,131	19
11/29/2022	151,306,131	0
11/30/2022	151,306,131	0
12/1/2022	151,306,131	0
12/2/2022	151,306,131	0

**Table 1**  
**HCC Water Treatment System Discharge Flow Rates**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

<b>Date</b>	<b>Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)</b>	<b>Calculated Average Daily Flow Rate<sup>1</sup> (gallons per minute)</b>
12/3/2022	151,306,131	0
12/4/2022	151,306,131	0
12/5/2022	151,306,279	0
12/6/2022	151,330,167	12
12/7/2022	151,359,239	20
12/8/2022	151,388,403	20
12/9/2022	151,417,711	20
12/10/2022	151,447,243	21
12/11/2022	151,476,947	21
12/12/2022	151,506,815	21
12/13/2022	151,536,951	21
12/14/2022	151,567,323	21
12/15/2022	151,597,859	21
12/16/2022	151,628,639	21
12/17/2022	151,658,395	21
12/18/2022	151,688,187	21
12/19/2022	151,718,067	21
12/20/2022	151,748,627	21
12/21/2022	151,780,863	22
12/22/2022	151,813,339	23
12/23/2022	151,834,735	22
12/24/2022	151,834,735	0
12/25/2022	151,834,735	0
12/26/2022	151,834,735	0
12/27/2022	151,834,735	0
12/28/2022	151,834,735	0
12/29/2022	151,834,735	0
12/30/2022	151,834,735	0
12/31/2022	151,834,735	0
<b>NPDES Permit Discharge Limit<sup>1</sup></b>		<b>100</b>

**NOTES:**

<sup>1</sup>Discharge limit specified in NPDES Permit No. WA0032123, applicable when the Skykomish River level is less than 928.56 feet NAVD88. Discharge is not allowed when the river level exceeds 928.56 feet NAVD88.

HCC = Hydraulic Control and Containment

NAVD88 = North American Vertical Datum of 1988

NPDES = National Pollutant Discharge Elimination System

**Table 2**  
**Total Petroleum Hydrocarbon Concentrations in HCC Water Treatment System Influent and Effluent**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-067**

Sample Location	Sample Date	Sample Identification	DRO <sup>1</sup> (micrograms per liter)			ORO <sup>1</sup> (micrograms per liter)			Calculated NWTPH-Dx <sup>2</sup> (micrograms per liter)
			Result	MDL	MRL	Result	MDL	MRL	
Treatment System Influent (Primary GAC Vessel Influent) <sup>3</sup>	1/7/2022	BEFORE GAC-1722	620	55	55	320	96	96	940
	1/12/2022	BEFORE GAC-11222	390	51	51	330	88	88	720
	1/18/2022	BEFORE GAC-11822	450	56	56	260	96	96	710
	1/24/2022	BEFORE GAC-12422	490	51	51	280	88	88	770
	2/2/2022	BEFORE GAC-2222	420	52	52	380	89	89	800
	2/10/2022	BEFORE GAC-21022	370	51	51	320	89	89	690
	2/15/2022	BEFORE GAC-21522	460	51	51	270	89	89	730
	2/25/2022	BEFORE GAC-22522	400	52	52	320	90	90	720
	3/1/2022	BEFORE GAC-3122	330	51	51	210	88	88	540
	3/9/2022	BEFORE GAC-3922	350	51	51	300	88	88	650
	3/17/2022	BEFORE GAC-31722	620	100	100	370	180	180	990
	3/24/2022	BEFORE GAC-32422	460	100	100	710	180	180	1,170
	3/31/2022	BEFORE GAC-33122	520	55	55	270	95	95	790
	4/5/2022	BEFORE GAC-4522	700	55	55	760	95	95	1,460
	4/14/2022	BEFORE GAC-41422	580	55	55	380	95	95	960
	4/21/2022	BEFORE GAC-42122	670	56	56	290	97	97	960
	4/26/2022	BEFORE GAC-42622	610	55	55	340	96	96	950
	5/4/2022	BEFORE GAC-5422	320	56	56	270	96	96	590
	5/12/2022	BEFORE GAC-51222	710	52	52	430	89	89	1,140
	5/16/2022	BEFORE GAC-51622	350	52	52	340	90	90	690
	5/24/2022	BEFORE GAC-52422	590	51	51	340	88	88	930
	5/31/2022	BEFORE GAC-53122	1,100	52	52	680	89	89	1,780
	6/17/2022	BEFORE GAC-61722	460	52	52	340	90	90	800
	6/24/2022	BEFORE GAC-62422	560	52	52	320	89	89	880
	6/29/2022	BEFORE GAC-62922	550	56	56	320	96	96	870
	7/6/2022	BEFORE GAC-7622	520	55	55	300	95	95	820
	7/12/2022	BEFORE GAC-71222	490	55	55	260	96	96	750
	7/21/2022	BEFORE GAC-72122	460	56	56	260	97	97	720
	7/26/2022	BEFORE GAC-72622	480	55	55	280	95	95	760
	8/5/2022	BEFORE GAC-8522	380	55	55	240	95	95	620

**Table 2**  
**Total Petroleum Hydrocarbon Concentrations in HCC Water Treatment System Influent and Effluent**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-067**

Sample Location	Sample Date	Sample Identification	DRO <sup>1</sup> (micrograms per liter)			ORO <sup>1</sup> (micrograms per liter)			Calculated NWTPH-Dx <sup>2</sup> (micrograms per liter)
			Result	MDL	MRL	Result	MDL	MRL	
Treatment System Influent (Primary GAC Vessel Influent) <sup>3</sup>	8/8/2022	BEFORE GAC-8822	360	55	55	180	95	95	540
	8/17/2022	BEFORE GAC-81722	320	52	52	170	90	90	490
	8/24/2022	BEFORE GAC-82422	360	50	50	200	87	87	560
	8/30/2022	BEFORE GAC-83022	330	52	52	340	90	90	670
	9/7/2022	BEFORE GAC-9722	390	51	51	180	87	87	570
	9/30/2022	BEFORE GAC-93022	510	52	52	270	89	89	780
	10/11/2022	BEFORE GAC-101122	310	51	51	180	87	87	490
	10/27/2022	BEFORE GAC-102722	260	51	51	140	88	88	400
	11/10/2022	BEFORE GAC-111022	840	57	57	540	99	99	1,380
	11/22/2022	BEFORE GAC-112222	770	55	55	450	95	95	1,220
	12/7/2022	BEFORE GAC-12722	600	58	58	410	100	100	1,010
	12/20/2022	BEFORE GAC-122022	770	55	55	510	96	96	1,280



**Table 2**  
**Total Petroleum Hydrocarbon Concentrations in HCC Water Treatment System Influent and Effluent**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
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Sample Location	Sample Date	Sample Identification	DRO <sup>1</sup> (micrograms per liter)			ORO <sup>1</sup> (micrograms per liter)			Calculated NWT PH-Dx <sup>2</sup> (micrograms per liter)
			Result	MDL	MRL	Result	MDL	MRL	
Treatment System Effluent (Secondary GAC Vessel Effluent) <sup>3</sup>	1/7/2022	HCC EFF-1722	<56	56	56	<96	96	96	<76
	1/12/2022	HCC EFF-11222	<52	52	52	<89	89	89	<70.5
	1/18/2022	HCC EFF-11822	<56	56	56	110	96	96	138
	1/24/2022	HCC EFF-12422	<52	52	52	<89	89	89	<70.5
	2/2/2022	HCC EFF-2222	68	52	52	100	90	90	168
	2/10/2022	HCC EFF-21022	65	52	52	<91	91	91	110.5
	2/15/2022	HCC EFF-21522	82	52	52	<90	90	90	127
	2/25/2022	HCC EFF-22522	<51	51	51	<89	89	89	<70
	3/1/2022	HCC EFF-3122	<52	52	52	<89	89	89	<70.5
	3/9/2022	HCC EFF-3922	<52	52	52	<90	90	90	<71
	3/17/2022	HCC EFF-31722	140	100	100	<90	90	90	185
	3/24/2022	HCC EFF-32422	<100	100	100	<180	180	180	<140
	3/31/2022	HCC EFF-33122	100	55	55	110	95	95	<b>210</b>
	4/5/2022	HCC EFF-4522	73	55	55	<95	95	95	120.5
	4/14/2022	HCC EFF-41422	63	55	55	<96	96	96	111
	4/21/2022	HCC EFF-42122	<56	56	56	<96	96	96	<76
	4/26/2022	HCC EFF-42622	<55	55	55	<96	96	96	<75.5
	5/4/2022	HCC EFF-5422	55	55	55	<96	96	96	103
	5/12/2022	HCC EFF-51222	55	52	52	<89	89	89	99.5
	5/16/2022	HCC EFF-51622	110	52	52	160	90	90	<b>270</b>
	5/24/2022	HCC EFF-52422	89	52	52	<90	90	90	134
	5/31/2022	HCC EFF-53122	120	51	51	<88	88	88	164
	6/17/2022	HCC EFF-61722	<52	52	52	<90	90	90	<71
	6/24/2022	HCC EFF-62422	<52	52	52	<90	90	90	<71
	6/29/2022	HCC EFF-62922	<56	56	56	<96	96	96	<76
	7/6/2022	HCC EFF-7622	<55	55	55	<96	96	96	<75.5
	7/12/2022	HCC EFF-71222	<55	55	55	<96	96	96	<75.5
	7/21/2022	HCC EFF-72122	<56	56	56	<97	97	97	<76.5
	7/26/2022	HCC EFF-72622	<55	55	55	<95	95	95	<75
<b>NPDES Permit Discharge Limit<sup>4</sup></b>									<b>208</b>

**Table 2**  
**Total Petroleum Hydrocarbon Concentrations in HCC Water Treatment System Influent and Effluent**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-067**

Sample Location	Sample Date	Sample Identification	DRO <sup>1</sup> (micrograms per liter)			ORO <sup>1</sup> (micrograms per liter)			Calculated NWTPH-Dx <sup>2</sup> (micrograms per liter)
			Result	MDL	MRL	Result	MDL	MRL	
Treatment System Effluent (Secondary GAC Vessel Effluent) <sup>3</sup>	8/5/2022	HCC EFF-8522	<55	55	55	<96	96	96	<75.5
	8/8/2022	HCC EFF-8822	<55	55	55	<95	95	95	<75
	8/17/2022	HCC EFF-81722	<51	51	51	<88	88	88	<69.5
	8/24/2022	HCC EFF-82422	<51	51	51	<88	88	88	<69.5
	8/30/2022	HCC EFF-83022	<51	51	51	<89	89	89	<70
	9/7/2022	HCC EFF-9722	<51	51	51	<88	88	88	<69.5
	9/30/2022	HCC EFF-93022	<51	51	51	<87	87	87	<69
	10/11/2022	HCC EFF-101122	<51	51	51	<88	88	88	<69.5
	10/27/2022	HCC EFF-102722	<51	51	51	<88	88	88	<69.5
	11/10/2022	HCC EFF-111022	64	56	56	<97	97	97	112.5
	11/22/2022	HCC EFF-112222	<55	55	55	<95	95	95	<75
	12/7/2022	HCC EFF-12722	<59	59	59	<100	100	100	79.5
	12/20/2022	HCC EFF-122022	<55	55	55	<95	95	95	75
<b>NPDES Permit Discharge Limit<sup>4</sup></b>									<b>208</b>

**NOTES:**

"<" denotes analyte not detected at or exceeding the reported concentration.

<sup>1</sup>Analyzed by Washington State Department of Ecology Method NWTPH-Dx.

<sup>2</sup>Sum of DRO and ORO, using half the method detection limit for non-detect results. Data reported previously in NPDES Discharge Monitoring Reports pursuant to NPDES Permit No. WA0032123.

<sup>3</sup>Sample frequency changed to quarterly per revised NPDES Permit No. WA0032123 dated September 12. NPDES = National Pollutant Discharge Elimination System

<sup>4</sup>Discharge limit specified in NPDES Permit No. WA0032123.

DRO = total petroleum hydrocarbons as diesel-range organics

HCC = Hydraulic Control and Containment

J = The reported concentration is an estimated value

MDL = method detection limit

MRL = method reporting limit

ORO = total petroleum hydrocarbons as oil-range organics

UJ = not detected at or exceeding the reported concentration; the reported concentration is an estimated value

**Table 3**  
**pH in HCC Water Treatment System Effluent**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

<b>Sample Date</b>	<b>pH<sup>1</sup> (Standard Units)</b>
1/7/2022	7.68
1/12/2022	7.97
1/18/2022	7.86
1/24/2022	7.85
2/2/2022	7.89
2/10/2022	7.90
2/15/2022	8.00
2/25/2022	8.00
3/1/2022	8.00
3/9/2022	8.17
3/17/2022	8.00
3/24/2022	8.10
3/31/2022	8.23
4/5/2022	7.78
4/14/2022	7.88
4/21/2022	7.38
4/26/2022	7.28
5/4/2022	7.50
5/12/2022	7.30
5/16/2022	7.35
5/24/2022	7.45
5/31/2022	6.88
6/17/2022	7.65
6/24/2022	7.15
6/29/2022	7.17
7/6/2022	7.04
7/12/2022	7.08
7/21/2022	7.09
7/26/2022	7.02
8/5/2022	7.07
8/8/2022	7.10
8/17/2022	7.21
8/24/2022	6.98
8/30/2022	7.01
9/7/2022	6.79
9/30/2022	7.23
10/11/2022	7.48
10/28/2022	7.44
11/10/2022	6.82
11/22/2022	6.85
12/7/2022	6.81
12/20/2022	7.02
<b>NPDES Permit Discharge Limit<sup>2</sup></b>	<b>6.5-8.5</b>

**NOTES:**

<sup>1</sup>Data reported previously in NPDES Discharge Monitoring Reports pursuant to NPDES Permit No. WA0032123.

<sup>2</sup>Discharge limit specified in NPDES Permit No. WA0032123.

HCC = Hydraulic Control and Containment

NPDES = National Pollutant Discharge Elimination System

**Table 4**  
**Metal Concentrations in HCC Water Treatment System Effluent**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

Sample Date	Sample Identification	Analytical Results (micrograms per liter)	
		Total Lead <sup>1</sup>	Total Arsenic <sup>1</sup>
01/12/2022	HCC EFF-11222	< 0.40	< 1.0
02/15/2022	HCC EFF-21522	< 0.40	<1.0
03/24/2022	HCC EFF-32422	<0.40	2.3
04/14/2022	HCC EFF-41422	<0.40	2.0
05/12/2022	HCC EFF-51222	<0.40	< 1.0
06/17/2022	HCC EFF-61722	<0.40	3.5
07/12/2022	HCC EFF-71222	<0.40	<1.0
08/08/2022	HCC EFF-8822	< 0.40	<1.0
09/30/2022	HCC EFF-93022	<0.40	< 1.0
11/22/2022 <sup>3</sup>	HCC EFF-112222	< 0.40	< 1.0
<b>NPDES Permit Discharge Limit<sup>2</sup></b>		<b>17.5</b>	<b>360</b>

**NOTES:**

"<" denotes analyte not detected at or exceeding the method reporting limit listed.

<sup>1</sup>Analyzed by U.S. Environmental Protection Agency Method 200.8. Data reported previously in NPDES Discharge Monitoring Reports pursuant to NPDES Permit No. WA0032123.

<sup>2</sup>Discharge limit specified in NPDES Permit No. WA0032123.

<sup>3</sup>Sample frequency changed to quarterly per revised NPDES Permit No. WA0032123 dated September 12, 2022.

HCC = Hydraulic Control and Containment

NPDES = National Pollutant Discharge Elimination System

Table 5  
HCC System Barrier Wall Groundwater Elevations  
BNSF Former Maintenance and Fueling Facility  
Skykomish, Washington  
Farallon PN: 683-071

Groundwater Elevations at Piezometers (feet NAVD88) and Elevation Differentials at Piezometer Pairs (feet)																				
Date	PZ-1	PZ-2S	PZ-2N	Elevation Differential at PZ-2S/PZ-2N	PZ-3S	PZ-3N	Elevation Differential at PZ-3S/PZ-3N	PZ-4S	PZ-4N	Elevation Differential at PZ-4S/PZ-4N	PZ-5S	PZ-5N	Elevation Differential at PZ-5S/PZ-5N	PZ-6S	PZ-6N	Elevation Differential at PZ-6S/PZ-6N	PZ-7S	PZ-7N	Elevation Differential at PZ-7S/PZ-7N	PZ-8
1/1/2022	925.67	925.54	923.20	2.34	925.19	921.01	4.18	924.66	921.10	3.56	918.92	921.10	-2.18	923.95	917.69	6.26	922.67	917.78	4.89	919.44
1/2/2022	925.55	925.43	923.15	2.28	925.02	920.94	4.08	924.55	921.09	3.46	918.92	921.07	-2.15	923.85	917.67	6.18	922.55	917.75	4.80	919.29
1/3/2022	925.52	925.35	923.15	2.20	924.99	920.95	4.04	924.53	921.11	3.42	918.98	921.11	-2.13	923.78	917.71	6.07	922.52	917.82	4.70	919.28
1/4/2022	925.47	925.20	923.07	2.13	924.86	920.95	3.91	924.48	921.07	3.41	918.92	921.03	-2.11	923.60	917.61	5.99	922.30	917.73	4.57	919.19
1/5/2022	925.49	925.21	923.12	2.09	924.89	921	3.89	924.38	921.12	3.26	918.96	921.06	-2.10	923.65	917.69	5.96	922.35	917.76	4.59	919.25
No data from 1/6 to 1/7																				
1/8/2022	926.89	927.33	924.49	2.84	927.02	921.1	5.92	926.66	921.24	5.42	919.02	921.90	-2.88	925.64	918.67	6.97	924.71	918.89	5.82	920.60
1/9/2022	926.74	927.27	924.13	3.14	926.81	921.19	5.62	926.31	921.23	5.08	919.01	921.57	-2.56	925.47	918.32	7.15	924.50	918.53	5.97	920.40
1/10/2022	926.54	927.02	923.88	3.14	926.53	921.17	5.36	926.03	921.23	4.80	919.05	921.44	-2.39	925.20	918.11	7.09	924.27	918.39	5.88	920.17
1/11/2022	926.95	927.19	923.90	3.29	926.59	921.16	5.43	926.05	921.24	4.81	919.02	921.44	-2.42	925.21	918.04	7.17	924.21	918.50	5.71	920.32
1/12/2022	928.60	928.18	926.32	1.86	928.02	921.25	6.77	927.47	921.75	5.72	919.04	924.46	-5.42	926.46	921.15	5.31	925.72	921.44	4.28	922.06
1/13/2022	928.00	928.41	926.11	2.30	927.92	921.11	6.81	927.33	921.31	6.02	919.00	923.79	-4.79	926.34	920.51	5.83	925.58	920.89	4.69	921.85
1/14/2022	927.49	928.18	925.22	2.96	927.57	921.14	6.43	927.02	921.23	5.79	918.98	922.74	-3.76	926.07	919.49	6.58	925.18	919.79	5.39	921.13
1/15/2022	927.17	927.96	924.64	3.32	927.31	921.1	6.21	926.84	921.28	5.56	918.99	922.23	-3.24	925.79	918.96	6.83	924.86	919.28	5.58	920.77
1/16/2022	926.96	927.66	924.30	3.36	927.01	921.1	5.91	926.54	921.29	5.25	919.01	921.95	-2.94	925.54	918.66	6.88	924.58	918.97	5.61	920.53
1/17/2022	926.79	927.31	924.03	3.28	926.67	921.07	5.60	926.2	921.25	4.95	918.99	921.79	-2.80	925.24	918.41	6.83	924.28	918.80	5.48	920.31
1/18/2022	926.78	926.99	923.95	3.04	926.43	921.08	5.35	925.89	921.23	4.66	919.01	921.78	-2.77	925.03	918.39	6.64	924.08	918.78	5.30	920.25
1/19/2022	926.75	926.88	923.98	2.90	926.49	921.1	5.39	926.02	921.26	4.76	918.99	921.75	-2.76	925.08	918.45	6.63	924.05	918.74	5.31	920.30
1/20/2022	927.22	927.45	924.27	3.18	926.93	921.08	5.85	926.45	921.27	5.18	919.00	921.95	-2.95	925.32	918.59	6.73	924.37	919.11	5.26	920.66
1/21/2022	927.79	928.05	925.69	2.36	927.71	921.07	6.64	927.19	921.27	5.92	918.98	923.05	-4.07	926.14	919.85	6.29	925.26	920.11	5.15	921.44
1/22/2022	927.38	928.00	924.98	3.02	927.43	921.03	6.40	926.94	921.22	5.72	919.01	922.49	-3.48	925.92	919.27	6.65	925.05	919.55	5.50	920.96
1/23/2022	927.11	927.81	924.53	3.28	927.19	921.01	6.18	926.74	921.27	5.47	918.99	922.16	-3.17	925.62	918.78	6.84	924.73	919.12	5.61	920.68
1/24/2022	926.96	927.48	924.20	3.28	926.88	921.05	5.83	926.36	921.24	5.12	919.02	921.90	-2.88	925.43	918.59	6.84	924.44	918.80	5.64	920.47
1/25/2022	926.74	927.20	924.02	3.18	926.62	921	5.62	926.16	921.28	4.88	918.96	921.69	-2.73	925.18	918.36	6.82	924.15	918.62	5.53	920.30
1/26/2022	926.64	926.88	923.81	3.07	926.46	921.02	5.44	926.05	921.21	4.84	918.95	921.60	-2.65	924.99	918.24	6.75	923.94	918.50	5.44	920.13
1/27/2022	926.48	926.65	923.67	2.98	926.25	920.99	5.26	925.91	921.21	4.70	918.96	921.54	-2.58	924.80	918.16	6.64	923.78	918.42	5.36	919.99
1/28/2022	926.37	926.46	923.56	2.90	926.05	920.98	5.07	925.66	921.20	4.46	918.98	921.45	-2.47	924.74	918.12	6.62	923.65	918.31	5.34	919.88
1/29/2022	926.31	926.27	923.51	2.76	925.83	921.03	4.80	925.28	921.20	4.08	918.96	921.38	-2.42	924.57	918.03	6.54	923.45	918.21	5.24	919.83
1/30/2022	926.18	926.11	923.43	2.68	925.62	920.99	4.63	925.14	921.18	3.96	919.02	921.38	-2.36	924.43	918.03	6.40	923.36	918.21	5.15	919.70
1/31/2022	926.39	926.14	923.58	2.56	925.84	921.05	4.79	925.33	921.22	4.11	918.94	921.43	-2.49	924.48	918.05	6.43	923.36	918.27	5.09	919.91
2/1/2022	926.30	926.24	923.65	2.59	925.82	920.98	4.84	925.37	921.21	4.16	918.98	921.48	-2.50	924.52	918.05	6.47	923.47	918.31	5.16	919.85
2/2/2022	926.25	926.19	923.59	2.60	925.73	920.96	4.77	925.25	921.17	4.08	918.98	921.41	-2.43	924.50	918.00	6.50	923.45	918.28	5.17	919.80
2/3/2022	926.15	926.13	923.54	2.59	925.63	920.95	4.68	925.19	921.21	3.98	918.99	921.37	-2.38	924.42	917.97	6.45	923.38	918.21	5.17	919.72
2/4/2022	926.12	926.04	923.50	2.54	925.58	921.01	4.57	925.07	921.23	3.84	918.99	921.31	-2.32	924.37	917.96	6.41	923.28	918.16	5.12	919.73
2/5/2022	926.18	926.01	923.54	2.47	925.60	921.01	4.59	925.12	921.23	3.89	919.00	921.35	-2.35	924.36	917.96	6.40	923.29	918.20	5.09	919.78
2/6/2022	926.13	926.06	923.53	2.53	925.62	920.97	4.65	925.19	921.19	4.00	918.95	921.31	-2.36	924.37	917.91	6.46	923.29	918.16	5.13	919.73
2/7/2022	926.16	926.03	923.50	2.53	925.67	921.01	4.66	925.16	921.17	3.99	918.98	921.33	-2.35	924.38	917.92	6.46	923.34	918.17	5.17	919.76
2/8/2022	926.11	925.98	923.46	2.52	925.61	920.99	4.62	925.14	921.15	3.99	918.95	921.26	-2.31	924.40	917.92	6.48	923.26	918.09	5.17	919.71
2/9/2022	926.13	926.06	923.51	2.55	925.72	921	4.72	925.24	921.21	4.03	918.99	921.31	-2.32	924.43	917.95	6.48	923.36	918.15	5.21	919.78
2/10/2022	926.20	926.14	923.50	2.64	925.78	921.02	4.76	925.28	921.16	4.12	918.96	921.32	-2.36	924.46	917.89	6.57	923.39	918.18	5.21	919.81
2/11/2022	926.22	926.32	923.59	2.73	925.88	920.99	4.89	925.44	921.20	4.24	918.96	921.36	-2.40	924.56	917.95	6.61	923.51	918.21	5.30	919.86
2/12/2022	926.20	926.27	923.54	2.73	925.86	920.99	4.87	925.41	921.13	4.28	918.93	921.31	-2.38	924.58	917.92	6.66	923.48	918.15	5.33	919.81
2/13/2022	926.20	926.20	923.52	2.68	925.84	921.01	4.83	925.36	921.15	4.21	918.94	921.30	-2.36	924.52	917.92	6.60	923.41	918.13	5.28	919.81
2/14/2022	926.11	926.15	923.45	2.70	925.72	920.95	4.77	925.3	921.14	4.16	918.92	921.25	-2.33	924.45	917.89	6.56	923.33	918.08		

Table 5  
HCC System Barrier Wall Groundwater Elevations  
BNSF Former Maintenance and Fueling Facility  
Skykomish, Washington  
Farallon PN: 683-071

Groundwater Elevations at Piezometers (feet NAVD88) and Elevation Differentials at Piezometer Pairs (feet)																				
Date	PZ-1	PZ-2S	PZ-2N	Elevation Differential at PZ-2S/PZ-2N	PZ-3S	PZ-3N	Elevation Differential at PZ-3S/PZ-3N	PZ-4S	PZ-4N	Elevation Differential at PZ-4S/PZ-4N	PZ-5S	PZ-5N	Elevation Differential at PZ-5S/PZ-5N	PZ-6S	PZ-6N	Elevation Differential at PZ-6S/PZ-6N	PZ-7S	PZ-7N	Elevation Differential at PZ-7S/PZ-7N	PZ-8
2/16/2022	926.14	926.22	923.49	2.73	925.78	920.94	4.84	925.36	921.18	4.18	918.93	921.24	-2.31	924.51	917.94	6.57	923.37	918.09	5.28	919.75
2/17/2022	926.22	926.23	923.55	2.68	925.87	921	4.87	925.37	921.17	4.20	918.93	921.23	-2.30	924.53	917.89	6.64	923.40	918.08	5.32	919.82
2/18/2022	926.08	926.20	923.52	2.68	925.79	920.96	4.83	925.34	921.20	4.14	918.96	921.21	-2.25	924.54	917.93	6.61	923.40	918.05	5.35	919.75
2/19/2022	926.09	926.18	923.49	2.69	925.79	920.98	4.81	925.3	921.19	4.11	918.97	921.19	-2.22	924.50	917.90	6.60	923.38	918.04	5.34	919.75
2/20/2022	926.61	926.72	923.88	2.84	926.46	920.94	5.52	926.13	921.17	4.96	918.95	921.30	-2.35	925.01	918.04	6.97	923.91	918.22	5.69	920.12
2/21/2022	926.41	926.89	923.92	2.97	926.42	920.95	5.47	926.02	921.14	4.88	918.99	921.34	-2.35	925.13	918.01	7.12	924.12	918.20	5.92	920.10
2/22/2022	926.32	926.67	923.74	2.93	926.30	921.01	5.29	925.82	921.16	4.66	918.94	921.20	-2.26	924.94	917.87	7.07	923.87	918.02	5.85	920.00
2/23/2022	926.11	926.45	923.53	2.92	926.09	920.98	5.11	925.71	921.12	4.59	918.95	921.09	-2.14	924.81	917.82	6.99	923.69	917.92	5.77	919.77
2/24/2022	925.99	926.25	923.41	2.84	925.92	920.95	4.97	925.61	921.17	4.44	918.95	921.14	-2.19	924.54	917.78	6.76	923.48	917.95	5.53	919.70
2/25/2022	925.86	926.04	923.33	2.71	925.68	920.94	4.74	925.29	921.17	4.12	918.98	921.06	-2.08	924.38	917.76	6.62	923.27	917.88	5.39	919.59
2/26/2022	925.77	925.85	923.27	2.58	925.42	920.96	4.46	924.95	921.18	3.77	918.96	920.97	-2.01	924.23	917.71	6.52	923.05	917.77	5.28	919.52
2/27/2022	925.68	925.69	923.20	2.49	925.31	920.93	4.38	924.92	921.16	3.76	918.93	920.99	-2.06	924.02	917.61	6.41	922.81	917.77	5.04	919.42
2/28/2022	927.09	926.89	924.10	2.79	926.84	920.94	5.90	926.42	921.17	5.25	918.95	921.30	-2.35	925.07	918.08	6.99	923.84	918.76	5.08	920.37
3/1/2022	929.47	928.81	927.21	1.60	928.71	923.27	5.44	927.84	923.76	4.08	919.00	926.34	-7.34	926.88	923.12	3.76	926.14	923.34	2.80	923.55
3/2/2022	928.52	928.67	926.41	2.26	928.36	921.73	6.63	927.53	922.07	5.46	919.00	924.73	-5.73	926.70	921.49	5.21	925.99	921.65	4.34	922.51
3/3/2022	927.72	928.37	925.52	2.85	927.89	920.96	6.93	927.3	921.15	6.15	918.98	923.29	-4.31	926.24	920.08	6.16	925.48	920.30	5.18	921.49
3/4/2022	927.23	928.16	924.89	3.27	927.61	920.97	6.64	927.12	921.19	5.93	918.95	922.47	-3.52	925.94	919.25	6.69	925.10	919.49	5.61	921.00
3/5/2022	927.04	927.90	924.42	3.48	927.33	920.99	6.34	926.83	921.13	5.70	918.97	922.03	-3.06	925.71	918.82	6.89	924.84	919.06	5.78	920.68
3/6/2022	926.86	927.68	924.17	3.51	927.13	921.01	6.12	926.65	921.16	5.49	918.94	921.68	-2.74	925.56	918.54	7.02	924.60	918.70	5.90	920.51
3/7/2022	926.67	927.44	923.97	3.47	926.88	920.94	5.94	926.55	921.18	5.37	918.98	921.53	-2.55	925.41	918.40	7.01	924.47	918.56	5.91	920.28
3/8/2022	926.76	927.20	923.82	3.38	926.70	921	5.70	926.32	921.13	5.19	918.95	921.43	-2.48	925.18	918.20	6.98	924.23	918.43	5.80	920.20
3/9/2022	926.53	927.10	923.82	3.28	926.62	920.95	5.67	926.28	921.17	5.11	918.95	921.34	-2.39	925.20	918.18	7.02	924.18	918.32	5.86	920.10
3/10/2022	926.44	926.84	923.74	3.10	926.36	921.01	5.35	925.81	921.19	4.62	918.94	921.27	-2.33	924.94	918.04	6.90	923.97	918.24	5.73	920.05
3/11/2022	926.31	926.57	923.61	2.96	926.07	921.01	5.06	925.52	921.17	4.35	918.95	921.18	-2.23	924.79	918.00	6.79	923.75	918.12	5.63	919.94
3/12/2022	926.26	926.32	923.48	2.84	925.81	920.99	4.82	925.27	921.12	4.15	918.91	921.13	-2.22	924.57	917.92	6.65	923.51	918.06	5.45	919.76
3/13/2022	926.26	926.16	923.44	2.72	925.71	921.01	4.70	925.15	921.13	4.02	918.97	921.11	-2.14	924.42	917.88	6.54	923.41	918.08	5.33	919.74
3/14/2022	926.34	926.33	923.61	2.72	926.02	921.02	5.00	925.5	921.15	4.35	918.94	921.15	-2.21	924.75	917.99	6.76	923.64	918.13	5.51	919.94
3/15/2022	926.62	926.94	923.97	2.97	926.63	920.97	5.66	926.25	921.19	5.06	918.93	921.37	-2.44	925.25	918.19	7.06	924.20	918.42	5.78	920.30
3/16/2022	926.72	927.11	924.09	3.02	926.76	920.96	5.80	926.32	921.16	5.16	918.98	921.54	-2.56	925.43	918.38	7.05	924.49	918.58	5.91	920.38
3/17/2022	926.65	927.10	923.96	3.14	926.64	921	5.64	926.11	921.19	4.92	918.93	921.39	-2.46	925.27	918.23	7.04	924.31	918.39	5.92	920.30
3/18/2022	926.53	926.88	923.78	3.10	926.40	921.02	5.38	925.83	921.18	4.65	918.95	921.30	-2.35	925.08	918.14	6.94	924.09	918.30	5.79	920.14
3/19/2022	926.43	926.67	923.67	3.00	926.14	921.02	5.12	925.53	921.15	4.38	918.94	921.25	-2.31	924.82	918.02	6.80	923.86	918.25	5.61	920.02
3/20/2022	926.35	926.56	923.64	2.92	926.12	920.98	5.14	925.63	921.16	4.47	918.93	921.20	-2.27	924.82	918.00	6.82	923.80	918.15	5.65	919.98
3/21/2022	926.47	926.69	923.67	3.02	926.35	921	5.35	925.95	921.12	4.83	918.93	921.21	-2.28	924.96	918.01	6.95	923.94	918.26	5.68	920.09
3/22/2022	926.40	926.73	923.78	2.95	926.42	920.98	5.44	925.98	921.20	4.78	918.96	921.26	-2.30	925.01	918.04	6.97	924.06	918.27	5.79	920.12
3/23/2022	926.44	926.60	923.70	2.90	926.23	921.01	5.22	925.68	921.12	4.56	918.96	921.27	-2.31	924.83	918.14	6.69	923.93	918.28	5.65	920.07
3/24/2022	926.47	926.54	923.72	2.82	926.10	920.97	5.13	925.59	921.10	4.49	918.98	921.49	-2.51	924.73	918.31	6.42	923.89	918.52	5.37	920.06
3/25/2022	926.44	926.44	923.63	2.81	925.98	921.01	4.97	925.37	921.09	4.28	918.97	921.39	-2.42	924.65	918.25	6.40	923.74	918.41	5.33	920.00
3/26/2022	926.34	926.38	923.59	2.79	925.89	920.98	4.91	925.3	921.14	4.16	918.98	921.36	-2.38	924.48	918.16	6.32	923.63	918.35	5.28	919.93
3/27/2022	926.27	926.26	923.52	2.74	925.72	920.94	4.78	925.18	921.13	4.05	918.98	921.32	-2.34	924.39	918.17	6.22	923.51	918.32	5.19	919.84
3/28/2022	926.40	926.12	923.58	2.54	925.69	920.99	4.70	925.06	921.11	3.95	918.99	921.49	-2.50	924.28	918.38	5.90	923.43	918.54	4.89	919.93
3/29/2022	926.41	926.08	923.59	2.49	925.62	920.96	4.66	925.01	921.09	3.92	918.94	921.52	-2.58	924.23	918.30	5.93	923.35	918.52	4.83	919.91
3/30/2022	926.42	926.06	923.62	2.44	925.64	920.98	4.66	924.97	921.11	3.86	918.96	921.60	-2.64	924.16	918.35	5.81	923.32	918.61	4.71	919.96
3/31/2022	926.42	926.13	923.67	2.46	925.74	920.98	4.76	925.14												

Table 5  
HCC System Barrier Wall Groundwater Elevations  
BNSF Former Maintenance and Fueling Facility  
Skykomish, Washington  
Farallon PN: 683-071

Groundwater Elevations at Piezometers (feet NAVD88) and Elevation Differentials at Piezometer Pairs (feet)																				
Date	PZ-1	PZ-2S	PZ-2N	Elevation Differential at PZ-2S/PZ-2N	PZ-3S	PZ-3N	Elevation Differential at PZ-3S/PZ-3N	PZ-4S	PZ-4N	Elevation Differential at PZ-4S/PZ-4N	PZ-5S	PZ-5N	Elevation Differential at PZ-5S/PZ-5N	PZ-6S	PZ-6N	Elevation Differential at PZ-6S/PZ-6N	PZ-7S	PZ-7N	Elevation Differential at PZ-7S/PZ-7N	PZ-8
4/1/2022	926.30	926.09	923.59	2.50	925.61	920.97	4.64	925.02	921.15	3.87	918.95	921.42	-2.47	924.28	918.23	6.05	923.36	918.42	4.94	919.90
4/2/2022	926.20	926.03	923.51	2.52	925.52	920.95	4.57	924.95	921.15	3.80	918.99	921.37	-2.38	924.23	918.26	5.97	923.35	918.36	4.99	919.82
4/3/2022	926.13	925.98	923.48	2.50	925.52	920.96	4.56	924.94	921.15	3.79	918.95	921.27	-2.32	924.20	918.10	6.10	923.26	918.22	5.04	919.78
4/4/2022	926.60	926.54	923.77	2.77	926.18	920.95	5.23	925.69	921.10	4.59	918.98	921.47	-2.49	924.69	918.34	6.35	923.77	918.55	5.22	920.16
4/5/2022	926.52	926.81	924.02	2.79	926.50	920.95	5.55	926.09	921.14	4.95	918.98	921.54	-2.56	925.05	918.35	6.70	924.24	918.55	5.69	920.33
4/6/2022	926.44	926.81	923.84	2.97	926.35	920.95	5.40	925.87	921.09	4.78	918.99	921.39	-2.40	925.01	918.27	6.74	924.18	918.37	5.81	920.16
4/7/2022	926.35	926.63	923.66	2.97	926.17	920.95	5.22	925.66	921.08	4.58	918.99	921.29	-2.30	924.85	918.18	6.67	924.00	918.25	5.75	920.01
4/8/2022	926.23	926.49	923.58	2.91	925.98	920.93	5.05	925.52	921.13	4.39	918.95	921.28	-2.33	924.61	918.04	6.57	923.76	918.21	5.55	919.91
4/9/2022	926.26	926.32	923.49	2.83	925.90	920.94	4.96	925.41	921.10	4.31	918.97	921.30	-2.33	924.63	918.16	6.47	923.68	918.23	5.45	919.88
4/10/2022	926.30	926.34	923.52	2.82	925.96	920.97	4.99	925.47	921.14	4.33	918.94	921.21	-2.27	924.57	917.97	6.60	923.66	918.14	5.52	919.95
4/11/2022	926.22	926.33	923.56	2.77	925.98	920.99	4.99	925.47	921.14	4.33	918.92	921.22	-2.30	924.58	917.94	6.64	923.70	918.16	5.54	919.95
4/12/2022	926.06	926.23	923.48	2.75	925.78	920.94	4.84	925.33	921.13	4.20	918.98	921.15	-2.17	924.52	918.03	6.49	923.62	918.06	5.56	919.79
4/13/2022	925.99	926.09	923.39	2.70	925.60	920.94	4.66	925.16	921.11	4.05	918.96	921.10	-2.14	924.40	917.99	6.41	923.48	918.00	5.48	919.68
4/14/2022	925.91	925.94	923.32	2.62	925.45	920.94	4.51	924.92	921.10	3.82	918.93	921.03	-2.10	924.19	917.78	6.41	923.27	917.93	5.34	919.59
4/15/2022	925.84	925.77	923.27	2.50	925.31	920.99	4.32	924.71	921.11	3.60	918.92	920.97	-2.05	924.05	917.73	6.32	923.07	917.85	5.22	919.55
4/16/2022	925.71	925.66	923.23	2.43	925.15	920.95	4.20	924.59	921.12	3.47	918.95	920.99	-2.04	923.87	917.74	6.13	922.91	917.87	5.04	919.45
4/17/2022	925.70	925.56	923.21	2.35	925.13	920.95	4.18	924.56	921.14	3.42	918.93	920.92	-1.99	923.83	917.62	6.21	922.75	917.79	4.96	919.43
4/18/2022	925.70	925.44	923.17	2.27	925.03	920.98	4.05	924.42	921.10	3.32	918.98	920.98	-2.00	923.75	917.80	5.95	922.72	917.84	4.88	919.40
4/19/2022	925.81	925.60	923.27	2.33	925.27	921	4.27	924.69	921.13	3.56	918.97	921.00	-2.03	924.04	917.86	6.18	922.86	917.89	4.97	919.55
4/20/2022	925.76	925.63	923.34	2.29	925.24	920.97	4.27	924.71	921.15	3.56	918.93	920.98	-2.05	923.84	917.70	6.14	922.91	917.86	5.05	919.51
4/21/2022	925.71	925.57	923.29	2.28	925.12	920.96	4.16	924.59	921.15	3.44	918.96	920.94	-1.98	923.89	917.76	6.13	922.83	917.81	5.02	919.45
4/22/2022	925.74	925.48	923.24	2.24	925.09	920.97	4.12	924.5	921.09	3.41	918.94	920.92	-1.98	923.84	917.68	6.16	922.75	917.78	4.97	919.42
4/23/2022	925.71	925.47	923.25	2.22	925.06	921	4.06	924.46	921.15	3.31	918.95	920.91	-1.96	923.77	917.68	6.09	922.67	917.76	4.91	919.43
4/24/2022	925.73	925.41	923.21	2.20	925.01	921.01	4.00	924.39	921.12	3.27	918.98	920.97	-1.99	923.67	917.72	5.95	922.64	917.83	4.81	919.41
4/25/2022	925.71	925.39	923.21	2.18	924.98	921	3.98	924.33	921.14	3.19	918.97	920.95	-1.98	923.69	917.77	5.92	922.59	917.82	4.77	919.43
4/26/2022	925.71	925.40	923.19	2.21	924.93	920.96	3.97	924.35	921.13	3.22	918.97	921.03	-2.06	923.59	917.75	5.84	922.56	917.89	4.67	919.38
4/27/2022	925.69	925.38	923.17	2.21	924.90	920.97	3.93	924.32	921.11	3.21	918.99	921.02	-2.03	923.62	917.79	5.83	922.55	917.89	4.66	919.34
4/28/2022	925.68	925.33	923.14	2.19	924.88	920.97	3.91	924.28	921.10	3.18	918.97	920.97	-2.00	923.54	917.73	5.81	922.50	917.84	4.66	919.32
4/29/2022	925.64	925.28	923.12	2.16	924.81	920.97	3.84	924.22	921.09	3.13	918.99	920.96	-1.97	923.64	917.82	5.82	922.49	917.82	4.67	919.30
4/30/2022	925.65	925.24	923.13	2.11	924.83	921	3.83	924.2	921.09	3.11	918.97	920.93	-1.96	923.56	917.68	5.88	922.40	917.79	4.61	919.33
5/1/2022	925.66	925.26	923.14	2.12	924.80	920.97	3.83	924.21	921.10	3.11	919.01	921.02	-2.01	923.50	917.84	5.66	922.41	917.91	4.50	919.32
5/2/2022	925.74	925.25	923.15	2.10	924.79	920.96	3.83	924.2	921.08	3.12	919.00	921.09	-2.09	923.61	917.94	5.67	922.44	917.98	4.46	919.36
5/3/2022	925.87	925.35	923.24	2.11	924.90	920.97	3.93	924.3	921.12	3.18	918.98	921.21	-2.23	923.45	917.90	5.55	922.47	918.09	4.38	919.46
5/4/2022	925.95	925.40	923.25	2.15	924.94	920.99	3.95	924.29	921.07	3.22	918.97	921.23	-2.26	923.60	917.90	5.70	922.53	918.11	4.42	919.49
5/5/2022	926.10	925.47	923.34	2.13	925.04	920.99	4.05	924.4	921.08	3.32	919.00	921.40	-2.40	923.67	918.21	5.46	922.67	918.34	4.33	919.62
5/6/2022	926.40	925.74	923.68	2.06	925.43	921.01	4.42	924.82	921.10	3.72	918.95	921.72	-2.77	923.90	918.42	5.48	923.04	918.66	4.38	919.95
5/7/2022	926.57	926.30	923.98	2.32	925.93	920.98	4.95	925.45	921.11	4.34	918.99	921.91	-2.92	924.58	918.82	5.76	923.60	918.88	4.72	920.21
5/8/2022	926.64	926.67	924.10	2.57	926.32	921	5.32	925.82	921.11	4.71	918.99	921.87	-2.88	924.92	918.74	6.18	924.08	918.83	5.25	920.40
5/9/2022	926.52	926.67	923.92	2.75	926.16	921.01	5.15	925.59	921.11	4.48	918.97	921.66	-2.69	924.69	918.36	6.33	923.98	918.59	5.39	920.24
5/10/2022	926.36	926.47	923.70	2.77	925.92	920.99	4.93	925.36	921.07	4.29	919.00	921.50	-2.50	924.67	918.37	6.30	923.82	918.41	5.41	920.04
5/11/2022	926.25	926.31	923.55	2.76	925.76	921.01	4.75	925.15	921.08	4.07	918.96	921.35	-2.39	924.36	918.07	6.29	923.57	918.25	5.32	919.92
5/12/2022	926.15	926.14	923.46	2.68	925.60	920.99	4.61	924.98	921.12	3.86	918.96	921.31	-2.35	924.14	918.02	6.12	923.35	918.20	5.15	919.84
5/13/2022	926.11	925.94	923.39	2.55	925.47	921.01	4.46	924.87	921.09	3.78	918.95	921.26	-2.31	924.08	917.99	6.09	923.18	918.15	5.03	919.76
5/14/2022	926.03	925.84	923.34	2.50	925.33	920.96	4.37	924.76	921.08	3.68	919.00	921.27	-2.27	924.13	918.11	6.02	923.14	918.17	4.97	919.68
5/15/2022	926.14	925.82	923.41	2.41	925.37	920.99	4.38	924.74	921.12	3.62	919.00	921.34	-2.34	924.13	918.22	5.91	923.10	918.24	4.86	919.74



Table 5  
HCC System Barrier Wall Groundwater Elevations  
BNSF Former Maintenance and Fueling Facility  
Skykomish, Washington  
Farallon PN: 683-071

Groundwater Elevations at Piezometers (feet NAVD88) and Elevation Differentials at Piezometer Pairs (feet)																				
Date	PZ-1	PZ-2S	PZ-2N	Elevation Differential at PZ-2S/PZ-2N	PZ-3S	PZ-3N	Elevation Differential at PZ-3S/PZ-3N	PZ-4S	PZ-4N	Elevation Differential at PZ-4S/PZ-4N	PZ-5S	PZ-5N	Elevation Differential at PZ-5S/PZ-5N	PZ-6S	PZ-6N	Elevation Differential at PZ-6S/PZ-6N	PZ-7S	PZ-7N	Elevation Differential at PZ-7S/PZ-7N	PZ-8
5/16/2022	926.58	926.23	923.88	2.35	925.84	920.98	4.86	925.27	921.08	4.19	918.96	921.90	-2.94	924.30	918.58	5.72	923.48	918.86	4.62	920.14
5/17/2022	926.69	926.47	924.13	2.34	926.02	921.01	5.01	925.39	921.10	4.29	918.96	922.05	-3.09	924.47	918.68	5.79	923.72	918.97	4.75	920.34
5/18/2022	926.65	926.58	924.02	2.56	926.06	921.01	5.05	925.45	921.11	4.34	918.96	921.92	-2.96	924.51	918.50	6.01	923.73	918.83	4.90	920.28
5/19/2022	926.68	926.63	924.01	2.62	926.13	920.98	5.15	925.53	921.08	4.45	919.00	921.93	-2.93	924.83	918.73	6.10	923.90	918.86	5.04	920.30
5/20/2022	926.54	926.63	923.89	2.74	926.09	920.97	5.12	925.49	921.08	4.41	918.98	921.80	-2.82	924.60	918.42	6.18	923.86	918.71	5.15	920.18
5/21/2022	926.47	926.51	923.77	2.74	925.97	921	4.97	925.34	921.09	4.25	918.99	921.68	-2.69	924.50	918.33	6.17	923.73	918.57	5.16	920.10
5/22/2022	926.34	926.43	923.68	2.75	926.03	920.98	5.05	925.63	921.13	4.50	919.00	921.60	-2.60	924.53	918.44	6.09	923.69	918.49	5.20	920.00
5/23/2022	926.33	926.29	923.58	2.71	925.84	920.95	4.89	925.33	921.09	4.24	918.99	921.59	-2.60	924.52	918.31	6.21	923.56	918.47	5.09	919.94
5/24/2022	926.35	926.20	923.61	2.59	925.69	920.97	4.72	925.06	921.14	3.92	919.01	921.66	-2.65	924.39	918.52	5.87	923.47	918.57	4.90	919.96
5/25/2022	926.41	926.13	923.67	2.46	925.63	920.96	4.67	924.98	921.13	3.85	918.98	921.72	-2.74	924.22	918.37	5.85	923.32	918.62	4.70	919.99
5/26/2022	926.56	926.13	923.84	2.29	925.61	920.96	4.65	924.94	921.09	3.85	918.98	922.01	-3.03	924.09	918.60	5.49	923.34	918.92	4.42	920.09
5/27/2022	926.78	926.22	924.13	2.09	925.82	920.98	4.84	925.17	921.09	4.08	918.99	922.40	-3.41	924.30	919.09	5.21	923.51	919.30	4.21	920.30
5/28/2022	926.87	926.48	924.46	2.02	925.98	920.94	5.04	925.43	921.10	4.33	919.02	922.65	-3.63	924.70	919.46	5.24	923.81	919.55	4.26	920.52
5/29/2022	926.74	926.53	924.24	2.29	926.01	920.95	5.06	925.46	921.10	4.36	919.01	922.34	-3.33	924.76	919.13	5.63	923.85	919.24	4.61	920.39
5/30/2022	926.76	926.54	924.21	2.33	926.09	920.99	5.10	925.48	921.11	4.37	918.98	922.26	-3.28	924.66	918.91	5.75	923.84	919.16	4.68	920.44
5/31/2022	926.63	926.53	924.05	2.48	926.11	920.99	5.12	925.58	921.12	4.46	918.99	922.01	-3.02	924.71	918.76	5.95	923.82	918.91	4.91	920.32
6/1/2022	926.67	926.50	924.05	2.45	926.14	920.95	5.19	925.69	921.09	4.60	918.98	922.18	-3.20	924.54	918.82	5.72	923.79	919.09	4.70	920.30
6/2/2022	926.85	926.54	924.29	2.25	926.22	921	5.22	925.73	921.11	4.62	919.01	922.49	-3.48	924.69	919.26	5.43	923.86	919.41	4.45	920.50
6/3/2022	927.07	926.63	924.72	1.91	926.32	921	5.32	925.81	921.13	4.68	918.97	922.98	-4.01	924.71	919.68	5.03	923.91	919.86	4.05	920.74
6/4/2022	927.07	926.76	924.80	1.96	926.42	920.97	5.45	925.95	921.14	4.81	919.00	923.00	-4.00	924.79	919.69	5.10	924.05	919.92	4.13	920.79
6/5/2022	927.17	926.79	924.91	1.88	926.45	920.95	5.50	926.01	921.09	4.92	918.98	923.20	-4.22	924.89	919.92	4.97	924.10	920.09	4.01	920.81
6/6/2022	927.26	926.99	925.22	1.77	926.62	920.96	5.66	926.2	921.13	5.07	919.04	923.47	-4.43	925.06	920.18	4.88	924.36	920.34	4.02	921.04
6/7/2022	927.00	927.02	924.78	2.24	926.59	920.96	5.63	926.19	921.12	5.07	918.99	922.77	-3.78	925.05	919.53	5.52	924.26	919.65	4.61	920.75
6/8/2022	926.94	926.91	924.59	2.32	926.49	920.95	5.54	926.09	921.13	4.96	919.01	922.69	-3.68	924.96	919.45	5.51	924.19	919.60	4.59	920.64
6/9/2022	926.89	926.80	924.49	2.31	926.37	920.95	5.42	925.98	921.09	4.89	918.97	922.65	-3.68	924.83	919.34	5.49	924.05	919.53	4.52	920.57
6/10/2022	927.84	927.35	925.90	1.45	927.04	921.4	5.64	926.67	921.86	4.81	919.02	924.60	-5.58	925.41	921.27	4.14	924.77	921.44	3.33	921.64
6/11/2022	927.68	927.59	925.79	1.80	927.17	921	6.17	926.74	921.32	5.42	918.97	924.05	-5.08	925.57	920.71	4.86	924.89	920.91	3.98	921.61
6/12/2022	927.35	927.58	925.37	2.21	927.04	920.95	6.09	926.66	921.12	5.54	919.03	923.42	-4.39	925.46	920.11	5.35	924.81	920.31	4.50	921.15
6/13/2022	927.18	927.40	925.01	2.39	926.89	920.95	5.94	926.51	921.12	5.39	919.03	923.09	-4.06	925.35	919.88	5.47	924.63	919.96	4.67	920.90
6/14/2022	927.27	927.47	925.09	2.38	927.07	920.97	6.10	926.7	921.10	5.60	919.01	923.21	-4.20	925.45	919.90	5.55	924.76	920.06	4.70	921.05
6/15/2022	927.03	927.42	924.77	2.65	926.96	920.97	5.99	926.6	921.15	5.45	918.99	922.69	-3.70	925.40	919.43	5.97	924.63	919.54	5.09	920.83
6/16/2022	926.89	927.25	924.46	2.79	926.81	920.99	5.82	926.45	921.16	5.29	919.01	922.39	-3.38	925.24	919.18	6.06	924.47	919.26	5.21	920.63
6/17/2022	926.83	927.02	924.26	2.76	926.64	921.01	5.63	926.21	921.12	5.09	919.01	922.26	-3.25	925.10	919.01	6.09	924.30	919.13	5.17	920.51
6/18/2022	926.66	926.83	924.05	2.78	926.22	920.97	5.25	925.67	921.10	4.57	919.04	922.12	-3.08	924.78	918.84	5.94	924.06	918.98	5.08	920.28
6/19/2022	926.56	926.66	923.96	2.70	926.02	920.96	5.06	925.46	921.15	4.31	919.00	922.02	-3.02	924.60	918.66	5.94	923.81	918.86	4.95	920.19
6/20/2022	926.52	926.45	923.86	2.59	925.82	920.97	4.85	925.24	921.10	4.14	919.02	922.02	-3.00	924.43	918.68	5.75	923.69	918.85	4.84	920.08
6/21/2022	926.45	926.35	923.83	2.52	925.72	920.96	4.76	925.14	921.14	4.00	919.01	921.95	-2.94	924.33	918.59	5.74	923.49	918.78	4.71	920.02
6/22/2022	926.59	926.23	923.96	2.27	925.68	921.01	4.67	925.02	921.11	3.91	919.02	922.13	-3.11	924.29	918.85	5.44	923.45	918.96	4.49	920.12
6/23/2022	926.58	926.24	924.05	2.19	925.62	920.97	4.65	925.01	921.11	3.90	919.03	922.29	-3.26	924.25	918.99	5.26	923.45	919.10	4.35	920.11
6/24/2022	926.52	926.23	924.00	2.23	925.61	920.98	4.63	925	921.16	3.84	918.98	922.14	-3.16	924.08	918.78	5.30	923.33	918.93	4.40	920.08
6/25/2022	926.45	926.16	923.89	2.27	925.51	920.95	4.56	924.91	921.13	3.78	919.04	922.14	-3.10	924.21	918.76	5.45	923.36	918.89	4.47	919.98
6/26/2022	926.57	926.11	924.00	2.11	925.52	920.99	4.53	924.85	921.11	3.74	919.01	922.66	-3.65	924.20	918.94	5.26	923.32	919.05	4.27	920.10
6/27/2022	926.68	926.18	924.19	1.99	925.59	921.01	4.58	924.91	921.15	3.76	919.01	922.89	-3.88	924.21	919.16	5.05	923.32	919.24	4.08	920.23
6/28/2022	926.76	926.21	924.34	1.87	925.61	921.01	4.60	924.89	921.13	3.76	918.97	923.06	-4.09	924.12	919.26	4.86	923.35	919.38	3.97	920.31
6/29/2022	926.68	926.23	924.28	1.95	925.58	920.99	4.59	924.93	921.16	3.77	919.01	923.05	-4.04	924.27	919.22	5.05	923.40	919.31	4.09	920.24
6/30/2022	926.50	926.17	924.05	2.12	925.52	920.99	4.53	924.88	921.16	3.72	918.98	922.78	-3.80	924.03	918.80	5.23	923.28	918.95	4.33	920.06

Table 5  
HCC System Barrier Wall Groundwater Elevations  
BNSF Former Maintenance and Fueling Facility  
Skykomish, Washington  
Farallon PN: 683-071

