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May 29, 2019

Brian Sato
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**RE: Final 2018 Annual Hydraulic Control and Containment System Operations Report
Transmittal
Consent Decree No. 07-2-33672-9 SEA:
Site Name: BNSF Former Maintenance and Fueling Facility
Site Address: Skykomish, WA
Facility/Site ID No.: 2104
Cleanup Site ID No.: 34**

Dear Mr. Sato:

Enclosed is the Final 2018 Annual Hydraulic Control and Containment System Operations Report for Ecology's records.

Sincerely,

A handwritten signature in blue ink that reads "Shane C. DeGross".

Shane C. DeGross
Manager Environmental Remediation, BNSF Railway

cc: Ms. Amy Essig Desai, Farallon Consulting

**2018 ANNUAL HYDRAULIC CONTROL AND
CONTAINMENT SYSTEM OPERATIONS REPORT**

**BNSF FORMER MAINTENANCE AND FUELING FACILITY
SKYKOMISH, WASHINGTON
CONSENT DECREE NO. 07-2-33672-9 SEA**

**Submitted by:
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**For:
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May 29, 2019

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ACRONYMS AND ABBREVIATIONS

2010 CMP	<i>2010 Compliance Monitoring Plan Update, BNSF Former Maintenance and Fueling Facility – Skykomish, Washington</i> dated April 30, 2010, prepared by AECOM Environment
AECOM	AECOM Environment
BNSF	BNSF Railway Company
DRO	total petroleum hydrocarbons as diesel-range organics
Ecology	Washington State Department of Ecology
GAC	granulated activated carbon
HCC	hydraulic control and containment
LNAPL	light nonaqueous-phase liquid
µg/l	micrograms per liter
NPDES	National Pollutant Discharge Elimination System
NPDES Permit	National Pollutant Discharge Elimination System Permit No. WA0032123
NWTPH-Dx	the sum of total petroleum hydrocarbons as diesel-range organics and as oil-range organics based on analysis using Ecology Method NWTPH-Dx
ORO	total petroleum hydrocarbons as oil-range organics
OWS	oil-water separator
PLC	programmable logic controller
RL	remediation level
Site	BNSF Former Maintenance and Fueling Facility in Skykomish, Washington



EXECUTIVE SUMMARY

This 2018 Annual Hydraulic Control and Containment (HCC) System Operations Report describes the HCC system operation and the performance monitoring conducted during 2018 at the BNSF Railway Company (BNSF) Former Maintenance and Fueling Facility in Skykomish, Washington (herein referred to as the Site). The HCC system operated for approximately 8,310 hours (i.e., 346 days); system operations were interrupted for short periods due to power outages or to perform maintenance, change out granular activated carbon and/or sand filter media, optimize system parameters, or make repairs. Approximately 50 gallons of light nonaqueous-phase liquid (LNAPL) was recovered from three groundwater extraction/LNAPL recovery wells, and approximately 8.05 million gallons of groundwater was treated by the HCC water treatment system.

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.

Liquid level gauging and groundwater sampling were performed to assess HCC system performance in March, June, September, and December 2018. North of the HCC system barrier wall, groundwater is inferred to generally flow toward the west and roughly parallel to the Skykomish River. South of the barrier wall, groundwater is inferred to generally flow toward the west/northwest. The inferred groundwater flow directions in 2018 were consistent with previous years subsequent to 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.

Reported concentrations of NWTPH-Dx in the majority of the groundwater samples collected from monitoring wells immediately north of the HCC system barrier wall were less than the Site-specific groundwater remediation level (RL). Two groundwater samples collected from monitoring wells GW-3 and 2A-W-41 exceeded the RL by factors of 1.3 and 1.4. Analytical results for groundwater samples from these wells that were prepared using a silica gel cleanup process suggest that the NWTPH-Dx concentrations reported for wells GW-3 and 2A-W-41 are biased high due to biogenic or petroleum metabolite interferences. Groundwater samples collected from wells GW-3 and 2A-W-41 will continue to be analyzed both with and without silica gel cleanup to further evaluate the likely biogenic or petroleum metabolite interferences affecting the analytical results. Monitoring wells GW-3 and 2A-W-41 will continue to be monitored in 2019, and the results will be evaluated for the need to take additional actions to ensure Site-related NWTPH-Dx concentrations in groundwater immediately north of the HCC system barrier wall meet the RL.

The HCC system recovery wells did not pump sufficient volumes of groundwater to maintain consistent hydraulic gradient reversal across the barrier wall gates during 2018. The original HCC system operational objective of using the recovery wells to reverse the hydraulic gradient across the barrier wall gates has not been achieved due to the prior placement of high-permeability, coarse



aggregate fill material adjacent to the barrier wall during installation of the barrier wall and in remedial excavation areas north of the barrier wall.

The HCC system operated in conformance with National Pollutant Discharge Elimination System Permit No. WA0032123 during 2018. The groundwater monitoring results from 2018 and previous years indicate that the HCC system has generally been effective in meeting the cleanup objective of preventing LNAPL and groundwater with NWTPH-Dx concentrations exceeding the RL from migrating from the BNSF railyard.

In 2019, a pilot study will be initiated to evaluate an alternative operational approach that uses the HCC system barrier wall and passive groundwater flow through the treatment gates to meet the cleanup objective, with active groundwater pumping as the backup redundant system (Farallon 2018b).



1.0 INTRODUCTION

This 2018 Annual Hydraulic Control and Containment (HCC) System Operations Report describes the HCC system operation and the performance monitoring conducted during 2018 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 encompasses an area of approximately 40 acres (Figure 1).

The HCC system is part of an integrated and comprehensive cleanup action being undertaken by BNSF at the Site, 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 2010c). Compliance monitoring is described in the 2010 Compliance Monitoring Plan Update (AECOM 2010b) (2010 CMP). HCC system operations monitoring is conducted in accordance with the 2011 Operation and Maintenance Manual (AECOM 2011a) and 2014 Addendum (Farallon 2014). These reports have been prepared in accordance with Consent Decree No. 07-2-33672-9 SEA between the Washington State Department of Ecology (Ecology) and BNSF.

1.1 CLEANUP OBJECTIVE

The HCC system was designed to meet the cleanup objective of preventing light nonaqueous-phase liquid (LNAPL) and groundwater with total petroleum hydrocarbon concentrations (quantified as NWTPH-Dx) exceeding the Site-specific remediation level (RL) of 477 micrograms per liter ($\mu\text{g/l}$) from migrating from the BNSF railyard (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.

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 2018, including the monitoring parameters, schedule, and results;
- **Section 3, Conclusions**, presents conclusions based on the HCC system operations and groundwater monitoring activities;
- **Section 4, Planned 2019 Operations and Activities**, describes HCC system operation, maintenance, and monitoring activities planned for 2019; and
- **Section 5, Bibliography**, 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 2018, including the monitoring parameters, schedule, and results. HCC system performance monitoring is conducted to facilitate optimal 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). During 2018, performance monitoring included HCC system operations and groundwater monitoring as required by the 2010 CMP. The HCC system performance monitoring activities and results are described in Sections 2.2 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 2017 Annual HCC System Operations Report (Farallon 2018a).

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 (PLC) 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 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 (daily);
- Visual inspection of the recovery wells and recovery well oil skimmer tanks for accumulation of LNAPL (weekly);
- Water treatment system influent monitoring:
 - Sampling of primary GAC vessel influent and analysis by Ecology Method NWTPH-Dx (weekly);
 - Sampling of secondary GAC vessel influent and analysis by Ecology Method NWTPH-Dx (weekly) (Note: secondary GAC vessel influent samples are collected to assess petroleum hydrocarbon loading of primary GAC vessel, and are not further discussed in this report);
- Water treatment system effluent monitoring:
 - Sampling of treatment system effluent and analysis by Ecology Method NWTPH-Dx (weekly);
 - Monitoring of treatment system effluent pH (weekly);
 - Sampling of treatment system effluent and analysis for total lead and total arsenic by U.S. Environmental Protection Agency Method 200.8 (monthly); and
- Groundwater elevations in piezometers and recovery wells (weekly).

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 chambers (Figures 1 and 2):

- The 20 sentry wells (well groups S1 through S4, containing four to six wells each) installed in the GAC/pea gravel chambers of the barrier wall treatment gates;



- The 11 HCC system monitoring wells:
 - 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;
 - 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 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 chambers in each vault of each barrier wall gate (Figure 2). (Note: monitoring of all ten gate vault OWS chambers began in June 2018. Prior to June 2018, four gate vault OWS chambers were monitored [one in each gate].)

The sentry wells are sampled semiannually and after an HCC system shut-down lasting longer than 48 hours. The HCC system monitoring wells are gauged and sampled quarterly. The piezometers, recovery wells, and barrier wall gate OWS chambers are gauged quarterly for the presence or absence of LNAPL or sheen and are not sampled. Site-wide groundwater monitoring events are conducted in March, June, September, and December. The March and September monitoring events are referred to as semiannual monitoring events. The June and December monitoring events are referred to as quarterly monitoring events.

2.4 RESULTS OF HCC SYSTEM OPERATIONS MONITORING

The following sections summarize the results of the 2018 HCC system operations monitoring.

2.4.1 System Run-Time

The HCC water treatment system operated for approximately 8,310 hours (i.e., 346 days) in 2018, which equates to an annual operational efficiency of approximately 95 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 450 hours (i.e., 19 days).

2.4.2 Groundwater Extraction and Treated Water Discharge Flow

Approximately 8.05 million gallons of groundwater was extracted and treated. Nearly all of the HCC system groundwater pumping in 2018 was from recovery wells RW-04, RW-05, RW-06, RW-07, and RW-08. HCC system discharge flow rate data are summarized in Table 1.



2.4.3 Influent Equalization Tank Water Level

Influent equalization tank water levels were maintained within normal operating ranges, with one exception. An influent equalization tank low water level alarm occurred on December 4, 2018, triggering an HCC system shut-down. The low water level in the equalization tank was confirmed on December 6, 2018 during a Site visit to manually restart the HCC system. It was determined that the low water level condition was caused by a transfer pump at the tank outlet failing to shut off when the tank water level fell below the low-level set point. The transfer pump controls were adjusted and the tank water levels returned to normal operating ranges. The December 4, 2018 HCC system shut-down is discussed further in Section 2.4.12.

2.4.4 Effluent Equalization Tank Water Level

Effluent equalization tank water levels were maintained within normal operating ranges.

2.4.5 Backwash-Water Holding Tank Water Level

Backwash-water holding tank water levels were maintained within normal operating ranges.

2.4.6 Visual Inspection of Effluent Equalization Tank for Sheen

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 (web cam). No sheen was observed on water in the effluent equalization tank.

2.4.7 Visual Inspection of Recovery Wells and Recovery Well Oil Skimmer Tanks for Accumulation of LNAPL

Recovery wells and recovery well oil skimmer tanks were inspected weekly for accumulation of LNAPL. The recovery well oil skimmer tanks were pumped out as required (see Section 2.4.10, Recovered Light Nonaqueous-Phase Liquid Volumes).

2.4.8 Water Treatment System Influent Monitoring

Water treatment system influent was sampled weekly at the inlet to the primary GAC vessel and analyzed for NWTPH-Dx. Reported influent NWTPH-Dx concentrations ranged from 156 to 1,340 µg/l; the average reported influent NWTPH-Dx concentration was 765 µg/l. Influent NWTPH-Dx data are summarized in Table 2; laboratory analytical reports are provided in Appendix A.

2.4.9 Water Treatment System Effluent Monitoring

Water treatment system effluent was sampled weekly at the outlet of the secondary GAC vessel. The effluent samples were analyzed for NWTPH-Dx; one effluent sample collected each month also was analyzed for total lead and total arsenic. In addition, the pH of the treatment system effluent was monitored weekly using an in-line 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. Effluent



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

- **pH:** Measured effluent pH ranged from 7.30 to 8.46 standard units; the average measured effluent pH was 7.40. 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 $\mu\text{g/l}$. Effluent lead and arsenic data are summarized in Table 4; laboratory analytical reports are provided in Appendix A.

2.4.10 Recovered Light Nonaqueous-Phase Liquid Volumes

The belt-type oil skimmers in recovery wells RW-01 and RW-03 through RW-08 were operated with approximate 2-minute run-times four to six times per day.

A total of approximately 50 gallons of LNAPL was recovered from the oil skimmer storage tanks at recovery wells RW-04 (approximately 7.2 gallons), RW-07 (approximately 17.1 gallons), and RW-08 (approximately 26.1 gallons). LNAPL was removed from the skimmer tanks during 2018 using a manual diaphragm pump and stored in a drum in the HCC water treatment building for subsequent disposal off the Site. In addition, small amounts of LNAPL (less than 1 to 2 gallons total) were removed from piezometers PZ-5S and PZ-6S on two occasions using a hand pump and vacuum truck. Measurable LNAPL was not observed in the barrier wall gate OWS chambers; a light trace of LNAPL was observed in the east vault OWS chamber of the West Gate in June, September, and December 2018 (see Section 2.5.7, Barrier Wall Gate Oil-Water Separator Chambers). Figures 3 through 6 depict the estimated areal extent of LNAPL at the Site.

2.4.11 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.).

Historical groundwater elevation data for the Site indicate that groundwater mounding occurs on the southern (up-gradient) side of the barrier wall. 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 2018 reporting period, including calculated elevation differentials at piezometer pairs, are presented in Table 5.

Average groundwater elevation differentials at the six piezometer pairs during 2018 ranged from 2.23 to 5.78 feet. Piezometer pair PZ-6S/PZ-6N, immediately east of the West Gate, had the largest average elevation differential of 5.78 feet. Piezometer pair PZ-2S/PZ-2N, between the East Gate



and Center Gate, had the smallest average elevation differential of 2.23 feet. The differential groundwater elevation data and previous HCC system pilot testing (Farallon 2017b) suggest that groundwater flow occurred from south (up-gradient) to north (down-gradient) through the East Gate, West Gate, and Far West Gate during 2018. 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/pea gravel media in this gate (Farallon 2017b).

2.4.12 Service Interruptions

HCC system operations were occasionally interrupted for short periods during 2018 due to utility power outages or to perform maintenance, change out GAC and/or sand filter media, optimize system parameters, or make repairs. Two service interruptions exceeded 48 hours:

- On December 4, 2018, the HCC system shut down due to an influent equalization tank low water level alarm condition. The system auto-dialer did not send out an alarm notification. The alarm condition and system shut-down were identified during a routine HCC system data download event the morning of December 6, 2018. After the shut-down was identified, attempts to restart the HCC system by remotely accessing the system PLC were unsuccessful due to a computer connectivity issue. The HCC system and PLC were manually restarted the evening of December 6, 2018, and no further auto-dialer or computer connectivity issues occurred. Because the HCC system shut-down exceeded 48 hours, Ecology was notified of the shut-down via email and telephone on December 7, 2018, and supplemental sampling of the sentry wells was conducted during the December Site-wide quarterly groundwater monitoring event.
- On December 14, 2018, the HCC system shut down due to a power outage. Power was restored and the HCC system was restarted on December 17, 2018. Because the HCC system shut-down exceeded 48 hours, Ecology was notified of the shut-down via email on December 19, 2018. Ecology did not require supplemental sampling of the sentry wells following the December 14, 2018 HCC system shut-down because the sentry wells were sampled immediately prior to this shut-down in response to the December 4, 2018 HCC system shut-down and NWTPH-Dx was reported at concentrations less than 50 percent of the RL in groundwater samples collected from the sentry wells.

2.5 RESULTS OF HCC SYSTEM GROUNDWATER MONITORING

The results of Site-wide groundwater monitoring conducted in 2018 were presented in the draft 2018 Site-Wide Groundwater Monitoring Report (Farallon 2019). Figures 3 through 6 show reported groundwater NWTPH-Dx concentrations and measured LNAPL thicknesses at the monitoring locations used to assess HCC system performance. Groundwater elevation contours and interpreted groundwater flow directions derived from the quarterly and semiannual groundwater monitoring data also are shown on Figures 3 through 6.

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

2.5.1 Sentry Wells

The 20 sentry wells (wells S1-AU, S2-BD, etc.) were sampled during the March and September semiannual groundwater monitoring events. The sentry wells also were sampled during the December Site-wide quarterly monitoring event in response to the December 4, 2018 HCC system shut-down that lasted more than 48 hours (see Section 2.4.12, Service Interruptions). The 2010 CMP requires that the sentry wells be sampled after HCC system shut-downs lasting more than 48 hours.

Reported NWTPH-Dx concentrations in groundwater samples collected from the sentry wells ranged from less than the laboratory method reporting limit (i.e., not detected) to 241 µg/l, with two exceptions:

- NWTPH-Dx was reported at a concentration of 682 µg/l in the March 2018 groundwater sample from up-gradient sentry well S2-BU in the east vault of the West Gate (Table 7; Figure 3). NWTPH-Dx was not reported above the method reporting limit in down-gradient sentry well S2-BD in the east vault of the West Gate.
- NWTPH-Dx was reported at a concentration of 560 µg/l in the September 2018 groundwater sample from down-gradient sentry well S2-BD in the east vault of the West Gate (Table 7, Figure 5). NWTPH-Dx was not reported above the method reporting limit in up-gradient sentry well S2-BU in the east vault of the West Gate. Because NWTPH-Dx concentrations in down-gradient sentry wells normally would not be expected to be greater than NWTPH-Dx concentrations in up-gradient sentry wells, wells S2-BU and S2-BD were resampled in October 2018. NWTPH-Dx was not reported above the method reporting limit in the October 2018 groundwater samples from sentry wells S2-BU and S2-BD.