Groundwater Elevations at Piezometers (feet NAVD88) and Elevation Differentials at Piezometer Pairs (feet)																				
Date	PZ-1	PZ-2S	PZ-2N	Elevation Differential at PZ-2S/PZ-2N	PZ-3S	PZ-3N	Elevation Differential at PZ-3S/PZ-3N	PZ-4S	PZ-4N	Elevation Differential at PZ-4S/PZ-4N	PZ-5S	PZ-5N	Elevation Differential at PZ-5S/PZ-5N	PZ-6S	PZ-6N	Elevation Differential at PZ-6S/PZ-6N	PZ-7S	PZ-7N	Elevation Differential at PZ-7S/PZ-7N	PZ-8
7/1/2022	926.40	926.08	923.88	2.20	925.45	920.97	4.48	924.8	921.16	3.64	918.99	922.63	-3.64	924.04	918.66	5.38	923.21	918.78	4.43	919.96
7/2/2022	926.34	926.02	923.78	2.24	925.38	920.96	4.42	924.75	921.16	3.59	919.04	922.68	-3.64	924.03	918.61	5.42	923.16	918.77	4.39	919.90
7/3/2022	926.36	925.97	923.80	2.17	925.41	920.94	4.47	924.81	921.16	3.65	918.97	922.78	-3.81	923.98	918.59	5.39	923.15	918.76	4.39	919.91
7/4/2022	926.34	925.91	923.73	2.18	925.38	921.02	4.36	924.71	921.15	3.56	918.97	925.60	-6.63	923.99	918.49	5.50	923.11	918.69	4.42	919.91
7/5/2022	926.17	925.81	923.56	2.25	925.24	920.97	4.27	924.6	921.11	3.49	919.02	928.04	-9.02	923.99	918.44	5.55	923.10	918.55	4.55	919.74
7/6/2022	926.07	925.73	923.47	2.26	925.14	920.96	4.18	924.49	921.12	3.37	919.00	928.54	-9.54	923.77	918.28	5.49	922.90	918.43	4.47	919.65
7/7/2022	926.06	925.63	923.45	2.18	925.08	920.95	4.13	924.43	921.11	3.32	919.04	929.67	-10.63	923.87	918.34	5.53	922.81	918.46	4.35	919.59
7/8/2022	926.02	925.60	923.40	2.20	925.04	920.95	4.09	924.39	921.10	3.29	918.98	929.08	-10.10	923.62	918.19	5.43	922.66	918.35	4.31	919.55
7/9/2022	925.96	925.57	923.40	2.17	925.00	920.94	4.06	924.38	921.15	3.23	919.00	929.36	-10.36	923.78	918.19	5.59	922.62	918.29	4.33	919.53
7/10/2022	925.92	925.53	923.38	2.15	924.97	920.96	4.01	924.33	921.17	3.16	918.99	929.64	-10.65	923.55	918.09	5.46	922.53	918.28	4.25	919.51
7/11/2022	925.91	925.39	923.30	2.09	924.89	920.97	3.92	924.22	921.11	3.11	919.02	929.14	-10.12	923.62	918.13	5.49	922.51	918.26	4.25	919.45
7/12/2022	925.88	925.42	923.32	2.10	924.86	920.94	3.92	924.21	921.15	3.06	919.03	928.89	-9.86	923.61	918.17	5.44	922.46	918.27	4.19	919.43
7/13/2022	925.89	925.38	923.34	2.04	924.84	920.96	3.88	924.16	921.17	2.99	919.00	929.13	-10.13	923.36	918.08	5.28	922.33	918.27	4.06	919.46
7/14/2022	925.86	925.32	923.27	2.05	924.80	920.99	3.81	924.06	921.15	2.91	918.97	929.45	-10.48	923.35	917.96	5.39	922.23	918.15	4.08	919.41
7/15/2022	925.75	925.28	923.20	2.08	924.69	920.94	3.75	924.04	921.15	2.89	918.98	928.51	-9.53	923.22	917.86	5.36	922.16	918.06	4.10	919.30
7/16/2022	925.70	925.21	923.18	2.03	924.66	920.96	3.70	923.97	921.17	2.80	919.02	929.62	-10.60	923.36	917.98	5.38	922.15	918.05	4.10	919.28
7/17/2022	925.69	925.09	923.12	1.97	924.61	920.99	3.62	923.88	921.15	2.73	918.98	928.98	-10.00	923.23	917.81	5.42	922.05	917.96	4.09	919.26
7/18/2022	925.57	925.05	923.10	1.95	924.50	920.94	3.56	923.84	921.13	2.71	918.99	927.14	-8.15	923.03	917.69	5.34	921.95	917.90	4.05	919.15
7/19/2022	925.53	925.01	923.07	1.94	924.47	920.96	3.51	923.8	921.16	2.64	918.99	927.17	-8.18	923.00	917.68	5.32	921.93	917.89	4.04	919.14
7/20/2022	925.54	924.91	923.07	1.84	924.45	921	3.45	923.72	921.16	2.56	918.97	927.17	-8.20	923.01	917.66	5.35	921.83	917.85	3.98	919.16
7/21/2022	925.46	924.89	923.03	1.86	924.37	920.96	3.41	923.71	921.15	2.56	919.00	927.21	-8.21	923.03	917.71	5.32	921.81	917.82	3.99	919.09
7/22/2022	925.45	924.83	923.04	1.79	924.35	920.98	3.37	923.62	921.16	2.46	918.99	926.29	-7.30	922.97	917.67	5.30	921.74	917.79	3.95	919.10
7/23/2022	925.43	924.76	922.97	1.79	924.28	920.97	3.31	923.55	921.10	2.45	918.99	927.66	-8.67	922.74	917.60	5.14	921.67	917.78	3.89	919.03
7/24/2022	925.39	924.72	922.97	1.75	924.23	920.98	3.25	923.51	921.09	2.42	918.98	926.99	-8.01	922.76	917.55	5.21	921.63	917.74	3.89	919.01
7/25/2022	925.33	924.69	922.94	1.75	924.18	920.96	3.22	923.5	921.12	2.38	918.97	927.50	-8.53	922.81	917.57	5.24	921.60	917.68	3.92	918.96
7/26/2022	925.32	924.63	922.92	1.71	924.13	920.97	3.16	923.43	921.10	2.33	918.99	927.75	-8.76	922.73	917.53	5.20	921.54	917.69	3.85	918.93
7/27/2022	925.32	924.61	922.95	1.66	924.16	921	3.16	923.42	921.14	2.28	918.98	927.54	-8.56	922.69	917.54	5.15	921.51	917.68	3.83	918.97
7/28/2022	925.29	924.54	922.90	1.64	924.09	920.98	3.11	923.35	921.09	2.26	918.99	927.67	-8.68	922.63	917.52	5.11	921.47	917.64	3.83	918.90
7/29/2022	925.24	924.55	922.93	1.62	924.06	920.99	3.07	923.37	921.14	2.23	919.01	927.55	-8.54	922.64	917.59	5.05	921.48	917.69	3.79	918.93
7/30/2022	925.22	924.51	922.92	1.59	924.02	920.99	3.03	923.3	921.14	2.16	918.97	926.44	-7.47	922.49	917.47	5.02	921.37	917.61	3.76	918.90
7/31/2022	925.17	924.47	922.91	1.56	923.96	920.98	2.98	923.24	921.15	2.09	919.01	926.64	-7.63	922.67	917.58	5.09	921.39	917.60	3.79	918.85
8/1/2022	925.11	924.43	922.88	1.55	923.93	920.98	2.95	923.21	921.14	2.07	918.97	926.52	-7.55	922.40	917.40	5.00	921.27	917.52	3.75	918.78
8/2/2022	925.07	924.38	922.85	1.53	923.86	920.95	2.91	923.12	921.12	2.00	919.00	926.86	-7.86	922.57	917.48	5.09	921.28	917.51	3.77	918.75
8/3/2022	925.04	924.35	922.83	1.52	923.79	920.95	2.84	923.12	921.12	2.00	919.04	926.77	-7.73	922.54	917.47	5.07	921.23	917.49	3.74	918.68
8/4/2022	925.03	924.26	922.78	1.48	923.75	920.99	2.76	922.99	921.10	1.89	918.98	926.95	-7.97	922.29	917.36	4.93	921.13	917.48	3.65	918.68
8/5/2022	925.02	924.25	922.78	1.47	923.71	920.96	2.75	922.98	921.11	1.87	919.02	927.00	-7.98	922.40	917.41	4.99	921.13	917.47	3.66	918.62
8/6/2022	925.04	924.20	922.78	1.42	923.72	921.01	2.71	922.92	921.11	1.81	919.01	927.12	-8.11	922.28	917.36	4.92	921.07	917.44	3.63	918.67
8/7/2022	924.91	924.17	922.74	1.43	923.66	920.96	2.70	922.96	921.11	1.85	918.97	927.23	-8.26	922.24	917.29	4.95	920.97	917.34	3.63	918.57
8/8/2022	924.93	924.12	922.73	1.39	923.62	920.98	2.64	922.86	921.10	1.76	919.01	927.26	-8.25	922.28	917.34	4.94	920.96	917.37	3.59	918.55
8/9/2022	924.88	924.11	922.76	1.35	923.59	921	2.59	922.81	921.15	1.66	918.96	927.14	-8.18	922.02	917.23	4.79	920.83	917.32	3.51	918.57
8/10/2022	924.88	924.05	922.74	1.31	923.54	921	2.54	922.75	921.16	1.59	918.97	927.20	-8.23	921.97	917.22	4.75	920.77	917.32	3.45	918.54
8/11/2022	924.84	924.00	922.71	1.29	923.50	921.02	2.48	922.68	921.16	1.52	919.02	927.16	-8.14	922.09	917.29	4.80	920.78	917.36	3.42	918.53
8/12/2022	924.79	923.93	922.66	1.27	923.40	920.98	2.42	922.6	921.11	1.49	918.99	927.55	-8.56	922.01	917.25	4.76	920.68	917.30	3.38	918.44
8/13/2022	924.76	923.89	922.64	1.25	923.36	921.01	2.35	922.54	921.13	1.41	919.01	927.85	-8.84	921.96	917.26	4.70	920.63	917.29	3.34	918.42
8/14/2022	924.71	923.86	922.62	1.24	923.31	920.99	2.32	922.51	921.14	1.37	919.01	928.19	-9.18	921.80	917.20	4.60	920.56	917.29	3.27	918.37
8/15/2022	924.69	923.82	922.64	1.18	923.31	921.02	2.29	922.47	921.18	1.29	918.97	927.37	-8.40	921.74	917.14	4.60	920.44	917.21	3.23	918.39
8/16/2022	924.62	923.79	922.62	1.17	923.23	920.97	2.26	922.45	921.19	1.26	919.02	927.80	-8.78	921.78	917.17	4.61	920.42	917.22	3.20	918.33

Table 5  
HCC System Barrier Wall Groundwater Elevations  
BNSF Former Maintenance and Fueling Facility  
Skykomish, Washington  
Farallon PN: 683-071

Groundwater Elevations at Piezometers (feet NAVD88) and Elevation Differentials at Piezometer Pairs (feet)																				
Date	PZ-1	PZ-2S	PZ-2N	Elevation Differential at PZ-2S/PZ-2N	PZ-3S	PZ-3N	Elevation Differential at PZ-3S/PZ-3N	PZ-4S	PZ-4N	Elevation Differential at PZ-4S/PZ-4N	PZ-5S	PZ-5N	Elevation Differential at PZ-5S/PZ-5N	PZ-6S	PZ-6N	Elevation Differential at PZ-6S/PZ-6N	PZ-7S	PZ-7N	Elevation Differential at PZ-7S/PZ-7N	PZ-8
8/17/2022	924.62	923.75	922.61	1.14	923.23	921.02	2.21	922.45	921.19	1.26	919.04	927.65	-8.61	921.69	917.15	4.54	920.35	917.23	3.12	918.31
8/18/2022	924.55	923.69	922.54	1.15	923.13	920.98	2.15	922.37	921.15	1.22	918.99	926.56	-7.57	921.67	917.10	4.57	920.28	917.16	3.12	918.21
8/19/2022	924.53	923.68	922.57	1.11	923.25	921	2.25	922.58	921.19	1.39	919.00	926.79	-7.79	921.73	917.11	4.62	920.28	917.17	3.11	918.24
8/20/2022	924.55	923.66	922.56	1.10	923.28	921.01	2.27	922.62	921.19	1.43	919.03	927.38	-8.35	921.75	917.12	4.63	920.31	917.20	3.11	918.26
8/21/2022	924.53	923.60	922.50	1.10	923.21	921	2.21	922.51	921.15	1.36	919.05	926.96	-7.91	921.69	917.12	4.57	920.30	917.21	3.09	918.20
8/22/2022	924.50	923.60	922.52	1.08	923.12	921	2.12	922.34	921.21	1.13	919.04	926.79	-7.75	921.51	917.08	4.43	920.21	917.19	3.02	918.20
8/23/2022	924.45	923.53	922.45	1.08	923.12	920.98	2.14	922.48	921.14	1.34	919.02	924.60	-5.58	921.47	917.09	4.38	920.19	917.19	3.00	918.10
8/24/2022	924.43	923.55	922.49	1.06	923.09	921	2.09	922.35	921.20	1.15	919.03	927.42	-8.39	921.44	917.08	4.36	920.10	917.14	2.96	918.12
8/25/2022	924.41	923.46	922.42	1.04	922.94	921	1.94	922.16	921.15	1.01	918.98	927.66	-8.68	921.20	917.01	4.19	919.93	917.07	2.86	918.03
8/26/2022	924.36	923.42	922.40	1.02	922.98	920.97	2.01	922.32	921.14	1.18	919.05	927.06	-8.01	921.36	917.03	4.33	919.92	917.09	2.83	917.97
8/27/2022	924.35	923.43	922.43	1.00	923.01	920.97	2.04	922.34	921.20	1.14	918.99	927.16	-8.17	921.15	916.98	4.17	919.83	917.04	2.79	918.01
8/28/2022	924.36	923.41	922.42	0.99	923.00	920.98	2.02	922.32	921.19	1.13	918.98	927.39	-8.41	921.27	917.00	4.27	919.81	917.01	2.80	917.98
8/29/2022	924.30	923.41	922.40	1.01	922.95	920.95	2.00	922.32	921.20	1.12	918.98	927.10	-8.12	921.27	916.99	4.28	919.77	917.00	2.77	917.92
8/30/2022	924.28	923.38	922.39	0.99	922.90	920.97	1.93	922.21	921.21	1.00	919.03	927.32	-8.29	921.28	917.06	4.22	919.82	917.07	2.75	917.91
8/31/2022	924.24	923.34	922.37	0.97	922.84	920.95	1.89	922.2	921.20	1.00	919.03	927.16	-8.13	921.09	917.07	4.02	919.66	917.05	2.61	917.84
9/1/2022	924.22	923.28	922.32	0.96	922.78	920.96	1.82	922.14	921.16	0.98	918.98	927.69	-8.71	921.05	917.03	4.02	919.53	917.04	2.49	917.76
9/2/2022	924.19	923.28	922.36	0.92	922.80	920.97	1.83	922.15	921.21	0.94	919.01	927.36	-8.35	920.98	917.09	3.89	919.53	917.12	2.41	917.77
9/3/2022	924.14	923.23	922.30	0.93	922.72	920.94	1.78	922.1	921.19	0.91	918.97	927.17	-8.20	920.94	917.04	3.90	919.36	917.04	2.32	917.70
9/4/2022	924.16	923.17	922.30	0.87	922.65	921	1.65	921.84	921.17	0.67	919.01	926.97	-7.96	920.93	917.10	3.83	919.32	917.09	2.23	917.71
9/5/2022	924.08	923.15	922.27	0.88	922.53	920.95	1.58	921.79	921.18	0.61	918.99	927.12	-8.13	920.65	917.01	3.64	919.18	917.11	2.07	917.57
9/6/2022	924.11	923.08	922.27	0.81	922.52	921	1.52	921.69	921.18	0.51	918.96	927.18	-8.22	920.58	917.01	3.57	919.02	917.07	1.95	917.55
9/7/2022	924.02	923.07	922.24	0.83	922.54	920.94	1.60	921.88	921.18	0.70	918.95	927.15	-8.20	920.68	917.06	3.62	919.02	917.02	2.00	917.45
9/8/2022	924.02	923.04	922.22	0.82	922.49	920.96	1.53	921.91	921.19	0.72	919.00	927.01	-8.01	920.51	917.07	3.44	918.97	917.09	1.88	917.41
9/9/2022	923.99	922.99	922.18	0.81	922.64	920.97	1.67	922.17	921.12	1.05	918.98	926.93	-7.95	920.58	917.08	3.50	919.02	917.07	1.95	917.40
9/10/2022	923.98	922.98	922.15	0.83	922.61	920.96	1.65	922.06	921.12	0.94	918.99	927.15	-8.16	920.67	917.08	3.59	919.01	917.08	1.93	917.36
9/11/2022	917.52	919.98	919.99	-0.01	919.96	919.95	0.01	919.94	920.02	-0.08	917.94	917.98	-0.04	915.94	916.13	-0.19	916.03	916.10	-0.07	915.83
No data from 9/12 to 9/22																				
9/23/2022	923.84	922.85	922.13	0.72	922.37	921.1	1.27	921.66	921.30	0.36	919.10	920.85	-1.75	920.42	917.06	3.36	918.67	917.18	1.49	917.17
9/24/2022	923.84	922.74	922.08	0.66	922.03	921.11	0.92	920.93	921.25	-0.32	919.06	920.85	-1.79	920.14	917.02	3.12	918.52	917.15	1.37	917.11
9/25/2022	923.77	922.65	922.10	0.55	921.84	921.06	0.78	921.06	921.23	-0.17	919.10	920.89	-1.79	919.99	917.05	2.94	918.49	917.18	1.31	917.04
9/26/2022	923.79	922.60	922.12	0.48	921.80	921.1	0.70	921.07	921.27	-0.20	919.02	920.88	-1.86	919.84	917.02	2.82	918.34	917.12	1.22	917.07
9/27/2022	923.77	922.53	922.08	0.45	921.72	921.09	0.63	921.06	921.27	-0.21	919.07	921.05	-1.98	919.74	917.04	2.70	918.35	917.17	1.18	917.01
9/28/2022	923.73	922.47	922.03	0.44	921.69	921.07	0.62	921.03	921.23	-0.20	919.09	923.01	-3.92	919.75	917.05	2.70	918.31	917.13	1.18	916.96
9/29/2022	923.73	922.45	922.04	0.41	921.77	921.08	0.69	921.06	921.25	-0.19	919.05	924.04	-4.99	919.48	917.01	2.47	918.21	917.12	1.09	916.97
9/30/2022	923.72	922.43	922.22	0.21	921.73	921.06	0.67	921.06	921.26	-0.20	919.06	924.15	-5.09	919.38	917.03	2.35	918.17	917.12	1.05	916.95

Table 5  
HCC System Barrier Wall Groundwater Elevations  
BNSF Former Maintenance and Fueling Facility  
Skykomish, Washington  
Farallon PN: 683-071

Groundwater Elevations at Piezometers (feet NAVD88) and Elevation Differentials at Piezometer Pairs (feet)																				
Date	PZ-1	PZ-2S	PZ-2N	Elevation Differential at PZ-2S/PZ-2N	PZ-3S	PZ-3N	Elevation Differential at PZ-3S/PZ-3N	PZ-4S	PZ-4N	Elevation Differential at PZ-4S/PZ-4N	PZ-5S	PZ-5N	Elevation Differential at PZ-5S/PZ-5N	PZ-6S	PZ-6N	Elevation Differential at PZ-6S/PZ-6N	PZ-7S	PZ-7N	Elevation Differential at PZ-7S/PZ-7N	PZ-8
10/1/2022	923.70	922.41	922.39	0.02	921.61	921.06	0.55	921.07	921.25	-0.18	919.06	923.54	-4.48	919.42	917.05	2.37	918.04	917.09	0.95	916.89
10/2/2022	923.69	922.36	922.46	-0.10	921.56	921.06	0.50	921.06	921.26	-0.20	919.09	924.97	-5.88	919.47	917.07	2.40	918.04	917.12	0.92	916.88
10/3/2022	923.65	922.31	922.45	-0.14	921.47	921.02	0.45	921.02	921.21	-0.19	919.08	925.08	-6.00	919.44	917.06	2.38	918.00	917.10	0.90	916.81
10/4/2022	923.65	922.27	922.47	-0.20	921.45	921.04	0.41	921.01	921.20	-0.19	919.03	924.92	-5.89	919.26	917.04	2.22	917.92	917.07	0.85	916.78
10/5/2022	923.64	922.24	922.47	-0.23	921.40	921.05	0.35	920.98	921.20	-0.22	919.08	925.12	-6.04	919.19	917.06	2.13	917.95	917.13	0.82	916.77
10/6/2022	923.62	922.21	922.47	-0.26	921.40	921.04	0.36	920.99	921.20	-0.21	919.05	925.56	-6.51	919.16	917.04	2.12	917.89	917.12	0.77	916.76
10/7/2022	923.60	922.18	922.50	-0.32	921.40	921.03	0.37	921.01	921.23	-0.22	919.06	925.58	-6.52	919.12	917.05	2.07	917.89	917.13	0.76	916.77
10/8/2022	923.54	922.20	922.52	-0.32	921.37	921.03	0.34	921.04	921.24	-0.20	919.02	925.67	-6.65	919.10	917.04	2.06	917.81	917.07	0.74	916.74
10/9/2022	923.53	922.17	922.50	-0.33	921.24	920.98	0.26	921.05	921.22	-0.17	919.01	925.77	-6.76	919.11	917.03	2.08	917.79	917.06	0.73	916.71
10/10/2022	923.50	922.11	922.46	-0.35	921.15	920.99	0.16	920.97	921.19	-0.22	919.07	925.62	-6.55	919.08	917.05	2.03	917.82	917.12	0.70	916.66
10/11/2022	923.51	922.08	922.44	-0.36	921.20	921.02	0.18	920.96	921.18	-0.22	919.08	925.52	-6.44	919.07	917.08	1.99	917.81	917.10	0.71	916.68
10/12/2022	923.48	922.08	922.44	-0.36	921.27	920.98	0.29	921.01	921.19	-0.18	919.02	925.46	-6.44	918.93	917.03	1.90	917.62	917.07	0.55	916.62
10/13/2022	923.49	922.08	922.48	-0.40	921.35	921.02	0.33	921.02	921.22	-0.20	919.02	925.55	-6.53	919.01	917.02	1.99	917.69	917.04	0.65	916.81
10/14/2022	923.44	922.03	922.42	-0.39	921.30	920.99	0.31	920.99	921.16	-0.17	919.01	925.38	-6.37	919.03	917.03	2.00	917.68	917.04	0.64	916.76
10/15/2022	923.48	922.01	922.41	-0.40	921.32	921	0.32	920.96	921.17	-0.21	919.05	925.77	-6.72	919.04	917.06	1.98	917.72	917.08	0.64	916.80
10/16/2022	923.44	921.99	922.39	-0.40	921.29	920.99	0.30	920.96	921.16	-0.20	919.05	925.92	-6.87	919.02	917.06	1.96	917.71	917.09	0.62	916.78
10/17/2022	923.43	921.99	922.42	-0.43	921.30	921	0.30	920.98	921.19	-0.21	919.00	925.89	-6.89	918.92	917.03	1.89	917.64	917.07	0.57	916.81
10/18/2022	923.36	921.97	922.38	-0.41	921.24	920.97	0.27	920.99	921.16	-0.17	919.04	926.09	-7.05	918.83	917.04	1.79	917.65	917.09	0.56	916.76
10/19/2022	923.37	921.98	922.40	-0.42	921.24	920.96	0.28	921.02	921.20	-0.18	919.04	926.29	-7.25	918.98	917.06	1.92	917.66	917.08	0.58	916.79
10/20/2022	923.36	921.92	922.35	-0.43	921.18	921	0.18	920.98	921.14	-0.16	919.04	925.84	-6.80	918.92	917.06	1.86	917.67	917.11	0.56	916.76
10/21/2022	923.39	921.95	922.37	-0.42	921.40	921.02	0.38	920.99	921.18	-0.19	919.00	925.68	-6.68	918.98	917.04	1.94	917.66	917.09	0.57	916.81
No data from 10/22 to 10/23																				
10/24/2022	923.45	921.95	922.33	-0.38	921.27	920.97	0.30	920.97	921.14	-0.17	919.02	925.79	-6.77	918.97	917.07	1.90	917.75	917.09	0.66	916.76
10/25/2022	923.90	922.27	922.45	-0.18	921.79	920.99	0.80	921	921.20	-0.20	918.97	925.87	-6.90	919.34	917.02	2.32	918.09	917.03	1.06	917.12
10/26/2022	924.23	922.63	922.51	0.12	922.14	920.97	1.17	921.31	921.10	0.21	918.99	925.83	-6.84	919.89	917.04	2.85	918.52	917.07	1.45	917.37
10/27/2022	924.35	923.03	922.63	0.40	922.43	920.95	1.48	921.67	921.11	0.56	918.97	925.80	-6.83	920.49	917.04	3.45	918.87	917.04	1.83	917.60
10/28/2022	924.61	923.34	922.72	0.62	922.82	920.99	1.83	922.01	921.14	0.87	919.01	925.57	-6.56	921.01	917.08	3.93	919.39	917.19	2.20	917.94
10/29/2022	924.78	923.71	922.67	1.04	923.17	920.98	2.19	922.33	921.14	1.19	919.00	925.67	-6.67	921.51	917.21	4.30	919.84	917.25	2.59	918.12
10/30/2022	924.71	923.84	922.63	1.21	923.25	921.01	2.24	922.42	921.13	1.29	918.97	925.62	-6.65	921.75	917.07	4.68	919.94	917.20	2.74	918.17
10/31/2022	926.20	925.36	923.74	1.62	925.43	920.96	4.47	925.21	921.13	4.08	919.00	926.34	-7.34	923.87	918.59	5.28	922.22	918.77	3.45	919.60
11/1/2022	926.21	926.07	923.63	2.44	925.33	921	4.33	924.78	921.12	3.66	918.98	926.25	-7.27	924.23	918.04	6.19	922.97	918.35	4.62	919.66
11/2/2022	925.94	925.98	923.38	2.60	925.18	920.99	4.19	924.64	921.15	3.49	918.98	926.26	-7.28	924.12	917.84	6.28	922.78	917.96	4.82	919.38
11/3/2022	925.72	925.73	923.22	2.51	925.00	921	4.00	924.47	921.12	3.35	918.96	926.48	-7.52	923.98	917.37	6.61	922.50	917.71	4.79	919.20
11/4/2022	926.79	927.11	924.21	2.90	926.97	921	5.97	926.88	921.13	5.75	918.93	926.82	-7.89	925.25	917.80	7.45	924.07	918.57	5.50	920.46
11/5/2022	928.43	927.64	926.33	1.31	927.63	921.31	6.32	927.39	921.86	5.53	918.95	930.82	-11.87	925.95	921.52	4.43	925.08	921.60	3.48	921.71
No data from 11/6 to 11/9																				
11/10/2022	926.29	926.77	923.66	3.11	926.22	921.13	5.09	925.92	921.26	4.66	918.98	923.53	-4.55	924.97	917.68	7.29	923.90	918.16	5.74	919.76
11/11/2022	926.11	926.43	923.54	2.89	925.79	921.14	4.65	925.34	921.26	4.08	919.01	923.81	-4.80	924.63	917.68	6.95	923.50	918.07	5.43	919.57
11/12/2022	925.93	926.12	923.44	2.68	925.48	921.13	4.35	925	921.26	3.74	919.02	925.35	-6.33	924.37	917.81	6.56	923.12	917.97	5.15	919.40
11/13/2022	925.77	925.87	923.39	2.48	925.27	921.11	4.16	924.78	921.29	3.49	918.99	925.41	-6.42	924.12	917.55	6.57	922.69	917.85	4.84	919.26
11/14/2022	925.61	925.67	923.31	2.36	925.04	921.07	3.97	924.59	921.28	3.31	918.99	925.78	-6.79	923.91	917.57	6.34	922.42	917.79	4.63	919.13
11/15/2022	925.55	925.48	923.28	2.20	924.91	921.09	3.82	924.4	921.29	3.11	918.99	925.52	-6.53	923.69	917.32	6.37	922.16	917.74	4.42	919.07

Table 5  
HCC System Barrier Wall Groundwater Elevations  
BNSF Former Maintenance and Fueling Facility  
Skykomish, Washington  
Farallon PN: 683-071

Groundwater Elevations at Piezometers (feet NAVD88) and Elevation Differentials at Piezometer Pairs (feet)																								
Date	PZ-1	PZ-2S	PZ-2N	Elevation Differential at PZ-2S/PZ-2N	PZ-3S	PZ-3N	Elevation Differential at PZ-3S/PZ-3N	PZ-4S	PZ-4N	Elevation Differential at PZ-4S/PZ-4N	PZ-5S	PZ-5N	Elevation Differential at PZ-5S/PZ-5N	PZ-6S	PZ-6N	Elevation Differential at PZ-6S/PZ-6N	PZ-7S	PZ-7N	Elevation Differential at PZ-7S/PZ-7N	PZ-8				
11/16/2022	925.46	925.34	923.23	2.11	924.75	921.07	3.68	924.27	921.28	2.99	919.02	925.68	-6.66	923.58	917.66	5.92	922.03	917.73	4.30	918.95				
11/17/2022	925.42	925.20	923.19	2.01	924.63	921.07	3.56	924.12	921.26	2.86	918.97	924.51	-5.54	923.42	917.40	6.02	921.83	917.65	4.18	918.93				
11/18/2022	925.37	925.08	923.14	1.94	924.54	921.08	3.46	924.02	921.26	2.76	919.00	924.03	-5.03	923.27	917.38	5.89	921.74	917.66	4.08	918.86				
11/19/2022	925.35	924.97	923.10	1.87	924.45	921.09	3.36	923.91	921.25	2.66	918.95	925.02	-6.07	923.19	917.38	5.81	921.58	917.55	4.03	918.81				
11/20/2022	925.26	924.92	923.07	1.85	924.35	921.05	3.30	923.86	921.25	2.61	918.97	923.56	-4.59	923.14	917.42	5.72	921.54	917.54	4.00	918.72				
11/21/2022	925.25	924.83	923.05	1.78	924.31	921.05	3.26	923.78	921.25	2.53	918.99	924.18	-5.19	923.06	917.41	5.65	921.44	917.52	3.92	918.72				
11/22/2022	925.26	924.77	923.01	1.76	924.26	921.07	3.19	923.72	921.24	2.48	918.98	924.38	-5.40	922.97	917.29	5.68	921.37	917.50	3.87	918.72				
11/23/2022	925.79	925.26	923.36	1.90	924.93	921.06	3.87	924.47	921.24	3.23	919.01	924.16	-5.15	923.52	917.85	5.67	922.02	918.03	3.99	919.21				
11/24/2022	925.85	925.54	923.37	2.17	924.99	921.02	3.97	924.51	921.21	3.30	918.97	924.51	-5.54	923.72	917.68	6.04	922.19	917.91	4.28	919.16				
11/25/2022	925.81	925.61	923.35	2.26	924.98	921.02	3.96	924.51	921.21	3.30	918.99	924.40	-5.41	923.69	917.53	6.16	922.22	917.87	4.35	919.14				
11/26/2022	925.92	925.74	923.41	2.33	925.15	921.02	4.13	924.7	921.22	3.48	919.00	924.37	-5.37	923.87	917.87	6.00	922.41	917.94	4.47	919.21				
11/27/2022	926.29	926.23	923.68	2.55	925.74	921.06	4.68	925.32	921.22	4.10	918.98	924.95	-5.97	924.27	917.79	6.48	922.92	918.16	4.76	919.58				
11/28/2022	917.52	919.98	919.99	-0.01	919.96	919.95	0.01	919.94	920.02	-0.08	917.94	917.98	-0.04	915.94	916.13	-0.19	916.03	916.10	-0.07	915.83				
No data from 11/29 to 12/5																								
12/6/2022	925.51	925.42	923.22	2.20	924.90	921.15	3.75	924.48	921.28	3.20	918.99	920.91	-1.92	923.73	917.44	6.29	922.28	917.79	4.49	918.99				
12/7/2022	925.50	925.27	923.18	2.09	924.76	921.17	3.59	924.28	921.23	3.05	918.99	920.95	-1.96	923.54	917.41	6.13	922.10	917.77	4.33	918.94				
12/8/2022	925.46	925.17	923.16	2.01	924.63	921.16	3.47	924.16	921.23	2.93	918.98	920.98	-2.00	923.43	917.35	6.08	921.96	917.72	4.24	918.87				
12/9/2022	925.44	925.09	923.17	1.92	924.56	921.17	3.39	924.08	921.25	2.83	919.00	921.01	-2.01	923.31	917.38	5.93	921.85	917.73	4.12	918.86				
12/10/2022	925.42	925.00	923.10	1.90	924.49	921.13	3.36	924	921.24	2.76	919.04	921.01	-1.97	923.27	917.66	5.61	921.79	917.73	4.06	918.79				
12/11/2022	925.35	924.96	923.14	1.82	924.41	921.11	3.30	923.96	921.27	2.69	919.03	920.99	-1.96	923.20	917.62	5.58	921.71	917.68	4.03	918.77				
12/12/2022	925.34	924.91	923.09	1.82	924.34	921.09	3.25	923.87	921.23	2.64	919.00	920.96	-1.96	923.12	917.40	5.72	921.62	917.65	3.97	918.74				
12/13/2022	925.35	924.86	923.09	1.77	924.34	921.1	3.24	923.84	921.26	2.58	919.01	920.96	-1.95	923.07	917.61	5.46	921.58	917.66	3.92	918.74				
12/14/2022	925.33	924.80	923.09	1.71	924.27	921.09	3.18	923.77	921.22	2.55	919.00	920.96	-1.96	922.98	917.32	5.66	921.52	917.63	3.89	918.71				
12/15/2022	925.29	924.80	923.14	1.66	924.25	921.05	3.20	923.77	921.25	2.52	919.00	920.94	-1.94	922.99	917.48	5.51	921.51	917.59	3.92	918.69				
12/16/2022	925.27	924.78	923.11	1.67	924.22	921.05	3.17	923.76	921.25	2.51	918.99	920.91	-1.92	922.95	917.31	5.64	921.44	917.55	3.89	918.66				
12/17/2022	925.26	924.76	923.09	1.67	924.22	921.04	3.18	923.75	921.24	2.51	919.02	920.95	-1.93	922.95	917.51	5.44	921.46	917.56	3.90	918.63				
12/18/2022	925.28	924.72	923.06	1.66	924.21	921.1	3.11	923.71	921.24	2.47	919.01	920.97	-1.96	922.88	917.31	5.57	921.43	917.56	3.87	918.65				
12/19/2022	925.22	924.69	923.00	1.69	924.14	921.05	3.09	923.67	921.23	2.44	919.00	920.92	-1.92	922.82	917.24	5.58	921.36	917.53	3.83	918.64				
12/20/2022	925.22	924.66	923.00	1.66	924.13	921.08	3.05	923.63	921.24	2.39	919.01	920.91	-1.90	922.83	917.50	5.33	921.35	917.50	3.85	918.61				
12/21/2022	925.22	924.59	922.98	1.61	924.07	921.09	2.98	923.53	921.23	2.30	918.99	920.89	-1.90	922.77	917.24	5.53	921.26	917.42	3.84	918.56				
12/22/2022	925.17	924.58	922.99	1.59	924.02	921.04	2.98	923.5	921.22	2.28	919.01	920.93	-1.92	922.74	917.39	5.35	921.22	917.42	3.80	918.52				
12/23/2022	917.52	919.98	919.99	-0.01	919.96	919.95	0.01	919.94	920.02	-0.08	917.94	917.98	-0.04	915.94	916.13	-0.19	916.03	916.10	-0.07	915.83				
12/24/2022	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
12/25/2022	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
12/26/2022	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
12/27/2022	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
12/28/2022	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
12/29/2022	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
12/30/2022	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
12/31/2022	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Average Elevation Differential				1.79				3.51				2.86				-4.06				4.89			3.74	
Maximum Elevation Differential				3.51				6.93				6.15				11.87				7.45			5.97	

NOTES:

Groundwater elevations are measured using dedicated water-level transducers installed in the piezometers and are referenced to North American Vertical Datum of 1988 (NAVD88).

HCC = Hydraulic Control and Containment

\*Data not available due to power outage that shut down the computer and its datalogging capabilities. The computer was restarted during the subsequent operations and maintenance events.

**Table 6**  
**Stabilized Field Parameter Values at HCC System Monitoring Wells**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

Monitoring Well	Sample Date	Sample Identification	Dissolved Oxygen (milligrams per liter)	Oxidation-Reduction Potential (millivolts)	pH (Standard Units)	Specific Conductivity (mS/cm)	Temperature (degrees Celsius)
GW-1	6/7/2022	GW-1-060722	1.61	266.9	5.93	0.160	13.0
	10/26/2022	GW-1-102622	1.62	160.6	6.01	0.107	11.1
	12/7/2022	GW-1-120722	2.41	222.3	6.41	0.131	8.3
GW-2	6/7/2022	GW-2-060722	2.82	218.9	6.20	0.100	13.9
	10/26/2022	GW-2-102622	4.74	133.9	6.51	0.092	9.3
	12/7/2022	GW-2-120722	8.62	239.7	6.15	0.167	8.0
GW-3	6/7/2022	GW-3-060722	4.64	129.0	5.96	0.0725	9.9
	10/26/2022	GW-3-102722	Well went dry during purging - sample was collected after well recharged.				
	12/7/2022	GW-3-120722	4.18	351.1	5.97	0.088	5.7
GW-4	6/7/2022	GW-4-060722	2.67	85.0	6.86	0.1306	9.0
	10/26/2022	GW-4-102622	3.73	343.1	6.23	0.081	9.4
	12/7/2022	GW-4-120722	8.63	259.8	6.36	0.156	7.4
EW-1	6/7/2022	EW-1-060722	2.87	323.7	6.18	0.086	10.6
	10/26/2022	EW-1-102622	1.20	224.9	6.03	0.057	8.3
	12/7/2022	EW-1-120722	3.70	275.0	6.20	0.092	8.1
EW-2A	6/7/2022	EW-2A--060722	7.69	-137.7	6.15	0.052	7.9
	10/26/2022	EW-2A-102622	6.02	359.4	5.87	0.062	9.2
	12/7/2022	EW-2A-120722	9.39	287.5	6.08	0.086	7.3
5-W-43	6/7/2022	5-W-43-060722	2.99	320.7	6.19	0.089	11.4
	10/26/2022	5-W-43-102622	5.07	223.8	6.21	0.073	9.4
	12/7/2022	5-W-43-120722	3.79	302.0	6.14	0.090	8.7
2A-W-40	6/7/2022	2A-W-40-060722	8.39	322.2	6.54	0.062	10.3
	10/26/2022	2A-W-40-102622	7.05	197.2	6.56	0.061	8.7
	12/7/2022	2A-W-40-120722	8.81	284.9	6.75	0.061	7.6
2A-W-41	6/7/2022	2A-W-41-060722	7.54	-134.2	6.53	0.142	12.3
	10/27/2022	2A-W-41-102722	1.96	78.8	6.33	0.195	10.4
	12/7/2022	2A-W-41-120722	8.18	276.5	6.27	0.224	8.8
1B-W-23	6/7/2022	1B-W-23-060722	9.84	132.8	6.12	0.0609	14.2
	10/27/2022	1B-W-23-102722	7.09	275.9	5.96	0.106	14.6
	12/7/2022	1B-W-23-120722	9.05	339.0	6.28	0.106	8.9



**Table 6**  
**Stabilized Field Parameter Values at HCC System Monitoring Wells**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

Monitoring Well	Sample Date	Sample Identification	Dissolved Oxygen (milligrams per liter)	Oxidation-Reduction Potential (millivolts)	pH (Standard Units)	Specific Conductivity (mS/cm)	Temperature (degrees Celsius)
2A-W-42	6/7/2022	2A-W-42-060722	3.87	139.7	6.10	0.1169	9.4
	10/26/2022	2A-W-42-102622	4.76	288.9	5.90	0.145	10.6
	12/7/2022	2A-W-42-120722	8.01	244.0	5.90	0.208	8.8

NOTES:

HCC = Hydraulic Control and Containment

IE = instrument error

mS/cm = milliSiemens per centimeter

**Table 7**  
**Total Petroleum Hydrocarbon Concentrations in Groundwater**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

Well	Date	Sample Identification	DRO (µg/l) <sup>1</sup>			ORO (µg/l) <sup>1</sup>			Calculated NWTPH-Dx <sup>2</sup> (µg/l)
			Result	MDL	MRL	Result	MDL	MRL	
Sentry Wells									
S1-AD	6/8/2022	S1-AD-060822	< 52	30	52	< 89	45	89	< 38
	10/27/2022	S1-AD-102722	58	26	44	< 76	38	76	77
S1-AU	6/8/2022	S1-AU-060822	< 52	31	52	< 89	45	89	< 38
	10/27/2022	S1-AU-102722	< 51	30	51	< 89	45	89	< 38
S1-BD	6/8/2022	S1-BD-060822	< 41 UJ	41	41	< 110 UJ	50	110	< 46 UJ
	10/27/2022	S1-BD-102722	< 51	30	51	< 87	44	87	< 37
S1-BU	6/8/2022	S1-BU-060822	< 53	31	53	< 91	46	91	< 39
	10/27/2022	S1-BU-102722	< 51	30	51	< 88	44	88	< 37
S2-AD	6/8/2022	S2-AD-060822	< 41 UJ	41	41	< 110 UJ	46	110	< 44 UJ
	10/27/2022	S2-AD-102722	< 53	31	53	< 92	46	92	< 39
S2-AU	6/8/2022	S2-AU-060822	< 32 UJ	32	32	< 110 UJ	46	110	< 39 UJ
	10/27/2022	S2-AU-102722	< 51	30	51	< 87	44	87	< 37
S2-BD	6/8/2022	S2-BD-060822	< 34 UJ	34	34	< 100 UJ	45	100	< 40 UJ
	12/7/2022	S2-BD-120722	< 51	30	51	< 89	45	89	< 38
S2-BU	6/8/2022	S2-BU-060822	< 52 U	31	52	63 J	45	100	79 J
	12/7/2022	S2-BU-120722	290	30	51	260	45	89	550
S3-AD	6/8/2022	S3-AD-060822	< 55	32	55	< 110 UJ	48	110	< 40 UJ
	10/27/2022	S3-AD-102722	< 51	30	51	< 88	44	88	< 37
S3-AU	6/8/2022	S3-AU-060822	< 53 U	31	53	230 J	46	110	246 J
	10/27/2022	S3-AU-102722	< 52	31	52	< 90	46	90	< 39
S3-BD	6/8/2022	S3-BD-060822	< 52	31	52	< 90	45	90	< 38
	10/27/2022	S3-BD-102722	< 42	25	42	< 73	37	73	< 31
S3-BU	6/8/2022	S3-BU-060822	< 52	31	52	< 90	45	90	< 38
	10/27/2022	S3-BU-102722	< 53	31	53	< 91	46	91	< 39

**Table 7**  
**Total Petroleum Hydrocarbon Concentrations in Groundwater**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

Well	Date	Sample Identification	DRO (µg/l) <sup>1</sup>			ORO (µg/l) <sup>1</sup>			Calculated NWTPH-Dx <sup>2</sup> (µg/l)
			Result	MDL	MRL	Result	MDL	MRL	
Sentry Wells									
S3-CD	6/8/2022	S3-CD-060822	< 36 UJ	36	36	< 100 UJ	46	100	< 41 UJ
	10/27/2022	S3-CD-102722	110	31	52	100	46	91	210
S3-CU	6/8/2022	S3-CU-060822	< 52 U	31	52	180 J	45	100	196 J
	10/27/2022	S3-CU-102722	< 42	25	42	< 72	37	72	< 31
S4-AD	6/8/2022	S4-AD-060822	< 31 UJ	31	31	< 100 UJ	45	100	< 38 UJ
	10/27/2022	S4-AD-102722	< 42	25	42	< 73	37	73	< 31
S4-AU	6/8/2022	S4-AU-060822	< 53 U	31	53	80 J	46	110	96 J
	10/27/2022	S4-AU-102722	< 43	25	43	< 74	37	74	< 31
S4-BD	6/8/2022	S4-BD-060822	< 43 UJ	43	43	< 110 UJ	47	110	< 45 UJ
	10/27/2022	S4-BD-102722	< 43	25	43	< 74	38	74	< 32
S4-BU	6/8/2022	S4-BU-060822	< 33 UJ	33	33	< 110 UJ	49	110	< 41 UJ
	10/27/2022	S4-BU-102722	53	31	52	< 90	45	90	76
S4-CD	6/8/2022	S4-CD-060822	< 52	31	52	< 100 UJ	46	100	< 39 UJ
	10/27/2022	S4-CD-102722	< 54	32	54	< 93	47	93	< 40
S4-CU	6/8/2022	S4-CU-060822	< 52 U	31	52	120 J	45	100	136 J
	10/27/2022	S4-CU-102722	< 51	30	51	< 88	44	88	< 37
Hydraulic Control and Containment System Monitoring Wells									
GW-1	6/7/2022	GW-1-060722	< 51 U	30	51	150	44	88	165
	10/26/2022	GW-1-102622	59	25	42	87	37	73	146
	12/7/2022	GW-1-120722	56 J	31	52	< 120 UJ	120	120	116 J
GW-2	6/7/2022	GW-2-060722	< 52	31	52	< 90	45	90	< 38
	10/26/2022	GW-2-102622	80	31	52	150	46	91	230
	12/7/2022	GW-2-120722	43 J	31	52	< 49 UJ	49	49	68 J
Site-Specific Remediation Level									477

**Table 7**  
**Total Petroleum Hydrocarbon Concentrations in Groundwater**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

Well	Date	Sample Identification	DRO (µg/l) <sup>1</sup>			ORO (µg/l) <sup>1</sup>			Calculated NWTPH-Dx <sup>2</sup> (µg/l)
			Result	MDL	MRL	Result	MDL	MRL	
Hydraulic Control and Containment System Monitoring Wells									
GW-3	6/7/2022	GW-3-060722	< 51 < 51 <sup>3</sup>	30 30 <sup>3</sup>	51 51 <sup>3</sup>	< 89 < 89 <sup>3</sup>	45 45 <sup>3</sup>	89 89 <sup>3</sup>	< 38 < 38 <sup>3</sup>
	10/27/2022	GW-3-102722	160 < 52 <sup>3</sup>	30 30 <sup>3</sup>	52 52 <sup>3</sup>	300 180 <sup>3</sup>	45 45 <sup>3</sup>	89 89 <sup>3</sup>	460 195 <sup>3</sup>
	12/7/2022	GW-3-120722	90 J < 51 <sup>3</sup> UJ	30 30 <sup>3</sup>	51 51 <sup>3</sup>	< 130 UJ 58 <sup>3</sup> J	130 45 <sup>3</sup>	130 89 <sup>3</sup>	155 J 73 <sup>3</sup> J
GW-4	6/7/2022	GW-4-060722	< 52	31	52	< 90	45	90	< 38
	10/26/2022	GW-4-102622	< 51	30	51	89	45	88	104
	12/7/2022	GW-4-120722	74 J	31	52	< 98 UJ	98	98	123 J
EW-1	6/7/2022	EW-1-060722	< 51	30	51	< 89	45	89	< 38
	10/26/2022	EW-1-102622	50	25	43	< 74	37	74	69
	12/7/2022	EW-1-120722	57 J	31	53	< 93 UJ	93	93	104 J
EW-2A	6/7/2022	EW-2A--060722	< 56	33	56	< 96	49	96	< 41
	10/26/2022	EW-2A-102622	57	30	51	180	44	88	237
	12/7/2022	EW-2A-120722	64 J	30	51	< 100 UJ	100	100	114 J
5-W-43	6/7/2022	5-W-43-060722	< 51	30	51	< 88	44	88	< 37
	10/26/2022	5-W-43-102622	88	31	52	280	45	90	368
	12/7/2022	5-W-43-120722	48 J	32	54	< 80 UJ	80	80	88 J
2A-W-40	6/7/2022	2A-W-40-060722	< 52	31	52	< 89	45	89	< 38
	10/26/2022	2A-W-40-102622	< 42	25	42	< 73	37	73	< 31
	12/7/2022	2A-W-40-120722	37 J	30	51	< 59 UJ	59	59	67 J
Site-Specific Remediation Level									477

**Table 7**  
**Total Petroleum Hydrocarbon Concentrations in Groundwater**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

Well	Date	Sample Identification	DRO (µg/l) <sup>1</sup>			ORO (µg/l) <sup>1</sup>			Calculated NWTPH-Dx <sup>2</sup> (µg/l)
			Result	MDL	MRL	Result	MDL	MRL	
Hydraulic Control and Containment System Monitoring Wells									
2A-W-41	6/7/2022	2A-W-41-060722	< 54 U < 54 <sup>3</sup>	32 32 <sup>3</sup>	54 54 <sup>3</sup>	120 < 93 <sup>3</sup>	47 47 <sup>3</sup>	93 93 <sup>3</sup>	136 < 40 <sup>3</sup>
	10/27/2022	2A-W-41-102722	500 120 <sup>3</sup>	30 30 <sup>3</sup>	51 51 <sup>3</sup>	280 < 89 <sup>3</sup>	45 45 <sup>3</sup>	89 89 <sup>3</sup>	<b>780</b> 143 <sup>3</sup>
	12/7/2022	2A-W-41-120722	460 J 71 <sup>3</sup> J	30 30 <sup>3</sup>	51 51 <sup>3</sup>	< 350 UJ 55 <sup>3</sup> J	350 45 <sup>3</sup>	350 88 <sup>3</sup>	<b>635</b> J 126 <sup>3</sup> J
1B-W-23	6/7/2022	1B-W-23-060722	< 52	31	52	< 91	46	91	< 39
	10/27/2022	1B-W-23-102722	69	26	44	100	38	76	169
	12/7/2022	1B-W-23-120722	< 51 UJ	30	51	< 88 UJ	45	88	< 38 UJ
2A-W-42	6/7/2022	2A-W-42-060722	< 52 U	31	52	150	45	90	166
	10/26/2022	2A-W-42-102622	180	32	54	150	47	94	330
	12/7/2022	2A-W-42-120722	180 J	31	52	< 180 UJ	180	180	270 J
Site-Specific Remediation Level									<b>477</b>

NOTES:

**Bold** denotes the reported concentration exceeds the Site-specific remediation level. The remediation level is not applicable to the sentry wells or vaults in the barrier wall treatment gates.

"<" denotes analyte not reported as detected at or exceeding the listed laboratory MRL.

<sup>1</sup>Analyzed by Washington State Department of Ecology (Ecology) Method NWTPH-Dx without silica gel cleanup unless otherwise noted.

<sup>2</sup>Sum of DRO and ORO, using half the MDL for non-detect results.

<sup>3</sup>Sample analyzed by Ecology Method NWTPH-Dx with silica gel cleanup.

DRO = total petroleum hydrocarbons as diesel-range organics

J = reported concentration is an estimated value

MDL = method detection limit

MRL = method reporting limit

µg/l = micrograms per liter

ORO = total petroleum hydrocarbons as oil-range organics

U = analyte not detected above the level of the associated value

UJ = analyte was not detected and reporting limit is an estimate

**Table 8**  
**Groundwater Elevations and LNAPL Thicknesses**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

Location	Measuring Point Elevation <sup>1</sup> (feet NAVD88)	Date	Depth to Water <sup>2</sup> (feet)	Water Elevation <sup>1</sup> (feet NAVD88)	LNAPL Thickness (feet)
GW-1	928.24	3/22/2022	10.13	918.11	—
		6/6/2022	7.95	920.29	—
		10/25/2022	11.56	916.68	—
		12/7/2022	10.95	917.29	—
GW-2	930.29	3/22/2022	18.78	911.51	—
		6/6/2022	10.23	920.06	—
		10/25/2022	13.45	916.84	—
		12/7/2022	12.92	917.37	—
GW-3	935.82	3/22/2022	13.88	921.94	—
		6/6/2022	14.13	921.69	—
		10/25/2022	16.24	919.58	—
		12/7/2022	15.79	920.03	—
GW-4	934.68	3/22/2022	10.21	924.47	—
		6/6/2022	8.84	925.84	—
		10/25/2022	12.10	922.58	—
		12/7/2022	10.96	923.72	—
EW-1	928.72	3/22/2022	9.80	918.92	—
		6/6/2022	8.30	920.42	—
		10/25/2022	11.90	916.82	—
		12/7/2022	10.65	918.07	—
EW-2A	936.2	3/22/2022	9.62	926.58	—
		6/6/2022	8.34	927.86	—
		10/25/2022	12.16	924.04	—
		12/7/2022	10.74	925.46	—
5-W-43	926.18	3/22/2022	7.81	918.37	—
		6/6/2022	5.95	920.23	—
		10/25/2022	9.53	916.65	—
		12/7/2022	8.42	917.76	—



**Table 8**  
**Groundwater Elevations and LNAPL Thicknesses**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

<b>Location</b>	<b>Measuring Point Elevation<sup>1</sup> (feet NAVD88)</b>	<b>Date</b>	<b>Depth to Water<sup>2</sup> (feet)</b>	<b>Water Elevation<sup>1</sup> (feet NAVD88)</b>	<b>LNAPL Thickness (feet)</b>
2A-W-40	933.34	3/22/2022	12.96	920.38	—
		6/6/2022	10.52	922.82	—
		10/25/2022	13.60	919.74	—
		12/7/2022	12.60	920.74	—
2A-W-41	935.22	3/22/2022	11.66	923.56	—
		6/6/2022	14.98	920.24	—
		10/25/2022	18.56	916.66	—
		12/7/2022	17.77	917.45	—
1B-W-23	936.25	3/22/2022	16.54	919.71	—
		6/6/2022	16.01	920.24	—
		10/25/2022	16.54	919.71	—
		12/7/2022	17.46	918.79	—
2A-W-42	935.37	3/22/2022	17.07	918.30	—
		6/6/2022	12.01	923.36	—
		10/25/2022	12.89	922.48	—
		12/7/2022	14.53	920.84	—
PZ-1	935.38	3/22/2022	9.00	926.38	—
		6/6/2022	7.08	928.30	—
		10/25/2022	11.56	923.82	—
		12/7/2022	9.97	925.41	—
PZ-2N	934.35	3/22/2022	7.39	926.96	—
		6/6/2022	10.01	924.34	—
		10/25/2022	12.71	921.64	—
		12/7/2022	12.25	922.10	—
PZ-2S	934.94	3/22/2022	11.44	923.50	—
		6/6/2022	7.21	927.73	—
		10/25/2022	11.98	922.96	—
		12/7/2022	8.98	925.96	—

**Table 8**  
**Groundwater Elevations and LNAPL Thicknesses**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

Location	Measuring Point Elevation <sup>1</sup> (feet NAVD88)	Date	Depth to Water <sup>2</sup> (feet)	Water Elevation <sup>1</sup> (feet NAVD88)	LNAPL Thickness (feet)
PZ-3N	934.41	3/22/2022	12.98	921.43	—
		6/6/2022	14.04	920.37	—
		10/25/2022	13.15	921.26	—
		12/7/2022	13.92	920.49	—
PZ-3S	934.45	3/22/2022	6.97	927.48	—
		6/6/2022	7.58	926.87	—
		10/25/2022	12.27	922.18	Light Trace
		12/7/2022	9.69 C	924.76 C	0.06
PZ-4N	935.27	3/22/2022	14.62	920.65	—
		6/6/2022	14.64	920.63	—
		10/25/2022	14.65	920.62	—
		12/7/2022	14.65	920.62	—
PZ-4S	935.31	3/22/2022	9.28	926.03	—
		6/6/2022	9.02	926.29	—
		10/25/2022	14.10	921.21	—
		12/7/2022	10.98	924.33	—
PZ-5N	933.15	3/22/2022	14.01	919.14	—
		6/6/2022	12.92	920.23	—
		10/25/2022	12.23	920.92	—
		12/7/2022	16.85	916.30	—
PZ-5S	933.46	3/22/2022	4.31 C	929.15 C	5.49 <sup>4</sup>
		6/6/2022	7.99 C	925.47 C	0.70
		10/25/2022	7.31 C	926.15 C	3.23
		12/7/2022	5.79 C	927.67 C	3.89
PZ-6N	931.17	3/22/2022	13.07	918.10	—
		6/6/2022	10.94	920.23	—
		10/25/2022	14.60	916.57	—
		12/7/2022	13.69	917.48	—

**Table 8**  
**Groundwater Elevations and LNAPL Thicknesses**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

Location	Measuring Point Elevation <sup>1</sup> (feet NAVD88)	Date	Depth to Water <sup>2</sup> (feet)	Water Elevation <sup>1</sup> (feet NAVD88)	LNAPL Thickness (feet)
PZ-6S	931.41	3/22/2022	6.59	924.82	Heavy Trace
		6/6/2022	6.28	925.13	Heavy Trace
		10/25/2022	11.60 C	919.81 C	0.18
		12/7/2022	7.66 C	923.75 C	0.03
PZ-7N	930.37	3/22/2022	12.20	918.17	—
		6/6/2022	10.09	920.28	—
		10/25/2022	13.70	916.67	—
		12/7/2022	12.97	917.40	—
PZ-7S	930.4	3/22/2022	6.08	924.32	—
		6/6/2022	5.87	924.53	—
		10/25/2022	12.10	918.30	—
		12/7/2022	8.08	922.32	—
PZ-8	929.48	3/22/2022	9.06	920.42	—
		6/6/2022	8.13	921.35	—
		10/25/2022	12.28	917.20	—
		12/7/2022	10.52	918.96	—
RW-01	932.84	3/22/2022	8.00	924.84	—
		6/6/2022	7.62	925.22	—
		10/25/2022	12.12	920.72	—
		12/7/2022	9.49	923.35	—
RW-02	933.84	3/22/2022	9.00	924.84	—
		6/6/2022	8.59	925.25	—
		10/25/2022	13.18	920.66	—
		12/7/2022	10.54	923.30	—
RW-03	933.80	3/22/2022	8.96	924.84	—
		6/6/2022	8.54	925.26	—
		10/25/2022	13.19	920.61	—
		12/7/2022	10.51	923.29	—

**Table 8**  
**Groundwater Elevations and LNAPL Thicknesses**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

Location	Measuring Point Elevation <sup>1</sup> (feet NAVD88)	Date	Depth to Water <sup>2</sup> (feet)	Water Elevation <sup>1</sup> (feet NAVD88)	LNAPL Thickness (feet)
RW-04	931.86	3/22/2022	6.25	925.61	Light Trace
		6/6/2022	6.13	925.73	Light Trace
		10/25/2022	13.61	918.25	—
		12/7/2022	8.80 C	923.06 C	0.15
RW-05	928.53	3/22/2022	7.71	920.82	Light Trace
		6/6/2022	7.25	921.28	—
		10/25/2022	10.92	917.61	—
		12/7/2022	9.86	918.67	—
RW-06	928.53	3/22/2022	7.75	920.78	—
		6/6/2022	7.15	921.38	Light Trace
		10/25/2022	11.92	916.61	—
		12/7/2022	9.72	918.81	—
RW-07	933.06	3/22/2022	7.24 C	925.82 C	0.81
		6/6/2022	6.71 C	926.35 C	1.51
		10/25/2022	11.97	921.09	Heavy Trace
		12/7/2022	8.88	924.18	Light Trace
RW-08	931.85	3/22/2022	6.22 C	925.63 C	7.1 <sup>4</sup>
		6/6/2022	5.92	925.93	Light Trace
		10/25/2022	11.47 C	920.38 C	2.12 <sup>4</sup>
		12/7/2022	9.82	922.03	Heavy Trace
RW-09	933.96	3/22/2022	8.34	925.62	—
		6/6/2022	7.50	926.46	—
		10/25/2022	10.76	923.20	—
		12/7/2022	9.19	924.77	—
EG-WV-South Chamber (formerly EG-WV or EV)	934.31	3/22/2022	9.69	924.62	—
		6/6/2022	8.27	926.04	—
		10/25/2022	11.62	922.69	—
		12/7/2022	10.41	923.90	—

**Table 8**  
**Groundwater Elevations and LNAPL Thicknesses**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

<b>Location</b>	<b>Measuring Point Elevation<sup>1</sup> (feet NAVD88)</b>	<b>Date</b>	<b>Depth to Water<sup>2</sup> (feet)</b>	<b>Water Elevation<sup>1</sup> (feet NAVD88)</b>	<b>LNAPL Thickness (feet)</b>
EG-WV-North Chamber	934.31	3/22/2022	9.65	924.66	—
		6/6/2022	8.31	926.00	—
		10/25/2022	11.48	922.83	—
		12/7/2022	10.41	923.90	—
CG-WV-South Chamber (formerly CG-WV or CV)	937.09	3/22/2022	7.79	929.30	—
		6/6/2022	7.57	929.52	—
		10/25/2022	11.97	925.12	—
		12/7/2022	9.78	927.31	—
CG-WV-North Chamber	937.09	3/22/2022	7.78	929.31	—
		6/6/2022	7.58	929.51	—
		10/25/2022	11.97	925.12	—
		12/7/2022	9.78	927.31	—
WG-EV-South Chamber (formerly WG-EV or WV)	931.84	3/22/2022	6.64	925.20	Heavy Trace
		6/6/2022	6.02	925.82	—
		10/25/2022	15.84 C	916.00 C	0.02
		12/7/2022	8.58	923.26	—
WG-EV-North Chamber	931.84	3/22/2022	6.64	925.20	—
		6/6/2022	6.05	925.79	—
		10/25/2022	15.84 C	916.00 C	0.02
		12/7/2022	8.58	923.26	—

**Table 8**  
**Groundwater Elevations and LNAPL Thicknesses**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**

Location	Measuring Point Elevation <sup>1</sup> (feet NAVD88)	Date	Depth to Water <sup>2</sup> (feet)	Water Elevation <sup>1</sup> (feet NAVD88)	LNAPL Thickness (feet)
FWG-WV-South Chamber (formerly FWG-WV or FWV)	930.76	3/22/2022	4.73	926.03	—
		6/6/2022	4.70	926.06	—
		10/25/2022	8.54	922.22	—
		12/7/2022	5.12	925.64	—
FWG-WV-North Chamber	930.76	3/22/2022	4.74	926.02	—
		6/6/2022	4.70	926.06	—
		10/25/2022	8.54	922.22	—
		12/7/2022	5.12	925.64	—

**NOTES:**

— denotes LNAPL was not observed.