As noted in Section 2.5.7, Barrier Wall Gate Oil-Water Separator Chambers, a light trace of LNAPL was observed in the east vault OWS chamber of the West Gate in June, September, and December 2018, and may be a source of elevated NWTPH-Dx concentrations in the east vault of the West Gate. The reported NWTPH-Dx concentrations in all but five groundwater samples collected from sentry wells S2-BU and S2-BD from 2009 through 2018 were less than 200 µg/l; most results were less than 100 µg/l. Sentry wells S2-BU, S2-BD, and the other sentry wells will continue to be monitored.

2.5.2 Gate Wells

The four gate wells (wells GW-1 through GW-4) were gauged and sampled during the Site-wide quarterly and semiannual groundwater monitoring events. Reported NWTPH-Dx concentrations in groundwater samples collected from the gate wells were less than the RL, with the exception of the sample collected in June 2018 from gate well GW-3, which had a reported concentration of 600 µg/l (Table 7; Figure 4). LNAPL or sheen was not observed in any of the gate wells.



Between June 2014 and December 2018, reported NWTPH-Dx detections in gate well GW-3 fluctuated over a range of 63 to 600 µg/l, with four values exceeding the RL. Historically (between April 2009 and June 2014), reported NWTPH-Dx detections in well GW-3 fluctuated over a smaller range of 34 to 184 µg/l. Well GW-3 is immediately north and down-gradient of the Center Gate, where substantial biofouling by iron bacteria slime has been observed. To evaluate whether the increased concentrations reported in well GW-3 since June 2014 may be the result of interference from biogenic substances or petroleum metabolites, all four groundwater samples collected from this well were analyzed by Method NWTPH-Dx both with and without a silica gel cleanup preparation process. Reported NWTPH-Dx concentrations in all of the silica gel-prepared samples were less than the RL, and significantly less than the reported NWTPH-Dx concentrations in the non-silica-gel-prepared samples. The lower NWTPH-Dx concentrations reported in the silica gel-prepared samples from gate well GW-3 suggest that the NWTPH-Dx results for the non-silica-gel-prepared samples are biased high due to biogenic or petroleum metabolite interferences.

2.5.3 End Wells

The two end wells (wells EW-1 and EW-2A) were gauged and sampled during the Site-wide quarterly and semiannual groundwater monitoring events. Reported NWTPH-Dx concentrations in groundwater samples collected from the end wells were less than the RL and no LNAPL or sheen was observed in these wells.

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

Monitoring wells 5-W-43, 2A-W-40, 2A-W-41, 1B-W-23, and 2A-W-42 were gauged and sampled during the Site-wide quarterly and semiannual groundwater monitoring events. Reported NWTPH-Dx concentrations in groundwater samples collected from these wells were less than the RL, with the exception of the sample collected in September 2018 from well 2A-W-41 (Table 7; Figure 5). LNAPL or sheen was not observed in any of these monitoring wells.

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), reported NWTPH-Dx detections in 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 may be affected by biogenic substances or petroleum metabolites, similar to gate well GW-3. All four groundwater samples collected from monitoring well 2A-W-41 in 2018 were analyzed by Method NWTPH-Dx both with and without a silica gel cleanup preparation process. Reported NWTPH-Dx concentrations in all of the silica gel-prepared samples were less than the RL, and the reported NWTPH-Dx concentrations in three of the four silica gel-prepared samples were significantly less than the reported concentrations in the non-silica-gel-prepared samples. The results of the analyses performed with and without silica gel cleanup suggest that results from the non-silica-gel-prepared samples are biased high due to biogenic or petroleum metabolite interferences.



2.5.5 Piezometers

The 14 piezometers were gauged for the presence or absence of LNAPL or sheen during the Site-wide quarterly and semiannual groundwater monitoring events. LNAPL was observed in piezometers PZ-5S and PZ-6S on the southern (up-gradient) side of the barrier wall during one or more monitoring events, as follows (Table 8):

- **PZ-5S.** A heavy trace of LNAPL was observed in March 2018, and measurable LNAPL was observed in June (1.8 feet), September (1.9 feet), and December 2018 (1.6 feet). The measured LNAPL thicknesses in piezometer PZ-5S in June, September, and December 2018 represent an overall slight increase in LNAPL thickness compared to 2017.
- **PZ-6S.** Measurable LNAPL was observed in March (1.0 foot), June (0.1 foot), September (0.1 foot), and December 2018 (0.8 foot). The measured LNAPL thicknesses in piezometer PZ-6S in March and December 2018 represent a slight increase in LNAPL thickness compared to 2017.

LNAPL thickness trend plots for HCC system monitoring locations that historically have contained measurable LNAPL are included in Appendix B. LNAPL recovery from piezometers will continue along with continued monitoring and evaluation for the need for additional actions to prevent LNAPL migration.

2.5.6 Recovery Wells

The nine recovery wells were gauged for the presence or absence of LNAPL or sheen during the Site-wide quarterly and semiannual groundwater monitoring events. LNAPL was observed in recovery wells RW-03 through RW-08 during one or more monitoring events, as follows (Table 8):

- **RW-03.** A light trace of LNAPL was observed in September and December 2018.
- **RW-04.** A light trace of LNAPL was observed in March, June, and December 2018, and a heavy trace was observed in September 2018. This represents an overall decrease in LNAPL thickness in recovery well RW-04 compared to 2017.
- **RW-05.** A light trace of LNAPL was observed in June and September 2018, and measurable LNAPL was observed in December 2018 (0.01 foot).
- **RW-06.** A light trace of LNAPL was observed in September and December 2018.
- **RW-07.** A light trace of LNAPL was observed in December 2018, a heavy trace of LNAPL was observed in March and June 2018, and measurable LNAPL was observed in September 2018 (0.1 foot).
- **RW-08.** A light trace of LNAPL was observed in December 2018 and a heavy trace of LNAPL was observed in March, June, and September 2018. This represents an overall decrease in LNAPL thickness in recovery well RW-08 compared to 2017.

LNAPL thickness trend plots for HCC system monitoring locations that historically have contained measurable LNAPL are included in Appendix B. The recovery wells will continue to be



monitored for LNAPL, and oil skimmer run-time and frequency will be evaluated and adjusted as needed to optimize LNAPL recovery.

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, and each vault contains an OWS chamber (Figure 2). During the March 2018 monitoring event, four gate vault OWS chambers (EG-WV, CG-WV, WG-EV, and FWG-WV) were gauged for the presence or absence of LNAPL or sheen. During the June, September, and December 2018 monitoring events, all 10 gate vault OWS chambers shown on Figure 2 were monitored for LNAPL or sheen (Table 8).

A sheen or trace LNAPL was observed in several gate vault OWS chambers as described below and in Table 8:

- A light trace of LNAPL was observed in December 2018 in the south (up-gradient) chamber of the east vault OWS of the Center Gate (location CG-EV-South Chamber).
- A light trace of LNAPL was observed in June and December 2018 in the south (up-gradient) chamber of the west vault OWS of the Center Gate (location CG-WV-South Chamber).
- A light trace of LNAPL was observed in June, September, and December 2018 in the south (up-gradient) chamber of the east vault OWS of the West Gate (location WG-EV-South Chamber).
- A slight sheen was observed in September 2018 in the north (down-gradient) chamber of the east vault OWS of the West Gate (location WG-EV-North Chamber).

LNAPL was not removed from any gate vault OWS chambers in 2018, as no measurable LNAPL was observed in the OWS chambers. The gate vault OWS chambers will continue to be monitored and LNAPL will be removed by a vacuum truck or hand pump as needed.



3.0 CONCLUSIONS

The groundwater monitoring results from 2018 and previous years indicate that the HCC system continues to be effective in meeting the cleanup objective. Groundwater samples collected from wells GW-3 and 2A-W-41 will continue to be analyzed both with and without the silica gel cleanup preparation process to gain additional perspective on likely biogenic or petroleum metabolite interferences affecting the analytical results from these wells. Wells GW-3 and 2A-W-41 will continue to be monitored in 2019, and the results will be evaluated for the need to take additional actions to ensure Site-related NWTPH-Dx concentrations in groundwater immediately north of the HCC system barrier wall meet the RL.

In 2018, measured LNAPL thicknesses increased slightly in piezometer PZ-5S, were generally stable in piezometer PZ-6S, and decreased in recovery wells RW-04 and RW-08 compared to 2017. 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 B). LNAPL measurements at the Site are subject to uncertainty due to the viscous nature of the LNAPL. Piezometers and recovery wells will continue to be monitored for LNAPL, and oil skimmer run-time and frequency will be adjusted as needed to optimize LNAPL recovery in 2019.

The HCC system recovery wells did not pump sufficient volumes of groundwater to maintain consistent hydraulic gradient reversal across the barrier wall gates during 2018. The original HCC system operational objective of using the recovery wells to reverse the hydraulic gradient across the barrier wall gates has not been achieved due to the prior placement of high-permeability, coarse aggregate fill material adjacent to the barrier wall during installation of the barrier wall and in remedial excavation areas north of the barrier wall.



4.0 PLANNED 2019 OPERATIONS AND ACTIVITIES

A pilot study will be initiated in 2019 to evaluate an alternative HCC operational approach that uses the HCC system barrier wall and passive groundwater flow through the treatment gates to meet the cleanup objective, with active groundwater pumping as the backup redundant system. The Passive Pilot Study Work Plan (Farallon 2018b) was approved by Ecology on December 5, 2018. The pilot study will be conducted over a 12-month period and will include the following activities:

- Collecting baseline groundwater samples at select monitoring locations near the western end of the HCC barrier wall for NWTPH-Dx analysis prior to turning off the recovery well pumps. The baseline pilot study sampling event was completed in December 2018.
- Turning off the recovery well pumps to initiate passive operation of the HCC system. Passive operations commenced on January 18, 2019.
- Conducting monthly groundwater sampling and liquid level gauging at the monitoring locations sampled during the baseline sampling event.
- Evaluating the monitoring results monthly to assess the effectiveness of passive HCC system operation.
- Operating the recovery well pumps and HCC water treatment system as necessary (approximately 4 hours) each month to ensure all components of the redundant HCC system can be activated to reverse the hydraulic gradient across the West Gate, if needed.

Recovery wells and piezometers will continue to be monitored for LNAPL, recovery well oil skimmer run-time and frequency will be evaluated and adjusted as needed to optimize LNAPL recovery, and LNAPL will continue to be removed from piezometers as needed.



5.0 BIBLIOGRAPHY

- AECOM Environment (AECOM). 2009. *2008 Skykomish Remediation – As-Built Completion Report, Former Maintenance and Fueling Facility*. Prepared for BNSF Railway Company. August.
- . 2010a. *2010 Operation and Maintenance Manual for Hydraulic Control and Containment System, Former Maintenance and Fueling Facility, Skykomish, WA (Final)*. Submitted to BNSF Railway Company. January.
- . 2010b. *2010 Compliance Monitoring Plan Update, BNSF Former Maintenance and Fueling Facility, Skykomish, Washington*. Prepared for BNSF Railway Company. April 30.
- . 2010c. *2009 Skykomish Remediation – As-Built Completion Report, BNSF Former Maintenance and Fueling Facility, Skykomish, Washington*. Prepared for BNSF Railway Company. June 10.
- . 2011a. *2011 Operation and Maintenance Manual for the Hydraulic Control and Containment System, Former Maintenance and Fueling Facility – Skykomish, WA*. Prepared for BNSF Railway Company. April 8.
- . 2011b. Memorandum Regarding HCC System Updated Optimization Plan. From Greg Chase. To Brian Sato, Washington State Department of Ecology. December 14.
- . 2012. Memorandum Regarding HCC System Updated Optimization Plan. From Greg Chase. To Brian Sato, Washington State Department of Ecology. May 9.
- BNSF. 2017. Letter Regarding Follow Up to the Potential Non-Compliance with NPDES Discharge Permit No. WA-003212-3 BNSF Railway Company Former Maintenance and Fueling Facility, Skykomish, Washington. From Shane DeGross. To Jeanne Tran and Brian Sato, Washington State Department of Ecology. February 27.
- ENSR Corporation. 2008a. Plans and Specifications for 2008 Remediation. Prepared for BNSF Railway Company. Addenda Added March 11, March 14, and March 20, 2008. March.
- . 2008b. *Hydraulic Control and Containment System Special Design Report, BNSF Former Maintenance and Fueling Facility – Skykomish, WA*. Prepared for BNSF Railway Company. August.
- Farallon Consulting, L.L.C. (Farallon). 2012. Technical Memorandum Regarding HCC Optimization Work Plan, Skykomish Cleanup Action, Skykomish, Washington. From Richard McManus and Gerald Portele. To Brian Sato, Washington State Department of Ecology. December 11.
- . 2013. Technical Memorandum Regarding Revised HCC System Optimization Status Report, Skykomish Cleanup Action, Skykomish, Washington. From Richard McManus and Gerald Portele. To Brian Sato, Washington State Department of Ecology. May 20.

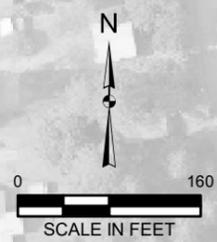
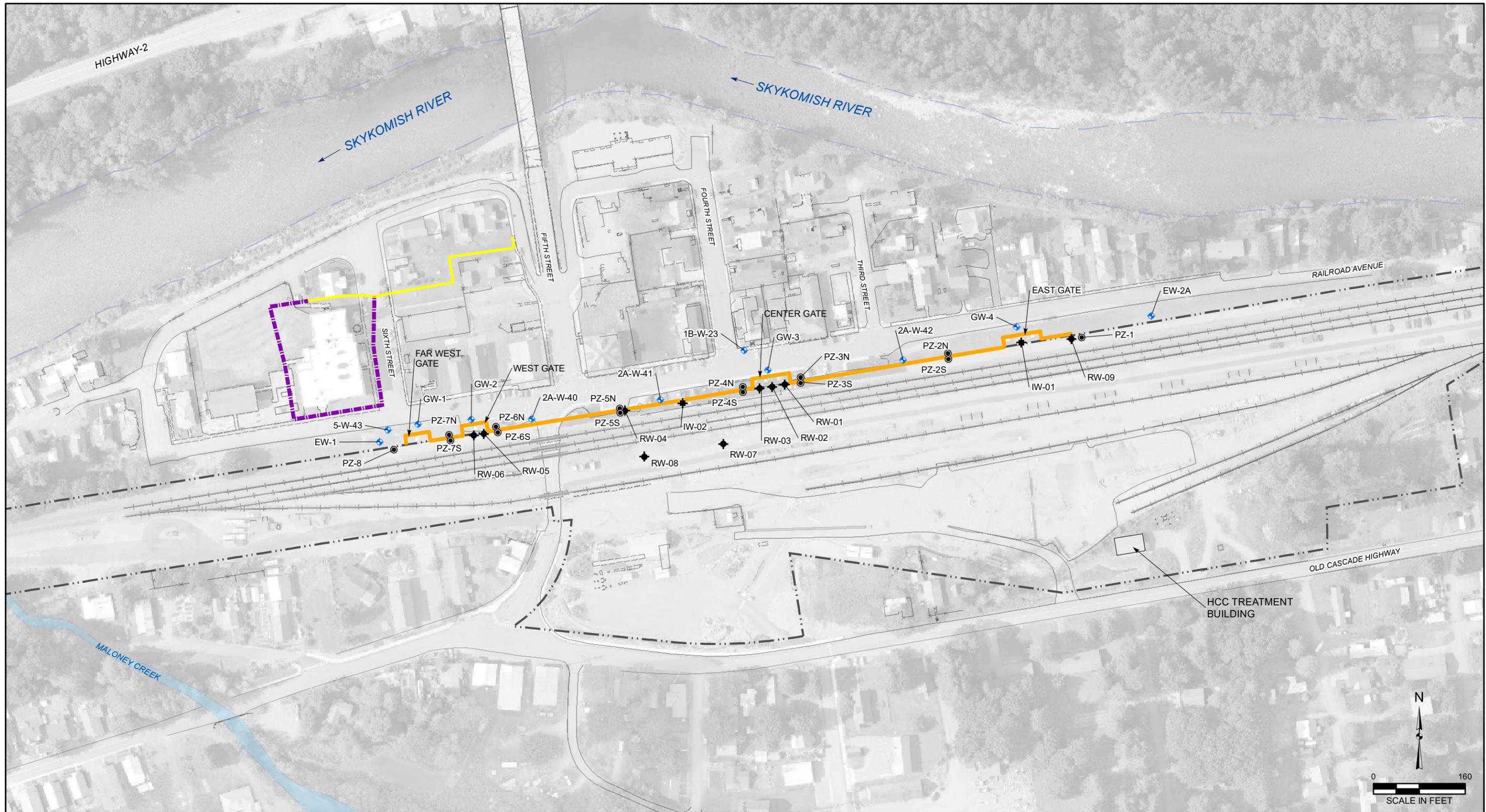