C = corrected depths to water and water elevations based on LNAPL thickness

Light Trace = LNAPL less than 0.01 foot thick and thin coating of LNAPL and/or a sheen observed on the oil-water interface probe

Heavy Trace = LNAPL less than 0.01 foot thick and thick coating of LNAPL observed on the oil-water interface probe

<sup>1</sup>Elevations referenced to North American Vertical Datum of 1988 (NAVD88).

<sup>2</sup>Depths referenced to measuring point (e.g., top of well casing, top of vault).

<sup>3</sup>Vault oil-water separator chamber is visually inspected for presence of LNAPL during monitoring events. LNAPL thickness measured only if measurable LNAPL is present.

<sup>4</sup> Inaccurate LNAPL thickness measurement due to instrumentation fouling.

LNAPL = light nonaqueous-phase liquid

NA = not applicable



**APPENDIX A**  
**LABORATORY ANALYTICAL REPORTS**

2022 ANNUAL HYDRAULIC CONTROL AND CONTAINMENT SYSTEM  
OPERATIONS REPORT  
BNSF Former Maintenance and Fueling Facility  
Skykomish, Washington  
Consent Decree No. 07-2-33672-9 SEA

Farallon PN: 683-071

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-109171-1  
Client Project/Site: Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC  
Revision: 1

For:  
Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:  
1/25/2022 12:03:40 PM

Pauline Matlock, Project Manager  
(253)922-2310  
[pauline.matlock@eurofinset.com](mailto:pauline.matlock@eurofinset.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



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[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	8
Certification Summary . . . . .	9
Sample Summary . . . . .	10
Chain of Custody . . . . .	11
Receipt Checklists . . . . .	12

# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109171-1

**Job ID: 580-109171-1**

**Laboratory: Eurofins Seattle**

## Narrative

**Job Narrative**  
**580-109171-1**

## Comments

No additional comments.

## Receipt

The samples were received on 1/11/2022 2:50 PM. 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 2.8° C.

## GC Semi VOA

Method NWTPH-Dx: The following sample contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: Before GAC-1722 (580-109171-1).

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

## Organic Prep

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

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109171-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109171-1

**Client Sample ID: Before GAC-1722**

**Lab Sample ID: 580-109171-1**

Date Collected: 01/07/22 17:30

Matrix: Water

Date Received: 01/11/22 14:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.62		0.055		mg/L		01/12/22 15:51	01/12/22 23:06	1
Motor Oil (>C24-C36)	0.32		0.096		mg/L		01/12/22 15:51	01/12/22 23:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	77		50 - 150				01/12/22 15:51	01/12/22 23:06	1



# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109171-1

**Client Sample ID: HCC EFF-1722**

**Lab Sample ID: 580-109171-2**

**Date Collected: 01/07/22 17:30**

**Matrix: Water**

**Date Received: 01/11/22 14:50**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.056		mg/L		01/12/22 15:51	01/12/22 23:26	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		01/12/22 15:51	01/12/22 23:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	75		50 - 150				01/12/22 15:51	01/12/22 23:26	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109171-1

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

Lab Sample ID: MB 580-378154/1-A

Matrix: Water

Analysis Batch: 378133

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 378154

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		01/12/22 15:51	01/12/22 19:45	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		01/12/22 15:51	01/12/22 19:45	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	86		50 - 150				01/12/22 15:51	01/12/22 19:45	1

Lab Sample ID: LCS 580-378154/2-A

Matrix: Water

Analysis Batch: 378133

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 378154

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)	4.00	3.53		mg/L		88	50 - 120		
Motor Oil (>C24-C36)	4.00	4.65		mg/L		116	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	89		50 - 150						

Lab Sample ID: LCSD 580-378154/3-A

Matrix: Water

Analysis Batch: 378133

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 378154

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.88		mg/L		97	50 - 120	10	26
Motor Oil (>C24-C36)	4.00	4.65		mg/L		116	64 - 120	0	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	91		50 - 150						

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109171-1

**Client Sample ID: Before GAC-1722**

**Lab Sample ID: 580-109171-1**

**Date Collected: 01/07/22 17:30**

**Matrix: Water**

**Date Received: 01/11/22 14:50**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			378154	01/12/22 15:51	M1E	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	378133	01/12/22 23:06	T1W	FGS SEA

**Client Sample ID: HCC EFF-1722**

**Lab Sample ID: 580-109171-2**

**Date Collected: 01/07/22 17:30**

**Matrix: Water**

**Date Received: 01/11/22 14:50**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			378154	01/12/22 15:51	M1E	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	378133	01/12/22 23:26	T1W	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109171-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22

1
2
3
4
5
6
7
8
9
10
11

# Sample Summary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109171-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-109171-1	Before GAC-1722	Water	01/07/22 17:30	01/11/22 14:50
580-109171-2	HCC EFF-1722	Water	01/07/22 17:30	01/11/22 14:50

1

2

3

4

5

6

7

8

9

10

11

5755 8th Street East

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

# TestAmerica

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**TestAmerica Laboratories, Inc.**

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:[illegible]

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-109171-1

**Login Number: 109171**

**List Number: 1**

**Creator: Blankinship, Tom X**

**List Source: Eurofins Seattle**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-109251-1  
Client Project/Site: Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC  
Revision: 1

For:  
Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:  
1/25/2022 12:04:14 PM

Pauline Matlock, Project Manager  
(253)922-2310  
[pauline.matlock@eurofinset.com](mailto:pauline.matlock@eurofinset.com)

### LINKS

Review your project  
results through  
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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	9
Certification Summary . . . . .	10
Sample Summary . . . . .	11
Chain of Custody . . . . .	12
Receipt Checklists . . . . .	13

# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109251-1

**Job ID: 580-109251-1**

**Laboratory: Eurofins Seattle**

## Narrative

**Job Narrative**  
**580-109251-1**

## Comments

No additional comments.

## Receipt

The samples were received on 1/13/2022 2:15 PM. 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 3.0° C.

## GC Semi VOA

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

## Metals

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.

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109251-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109251-1

**Client Sample ID: Before GAC-11222**

**Lab Sample ID: 580-109251-1**

Date Collected: 01/12/22 10:00

Matrix: Water

Date Received: 01/13/22 14:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.39		0.051		mg/L		01/16/22 16:26	01/17/22 05:50	1
Motor Oil (>C24-C36)	0.33		0.088		mg/L		01/16/22 16:26	01/17/22 05:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	82		50 - 150				01/16/22 16:26	01/17/22 05:50	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109251-1

**Client Sample ID: HCC EFF-11222**

**Lab Sample ID: 580-109251-2**

**Date Collected: 01/12/22 10:00**

**Matrix: Water**

**Date Received: 01/13/22 14:15**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.052		mg/L		01/16/22 16:26	01/17/22 05:30	1
Motor Oil (>C24-C36)	ND		0.089		mg/L		01/16/22 16:26	01/17/22 05:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	85		50 - 150				01/16/22 16:26	01/17/22 05:30	1

## Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		01/13/22 17:28	01/14/22 12:36	1
Lead	ND		0.00040		mg/L		01/13/22 17:28	01/14/22 12:36	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109251-1

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

Lab Sample ID: MB 580-378496/1-A

Matrix: Water

Analysis Batch: 378499

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 378496

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		01/16/22 16:26	01/17/22 04:12	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		01/16/22 16:26	01/17/22 04:12	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	73		50 - 150				01/16/22 16:26	01/17/22 04:12	1

Lab Sample ID: LCS 580-378496/2-A

Matrix: Water

Analysis Batch: 378499

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 378496

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)	2.00	1.72		mg/L		86	50 - 120		
Motor Oil (>C24-C36)	2.00	1.74		mg/L		87	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	85		50 - 150						

Lab Sample ID: LCSD 580-378496/3-A

Matrix: Water

Analysis Batch: 378499

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 378496

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	2.00	1.76		mg/L		88	50 - 120	2	26
Motor Oil (>C24-C36)	2.00	1.81		mg/L		91	64 - 120	4	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	85		50 - 150						

## Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-378264/14-A

Matrix: Water

Analysis Batch: 378392

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 378264

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		01/13/22 17:28	01/14/22 12:32	1
Lead	ND		0.00040		mg/L		01/13/22 17:28	01/14/22 12:32	1

Lab Sample ID: LCS 580-378264/15-A

Matrix: Water

Analysis Batch: 378392

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 378264

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
Arsenic	1.00	0.991		mg/L		99	85 - 115		
Lead	1.00	0.989		mg/L		99	85 - 115		

Eurofins Seattle



# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109251-1

## Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 580-378264/16-A

Matrix: Water

Analysis Batch: 378392

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 378264

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	1.00	0.980		mg/L		98	85 - 115	1	20
Lead	1.00	0.994		mg/L		99	85 - 115	0	20

Lab Sample ID: 580-109228-A-1-C MS

Matrix: Water

Analysis Batch: 378392

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 378264

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		1.00	0.990		mg/L		99	70 - 130		
Lead	0.0010		1.00	0.993		mg/L		99	70 - 130		

Lab Sample ID: 580-109228-A-1-D MSD

Matrix: Water

Analysis Batch: 378392

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 378264

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		1.00	1.02		mg/L		101	70 - 130	3	20
Lead	0.0010		1.00	1.02		mg/L		102	70 - 130	3	20

Lab Sample ID: 580-109228-A-1-B DU

Matrix: Water

Analysis Batch: 378392

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 378264

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		0.00103		mg/L				NC	20
Lead	0.0010		0.000929		mg/L				9	20

Eurofins Seattle

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109251-1

**Client Sample ID: Before GAC-11222**

**Lab Sample ID: 580-109251-1**

**Date Collected: 01/12/22 10:00**

**Matrix: Water**

**Date Received: 01/13/22 14:15**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			378496	01/16/22 16:26	JHR	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	378499	01/17/22 05:50	JCM	FGS SEA

**Client Sample ID: HCC EFF-11222**

**Lab Sample ID: 580-109251-2**

**Date Collected: 01/12/22 10:00**

**Matrix: Water**

**Date Received: 01/13/22 14:15**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			378496	01/16/22 16:26	JHR	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	378499	01/17/22 05:30	JCM	FGS SEA
Total/NA	Prep	200.8			378264	01/13/22 17:28	ABP	FGS SEA
Total/NA	Analysis	200.8		1	378392	01/14/22 12:36	FCW	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109251-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22

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# Sample Summary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109251-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-109251-1	Before GAC-11222	Water	01/12/22 10:00	01/13/22 14:15
580-109251-2	HCC EFF-11222	Water	01/12/22 10:00	01/13/22 14:15

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5755 8th Street East

## Chain of Custody Record

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

10925

**TestAmerica**  
THE LEADER IN ENVIRONMENTAL TESTING

**TestAmerica Laboratories, Inc.**

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:[illegible]

Form No. CA-C-WI-002, Rev. 4.16, Dated 9/5/2018  
1/25/2022 (Rev. 1)  
A3 = 3.0/3.0 LRB 10/10/10 45CS

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-109251-1

**Login Number: 109251**

**List Number: 1**

**Creator: Blankinship, Tom X**

**List Source: Eurofins Seattle**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-109449-1

Client Project/Site: BNSF Skykomish Rush NPDES  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:  
1/24/2022 9:50:23 PM

Pauline Matlock, Project Manager  
(253)922-2310  
[pauline.matlock@eurofinset.com](mailto:pauline.matlock@eurofinset.com)

### LINKS

Review your project  
results through

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Have a Question?



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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	9
Certification Summary . . . . .	10
Sample Summary . . . . .	11
Chain of Custody . . . . .	12
Receipt Checklists . . . . .	13



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-109449-1

**Job ID: 580-109449-1**

**Laboratory: Eurofins Seattle**

## Narrative

### Job Narrative 580-109449-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 1/19/2022 11:40 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 2.2° C.

#### GC Semi VOA

Method NWTPH-Dx: The method blank for preparation batch 580-378885 contained both Diesel and Motor Oil above the reporting limit (RL). Client sample #2 was ND for Diesel, however it had a hit for Motor Oil, and the remaining sample container could not be located. Therefore, there was insufficient sample to perform a re-extraction and/or re-analysis. This set of data has been reported.

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

#### Organic Prep

Method 3510C: The following samples formed emulsions during the extraction procedure: Before GAC-11822 (580-109449-1) and HCC EFF-11822 (580-109449-2). These emulsions were broken up with additional sodium sulfate and methylene chloride rinsing.

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

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-109449-1

### Qualifiers

#### GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-109449-1

**Client Sample ID: Before GAC-11822**

**Lab Sample ID: 580-109449-1**

Date Collected: 01/18/22 09:00

Matrix: Water

Date Received: 01/19/22 11:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.45		0.056		mg/L		01/24/22 08:04	01/24/22 14:25	1
Motor Oil (>C24-C36)	0.26		0.096		mg/L		01/24/22 08:04	01/24/22 14:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	83		50 - 150				01/24/22 08:04	01/24/22 14:25	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-109449-1

**Client Sample ID: HCC EFF-11822**

**Lab Sample ID: 580-109449-2**

**Date Collected: 01/18/22 09:00**

**Matrix: Water**

**Date Received: 01/19/22 11:40**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.056		mg/L		01/20/22 14:25	01/21/22 16:43	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.11</b>	<b>B</b>	0.096		mg/L		01/20/22 14:25	01/21/22 16:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	88		50 - 150				01/20/22 14:25	01/21/22 16:43	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-109449-1

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

Lab Sample ID: MB 580-378885/1-A

Matrix: Water

Analysis Batch: 378955

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 378885

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.0578		0.055		mg/L		01/20/22 14:25	01/21/22 15:22	1
Motor Oil (>C24-C36)	0.184		0.095		mg/L		01/20/22 14:25	01/21/22 15:22	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	80		50 - 150				01/20/22 14:25	01/21/22 15:22	1

Lab Sample ID: LCS 580-378885/2-A

Matrix: Water

Analysis Batch: 378955

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 378885

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)	2.00	1.76		mg/L		88	50 - 120		
Motor Oil (>C24-C36)	2.00	1.88		mg/L		94	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	78		50 - 150						

Lab Sample ID: LCSD 580-378885/3-A

Matrix: Water

Analysis Batch: 378955

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 378885

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	2.00	1.65		mg/L		82	50 - 120	7	26
Motor Oil (>C24-C36)	2.00	1.79		mg/L		89	64 - 120	5	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	79		50 - 150						

Lab Sample ID: MB 580-379122/1-A

Matrix: Water

Analysis Batch: 379120

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 379122

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		01/24/22 08:04	01/24/22 13:24	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		01/24/22 08:04	01/24/22 13:24	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	88		50 - 150				01/24/22 08:04	01/24/22 13:24	1

Lab Sample ID: LCS 580-379122/2-A

Matrix: Water

Analysis Batch: 379120

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 379122

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)	2.00	1.76		mg/L		88	50 - 120		
Motor Oil (>C24-C36)	2.00	1.90		mg/L		95	64 - 120		

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# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-109449-1

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

Lab Sample ID: LCS 580-379122/2-A

Matrix: Water

Analysis Batch: 379120

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 379122

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	84		50 - 150

Lab Sample ID: LCSD 580-379122/3-A

Matrix: Water

Analysis Batch: 379120

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 379122

	Spike	LCSD	LCSD						%Rec.	RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit		
#2 Diesel (C10-C24)	2.00	1.78		mg/L		89	50 - 120	1	26		
Motor Oil (>C24-C36)	2.00	1.86		mg/L		93	64 - 120	2	24		

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	78		50 - 150



# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-109449-1

**Client Sample ID: Before GAC-11822**

**Lab Sample ID: 580-109449-1**

**Date Collected: 01/18/22 09:00**

**Matrix: Water**

**Date Received: 01/19/22 11:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			379122	01/24/22 08:04	JCM	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	379120	01/24/22 14:25	ADB	FGS SEA

**Client Sample ID: HCC EFF-11822**

**Lab Sample ID: 580-109449-2**

**Date Collected: 01/18/22 09:00**

**Matrix: Water**

**Date Received: 01/19/22 11:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			378885	01/20/22 14:25	JHR	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	378955	01/21/22 16:43	JAE	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-109449-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22



# Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-109449-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-109449-1	Before GAC-11822	Water	01/18/22 09:00	01/19/22 11:40
580-109449-2	HCC EFF-11822	Water	01/18/22 09:00	01/19/22 11:40

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5755 8th Street East

phone 253.922.2310 fax 253.922.5047

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

**TestAmerica Laboratories, Inc.**

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:[illegible]

Form No. CA-C-WI-002, Rev. 4.18, dated 9/5/2018

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-109449-1

**Login Number: 109449**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Vallelunga, Diana L**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-109586-1

Client Project/Site: Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:  
1/28/2022 2:12:08 PM

Pauline Matlock, Project Manager  
(253)922-2310  
[pauline.matlock@eurofinset.com](mailto:pauline.matlock@eurofinset.com)

### LINKS

Review your project  
results through

**TotalAccess**

Have a Question?



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[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	8
Certification Summary . . . . .	9
Sample Summary . . . . .	10
Chain of Custody . . . . .	11
Receipt Checklists . . . . .	12



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109586-1

**Job ID: 580-109586-1**

**Laboratory: Eurofins Seattle**

## Narrative

**Job Narrative**  
**580-109586-1**

## Comments

No additional comments.

## Receipt

The samples were received on 1/24/2022 3:05 PM. 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 6.9° C.

## 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.



## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109586-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109586-1

Client Sample ID: Before GAC-12422

Lab Sample ID: 580-109586-1

Date Collected: 01/24/22 09:30

Matrix: Water

Date Received: 01/24/22 15:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.49		0.051		mg/L		01/26/22 13:20	01/27/22 01:17	1
Motor Oil (>C24-C36)	0.28		0.088		mg/L		01/26/22 13:20	01/27/22 01:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	83		50 - 150				01/26/22 13:20	01/27/22 01:17	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109586-1

**Client Sample ID: HCC EFF-12422**

**Lab Sample ID: 580-109586-2**

**Date Collected: 01/24/22 09:30**

**Matrix: Water**

**Date Received: 01/24/22 15:05**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.052		mg/L		01/26/22 13:20	01/27/22 01:37	1
Motor Oil (>C24-C36)	ND		0.089		mg/L		01/26/22 13:20	01/27/22 01:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	82		50 - 150				01/26/22 13:20	01/27/22 01:37	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109586-1

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

Lab Sample ID: MB 580-379403/1-A

Matrix: Water

Analysis Batch: 379467

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 379403

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		01/26/22 13:20	01/27/22 00:19	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		01/26/22 13:20	01/27/22 00:19	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	86		50 - 150				01/26/22 13:20	01/27/22 00:19	1

Lab Sample ID: LCS 580-379403/2-A

Matrix: Water

Analysis Batch: 379467

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 379403

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits	%Rec.
#2 Diesel (C10-C24)	2.00	1.34		mg/L		67	50 - 120	
Motor Oil (>C24-C36)	2.00	1.50		mg/L		75	64 - 120	
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
o-Terphenyl	70		50 - 150					

Lab Sample ID: LCSD 580-379403/3-A

Matrix: Water

Analysis Batch: 379467

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 379403

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	2.00	1.59		mg/L		80	50 - 120	17	26
Motor Oil (>C24-C36)	2.00	1.78		mg/L		89	64 - 120	17	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	83		50 - 150						

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109586-1

**Client Sample ID: Before GAC-12422**

**Lab Sample ID: 580-109586-1**

**Date Collected: 01/24/22 09:30**

**Matrix: Water**

**Date Received: 01/24/22 15:05**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			379403	01/26/22 13:20	M1E	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	379467	01/27/22 01:17	JAE	FGS SEA

**Client Sample ID: HCC EFF-12422**

**Lab Sample ID: 580-109586-2**

**Date Collected: 01/24/22 09:30**

**Matrix: Water**

**Date Received: 01/24/22 15:05**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			379403	01/26/22 13:20	M1E	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	379467	01/27/22 01:37	JAE	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109586-1

## Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22

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# Sample Summary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109586-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-109586-1	Before GAC-12422	Water	01/24/22 09:30	01/24/22 15:05
580-109586-2	HCC EFF-12422	Water	01/24/22 09:30	01/24/22 15:05

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5755 8th Street East

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

## TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

**TestAmerica Laboratories, Inc.**

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:

109580

[illegible]



# 

Client: Farallon Consulting LLC

Job Number: 580-109586-1

**Login Number: 109586**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Blankinship, Tom X**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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	Received same day of collection; chilling process has begun.
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-109892-1  
Client Project/Site: Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC

For:  
Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:  
2/7/2022 8:56:38 PM

Pauline Matlock, Project Manager  
(253)922-2310  
[pauline.matlock@eurofinset.com](mailto:pauline.matlock@eurofinset.com)

### LINKS

Review your project  
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Have a Question?



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[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	8
Certification Summary . . . . .	9
Sample Summary . . . . .	10
Chain of Custody . . . . .	11
Receipt Checklists . . . . .	12



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109892-1

**Job ID: 580-109892-1**

**Laboratory: Eurofins Seattle**

## Narrative

**Job Narrative**  
**580-109892-1**

## Comments

No additional comments.

## Receipt

The samples were received on 2/2/2022 4:35 PM. 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 5.9° C.

## 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.

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109892-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109892-1

**Client Sample ID: Before GAC-2222**

**Lab Sample ID: 580-109892-1**

**Date Collected: 02/02/22 08:40**

**Matrix: Water**

**Date Received: 02/02/22 16:35**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.42		0.052		mg/L		02/07/22 12:56	02/07/22 16:43	1
Motor Oil (>C24-C36)	0.38		0.089		mg/L		02/07/22 12:56	02/07/22 16:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	79		50 - 150				02/07/22 12:56	02/07/22 16:43	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109892-1

**Client Sample ID: HCC EFF-2222**

**Lab Sample ID: 580-109892-2**

**Date Collected: 02/02/22 08:40**

**Matrix: Water**

**Date Received: 02/02/22 16:35**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.068		0.052		mg/L		02/07/22 12:56	02/07/22 17:03	1
Motor Oil (>C24-C36)	0.10		0.090		mg/L		02/07/22 12:56	02/07/22 17:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	81		50 - 150				02/07/22 12:56	02/07/22 17:03	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109892-1

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

Lab Sample ID: MB 580-380503/1-A

Matrix: Water

Analysis Batch: 380496

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 380503

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		02/07/22 12:56	02/07/22 15:44	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		02/07/22 12:56	02/07/22 15:44	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	76		50 - 150				02/07/22 12:56	02/07/22 15:44	1

Lab Sample ID: LCS 580-380503/2-A

Matrix: Water

Analysis Batch: 380496

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 380503

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)	4.00	3.36		mg/L		84	50 - 120		
Motor Oil (>C24-C36)	4.00	3.59		mg/L		90	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	91		50 - 150						

Lab Sample ID: LCSD 580-380503/3-A

Matrix: Water

Analysis Batch: 380496

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 380503

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.79		mg/L		95	50 - 120	12	26
Motor Oil (>C24-C36)	4.00	3.99		mg/L		100	64 - 120	11	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	99		50 - 150						



# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109892-1

**Client Sample ID: Before GAC-2222**

**Lab Sample ID: 580-109892-1**

**Date Collected: 02/02/22 08:40**

**Matrix: Water**

**Date Received: 02/02/22 16:35**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			380503	02/07/22 12:56	JAE	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	380496	02/07/22 16:43	JAE	FGS SEA

**Client Sample ID: HCC EFF-2222**

**Lab Sample ID: 580-109892-2**

**Date Collected: 02/02/22 08:40**

**Matrix: Water**

**Date Received: 02/02/22 16:35**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			380503	02/07/22 12:56	JAE	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	380496	02/07/22 17:03	JAE	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109892-1

## Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22

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# Sample Summary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-109892-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-109892-1	Before GAC-2222	Water	02/02/22 08:40	02/02/22 16:35
580-109892-2	HCC EFF-2222	Water	02/02/22 08:40	02/02/22 16:35

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Tacoma, WA 98424-1317

phone 253.922.2310 fax 253.922.5047

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:

**TestAmerica Laboratories, Inc.**

[illegible]

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-109892-1

**Login Number: 109892**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Blankinship, Tom X**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

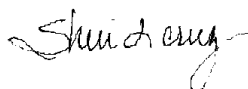
## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-110245-1  
Client Project/Site: Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC

For:  
Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:  
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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	8
Certification Summary . . . . .	9
Sample Summary . . . . .	10
Chain of Custody . . . . .	11
Receipt Checklists . . . . .	12



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-110245-1

**Job ID: 580-110245-1**

**Laboratory: Eurofins Seattle**

## Narrative

### CASE NARRATIVE

**Client: Farallon Consulting LLC**  
**Project: Skykomish HCC System**  
**Report Number: 580-110245-1**

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) resulting from a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are an unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes within the calibration range of the instrument or that reduces the interferences thereby enabling the quantification of target analytes.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### RECEIPT

The samples were received on 02/11/2022; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.5 C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

### DIESEL AND MOTOR OIL RANGE ORGANICS

**Samples Before GAC-21022 (580-110245-1) and HCC EFF-21022 (580-110245-2) were analyzed for diesel and motor oil range organics in accordance with Method NWTPH-Dx.** The samples were prepared on 02/15/2022 and analyzed on 02/16/2022.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 580-381285. Laboratory control sample/laboratory control sample duplicate were created and substituted for MS/MSD/DUP.

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



## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-110245-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-110245-1

**Client Sample ID: Before GAC-21022**

**Lab Sample ID: 580-110245-1**

**Date Collected: 02/10/22 07:30**

**Matrix: Water**

**Date Received: 02/11/22 13:15**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.37		0.051		mg/L		02/15/22 14:47	02/16/22 08:14	1
Motor Oil (>C24-C36)	0.32		0.089		mg/L		02/15/22 14:47	02/16/22 08:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	71		50 - 150				02/15/22 14:47	02/16/22 08:14	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-110245-1

**Client Sample ID: HCC EFF-21022**

**Lab Sample ID: 580-110245-2**

**Date Collected: 02/10/22 07:30**

**Matrix: Water**

**Date Received: 02/11/22 13:15**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.065</b>		0.052		mg/L		02/15/22 14:47	02/16/22 08:34	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		02/15/22 14:47	02/16/22 08:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	73		50 - 150				02/15/22 14:47	02/16/22 08:34	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-110245-1

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

Lab Sample ID: MB 580-381285/1-A

Matrix: Water

Analysis Batch: 381327

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 381285

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		02/15/22 14:47	02/16/22 07:16	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		02/15/22 14:47	02/16/22 07:16	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	70		50 - 150				02/15/22 14:47	02/16/22 07:16	1

Lab Sample ID: LCS 580-381285/2-A

Matrix: Water

Analysis Batch: 381327

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 381285

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)	4.00	3.02		mg/L		76	50 - 120		
Motor Oil (>C24-C36)	4.00	3.25		mg/L		81	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	88		50 - 150						

Lab Sample ID: LCSD 580-381285/3-A

Matrix: Water

Analysis Batch: 381327

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 381285

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.12		mg/L		78	50 - 120	3	26
Motor Oil (>C24-C36)	4.00	3.32		mg/L		83	64 - 120	2	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	88		50 - 150						

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-110245-1

**Client Sample ID: Before GAC-21022**

**Lab Sample ID: 580-110245-1**

**Date Collected: 02/10/22 07:30**

**Matrix: Water**

**Date Received: 02/11/22 13:15**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			381285	02/15/22 14:47	JHR	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	381327	02/16/22 08:14	ADB	FGS SEA

**Client Sample ID: HCC EFF-21022**

**Lab Sample ID: 580-110245-2**

**Date Collected: 02/10/22 07:30**

**Matrix: Water**

**Date Received: 02/11/22 13:15**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			381285	02/15/22 14:47	JHR	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	381327	02/16/22 08:34	ADB	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-110245-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22

1
2
3
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10
11

## Sample Summary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-110245-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-110245-1	Before GAC-21022	Water	02/10/22 07:30	02/11/22 13:15
580-110245-2	HCC EFF-21022	Water	02/10/22 07:30	02/11/22 13:15

1

2

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11

5755 8th Street East

## Chain of Custody Record

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

**TestAmerica Laboratories, Inc.**

[illegible]



## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-110245-1

**Login Number: 110245**

**List Number: 1**

**Creator: Blankinship, Tom X**

**List Source: Eurofins Seattle**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-110413-1

Client Project/Site: Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:  
2/22/2022 5:21:49 PM

Pauline Matlock, Project Manager  
(253)922-2310  
[pauline.matlock@eurofinset.com](mailto:pauline.matlock@eurofinset.com)

### LINKS

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*Results relate only to the items tested and the sample(s) as received by the laboratory.*



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	9
Certification Summary . . . . .	10
Sample Summary . . . . .	11
Chain of Custody . . . . .	12
Receipt Checklists . . . . .	13

# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-110413-1

**Job ID: 580-110413-1**

**Laboratory: Eurofins Seattle**

## Narrative

**Job Narrative**  
**580-110413-1**

## Comments

No additional comments.

## Receipt

The samples were received on 2/16/2022 12:08 PM. 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 1.6° C.

## GC Semi VOA

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

## Metals

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.

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-110413-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-110413-1

**Client Sample ID: Before GAC-21522**

**Lab Sample ID: 580-110413-1**

Date Collected: 02/15/22 10:00

Matrix: Water

Date Received: 02/16/22 12:08

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.46		0.051		mg/L		02/18/22 15:28	02/18/22 20:35	1
Motor Oil (>C24-C36)	0.27		0.089		mg/L		02/18/22 15:28	02/18/22 20:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	81		50 - 150				02/18/22 15:28	02/18/22 20:35	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-110413-1

**Client Sample ID: HCC EFF-21522**

**Lab Sample ID: 580-110413-2**

Date Collected: 02/15/22 10:00

Matrix: Water

Date Received: 02/16/22 12:08

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.082		0.052		mg/L		02/18/22 15:28	02/18/22 20:55	1
Motor Oil (>C24-C36)	ND		0.090		mg/L		02/18/22 15:28	02/18/22 20:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	87		50 - 150				02/18/22 15:28	02/18/22 20:55	1

## Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		02/17/22 11:09	02/17/22 16:14	1
Lead	ND		0.00040		mg/L		02/17/22 11:09	02/17/22 16:14	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-110413-1

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

Lab Sample ID: MB 580-381643/1-A

Matrix: Water

Analysis Batch: 381680

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 381643

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		02/18/22 15:28	02/18/22 19:34	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		02/18/22 15:28	02/18/22 19:34	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	91		50 - 150				02/18/22 15:28	02/18/22 19:34	1

Lab Sample ID: LCS 580-381643/2-A

Matrix: Water

Analysis Batch: 381680

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 381643

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)	4.00	3.50		mg/L		88	50 - 120		
Motor Oil (>C24-C36)	4.00	4.06		mg/L		101	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	84		50 - 150						

Lab Sample ID: LCSD 580-381643/3-A

Matrix: Water

Analysis Batch: 381680

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 381643

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	4.00	3.63		mg/L		91	50 - 120	4	26
Motor Oil (>C24-C36)	4.00	4.23		mg/L		106	64 - 120	4	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	89		50 - 150						

## Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-381494/14-A

Matrix: Water

Analysis Batch: 381671

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 381494

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		02/17/22 11:09	02/17/22 16:06	1
Lead	ND		0.00040		mg/L		02/17/22 11:09	02/17/22 16:06	1

Lab Sample ID: LCS 580-381494/15-A

Matrix: Water

Analysis Batch: 381671

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 381494

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
Arsenic	1.00	0.961		mg/L		96	85 - 115		
Lead	1.00	1.06		mg/L		106	85 - 115		

Eurofins Seattle



# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-110413-1

## Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 580-381494/16-A

Matrix: Water

Analysis Batch: 381671

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 381494

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	1.00	0.961		mg/L		96	85 - 115	0	20
Lead	1.00	1.06		mg/L		106	85 - 115	1	20

Lab Sample ID: 580-110413-2 MS

Matrix: Water

Analysis Batch: 381671

Client Sample ID: HCC EFF-21522

Prep Type: Total/NA

Prep Batch: 381494

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		1.00	1.02		mg/L		102	70 - 130		
Lead	ND		1.00	1.06		mg/L		106	70 - 130		

Lab Sample ID: 580-110413-2 MSD

Matrix: Water

Analysis Batch: 381671

Client Sample ID: HCC EFF-21522

Prep Type: Total/NA

Prep Batch: 381494

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		1.00	1.06		mg/L		106	70 - 130	4	20
Lead	ND		1.00	1.11		mg/L		111	70 - 130	4	20

Lab Sample ID: 580-110413-2 DU

Matrix: Water

Analysis Batch: 381671

Client Sample ID: HCC EFF-21522

Prep Type: Total/NA

Prep Batch: 381494

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		ND		mg/L				NC	20
Lead	ND		ND		mg/L				NC	20

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-110413-1

**Client Sample ID: Before GAC-21522**

**Lab Sample ID: 580-110413-1**

**Date Collected: 02/15/22 10:00**

**Matrix: Water**

**Date Received: 02/16/22 12:08**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			381643	02/18/22 15:28	JAЕ	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	381680	02/18/22 20:35	T1W	FGS SEA

**Client Sample ID: HCC EFF-21522**

**Lab Sample ID: 580-110413-2**

**Date Collected: 02/15/22 10:00**

**Matrix: Water**

**Date Received: 02/16/22 12:08**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			381643	02/18/22 15:28	JAЕ	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	381680	02/18/22 20:55	T1W	FGS SEA
Total/NA	Prep	200.8			381494	02/17/22 11:09	TMH	FGS SEA
Total/NA	Analysis	200.8		1	381671	02/17/22 16:14	TMH	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-110413-1

## Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22



# Sample Summary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-110413-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-110413-1	Before GAC-21522	Water	02/15/22 10:00	02/16/22 12:08
580-110413-2	HCC EFF-21522	Water	02/15/22 10:00	02/16/22 12:08

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Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:

**TestAmerica Laboratories, Inc.**

[illegible]

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-110413-1

**Login Number: 110413**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Vallelunga, Diana L**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-110848-1

Client Project/Site: BNSF Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:  
3/7/2022 1:41:22 PM

Pauline Matlock, Project Manager  
(253)922-2310  
[pauline.matlock@eurofinset.com](mailto:pauline.matlock@eurofinset.com)

### LINKS

Review your project  
results through

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[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	9
Certification Summary . . . . .	10
Sample Summary . . . . .	11
Chain of Custody . . . . .	12
Receipt Checklists . . . . .	13





# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-110848-1

**Job ID: 580-110848-1**

**Laboratory: Eurofins Seattle**

## Narrative

**Job Narrative**  
**580-110848-1**

## Comments

No additional comments.

## Receipt

The samples were received on 3/1/2022 1:55 PM. 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 1.8° C.

## GC Semi VOA

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

## Metals

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.

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-110848-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-110848-1

**Client Sample ID: Before GAC-22522**

**Lab Sample ID: 580-110848-1**

**Date Collected: 02/25/22 12:15**

**Matrix: Water**

**Date Received: 03/01/22 13:55**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.40		0.052		mg/L		03/04/22 10:06	03/04/22 16:30	1
Motor Oil (>C24-C36)	0.32		0.090		mg/L		03/04/22 10:06	03/04/22 16:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	86		50 - 150				03/04/22 10:06	03/04/22 16:30	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-110848-1

**Client Sample ID: HCC EFF-225222**

**Lab Sample ID: 580-110848-2**

Date Collected: 02/25/22 12:15

Matrix: Water

Date Received: 03/01/22 13:55

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.051		mg/L		03/04/22 10:06	03/04/22 16:50	1
Motor Oil (>C24-C36)	ND		0.089		mg/L		03/04/22 10:06	03/04/22 16:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	94		50 - 150				03/04/22 10:06	03/04/22 16:50	1

## Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.074		0.0010		mg/L		03/01/22 17:30	03/02/22 16:09	1
Lead	ND		0.00040		mg/L		03/01/22 17:30	03/02/22 16:09	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-110848-1

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

Lab Sample ID: MB 580-382862/1-A

Matrix: Water

Analysis Batch: 382935

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 382862

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		03/04/22 10:06	03/04/22 15:30	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		03/04/22 10:06	03/04/22 15:30	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	101		50 - 150				03/04/22 10:06	03/04/22 15:30	1

Lab Sample ID: LCS 580-382862/2-A

Matrix: Water

Analysis Batch: 382935

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 382862

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)	4.00	3.37		mg/L		84	50 - 120		
Motor Oil (>C24-C36)	4.00	4.03		mg/L		101	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	86		50 - 150						

Lab Sample ID: LCSD 580-382862/3-A

Matrix: Water

Analysis Batch: 382935

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 382862

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	4.00	3.27		mg/L		82	50 - 120	3	26
Motor Oil (>C24-C36)	4.00	3.94		mg/L		99	64 - 120	2	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	83		50 - 150						

## Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-382549/24-A

Matrix: Water

Analysis Batch: 382710

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 382549

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		03/01/22 17:30	03/02/22 16:05	1
Lead	ND		0.00040		mg/L		03/01/22 17:30	03/02/22 16:05	1

Lab Sample ID: LCS 580-382549/25-A

Matrix: Water

Analysis Batch: 382710

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 382549

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
Arsenic	1.00	0.963		mg/L		96	85 - 115		
Lead	1.00	1.02		mg/L		102	85 - 115		

Eurofins Seattle

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-110848-1

## Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 580-382549/26-A

Matrix: Water

Analysis Batch: 382710

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 382549

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	1.00	0.983		mg/L		98	85 - 115	2	20
Lead	1.00	1.01		mg/L		101	85 - 115	1	20

Lab Sample ID: 580-110529-A-1-C MS

Matrix: Water

Analysis Batch: 382710

Client Sample ID: Matrix Spike

Prep Type: Dissolved

Prep Batch: 382549

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		1.00	0.974		mg/L		97	70 - 130		
Lead	ND		1.00	0.984		mg/L		98	70 - 130		

Lab Sample ID: 580-110529-A-1-D MSD

Matrix: Water

Analysis Batch: 382710

Client Sample ID: Matrix Spike Duplicate

Prep Type: Dissolved

Prep Batch: 382549

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		1.00	0.984		mg/L		98	70 - 130	1	20
Lead	ND		1.00	1.02		mg/L		102	70 - 130	4	20

Lab Sample ID: 580-110529-A-1-B DU

Matrix: Water

Analysis Batch: 382710

Client Sample ID: Duplicate

Prep Type: Dissolved

Prep Batch: 382549

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		ND		mg/L				NC	20
Lead	ND		ND		mg/L				NC	20

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-110848-1

**Client Sample ID: Before GAC-22522**

**Lab Sample ID: 580-110848-1**

**Date Collected: 02/25/22 12:15**

**Matrix: Water**

**Date Received: 03/01/22 13:55**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			382862	03/04/22 10:06	JJY	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	382935	03/04/22 16:30	JAE	FGS SEA

**Client Sample ID: HCC EFF-225222**

**Lab Sample ID: 580-110848-2**

**Date Collected: 02/25/22 12:15**

**Matrix: Water**

**Date Received: 03/01/22 13:55**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			382862	03/04/22 10:06	JJY	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	382935	03/04/22 16:50	JAE	FGS SEA
Total/NA	Prep	200.8			382549	03/01/22 17:30	ABP	FGS SEA
Total/NA	Analysis	200.8		1	382710	03/02/22 16:09	FCW	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-110848-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22

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# Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-110848-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-110848-1	Before GAC-22522	Water	02/25/22 12:15	03/01/22 13:55
580-110848-2	HCC EFF-225222	Water	02/25/22 12:15	03/01/22 13:55

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5755 8th Street East

## Chain of Custody Record

**TestAmerica**  
THE LEADER IN ENVIRONMENTAL TESTING

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:

**TestAmerica Laboratories, Inc.**

[illegible]

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-110848-1

**Login Number: 110848**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Vallelunga, Diana L**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-110856-1

Client Project/Site: BNSF Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:  
3/7/2022 1:41:42 PM

Pauline Matlock, Project Manager  
(253)922-2310  
[pauline.matlock@eurofinset.com](mailto:pauline.matlock@eurofinset.com)

### LINKS

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[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	8
Certification Summary . . . . .	9
Sample Summary . . . . .	10
Chain of Custody . . . . .	11
Receipt Checklists . . . . .	12



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-110856-1

**Job ID: 580-110856-1**

**Laboratory: Eurofins Seattle**

## Narrative

**Job Narrative**  
**580-110856-1**

## Comments

No additional comments.

## Receipt

The samples were received on 3/1/2022 1:55 PM. 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 5.2° C.

## 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.

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-110856-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-110856-1

**Client Sample ID: Before GAC-3122**

**Lab Sample ID: 580-110856-1**

**Date Collected: 03/01/22 08:00**

**Matrix: Water**

**Date Received: 03/01/22 13:55**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.33		0.051		mg/L		03/04/22 10:06	03/04/22 17:30	1
Motor Oil (>C24-C36)	0.21		0.088		mg/L		03/04/22 10:06	03/04/22 17:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	85		50 - 150				03/04/22 10:06	03/04/22 17:30	1



# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-110856-1

**Client Sample ID: HCC EFF-3122**

**Lab Sample ID: 580-110856-2**

**Date Collected: 03/01/22 08:00**

**Matrix: Water**

**Date Received: 03/01/22 13:55**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.052		mg/L		03/04/22 10:06	03/04/22 17:50	1
Motor Oil (>C24-C36)	ND		0.089		mg/L		03/04/22 10:06	03/04/22 17:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	88		50 - 150				03/04/22 10:06	03/04/22 17:50	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-110856-1

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

Lab Sample ID: MB 580-382862/1-A

Matrix: Water

Analysis Batch: 382935

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 382862

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		03/04/22 10:06	03/04/22 15:30	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		03/04/22 10:06	03/04/22 15:30	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	101		50 - 150				03/04/22 10:06	03/04/22 15:30	1

Lab Sample ID: LCS 580-382862/2-A

Matrix: Water

Analysis Batch: 382935

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 382862

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)	4.00	3.37		mg/L		84	50 - 120		
Motor Oil (>C24-C36)	4.00	4.03		mg/L		101	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	86		50 - 150						

Lab Sample ID: LCSD 580-382862/3-A

Matrix: Water

Analysis Batch: 382935

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 382862

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.27		mg/L		82	50 - 120	3	26
Motor Oil (>C24-C36)	4.00	3.94		mg/L		99	64 - 120	2	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	83		50 - 150						

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-110856-1

**Client Sample ID: Before GAC-3122**

**Lab Sample ID: 580-110856-1**

**Date Collected: 03/01/22 08:00**

**Matrix: Water**

**Date Received: 03/01/22 13:55**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			382862	03/04/22 10:06	JJY	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	382935	03/04/22 17:30	JAE	FGS SEA

**Client Sample ID: HCC EFF-3122**

**Lab Sample ID: 580-110856-2**

**Date Collected: 03/01/22 08:00**

**Matrix: Water**

**Date Received: 03/01/22 13:55**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			382862	03/04/22 10:06	JJY	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	382935	03/04/22 17:50	JAE	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-110856-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22

- 1
- 2
- 3
- 4
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- 10
- 11

# Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-110856-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-110856-1	Before GAC-3122	Water	03/01/22 08:00	03/01/22 13:55
580-110856-2	HCC EFF-3122	Water	03/01/22 08:00	03/01/22 13:55

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5755 8th Street East

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

## TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

**TestAmerica Laboratories, Inc.**

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:[illegible]

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-110856-1

**Login Number: 110856**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Vallelunga, Diana L**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-111296-1

Client Project/Site: BNSF Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:  
3/17/2022 9:31:54 PM

Pauline Matlock, Project Manager  
(253)922-2310  
[pauline.matlock@eurofinset.com](mailto:pauline.matlock@eurofinset.com)

### LINKS

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results through  
**TotalAccess**

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	8
Certification Summary . . . . .	9
Sample Summary . . . . .	10
Chain of Custody . . . . .	11
Receipt Checklists . . . . .	12



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-111296-1

**Job ID: 580-111296-1**

**Laboratory: Eurofins Seattle**

## Narrative

**Job Narrative**  
**580-111296-1**

## Comments

No additional comments.

## Receipt

The samples were received on 3/11/2022 1:10 PM. 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 3.3° C.

## 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.

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-111296-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-111296-1

**Client Sample ID: Before GAC-3922**

**Lab Sample ID: 580-111296-1**

**Date Collected: 03/09/22 12:00**

**Matrix: Water**

**Date Received: 03/11/22 13:10**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.35		0.051		mg/L		03/17/22 13:01	03/17/22 18:31	1
Motor Oil (>C24-C36)	0.30		0.088		mg/L		03/17/22 13:01	03/17/22 18:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	60		50 - 150				03/17/22 13:01	03/17/22 18:31	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-111296-1

**Client Sample ID: HCC EFF-3922**

**Lab Sample ID: 580-111296-2**

**Date Collected: 03/09/22 12:00**

**Matrix: Water**

**Date Received: 03/11/22 13:10**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.052		mg/L		03/17/22 13:01	03/17/22 18:50	1
Motor Oil (>C24-C36)	ND		0.090		mg/L		03/17/22 13:01	03/17/22 18:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	61		50 - 150				03/17/22 13:01	03/17/22 18:50	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-111296-1

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

Lab Sample ID: MB 580-384184/1-A

Matrix: Water

Analysis Batch: 384126

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 384184

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		03/17/22 13:01	03/17/22 17:12	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		03/17/22 13:01	03/17/22 17:12	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	57		50 - 150				03/17/22 13:01	03/17/22 17:12	1

Lab Sample ID: LCS 580-384184/2-A

Matrix: Water

Analysis Batch: 384126

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 384184

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits	%Rec.
#2 Diesel (C10-C24)	4.00	2.91		mg/L		73	50 - 120	
Motor Oil (>C24-C36)	4.00	3.21		mg/L		80	64 - 120	
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
o-Terphenyl	72		50 - 150					

Lab Sample ID: LCSD 580-384184/3-A

Matrix: Water

Analysis Batch: 384126

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 384184

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	2.81		mg/L		70	50 - 120	4	26
Motor Oil (>C24-C36)	4.00	3.40		mg/L		85	64 - 120	6	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	73		50 - 150						

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-111296-1

**Client Sample ID: Before GAC-3922**

**Lab Sample ID: 580-111296-1**

**Date Collected: 03/09/22 12:00**

**Matrix: Water**

**Date Received: 03/11/22 13:10**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			384184	03/17/22 13:01	ASL	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	384126	03/17/22 18:31	ADB	FGS SEA

**Client Sample ID: HCC EFF-3922**

**Lab Sample ID: 580-111296-2**

**Date Collected: 03/09/22 12:00**

**Matrix: Water**

**Date Received: 03/11/22 13:10**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			384184	03/17/22 13:01	ASL	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	384126	03/17/22 18:50	ADB	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-111296-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22

- 1
- 2
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- 4
- 5
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- 11



# Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-111296-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-111296-1	Before GAC-3922	Water	03/09/22 12:00	03/11/22 13:10
580-111296-2	HCC EFF-3922	Water	03/09/22 12:00	03/11/22 13:10

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5755 8th Street East

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

## Chain of Custody



580-111296 Chain of Custody

TestAmerica

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**TestAmerica Laboratories, Inc.**

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other[illegible]

Form No. CA-C-WI-002, Rev. 4.18, dated 9/5/2018

Page 11 of 12

IR9 33/37  
43 West Bank

@Lab 3/17/2022

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-111296-1

**Login Number: 111296**

**List Number: 1**

**Creator: Presley, Kim A**

**List Source: Eurofins Seattle**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-111577-1

Client Project/Site: BNSF Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC  
Revision: 1

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:  
4/15/2022 11:50:31 AM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

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results through

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	9
Certification Summary . . . . .	10
Sample Summary . . . . .	11
Chain of Custody . . . . .	12
Receipt Checklists . . . . .	13



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-111577-1

**Job ID: 580-111577-1**

**Laboratory: Eurofins Seattle**

## Narrative

### Job Narrative 580-111577-1

#### Comments

No additional comments.

#### Revision

The report being provided is a revision of the original report sent on 3/24/2022. The report (revision 1) is being revised due to: Sample was not taken to final volume of 1mL for Dx per method note, limits were too high.

#### Receipt

The samples were received on 3/18/2022 4:10 PM. 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 4.8° C.

#### GC Semi VOA

Method NWTPH-Dx: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 580-384807 and analytical batch 580-384987 recovered outside control limits for the following analytes: #2 Diesel (C10-C24) and Motor Oil (>C24-C36). However, both the LCS and LCSD are within limits for percent recovery so the data is being reported.

Method NWTPH-Dx: The following samples were re-prepared outside of preparation holding time due to the samples being prepped at the incorrect final volume while the samples were in hold. Both sets of data are being reported: Before GAC- 31722 (580-111577-1) and HCC EFF- 31722 (580-111577-2).