- . 2014. *2014 Addendum to the Operation and Maintenance Manual for the Hydraulic Control and Containment, BNSF Former Maintenance and Fueling Facility, Skykomish, Washington*. Prepared for BNSF Railway Company. September 10.
 - . 2015. Technical Memorandum Regarding Revised HCC System Pilot Test Status Report, Skykomish Cleanup Action, Skykomish, Washington. From Richard McManus. To Brian Sato, Washington State Department of Ecology. April 23.
 - . 2017a. Technical Memorandum Regarding Carbon Replacement in East Vault of West Gate of HCC System, BNSF Former Maintenance and Fueling Facility, Skykomish, Washington. From Gerald Portele and Jason Shrope. To Brian Sato, Washington State Department of Ecology. January 4.
 - . 2017b. *Hydraulic Control and Containment System Optimization and Pilot Testing Report, BNSF Former Maintenance and Fueling Facility, Skykomish, Washington*. Prepared for BNSF Railway Company. February 21.
 - . 2017c. *2016 Annual Hydraulic Control and Containment System Operations Report, BNSF Former Maintenance and Fueling Facility, Skykomish, Washington*. Prepared for BNSF Railway Company. June.
 - . 2017d. Technical Memorandum Regarding 2017 HCC System Modifications Work Plan, BNSF Former Maintenance and Fueling Facility, Skykomish, Washington. From Robert Leet and Gerald Portele. To Brian Sato, Washington State Department of Ecology. October 30.
 - . 2018a. *2017 Annual Hydraulic Control and Containment System Operations Report, BNSF Former Maintenance and Fueling Facility, Skykomish, Washington*. Prepared for BNSF Railway Company. July 9.
 - . 2018b. *HCC System Passive Operation Pilot Study Work Plan, BNSF Former Maintenance and Fueling Facility, Skykomish, Washington*. Prepared for BNSF Railway Company. November 29.
 - . 2019. *2018 Site-Wide Groundwater Monitoring Report, BNSF Former Maintenance and Fueling Facility, Skykomish, Washington*. Prepared for BNSF Railway Company. February 26.
- Washington State Department of Ecology (Ecology). 2007. *Cleanup Action Plan for BNSF Former Maintenance and Fueling Facility, Skykomish, Washington*. Exhibit B of Consent Decree No. 07-2-33672-9 SEA between the Washington State Department of Ecology and BNSF Railway Company. October.
- . 2018. Letter Regarding NPDES Permit Renewal Application, Permit No. WA0032123; BNSF Skykomish Cleanup Site. From Tricia Miller. To Shane DeGross, BNSF Railway Company. August 24.

FIGURES

**2018 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: 683-067



LEGEND

- 2A-W-41 MONITORING WELL (SAMPLED QUARTERLY)
- RW-04 RECOVERY WELL
- PZ-5S PIEZOMETER
- IW-02 INJECTION WELL
- HYDRAULIC CONTROL AND CONTAINMENT SYSTEM SHEET PILE BARRIER WALL AND GATES
- BNSF RAILYARD BOUNDARY
- MECHANICALLY STABILIZED EARTH WALL
- SKYKOMISH SCHOOL SHEET PILE BARRIER WALL (REMOVED JULY 2018)



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.

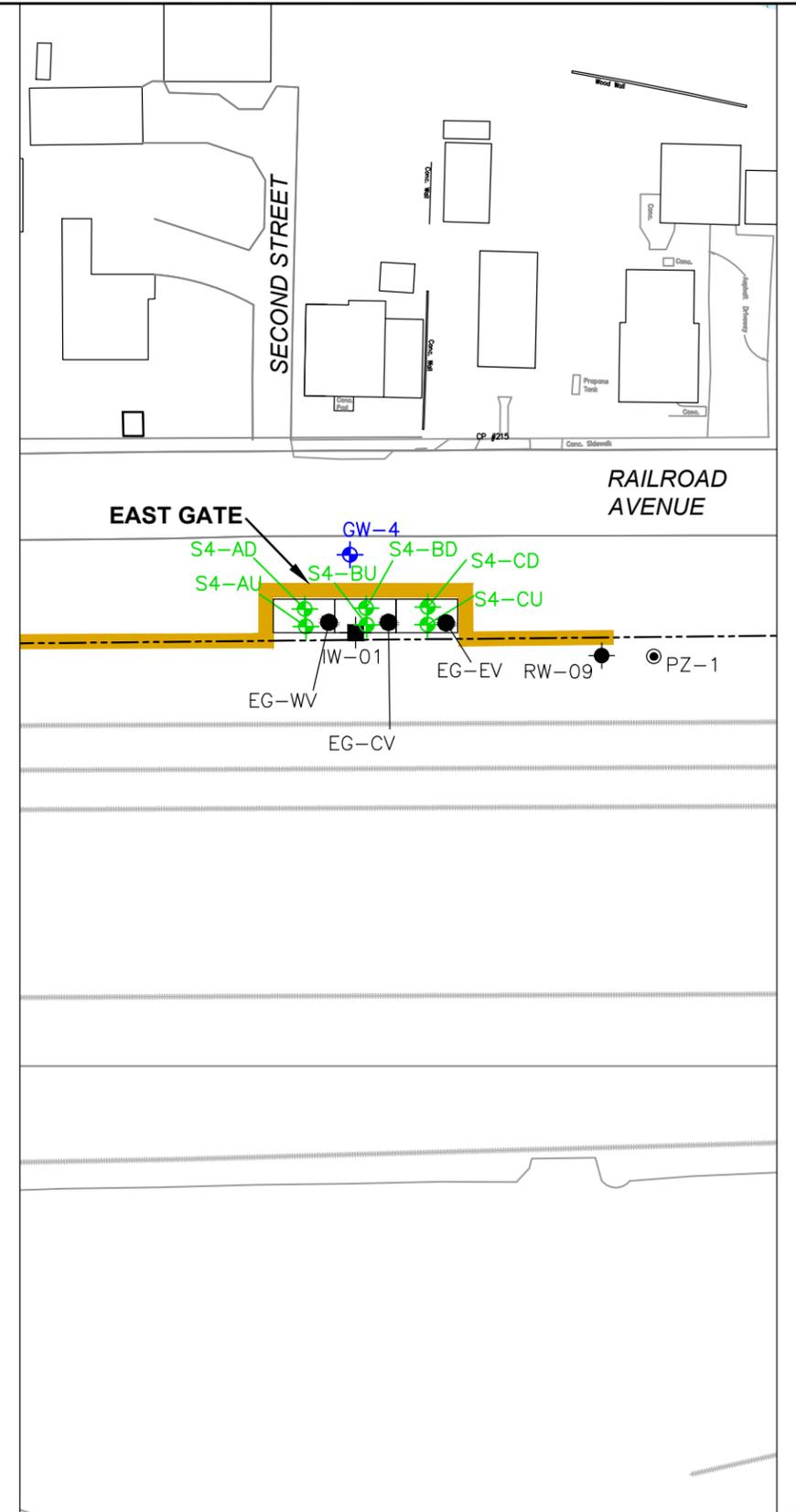
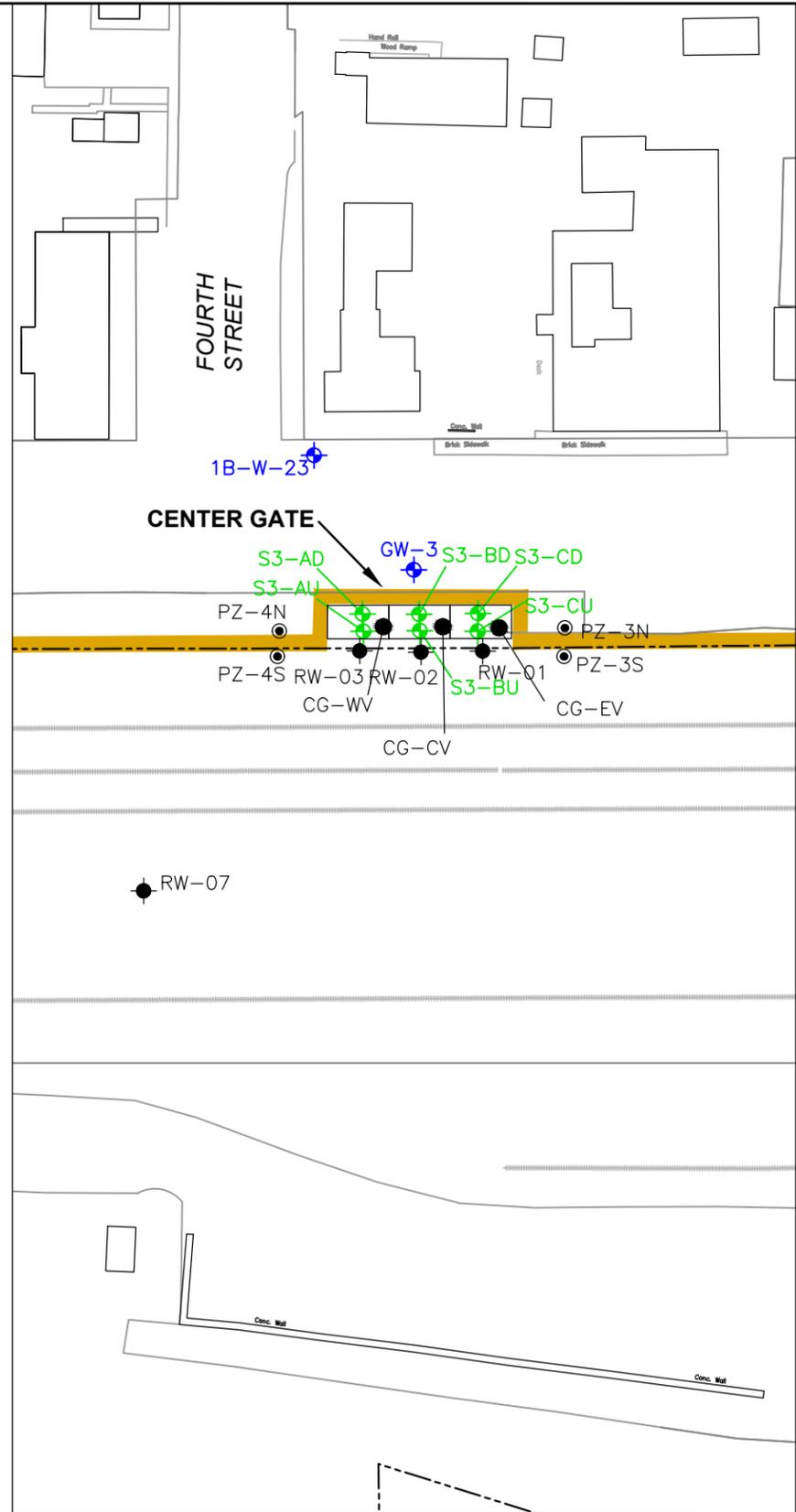
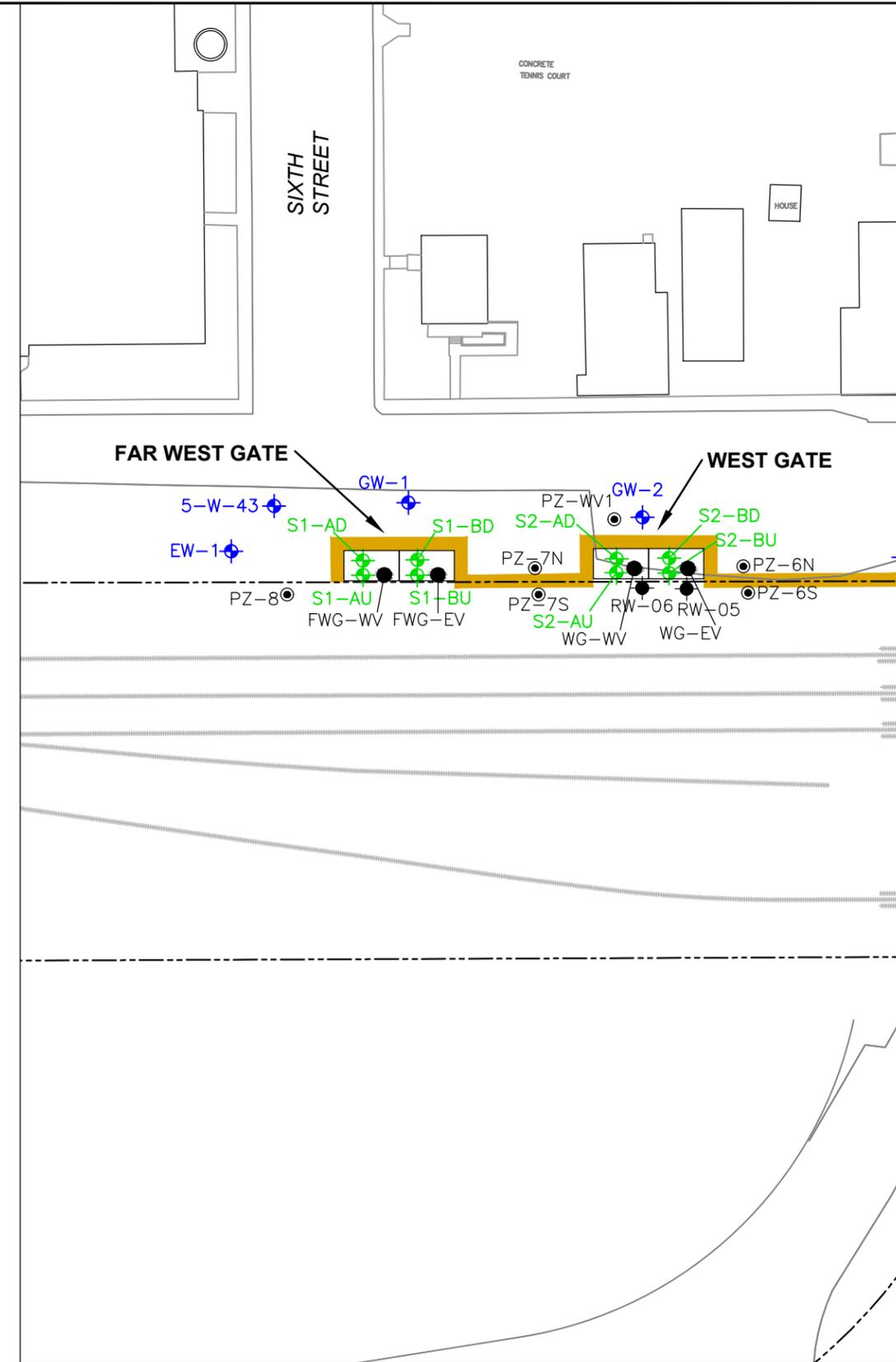
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 Portland | Bend | Baker City

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FIGURE 1
 SITE PLAN SHOWING 2018
 HCC SYSTEM MONITORING NETWORK
 BNSF FORMER MAINTENANCE
 AND FUELING FACILITY
 SKYKOMISH, WASHINGTON
 FARALLON PN: 683-067



- LEGEND**
- 2A-W-41 MONITORING WELL
 - RW-04 RECOVERY WELL
 - PZ-5S PIEZOMETER
 - IW-02 TREATED-WATER REINJECTION WELL
 - WG-WV BARRIER WALL GATE VAULT
 - GW-2 WELLS SAMPLED QUARTERLY
 - S1-AU WELLS SAMPLED SEMIANNUALLY

- HYDRAULIC CONTROL AND CONTAINMENT SYSTEM BARRIER WALL/GATE SYSTEM
- BNSF RAILYARD PROPERTY LINE



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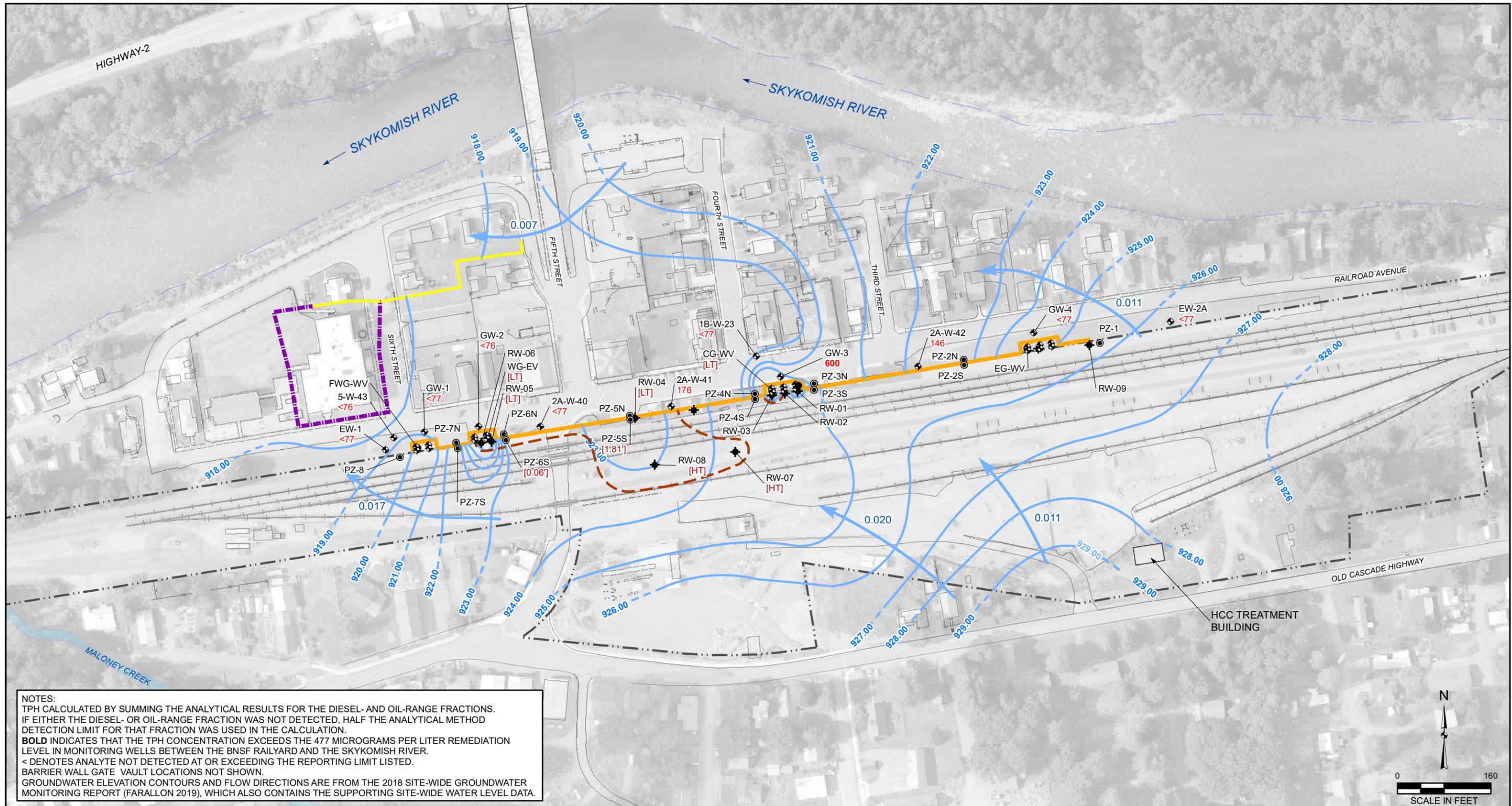
FIGURE 2