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

#### Organic Prep

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

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-111577-1

### Qualifiers

#### GC Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
H	Sample was prepped or analyzed beyond the specified holding time

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-111577-1

Client Sample ID: Before GAC- 31722

Lab Sample ID: 580-111577-1

Date Collected: 03/17/22 07:15

Matrix: Water

Date Received: 03/18/22 16:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.62	*1	0.10		mg/L		03/23/22 10:23	03/24/22 12:44	1
#2 Diesel (C10-C24)	0.50	H	0.052		mg/L		04/14/22 10:51	04/14/22 17:46	1
Motor Oil (>C24-C36)	0.37	*1	0.18		mg/L		03/23/22 10:23	03/24/22 12:44	1
Motor Oil (>C24-C36)	0.29	H	0.089		mg/L		04/14/22 10:51	04/14/22 17:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	67		50 - 150				03/23/22 10:23	03/24/22 12:44	1
o-Terphenyl	74		50 - 150				04/14/22 10:51	04/14/22 17:46	1



# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-111577-1

Client Sample ID: HCC EFF- 31722

Lab Sample ID: 580-111577-2

Date Collected: 03/17/22 07:15

Matrix: Water

Date Received: 03/18/22 16:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.14	*1	0.10		mg/L		03/23/22 10:23	03/24/22 13:04	1
#2 Diesel (C10-C24)	ND	H	0.052		mg/L		04/14/22 10:51	04/14/22 18:06	1
Motor Oil (>C24-C36)	ND	*1	0.18		mg/L		03/23/22 10:23	03/24/22 13:04	1
Motor Oil (>C24-C36)	ND	H	0.090		mg/L		04/14/22 10:51	04/14/22 18:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	80		50 - 150				03/23/22 10:23	03/24/22 13:04	1
o-Terphenyl	73		50 - 150				04/14/22 10:51	04/14/22 18:06	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-111577-1

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

Lab Sample ID: MB 580-384807/1-A

Matrix: Water

Analysis Batch: 384987

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 384807

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.11		mg/L		03/23/22 10:23	03/24/22 15:26	1
Motor Oil (>C24-C36)	ND		0.19		mg/L		03/23/22 10:23	03/24/22 15:26	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	111		50 - 150				03/23/22 10:23	03/24/22 15:26	1

Lab Sample ID: LCS 580-384807/2-A

Matrix: Water

Analysis Batch: 384987

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 384807

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
#2 Diesel (C10-C24)	4.00	4.58		mg/L		115	50 - 120	
Motor Oil (>C24-C36)	4.00	4.70		mg/L		117	64 - 120	
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
o-Terphenyl	85		50 - 150					

Lab Sample ID: LCSD 580-384807/3-A

Matrix: Water

Analysis Batch: 384987

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 384807

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.22	*1	mg/L		80	50 - 120	35	26
Motor Oil (>C24-C36)	4.00	3.37	*1	mg/L		84	64 - 120	33	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	69		50 - 150						

Lab Sample ID: MB 580-387448/1-A

Matrix: Water

Analysis Batch: 387478

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 387448

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		04/14/22 10:51	04/14/22 15:45	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		04/14/22 10:51	04/14/22 15:45	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	77		50 - 150				04/14/22 10:51	04/14/22 15:45	1

Lab Sample ID: LCS 580-387448/2-A

Matrix: Water

Analysis Batch: 387478

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 387448

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
#2 Diesel (C10-C24)	4.00	2.79		mg/L		70	50 - 120	
Motor Oil (>C24-C36)	4.00	3.24		mg/L		81	64 - 120	

Eurofins Seattle

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-111577-1

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

Lab Sample ID: LCS 580-387448/2-A

Matrix: Water

Analysis Batch: 387478

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 387448

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	74		50 - 150

Lab Sample ID: LCSD 580-387448/3-A

Matrix: Water

Analysis Batch: 387478

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 387448

	Spike	LCSD	LCSD						%Rec	RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit		
#2 Diesel (C10-C24)	4.00	2.93		mg/L		73	50 - 120	5	26		
Motor Oil (>C24-C36)	4.00	3.29		mg/L		82	64 - 120	2	24		

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	70		50 - 150

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-111577-1

**Client Sample ID: Before GAC- 31722**

**Lab Sample ID: 580-111577-1**

**Date Collected: 03/17/22 07:15**

**Matrix: Water**

**Date Received: 03/18/22 16:10**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			384807	03/23/22 10:23	JJY	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	384987	03/24/22 12:44	JAЕ	FGS SEA
Total/NA	Prep	3510C			387448	04/14/22 10:51	JJY	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	387478	04/14/22 17:46	JAЕ	FGS SEA

**Client Sample ID: HCC EFF- 31722**

**Lab Sample ID: 580-111577-2**

**Date Collected: 03/17/22 07:15**

**Matrix: Water**

**Date Received: 03/18/22 16:10**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			384807	03/23/22 10:23	JJY	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	384987	03/24/22 13:04	JAЕ	FGS SEA
Total/NA	Prep	3510C			387448	04/14/22 10:51	JJY	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	387478	04/14/22 18:06	JAЕ	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-111577-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22

1
2
3
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5
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10
11

# Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-111577-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-111577-1	Before GAC- 31722	Water	03/17/22 07:15	03/18/22 16:10
580-111577-2	HCC EFF- 31722	Water	03/17/22 07:15	03/18/22 16:10

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11



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**TestAmerica Laboratories, Inc.**

550-111577 Chain of Custody		Regulatory Program: <input type="checkbox"/> DW <input checked="" type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other:		Date: 3/17/2022		COC No: 1 of 2 COCs													
Farallong Consulting 975 5th Avenue Northwest Issaquah, Washington (425) 295-0800 Phone (425) 295-0850 FAX Project Name: Skykomish HCC System Site: WO # TT0100-S03		Project Manager: Pete Kingston Tel/Fax: 425-394-4146 Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below 3 day <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Site Contact: Matt Bowser Lab Contact: Kristine Allen Carrier:		Sampler: JW For Lab Use Only: Walk-in Client: Lab Sampling: Job / SDG No.:													
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	NWTPH-Dx w/o silica gel cleanup	Sample Specific Notes:									
Before GAC- 31722		3/17/22	7:15	Grab	W	2		X		***See instructions below									
HCC EFF- 31722		3/17/22	7:15	Grab	W	2		X		***See instructions below									
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3; 5=NaOH; 6= Other								2	1										
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.								Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months											
Special Instructions/QC Requirements & Comments: 1) DxRx requires special limits 0.208 mg/L, cumulative, Final Volume of 2 mL required 2) No silica gel cleanup needed for Dx																			
Custody Seal Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temp. (°C): Obs'd:		Corr'd:		Therm ID No.:											
Relinquished by: [Signature]		Company: Glacier		Date/Time: 3/18/22 9:55		Received by: [Signature]		Company: EMab		Date/Time: 3/18/22 9:57									
Relinquished by: [Signature]		Company:		Date/Time: 3/18/22 130		Received by: [Signature]		Company: EBCS		Date/Time: 3/18/22 1310									
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:		Date/Time:									

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-111577-1

**Login Number: 111577**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Greene, Ashton R**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-111897-1

Client Project/Site: BNSF Skykomish Rush NPDES  
Sampling Event: Skykomish - GAC/HCC  
Revision: 1

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:  
4/18/2022 11:54:35 AM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

Review your project  
results through

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	9
Certification Summary . . . . .	10
Sample Summary . . . . .	11
Chain of Custody . . . . .	12
Receipt Checklists . . . . .	14



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-111897-1

**Job ID: 580-111897-1**

**Laboratory: Eurofins Seattle**

## Narrative

### Job Narrative 580-111897-1

#### Comments

No additional comments.

#### Revision

The report being provided is a revision of the original report sent on 4/4/2022. The report (revision 1) is being revised due to: Sample was not taken to final volume of 1mL for Dx per method note, limits are too high.

#### Receipt

The samples were received on 3/28/2022 3:05 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.0° C and 3.2° C.

#### GC Semi VOA

Method NWTPH-Dx: The continuing calibration verification (CCV) associated with batch 580-386091 recovered above the upper control limit for Motor Oil (>C24-C36) and #2 Diesel (C10-C24). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: HCC EFF-32422 (580-111897-2) and (CCV 580-386091/25).

Method NWTPH-Dx: The following samples were re-prepared outside of preparation holding time due to the samples being prepped to the wrong final volume initially. Both sets of data are being reported: Before GAC-32422 (580-111897-1) and HCC EFF-32422 (580-111897-2).

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

#### Metals

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.

# Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-111897-1

## Qualifiers

### GC Semi VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-111897-1

**Client Sample ID: Before GAC-32422**

**Lab Sample ID: 580-111897-1**

Date Collected: 03/24/22 11:30

Matrix: Water

Date Received: 03/28/22 15:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.46		0.10		mg/L		04/01/22 10:47	04/04/22 14:02	1
#2 Diesel (C10-C24)	0.50	H	0.052		mg/L		04/14/22 10:51	04/15/22 11:21	1
Motor Oil (>C24-C36)	0.71		0.18		mg/L		04/01/22 10:47	04/04/22 14:02	1
Motor Oil (>C24-C36)	0.32	H	0.090		mg/L		04/14/22 10:51	04/15/22 11:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	63		50 - 150				04/01/22 10:47	04/04/22 14:02	1
o-Terphenyl	86		50 - 150				04/14/22 10:51	04/15/22 11:21	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-111897-1

Client Sample ID: HCC EFF-32422

Lab Sample ID: 580-111897-2

Date Collected: 03/24/22 11:30

Matrix: Water

Date Received: 03/28/22 15:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.10		mg/L		04/01/22 10:47	04/01/22 23:18	1
#2 Diesel (C10-C24)	ND	H	0.052		mg/L		04/14/22 10:51	04/15/22 11:42	1
Motor Oil (>C24-C36)	ND		0.18		mg/L		04/01/22 10:47	04/01/22 23:18	1
Motor Oil (>C24-C36)	ND	H	0.090		mg/L		04/14/22 10:51	04/15/22 11:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	67		50 - 150				04/01/22 10:47	04/01/22 23:18	1
o-Terphenyl	75		50 - 150				04/14/22 10:51	04/15/22 11:42	1

## Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0023		0.0010		mg/L		03/28/22 17:35	03/29/22 15:27	1
Lead	ND		0.00040		mg/L		03/28/22 17:35	03/29/22 15:27	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-111897-1

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

Lab Sample ID: MB 580-386009/1-A

Matrix: Water

Analysis Batch: 386091

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 386009

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.11		mg/L		04/01/22 10:47	04/01/22 21:21	1
Motor Oil (>C24-C36)	ND		0.19		mg/L		04/01/22 10:47	04/01/22 21:21	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	72		50 - 150				04/01/22 10:47	04/01/22 21:21	1

Lab Sample ID: LCS 580-386009/2-A

Matrix: Water

Analysis Batch: 386091

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 386009

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
#2 Diesel (C10-C24)	4.00	2.88		mg/L		72	50 - 120	
Motor Oil (>C24-C36)	4.00	3.25		mg/L		81	64 - 120	
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
o-Terphenyl	83		50 - 150					

Lab Sample ID: LCSD 580-386009/3-A

Matrix: Water

Analysis Batch: 386091

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 386009

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	2.82		mg/L		70	50 - 120	2	26
Motor Oil (>C24-C36)	4.00	3.28		mg/L		82	64 - 120	1	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	82		50 - 150						

## Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-385456/14-A

Matrix: Water

Analysis Batch: 385691

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 385456

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		03/28/22 17:35	03/29/22 15:24	1
Lead	ND		0.00040		mg/L		03/28/22 17:35	03/29/22 15:24	1

Lab Sample ID: LCS 580-385456/15-A

Matrix: Water

Analysis Batch: 385691

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 385456

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Arsenic	1.00	0.998		mg/L		100	85 - 115	
Lead	1.00	1.01		mg/L		101	85 - 115	

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# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-111897-1

## Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 580-385456/16-A

Matrix: Water

Analysis Batch: 385691

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 385456

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	1.00	1.00		mg/L		100	85 - 115	1	20
Lead	1.00	1.03		mg/L		103	85 - 115	2	20

Lab Sample ID: 580-111879-G-1-C MS

Matrix: Water

Analysis Batch: 385691

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 385456

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		1.00	0.936		mg/L		93	70 - 130		
Lead	0.0022		1.00	0.989		mg/L		99	70 - 130		

Lab Sample ID: 580-111879-G-1-D MSD

Matrix: Water

Analysis Batch: 385691

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 385456

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		1.00	0.966		mg/L		96	70 - 130	3	20
Lead	0.0022		1.00	1.00		mg/L		100	70 - 130	1	20

Lab Sample ID: 580-111879-G-1-B DU

Matrix: Water

Analysis Batch: 385691

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 385456

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		ND		mg/L				NC	20
Lead	0.0022		0.00231		mg/L				4	20



# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-111897-1

**Client Sample ID: Before GAC-32422**

**Lab Sample ID: 580-111897-1**

**Date Collected: 03/24/22 11:30**

**Matrix: Water**

**Date Received: 03/28/22 15:05**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			386009	04/01/22 10:47	KLW	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	386252	04/04/22 14:02	JAE	FGS SEA
Total/NA	Prep	3510C			387448	04/14/22 10:51	JJY	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	387607	04/15/22 11:21	Y1F	FGS SEA

**Client Sample ID: HCC EFF-32422**

**Lab Sample ID: 580-111897-2**

**Date Collected: 03/24/22 11:30**

**Matrix: Water**

**Date Received: 03/28/22 15:05**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			386009	04/01/22 10:47	KLW	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	386091	04/01/22 23:18	JAE	FGS SEA
Total/NA	Prep	3510C			387448	04/14/22 10:51	JJY	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	387607	04/15/22 11:42	Y1F	FGS SEA
Total/NA	Prep	200.8			385456	03/28/22 17:35	ABP	FGS SEA
Total/NA	Analysis	200.8		1	385691	03/29/22 15:27	FCW	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-111897-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22

1
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# Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-111897-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-111897-1	Before GAC-32422	Water	03/24/22 11:30	03/28/22 15:05
580-111897-2	HCC EFF-32422	Water	03/24/22 11:30	03/28/22 15:05

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Therm. ID: 1R8 Cor: 3.2 ° Unc: 3.4 °  
Cooler Dsc: #1 BB FedEx: \_\_\_\_\_  
Packing: Bub UPS: \_\_\_\_\_  
Cust. Seal: Yes \_\_\_\_\_ No ☒ Lab Cour: ☒  
Blue Ice: ☒ Wet, Dry, None Other: \_\_\_\_\_

~~Therm. ID: 1R8 Cor: 5.3 ° Unc: 5.5 °  
Cooler Dsc: #2 BB FedEx: \_\_\_\_\_  
Packing: Bub UPS: \_\_\_\_\_  
Cust. Seal: Yes \_\_\_\_\_ No ☒ Lab Cour: ☒  
Blue Ice: ☒ Wet, Dry, None Other: \_\_\_\_\_~~

Therm. ID: 1R8 Cor: 1.0 ° Unc: 1.2 °  
Cooler Dsc: #4 BB FedEx: \_\_\_\_\_  
Packing: Bub UPS: \_\_\_\_\_  
Cust. Seal: Yes \_\_\_\_\_ No ☒ Lab Cour: ☒  
Blue Ice: ☒ Wet, Dry, None Other: \_\_\_\_\_

~~Therm. ID: 1R8 Cor: .10 ° Unc: .8 °  
Cooler Dsc: #3 BB FedEx: \_\_\_\_\_  
Packing: Bub UPS: \_\_\_\_\_  
Cust. Seal: Yes \_\_\_\_\_ No ☒ Lab Cour: ☒  
Blue Ice: ☒ Wet, Dry, None Other: \_\_\_\_\_~~

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-111897-1

**Login Number: 111897**

**List Number: 1**

**Creator: Greene, Ashton R**

**List Source: Eurofins Seattle**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-112282-1

Client Project/Site: BNSF Skykomish Rush NPDES  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:  
4/15/2022 11:35:07 AM

Pauline Matlock, Project Manager  
(253)922-2310  
[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	8
Certification Summary . . . . .	9
Sample Summary . . . . .	10
Chain of Custody . . . . .	11
Receipt Checklists . . . . .	12





# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-112282-1

**Job ID: 580-112282-1**

**Laboratory: Eurofins Seattle**

## Narrative

**Job Narrative**  
**580-112282-1**

## Comments

No additional comments.

## Receipt

The samples were received on 4/6/2022 4:00 PM. 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 2.9° C.

## 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.

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-112282-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-112282-1

**Client Sample ID: Before GAC-33122**

**Lab Sample ID: 580-112282-1**

**Date Collected: 03/31/22 11:15**

**Matrix: Water**

**Date Received: 04/06/22 16:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.52		0.055		mg/L		04/13/22 12:51	04/14/22 14:04	1
Motor Oil (>C24-C36)	0.27		0.095		mg/L		04/13/22 12:51	04/14/22 14:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	68		50 - 150				04/13/22 12:51	04/14/22 14:04	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-112282-1

**Client Sample ID: HCC EFF-33122**

**Lab Sample ID: 580-112282-2**

**Date Collected: 03/31/22 11:15**

**Matrix: Water**

**Date Received: 04/06/22 16:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.10		0.055		mg/L		04/13/22 12:51	04/14/22 14:24	1
Motor Oil (>C24-C36)	0.11		0.095		mg/L		04/13/22 12:51	04/14/22 14:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	75		50 - 150				04/13/22 12:51	04/14/22 14:24	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-112282-1

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

Lab Sample ID: MB 580-387349/1-A

Matrix: Water

Analysis Batch: 387478

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 387349

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		04/13/22 12:51	04/14/22 13:04	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		04/13/22 12:51	04/14/22 13:04	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	65		50 - 150				04/13/22 12:51	04/14/22 13:04	1

Lab Sample ID: LCS 580-387349/2-A

Matrix: Water

Analysis Batch: 387478

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 387349

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4.00	2.70		mg/L		68	50 - 120		
Motor Oil (>C24-C36)	4.00	2.81		mg/L		70	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	60		50 - 150						

Lab Sample ID: LCSD 580-387349/3-A

Matrix: Water

Analysis Batch: 387478

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 387349

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.04		mg/L		76	50 - 120	12	26
Motor Oil (>C24-C36)	4.00	3.13		mg/L		78	64 - 120	11	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	71		50 - 150						

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-112282-1

**Client Sample ID: Before GAC-33122**

**Lab Sample ID: 580-112282-1**

**Date Collected: 03/31/22 11:15**

**Matrix: Water**

**Date Received: 04/06/22 16:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			387349	04/13/22 12:51	JJY	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	387478	04/14/22 14:04	JAE	FGS SEA

**Client Sample ID: HCC EFF-33122**

**Lab Sample ID: 580-112282-2**

**Date Collected: 03/31/22 11:15**

**Matrix: Water**

**Date Received: 04/06/22 16:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			387349	04/13/22 12:51	JJY	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	387478	04/14/22 14:24	JAE	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-112282-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22



## Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-112282-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-112282-1	Before GAC-33122	Water	03/31/22 11:15	04/06/22 16:00
580-112282-2	HCC EFF-33122	Water	03/31/22 11:15	04/06/22 16:00

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5755 8th Street East

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

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**TestAmerica Laboratories, Inc.**

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:[illegible]

Form No. CA-C-WI-002, Rev. 4.18, dated 9/5/2018

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-112282-1

**Login Number: 112282**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Vallelunga, Diana L**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-112286-1

Client Project/Site: BNSF Skykomish Rush NPDES-4522  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:  
4/15/2022 12:14:58 PM

Pauline Matlock, Project Manager  
(253)922-2310  
[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	8
Certification Summary . . . . .	9
Sample Summary . . . . .	10
Chain of Custody . . . . .	11
Receipt Checklists . . . . .	12



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES-4522

Job ID: 580-112286-1

**Job ID: 580-112286-1**

**Laboratory: Eurofins Seattle**

## Narrative

**Job Narrative**  
**580-112286-1**

## Comments

No additional comments.

## Receipt

The samples were received on 4/6/2022 1:00 PM. 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 4.3° C.

## 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.

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES-4522

Job ID: 580-112286-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES-4522

Job ID: 580-112286-1

Client Sample ID: Before GAC-4522

Lab Sample ID: 580-112286-1

Date Collected: 04/05/22 07:00

Matrix: Water

Date Received: 04/06/22 13:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.70		0.055		mg/L		04/14/22 10:51	04/14/22 16:45	1
Motor Oil (>C24-C36)	0.76		0.095		mg/L		04/14/22 10:51	04/14/22 16:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	80		50 - 150				04/14/22 10:51	04/14/22 16:45	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES-4522

Job ID: 580-112286-1

Client Sample ID: HCC EFF-4522

Lab Sample ID: 580-112286-2

Date Collected: 04/05/22 07:00

Matrix: Water

Date Received: 04/06/22 13:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.073		0.055		mg/L		04/14/22 10:51	04/14/22 17:06	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		04/14/22 10:51	04/14/22 17:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	76		50 - 150				04/14/22 10:51	04/14/22 17:06	1



# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES-4522

Job ID: 580-112286-1

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

Lab Sample ID: MB 580-387448/1-A

Matrix: Water

Analysis Batch: 387478

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 387448

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		04/14/22 10:51	04/14/22 15:45	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		04/14/22 10:51	04/14/22 15:45	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	77		50 - 150				04/14/22 10:51	04/14/22 15:45	1

Lab Sample ID: LCS 580-387448/2-A

Matrix: Water

Analysis Batch: 387478

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 387448

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4.00	2.79		mg/L		70	50 - 120		
Motor Oil (>C24-C36)	4.00	3.24		mg/L		81	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	74		50 - 150						

Lab Sample ID: LCSD 580-387448/3-A

Matrix: Water

Analysis Batch: 387478

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 387448

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	2.93		mg/L		73	50 - 120	5	26
Motor Oil (>C24-C36)	4.00	3.29		mg/L		82	64 - 120	2	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	70		50 - 150						

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES-4522

Job ID: 580-112286-1

**Client Sample ID: Before GAC-4522**

**Date Collected: 04/05/22 07:00**

**Date Received: 04/06/22 13:00**

**Lab Sample ID: 580-112286-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			387448	04/14/22 10:51	JJY	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	387478	04/14/22 16:45	JAE	FGS SEA

**Client Sample ID: HCC EFF-4522**

**Date Collected: 04/05/22 07:00**

**Date Received: 04/06/22 13:00**

**Lab Sample ID: 580-112286-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			387448	04/14/22 10:51	JJY	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	387478	04/14/22 17:06	JAE	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES-4522

Job ID: 580-112286-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22

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## Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES-4522

Job ID: 580-112286-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-112286-1	Before GAC-4522	Water	04/05/22 07:00	04/06/22 13:00
580-112286-2	HCC EFF-4522	Water	04/05/22 07:00	04/06/22 13:00

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5755 8th Street East

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

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**TestAmerica Laboratories, Inc.**

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:[illegible]

Form No. CA-C-WI-002, Rev. 4.18, dated 9/5/2018

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-112286-1

**Login Number: 112286**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Vallelunga, Diana L**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-112686-1

Client Project/Site: BNSF Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC  
Revision: 2

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:  
6/28/2022 3:48:45 PM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	10
Certification Summary . . . . .	11
Sample Summary . . . . .	12
Chain of Custody . . . . .	13
Receipt Checklists . . . . .	14



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-112686-1

**Job ID: 580-112686-1**

**Laboratory: Eurofins Seattle**

## Narrative

### Job Narrative 580-112686-1

## Comments

No additional comments.

## Revision

The report being provided is a revision of the original report sent on 4/20/2022. The report (revision 2) is being revised due to: To correct a quantitation error associated with the results reported for NWTPH\_Dx (Diesel only). The discrepancy stems from an initial calibration performed on 4/11/22 that misidentified the retention time markers used to set the retention time range for the diesel range organics.

### Report revision history

Revision 1 - 4/25/2022 - Reason - Samples appear to have been switched, as results for sample 1 (untreated influent) should be higher than for sample 2 (treated effluent).

## Receipt

The samples were received on 4/15/2022 12:45 PM. 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 3.7° C.

## GC Semi VOA

Method NWTPH-Dx: Before GAC-41422 (580-112686-1) and HCC EFF-41422 (580-112686-2) were re-extracted and re-analyzed due to suspected sample switching event. Sample switching has been confirmed upon re-extraction and re-analysis. This set of data has been reported.

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

## Metals

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.

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-112686-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-112686-1

**Client Sample ID: Before GAC-41422**

**Lab Sample ID: 580-112686-1**

**Date Collected: 04/14/22 09:00**

**Matrix: Water**

**Date Received: 04/15/22 12:45**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.58		0.055		mg/L		04/22/22 16:05	04/24/22 18:29	1
Motor Oil (>C24-C36)	0.38		0.095		mg/L		04/22/22 16:05	04/24/22 18:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	85		50 - 150				04/22/22 16:05	04/24/22 18:29	1
o-Terphenyl	90		50 - 150				04/22/22 16:05	04/25/22 18:16	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-112686-1

**Client Sample ID: HCC EFF-41422**

**Lab Sample ID: 580-112686-2**

Date Collected: 04/14/22 09:00

Matrix: Water

Date Received: 04/15/22 12:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.063		0.055		mg/L		04/22/22 16:05	04/24/22 18:49	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		04/22/22 16:05	04/24/22 18:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	79		50 - 150				04/22/22 16:05	04/24/22 18:49	1
o-Terphenyl	84		50 - 150				04/22/22 16:05	04/25/22 18:36	1

## Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0020		0.0010		mg/L		04/18/22 17:44	04/19/22 13:03	1
Lead	ND		0.00040		mg/L		04/18/22 17:44	04/19/22 13:03	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-112686-1

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

Lab Sample ID: MB 580-388315/1-A

Matrix: Water

Analysis Batch: 388400

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 388315

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		04/22/22 16:05	04/24/22 17:28	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		04/22/22 16:05	04/24/22 17:28	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	81		50 - 150				04/22/22 16:05	04/24/22 17:28	1

Lab Sample ID: MB 580-388315/1-A

Matrix: Water

Analysis Batch: 388493

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 388315

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		04/22/22 16:05	04/25/22 17:16	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		04/22/22 16:05	04/25/22 17:16	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	84		50 - 150				04/22/22 16:05	04/25/22 17:16	1

Lab Sample ID: LCS 580-388315/2-A

Matrix: Water

Analysis Batch: 388400

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 388315

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
#2 Diesel (C10-C24)	4.00	3.35		mg/L		84	50 - 120
Motor Oil (>C24-C36)	4.00	3.58		mg/L		90	64 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
o-Terphenyl	92		50 - 150				

Lab Sample ID: LCS 580-388315/2-A

Matrix: Water

Analysis Batch: 388493

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 388315

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
#2 Diesel (C10-C24)	4.00	3.53		mg/L		88	50 - 120
Motor Oil (>C24-C36)	4.00	3.82		mg/L		96	64 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
o-Terphenyl	97		50 - 150				

Lab Sample ID: LCSD 580-388315/3-A

Matrix: Water

Analysis Batch: 388400

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 388315

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.42		mg/L		85	50 - 120	2	26
Motor Oil (>C24-C36)	4.00	3.55		mg/L		89	64 - 120	1	24

Eurofins Seattle

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-112686-1

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

Lab Sample ID: LCSD 580-388315/3-A

Matrix: Water

Analysis Batch: 388400

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 388315

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	98		50 - 150

Lab Sample ID: LCSD 580-388315/3-A

Matrix: Water

Analysis Batch: 388493

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 388315

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.47		mg/L		87	50 - 120	2	26
Motor Oil (>C24-C36)	4.00	3.74		mg/L		94	64 - 120	2	24

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	90		50 - 150

## Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-387800/14-A

Matrix: Water

Analysis Batch: 387995

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 387800

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		04/18/22 17:44	04/19/22 12:59	1
Lead	ND		0.00040		mg/L		04/18/22 17:44	04/19/22 12:59	1

Lab Sample ID: LCS 580-387800/15-A

Matrix: Water

Analysis Batch: 387995

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 387800

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	1.01		mg/L		101	85 - 115
Lead	1.00	0.992		mg/L		99	85 - 115

Lab Sample ID: LCSD 580-387800/16-A

Matrix: Water

Analysis Batch: 387995

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 387800

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	1.00	1.01		mg/L		101	85 - 115	1	20
Lead	1.00	0.998		mg/L		100	85 - 115	1	20

Lab Sample ID: 580-112719-E-1-C MS

Matrix: Water

Analysis Batch: 387995

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 387800

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	ND		1.00	1.18		mg/L		118	70 - 130
Lead	ND		1.00	1.18		mg/L		118	70 - 130

Eurofins Seattle

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-112686-1

## Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 580-112719-E-1-D MSD

Matrix: Water

Analysis Batch: 387995

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 387800

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		1.00	1.13		mg/L		113	70 - 130	5	20
Lead	ND		1.00	1.14		mg/L		114	70 - 130	4	20

Lab Sample ID: 580-112719-E-1-B DU

Matrix: Water

Analysis Batch: 387995

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 387800

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	ND		ND		mg/L		NC	20
Lead	ND		ND		mg/L		NC	20

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-112686-1

**Client Sample ID: Before GAC-41422**

**Lab Sample ID: 580-112686-1**

**Date Collected: 04/14/22 09:00**

**Matrix: Water**

**Date Received: 04/15/22 12:45**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			388315	04/22/22 16:05	ADB	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	388400	04/24/22 18:29	JCM	FGS SEA
Total/NA	Prep	3510C			388315	04/22/22 16:05	ADB	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	388493	04/25/22 18:16	Y1F	FGS SEA

**Client Sample ID: HCC EFF-41422**

**Lab Sample ID: 580-112686-2**

**Date Collected: 04/14/22 09:00**

**Matrix: Water**

**Date Received: 04/15/22 12:45**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			388315	04/22/22 16:05	ADB	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	388400	04/24/22 18:49	JCM	FGS SEA
Total/NA	Prep	3510C			388315	04/22/22 16:05	ADB	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	388493	04/25/22 18:36	Y1F	FGS SEA
Total/NA	Prep	200.8			387800	04/18/22 17:44	ABP	FGS SEA
Total/NA	Analysis	200.8		1	387995	04/19/22 13:03	FCW	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310



Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-112686-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22

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## Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-112686-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-112686-1	Before GAC-41422	Water	04/14/22 09:00	04/15/22 12:45
580-112686-2	HCC EFF-41422	Water	04/14/22 09:00	04/15/22 12:45

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5755 8th Street East

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

## TestAmerica

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**TestAmerica Laboratories, Inc.**

[illegible]

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-112686-1

**Login Number: 112686**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Blankinship, Tom X**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-112958-1

Client Project/Site: BNSF Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC  
Revision: 1

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:  
7/6/2022 3:48:40 PM

Pauline Matlock, Project Manager  
(253)922-2310  
[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	8
Certification Summary . . . . .	9
Sample Summary . . . . .	10
Chain of Custody . . . . .	11
Receipt Checklists . . . . .	12



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-112958-1

**Job ID: 580-112958-1**

**Laboratory: Eurofins Seattle**

## Narrative

### Job Narrative 580-112958-1

## Comments

No additional comments.

## Revision

The report being provided is a revision of the original report sent on 4/30/2022. The report (revision 1) is being revised due to: To correct a quantitation error associated with the results reported for NWTPH\_Dx (Diesel only). The discrepancy stems from an initial calibration performed on 4/11/22 that misidentified the retention time markers used to set the retention time range for the diesel range organics.

## Receipt

The samples were received on 4/22/2022 2:15 PM. 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 -0.8° C.

## GC Semi VOA

Method NWTPH-Dx: CCV in analytical batch 580-388595, associated with the following samples, was outside %Drift limits for surrogate o-Terphenyl: Before GAC-42122 (580-112958-1), HCC EFF-42122 (580-112958-2), (CCV 580-388595/32), (LCS 580-388586/2-A), (LCSD 580-388586/3-A) and (MB 580-388586/1-A). The CCV and associated client samples were within %Recovery control limits for this surrogate; therefore, the data has been reported.

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

## Organic Prep

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

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-112958-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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



# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-112958-1

**Client Sample ID: Before GAC-42122**

**Lab Sample ID: 580-112958-1**

**Date Collected: 04/21/22 12:58**

**Matrix: Water**

**Date Received: 04/22/22 14:15**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.67		0.056		mg/L		04/27/22 12:35	04/27/22 23:58	1
Motor Oil (>C24-C36)	0.29		0.097		mg/L		04/27/22 12:35	04/27/22 23:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	74		50 - 150				04/27/22 12:35	04/27/22 23:58	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-112958-1

**Client Sample ID: HCC EFF-42122**

**Lab Sample ID: 580-112958-2**

**Date Collected: 04/21/22 12:46**

**Matrix: Water**

**Date Received: 04/22/22 14:15**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.056		mg/L		04/27/22 12:35	04/28/22 00:18	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		04/27/22 12:35	04/28/22 00:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	71		50 - 150				04/27/22 12:35	04/28/22 00:18	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-112958-1

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

Lab Sample ID: MB 580-388586/1-A

Matrix: Water

Analysis Batch: 388595

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 388586

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		04/27/22 12:35	04/27/22 22:57	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		04/27/22 12:35	04/27/22 22:57	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	73		50 - 150				04/27/22 12:35	04/27/22 22:57	1

Lab Sample ID: LCS 580-388586/2-A

Matrix: Water

Analysis Batch: 388595

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 388586

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4.00	2.64		mg/L		66	50 - 120		
Motor Oil (>C24-C36)	4.00	3.04		mg/L		76	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	74		50 - 150						

Lab Sample ID: LCSD 580-388586/3-A

Matrix: Water

Analysis Batch: 388595

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 388586

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.10		mg/L		77	50 - 120	16	26
Motor Oil (>C24-C36)	4.00	3.54		mg/L		88	64 - 120	15	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	81		50 - 150						

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-112958-1

**Client Sample ID: Before GAC-42122**

**Lab Sample ID: 580-112958-1**

**Date Collected: 04/21/22 12:58**

**Matrix: Water**

**Date Received: 04/22/22 14:15**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			388586	04/27/22 12:35	JJY	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	388595	04/27/22 23:58	Y1F	FGS SEA

**Client Sample ID: HCC EFF-42122**

**Lab Sample ID: 580-112958-2**

**Date Collected: 04/21/22 12:46**

**Matrix: Water**

**Date Received: 04/22/22 14:15**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			388586	04/27/22 12:35	JJY	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	388595	04/28/22 00:18	Y1F	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-112958-1

## Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22

1
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# Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-112958-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-112958-1	Before GAC-42122	Water	04/21/22 12:58	04/22/22 14:15
580-112958-2	HCC EFF-42122	Water	04/21/22 12:46	04/22/22 14:15

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5755 8th Street East

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

## TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

**TestAmerica Laboratories, Inc.**

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:

112958

[illegible]

Form No. CA-C-WI-002, Rev. 4.18, dated 9/5/2018

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-112958-1

**Login Number: 112958**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Blankinship, Tom X**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-113175-1

Client Project/Site: BNSF Skykomish Rush NPDES  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:  
5/5/2022 2:26:04 PM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

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[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	8
Certification Summary . . . . .	9
Sample Summary . . . . .	10
Chain of Custody . . . . .	11
Receipt Checklists . . . . .	12



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-113175-1

**Job ID: 580-113175-1**

**Laboratory: Eurofins Seattle**

## Narrative

### Job Narrative 580-113175-1

## Comments

No additional comments.

## Receipt

The samples were received on 4/28/2022 10:31 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 5.0° C.

## GC Semi VOA

Method NWTPH-Dx: The continuing calibration verification (CCV) associated with batch 580-389196 recovered above the upper control limit for Motor Oil (>C24-C36). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

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

## Organic Prep

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

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-113175-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-113175-1

Client Sample ID: Before GAC-42622

Lab Sample ID: 580-113175-1

Date Collected: 04/26/22 13:00

Matrix: Water

Date Received: 04/28/22 10:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.61		0.055		mg/L		05/01/22 12:42	05/04/22 15:05	1
Motor Oil (>C24-C36)	0.34		0.096		mg/L		05/01/22 12:42	05/04/22 15:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	77		50 - 150				05/01/22 12:42	05/04/22 15:05	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-113175-1

**Client Sample ID: HCC EFF-42622**

**Lab Sample ID: 580-113175-2**

**Date Collected: 04/26/22 13:00**

**Matrix: Water**

**Date Received: 04/28/22 10:31**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		05/01/22 12:42	05/03/22 05:19	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		05/01/22 12:42	05/03/22 05:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	59		50 - 150				05/01/22 12:42	05/03/22 05:19	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-113175-1

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

Lab Sample ID: MB 580-389068/23-A

Matrix: Water

Analysis Batch: 389196

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 389068

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		05/01/22 12:42	05/03/22 08:34	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		05/01/22 12:42	05/03/22 08:34	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	77		50 - 150				05/01/22 12:42	05/03/22 08:34	1

Lab Sample ID: LCS 580-389068/24-A

Matrix: Water

Analysis Batch: 389196

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 389068

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4.00	3.19		mg/L		80	50 - 120		
Motor Oil (>C24-C36)	4.00	4.01		mg/L		100	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	79		50 - 150						

Lab Sample ID: LCSD 580-389068/25-A

Matrix: Water

Analysis Batch: 389196

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 389068

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.21		mg/L		80	50 - 120	1	26
Motor Oil (>C24-C36)	4.00	4.17		mg/L		104	64 - 120	4	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	76		50 - 150						

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-113175-1

**Client Sample ID: Before GAC-42622**

**Lab Sample ID: 580-113175-1**

**Date Collected: 04/26/22 13:00**

**Matrix: Water**

**Date Received: 04/28/22 10:31**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			389068	05/01/22 12:42	KLW	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	389436	05/04/22 15:05	ADB	FGS SEA

**Client Sample ID: HCC EFF-42622**

**Lab Sample ID: 580-113175-2**

**Date Collected: 04/26/22 13:00**

**Matrix: Water**

**Date Received: 04/28/22 10:31**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			389068	05/01/22 12:42	KLW	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	389196	05/03/22 05:19	Y1F	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310



# Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-113175-1

## Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

## Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-113175-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-113175-1	Before GAC-42622	Water	04/26/22 13:00	04/28/22 10:31
580-113175-2	HCC EFF-42622	Water	04/26/22 13:00	04/28/22 10:31

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5755 8th Street East

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:

## TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

**TestAmerica Laboratories, Inc.**

[illegible]

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-113175-1

**Login Number: 113175**

**List Number: 1**

**Creator: Blankinship, Tom X**

**List Source: Eurofins Seattle**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-113513-1

Client Project/Site: BNSF Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:

5/18/2022 11:04:28 AM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

Review your project  
results through



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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	8
Certification Summary . . . . .	9
Sample Summary . . . . .	10
Chain of Custody . . . . .	11
Receipt Checklists . . . . .	12



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113513-1

**Job ID: 580-113513-1**

**Laboratory: Eurofins Seattle**

## Narrative

**Job Narrative**  
**580-113513-1**

## Comments

No additional comments.

## Receipt

The samples were received on 5/6/2022 2:30 PM. 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 6.9° C.

## GC Semi VOA

Method NWTPH-Dx: The continuing calibration verification (CCV) associated with batch 580-390425 recovered above the upper control limit for Motor Oil (>C24-C36). The sample associated with this CCV was non-detect for the affected analyte; therefore, the data have been reported.

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

## Organic Prep

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

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113513-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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



# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113513-1

**Client Sample ID: Before GAC- 5422**

**Lab Sample ID: 580-113513-1**

**Date Collected: 05/04/22 09:00**

**Matrix: Water**

**Date Received: 05/06/22 14:30**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.32		0.056		mg/L		05/12/22 09:54	05/17/22 05:24	1
Motor Oil (>C24-C36)	0.27		0.096		mg/L		05/12/22 09:54	05/17/22 05:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	69		50 - 150				05/12/22 09:54	05/17/22 05:24	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113513-1

**Client Sample ID: HCC EFF- 5422**

**Lab Sample ID: 580-113513-2**

**Date Collected: 05/04/22 09:00**

**Matrix: Water**

**Date Received: 05/06/22 14:30**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.055</b>		0.055		mg/L		05/12/22 09:54	05/12/22 22:41	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		05/12/22 09:54	05/12/22 22:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	75		50 - 150				05/12/22 09:54	05/12/22 22:41	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113513-1

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

Lab Sample ID: MB 580-390355/1-A

Matrix: Water

Analysis Batch: 390425

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 390355

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		05/12/22 09:54	05/12/22 21:21	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		05/12/22 09:54	05/12/22 21:21	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	83		50 - 150				05/12/22 09:54	05/12/22 21:21	1

Lab Sample ID: LCS 580-390355/2-A

Matrix: Water

Analysis Batch: 390425

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 390355

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4.00	3.84		mg/L		96	50 - 120		
Motor Oil (>C24-C36)	4.00	4.27		mg/L		107	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	97		50 - 150						

Lab Sample ID: LCSD 580-390355/3-A

Matrix: Water

Analysis Batch: 390425

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 390355

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.44		mg/L		86	50 - 120	11	26
Motor Oil (>C24-C36)	4.00	3.85		mg/L		96	64 - 120	10	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	90		50 - 150						

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113513-1

**Client Sample ID: Before GAC- 5422**

**Lab Sample ID: 580-113513-1**

**Date Collected: 05/04/22 09:00**

**Matrix: Water**

**Date Received: 05/06/22 14:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			390355	05/12/22 09:54	KLW	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	390801	05/17/22 05:24	Y1F	FGS SEA

**Client Sample ID: HCC EFF- 5422**

**Lab Sample ID: 580-113513-2**

**Date Collected: 05/04/22 09:00**

**Matrix: Water**

**Date Received: 05/06/22 14:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			390355	05/12/22 09:54	KLW	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	390425	05/12/22 22:41	Y1F	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113513-1

## Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22

1
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# Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113513-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-113513-1	Before GAC- 5422	Water	05/04/22 09:00	05/06/22 14:30
580-113513-2	HCC EFF- 5422	Water	05/04/22 09:00	05/06/22 14:30

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phone 253.922.2310 fax 253.922.5047

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:

**TestAmerica Laboratories, Inc.**

[illegible]

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-113513-1

**Login Number: 113513**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Vallelunga, Diana L**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-113795-1

Client Project/Site: BNSF Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:

5/19/2022 9:10:05 PM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



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[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	9
Certification Summary . . . . .	10
Sample Summary . . . . .	11
Chain of Custody . . . . .	12
Receipt Checklists . . . . .	13



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113795-1

**Job ID: 580-113795-1**

**Laboratory: Eurofins Seattle**

## Narrative

### Job Narrative 580-113795-1

## Comments

No additional comments.

## Receipt

The samples were received on 5/13/2022 1:20 PM. 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 3.4° C.

## GC Semi VOA

Method NWTPH-Dx: In analytical batch 580-390966, the following CCV contained o-Terphenyl at 15.1%Drift: (CCV 580-390966/38). This passes %D criteria by virtue of rounding; therefore, the data have been reported.

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

## Metals

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.

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113795-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113795-1

**Client Sample ID: Before GAC-51222**

**Lab Sample ID: 580-113795-1**

**Date Collected: 05/12/22 11:00**

**Matrix: Water**

**Date Received: 05/13/22 13:20**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.71		0.052		mg/L		05/17/22 09:48	05/18/22 05:28	1
Motor Oil (>C24-C36)	0.43		0.089		mg/L		05/17/22 09:48	05/18/22 05:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	85		50 - 150				05/17/22 09:48	05/18/22 05:28	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113795-1

**Client Sample ID: HCC EFF-51222**

**Lab Sample ID: 580-113795-2**

Date Collected: 05/12/22 11:00

Matrix: Water

Date Received: 05/13/22 13:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.055		0.052		mg/L		05/17/22 09:48	05/18/22 05:48	1
Motor Oil (>C24-C36)	ND		0.089		mg/L		05/17/22 09:48	05/18/22 05:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	76		50 - 150				05/17/22 09:48	05/18/22 05:48	1

## Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		05/16/22 16:42	05/17/22 14:28	1
Lead	ND		0.00040		mg/L		05/16/22 16:42	05/17/22 14:28	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113795-1

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

Lab Sample ID: MB 580-390853/1-A

Matrix: Water

Analysis Batch: 390966

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 390853

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		05/17/22 09:48	05/18/22 04:08	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		05/17/22 09:48	05/18/22 04:08	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	77		50 - 150				05/17/22 09:48	05/18/22 04:08	1

Lab Sample ID: LCS 580-390853/2-A

Matrix: Water

Analysis Batch: 390966

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 390853

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4.00	3.19		mg/L		80	50 - 120		
Motor Oil (>C24-C36)	4.00	3.71		mg/L		93	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	98		50 - 150						

Lab Sample ID: LCSD 580-390853/3-A

Matrix: Water

Analysis Batch: 390966

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 390853

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.28		mg/L		82	50 - 120	3	26
Motor Oil (>C24-C36)	4.00	3.68		mg/L		92	64 - 120	1	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	92		50 - 150						

## Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-390829/25-A

Matrix: Water

Analysis Batch: 390979

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 390829

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		05/16/22 16:42	05/17/22 14:24	1
Lead	ND		0.00040		mg/L		05/16/22 16:42	05/17/22 14:24	1

Lab Sample ID: LCS 580-390829/26-A

Matrix: Water

Analysis Batch: 390979

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 390829

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic	1.00	1.03		mg/L		103	85 - 115		
Lead	1.00	1.02		mg/L		102	85 - 115		

Eurofins Seattle

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113795-1

## Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 580-390829/27-A

Matrix: Water

Analysis Batch: 390979

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 390829

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	1.00	1.02		mg/L		102	85 - 115	1	20
Lead	1.00	1.01		mg/L		101	85 - 115	1	20

Lab Sample ID: 580-113795-2 MS

Matrix: Water

Analysis Batch: 390979

Client Sample ID: HCC EFF-51222

Prep Type: Total/NA

Prep Batch: 390829

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		1.00	1.05		mg/L		105	70 - 130		
Lead	ND		1.00	1.06		mg/L		106	70 - 130		

Lab Sample ID: 580-113795-2 MSD

Matrix: Water

Analysis Batch: 390979

Client Sample ID: HCC EFF-51222

Prep Type: Total/NA

Prep Batch: 390829

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		1.00	1.06		mg/L		106	70 - 130	1	20
Lead	ND		1.00	1.06		mg/L		106	70 - 130	1	20

Lab Sample ID: 580-113795-2 DU

Matrix: Water

Analysis Batch: 390979

Client Sample ID: HCC EFF-51222

Prep Type: Total/NA

Prep Batch: 390829

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	ND		ND		mg/L		NC	20
Lead	ND		ND		mg/L		NC	20



# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113795-1

**Client Sample ID: Before GAC-51222**

**Lab Sample ID: 580-113795-1**

**Date Collected: 05/12/22 11:00**

**Matrix: Water**

**Date Received: 05/13/22 13:20**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			390853	05/17/22 09:48	KLW	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	390966	05/18/22 05:28	Y1F	FGS SEA

**Client Sample ID: HCC EFF-51222**

**Lab Sample ID: 580-113795-2**

**Date Collected: 05/12/22 11:00**

**Matrix: Water**

**Date Received: 05/13/22 13:20**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			390853	05/17/22 09:48	KLW	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	390966	05/18/22 05:48	Y1F	FGS SEA
Total/NA	Prep	200.8			390829	05/16/22 16:42	JLS	FGS SEA
Total/NA	Analysis	200.8		1	390979	05/17/22 14:28	FCW	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113795-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22



# Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113795-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-113795-1	Before GAC-51222	Water	05/12/22 11:00	05/13/22 13:20
580-113795-2	HCC EFF-51222	Water	05/12/22 11:00	05/13/22 13:20

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5755 8th Street East

phone 253.922.2310 fax 253.922.



580-113795 Chain of Custody

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

**TestAmerica Laboratories, Inc.**

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:[illegible]

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-113795-1

**Login Number: 113795**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Greene, Ashton R**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-113919-1

Client Project/Site: BNSF Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC  
Revision: 1

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:  
5/31/2022 10:00:17 PM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

Review your project  
results through



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[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	9
Certification Summary . . . . .	10
Sample Summary . . . . .	11
Chain of Custody . . . . .	12
Receipt Checklists . . . . .	13

## Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113919-1

**Job ID: 580-113919-1**

**Laboratory: Eurofins Seattle**

### Narrative

**Job Narrative**  
**580-113919-1**

### Comments

No additional comments.

### Revision

The report being provided is a revision of the original report sent on 5/27/2022. The report (revision 1) is being revised due to: Client would like sample #2 (Effluent) re-extracted to confirm result.

### Receipt

The samples were received on 5/18/2022 1:30 PM. 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 2.7° C.

### GC Semi VOA

Method NWTPH-Dx: The following sample was re-prepared outside of preparation holding time due to data not matching historical results: HCC EFF-51622 (580-113919-2). Both sets of data have been reported.

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

### Organic Prep

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



# Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113919-1

## Qualifiers

### GC Semi VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113919-1

**Client Sample ID: Before GAC-51622**

**Lab Sample ID: 580-113919-1**

Date Collected: 05/16/22 11:40

Matrix: Water

Date Received: 05/18/22 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.35		0.052		mg/L		05/25/22 11:22	05/26/22 12:28	1
Motor Oil (>C24-C36)	0.34		0.090		mg/L		05/25/22 11:22	05/26/22 12:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	75		50 - 150				05/25/22 11:22	05/26/22 12:28	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113919-1

**Client Sample ID: HCC EFF-51622**

**Lab Sample ID: 580-113919-2**

Date Collected: 05/16/22 11:40

Matrix: Water

Date Received: 05/18/22 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.11		0.052		mg/L		05/25/22 11:22	05/26/22 12:48	1
Motor Oil (>C24-C36)	0.16		0.090		mg/L		05/25/22 11:22	05/26/22 12:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	77		50 - 150				05/25/22 11:22	05/26/22 12:48	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.13	H	0.053		mg/L		05/31/22 11:26	05/31/22 16:47	1
Motor Oil (>C24-C36)	0.18	H	0.091		mg/L		05/31/22 11:26	05/31/22 16:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	78		50 - 150				05/31/22 11:26	05/31/22 16:47	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113919-1

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

Lab Sample ID: MB 580-391777/1-A

Matrix: Water

Analysis Batch: 391958

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 391777

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		05/25/22 11:22	05/26/22 11:29	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		05/25/22 11:22	05/26/22 11:29	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	70		50 - 150				05/25/22 11:22	05/26/22 11:29	1

Lab Sample ID: LCS 580-391777/2-A

Matrix: Water

Analysis Batch: 391958

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 391777

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
#2 Diesel (C10-C24)	4.00	3.14		mg/L		78	50 - 120	
Motor Oil (>C24-C36)	4.00	3.90		mg/L		98	64 - 120	
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
o-Terphenyl	88		50 - 150					

Lab Sample ID: LCSD 580-391777/3-A

Matrix: Water

Analysis Batch: 391958

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 391777

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.52		mg/L		88	50 - 120	11	26
Motor Oil (>C24-C36)	4.00	4.06		mg/L		102	64 - 120	4	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	95		50 - 150						

Lab Sample ID: MB 580-392332/1-A

Matrix: Water

Analysis Batch: 392308

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 392332

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		05/31/22 11:24	05/31/22 17:07	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		05/31/22 11:24	05/31/22 17:07	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	68		50 - 150				05/31/22 11:24	05/31/22 17:07	1

Lab Sample ID: LCS 580-392332/2-A

Matrix: Water

Analysis Batch: 392308

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 392332

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
#2 Diesel (C10-C24)	4.00	2.76		mg/L		69	50 - 120	
Motor Oil (>C24-C36)	4.00	3.23		mg/L		81	64 - 120	

Eurofins Seattle

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113919-1

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

Lab Sample ID: LCS 580-392332/2-A

Matrix: Water

Analysis Batch: 392308

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 392332

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	75		50 - 150

Lab Sample ID: LCSD 580-392332/3-A

Matrix: Water

Analysis Batch: 392308

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 392332

	Spike	LCSD	LCSD						%Rec		
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit		
#2 Diesel (C10-C24)	4.00	2.91		mg/L		73	50 - 120	5	26		
Motor Oil (>C24-C36)	4.00	3.47		mg/L		87	64 - 120	7	24		

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	73		50 - 150

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113919-1

**Client Sample ID: Before GAC-51622**

**Lab Sample ID: 580-113919-1**

**Date Collected: 05/16/22 11:40**

**Matrix: Water**

**Date Received: 05/18/22 13:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			391777	05/25/22 11:22	KLW	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	391958	05/26/22 12:28	Y1F	FGS SEA

**Client Sample ID: HCC EFF-51622**

**Lab Sample ID: 580-113919-2**

**Date Collected: 05/16/22 11:40**

**Matrix: Water**

**Date Received: 05/18/22 13:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			391777	05/25/22 11:22	KLW	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	391958	05/26/22 12:48	Y1F	FGS SEA
Total/NA	Prep	3510C	RE		392332	05/31/22 11:26	JJY	FGS SEA
Total/NA	Analysis	NWTPH-Dx	RE	1	392308	05/31/22 16:47	Y1F	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113919-1

## Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22

1
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# Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-113919-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-113919-1	Before GAC-51622	Water	05/16/22 11:40	05/18/22 13:30
580-113919-2	HCC EFF-51622	Water	05/16/22 11:40	05/18/22 13:30

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Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:

**TestAmerica Laboratories, Inc.**

[illegible]

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-113919-1

**Login Number: 113919**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Vallelunga, Diana L**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-114159-1

Client Project/Site: BNSF Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:

5/31/2022 6:46:42 PM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	8
Certification Summary . . . . .	9
Sample Summary . . . . .	10
Chain of Custody . . . . .	11
Receipt Checklists . . . . .	12



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-114159-1

**Job ID: 580-114159-1**

**Laboratory: Eurofins Seattle**

## Narrative

**Job Narrative**  
**580-114159-1**

## Comments

No additional comments.

## Receipt

The samples were received on 5/25/2022 12:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, preserved and on ice. The temperature of the cooler at receipt was 6.9° C.

## Receipt Exceptions

The samples were received at the laboratory outside the required temperature criteria: Cooler temperature was 6.9/7.3 upon arrival at the laboratory.

## 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.

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-114159-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-114159-1

**Client Sample ID: Before GAC-052422**

**Lab Sample ID: 580-114159-1**

**Date Collected: 05/24/22 12:30**

**Matrix: Water**

**Date Received: 05/25/22 12:25**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.59		0.051		mg/L		05/31/22 11:24	05/31/22 16:07	1
Motor Oil (>C24-C36)	0.34		0.088		mg/L		05/31/22 11:24	05/31/22 16:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	67		50 - 150				05/31/22 11:24	05/31/22 16:07	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-114159-1

Client Sample ID: HCC EFF-052422

Lab Sample ID: 580-114159-2

Date Collected: 05/24/22 12:30

Matrix: Water

Date Received: 05/25/22 12:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.089		0.052		mg/L		05/31/22 11:24	05/31/22 16:27	1
Motor Oil (>C24-C36)	ND		0.090		mg/L		05/31/22 11:24	05/31/22 16:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	71		50 - 150				05/31/22 11:24	05/31/22 16:27	1



# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-114159-1

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

Lab Sample ID: MB 580-392332/1-A

Matrix: Water

Analysis Batch: 392308

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 392332

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		05/31/22 11:24	05/31/22 17:07	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		05/31/22 11:24	05/31/22 17:07	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	68		50 - 150				05/31/22 11:24	05/31/22 17:07	1

Lab Sample ID: LCS 580-392332/2-A

Matrix: Water

Analysis Batch: 392308

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 392332

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4.00	2.76		mg/L		69	50 - 120		
Motor Oil (>C24-C36)	4.00	3.23		mg/L		81	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	75		50 - 150						

Lab Sample ID: LCSD 580-392332/3-A

Matrix: Water

Analysis Batch: 392308

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 392332

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	2.91		mg/L		73	50 - 120	5	26
Motor Oil (>C24-C36)	4.00	3.47		mg/L		87	64 - 120	7	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	73		50 - 150						

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-114159-1

**Client Sample ID: Before GAC-052422**

**Lab Sample ID: 580-114159-1**

**Date Collected: 05/24/22 12:30**

**Matrix: Water**

**Date Received: 05/25/22 12:25**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			392332	05/31/22 11:24	JJY	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	392308	05/31/22 16:07	Y1F	FGS SEA

**Client Sample ID: HCC EFF-052422**

**Lab Sample ID: 580-114159-2**

**Date Collected: 05/24/22 12:30**

**Matrix: Water**

**Date Received: 05/25/22 12:25**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			392332	05/31/22 11:24	JJY	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	392308	05/31/22 16:27	Y1F	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-114159-1

## Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22



# Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-114159-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-114159-1	Before GAC-052422	Water	05/24/22 12:30	05/25/22 12:25
580-114159-2	HCC EFF-052422	Water	05/24/22 12:30	05/25/22 12:25

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5755 8th Street East

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

## Chain of Custody Record

**TestAmerica**  
THE LEADER IN ENVIRONMENTAL TESTING

**TestAmerica Laboratories, Inc.**

[illegible]

Form No. CA-C-WI-002, Rev. 4.18, dated 9/5/2018

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-114159-1

**Login Number: 114159**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Vallelunga, Diana L**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
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.	False	Cooler temperature outside required temperature criteria.
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-114336-1

Client Project/Site: Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:

6/2/2022 11:50:57 AM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

Review your project  
results through



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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	8
Certification Summary . . . . .	9
Sample Summary . . . . .	10
Chain of Custody . . . . .	11
Receipt Checklists . . . . .	12





# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-114336-1

**Job ID: 580-114336-1**

**Laboratory: Eurofins Seattle**

## Narrative

**Job Narrative**  
**580-114336-1**

## Comments

No additional comments.

## Receipt

The samples were received on 6/1/2022 3:40 PM. 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 4.9° C.

## 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.

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-114336-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-114336-1

**Client Sample ID: Before GAC-53122**

**Lab Sample ID: 580-114336-1**

Date Collected: 05/31/22 09:30

Matrix: Water

Date Received: 06/01/22 15:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1.1		0.052		mg/L		06/01/22 16:50	06/02/22 04:53	1
Motor Oil (>C24-C36)	0.68		0.089		mg/L		06/01/22 16:50	06/02/22 04:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	93		50 - 150				06/01/22 16:50	06/02/22 04:53	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-114336-1

**Client Sample ID: HCC EFF-53122**

**Lab Sample ID: 580-114336-2**

**Date Collected: 05/31/22 09:30**

**Matrix: Water**

**Date Received: 06/01/22 15:40**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.12		0.051		mg/L		06/01/22 16:50	06/02/22 05:13	1
Motor Oil (>C24-C36)	ND		0.088		mg/L		06/01/22 16:50	06/02/22 05:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	89		50 - 150				06/01/22 16:50	06/02/22 05:13	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-114336-1

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

Lab Sample ID: MB 580-392411/1-A

Matrix: Water

Analysis Batch: 392462

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 392411

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		06/01/22 09:47	06/02/22 00:51	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		06/01/22 09:47	06/02/22 00:51	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	75		50 - 150				06/01/22 09:47	06/02/22 00:51	1

Lab Sample ID: LCS 580-392411/2-A

Matrix: Water

Analysis Batch: 392462

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 392411

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4.00	3.18		mg/L		79	50 - 120		
Motor Oil (>C24-C36)	4.00	3.65		mg/L		91	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	87		50 - 150						

Lab Sample ID: LCSD 580-392411/3-A

Matrix: Water

Analysis Batch: 392462

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 392411

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.25		mg/L		81	50 - 120	2	26
Motor Oil (>C24-C36)	4.00	3.64		mg/L		91	64 - 120	0	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	89		50 - 150						

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-114336-1

**Client Sample ID: Before GAC-53122**

**Lab Sample ID: 580-114336-1**

**Date Collected: 05/31/22 09:30**

**Matrix: Water**

**Date Received: 06/01/22 15:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			392411	06/01/22 16:50	KLW	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	392462	06/02/22 04:53	Y1F	FGS SEA

**Client Sample ID: HCC EFF-53122**

**Lab Sample ID: 580-114336-2**

**Date Collected: 05/31/22 09:30**

**Matrix: Water**

**Date Received: 06/01/22 15:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			392411	06/01/22 16:50	KLW	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	392462	06/02/22 05:13	Y1F	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-114336-1

## Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

## Sample Summary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-114336-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-114336-1	Before GAC-53122	Water	05/31/22 09:30	06/01/22 15:40
580-114336-2	HCC EFF-53122	Water	05/31/22 09:30	06/01/22 15:40

1

2

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11



5755 8th Street East

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

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**TestAmerica Laboratories, Inc.**

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:Page 11 of 12

Form No. CA-C-WI-002, Rev. 4.18, dated 9/5/2018

6/2/2022

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-114336-1

**Login Number: 114336**

**List Number: 1**

**Creator: Blankinship, Tom X**

**List Source: Eurofins Seattle**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-115039-1

Client Project/Site: BNSF Skykomish Rush NPDES  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:

6/23/2022 5:33:36 PM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	9
Certification Summary . . . . .	10
Sample Summary . . . . .	11
Chain of Custody . . . . .	12
Receipt Checklists . . . . .	13



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115039-1

**Job ID: 580-115039-1**

**Laboratory: Eurofins Seattle**

## Narrative

**Job Narrative**  
**580-115039-1**

## Comments

No additional comments.

## Receipt

The samples were received on 6/20/2022 11:50 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 5.3° C.

## GC Semi VOA

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

## Metals

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.

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115039-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115039-1

Client Sample ID: Before GAC-61722

Lab Sample ID: 580-115039-1

Date Collected: 06/17/22 17:00

Matrix: Water

Date Received: 06/20/22 11:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.46		0.052		mg/L		06/21/22 09:25	06/22/22 20:23	1
Motor Oil (>C24-C36)	0.34		0.090		mg/L		06/21/22 09:25	06/22/22 20:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	66		50 - 150				06/21/22 09:25	06/22/22 20:23	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115039-1

**Client Sample ID: HCC EFF-61722**

**Lab Sample ID: 580-115039-2**

**Date Collected: 06/17/22 17:00**

**Matrix: Water**

**Date Received: 06/20/22 11:50**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.052		mg/L		06/21/22 09:25	06/22/22 20:44	1
Motor Oil (>C24-C36)	ND		0.090		mg/L		06/21/22 09:25	06/22/22 20:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	75		50 - 150				06/21/22 09:25	06/22/22 20:44	1

## Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Arsenic</b>	<b>0.0035</b>		0.0010		mg/L		06/20/22 17:49	06/21/22 19:21	1
Lead	ND		0.00040		mg/L		06/20/22 17:49	06/21/22 19:21	1



# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115039-1

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

Lab Sample ID: MB 580-394395/1-A

Matrix: Water

Analysis Batch: 394637

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 394395

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		06/21/22 09:25	06/22/22 19:23	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		06/21/22 09:25	06/22/22 19:23	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	85		50 - 150				06/21/22 09:25	06/22/22 19:23	1

Lab Sample ID: LCS 580-394395/2-A

Matrix: Water

Analysis Batch: 394637

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 394395

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
#2 Diesel (C10-C24)	4.00	3.00		mg/L		75	50 - 120	
Motor Oil (>C24-C36)	4.00	3.51		mg/L		88	64 - 120	
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
o-Terphenyl	86		50 - 150					

Lab Sample ID: LCSD 580-394395/3-A

Matrix: Water

Analysis Batch: 394637

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 394395

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	2.80		mg/L		70	50 - 120	7	26
Motor Oil (>C24-C36)	4.00	3.45		mg/L		86	64 - 120	2	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	89		50 - 150						

## Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-394370/14-A

Matrix: Water

Analysis Batch: 394534

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 394370

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		06/20/22 17:49	06/21/22 19:18	1
Lead	ND		0.00040		mg/L		06/20/22 17:49	06/21/22 19:18	1

Lab Sample ID: LCS 580-394370/15-A

Matrix: Water

Analysis Batch: 394534

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 394370

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Arsenic	1.00	0.991		mg/L		99	85 - 115	
Lead	1.00	1.00		mg/L		100	85 - 115	

Eurofins Seattle

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115039-1

## Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 580-394370/16-A

Matrix: Water

Analysis Batch: 394534

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 394370

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	1.00	1.00		mg/L		100	85 - 115	1	20
Lead	1.00	1.01		mg/L		101	85 - 115	1	20

Lab Sample ID: 580-115039-2 MS

Matrix: Water

Analysis Batch: 394534

Client Sample ID: HCC EFF-61722

Prep Type: Total/NA

Prep Batch: 394370

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.0035		1.00	1.07		mg/L		106	70 - 130		
Lead	ND		1.00	1.07		mg/L		107	70 - 130		

Lab Sample ID: 580-115039-2 MSD

Matrix: Water

Analysis Batch: 394534

Client Sample ID: HCC EFF-61722

Prep Type: Total/NA

Prep Batch: 394370

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.0035		1.00	1.07		mg/L		107	70 - 130	0	20
Lead	ND		1.00	1.06		mg/L		106	70 - 130	1	20

Lab Sample ID: 580-115039-2 DU

Matrix: Water

Analysis Batch: 394534

Client Sample ID: HCC EFF-61722

Prep Type: Total/NA

Prep Batch: 394370

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	0.0035		0.00358		mg/L		3	20
Lead	ND		ND		mg/L		NC	20

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115039-1

**Client Sample ID: Before GAC-61722**

**Lab Sample ID: 580-115039-1**

**Date Collected: 06/17/22 17:00**

**Matrix: Water**

**Date Received: 06/20/22 11:50**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			394395	06/21/22 09:25	KLW	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	394637	06/22/22 20:23	Y1F	FGS SEA

**Client Sample ID: HCC EFF-61722**

**Lab Sample ID: 580-115039-2**

**Date Collected: 06/17/22 17:00**

**Matrix: Water**

**Date Received: 06/20/22 11:50**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			394395	06/21/22 09:25	KLW	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	394637	06/22/22 20:44	Y1F	FGS SEA
Total/NA	Prep	200.8			394370	06/20/22 17:49	ABP	FGS SEA
Total/NA	Analysis	200.8		1	394534	06/21/22 19:21	FCW	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115039-1

## Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22

1
2
3
4
5
6
7
8
9
10
11

## Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115039-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-115039-1	Before GAC-61722	Water	06/17/22 17:00	06/20/22 11:50
580-115039-2	HCC EFF-61722	Water	06/17/22 17:00	06/20/22 11:50

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5755 8th Street East

## Chain of Custody Record

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

**TestAmerica Laboratories, Inc.**

[illegible]

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-115039-1

**Login Number: 115039**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Vallelunga, Diana L**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-115285-1

Client Project/Site: BNSF Skykomish Rush NPDES  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:

7/1/2022 1:03:15 PM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

Review your project  
results through



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[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	8
Certification Summary . . . . .	9
Sample Summary . . . . .	10
Chain of Custody . . . . .	11
Receipt Checklists . . . . .	12



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115285-1

**Job ID: 580-115285-1**

**Laboratory: Eurofins Seattle**

## Narrative

**Job Narrative**  
**580-115285-1**

## Comments

No additional comments.

## Receipt

The samples were received on 6/27/2022 1:30 PM. 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 7.2° C.

## 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.

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115285-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115285-1

Client Sample ID: Before GAC-62422

Lab Sample ID: 580-115285-1

Date Collected: 06/24/22 11:50

Matrix: Water

Date Received: 06/27/22 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.56		0.052		mg/L		06/29/22 09:21	06/30/22 16:25	1
Motor Oil (>C24-C36)	0.32		0.089		mg/L		06/29/22 09:21	06/30/22 16:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	87		50 - 150				06/29/22 09:21	06/30/22 16:25	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115285-1

**Client Sample ID: HCC EFF-62422**

**Lab Sample ID: 580-115285-2**

**Date Collected: 06/24/22 11:50**

**Matrix: Water**

**Date Received: 06/27/22 13:30**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.052		mg/L		06/29/22 09:21	06/30/22 16:45	1
Motor Oil (>C24-C36)	ND		0.090		mg/L		06/29/22 09:21	06/30/22 16:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	83		50 - 150				06/29/22 09:21	06/30/22 16:45	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115285-1

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

Lab Sample ID: MB 580-395336/1-A

Matrix: Water

Analysis Batch: 395536

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 395336

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		06/29/22 09:21	06/30/22 15:04	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		06/29/22 09:21	06/30/22 15:04	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	89		50 - 150				06/29/22 09:21	06/30/22 15:04	1

Lab Sample ID: LCS 580-395336/2-A

Matrix: Water

Analysis Batch: 395536

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 395336

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4.00	3.02		mg/L		75	50 - 120		
Motor Oil (>C24-C36)	4.00	3.76		mg/L		94	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	105		50 - 150						

Lab Sample ID: LCSD 580-395336/3-A

Matrix: Water

Analysis Batch: 395536

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 395336

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.27		mg/L		82	50 - 120	8	26
Motor Oil (>C24-C36)	4.00	3.81		mg/L		95	64 - 120	1	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	107		50 - 150						

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115285-1

**Client Sample ID: Before GAC-62422**

**Lab Sample ID: 580-115285-1**

**Date Collected: 06/24/22 11:50**

**Matrix: Water**

**Date Received: 06/27/22 13:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			395336	06/29/22 09:21	KLW	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	395536	06/30/22 16:25	Y1F	FGS SEA

**Client Sample ID: HCC EFF-62422**

**Lab Sample ID: 580-115285-2**

**Date Collected: 06/24/22 11:50**

**Matrix: Water**

**Date Received: 06/27/22 13:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			395336	06/29/22 09:21	KLW	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	395536	06/30/22 16:45	Y1F	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115285-1

## Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22

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## Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115285-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-115285-1	Before GAC-62422	Water	06/24/22 11:50	06/27/22 13:30
580-115285-2	HCC EFF-62422	Water	06/24/22 11:50	06/27/22 13:30

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5755 8th Street East

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

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**TestAmerica Laboratories, Inc.**

[illegible]

Form No. CA-C-WI-002, Rev. 4.18, dated 9/5/2018

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-115285-1

**Login Number: 115285**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Vallelunga, Diana L**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-115407-1

Client Project/Site: BNSF Skykomish Rush NPDES  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:

7/8/2022 11:26:04 AM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	8
Certification Summary . . . . .	9
Sample Summary . . . . .	10
Chain of Custody . . . . .	11
Receipt Checklists . . . . .	12



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115407-1

**Job ID: 580-115407-1**

**Laboratory: Eurofins Seattle**

## Narrative

**Job Narrative**  
**580-115407-1**

## Comments

No additional comments.

## Receipt

The samples were received on 6/30/2022 10:40 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 3.2° C.

## 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.

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115407-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115407-1

**Client Sample ID: Before GAC-62922**

**Lab Sample ID: 580-115407-1**

**Date Collected: 06/29/22 08:45**

**Matrix: Water**

**Date Received: 06/30/22 10:40**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.55		0.056		mg/L		07/06/22 09:34	07/06/22 16:01	1
Motor Oil (>C24-C36)	0.32		0.096		mg/L		07/06/22 09:34	07/06/22 16:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	65		50 - 150				07/06/22 09:34	07/06/22 16:01	1



# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115407-1

**Client Sample ID: HCC EFF-62922**

**Lab Sample ID: 580-115407-2**

**Date Collected: 06/29/22 08:45**

**Matrix: Water**

**Date Received: 06/30/22 10:40**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.056		mg/L		07/06/22 09:34	07/06/22 16:21	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		07/06/22 09:34	07/06/22 16:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	66		50 - 150				07/06/22 09:34	07/06/22 16:21	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115407-1

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

Lab Sample ID: MB 580-396041/1-A

Matrix: Water

Analysis Batch: 396167

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 396041

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		07/06/22 09:34	07/06/22 18:15	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		07/06/22 09:34	07/06/22 18:15	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	52		50 - 150				07/06/22 09:34	07/06/22 18:15	1

Lab Sample ID: LCS 580-396041/2-A

Matrix: Water

Analysis Batch: 396151

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 396041

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4.00	2.60		mg/L		65	50 - 120		
Motor Oil (>C24-C36)	4.00	2.99		mg/L		75	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	72		50 - 150						

Lab Sample ID: LCSD 580-396041/3-A

Matrix: Water

Analysis Batch: 396151

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 396041

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	2.83		mg/L		71	50 - 120	9	26
Motor Oil (>C24-C36)	4.00	3.25		mg/L		81	64 - 120	8	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	80		50 - 150						

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115407-1

**Client Sample ID: Before GAC-62922**

**Lab Sample ID: 580-115407-1**

**Date Collected: 06/29/22 08:45**

**Matrix: Water**

**Date Received: 06/30/22 10:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			396041	07/06/22 09:34	JJY	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	396151	07/06/22 16:01	DH	FGS SEA

**Client Sample ID: HCC EFF-62922**

**Lab Sample ID: 580-115407-2**

**Date Collected: 06/29/22 08:45**

**Matrix: Water**

**Date Received: 06/30/22 10:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			396041	07/06/22 09:34	JJY	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	396151	07/06/22 16:21	DH	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115407-1

## Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22



## Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115407-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-115407-1	Before GAC-62922	Water	06/29/22 08:45	06/30/22 10:40
580-115407-2	HCC EFF-62922	Water	06/29/22 08:45	06/30/22 10:40

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5755 8th Street East

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

## TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

**TestAmerica Laboratories, Inc.**

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:[illegible]

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-115407-1

**Login Number: 115407**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Vallelunga, Diana L**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-115640-1

Client Project/Site: BNSF Skykomish Rush NPDES  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:

7/13/2022 2:20:48 PM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	8
Certification Summary . . . . .	9
Sample Summary . . . . .	10
Chain of Custody . . . . .	11
Receipt Checklists . . . . .	12



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115640-1

**Job ID: 580-115640-1**

**Laboratory: Eurofins Seattle**

## Narrative

**Job Narrative**  
**580-115640-1**

## Comments

No additional comments.

## Receipt

The samples were received on 7/7/2022 1:26 PM. Unless otherwise noted below, the samples arrived in good condition. The temperature of the cooler at receipt was 6.6° C.

## Receipt Exceptions

The samples on this job were received at the laboratory slightly outside the required temperature criteria at a temp of 6.6/6.2.

## 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.

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115640-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115640-1

**Client Sample ID: Before GAC-7622**

**Lab Sample ID: 580-115640-1**

**Date Collected: 07/06/22 12:45**

**Matrix: Water**

**Date Received: 07/07/22 13:26**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.52		0.055		mg/L		07/12/22 08:55	07/12/22 18:20	1
Motor Oil (>C24-C36)	0.30		0.095		mg/L		07/12/22 08:55	07/12/22 18:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	72		50 - 150				07/12/22 08:55	07/12/22 18:20	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115640-1

**Client Sample ID: HCC EFF-7622**

**Lab Sample ID: 580-115640-2**

**Date Collected: 07/06/22 12:45**

**Matrix: Water**

**Date Received: 07/07/22 13:26**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		07/12/22 08:55	07/12/22 18:40	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		07/12/22 08:55	07/12/22 18:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	61		50 - 150				07/12/22 08:55	07/12/22 18:40	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115640-1

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

Lab Sample ID: MB 580-396677/1-A

Matrix: Water

Analysis Batch: 396794

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 396677

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		07/12/22 08:55	07/12/22 17:19	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		07/12/22 08:55	07/12/22 17:19	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	67		50 - 150				07/12/22 08:55	07/12/22 17:19	1

Lab Sample ID: LCS 580-396677/2-A

Matrix: Water

Analysis Batch: 396794

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 396677

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4.00	3.06		mg/L		76	50 - 120		
Motor Oil (>C24-C36)	4.00	3.56		mg/L		89	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	90		50 - 150						

Lab Sample ID: LCSD 580-396677/3-A

Matrix: Water

Analysis Batch: 396794

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 396677

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.02		mg/L		75	50 - 120	1	26
Motor Oil (>C24-C36)	4.00	3.47		mg/L		87	64 - 120	3	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	86		50 - 150						

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115640-1

**Client Sample ID: Before GAC-7622**

**Lab Sample ID: 580-115640-1**

**Date Collected: 07/06/22 12:45**

**Matrix: Water**

**Date Received: 07/07/22 13:26**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			396677	07/12/22 08:55	KLW	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	396794	07/12/22 18:20	DH	FGS SEA

**Client Sample ID: HCC EFF-7622**

**Lab Sample ID: 580-115640-2**

**Date Collected: 07/06/22 12:45**

**Matrix: Water**

**Date Received: 07/07/22 13:26**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			396677	07/12/22 08:55	KLW	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	396794	07/12/22 18:40	DH	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115640-1

## Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22





## Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115640-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-115640-1	Before GAC-7622	Water	07/06/22 12:45	07/07/22 13:26
580-115640-2	HCC EFF-7622	Water	07/06/22 12:45	07/07/22 13:26

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5755 8th Street East

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

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**TestAmerica Laboratories, Inc.**

7/13/2022

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-115640-1

**Login Number: 115640**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Vallelunga, Diana L**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-115966-1

Client Project/Site: BNSF Skykomish Rush NPDES  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:

7/26/2022 4:51:09 PM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	10
Certification Summary . . . . .	11
Sample Summary . . . . .	12
Chain of Custody . . . . .	13
Receipt Checklists . . . . .	14

## Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115966-1

**Job ID: 580-115966-1**

**Laboratory: Eurofins Seattle**

### Narrative

#### Job Narrative 580-115966-1

### Comments

No additional comments.

### Receipt

The samples were received on 7/15/2022 4:15 PM. 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 3.4° C.

### GC Semi VOA

Method NWTPH-Dx: The method blank for preparation batch 580-397484 contained #2 Diesel (C10-C24) and Motor Oil (>C24-C36) above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed.

Method NWTPH-Dx: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 580-398096 and analytical batch 580-398219 recovered outside control limits for the following analytes: Motor Oil (>C24-C36).

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

### Metals

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.

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115966-1

### Qualifiers

#### GC Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115966-1

**Client Sample ID: Before GAC-71222**

**Lab Sample ID: 580-115966-1**

**Date Collected: 07/12/22 08:15**

**Matrix: Water**

**Date Received: 07/15/22 16:15**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.49		0.055		mg/L		07/25/22 09:15	07/25/22 22:04	1
Motor Oil (>C24-C36)	0.26	*1	0.096		mg/L		07/25/22 09:15	07/25/22 22:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	79		50 - 150				07/25/22 09:15	07/25/22 22:04	1



# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115966-1

**Client Sample ID: HCC EFF-71222**

**Lab Sample ID: 580-115966-2**

**Date Collected: 07/12/22 08:15**

**Matrix: Water**

**Date Received: 07/15/22 16:15**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		07/19/22 10:09	07/19/22 22:53	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		07/19/22 10:09	07/19/22 22:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	73		50 - 150				07/19/22 10:09	07/19/22 22:53	1

## Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		07/19/22 18:49	07/20/22 07:33	1
Lead	ND		0.00040		mg/L		07/19/22 18:49	07/20/22 07:33	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115966-1

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

Lab Sample ID: MB 580-397484/1-A

Matrix: Water

Analysis Batch: 397588

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 397484

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		07/19/22 10:09	07/19/22 20:32	1
Motor Oil (>C24-C36)	0.103		0.095		mg/L		07/19/22 10:09	07/19/22 20:32	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	72		50 - 150				07/19/22 10:09	07/19/22 20:32	1

Lab Sample ID: LCS 580-397484/2-A

Matrix: Water

Analysis Batch: 397588

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 397484

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
#2 Diesel (C10-C24)	4.00	3.11		mg/L		78	50 - 120	
Motor Oil (>C24-C36)	4.00	3.74		mg/L		93	64 - 120	
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
o-Terphenyl	80		50 - 150					

Lab Sample ID: LCSD 580-397484/3-A

Matrix: Water

Analysis Batch: 397588

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 397484

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.03		mg/L		76	50 - 120	3	26
Motor Oil (>C24-C36)	4.00	3.63		mg/L		91	64 - 120	3	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	83		50 - 150						

Lab Sample ID: MB 580-398096/1-A

Matrix: Water

Analysis Batch: 398219

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 398096

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		07/25/22 09:15	07/25/22 21:02	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		07/25/22 09:15	07/25/22 21:02	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	67		50 - 150				07/25/22 09:15	07/25/22 21:02	1

Lab Sample ID: LCS 580-398096/2-A

Matrix: Water

Analysis Batch: 398219

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 398096

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
#2 Diesel (C10-C24)	4.00	2.61		mg/L		65	50 - 120	
Motor Oil (>C24-C36)	4.00	2.95		mg/L		74	64 - 120	

Eurofins Seattle

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115966-1

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

Lab Sample ID: LCS 580-398096/2-A  
Matrix: Water  
Analysis Batch: 398219

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 398096

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	82		50 - 150

Lab Sample ID: LCSD 580-398096/3-A  
Matrix: Water  
Analysis Batch: 398219

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 398096

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.06		mg/L		76	50 - 120	16	26
Motor Oil (>C24-C36)	4.00	3.99	*1	mg/L		100	64 - 120	30	24

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	104		50 - 150

## Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-397584/14-A  
Matrix: Water  
Analysis Batch: 397616

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 397584

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		07/19/22 18:49	07/20/22 07:29	1
Lead	ND		0.00040		mg/L		07/19/22 18:49	07/20/22 07:29	1

Lab Sample ID: LCS 580-397584/15-A  
Matrix: Water  
Analysis Batch: 397616

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 397584

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	1.01		mg/L		101	85 - 115
Lead	1.00	1.02		mg/L		102	85 - 115

Lab Sample ID: LCSD 580-397584/16-A  
Matrix: Water  
Analysis Batch: 397616

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 397584

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	1.00	1.03		mg/L		103	85 - 115	2	20
Lead	1.00	1.03		mg/L		103	85 - 115	1	20

Lab Sample ID: 320-90046-A-1-D MS  
Matrix: Water  
Analysis Batch: 397616

Client Sample ID: Matrix Spike  
Prep Type: Total Recoverable  
Prep Batch: 397584

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	ND		1.00	1.05		mg/L		105	70 - 130
Lead	0.037		1.00	1.11		mg/L		107	70 - 130

Eurofins Seattle

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115966-1

## Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 320-90046-A-1-E MSD

Matrix: Water

Analysis Batch: 397616

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total Recoverable

Prep Batch: 397584

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		1.00	1.10		mg/L		110	70 - 130	5	20
Lead	0.037		1.00	1.12		mg/L		108	70 - 130	1	20

Lab Sample ID: 320-90046-A-1-C DU

Matrix: Water

Analysis Batch: 397616

Client Sample ID: Duplicate

Prep Type: Total Recoverable

Prep Batch: 397584

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	ND		ND		mg/L		NC	20
Lead	0.037		0.0383		mg/L		2	20

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115966-1

**Client Sample ID: Before GAC-71222**

**Lab Sample ID: 580-115966-1**

**Date Collected: 07/12/22 08:15**

**Matrix: Water**

**Date Received: 07/15/22 16:15**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			398096	07/25/22 09:15	KLW	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	398219	07/25/22 22:04	DH	FGS SEA

**Client Sample ID: HCC EFF-71222**

**Lab Sample ID: 580-115966-2**

**Date Collected: 07/12/22 08:15**

**Matrix: Water**

**Date Received: 07/15/22 16:15**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			397484	07/19/22 10:09	JJY	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	397588	07/19/22 22:53	Y1F	FGS SEA
Total/NA	Prep	200.8			397584	07/19/22 18:49	JLS	FGS SEA
Total/NA	Analysis	200.8		1	397616	07/20/22 07:33	FCW	FGS SEA

## Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115966-1

## Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22 *



\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-115966-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-115966-1	Before GAC-71222	Water	07/12/22 08:15	07/15/22 16:15
580-115966-2	HCC EFF-71222	Water	07/12/22 08:15	07/15/22 16:15

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5755 8th Street East

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

## Chain c



580-115966 Chain of Custody

TestAmerica

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**TestAmerica Laboratories, Inc.**

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:[illegible]

Form No. CA-C-WI-002, Rev. 4.18, dated 9/5/2018



## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-115966-1

**Login Number: 115966**

**List Number: 1**

**Creator: Presley, Kim A**

**List Source: Eurofins Seattle**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-116231-1

Client Project/Site: BNSF Skykomish Rush NPDES  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:

8/5/2022 10:38:57 AM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

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results through



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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	9
Certification Summary . . . . .	10
Sample Summary . . . . .	11
Chain of Custody . . . . .	12
Receipt Checklists . . . . .	13



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-116231-1

**Job ID: 580-116231-1**

**Laboratory: Eurofins Seattle**

## Narrative

**Job Narrative**  
**580-116231-1**

## Comments

No additional comments.

## Receipt

The samples were received on 7/22/2022 1:00 PM. 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 1.3° C.

## GC Semi VOA

Method NWTPH-Dx: The method blank for preparation batch 580-399005 contained Motor Oil above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed.

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

## Organic Prep

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

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-116231-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-116231-1

**Client Sample ID: Before GAC-072122**

**Lab Sample ID: 580-116231-1**

Date Collected: 07/21/22 13:20

Matrix: Water

Date Received: 07/22/22 13:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.46		0.056		mg/L		08/03/22 08:49	08/03/22 21:22	1
Motor Oil (>C24-C36)	0.26		0.097		mg/L		08/03/22 08:49	08/03/22 21:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	65		50 - 150				08/03/22 08:49	08/03/22 21:22	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-116231-1

Client Sample ID: HCC EFF-072122

Lab Sample ID: 580-116231-2

Date Collected: 07/21/22 13:10

Matrix: Water

Date Received: 07/22/22 13:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.056		mg/L		08/01/22 14:06	08/02/22 09:17	1
Motor Oil (>C24-C36)	ND		0.097		mg/L		08/01/22 14:06	08/02/22 09:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	67		50 - 150				08/01/22 14:06	08/02/22 09:17	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-116231-1

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

Lab Sample ID: MB 580-399005/1-A

Matrix: Water

Analysis Batch: 399047

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 399005

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		08/01/22 14:06	08/02/22 07:59	1
Motor Oil (>C24-C36)	0.134		0.095		mg/L		08/01/22 14:06	08/02/22 07:59	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	68		50 - 150				08/01/22 14:06	08/02/22 07:59	1

Lab Sample ID: LCS 580-399005/2-A

Matrix: Water

Analysis Batch: 399047

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 399005

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
#2 Diesel (C10-C24)	4.00	3.73		mg/L		93	50 - 120	
Motor Oil (>C24-C36)	4.00	4.41		mg/L		110	64 - 120	
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
o-Terphenyl	95		50 - 150					

Lab Sample ID: LCSD 580-399005/3-A

Matrix: Water

Analysis Batch: 399047

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 399005

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.90		mg/L		97	50 - 120	4	26
Motor Oil (>C24-C36)	4.00	4.67		mg/L		117	64 - 120	6	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	98		50 - 150						

Lab Sample ID: MB 580-399220/1-A

Matrix: Water

Analysis Batch: 399327

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 399220

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		08/03/22 08:49	08/03/22 20:22	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		08/03/22 08:49	08/03/22 20:22	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	67		50 - 150				08/03/22 08:49	08/03/22 20:22	1

Lab Sample ID: LCS 580-399220/2-A

Matrix: Water

Analysis Batch: 399327

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 399220

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
#2 Diesel (C10-C24)	4.00	3.37		mg/L		84	50 - 120	
Motor Oil (>C24-C36)	4.00	3.95		mg/L		99	64 - 120	

Eurofins Seattle



# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-116231-1

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

Lab Sample ID: LCS 580-399220/2-A

Matrix: Water

Analysis Batch: 399327

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 399220

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	87		50 - 150

Lab Sample ID: LCSD 580-399220/3-A

Matrix: Water

Analysis Batch: 399327

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 399220

	Spike	LCSD	LCSD						%Rec		
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit		
#2 Diesel (C10-C24)	4.00	3.71		mg/L		93	50 - 120	10	26		
Motor Oil (>C24-C36)	4.00	4.26		mg/L		107	64 - 120	8	24		

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	97		50 - 150

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-116231-1

**Client Sample ID: Before GAC-072122**

**Lab Sample ID: 580-116231-1**

**Date Collected: 07/21/22 13:20**

**Matrix: Water**

**Date Received: 07/22/22 13:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			399220	08/03/22 08:49	KLW	EETNW SE.
Total/NA	Analysis	NWTPH-Dx		1	399327	08/03/22 21:22	DH	EETNW SE.

**Client Sample ID: HCC EFF-072122**

**Lab Sample ID: 580-116231-2**

**Date Collected: 07/21/22 13:10**

**Matrix: Water**

**Date Received: 07/22/22 13:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			399005	08/01/22 14:06	JJY	EETNW SE.
Total/NA	Analysis	NWTPH-Dx		1	399047	08/02/22 09:17	JSM	EETNW SE.

## Laboratory References:

EETNW SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

## Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-116231-1

### Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22 *

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Seattle

## Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-116231-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-116231-1	Before GAC-072122	Water	07/21/22 13:20	07/22/22 13:00
580-116231-2	HCC EFF-072122	Water	07/21/22 13:10	07/22/22 13:00

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5755 8th Street East

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:

## TestAmerica

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**TestAmerica Laboratories, Inc.**

[illegible]

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-116231-1

**Login Number: 116231**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Vallelunga, Diana L**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-116321-1

Client Project/Site: BNSF Skykomish Rush NPDES  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:

8/5/2022 10:40:15 AM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	9
Certification Summary . . . . .	10
Sample Summary . . . . .	11
Chain of Custody . . . . .	12
Receipt Checklists . . . . .	13





# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-116321-1

**Job ID: 580-116321-1**

**Laboratory: Eurofins Seattle**

## Narrative

**Job Narrative**  
**580-116321-1**

## Comments

No additional comments.

## Receipt

The samples were received on 7/27/2022 8:00 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 1.6° C.

## GC Semi VOA

Method NWTPH-Dx: The method blank for preparation batch 580-399005 contained Motor Oil above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed.

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

## Organic Prep

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

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-116321-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-116321-1

**Client Sample ID: Before GAC-072622**

**Lab Sample ID: 580-116321-1**

**Date Collected: 07/26/22 11:00**

**Matrix: Water**

**Date Received: 07/27/22 08:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.48		0.055		mg/L		08/03/22 08:49	08/03/22 21:42	1
Motor Oil (>C24-C36)	0.28		0.095		mg/L		08/03/22 08:49	08/03/22 21:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	66		50 - 150				08/03/22 08:49	08/03/22 21:42	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-116321-1

**Client Sample ID: HCC EFF-072622**

**Lab Sample ID: 580-116321-2**

**Date Collected: 07/26/22 11:00**

**Matrix: Water**

**Date Received: 07/27/22 08:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		08/01/22 14:06	08/02/22 10:16	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		08/01/22 14:06	08/02/22 10:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	68		50 - 150				08/01/22 14:06	08/02/22 10:16	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-116321-1

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

Lab Sample ID: MB 580-399005/1-A

Matrix: Water

Analysis Batch: 399047

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 399005

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		08/01/22 14:06	08/02/22 07:59	1
Motor Oil (>C24-C36)	0.134		0.095		mg/L		08/01/22 14:06	08/02/22 07:59	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	68		50 - 150				08/01/22 14:06	08/02/22 07:59	1

Lab Sample ID: LCS 580-399005/2-A

Matrix: Water

Analysis Batch: 399047

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 399005

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4.00	3.73		mg/L		93	50 - 120		
Motor Oil (>C24-C36)	4.00	4.41		mg/L		110	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	95		50 - 150						

Lab Sample ID: LCSD 580-399005/3-A

Matrix: Water

Analysis Batch: 399047

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 399005

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.90		mg/L		97	50 - 120	4	26
Motor Oil (>C24-C36)	4.00	4.67		mg/L		117	64 - 120	6	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	98		50 - 150						

Lab Sample ID: MB 580-399220/1-A

Matrix: Water

Analysis Batch: 399327

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 399220

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		08/03/22 08:49	08/03/22 20:22	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		08/03/22 08:49	08/03/22 20:22	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	67		50 - 150				08/03/22 08:49	08/03/22 20:22	1

Lab Sample ID: LCS 580-399220/2-A

Matrix: Water

Analysis Batch: 399327

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 399220

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4.00	3.37		mg/L		84	50 - 120		
Motor Oil (>C24-C36)	4.00	3.95		mg/L		99	64 - 120		

Eurofins Seattle

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-116321-1

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

Lab Sample ID: LCS 580-399220/2-A

Matrix: Water

Analysis Batch: 399327

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 399220

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	87		50 - 150

Lab Sample ID: LCSD 580-399220/3-A

Matrix: Water

Analysis Batch: 399327

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 399220

	Spike	LCSD	LCSD						%Rec		
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit		
#2 Diesel (C10-C24)	4.00	3.71		mg/L		93	50 - 120	10	26		
Motor Oil (>C24-C36)	4.00	4.26		mg/L		107	64 - 120	8	24		

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	97		50 - 150

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-116321-1

**Client Sample ID: Before GAC-072622**

**Lab Sample ID: 580-116321-1**

**Date Collected: 07/26/22 11:00**

**Matrix: Water**

**Date Received: 07/27/22 08:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			399220	08/03/22 08:49	KLW	EETNW SE.
Total/NA	Analysis	NWTPH-Dx		1	399327	08/03/22 21:42	DH	EETNW SE.

**Client Sample ID: HCC EFF-072622**

**Lab Sample ID: 580-116321-2**

**Date Collected: 07/26/22 11:00**

**Matrix: Water**

**Date Received: 07/27/22 08:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			399005	08/01/22 14:06	JJY	EETNW SE.
Total/NA	Analysis	NWTPH-Dx		1	399047	08/02/22 10:16	JSM	EETNW SE.

## Laboratory References:

EETNW SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

## Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-116321-1

### Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22 *

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Seattle



# Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-116321-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-116321-1	Before GAC-072622	Water	07/26/22 11:00	07/27/22 08:00
580-116321-2	HCC EFF-072622	Water	07/26/22 11:00	07/27/22 08:00

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5755 8th Street East

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

## TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

**TestAmerica Laboratories, Inc.**

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:[illegible]

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-116321-1

**Login Number: 116321**

**List Number: 1**

**Creator: Vallelunga, Diana L**

**List Source: Eurofins Seattle**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-116659-1

Client Project/Site: BNSF Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:

8/11/2022 9:04:23 PM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	8
Certification Summary . . . . .	9
Sample Summary . . . . .	10
Chain of Custody . . . . .	11
Receipt Checklists . . . . .	12



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-116659-1

**Job ID: 580-116659-1**

**Laboratory: Eurofins Seattle**

## Narrative

**Job Narrative**  
**580-116659-1**

## Comments

No additional comments.

## Receipt

The samples were received on 8/5/2022 12:10 PM. 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 1.3° C.

## 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.

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-116659-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-116659-1

**Client Sample ID: Before GAC-8522**

**Lab Sample ID: 580-116659-1**

Date Collected: 08/05/22 07:00

Matrix: Water

Date Received: 08/05/22 12:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.38		0.055		mg/L		08/08/22 10:19	08/08/22 22:02	1
Motor Oil (>C24-C36)	0.24		0.095		mg/L		08/08/22 10:19	08/08/22 22:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	73		50 - 150				08/08/22 10:19	08/08/22 22:02	1



# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-116659-1

**Client Sample ID: HCC EFF-8522**

**Lab Sample ID: 580-116659-2**

**Date Collected: 08/05/22 07:00**

**Matrix: Water**

**Date Received: 08/05/22 12:10**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		08/08/22 10:19	08/08/22 22:22	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		08/08/22 10:19	08/08/22 22:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	79		50 - 150				08/08/22 10:19	08/08/22 22:22	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-116659-1

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

Lab Sample ID: MB 580-399751/1-A

Matrix: Water

Analysis Batch: 399863

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 399751

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		08/08/22 10:19	08/08/22 21:02	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		08/08/22 10:19	08/08/22 21:02	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	68		50 - 150				08/08/22 10:19	08/08/22 21:02	1

Lab Sample ID: LCS 580-399751/2-A

Matrix: Water

Analysis Batch: 399863

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 399751

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
#2 Diesel (C10-C24)	4.00	3.62		mg/L		90	50 - 120	
Motor Oil (>C24-C36)	4.00	4.48		mg/L		112	64 - 120	
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
o-Terphenyl	65		50 - 150					

Lab Sample ID: LCSD 580-399751/3-A

Matrix: Water

Analysis Batch: 399955

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 399751

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.89		mg/L		97	50 - 120	7	26
Motor Oil (>C24-C36)	4.00	4.74		mg/L		118	64 - 120	6	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	107		50 - 150						

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-116659-1

**Client Sample ID: Before GAC-8522**

**Date Collected: 08/05/22 07:00**

**Date Received: 08/05/22 12:10**

**Lab Sample ID: 580-116659-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			399751	KLW	EET SEA	08/08/22 10:19
Total/NA	Analysis	NWTPH-Dx		1	399863	Y1F	EET SEA	08/08/22 22:02

**Client Sample ID: HCC EFF-8522**

**Date Collected: 08/05/22 07:00**

**Date Received: 08/05/22 12:10**

**Lab Sample ID: 580-116659-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			399751	KLW	EET SEA	08/08/22 10:19
Total/NA	Analysis	NWTPH-Dx		1	399863	Y1F	EET SEA	08/08/22 22:22

## Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-116659-1

## Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-23

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## Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-116659-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-116659-1	Before GAC-8522	Water	08/05/22 07:00	08/05/22 12:10
580-116659-2	HCC EFF-8522	Water	08/05/22 07:00	08/05/22 12:10

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5755 8th Street East

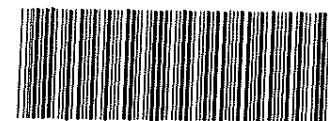
## Chain of Custody Record

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

**TestAmerica Laboratories, Inc.**

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:[illegible]

580-116659 Chain of Custody

Form No. CA-C-WI-002, Rev. 4.18, dated 9/5/2018

© 1415

MB  
But/Wet  
A3: 1.3/1.2

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-116659-1

**Login Number: 116659**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Presley, Kim A**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-116814-1

Client Project/Site: BNSF Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:

8/19/2022 3:10:14 PM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	9
Certification Summary . . . . .	10
Sample Summary . . . . .	11
Chain of Custody . . . . .	12
Receipt Checklists . . . . .	13



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-116814-1

**Job ID: 580-116814-1**

**Laboratory: Eurofins Seattle**

## Narrative

### Job Narrative 580-116814-1

## Comments

No additional comments.

## Receipt

The samples were received on 8/10/2022 8:56 AM. Unless otherwise noted below, the samples arrived in good condition. The temperature of the cooler at receipt was 6.6° C.

## Receipt Exceptions

The following samples were received at the laboratory outside the required temperature criteria by 0.2°C: Before GAC-8822 (580-116814-1) and HCC EFF-8822 (580-116814-2). These samples arrived right around the time a major power outage occurred at the laboratory, and the temperature may not have been recorded immediately upon receipt. Client confirmed that the samples were stored refrigerated at their facility after collection, and were transported to the lab with several frozen ice packs in the cooler.

## GC Semi VOA

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

## Metals

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.

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-116814-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-116814-1

**Client Sample ID: Before GAC-8822**

**Lab Sample ID: 580-116814-1**

**Date Collected: 08/08/22 13:30**

**Matrix: Water**

**Date Received: 08/10/22 08:56**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.36		0.055		mg/L		08/18/22 10:07	08/19/22 08:38	1
Motor Oil (>C24-C36)	0.18		0.095		mg/L		08/18/22 10:07	08/19/22 08:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	54		50 - 150				08/18/22 10:07	08/19/22 08:38	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-116814-1

**Client Sample ID: HCC EFF-8822**

**Lab Sample ID: 580-116814-2**

Date Collected: 08/08/22 13:30

Matrix: Water

Date Received: 08/10/22 08:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		08/18/22 10:07	08/19/22 08:58	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		08/18/22 10:07	08/19/22 08:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	51		50 - 150				08/18/22 10:07	08/19/22 08:58	1

## Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		08/11/22 19:18	08/13/22 18:50	1
Lead	ND		0.00040		mg/L		08/11/22 19:18	08/13/22 18:50	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-116814-1

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

Lab Sample ID: MB 580-400994/1-A

Matrix: Water

Analysis Batch: 401049

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 400994

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		08/18/22 10:07	08/19/22 07:37	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		08/18/22 10:07	08/19/22 07:37	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	61		50 - 150				08/18/22 10:07	08/19/22 07:37	1

Lab Sample ID: LCS 580-400994/2-A

Matrix: Water

Analysis Batch: 401049

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 400994

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
#2 Diesel (C10-C24)	4.00	2.83		mg/L		71	50 - 120	
Motor Oil (>C24-C36)	4.00	3.73		mg/L		93	64 - 120	
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
o-Terphenyl	81		50 - 150					

Lab Sample ID: LCSD 580-400994/3-A

Matrix: Water

Analysis Batch: 401049

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 400994

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	2.53		mg/L		63	50 - 120	11	26
Motor Oil (>C24-C36)	4.00	3.54		mg/L		88	64 - 120	5	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	77		50 - 150						

## Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-400303/14-A

Matrix: Water

Analysis Batch: 400574

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 400303

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		08/11/22 19:18	08/13/22 18:46	1
Lead	ND		0.00040		mg/L		08/11/22 19:18	08/13/22 18:46	1

Lab Sample ID: LCS 580-400303/15-A

Matrix: Water

Analysis Batch: 400574

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 400303

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Arsenic	1.00	1.01		mg/L		101	85 - 115	
Lead	1.00	1.02		mg/L		102	85 - 115	

Eurofins Seattle

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-116814-1

## Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 580-400303/16-A

Matrix: Water

Analysis Batch: 400574

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 400303

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	1.00	1.01		mg/L		101	85 - 115	0	20
Lead	1.00	1.02		mg/L		102	85 - 115	0	20

Lab Sample ID: 580-116814-2 MS

Matrix: Water

Analysis Batch: 400574

Client Sample ID: HCC EFF-8822

Prep Type: Total/NA

Prep Batch: 400303

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		1.00	1.04		mg/L		104	70 - 130		
Lead	ND		1.00	1.05		mg/L		105	70 - 130		

Lab Sample ID: 580-116814-2 MSD

Matrix: Water

Analysis Batch: 400574

Client Sample ID: HCC EFF-8822

Prep Type: Total/NA

Prep Batch: 400303

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		1.00	1.03		mg/L		103	70 - 130	1	20
Lead	ND		1.00	1.03		mg/L		103	70 - 130	2	20

Lab Sample ID: 580-116814-2 DU

Matrix: Water

Analysis Batch: 400574

Client Sample ID: HCC EFF-8822

Prep Type: Total/NA

Prep Batch: 400303

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	ND		ND		mg/L		NC	20
Lead	ND		ND		mg/L		NC	20

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-116814-1

**Client Sample ID: Before GAC-8822**

**Lab Sample ID: 580-116814-1**

**Date Collected: 08/08/22 13:30**

**Matrix: Water**

**Date Received: 08/10/22 08:56**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			400994	KLW	EET SEA	08/18/22 10:07
Total/NA	Analysis	NWTPH-Dx		1	401049	DH	EET SEA	08/19/22 08:38

**Client Sample ID: HCC EFF-8822**

**Lab Sample ID: 580-116814-2**

**Date Collected: 08/08/22 13:30**

**Matrix: Water**

**Date Received: 08/10/22 08:56**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			400994	KLW	EET SEA	08/18/22 10:07
Total/NA	Analysis	NWTPH-Dx		1	401049	DH	EET SEA	08/19/22 08:58
Total/NA	Prep	200.8			400303	NJ	EET SEA	08/11/22 19:18
Total/NA	Analysis	200.8		1	400574	FCW	EET SEA	08/13/22 18:50

## Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310



Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-116814-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-23



# Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-116814-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-116814-1	Before GAC-8822	Water	08/08/22 13:30	08/10/22 08:56
580-116814-2	HCC EFF-8822	Water	08/08/22 13:30	08/10/22 08:56

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5755 8th Street East

## Chain of Custody Record

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

**TestAmerica Laboratories, Inc.**

[illegible]

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-116814-1

**Login Number: 116814**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Holdener, Heather D**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	False	Cooler temperature outside required temperature criteria.
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-117120-1

Client Project/Site: BNSF Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:

8/31/2022 2:38:57 PM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	8
Certification Summary . . . . .	9
Sample Summary . . . . .	10
Chain of Custody . . . . .	11
Receipt Checklists . . . . .	12



## Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-117120-1

**Job ID: 580-117120-1**

**Laboratory: Eurofins Seattle**

### Narrative

#### Job Narrative 580-117120-1

### Comments

No additional comments.

### Receipt

The samples were received on 8/19/2022 1:15 PM. 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 2.4° C.

### GC Semi VOA

Method NWTPH-Dx: Continuing calibration verification (CCV) standard associated with batch 580-402450 recovered outside %Drift acceptance criteria for o-Terphenyl surrogate. The %Recovery is within acceptance criteria for the surrogate in the CCV and associated samples; therefore, the data are qualified and reported. Before GAC-81722 (580-117120-1), HCC EFF-81722 (580-117120-2), (CCVRT 580-402450/3) and (MB 580-402024/1-A)

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

### Organic Prep

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

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-117120-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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



# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-117120-1

**Client Sample ID: Before GAC-81722**

**Lab Sample ID: 580-117120-1**

Date Collected: 08/17/22 12:45

Matrix: Water

Date Received: 08/19/22 13:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.32		0.052		mg/L		08/26/22 13:29	08/30/22 23:13	1
Motor Oil (>C24-C36)	0.17		0.090		mg/L		08/26/22 13:29	08/30/22 23:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	54		50 - 150				08/26/22 13:29	08/30/22 23:13	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-117120-1

**Client Sample ID: HCC EFF-81722**

**Lab Sample ID: 580-117120-2**

**Date Collected: 08/17/22 12:45**

**Matrix: Water**

**Date Received: 08/19/22 13:15**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.051		mg/L		08/26/22 13:29	08/30/22 23:34	1
Motor Oil (>C24-C36)	ND		0.088		mg/L		08/26/22 13:29	08/30/22 23:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	57		50 - 150				08/26/22 13:29	08/30/22 23:34	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-117120-1

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

Lab Sample ID: MB 580-402024/1-A

Matrix: Water

Analysis Batch: 402450

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 402024

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		08/26/22 13:29	08/30/22 21:51	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		08/26/22 13:29	08/30/22 21:51	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	61		50 - 150				08/26/22 13:29	08/30/22 21:51	1

Lab Sample ID: LCS 580-402024/2-A

Matrix: Water

Analysis Batch: 402450

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 402024

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4.00	2.94		mg/L		74	50 - 120		
Motor Oil (>C24-C36)	4.00	3.40		mg/L		85	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	72		50 - 150						

Lab Sample ID: LCSD 580-402024/3-A

Matrix: Water

Analysis Batch: 402450

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 402024

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.33		mg/L		83	50 - 120	12	26
Motor Oil (>C24-C36)	4.00	3.83		mg/L		96	64 - 120	12	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	81		50 - 150						

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-117120-1

**Client Sample ID: Before GAC-81722**

**Lab Sample ID: 580-117120-1**

**Date Collected: 08/17/22 12:45**

**Matrix: Water**

**Date Received: 08/19/22 13:15**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			402024	S1B	EET SEA	08/26/22 13:29
Total/NA	Analysis	NWTPH-Dx		1	402450	ADB	EET SEA	08/30/22 23:13

**Client Sample ID: HCC EFF-81722**

**Lab Sample ID: 580-117120-2**

**Date Collected: 08/17/22 12:45**

**Matrix: Water**

**Date Received: 08/19/22 13:15**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			402024	S1B	EET SEA	08/26/22 13:29
Total/NA	Analysis	NWTPH-Dx		1	402450	ADB	EET SEA	08/30/22 23:34

## Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-117120-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-23



## Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-117120-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-117120-1	Before GAC-81722	Water	08/17/22 12:45	08/19/22 13:15
580-117120-2	HCC EFF-81722	Water	08/17/22 12:45	08/19/22 13:15

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5755 8th Street East

## Chain of Custody Record

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:

**TestAmerica Laboratories, Inc.**

[illegible]

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-117120-1

**Login Number: 117120**

**List Number: 1**

**Creator: Presley, Kim A**

**List Source: Eurofins Seattle**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-117289-1

Client Project/Site: BNSF Skykomish Rush NPDES  
Sampling Event: Skykomish - GAC/HCC  
Revision: 1

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:  
9/8/2022 5:16:53 PM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

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results through



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[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	9
Certification Summary . . . . .	10
Sample Summary . . . . .	11
Chain of Custody . . . . .	12
Receipt Checklists . . . . .	13

# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-117289-1

**Job ID: 580-117289-1**

**Laboratory: Eurofins Seattle**

## Narrative

### Job Narrative 580-117289-1

## Comments

No additional comments.

## Receipt

The samples were received on 8/25/2022 9:47 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 0.9° C.

## Revision

The report being provided is a revision of the original report sent on 9/6/2022. The report (revision 1) is being revised due to: Client needs sample 2 on this job re-prepped and re-analyzed. A sample switch is suspected due to the fully treated Effluent (sample 2 on job 580-117289) having higher results than the sample after initial treatment (sample on job 580-117288).

## 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.

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-117289-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-117289-1

**Client Sample ID: Before GAC-82422**

**Lab Sample ID: 580-117289-1**

**Date Collected: 08/24/22 11:10**

**Matrix: Water**

**Date Received: 08/25/22 09:47**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.36		0.050		mg/L		08/31/22 09:37	09/06/22 14:22	1
Motor Oil (>C24-C36)	0.20		0.087		mg/L		08/31/22 09:37	09/06/22 14:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	50		50 - 150				08/31/22 09:37	09/06/22 14:22	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-117289-1

**Client Sample ID: HCC EFF- 82422**

**Lab Sample ID: 580-117289-2**

**Date Collected: 08/24/22 11:10**

**Matrix: Water**

**Date Received: 08/25/22 09:47**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.051		mg/L		09/07/22 09:21	09/08/22 14:46	1
Motor Oil (>C24-C36)	ND		0.088		mg/L		09/07/22 09:21	09/08/22 14:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	64		50 - 150				09/07/22 09:21	09/08/22 14:46	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-117289-1

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

Lab Sample ID: MB 580-402502/1-A

Matrix: Water

Analysis Batch: 402957

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 402502

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		08/31/22 09:37	09/06/22 13:02	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		08/31/22 09:37	09/06/22 13:02	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	50		50 - 150				08/31/22 09:37	09/06/22 13:02	1

Lab Sample ID: LCS 580-402502/2-A

Matrix: Water

Analysis Batch: 402957

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 402502

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
#2 Diesel (C10-C24)	4.00	2.89		mg/L		72	50 - 120	
Motor Oil (>C24-C36)	4.00	3.66		mg/L		91	64 - 120	
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
o-Terphenyl	76		50 - 150					

Lab Sample ID: LCSD 580-402502/3-A

Matrix: Water

Analysis Batch: 402957

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 402502

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	2.65		mg/L		66	50 - 120	9	26
Motor Oil (>C24-C36)	4.00	3.63		mg/L		91	64 - 120	1	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	73		50 - 150						

Lab Sample ID: MB 580-403110/1-A

Matrix: Water

Analysis Batch: 403238

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 403110

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		09/07/22 09:21	09/08/22 13:05	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		09/07/22 09:21	09/08/22 13:05	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	61		50 - 150				09/07/22 09:21	09/08/22 13:05	1

Lab Sample ID: LCS 580-403110/2-A

Matrix: Water

Analysis Batch: 403238

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 403110

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
#2 Diesel (C10-C24)	4.00	3.77		mg/L		94	50 - 120	
Motor Oil (>C24-C36)	4.00	4.27		mg/L		107	64 - 120	

Eurofins Seattle

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-117289-1

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

Lab Sample ID: LCS 580-403110/2-A

Matrix: Water

Analysis Batch: 403238

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 403110

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	94		50 - 150

Lab Sample ID: LCSD 580-403110/3-A

Matrix: Water

Analysis Batch: 403238

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 403110

	Spike	LCSD	LCSD						%Rec	RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit		
#2 Diesel (C10-C24)	4.00	3.36		mg/L		84	50 - 120	11	26		
Motor Oil (>C24-C36)	4.00	4.00		mg/L		100	64 - 120	7	24		

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	83		50 - 150



# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-117289-1

**Client Sample ID: Before GAC-82422**

**Lab Sample ID: 580-117289-1**

**Date Collected: 08/24/22 11:10**

**Matrix: Water**

**Date Received: 08/25/22 09:47**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			402502	JJY	EET SEA	08/31/22 09:37
Total/NA	Analysis	NWTPH-Dx		1	402957	DH	EET SEA	09/06/22 14:22

**Client Sample ID: HCC EFF- 82422**

**Lab Sample ID: 580-117289-2**

**Date Collected: 08/24/22 11:10**

**Matrix: Water**

**Date Received: 08/25/22 09:47**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			403110	KLW	EET SEA	09/07/22 09:21
Total/NA	Analysis	NWTPH-Dx		1	403238	DH	EET SEA	09/08/22 14:46

## Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-117289-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-23

1
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## Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-117289-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-117289-1	Before GAC-82422	Water	08/24/22 11:10	08/25/22 09:47
580-117289-2	HCC EFF- 82422	Water	08/24/22 11:10	08/25/22 09:47

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5755 8th Street East



580-117289 Chain of Custody

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

phone 253.922.2310 fax 253.922.5047

☐ DW ☒ NPDES ☐ RCRA ☐ Other:

**TestAmerica Laboratories, Inc.**

[illegible]

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-117289-1

**Login Number: 117289**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Swoope, Alexandra C**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-117440-1

Client Project/Site: BNSF Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:

9/8/2022 5:21:20 PM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

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results through



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[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	8
Certification Summary . . . . .	9
Sample Summary . . . . .	10
Chain of Custody . . . . .	11
Receipt Checklists . . . . .	12

# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-117440-1

**Job ID: 580-117440-1**

**Laboratory: Eurofins Seattle**

## Narrative

**Job Narrative**  
**580-117440-1**

## Comments

No additional comments.

## Receipt

The samples were received on 8/31/2022 9:24 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 0.0° C.

## GC Semi VOA

Method NWTPH-Dx: Surrogate recovery for the following sample was outside control limits: Before GAC- 83022 (580-117440-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

## Organic Prep

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



## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-117440-1

### Qualifiers

#### GC Semi VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-117440-1

**Client Sample ID: Before GAC- 83022**

**Lab Sample ID: 580-117440-1**

**Date Collected: 08/30/22 10:15**

**Matrix: Water**

**Date Received: 08/31/22 09:24**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.33		0.052		mg/L		09/06/22 09:11	09/08/22 10:24	1
Motor Oil (>C24-C36)	0.34		0.090		mg/L		09/06/22 09:11	09/08/22 10:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	44	S1-	50 - 150				09/06/22 09:11	09/08/22 10:24	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-117440-1

**Client Sample ID: HCC EFF- 83022**

**Lab Sample ID: 580-117440-2**

**Date Collected: 08/30/22 10:15**

**Matrix: Water**

**Date Received: 08/31/22 09:24**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.051		mg/L		09/06/22 09:11	09/08/22 10:44	1
Motor Oil (>C24-C36)	ND		0.089		mg/L		09/06/22 09:11	09/08/22 10:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	60		50 - 150				09/06/22 09:11	09/08/22 10:44	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-117440-1

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

Lab Sample ID: MB 580-402966/1-A

Matrix: Water

Analysis Batch: 403238

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 402966

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		09/06/22 09:11	09/08/22 09:03	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		09/06/22 09:11	09/08/22 09:03	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	66		50 - 150				09/06/22 09:11	09/08/22 09:03	1

Lab Sample ID: LCS 580-402966/2-A

Matrix: Water

Analysis Batch: 403238

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 402966

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
#2 Diesel (C10-C24)	4.00	3.23		mg/L		81	50 - 120	
Motor Oil (>C24-C36)	4.00	3.61		mg/L		90	64 - 120	
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
o-Terphenyl	80		50 - 150					

Lab Sample ID: LCSD 580-402966/3-A

Matrix: Water

Analysis Batch: 403238

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 402966

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.00		mg/L		75	50 - 120	7	26
Motor Oil (>C24-C36)	4.00	3.66		mg/L		91	64 - 120	1	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	76		50 - 150						

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-117440-1

**Client Sample ID: Before GAC- 83022**

**Date Collected: 08/30/22 10:15**

**Date Received: 08/31/22 09:24**

**Lab Sample ID: 580-117440-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			402966	KLW	EET SEA	09/06/22 09:11
Total/NA	Analysis	NWTPH-Dx		1	403238	DH	EET SEA	09/08/22 10:24

**Client Sample ID: HCC EFF- 83022**

**Date Collected: 08/30/22 10:15**

**Date Received: 08/31/22 09:24**

**Lab Sample ID: 580-117440-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			402966	KLW	EET SEA	09/06/22 09:11
Total/NA	Analysis	NWTPH-Dx		1	403238	DH	EET SEA	09/08/22 10:44

## Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-117440-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-23



# Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-117440-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-117440-1	Before GAC- 83022	Water	08/30/22 10:15	08/31/22 09:24
580-117440-2	HCC EFF- 83022	Water	08/30/22 10:15	08/31/22 09:24

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5755 8th Street East



580-117440 Chain of Custody

## Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Tacoma, WA 98424-1317

phone 253.922.2310 fax 253.922.5047

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:

**TestAmerica Laboratories, Inc.**

[illegible]



## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-117440-1

**Login Number: 117440**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Swoope, Alexandra C**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

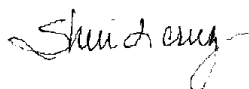
Laboratory Job ID: 580-117733-1

Client Project/Site: BNSF Skykomish Rush NPDES  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:

9/15/2022 8:49:51 AM

Sheri Cruz, Project Manager I  
(253)922-2310

[Sheri.Cruz@et.eurofinsus.com](mailto:Sheri.Cruz@et.eurofinsus.com)

Designee for

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

### LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	8
Certification Summary . . . . .	9
Sample Summary . . . . .	10
Chain of Custody . . . . .	11
Receipt Checklists . . . . .	12



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-117733-1

**Job ID: 580-117733-1**

**Laboratory: Eurofins Seattle**

## Narrative

### CASE NARRATIVE

**Client: Farallon Consulting LLC**  
**Project: BNSF Skykomish Rush NPDES**  
**Report Number: 580-117733-1**

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) resulting from a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are an unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes within the calibration range of the instrument or that reduces the interferences thereby enabling the quantification of target analytes.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### RECEIPT

The samples were received on 09/09/2022; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was -2.0 C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

### DIESEL AND MOTOR OIL RANGE ORGANICS

**Samples Before GAC-9722 (580-117733-1) and HCC EFF- 9722 (580-117733-2) were analyzed for diesel and motor oil range organics in accordance with Method NWTPH-Dx.** The samples were prepared and analyzed on 09/14/2022.