HYDRAULIC CONTROL AND CONTAINMENT SYSTEM
BARRIER WALL GATE DETAIL
BNSF FORMER MAINTENANCE
AND FUELING FACILITY
SKYKOMISH, WASHINGTON

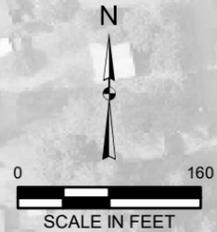
FARALLON PN: 683-067

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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.
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.
 < DENOTES ANALYTE NOT DETECTED AT OR EXCEEDING THE REPORTING LIMIT LISTED.
 BARRIER WALL GATE VAULT LOCATIONS NOT SHOWN.
 GROUNDWATER ELEVATION CONTOURS AND FLOW DIRECTIONS ARE FROM THE 2018 SITE-WIDE GROUNDWATER
 MONITORING REPORT (FARALLON 2019), WHICH ALSO CONTAINS THE SUPPORTING SITE-WIDE WATER LEVEL DATA.



- LEGEND**
- 2A-W-41 ◆ MONITORING WELL
 - RW-04 ◆ RECOVERY WELL
 - PZ-5S ● PIEZOMETER
 - IW-02 ◆ INJECTION WELL
 - 927.00— APPROXIMATE INTERPRETED GROUNDWATER ELEVATION CONTOUR FEET NAVD88 (INFERRED WHERE DASHED)
 - ← 0.011 APPROXIMATE INTERPRETED DIRECTION OF GROUNDWATER FLOW AND GRADIENT (UNITS IN FOOT PER FOOT)
 - HYDRAULIC CONTROL AND CONTAINMENT SYSTEM SHEET PILE BARRIER WALL AND GATES
 - BNSF RAILYARD BOUNDARY
 - MECHANICALLY STABILIZED EARTH WALL
 - SKYKOMISH SCHOOL SHEET PILE BARRIER WALL (TO BE REMOVED)

- 117** TOTAL PETROLEUM HYDROCARBONS (TPH) IN MICROGRAMS PER LITER
- () ESTIMATED EXTENT OF LNAPL AS INDICATED BY LIGHT TRACE (LT), HEAVY TRACE (HT), OR MEASURABLE LNAPL THICKNESS ON GROUNDWATER SURFACE
- (HT) HEAVY TRACE - NO MEASURABLE LNAPL THICKNESS GREATER THAN 0.01 FOOT
- (LT) LIGHT TRACE - NO MEASURABLE LNAPL THICKNESS GREATER THAN 0.01 FOOT
- [1.02] MEASURABLE LNAPL THICKNESS GREATER THAN 0.01 FOOT
- LNAPL = LIGHT NONAQUEOUS-PHASE LIQUID
- NAVD88 = NORTH AMERICAN VERTICAL DATUM OF 1988
- IMAGERY SOURCE: KING COUNTY PICTOMETRY 2015

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Drawn By: tperrin Checked By: RL Date: 3/29/2019 Disc Reference:
 Document Path: Q:\Projects\683 BNSF\067 GROUNDWATER_HCC\Mapfiles\HCC_Report_2018\HCC FIGURE_3-6_TPH-GW_MP8K_18.mxd

ALL LOCATIONS ARE APPROXIMATE. FIGURES WERE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION.

FIGURE 4
JUNE 2018 TOTAL PETROLEUM HYDROCARBONS IN GROUNDWATER BNSF FORMER MAINTENANCE AND FUELING FACILITY SKYKOMISH, WASHINGTON
 FARALLON PN: 683-067

TABLES

**2018 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: 683-067

Table 1
HCC Water Treatment System Discharge Flow Rates
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067

Date	Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)	Calculated Average Daily Flow Rate ¹ (gallons per minute)
1/1/2018	127,370,823	5
1/2/2018	127,378,023	5
1/3/2018	127,385,223	5
1/4/2018	127,392,423	5
1/5/2018	127,399,623	5
1/6/2018	127,406,823	5
1/7/2018	127,414,023	5
1/8/2018	127,416,931	2
1/9/2018	127,416,931	0
1/10/2018	127,420,087	2
1/11/2018	127,455,407	25
1/12/2018	127,462,607	5
1/13/2018	127,469,807	5
1/14/2018	127,471,187	1
1/15/2018	127,482,647	6
1/16/2018	127,517,347	24
1/17/2018	127,551,659	24
1/18/2018	127,585,811	24
1/19/2018	127,619,659	23
1/20/2018	127,653,603	24
1/21/2018	127,686,611	23
1/22/2018	127,719,243	23
1/23/2018	127,751,455	22
1/24/2018	127,781,979	21
1/25/2018	127,783,207	1
1/26/2018	127,809,275	18
1/27/2018	127,826,967	14
1/28/2018	127,827,111	0
1/29/2018	127,851,059	17
1/30/2018	127,858,259	5
1/31/2018	127,865,459	5
2/1/2018	127,872,659	5
2/2/2018	127,879,859	5
2/3/2018	127,887,059	5
2/4/2018	127,894,259	5
2/5/2018	127,914,259	14
2/6/2018	127,941,755	19
2/7/2018	127,967,939	18
2/8/2018	127,993,383	18
2/9/2018	128,017,975	17
2/10/2018	128,042,643	17
2/11/2018	128,065,235	16
2/12/2018	128,087,651	16
NPDES Permit Discharge Limit¹		100

**Table 1
HCC Water Treatment System Discharge Flow Rates
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067**

Date	Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)	Calculated Average Daily Flow Rate¹ (gallons per minute)
2/13/2018	128,110,415	16
2/14/2018	128,129,875	12
2/15/2018	128,137,287	5
2/16/2018	128,154,935	14
2/17/2018	128,175,743	17
2/18/2018	128,189,479	8
2/19/2018	128,204,979	11
2/20/2018	128,220,127	11
2/21/2018	128,234,843	10
2/22/2018	128,248,915	10
2/23/2018	128,270,411	15
2/24/2018	128,291,403	15
2/25/2018	128,311,959	14
2/26/2018	128,321,647	7
2/27/2018	128,341,491	14
2/28/2018	128,361,199	14
3/1/2018	128,381,347	14
3/2/2018	128,401,087	14
3/3/2018	128,420,699	14
3/4/2018	128,438,383	12
3/5/2018	128,455,663	12
3/6/2018	128,462,863	5
3/7/2018	128,470,063	5
3/8/2018	128,477,263	5
3/9/2018	128,484,463	5
3/10/2018	128,491,663	5
3/11/2018	128,498,863	5
3/12/2018	128,506,063	5
3/13/2018	128,513,263	5
3/14/2018	128,521,027	5
3/15/2018	128,555,031	24
3/16/2018	128,588,967	24
3/17/2018	128,622,491	23
3/18/2018	128,656,211	23
3/19/2018	128,688,383	22
3/20/2018	128,721,579	23
3/21/2018	128,754,279	23
3/22/2018	128,786,883	23
3/23/2018	128,819,871	23
3/24/2018	128,852,471	23
3/25/2018	128,886,143	23
3/26/2018	128,919,527	23
3/27/2018	128,941,903	16
NPDES Permit Discharge Limit¹		100

Table 1
HCC Water Treatment System Discharge Flow Rates
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067