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

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-117733-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-117733-1

**Client Sample ID: Before GAC-9722**

**Lab Sample ID: 580-117733-1**

**Date Collected: 09/07/22 10:50**

**Matrix: Water**

**Date Received: 09/09/22 12:10**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.39		0.051		mg/L		09/14/22 09:40	09/14/22 17:38	1
Motor Oil (>C24-C36)	0.18		0.087		mg/L		09/14/22 09:40	09/14/22 17:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	72		50 - 150				09/14/22 09:40	09/14/22 17:38	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-117733-1

**Client Sample ID: HCC EFF- 9722**

**Lab Sample ID: 580-117733-2**

**Date Collected: 09/07/22 10:50**

**Matrix: Water**

**Date Received: 09/09/22 12:10**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.051		mg/L		09/14/22 09:40	09/14/22 17:58	1
Motor Oil (>C24-C36)	ND		0.088		mg/L		09/14/22 09:40	09/14/22 17:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	66		50 - 150				09/14/22 09:40	09/14/22 17:58	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-117733-1

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

Lab Sample ID: MB 580-403811/1-A

Matrix: Water

Analysis Batch: 403902

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 403811

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		09/14/22 09:40	09/14/22 16:38	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		09/14/22 09:40	09/14/22 16:38	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	74		50 - 150				09/14/22 09:40	09/14/22 16:38	1

Lab Sample ID: LCS 580-403811/2-A

Matrix: Water

Analysis Batch: 403902

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 403811

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4.00	3.15		mg/L		79	50 - 120		
Motor Oil (>C24-C36)	4.00	3.70		mg/L		92	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	85		50 - 150						

Lab Sample ID: LCSD 580-403811/3-A

Matrix: Water

Analysis Batch: 403902

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 403811

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.11		mg/L		78	50 - 120	1	26
Motor Oil (>C24-C36)	4.00	3.53		mg/L		88	64 - 120	5	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	86		50 - 150						



# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-117733-1

**Client Sample ID: Before GAC-9722**

**Lab Sample ID: 580-117733-1**

**Date Collected: 09/07/22 10:50**

**Matrix: Water**

**Date Received: 09/09/22 12:10**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			403811	KLW	EET SEA	09/14/22 09:40
Total/NA	Analysis	NWTPH-Dx		1	403902	DH	EET SEA	09/14/22 17:38

**Client Sample ID: HCC EFF- 9722**

**Lab Sample ID: 580-117733-2**

**Date Collected: 09/07/22 10:50**

**Matrix: Water**

**Date Received: 09/09/22 12:10**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			403811	KLW	EET SEA	09/14/22 09:40
Total/NA	Analysis	NWTPH-Dx		1	403902	DH	EET SEA	09/14/22 17:58

## Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-117733-1

## Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-23

1
2
3
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11

## Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-117733-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-117733-1	Before GAC-9722	Water	09/07/22 10:50	09/09/22 12:10
580-117733-2	HCC EFF- 9722	Water	09/07/22 10:50	09/09/22 12:10

1

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10

11

5755 8th Street East



580-117733 Chain of Custody

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

phone 253.922.2310 fax 253.922.5047

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:

**TestAmerica Laboratories, Inc.**

[illegible]

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-117733-1

**Login Number: 117733**

**List Number: 1**

**Creator: Swoope, Alexandra C**

**List Source: Eurofins Seattle**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-118454-1

Client Project/Site: BNSF Skykomish Rush NPDES  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:

10/11/2022 3:54:11 PM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	10
Certification Summary . . . . .	11
Sample Summary . . . . .	12
Chain of Custody . . . . .	13
Receipt Checklists . . . . .	14



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-118454-1

**Job ID: 580-118454-1**

**Laboratory: Eurofins Seattle**

## Narrative

**Job Narrative**  
**580-118454-1**

## Comments

No additional comments.

## Receipt

The samples were received on 10/3/2022 12:45 PM. 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 0.9° C.

## Receipt Exceptions

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): Before GAC-93022 (580-118454-1). The container labels list a sample time of 11:40, while the COC lists 11:45. The sample was logged in per the COC.

## GC Semi VOA

Method NWTPH-Dx: The method blank for preparation batch 580-406022 contained Motor Oil above the reporting limit (RL). None of the samples associated with this method blank (sample #2 only) contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed on this sample.

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

## Metals

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.



## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-118454-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-118454-1

**Client Sample ID: Before GAC-93022**

**Lab Sample ID: 580-118454-1**

**Date Collected: 09/30/22 11:45**

**Matrix: Water**

**Date Received: 10/03/22 12:45**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.51		0.052		mg/L		10/07/22 10:55	10/08/22 02:39	1
Motor Oil (>C24-C36)	0.27		0.089		mg/L		10/07/22 10:55	10/08/22 02:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	58		50 - 150				10/07/22 10:55	10/08/22 02:39	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-118454-1

Client Sample ID: HCC EFF-93022

Lab Sample ID: 580-118454-2

Date Collected: 09/30/22 11:45

Matrix: Water

Date Received: 10/03/22 12:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.051		mg/L		10/05/22 09:17	10/05/22 19:53	1
Motor Oil (>C24-C36)	ND		0.087		mg/L		10/05/22 09:17	10/05/22 19:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	71		50 - 150				10/05/22 09:17	10/05/22 19:53	1

## Method: EPA 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		10/03/22 16:37	10/05/22 05:30	1
Lead	ND		0.00040		mg/L		10/03/22 16:37	10/05/22 05:30	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-118454-1

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

Lab Sample ID: MB 580-406022/1-A

Matrix: Water

Analysis Batch: 406112

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 406022

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		10/05/22 09:17	10/05/22 18:32	1
Motor Oil (>C24-C36)	0.136		0.095		mg/L		10/05/22 09:17	10/05/22 18:32	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	66		50 - 150				10/05/22 09:17	10/05/22 18:32	1

Lab Sample ID: LCS 580-406022/2-A

Matrix: Water

Analysis Batch: 406112

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 406022

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4.00	2.93		mg/L		73	50 - 120		
Motor Oil (>C24-C36)	4.00	3.01		mg/L		75	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	69		50 - 150						

Lab Sample ID: LCSD 580-406022/3-A

Matrix: Water

Analysis Batch: 406112

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 406022

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.07		mg/L		77	50 - 120	5	26
Motor Oil (>C24-C36)	4.00	3.38		mg/L		85	64 - 120	12	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	77		50 - 150						

Lab Sample ID: MB 580-406293/1-A

Matrix: Water

Analysis Batch: 406390

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 406293

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		10/07/22 10:55	10/07/22 20:21	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		10/07/22 10:55	10/07/22 20:21	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	62		50 - 150				10/07/22 10:55	10/07/22 20:21	1

Lab Sample ID: LCS 580-406293/2-A

Matrix: Water

Analysis Batch: 406390

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 406293

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4.00	2.86		mg/L		71	50 - 120		
Motor Oil (>C24-C36)	4.00	3.11		mg/L		78	64 - 120		

Eurofins Seattle

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-118454-1

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

Lab Sample ID: LCS 580-406293/2-A  
Matrix: Water  
Analysis Batch: 406390

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 406293

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	81		50 - 150

Lab Sample ID: LCSD 580-406293/3-A  
Matrix: Water  
Analysis Batch: 406390

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 406293

	Spike	LCSD	LCSD						%Rec	RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit		
#2 Diesel (C10-C24)	4.00	3.27		mg/L		82	50 - 120	13	26		
Motor Oil (>C24-C36)	4.00	3.48		mg/L		87	64 - 120	11	24		

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	90		50 - 150

Lab Sample ID: 580-118436-J-5-B MS  
Matrix: Water  
Analysis Batch: 406390

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 406293

	Sample	Sample	Spike	MS	MS				%Rec		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.34		4.14	3.30		mg/L		71	50 - 120		
Motor Oil (>C24-C36)	0.23		4.14	3.48		mg/L		78	64 - 120		

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	83		50 - 150

Lab Sample ID: 580-118436-J-5-C MSD  
Matrix: Water  
Analysis Batch: 406390

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 406293

	Sample	Sample	Spike	MSD	MSD				%Rec	RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.34		4.17	3.55		mg/L		77	50 - 120	7	26
Motor Oil (>C24-C36)	0.23		4.17	3.83		mg/L		86	64 - 120	10	24

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	88		50 - 150

## Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-405841/14-A  
Matrix: Water  
Analysis Batch: 406063

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 405841

	MB	MB								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Arsenic	ND		0.0010		mg/L		10/03/22 16:37	10/05/22 04:47	1	
Lead	ND		0.00040		mg/L		10/03/22 16:37	10/05/22 04:47	1	

Eurofins Seattle

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-118454-1

## Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 580-405841/15-A  
Matrix: Water  
Analysis Batch: 406063

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 405841

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	0.995		mg/L		100	85 - 115
Lead	1.00	1.01		mg/L		101	85 - 115

Lab Sample ID: LCSD 580-405841/16-A  
Matrix: Water  
Analysis Batch: 406063

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 405841

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	1.00	0.989		mg/L		99	85 - 115	1	20
Lead	1.00	1.00		mg/L		100	85 - 115	1	20

Lab Sample ID: 580-118291-A-5-C MS  
Matrix: Water  
Analysis Batch: 406063

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 405841

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	ND		1.00	1.08		mg/L		108	70 - 130
Lead	0.0054		1.00	1.08		mg/L		107	70 - 130

Lab Sample ID: 580-118291-A-5-D MSD  
Matrix: Water  
Analysis Batch: 406063

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 405841

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		1.00	1.15		mg/L		115	70 - 130	6	20
Lead	0.0054		1.00	1.14		mg/L		114	70 - 130	6	20

Lab Sample ID: 580-118291-A-5-B DU  
Matrix: Water  
Analysis Batch: 406063

Client Sample ID: Duplicate  
Prep Type: Total/NA  
Prep Batch: 405841

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		ND		mg/L				NC	20
Lead	0.0054		0.00541		mg/L				0.1	20

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-118454-1

**Client Sample ID: Before GAC-93022**

**Lab Sample ID: 580-118454-1**

**Date Collected: 09/30/22 11:45**

**Matrix: Water**

**Date Received: 10/03/22 12:45**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			406293	KLW	EET SEA	10/07/22 10:55
Total/NA	Analysis	NWTPH-Dx		1	406390	DH	EET SEA	10/08/22 02:39

**Client Sample ID: HCC EFF-93022**

**Lab Sample ID: 580-118454-2**

**Date Collected: 09/30/22 11:45**

**Matrix: Water**

**Date Received: 10/03/22 12:45**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			406022	KLW	EET SEA	10/05/22 09:17
Total/NA	Analysis	NWTPH-Dx		1	406112	DH	EET SEA	10/05/22 19:53
Total/NA	Prep	200.8			405841	JLS	EET SEA	10/03/22 16:37
Total/NA	Analysis	200.8		1	406063	FCW	EET SEA	10/05/22 05:30

## Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-118454-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-23





## Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish Rush NPDES

Job ID: 580-118454-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-118454-1	Before GAC-93022	Water	09/30/22 11:45	10/03/22 12:45
580-118454-2	HCC EFF-93022	Water	09/30/22 11:45	10/03/22 12:45

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5755 8th Street East



## Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.

530-118454 Chain of Custody

am: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:

**TestAmerica Laboratories, Inc.**

[illegible]

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-118454-1

**Login Number: 118454**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Swoope, Alexandra C**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	False	Refer to Job Narrative for details.
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-118765-1

Client Project/Site: BNSF Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot



Authorized for release by:

10/18/2022 4:09:36 PM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

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[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	9
Certification Summary . . . . .	10
Sample Summary . . . . .	11
Chain of Custody . . . . .	12
Receipt Checklists . . . . .	13



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-118765-1

**Job ID: 580-118765-1**

**Laboratory: Eurofins Seattle**

## Narrative

### Job Narrative 580-118765-1

## Comments

No additional comments.

## Receipt

The samples were received on 10/12/2022 12:00 PM. 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 0.4° C.

## GC Semi VOA

Method NWTPH-Dx: #2 Diesel (C10-C24) was detected above the reporting limit (RL) in the method blank associated with preparation batch 580-406811 and analytical batch 580-406892 as well as in the following samples: Before GAC-101122 (580-118765-1) and HCC EFF-101122 (580-118765-2). All affected samples were re-extracted and/or re-analyzed. Both sets of data have been reported.

Method NWTPH-Dx: Motor Oil was detected above the reporting limit (RL) in the method blank associated with the re-analysis preparation batch 580-407056 and analytical batch 580-407180 as well as in the following samples: Before GAC-101122 (580-118765-1) and (MB 580-407056/1-A). Both sets of data have been reported.

Method NWTPH-Dx: The method blank for preparation batch 580-407056 contained Motor Oil (>C24-C36) above the reporting limit (RL). Sample #2 (HCC EFF-101122) associated with this method blank did not contain the target compound; therefore, re-extraction and/or re-analysis of samples were not performed.

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

## Organic Prep

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

# Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-118765-1

## Qualifiers

### GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-118765-1

**Client Sample ID: Before GAC-101122**

**Lab Sample ID: 580-118765-1**

Date Collected: 10/11/22 11:40

Matrix: Water

Date Received: 10/12/22 12:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.40	B	0.055		mg/L		10/13/22 10:42	10/13/22 20:26	1
Motor Oil (>C24-C36)	0.19		0.096		mg/L		10/13/22 10:42	10/13/22 20:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	80		50 - 150				10/13/22 10:42	10/13/22 20:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.31		0.051		mg/L		10/17/22 10:49	10/17/22 21:19	1
Motor Oil (>C24-C36)	0.18	B	0.087		mg/L		10/17/22 10:49	10/17/22 21:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	59		50 - 150				10/17/22 10:49	10/17/22 21:19	1



# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-118765-1

**Client Sample ID: HCC EFF-101122**

**Lab Sample ID: 580-118765-2**

**Date Collected: 10/11/22 11:40**

**Matrix: Water**

**Date Received: 10/12/22 12:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.054	B	0.051		mg/L		10/13/22 10:42	10/13/22 20:46	1
Motor Oil (>C24-C36)	ND		0.088		mg/L		10/13/22 10:42	10/13/22 20:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	63		50 - 150				10/13/22 10:42	10/13/22 20:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.051		mg/L		10/17/22 10:49	10/17/22 21:39	1
Motor Oil (>C24-C36)	ND		0.088		mg/L		10/17/22 10:49	10/17/22 21:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	70		50 - 150				10/17/22 10:49	10/17/22 21:39	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-118765-1

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

Lab Sample ID: MB 580-406811/1-A

Matrix: Water

Analysis Batch: 406892

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 406811

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.0802		0.055		mg/L		10/13/22 10:42	10/13/22 19:06	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		10/13/22 10:42	10/13/22 19:06	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	80		50 - 150				10/13/22 10:42	10/13/22 19:06	1

Lab Sample ID: LCS 580-406811/2-A

Matrix: Water

Analysis Batch: 406892

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 406811

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4.00	2.73		mg/L		68	50 - 120		
Motor Oil (>C24-C36)	4.00	3.23		mg/L		81	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	77		50 - 150						

Lab Sample ID: LCSD 580-406811/3-A

Matrix: Water

Analysis Batch: 406892

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 406811

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.07		mg/L		77	50 - 120	12	26
Motor Oil (>C24-C36)	4.00	3.58		mg/L		89	64 - 120	10	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	86		50 - 150						

Lab Sample ID: MB 580-407056/1-A

Matrix: Water

Analysis Batch: 407180

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 407056

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		10/17/22 10:49	10/17/22 20:18	1
Motor Oil (>C24-C36)	0.104		0.095		mg/L		10/17/22 10:49	10/17/22 20:18	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	71		50 - 150				10/17/22 10:49	10/17/22 20:18	1

Lab Sample ID: LCS 580-407056/2-A

Matrix: Water

Analysis Batch: 407180

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 407056

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4.00	2.97		mg/L		74	50 - 120		
Motor Oil (>C24-C36)	4.00	3.60		mg/L		90	64 - 120		

Eurofins Seattle

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-118765-1

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

Lab Sample ID: LCS 580-407056/2-A

Matrix: Water

Analysis Batch: 407180

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 407056

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	85		50 - 150

Lab Sample ID: LCSD 580-407056/3-A

Matrix: Water

Analysis Batch: 407180

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 407056

	Spike	LCSD	LCSD						%Rec		
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit		
#2 Diesel (C10-C24)	4.00	3.06		mg/L		77	50 - 120	3	26		
Motor Oil (>C24-C36)	4.00	3.59		mg/L		90	64 - 120	0	24		

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	82		50 - 150

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-118765-1

**Client Sample ID: Before GAC-101122**

**Lab Sample ID: 580-118765-1**

**Date Collected: 10/11/22 11:40**

**Matrix: Water**

**Date Received: 10/12/22 12:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			406811	CSS	EET SEA	10/13/22 10:42
Total/NA	Analysis	NWTPH-Dx		1	406892	DH	EET SEA	10/13/22 20:26
Total/NA	Prep	3510C	RE		407056	CSS	EET SEA	10/17/22 10:49
Total/NA	Analysis	NWTPH-Dx	RE	1	407180	DH	EET SEA	10/17/22 21:19

**Client Sample ID: HCC EFF-101122**

**Lab Sample ID: 580-118765-2**

**Date Collected: 10/11/22 11:40**

**Matrix: Water**

**Date Received: 10/12/22 12:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			406811	CSS	EET SEA	10/13/22 10:42
Total/NA	Analysis	NWTPH-Dx		1	406892	DH	EET SEA	10/13/22 20:46
Total/NA	Prep	3510C	RE		407056	CSS	EET SEA	10/17/22 10:49
Total/NA	Analysis	NWTPH-Dx	RE	1	407180	DH	EET SEA	10/17/22 21:39

## Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-118765-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-23

- 1
- 2
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- 10
- 11

## Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-118765-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-118765-1	Before GAC-101122	Water	10/11/22 11:40	10/12/22 12:00
580-118765-2	HCC EFF-101122	Water	10/11/22 11:40	10/12/22 12:00

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phone 253.922.2310 fax 253.922.5047

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:

**TestAmerica Laboratories, Inc.**

[illegible]

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-118765-1

**Login Number: 118765**

**List Number: 1**

**Creator: Presley, Kim A**

**List Source: Eurofins Seattle**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	





## Environment Testing

### ANALYTICAL REPORT

Eurofins Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-119453-1

Client Project/Site: Skykomish HCC System  
Sampling Event: Skykomish - GAC/HCC

**For:**

Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Attn: Amanda Meuginot

Authorized for release by:

11/3/2022 5:28:03 PM

Pauline Matlock, Project Manager  
(253)922-2310

[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	8
Certification Summary . . . . .	9
Sample Summary . . . . .	10
Chain of Custody . . . . .	11
Receipt Checklists . . . . .	12



# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-119453-1

**Job ID: 580-119453-1**

**Laboratory: Eurofins Seattle**

## Narrative

### Job Narrative 580-119453-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 10/31/2022 1:30 PM. 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 1.6° C.

#### Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received. The sample date column is not filled out. The sample date is typically part of the sample ID therefore this date was used for login.

#### 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.

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-119453-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-119453-1

**Client Sample ID: Before GAC-102722**

**Lab Sample ID: 580-119453-1**

**Date Collected: 10/27/22 11:50**

**Matrix: Water**

**Date Received: 10/31/22 13:30**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.26		0.051		mg/L		11/02/22 10:11	11/03/22 04:40	1
Motor Oil (>C24-C36)	0.14		0.088		mg/L		11/02/22 10:11	11/03/22 04:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	63		50 - 150				11/02/22 10:11	11/03/22 04:40	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-119453-1

**Client Sample ID: HCC EFF-102722**

**Lab Sample ID: 580-119453-2**

**Date Collected: 10/27/22 11:56**

**Matrix: Water**

**Date Received: 10/31/22 13:30**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.051		mg/L		11/02/22 10:11	11/03/22 04:58	1
Motor Oil (>C24-C36)	ND		0.088		mg/L		11/02/22 10:11	11/03/22 04:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	56		50 - 150				11/02/22 10:11	11/03/22 04:58	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-119453-1

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

Lab Sample ID: MB 580-408648/1-A

Matrix: Water

Analysis Batch: 408739

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 408648

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		11/02/22 10:11	11/03/22 03:44	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		11/02/22 10:11	11/03/22 03:44	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	59		50 - 150				11/02/22 10:11	11/03/22 03:44	1

Lab Sample ID: LCS 580-408648/2-A

Matrix: Water

Analysis Batch: 408739

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 408648

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4.00	2.45		mg/L		61	50 - 120		
Motor Oil (>C24-C36)	4.00	2.75		mg/L		69	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	69		50 - 150						

Lab Sample ID: LCSD 580-408648/3-A

Matrix: Water

Analysis Batch: 408739

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 408648

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.04		mg/L		76	50 - 120	22	26
Motor Oil (>C24-C36)	4.00	3.37		mg/L		84	64 - 120	20	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	85		50 - 150						

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-119453-1

**Client Sample ID: Before GAC-102722**

**Lab Sample ID: 580-119453-1**

**Date Collected: 10/27/22 11:50**

**Matrix: Water**

**Date Received: 10/31/22 13:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			408648	KLW	EET SEA	11/02/22 10:11
Total/NA	Analysis	NWTPH-Dx		1	408739	DH	EET SEA	11/03/22 04:40

**Client Sample ID: HCC EFF-102722**

**Lab Sample ID: 580-119453-2**

**Date Collected: 10/27/22 11:56**

**Matrix: Water**

**Date Received: 10/31/22 13:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			408648	KLW	EET SEA	11/02/22 10:11
Total/NA	Analysis	NWTPH-Dx		1	408739	DH	EET SEA	11/03/22 04:58

## Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310



# Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-119453-1

## Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-23

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

## Sample Summary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-119453-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-119453-1	Before GAC-102722	Water	10/27/22 11:50	10/31/22 13:30
580-119453-2	HCC EFF-102722	Water	10/27/22 11:56	10/31/22 13:30

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5755 8th Street East

## Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Tacoma, WA 98424-1317

phone 253.922.2310 fax 253.922.5047

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:

**TestAmerica Laboratories, Inc.**

[illegible]

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-119453-1

Login Number: 119453

List Number: 1

Creator: Presley, Kim A

List Source: Eurofins Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	False	Refer to Job Narrative for details.
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# ANALYTICAL REPORT

## PREPARED FOR

Attn: Amanda Meuginot  
Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah Washington 98027

Generated 11/16/2022 4:52:39 PM

## JOB DESCRIPTION

BNSF Skykomish HCC System  
Skykomish - GAC/HCC

## JOB NUMBER

580-119962-1



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
Chronicle . . . . .	8
Certification Summary . . . . .	9
Sample Summary . . . . .	10
Chain of Custody . . . . .	11
Receipt Checklists . . . . .	12
Appendix . . . . .	13

# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-119962-1

**Job ID: 580-119962-1**

**Laboratory: Eurofins Seattle**

## Narrative

### Job Narrative 580-119962-1

#### Receipt

The samples were received on 11/11/2022 11:45 AM and 11/11/2022 12:21 PM. 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 time was 2.5°C

#### 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.

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-119962-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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



# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-119962-1

**Client Sample ID: Before GAC - 111022**

**Lab Sample ID: 580-119962-1**

**Date Collected: 11/10/22 12:32**

**Matrix: Water**

**Date Received: 11/11/22 12:21**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.84		0.057		mg/L		11/15/22 12:15	11/16/22 03:48	1
Motor Oil (>C24-C36)	0.54		0.099		mg/L		11/15/22 12:15	11/16/22 03:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	70		50 - 150				11/15/22 12:15	11/16/22 03:48	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-119962-1

Client Sample ID: HCC EFF - 111022

Lab Sample ID: 580-119962-2

Date Collected: 11/10/22 12:26

Matrix: Water

Date Received: 11/11/22 11:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.064		0.056		mg/L		11/15/22 12:15	11/16/22 04:08	1
Motor Oil (>C24-C36)	ND		0.097		mg/L		11/15/22 12:15	11/16/22 04:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	70		50 - 150				11/15/22 12:15	11/16/22 04:08	1

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-119962-1

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

Lab Sample ID: MB 580-410024/1-A

Matrix: Water

Analysis Batch: 410114

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 410024

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		11/15/22 12:15	11/16/22 02:47	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		11/15/22 12:15	11/16/22 02:47	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	68		50 - 150				11/15/22 12:15	11/16/22 02:47	1

Lab Sample ID: LCS 580-410024/2-A

Matrix: Water

Analysis Batch: 410114

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 410024

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4.00	3.36		mg/L		84	50 - 120		
Motor Oil (>C24-C36)	4.00	3.84		mg/L		96	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	92		50 - 150						

Lab Sample ID: LCSD 580-410024/3-A

Matrix: Water

Analysis Batch: 410114

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 410024

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.35		mg/L		84	50 - 120	0	26
Motor Oil (>C24-C36)	4.00	3.85		mg/L		96	64 - 120	0	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	91		50 - 150						

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-119962-1

**Client Sample ID: Before GAC - 111022**

**Lab Sample ID: 580-119962-1**

**Date Collected: 11/10/22 12:32**

**Matrix: Water**

**Date Received: 11/11/22 12:21**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			410024	CSS	EET SEA	11/15/22 12:15
Total/NA	Analysis	NWTPH-Dx		1	410114	DH	EET SEA	11/16/22 03:48

**Client Sample ID: HCC EFF - 111022**

**Lab Sample ID: 580-119962-2**

**Date Collected: 11/10/22 12:26**

**Matrix: Water**

**Date Received: 11/11/22 11:45**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			410024	CSS	EET SEA	11/15/22 12:15
Total/NA	Analysis	NWTPH-Dx		1	410114	DH	EET SEA	11/16/22 04:08

## Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-119962-1

## Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-23

1
2
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12

# Sample Summary

Client: Farallon Consulting LLC  
Project/Site: BNSF Skykomish HCC System

Job ID: 580-119962-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-119962-1	Before GAC - 111022	Water	11/10/22 12:32	11/11/22 12:21
580-119962-2	HCC EFF - 111022	Water	11/10/22 12:26	11/11/22 11:45

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5755 8th Street East

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

**TestAmerica Laboratories, Inc.**

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:[illegible]

Form No. CA-C-WI-002, Rev. 4.18, dated 9/5/2018

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-119962-1

**Login Number: 119962**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Holdener, Heather D**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# Eurofins Seattle

## Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

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



Authorized for release by  
Pauline Matlock, Project Manager  
[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)  
(253)922-2310

Generated  
11/16/2022 4:52:39 PM

# ANALYTICAL REPORT

## PREPARED FOR

Attn: Amanda Meuginot  
Farallon Consulting LLC  
975 5th Avenue NW  
Suite 100  
Issaquah, Washington 98027

Generated 12/2/2022 5:35:22 PM

## JOB DESCRIPTION

Skykomish HCC System

## JOB NUMBER

580-120392-1

# Eurofins Seattle

## Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

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



Authorized for release by  
Pauline Matlock, Project Manager  
[Pauline.Matlock@et.eurofinsus.com](mailto:Pauline.Matlock@et.eurofinsus.com)  
(253)922-2310

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12/2/2022 5:35:22 PM



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	3
Case Narrative . . . . .	4
Definitions . . . . .	5
Client Sample Results . . . . .	6
QC Sample Results . . . . .	8
Chronicle . . . . .	10
Certification Summary . . . . .	11
Sample Summary . . . . .	12
Chain of Custody . . . . .	13
Receipt Checklists . . . . .	14

# Case Narrative

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-120392-1

**Job ID: 580-120392-1**

**Laboratory: Eurofins Seattle**

## Narrative

### Job Narrative 580-120392-1

#### Receipt

The samples were received on 11/23/2022 11:45 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 time was 4.2°C

#### GC Semi VOA

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

#### Metals

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

## Definitions/Glossary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-120392-1

### 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
CFU	Colony Forming Unit
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)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
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

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-120392-1

**Client Sample ID: Before GAC - 112222**

**Lab Sample ID: 580-120392-1**

**Date Collected: 11/22/22 09:15**

**Matrix: Water**

**Date Received: 11/23/22 11:45**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.77		0.055		mg/L		11/29/22 09:46	12/01/22 12:13	1
Motor Oil (>C24-C36)	0.45		0.095		mg/L		11/29/22 09:46	12/01/22 12:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	68		50 - 150				11/29/22 09:46	12/01/22 12:13	1

# Client Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-120392-1

**Client Sample ID: HCC EFF - 112222**

**Lab Sample ID: 580-120392-2**

**Date Collected: 11/22/22 09:15**

**Matrix: Water**

**Date Received: 11/23/22 11:45**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		11/29/22 09:46	12/01/22 12:33	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		11/29/22 09:46	12/01/22 12:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	71		50 - 150				11/29/22 09:46	12/01/22 12:33	1

## Method: EPA 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		11/28/22 20:06	11/29/22 15:04	1
Lead	ND		0.00040		mg/L		11/28/22 20:06	11/29/22 15:04	1



# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-120392-1

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

Lab Sample ID: MB 580-411249/1-A

Matrix: Water

Analysis Batch: 411515

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 411249

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.055		mg/L		11/29/22 09:46	12/01/22 10:52	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		11/29/22 09:46	12/01/22 10:52	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	76		50 - 150				11/29/22 09:46	12/01/22 10:52	1

Lab Sample ID: LCS 580-411249/2-A

Matrix: Water

Analysis Batch: 411515

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 411249

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
#2 Diesel (C10-C24)	4.00	3.85		mg/L		96	50 - 120	
Motor Oil (>C24-C36)	4.00	4.41		mg/L		110	64 - 120	
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
o-Terphenyl	114		50 - 150					

Lab Sample ID: LCSD 580-411249/3-A

Matrix: Water

Analysis Batch: 411515

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 411249

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.85		mg/L		96	50 - 120	0	26
Motor Oil (>C24-C36)	4.00	4.27		mg/L		107	64 - 120	3	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	113		50 - 150						

## Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-411219/14-A

Matrix: Water

Analysis Batch: 411295

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 411219

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		11/28/22 20:06	11/29/22 11:28	1
Lead	ND		0.00040		mg/L		11/28/22 20:06	11/29/22 11:28	1

Lab Sample ID: LCS 580-411219/15-A

Matrix: Water

Analysis Batch: 411295

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 411219

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Arsenic	1.00	0.985		mg/L		99	85 - 115	
Lead	1.00	0.976		mg/L		98	85 - 115	

Eurofins Seattle

# QC Sample Results

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-120392-1

## Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 580-411219/16-A

Matrix: Water

Analysis Batch: 411295

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 411219

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	1.00	0.957		mg/L		96	85 - 115	3	20
Lead	1.00	0.987		mg/L		99	85 - 115	1	20

Lab Sample ID: 580-120396-F-1-C MS

Matrix: Water

Analysis Batch: 411295

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 411219

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		1.00	1.03		mg/L		103	70 - 130		
Lead	ND		1.00	1.01		mg/L		101	70 - 130		

Lab Sample ID: 580-120396-F-1-D MSD

Matrix: Water

Analysis Batch: 411295

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 411219

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		1.00	1.05		mg/L		105	70 - 130	2	20
Lead	ND		1.00	1.05		mg/L		104	70 - 130	4	20

Lab Sample ID: 580-120396-F-1-B DU

Matrix: Water

Analysis Batch: 411295

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 411219

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		ND		mg/L				NC	20
Lead	ND		ND		mg/L				NC	20

# Lab Chronicle

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-120392-1

## Client Sample ID: Before GAC - 112222

Date Collected: 11/22/22 09:15

Date Received: 11/23/22 11:45

## Lab Sample ID: 580-120392-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			411249	CSS	EET SEA	11/29/22 09:46
Total/NA	Analysis	NWTPH-Dx		1	411515	DH	EET SEA	12/01/22 12:13

## Client Sample ID: HCC EFF - 112222

Date Collected: 11/22/22 09:15

Date Received: 11/23/22 11:45

## Lab Sample ID: 580-120392-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			411249	CSS	EET SEA	11/29/22 09:46
Total/NA	Analysis	NWTPH-Dx		1	411515	DH	EET SEA	12/01/22 12:33
Total/NA	Prep	200.8			411219	JLS	EET SEA	11/28/22 20:06
Total/NA	Analysis	200.8		1	411381	FCW	EET SEA	11/29/22 15:04

### Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-120392-1

## Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-23

1
2
3
4
5
6
7
8
9
10
11

## Sample Summary

Client: Farallon Consulting LLC  
Project/Site: Skykomish HCC System

Job ID: 580-120392-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-120392-1	Before GAC - 112222	Water	11/22/22 09:15	11/23/22 11:45
580-120392-2	HCC EFF - 112222	Water	11/22/22 09:15	11/23/22 11:45

1

2

3

4

5

6

7

8

9

10

11

5755 8th Street East

Tacoma, WA 98424-1317  
phone 253.922.2310 fax 253.922.5047

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

**TestAmerica Laboratories, Inc.**

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:[illegible]

## Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-120392-1

**Login Number: 120392**

**List Number: 1**

**Creator: Groves, Elizabeth**

**List Source: Eurofins Seattle**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

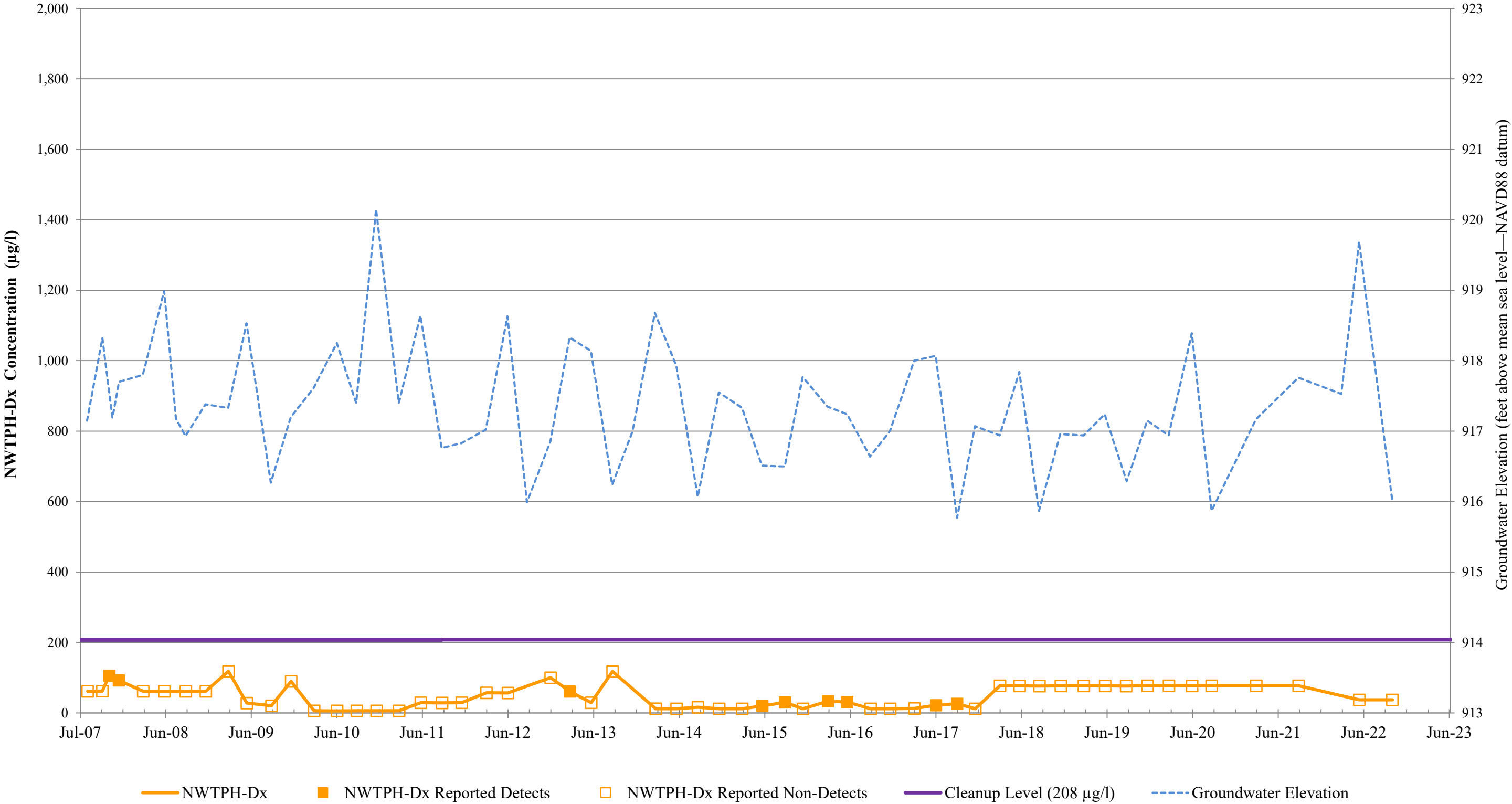
**APPENDIX B**  
**NWTPH-DX AND NWTPH-DX/SGC GW-3 TREND PLOT**

2022 ANNUAL HYDRAULIC CONTROL AND CONTAINMENT SYSTEM  
OPERATIONS REPORT  
BNSF Former Maintenance and Fueling Facility  
Skykomish, Washington  
Consent Decree No. 07-2-33672-9 SEA

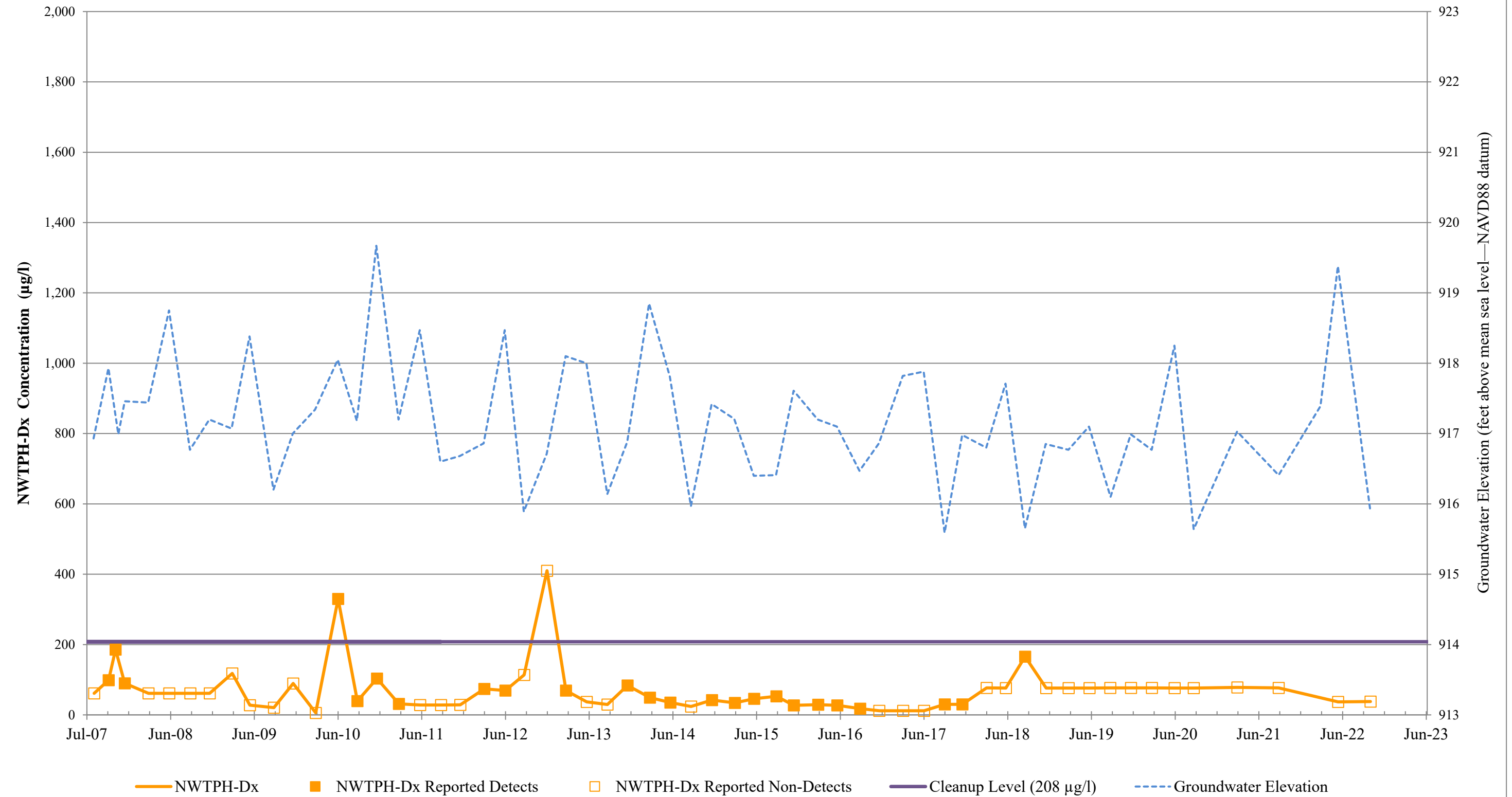
Farallon PN: 683-071



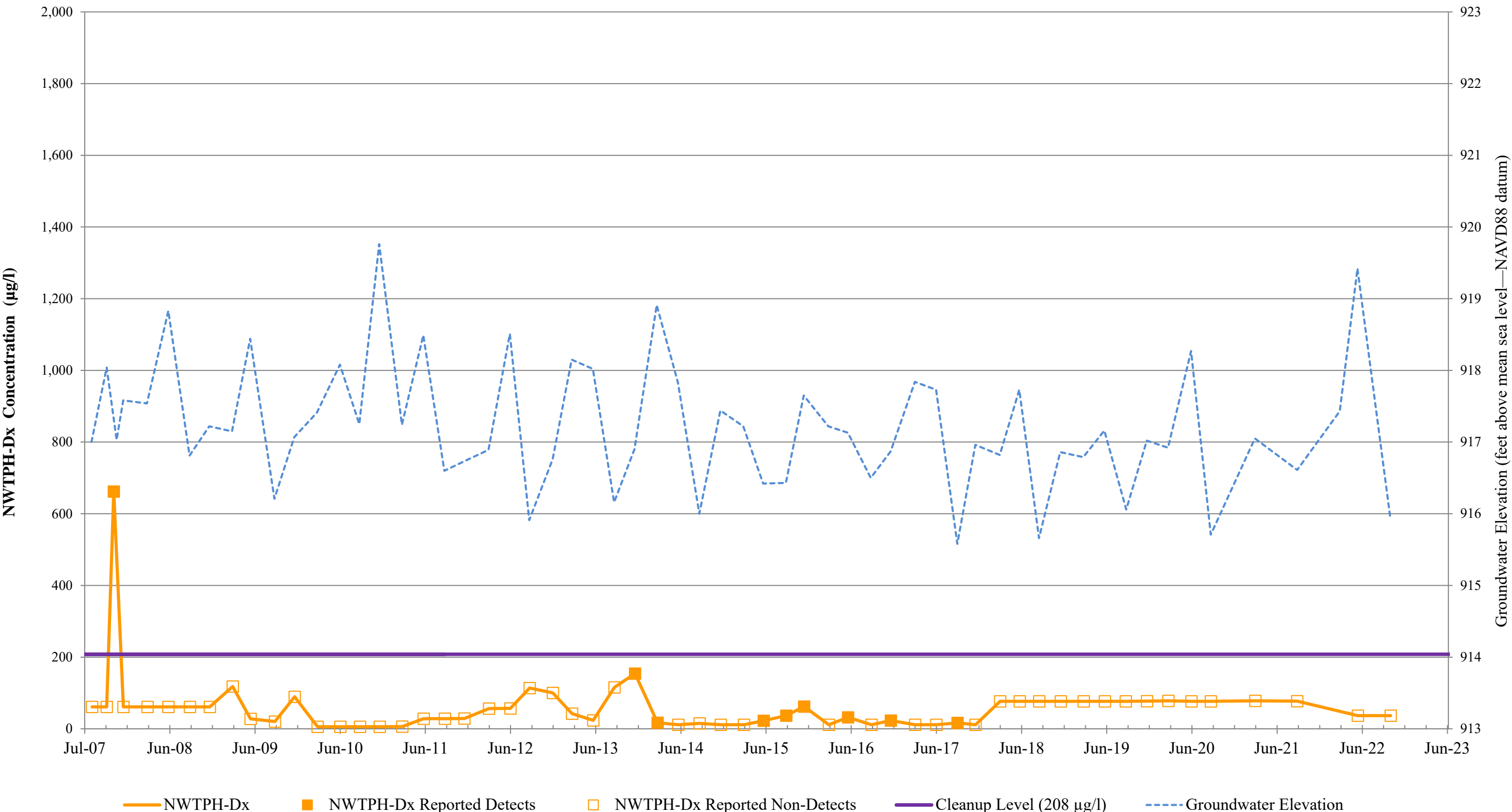
**NWTPH-Dx Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Well 5-W-14**



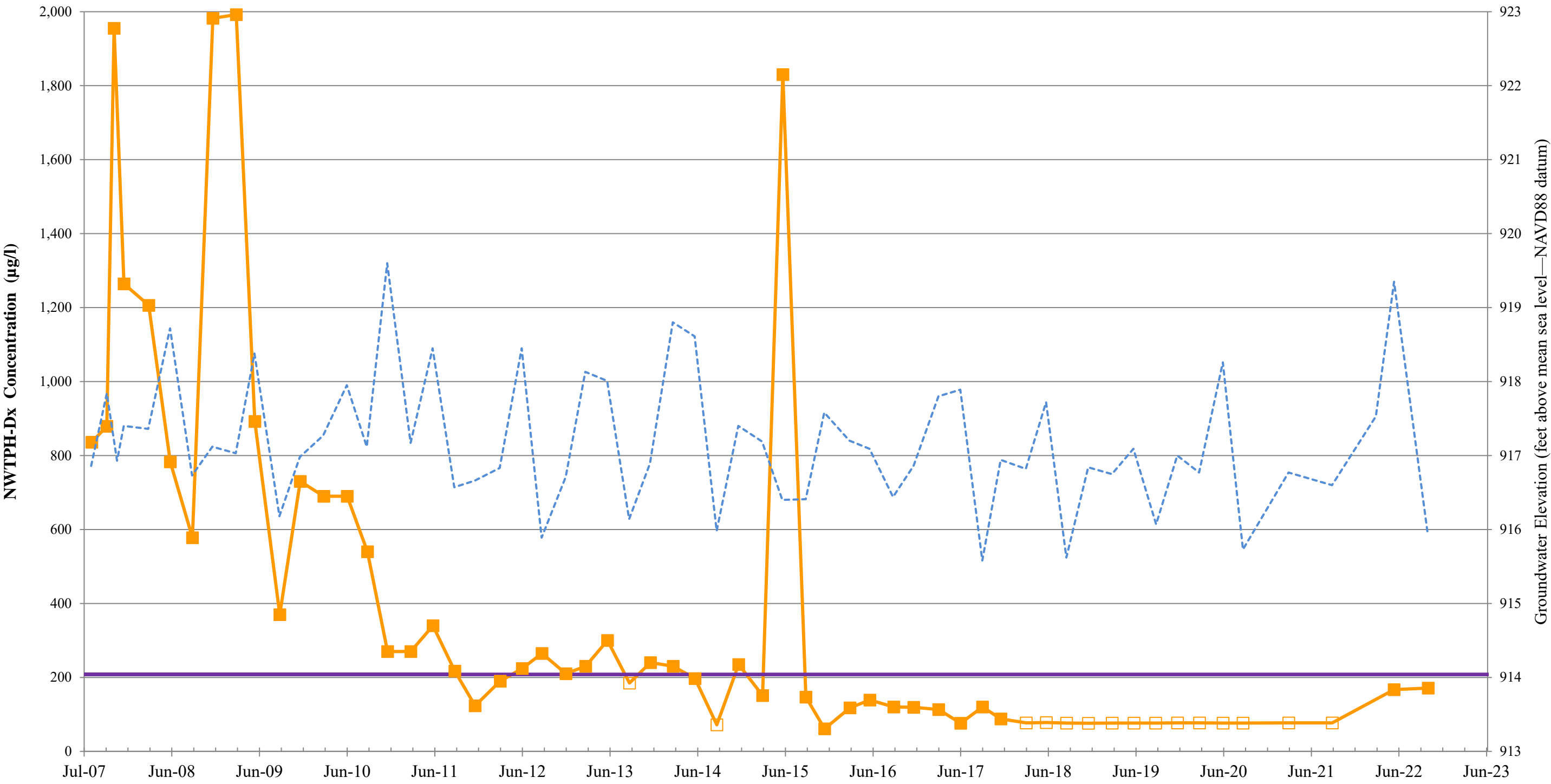
NWTPH-Dx Trend Plot  
BNSF Former Maintenance and Fueling Facility  
Skykomish, Washington  
Farallon PN: 683-071  
Well 5-W-16



**NWTPH-Dx Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Well 5-W-17**

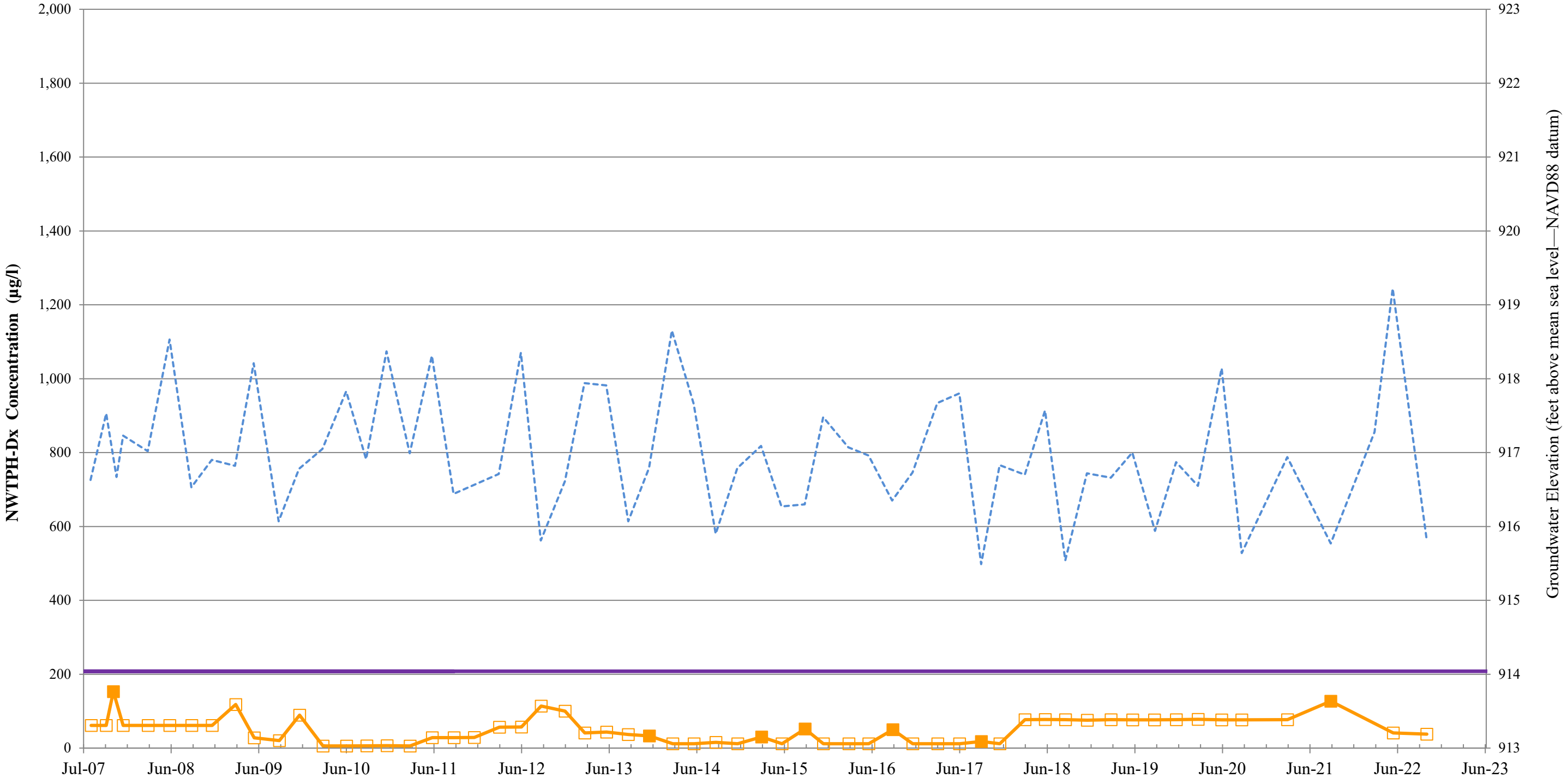


**NWTPH-Dx Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Well 5-W-18**



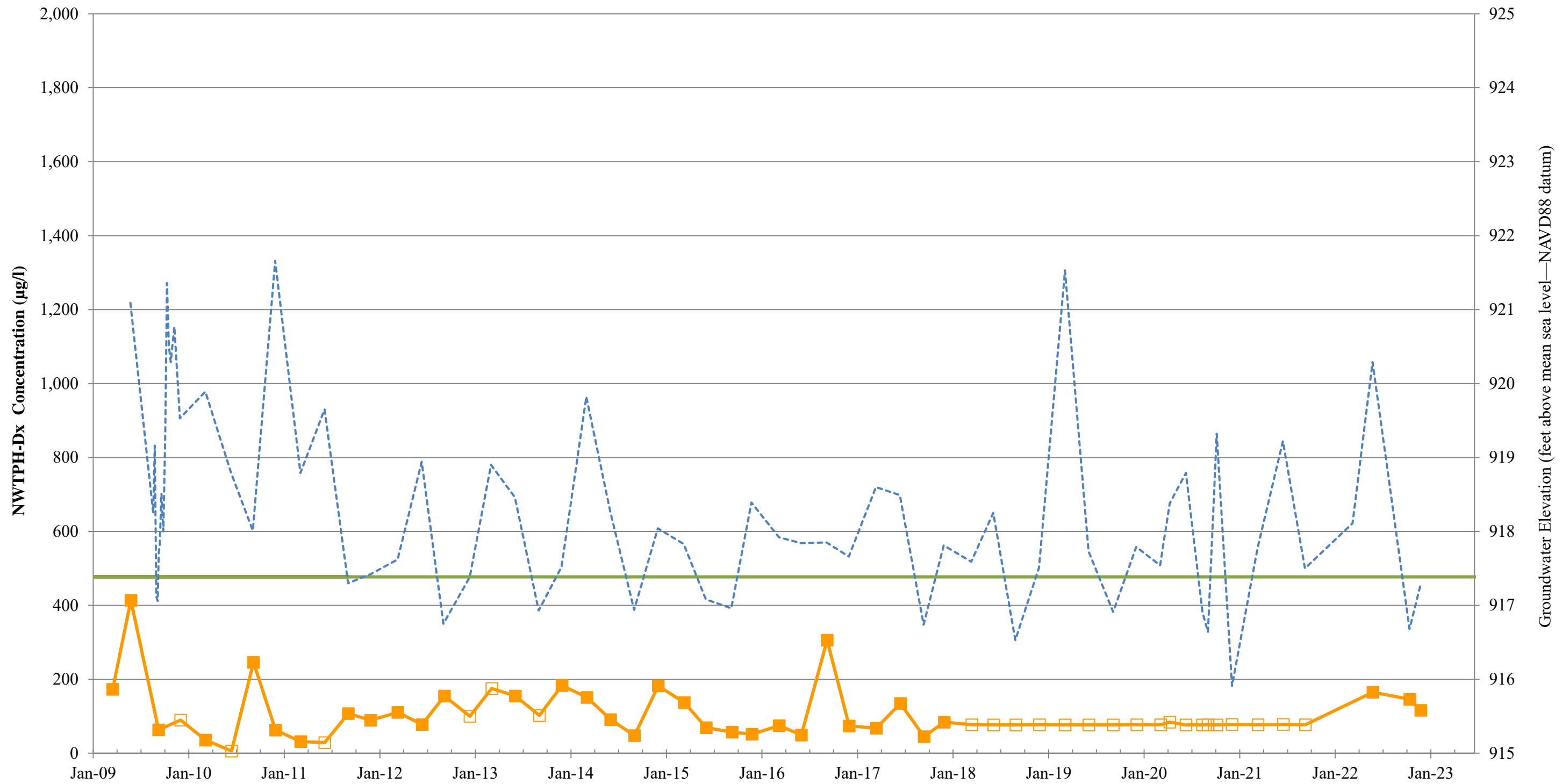
— NWTPH-Dx    ■ NWTPH-Dx Reported Detects    □ NWTPH-Dx Reported Non-Detects    — Cleanup Level (208 µg/l)    - - - Groundwater Elevation

**NWTPH-Dx Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-070**  
**Well 5-W-19**



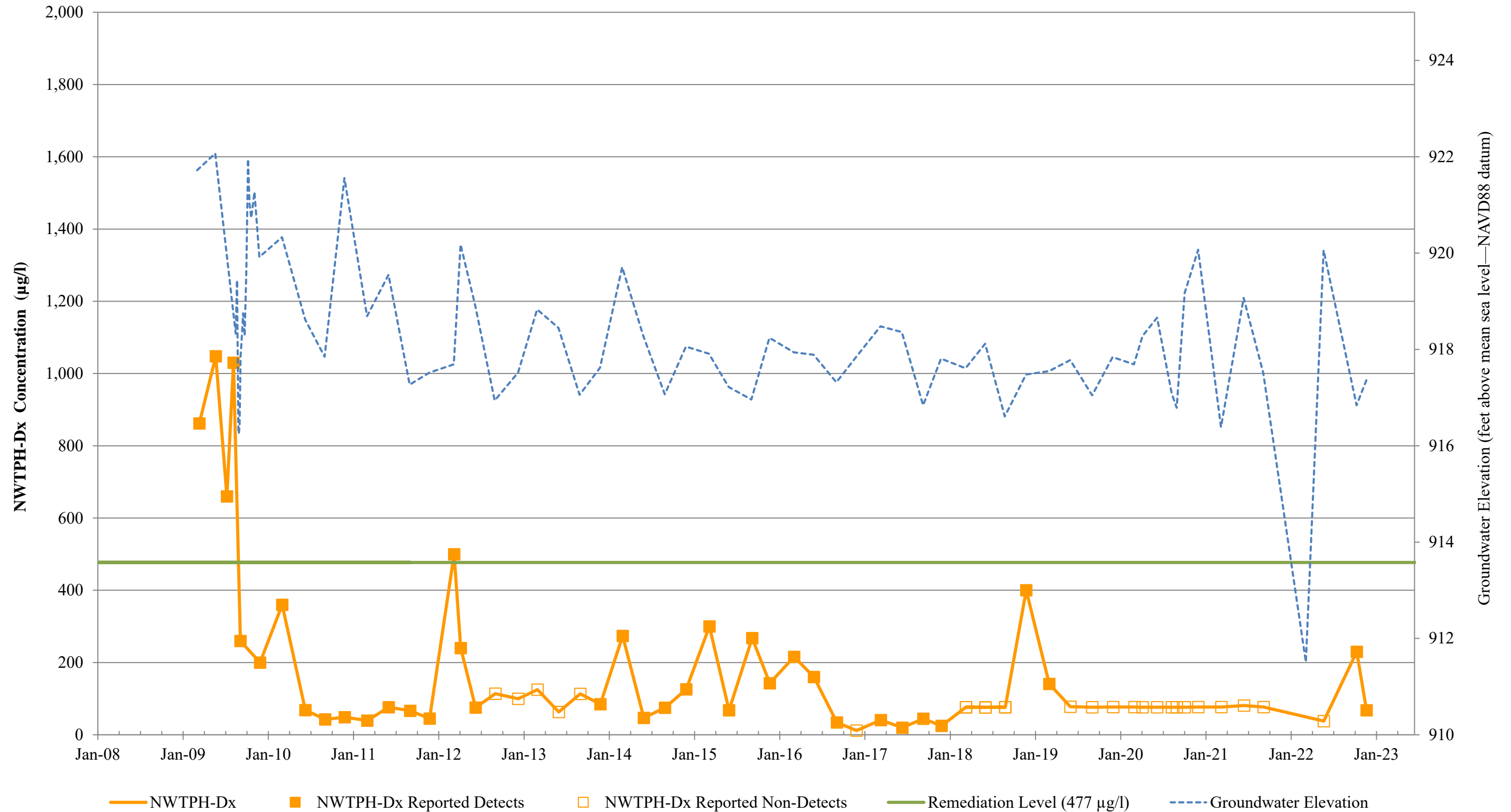
— NWTPH-Dx    ■ NWTPH-Dx Reported Detects    □ NWTPH-Dx Reported Non-Detects    — Cleanup Level (208 µg/l)    - - - Groundwater Elevation

**NWTPH-Dx Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Well GW-1**

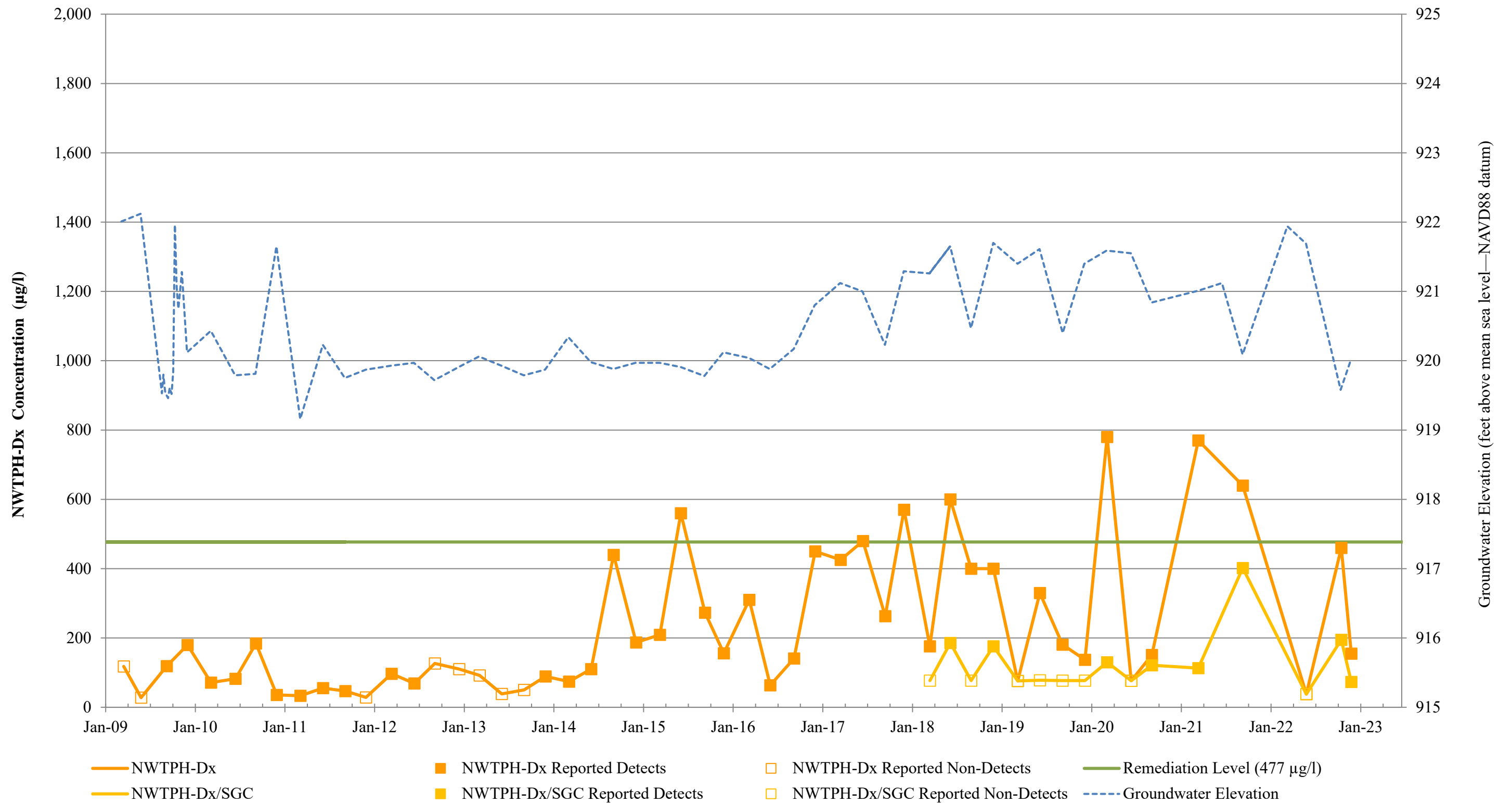


— NWTPH-Dx    ■ NWTPH-Dx Reported Detects    □ NWTPH-Dx Reported Non-Detects    — Remediation Level (477 µg/l)    - - - Groundwater Elevation

**NWTPH-Dx Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Well GW-2**

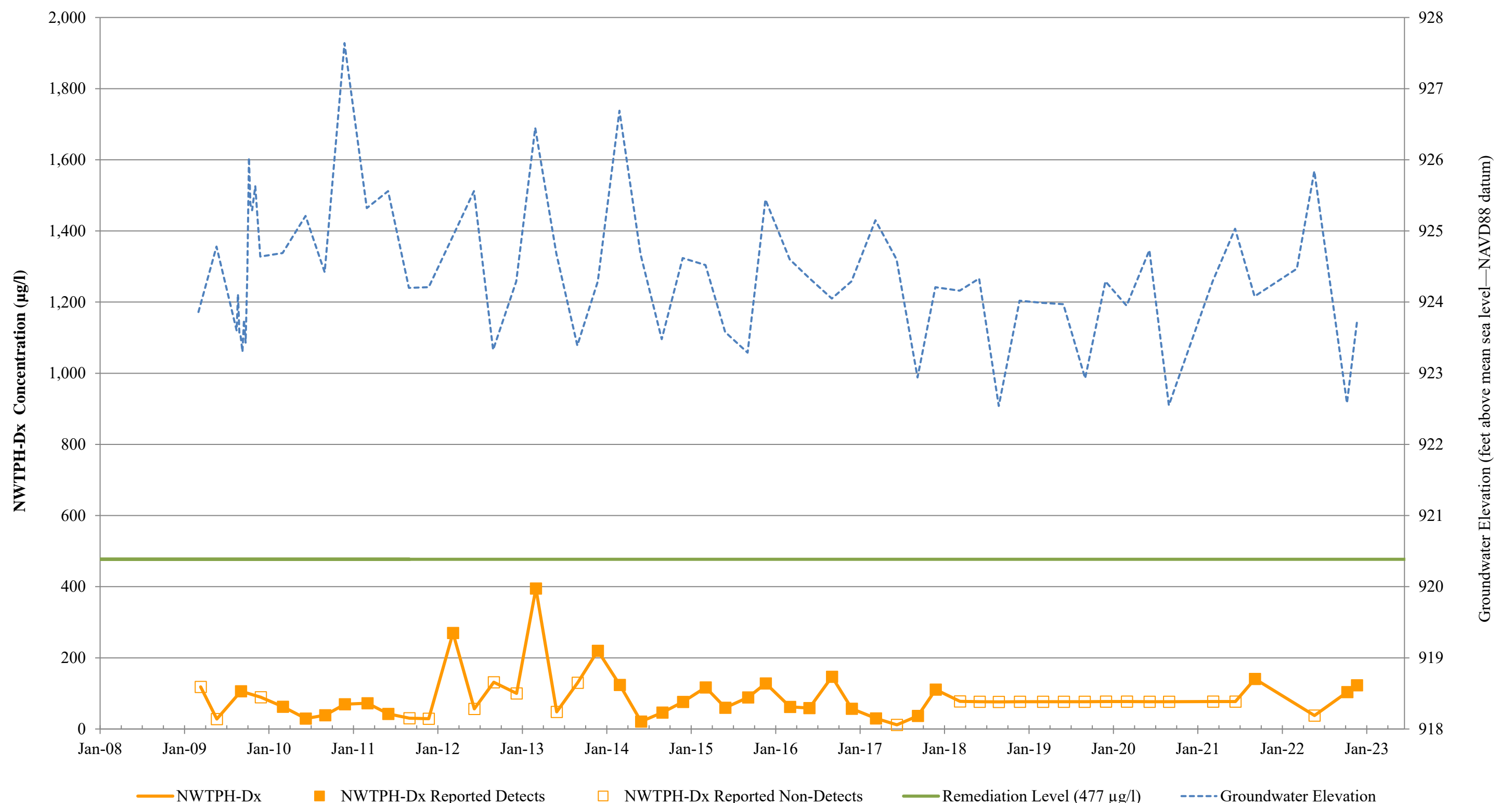


**NWTPH-Dx Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Well GW-3**

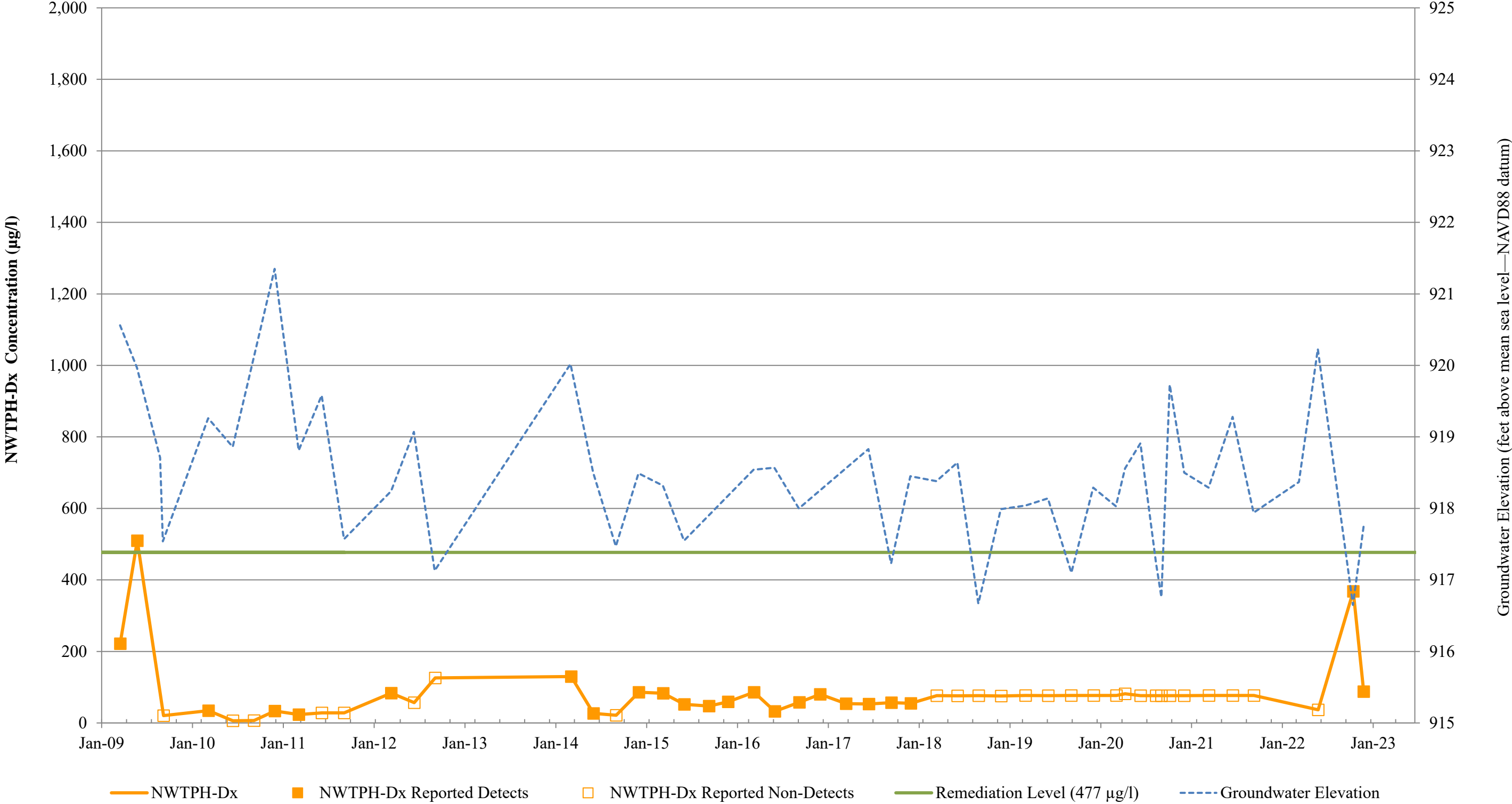




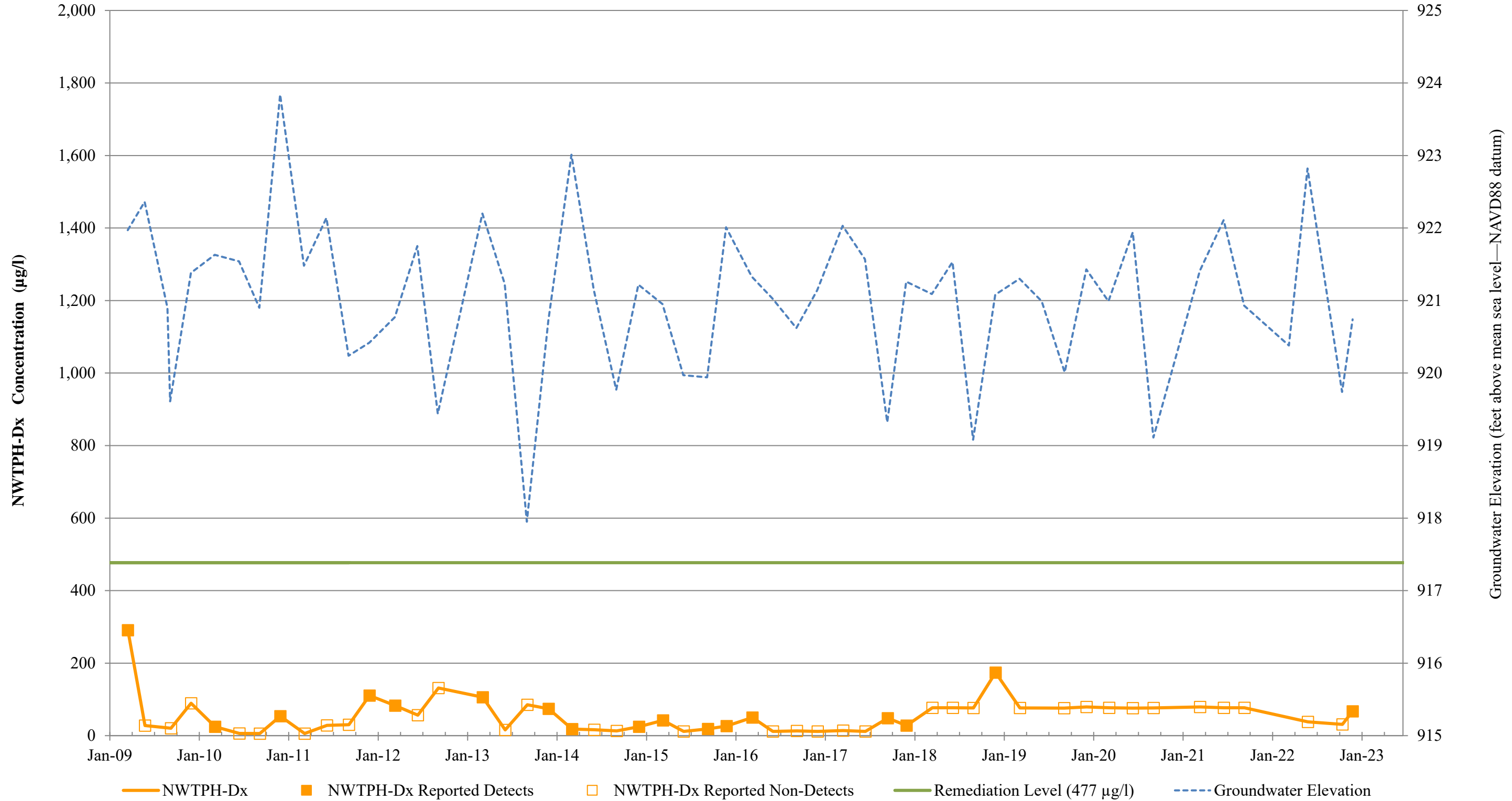
**NWTPH-Dx Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Well GW-4**



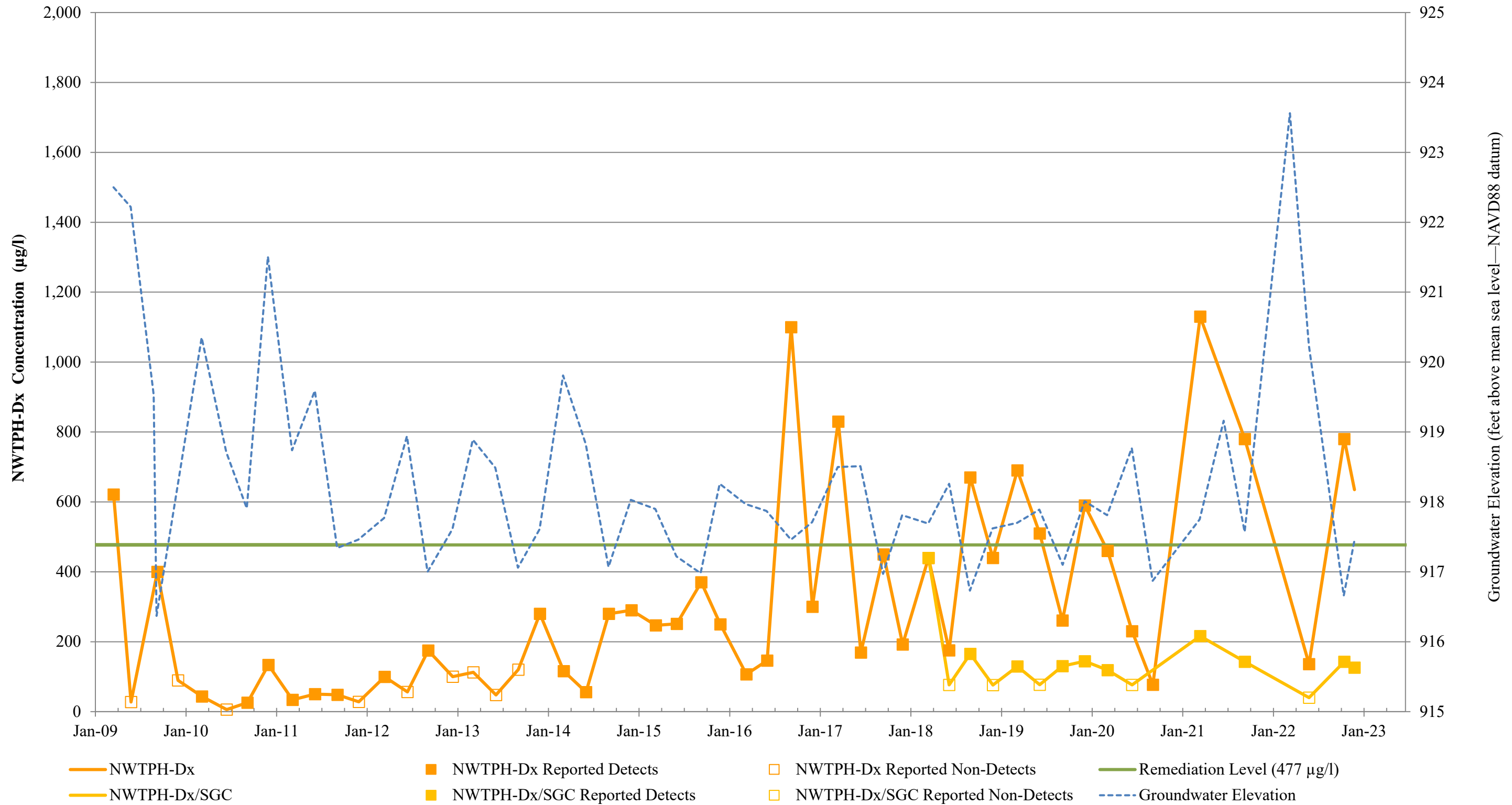
NWTPH-Dx Trend Plot  
BNSF Former Maintenance and Fueling Facility  
Skykomish, Washington  
Farallon PN: 683-071  
Well 5-W-43



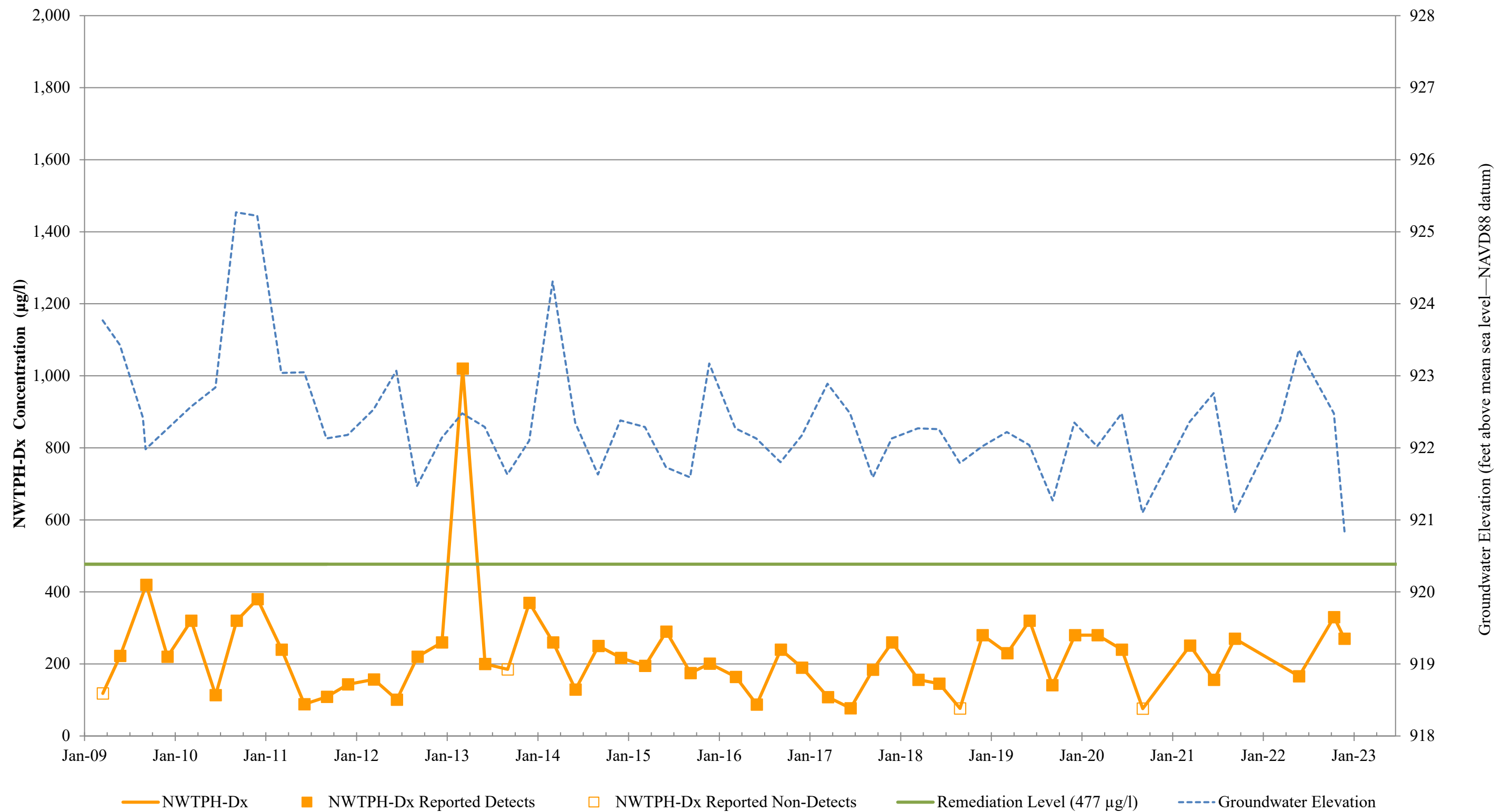
**NWTPH-Dx Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Well 2A-W-40**



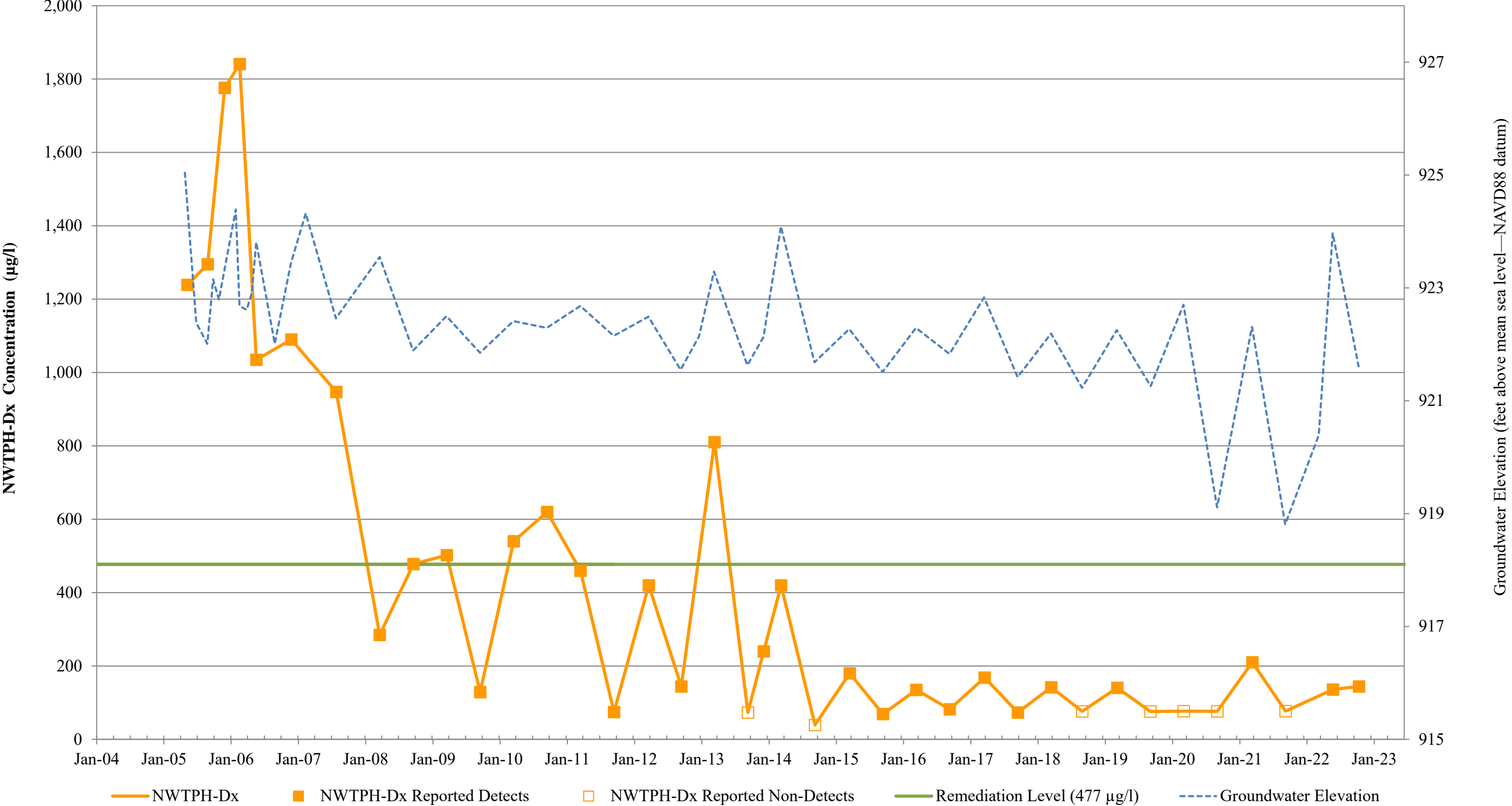
**NWTPH-Dx Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Well 2A-W-41**



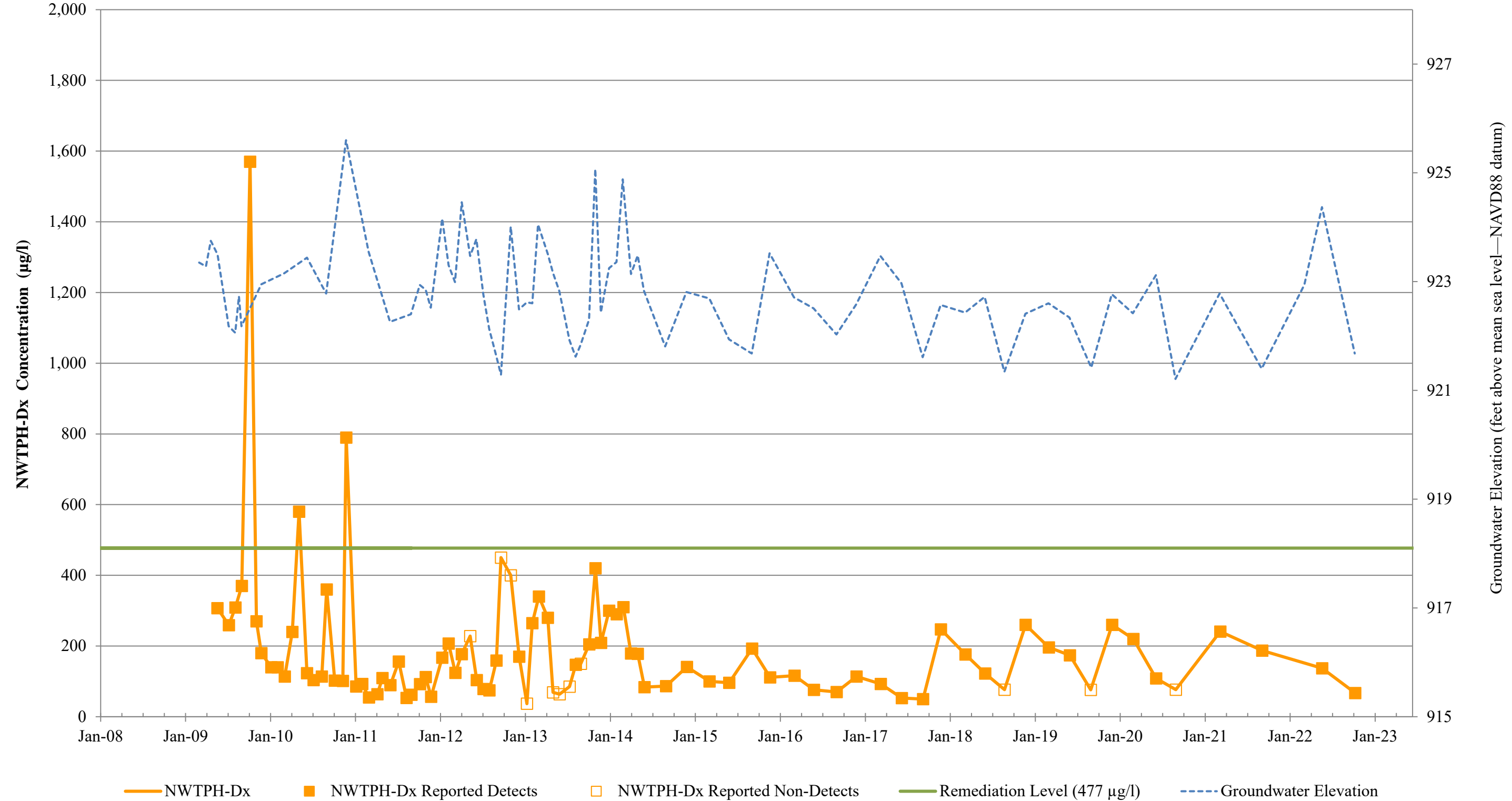
**NWTPH-Dx Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Well 2A-W-42**



NWTPH-Dx Trend Plot  
BNSF Former Maintenance and Fueling Facility  
Skykomish, Washington  
Farallon PN: 683-071  
Well 1C-W-4

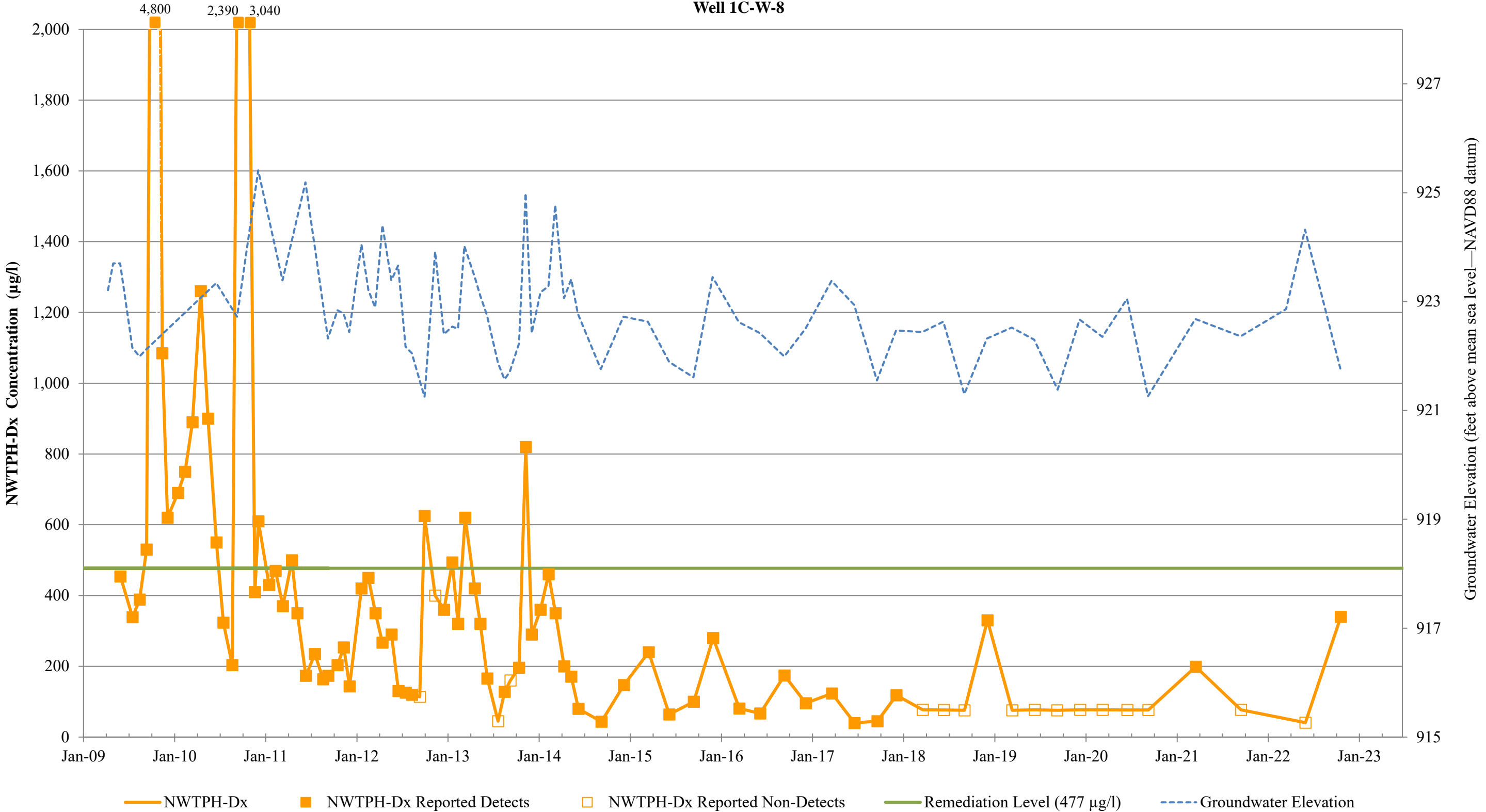


**NWTPH-Dx Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Well 1C-W-7**



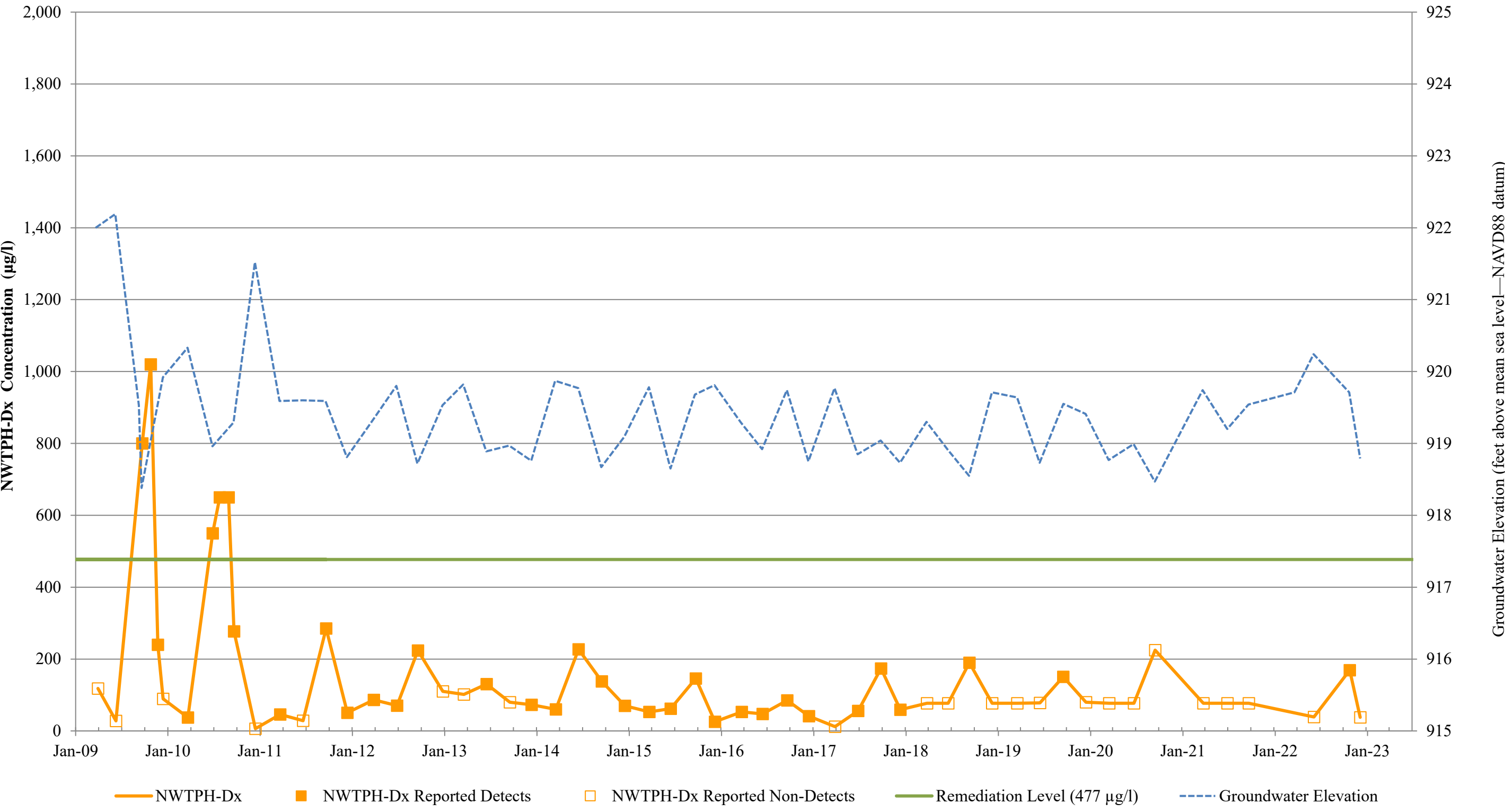
NWTPH-Dx concentrations exceeding the plot scale are shown above the plot area with the associated reported concentration value.

**NWTPH-Dx Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Well 1C-W-8**



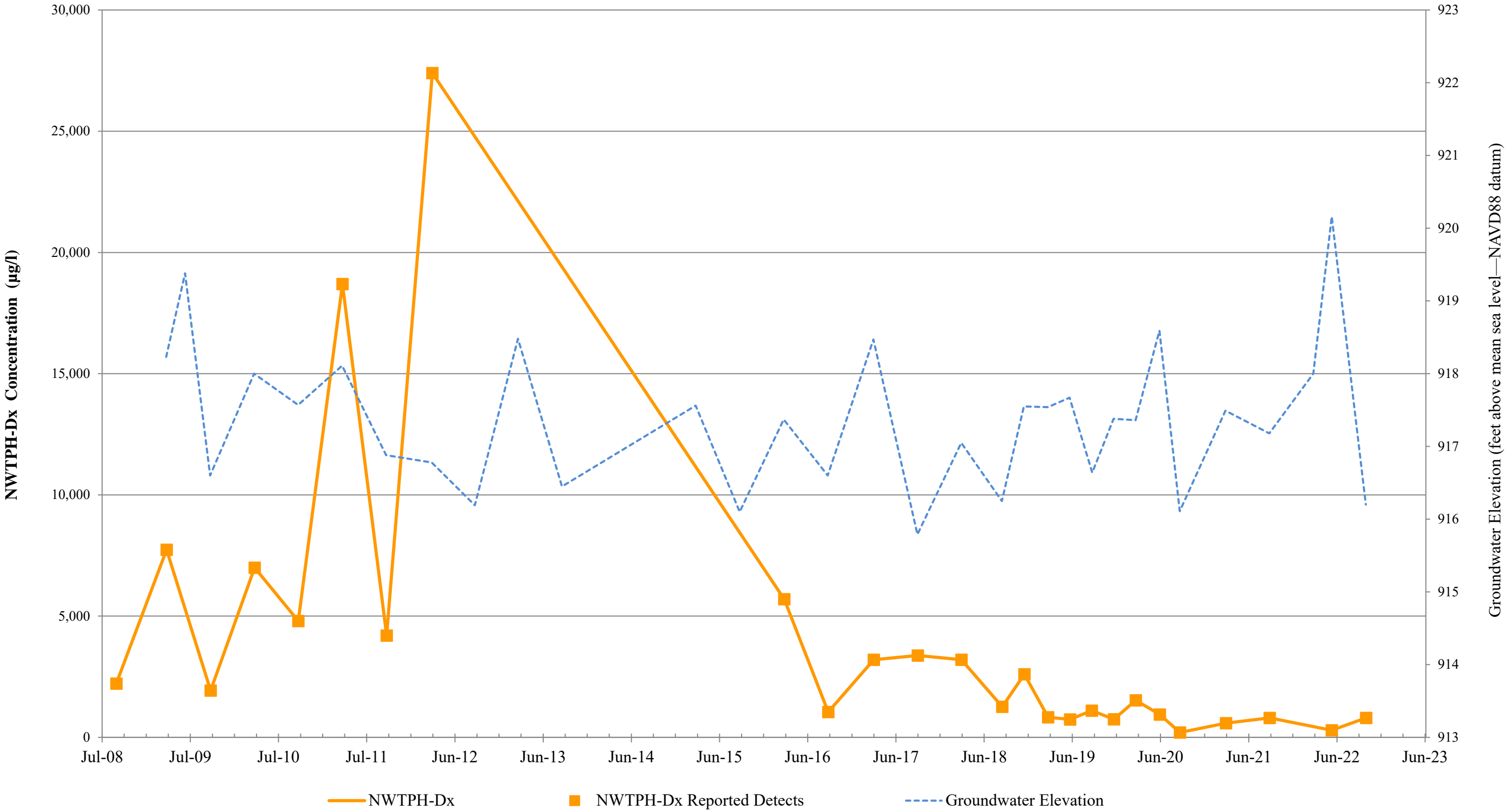


**NWTPH-Dx Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Well 1B-W-23**

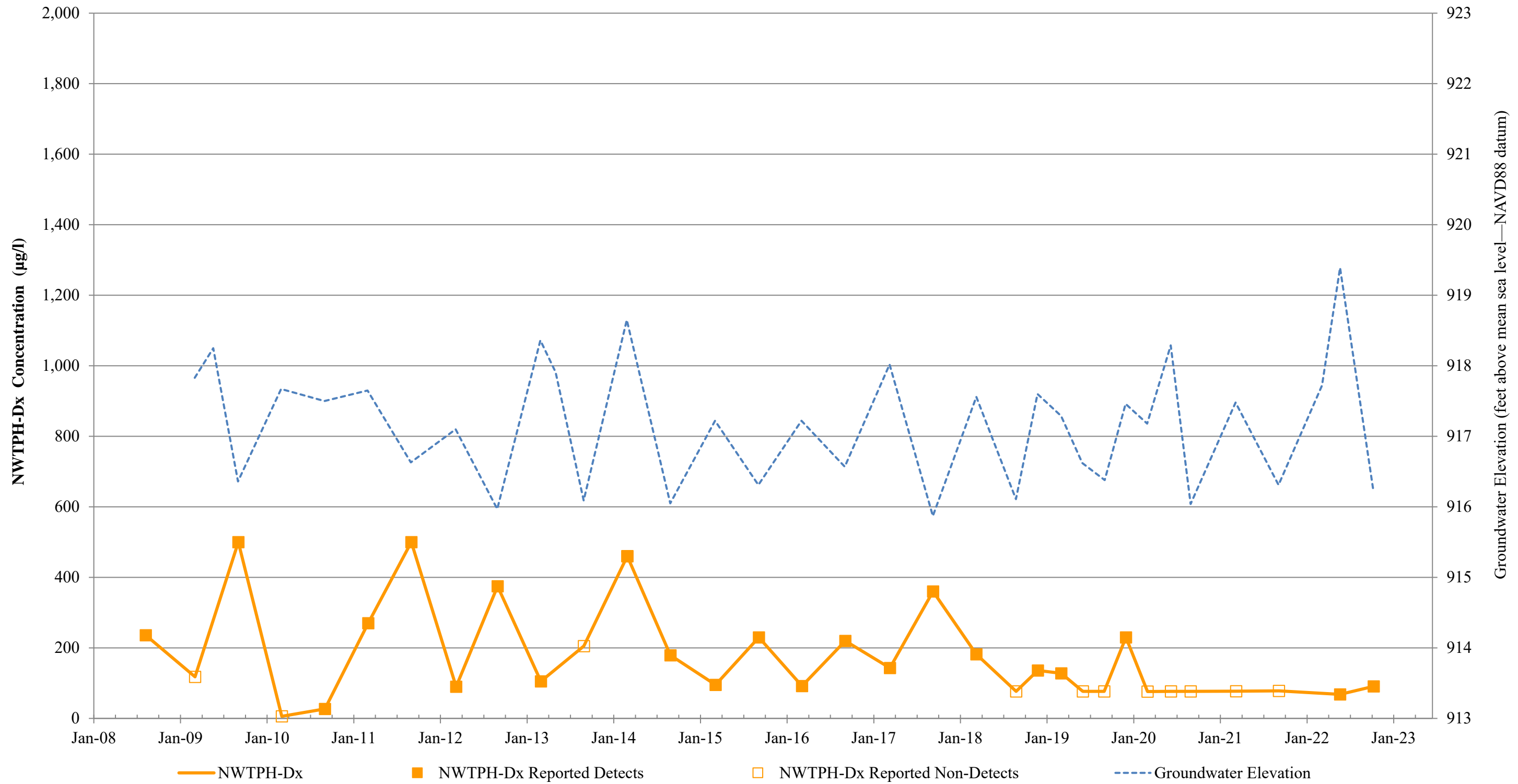


**Note:** Vertical scale is different from other plots; scale increased from 2,000 µg/l to 30,000 µg/l to show all data points.

**NWTPH-Dx Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Well 5-W-51**

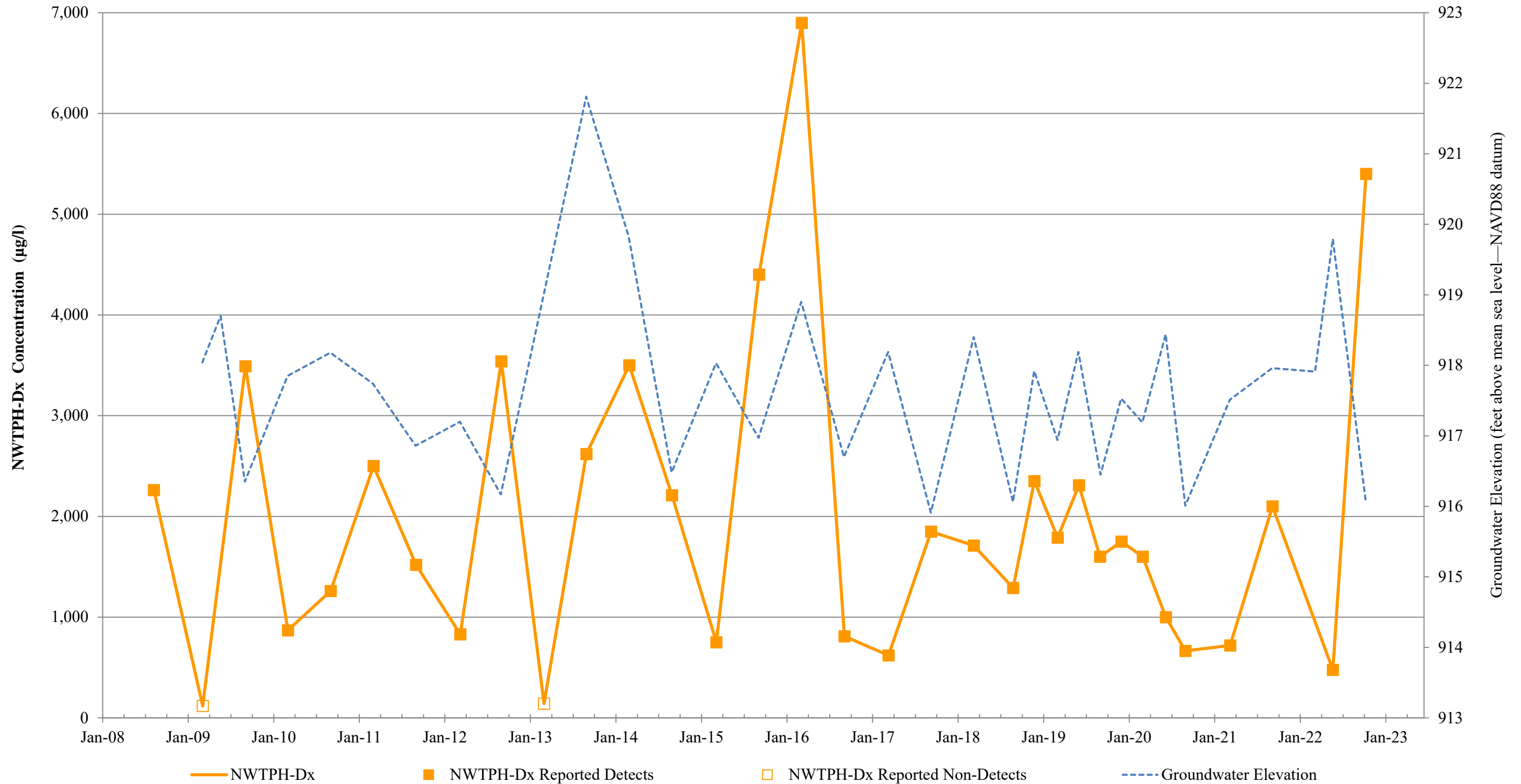


**NWTPH-Dx Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Well 5-W-55**

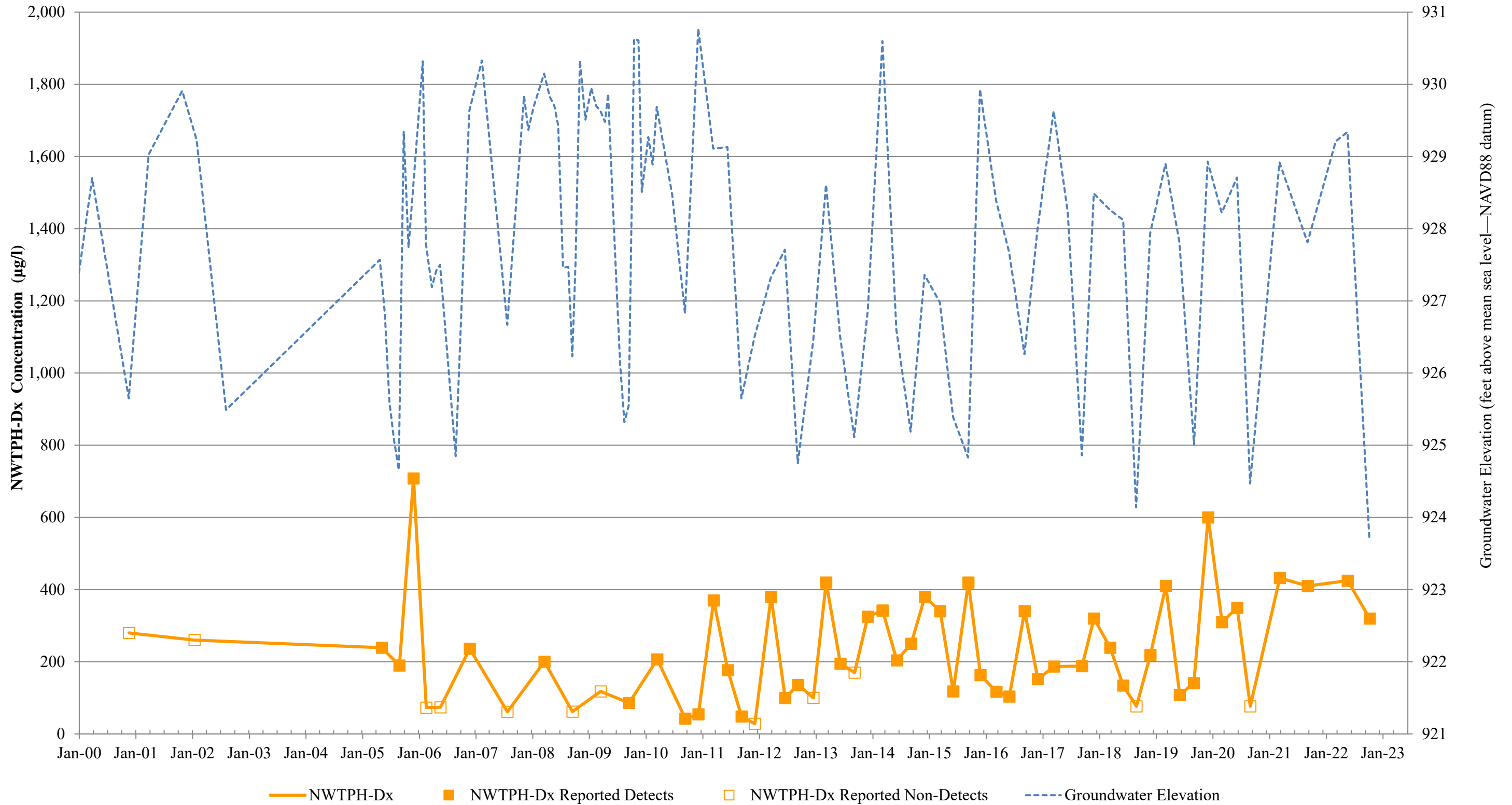


**Note:** Vertical scale is different from other plots; scale increased from 2,000 µg/l to 7,000 µg/l to show all data points.

**NWTPH-Dx Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Well 5-W-56**

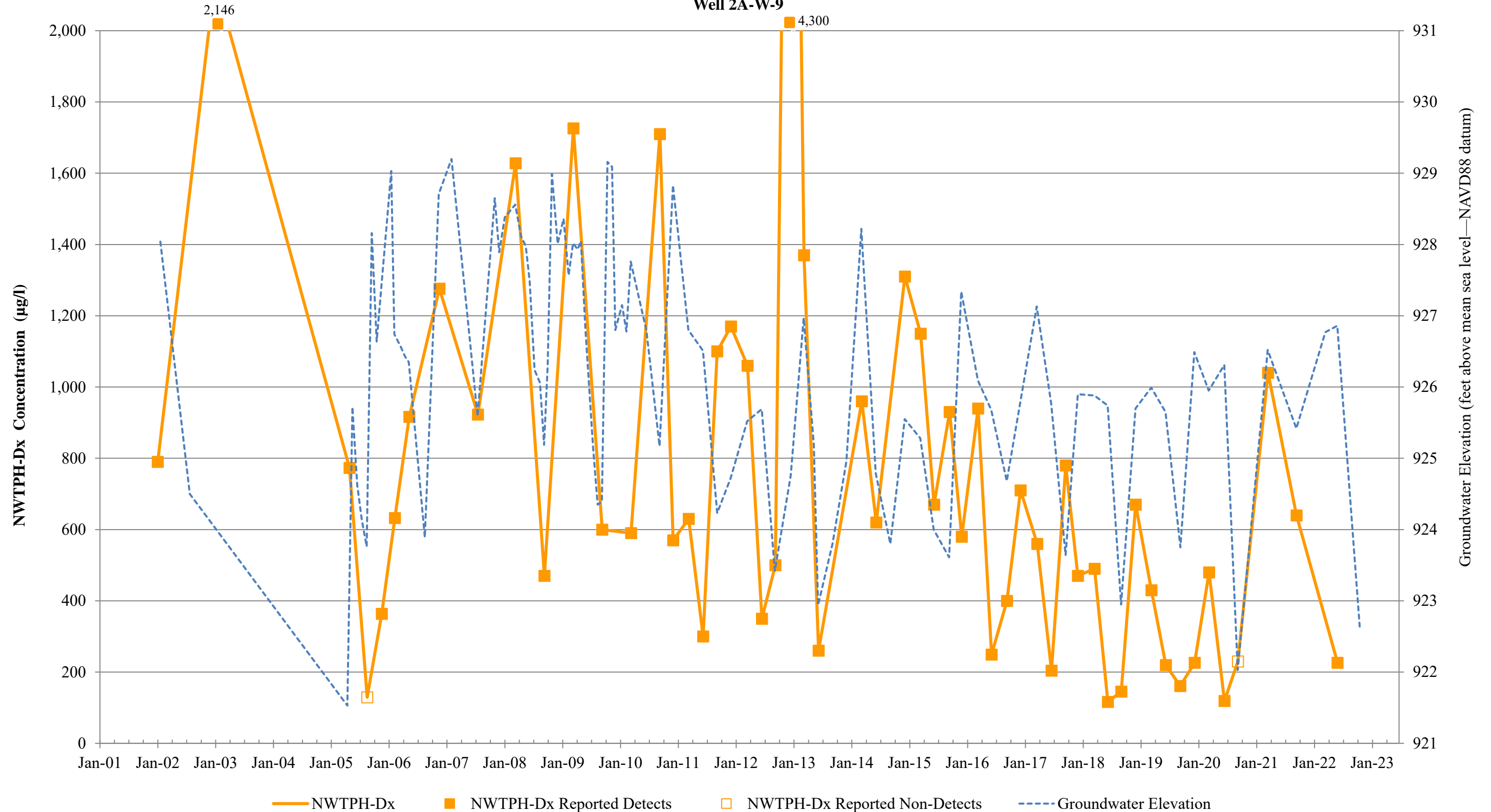


**NWTPH-Dx Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Well MW-4**



NWTPH-Dx concentrations exceeding the plot scale are shown above the plot area with the associated reported concentration value.

**NWTPH-Dx Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Well 2A-W-9**

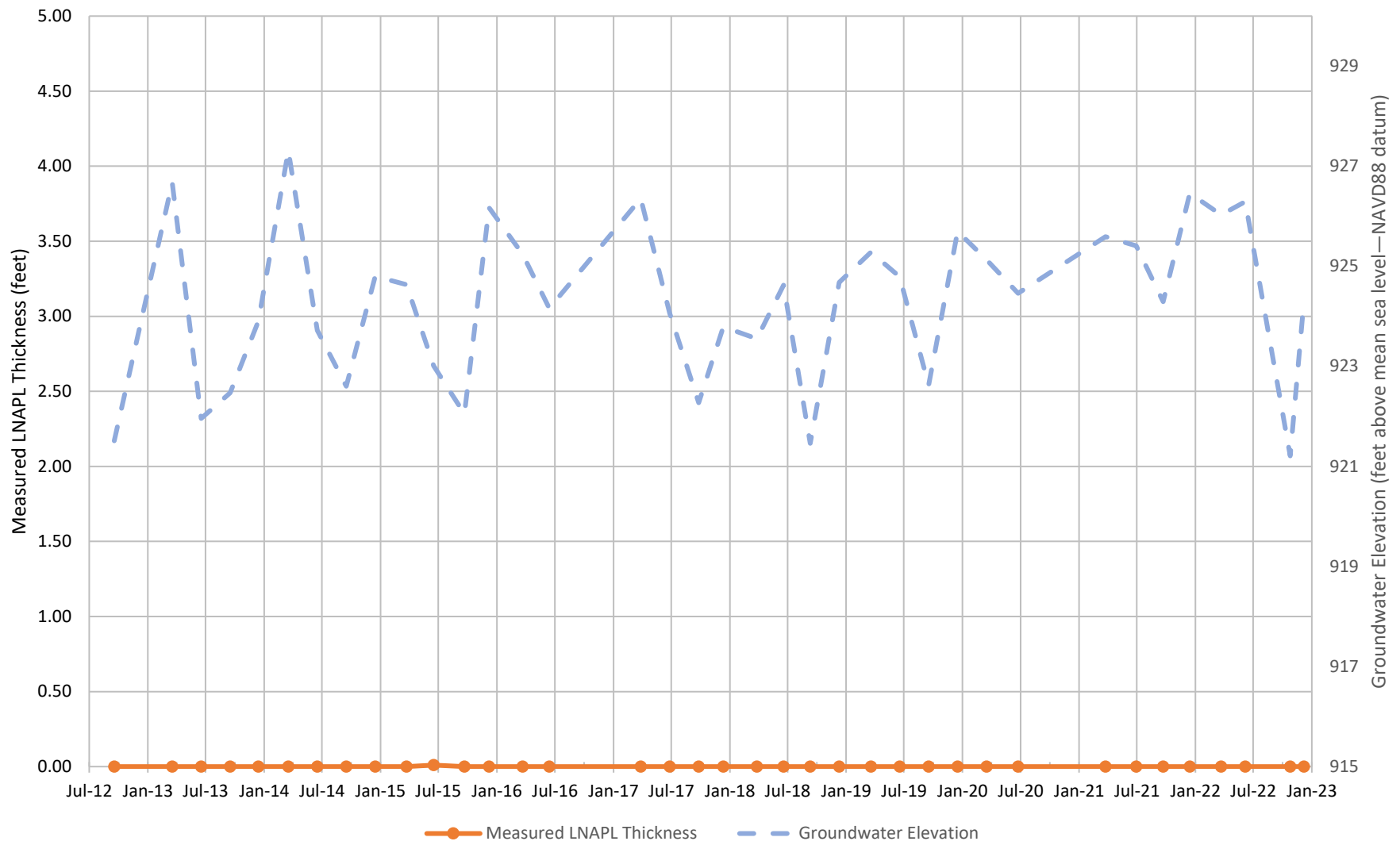


**APPENDIX C**  
**LNAPL TREND PLOTS**

2022 ANNUAL HYDRAULIC CONTROL AND CONTAINMENT SYSTEM  
OPERATIONS REPORT  
BNSF Former Maintenance and Fueling Facility  
Skykomish, Washington  
Consent Decree No. 07-2-33672-9 SEA

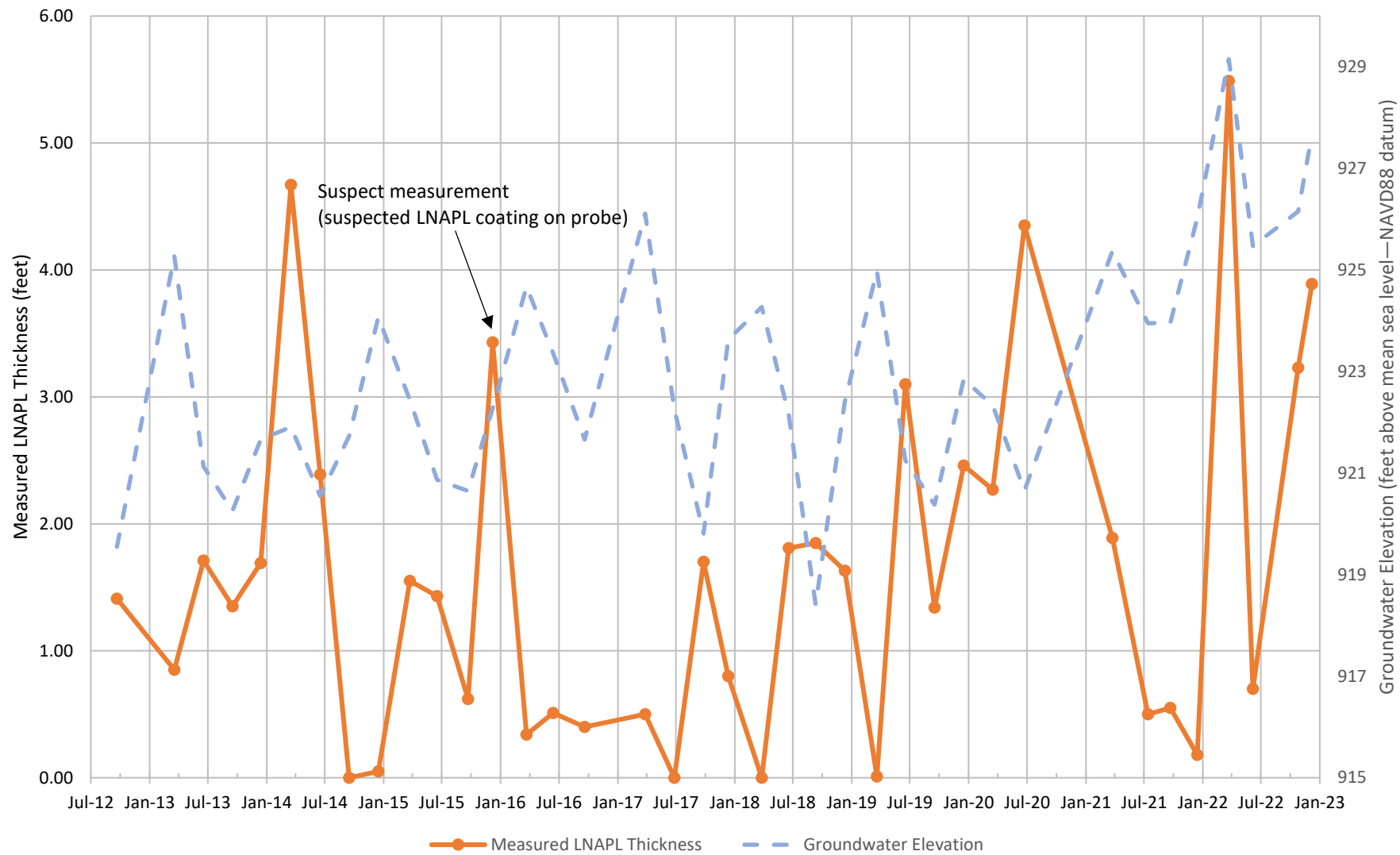
Farallon PN: 683-071

**LNAPL Thickness Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Piezometer PZ-4S**

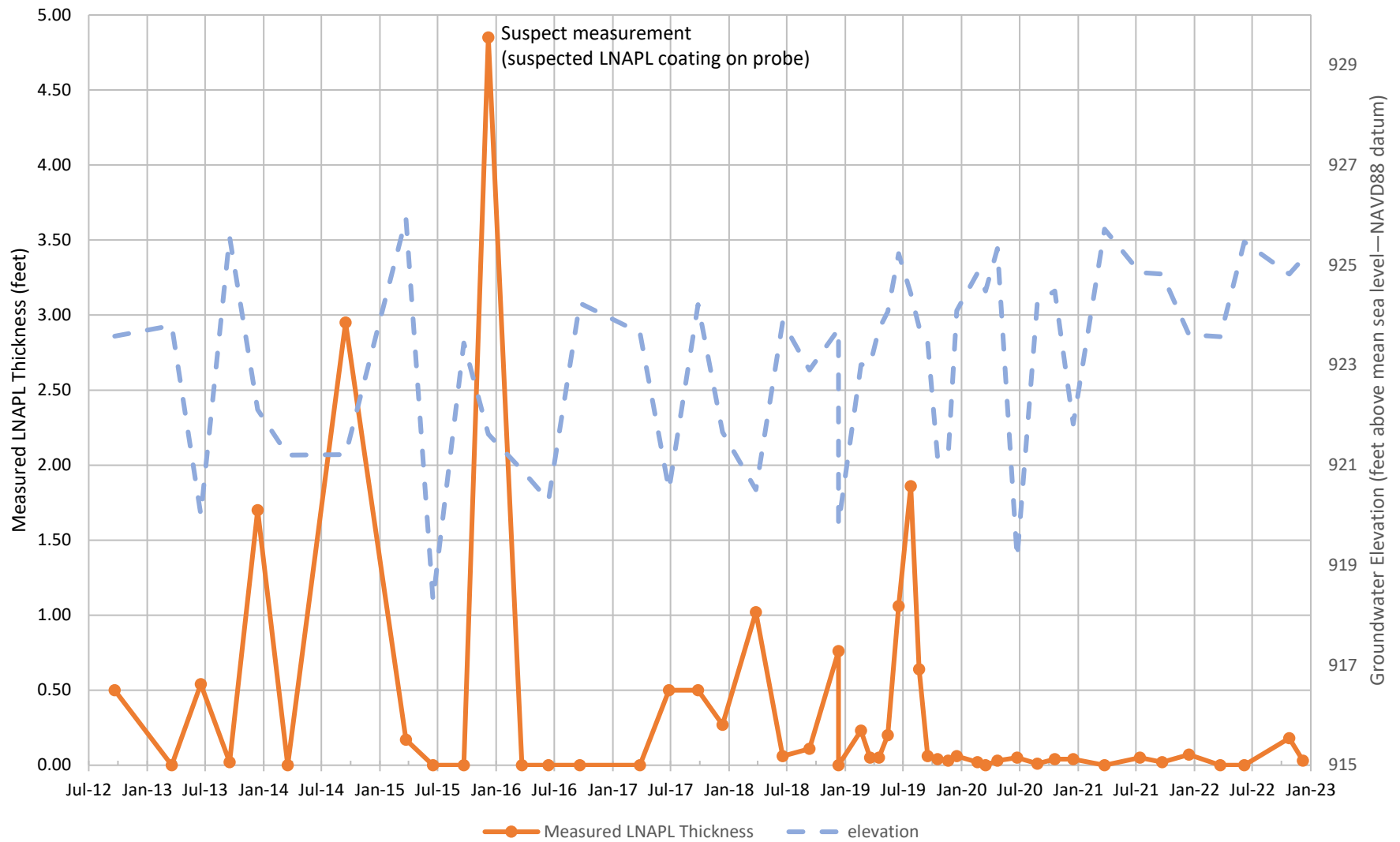




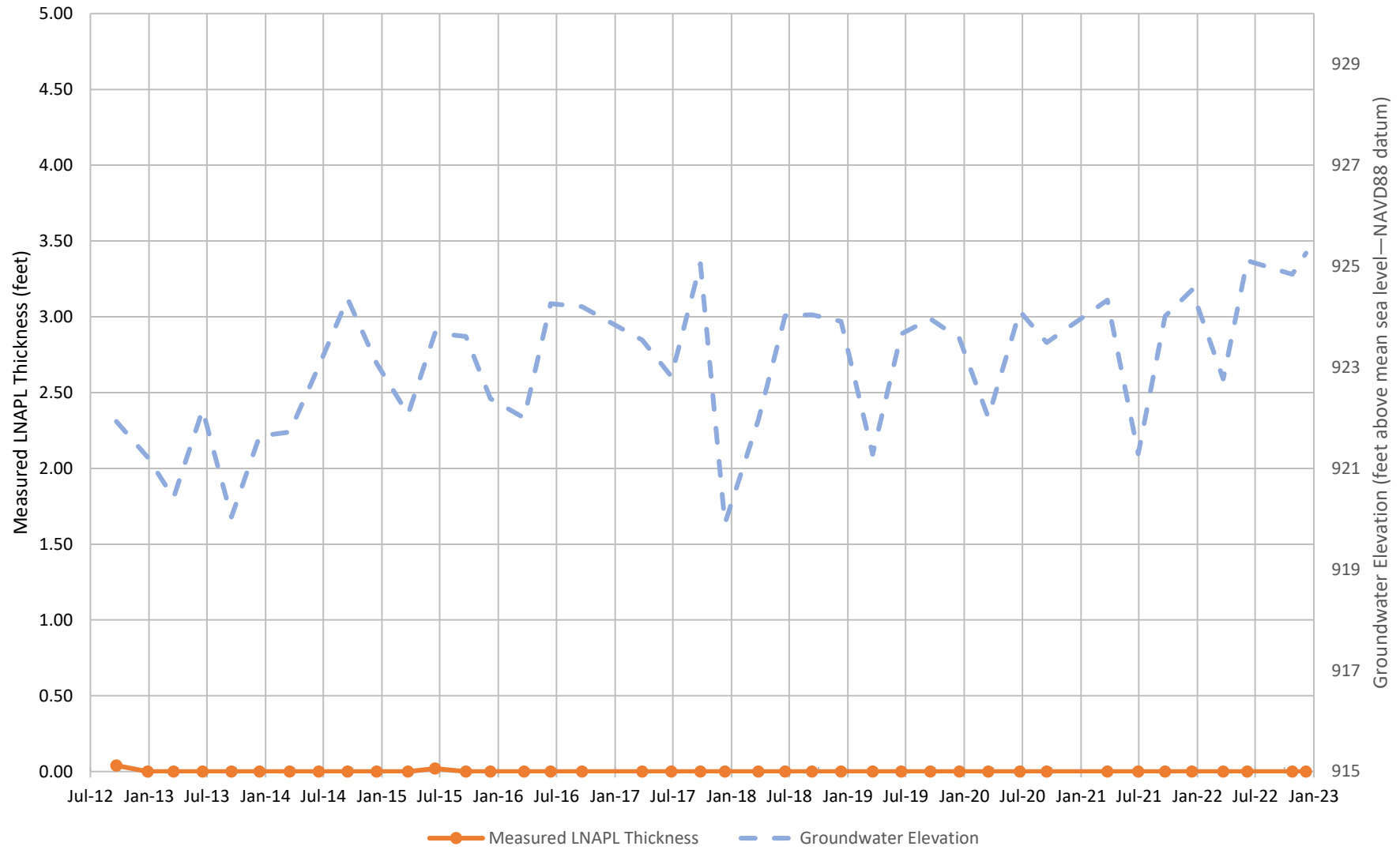
**LNAPL Thickness Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Piezometer PZ-5S**



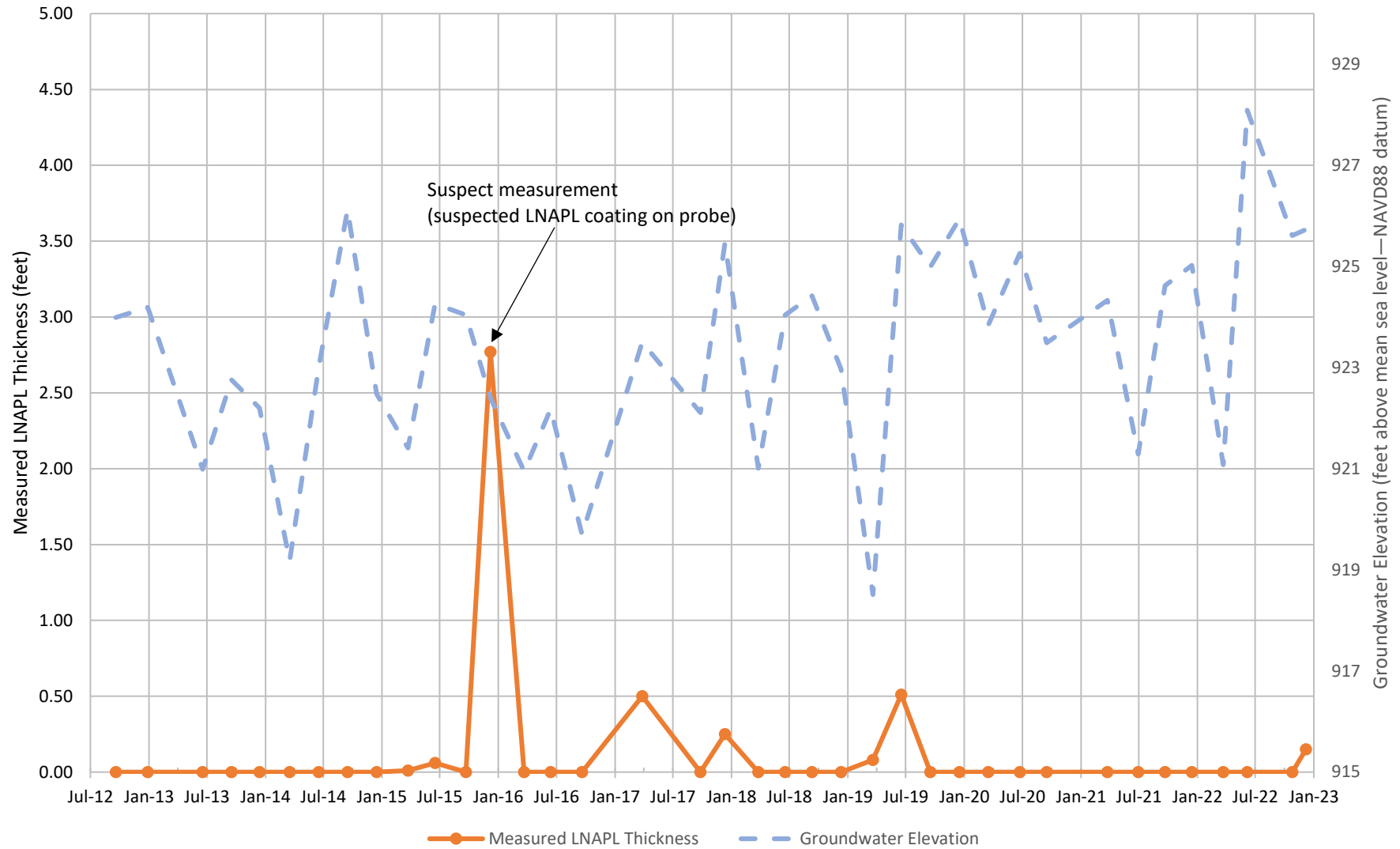
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**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Piezometer PZ-6S**



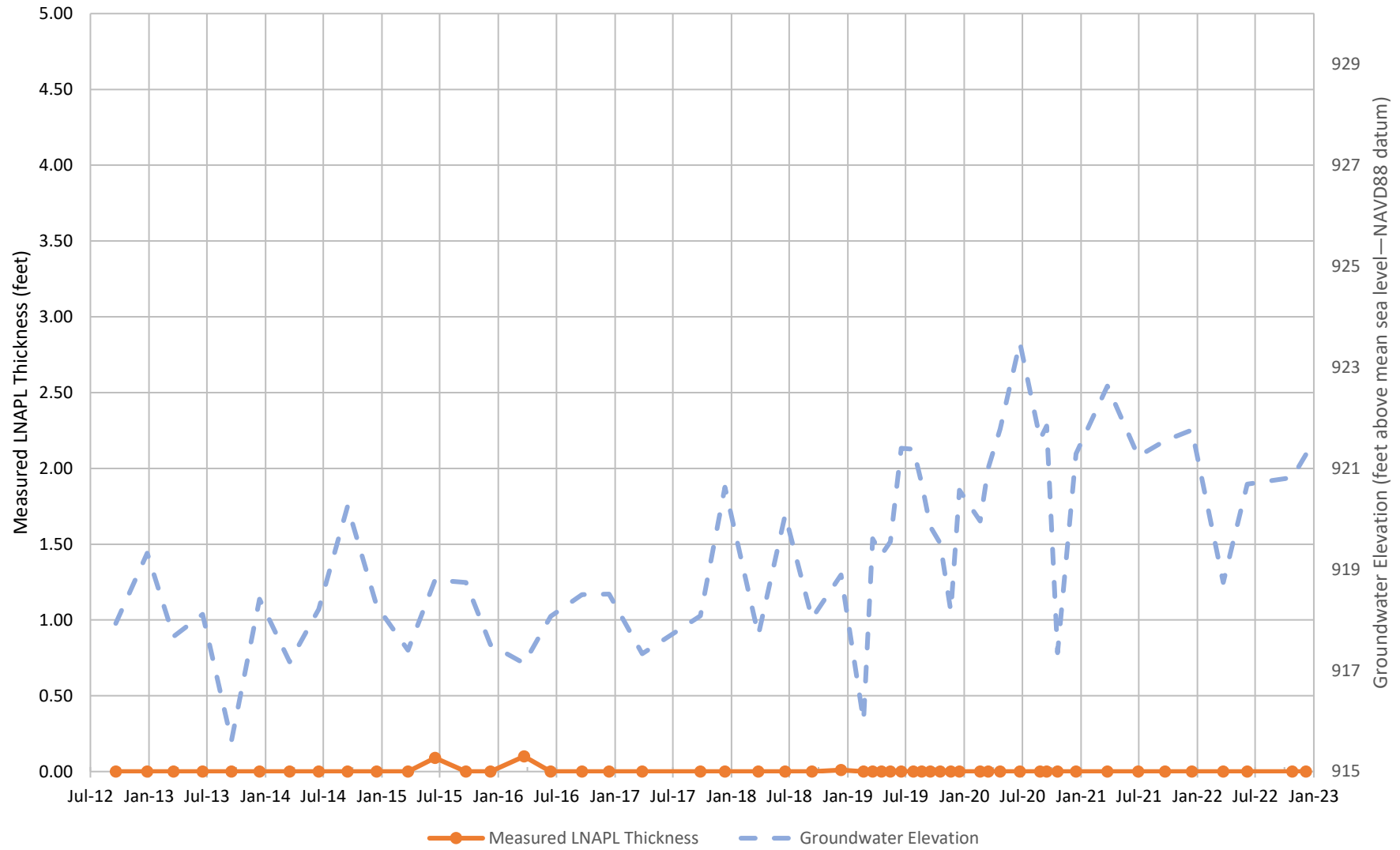
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**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Recovery Well RW-03**



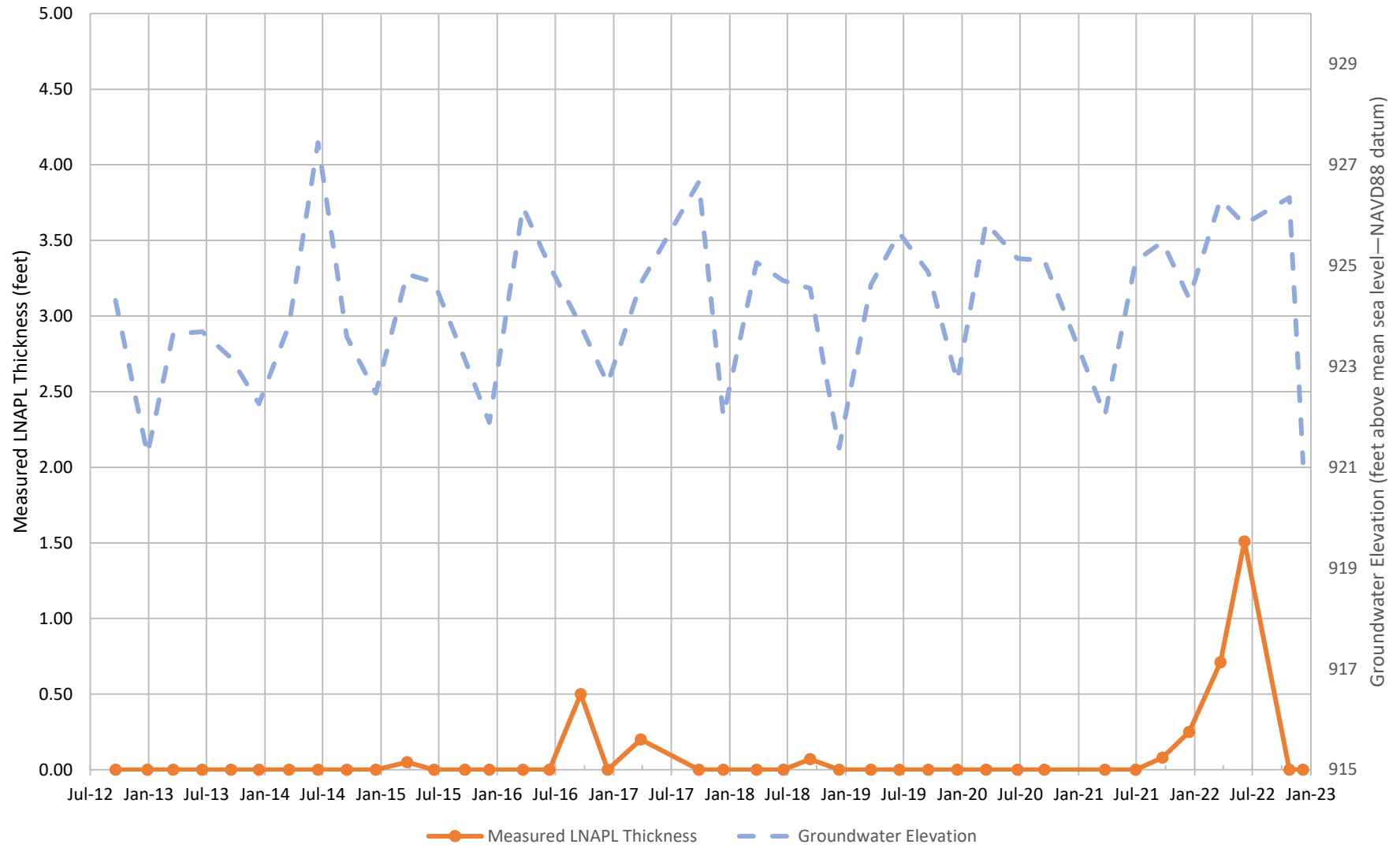
**LNAPL Thickness Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Recovery Well RW-04**



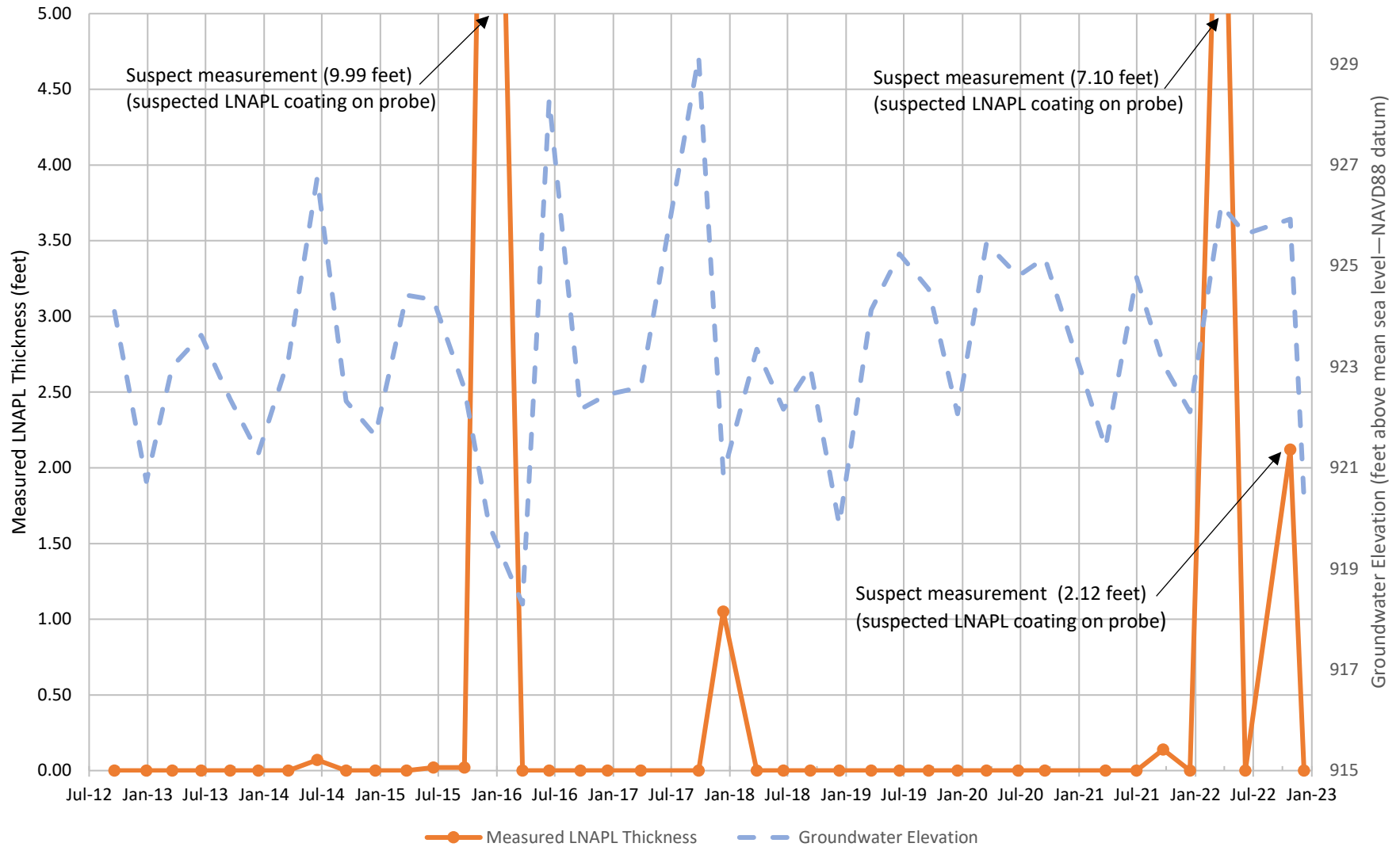
**LNAPL Thickness Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Recovery Well RW-05**



**LNAPL Thickness Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Recovery Well RW-07**



**LNAPL Thickness Trend Plot**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**  
**Farallon PN: 683-071**  
**Recovery Well RW-08**



**APPENDIX D**  
**WEST GATE EAST VAULT GAC CHANGEOUT TECHNICAL MEMO**

2022 ANNUAL HYDRAULIC CONTROL AND CONTAINMENT SYSTEM  
OPERATIONS REPORT  
BNSF Former Maintenance and Fueling Facility  
Skykomish, Washington  
Consent Decree No. 07-2-33672-9 SEA

Farallon PN: 683-071



## T E C H N I C A L   M E M O R A N D U M

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**TO:** Tanner Bushnell – Washington Department of Ecology

**cc:** Shane DeGross – BNSF, Railway Company

**FROM:** Angela Osman and Amy Essig – Farallon Consulting, L.L.C.

**DATE:** March 29, 2023

**RE:** **CARBON REPLACEMENT IN EAST VAULT OF WEST GATE OF HCC SYSTEM  
BNSF FORMER MAINTENANCE AND FUELING FACILITY  
SKYKOMISH, WASHINGTON  
FARALLON PN: 683-071**

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Farallon Consulting, L.L.C. (Farallon) has prepared this Technical Memorandum to on behalf of BNSF Railway Company (BNSF) to summarize the methods implemented for removal and replacement of the granular activated carbon (GAC)/pea gravel media in the east vault of the West Gate of the hydraulic control and containment (HCC) system in October 2022 at the BNSF Former Maintenance and Fueling Facility in Skykomish, Washington (herein referred to as the Site).

The West Gate is one of four gate installations that are part of the HCC system at the Site that were constructed in 2008. The West Gate consists of two separate vaults, each containing an oil-water separator followed by two partitioned chambers containing a GAC and pea gravel mix at a 70:30 ratio by volume. Each vault in the West Gate is covered by three lids that are oriented in a north-south direction, perpendicular to the oil-water separator and the GAC/pea gravel media chambers. The plan set in Attachment A depicts the gate and vault configurations in plan view and in cross-section.

Farallon provided project coordination, design support services, and technical guidance for replacement of the GAC/pea gravel media in the two chambers comprising the east vault of the West Gate. Construction support services were provided by Glacier Environmental



Services, Inc. of Mukilteo, Washington (Glacier). A description of the work undertaken to complete the GAC/pea gravel media replacement is provided below. Photographs showing the GAC/pea gravel media replacement process are provided in Attachment B.

### **GAC/PEA GRAVEL MEDIA REPLACEMENT**

The methods for conducting the GAC/pea gravel media replacement are described in the following sections:

- Obtaining required permits;
- Groundwater elevation monitoring;
- Temporary erosion and sediment control;
- Asphalt and concrete gutter protection;
- Excavation to the top of the vault and lid removal;
- Removal of the GAC/pea gravel media, including vault dewatering;
- GAC/pea gravel media replacement; and

Restoration of the area.

### **Permitting**

Prior to the GAC/pea gravel media replacement, a Street Use Permit was obtained by Glacier from the Town of Skykomish for the work to be conducted in the right-of-way of Railroad Avenue in Skykomish.

### **Groundwater Elevation Monitoring**

Prior to the GAC/pea gravel media replacement, groundwater elevations were monitored in the piezometers, sentry wells, and the gate well proximate to the West Gate. A second set of groundwater elevation data was obtained from the same locations following completion of the GAC/pea gravel media replacement. The groundwater elevation data were evaluated to assess flow conditions at and proximate to the West Gate before and after the GAC/pea gravel media replacement. There were no discernible indications of changes in flow conditions or the transmissivity of groundwater through the vault as a result of the GAC/pea



gravel replacement. Between the initial set of water level measurements on October 6, 2022, and the second set of measurements on October 25 and 26, and November 16, 2022, the five wells and piezometers monitored increased in elevation by an average of 0.6 foot. These measurements are consistent with the trends typically observed at the Site.

### **Temporary Erosion and Sediment Control**

Work zones, stockpile areas, and contractor lay-down areas were cordoned off using traffic cones and temporary fencing. Stormwater catch basins within 100 feet of the work areas were protected using sandbags and filter socks to ensure that no runoff from the work area entered the stormwater system. A fully stocked spill kit, plastic sheeting, and sandbags for additional stormwater protection were available on the Site throughout the project duration, although not needed. The work area was swept clean of loose soil before workers left the Site.

### **Asphalt and Concrete Gutter Protection**

The northern outside face of the vault is approximately 2 feet from the southern side of the adjacent concrete gutter in Railroad Avenue. It was not necessary to remove any portion of the concrete gutter or the asphalt concrete pavement during construction due to the installation of construction shoring south-adjacent to Railroad Avenue on the northern side of the vault.

### **Excavation to Vault Top and Lid Removal**

Approximately 5 feet of soil was removed from the top of the vault lids. Excavators worked around the access risers that had been placed to provide access to the oil-water separator and the GAC/pea gravel media chambers (Attachment A), and shoring was installed along the northern and southern sides of the vault. Vault lids were exposed, and excavated material was stockpiled adjacent to the excavation area and reused as backfill during restoration.

Following removal of the overburden, the access lids and risers were removed from the top of the vault. The two sentry wells (S2-BU and S2-BD) that had been installed through the risers at the center access point also were removed. Risers and access lids south-adjacent to the excavation were temporarily shored to prevent impact from construction activities.



The three approximately 10-ton lid sections were removed using an excavator, and were staged adjacent to the vault in the work zone before the GAC/pea gravel media was removed and replaced.

### **GAC/Pea Gravel Media Removal**

The GAC/pea gravel media is contained in up- and down-gradient chambers inside the vault. GAC/pea gravel media removal and replacement were completed sequentially in each of the chambers to ensure that GAC/pea gravel media was present in the east vault of the West Gate at all times. No personnel were required to enter the vault during the GAC/pea gravel media removal and replacement effort.

Approximately 4 feet of groundwater was present in the vault prior to dewatering. A vacuum truck with a positive displacement pump and high vacuum capacity was used initially to remove the GAC/pea gravel media present above the groundwater table from the up- and down-gradient chambers using an overhead stinger. When the unsaturated material had been removed, GAC chamber dewatering was instituted as described below.

### **Vault Dewatering and Water Management**

- The chambers containing the GAC/pea gravel media are enclosed by metal mesh with an internal support framework. Gaps are present between the oil-water separator baffle on the up-gradient side of the vault and the first GAC/pea gravel chamber, and on the down-gradient side of the vault between the down-gradient side of the second GAC/pea gravel media chamber and the down-gradient concrete face of the vault. The presence of these gaps enabled installation of temporary water-resistant barriers to impede groundwater flow into the vault.
- Two water-resistant barriers were constructed to limit the flow of water into both the up-gradient and down-gradient sides of the east vault. The water barriers were constructed of plywood, with a continuous 2-inch-diameter hose along the bottom and two sides. Once the barrier was lowered into place, the hose was inflated with air in an effort to create a water-tight seal. The presence of loose imported aggregate material along the bottom of the vault



prevented attaining a water-tight seal at both barrier locations, so groundwater flow into the vault was reduced, but not eliminated.

- The water in the vault was then pumped to lower the water level in the GAC/pea gravel media chambers. A submersible pump was used to continuously pump water from the vault in the area up-gradient of the metal mesh enclosure at a rate of approximately 100 gallons per minute. The pumped water was conveyed through an existing unused 3-inch-diameter pipe to a 500-barrel weir settling tank near the HCC system groundwater treatment building on the southern side of the railyard. The water removed during the GAC/pea gravel media replacement process subsequently was treated by the HCC treatment system. The dewatering process had limited influence, lowering the water level to a total depth of approximately 4 feet in the east vault.

When the removal of the unsaturated GAC/pea gravel media was complete, the extracted GAC/pea gravel media was then transported and placed into the containment area near the HCC water treatment building pending transport for disposal off the Site. The amount of water removed from the vault along with the carbon was small enough that it was absorbed in the carbon stockpile and consequently was also transported to the containment area near the HCC. The excess water pumped and transported to the HCC water treatment building during the GAC/pea gravel media removal process was temporarily stored in the settling tanks before being discharged to the treatment facility at a rate that allowed for treatment of the influent water from the HCC system and the stored water consistent with the design capacity of the treatment system.

Material from the up-gradient chamber was removed and then refilled with new media to a level above the groundwater level before proceeding to the down-gradient chamber.

### **GAC/Pea Gravel Media Replacement**

The GAC/pea gravel media used for replacement of the extracted material was blended to match the existing media mix at a 70:30 ratio by volume in small 3- to 5-cubic-yard batches using the excavator and a small dump truck. Care was taken to gently mix the materials using the excavator bucket to ensure that the integrity of the GAC in the mixture was maintained throughout the mixing and placement process. Following mixing, the excavator



was used to place the new GAC/pea gravel media into the up-gradient and down-gradient vault chambers. The new material was added until it reached the top of the metal framework, approximately 12 inches higher than the previous volume. The quantities of material placed in the GAC/pea gravel media chambers in the east vault of the West Gate were approximately 20 cubic yards of GAC and approximately 25 tons of pea gravel.

### **Restoration**

Following the GAC/pea gravel media replacement and final inspection of the vault, the lids to the vault were replaced using the existing gaskets on the top of the concrete vault walls. Before the lids were replaced, the rebar dowel set pins were covered with polyvinyl chloride caps to preserve their integrity during backfilling. The lid post holes for the set pins and the vault lid seams were grouted. Following placement of the vault lids, the risers and access lids were replaced on top of the vault lids, and the aggregate material and topsoil removed at the outset of the process were reused as backfill. Following backfilling and compacting, mulch, seed, and fertilizer were applied to the excavation area and to surrounding areas where vegetation had been disturbed. The final step taken was reinstallation of the two sentry wells in the vault using direct-push drilling equipment. The sentry wells (S2-BU and S2-BD) were reinstalled by Holt Services, Inc. of Edgewood, Washington using a truck-mounted direct-push drill rig. The wells were constructed using 2-inch stainless steel screen and riser materials.

Attachments: Attachment A, West Gate Figures  
Attachment B, Construction Photographs

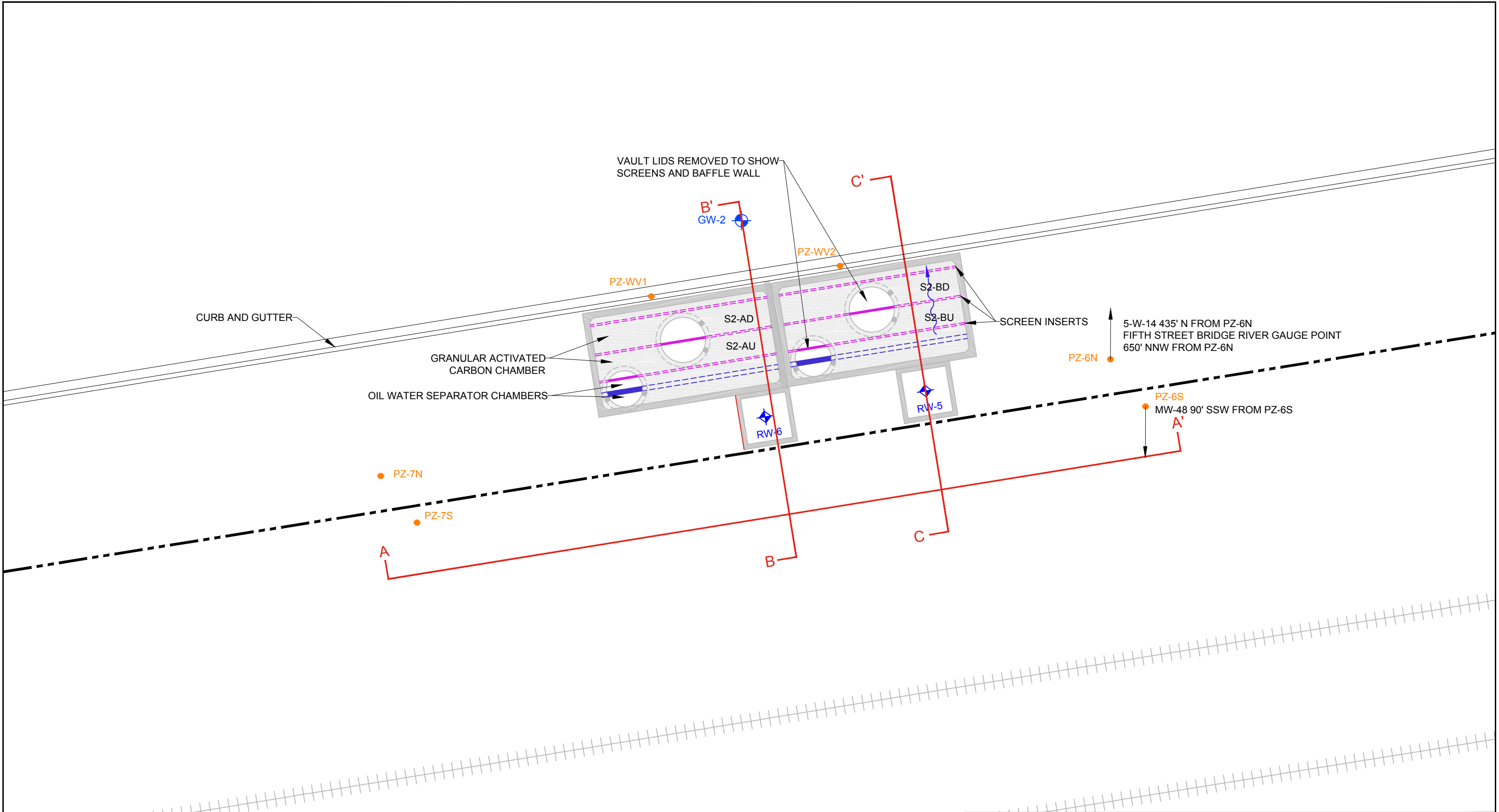
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**ATTACHMENT A  
WEST GATE FIGURES**

**CARBON REPLACEMENT AT EAST VAULT OF WESTGATE OF HCC SYSTEM**


**BNSF Former Maintenance and Fueling Facility  
Skykomish, Washington**

**Farallon PN: 683-071**






WATER FLOW DIRECTION




RAILROAD TRACKS


GW-2



RW-5



PZ-7N



MONITORING WELL


RECOVERY WELL

PIEZMOMETER


A


A'

LINE OF CROSS-SECTION



0' SCALE IN FEET 10'





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Washington  
Issaquah | Bellingham | Seattle

Oregon  
Portland | Bend | Baker City

California  
Oakland | Sacramento | Irvine

PLAN VIEW OF HCC SYSTEM WEST GATE  
BNSF FORMER MAINTENANCE AND FUELING FACILITY  
SKYKOMISH, WASHINGTON

FARALLON PN: 683-043

Drawn By: DJR    Checked By: DEW    Date: 12/29/2015    Disk Reference: 683-043-028D.dwg





**ATTACHMENT B  
CONSTRUCTION PHOTOGRAPHS**

**CARBON REPLACEMENT AT EAST VAULT OF WESTGATE OF HCC SYSTEM**

**BNSF Former Maintenance and Fueling Facility  
Skykomish, Washington**

**Farallon PN: 683-071**

## **SITE PHOTOGRAPHS**

**Carbon Replacement in East Vault of West Gate of HCC System  
BNSF Former Maintenance and Fueling Facility  
Skykomish, Washington  
Farallon PN: 683-071**

- Photograph 1. Preconstruction Site Conditions.**
- Photograph 2. Excavation to Vault Top.**
- Photograph 3. Removal of Vault Access Hatch.**
- Photograph 4. Removal of Wells.**
- Photograph 5. Removal of Risers.**
- Photograph 6. Lifting of Concrete Vault Lid.**
- Photograph 7. Exposed Vault.**
- Photograph 8. Installation of Water Barriers.**
- Photograph 9. Installation of Water Barriers.**
- Photograph 10. Installation of Water Barriers.**
- Photograph 11. Vault Dewatering.**
- Photograph 12. Removal of Saturated Material with Vactor.**
- Photograph 13. Mixing of GAC/Pea Gravel Material.**
- Photograph 14. Placement of GAC/Pea Gravel Material.**
- Photograph 15. Replaced GAC/Pea Gravel Material.**
- Photograph 16. Removal of Water Barriers.**
- Photograph 17. Reinstallation of Vault Lid.**
- Photograph 18. Reinstalled Vault Lid.**
- Photograph 19. Replacement of Access Lids.**
- Photograph 20. Replacement of Risers.**
- Photograph 21. Grouting Dowel Post Connections.**
- Photograph 22. PVC Covering Anchor Bolts.**
- Photograph 23. Beginning of Backfill.**
- Photograph 24. Removal of Shoring.**
- Photograph 25. Exposed Temporary Risers for Wells.**
- Photograph 26. Backfilling of Excavated Area.**
- Photograph 27. Compaction of Backfill.**
- Photograph 28. Restoration of Excavated Area.**
- Photograph 29. Placement of Seeds and Fertilizer.**



**SITE PHOTOGRAPHS (continued)**  
**Carbon Replacement in East Vault of West Gate of HCC System**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**



**Photograph 1:** Preconstruction Site Conditions (Facing East).



**Photograph 2:** Excavation to Vault Top.





**SITE PHOTOGRAPHS (continued)**  
**Carbon Replacement in East Vault of West Gate of HCC System**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**



**Photograph 3:** Removal of Vault Access Hatch.



**Photograph 4:** Removal of Wells.



**SITE PHOTOGRAPHS (continued)**  
**Carbon Replacement in East Vault of West Gate of HCC System**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**



**Photograph 5:** Removal of Risers.



**Photograph 6:** Lifting of Concrete Vault Lid.





**SITE PHOTOGRAPHS (continued)**  
**Carbon Replacement in East Vault of West Gate of HCC System**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**



**Photograph 7: Exposed Vault.**



**Photograph 8: Installation of Water Barriers.**





**SITE PHOTOGRAPHS (continued)**  
**Carbon Replacement in East Vault of West Gate of HCC System**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**



**Photograph 9:** Installation of Water Barriers.



**Photograph 10:** Installation of Water Barriers.





**SITE PHOTOGRAPHS (continued)**  
**Carbon Replacement in East Vault of West Gate of HCC System**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**



**Photograph 11:** Vault Dewatering.



**Photograph 12:** Removal of Saturated Material with Vector.





**SITE PHOTOGRAPHS (continued)**  
**Carbon Replacement in East Vault of West Gate of HCC System**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**



**Photograph 13:** Mixing of GAC/Pea Gravel Material.



**Photograph 14:** Placement of GAC/Pea Gravel Material.





**SITE PHOTOGRAPHS (continued)**  
**Carbon Replacement in East Vault of West Gate of HCC System**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**



**Photograph 15:** Replaced GAC/Pea Gravel Material.



**Photograph 16:** Removal of Water Barriers.





**SITE PHOTOGRAPHS (continued)**  
**Carbon Replacement in East Vault of West Gate of HCC System**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**



**Photograph 17: Reinstallation of Vault Lid.**



**Photograph 18: Reinstalled Vault Lid.**





**SITE PHOTOGRAPHS (continued)**  
**Carbon Replacement in East Vault of West Gate of HCC System**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**



**Photograph 19: Replacement of Access Lids.**



**Photograph 20: Replacement of Risers.**





**SITE PHOTOGRAPHS (continued)**  
**Carbon Replacement in East Vault of West Gate of HCC System**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**



**Photograph 21:** Grouting Dowel Post Connections.



**Photograph 22:** PVC Covering Anchor Bolts.





**SITE PHOTOGRAPHS (continued)**  
**Carbon Replacement in East Vault of West Gate of HCC System**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**



**Photograph 23:** Beginning of Backfill.



**Photograph 24:** Removal of Shoring.





**SITE PHOTOGRAPHS (continued)**  
**Carbon Replacement in East Vault of West Gate of HCC System**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**



**Photograph 25:** Exposed Temporary Risers for Wells.



**Photograph 26:** Backfilling of Excavated Area.





**SITE PHOTOGRAPHS (continued)**  
**Carbon Replacement in East Vault of West Gate of HCC System**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**



**Photograph 27:** Compaction of Backfill.



**Photograph 28:** Restoration of Excavated Area.



**SITE PHOTOGRAPHS (continued)**  
**Carbon Replacement in East Vault of West Gate of HCC System**  
**BNSF Former Maintenance and Fueling Facility**  
**Skykomish, Washington**



**Photograph 29:** Placement of Seeds and Fertilizer.