Date	Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)	Calculated Average Daily Flow Rate ¹ (gallons per minute)
3/28/2018	128,952,231	7
3/29/2018	128,984,787	23
3/30/2018	129,018,967	24
3/31/2018	129,051,063	22
4/1/2018	129,083,187	22
4/2/2018	129,115,607	24
4/3/2018	129,151,199	25
4/4/2018	129,183,891	23
4/5/2018	129,218,103	24
4/6/2018	129,249,415	22
4/7/2018	129,269,303	14
4/8/2018	129,288,095	13
4/9/2018	129,307,547	14
4/10/2018	129,326,595	13
4/11/2018	129,339,987	9
4/12/2018	129,339,987	0
4/13/2018	129,349,879	7
4/14/2018	129,375,907	18
4/15/2018	129,401,667	18
4/16/2018	129,426,691	17
4/17/2018	129,452,111	18
4/18/2018	129,476,595	17
4/19/2018	129,501,183	17
4/20/2018	129,525,027	17
4/21/2018	129,547,939	16
4/22/2018	129,570,015	15
4/23/2018	129,592,799	16
4/24/2018	129,616,915	17
4/25/2018	129,648,595	22
4/26/2018	129,680,247	22
4/27/2018	129,711,931	22
4/28/2018	129,742,451	21
4/29/2018	129,765,443	16
4/30/2018	129,789,743	17
5/1/2018	129,814,907	17
5/2/2018	129,846,567	22
5/3/2018	129,878,187	22
5/4/2018	129,909,943	22
5/5/2018	129,941,887	22
5/6/2018	129,974,007	22
5/7/2018	130,006,203	22
5/8/2018	130,038,383	22
5/9/2018	130,053,367	10
NPDES Permit Discharge Limit¹		100

Table 1
HCC Water Treatment System Discharge Flow Rates
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067

Date	Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)	Calculated Average Daily Flow Rate ¹ (gallons per minute)
5/10/2018	130,085,283	22
5/11/2018	130,117,011	22
5/12/2018	130,148,035	22
5/13/2018	130,178,867	21
5/14/2018	130,209,595	21
5/15/2018	130,240,251	21
5/16/2018	130,270,803	21
5/17/2018	130,301,391	21
5/18/2018	130,326,723	21
5/19/2018	130,357,499	21
5/20/2018	130,388,271	21
5/21/2018	130,419,119	21
5/22/2018	130,450,063	21
5/23/2018	130,477,059	19
5/24/2018	130,504,043	19
5/25/2018	130,535,459	22
5/26/2018	130,566,883	22
5/27/2018	130,598,247	22
5/28/2018	130,629,555	22
5/29/2018	130,659,275	21
5/30/2018	130,690,379	22
5/31/2018	130,721,615	22
6/1/2018	130,753,191	22
6/2/2018	130,783,939	21
6/3/2018	130,813,063	20
6/4/2018	130,842,811	21
6/5/2018	130,874,819	22
6/6/2018	130,906,807	22
6/7/2018	130,938,659	22
6/8/2018	130,951,635	9
6/9/2018	130,983,227	22
6/10/2018	131,014,435	22
6/11/2018	131,020,371	4
6/12/2018	131,049,327	20
6/13/2018	131,078,287	20
6/14/2018	131,107,795	20
6/15/2018	131,139,779	22
6/16/2018	131,171,795	22
6/17/2018	131,202,135	21
6/18/2018	131,232,623	21
6/19/2018	131,263,523	21
6/20/2018	131,293,443	21
6/21/2018	131,319,963	18
NPDES Permit Discharge Limit¹		100

Table 1
HCC Water Treatment System Discharge Flow Rates
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067

Date	Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)	Calculated Average Daily Flow Rate ¹ (gallons per minute)
6/22/2018	131,337,559	12
6/23/2018	131,344,759	5
6/24/2018	131,351,959	5
6/25/2018	131,353,339	1
6/26/2018	131,353,339	0
6/27/2018	131,361,743	6
6/28/2018	131,387,275	18
6/29/2018	131,412,739	18
6/30/2018	131,436,907	17
7/1/2018	131,459,571	16
7/2/2018	131,482,951	16
7/3/2018	131,506,307	16
7/4/2018	131,529,875	16
7/5/2018	131,553,439	16
7/6/2018	131,577,043	16
7/7/2018	131,600,647	16
7/8/2018	131,624,263	16
7/9/2018	131,647,975	16
7/10/2018	131,672,003	17
7/11/2018	131,696,035	17
7/12/2018	131,720,071	17
7/13/2018	131,744,103	17
7/14/2018	131,768,131	17
7/15/2018	131,792,335	17
7/16/2018	131,801,003	6
7/17/2018	131,816,063	13
7/18/2018	131,838,419	15
7/19/2018	131,862,815	17
7/20/2018	131,886,971	17
7/21/2018	131,911,047	17
7/22/2018	131,935,063	17
7/23/2018	131,959,091	17
7/24/2018	131,961,083	1
7/25/2018	131,984,567	16
7/26/2018	132,008,507	17
7/27/2018	132,031,603	16
7/28/2018	132,031,603	0
7/29/2018	132,031,603	0
7/30/2018	132,036,499	3
7/31/2018	132,053,675	12
8/1/2018	132,071,795	13
8/2/2018	132,090,535	13
8/3/2018	132,109,787	13
NPDES Permit Discharge Limit¹		100

Table 1
HCC Water Treatment System Discharge Flow Rates
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067

Date	Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)	Calculated Average Daily Flow Rate ¹ (gallons per minute)
8/4/2018	132,128,339	13
8/5/2018	132,147,407	13
8/6/2018	132,166,483	13
8/7/2018	132,185,563	13
8/8/2018	132,204,603	13
8/9/2018	132,223,311	13
8/10/2018	132,247,259	17
8/11/2018	132,271,219	17
8/12/2018	132,295,103	17
8/13/2018	132,319,019	17
8/14/2018	132,342,911	17
8/15/2018	132,366,799	17
8/16/2018	132,390,671	17
8/17/2018	132,415,063	17
8/18/2018	132,438,311	16
8/19/2018	132,462,287	17
8/20/2018	132,486,251	17
8/21/2018	132,510,195	17
8/22/2018	132,534,131	17
8/23/2018	132,558,031	17
8/24/2018	132,581,903	17
8/25/2018	132,605,787	17
8/26/2018	132,629,663	17
8/27/2018	132,653,507	17
8/28/2018	132,677,411	17
8/29/2018	132,701,331	17
8/30/2018	132,725,219	17
8/31/2018	132,749,739	17
9/1/2018	132,772,859	16
9/2/2018	132,796,823	17
9/3/2018	132,820,751	17
9/4/2018	132,844,683	17
9/5/2018	132,868,591	17
9/6/2018	132,892,423	17
9/7/2018	132,916,235	17
9/8/2018	132,939,995	16
9/9/2018	132,963,691	16
9/10/2018	132,987,291	16
9/11/2018	133,010,867	16
9/12/2018	133,034,479	16
9/13/2018	133,058,127	16
9/14/2018	133,082,195	17
9/15/2018	133,105,443	16
NPDES Permit Discharge Limit¹		100

Table 1
HCC Water Treatment System Discharge Flow Rates
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067

Date	Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)	Calculated Average Daily Flow Rate ¹ (gallons per minute)
9/16/2018	133,129,007	16
9/17/2018	133,152,839	17
9/18/2018	133,176,743	17
9/19/2018	133,200,691	17
9/20/2018	133,224,679	17
9/21/2018	133,248,651	17
9/22/2018	133,272,527	17
9/23/2018	133,296,771	17
9/24/2018	133,321,087	17
9/25/2018	133,345,355	17
9/26/2018	133,369,679	17
9/27/2018	133,393,983	17
9/28/2018	133,418,207	17
9/29/2018	133,442,867	17
9/30/2018	133,466,175	16
10/1/2018	133,490,067	17
10/2/2018	133,513,995	17
10/3/2018	133,538,155	17
10/4/2018	133,562,179	17
10/5/2018	133,586,199	17
10/6/2018	133,610,227	17
10/7/2018	133,634,123	17
10/8/2018	133,657,975	17
10/9/2018	133,681,839	17
10/10/2018	133,711,147	20
10/11/2018	133,741,259	21
10/12/2018	133,762,495	15
10/13/2018	133,762,495	0
10/14/2018	133,771,883	7
10/15/2018	133,801,831	21
10/16/2018	133,831,515	21
10/17/2018	133,860,883	20
10/18/2018	133,889,899	20
10/19/2018	133,919,179	20
10/20/2018	133,946,903	19
10/21/2018	133,975,043	20
10/22/2018	134,002,943	19
10/23/2018	134,030,523	19
10/24/2018	134,057,951	19
10/25/2018	134,085,239	19
10/26/2018	134,114,663	20
10/27/2018	134,144,363	21
10/28/2018	134,174,547	21
NPDES Permit Discharge Limit¹		100

Table 1
HCC Water Treatment System Discharge Flow Rates
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067

Date	Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)	Calculated Average Daily Flow Rate ¹ (gallons per minute)
10/29/2018	134,204,527	21
10/30/2018	134,233,867	20
10/31/2018	134,262,895	20
11/1/2018	134,291,795	20
11/2/2018	134,318,031	17
11/3/2018	134,341,095	16
11/4/2018	134,364,859	17
11/5/2018	134,389,047	17
11/6/2018	134,412,747	16
11/7/2018	134,435,047	15
11/8/2018	134,455,463	14
11/9/2018	134,474,507	13
11/10/2018	134,493,699	13
11/11/2018	134,512,447	13
11/12/2018	134,528,183	11
11/13/2018	134,533,471	4
11/14/2018	134,551,779	13
11/15/2018	134,570,131	13
11/16/2018	134,586,947	12
11/17/2018	134,604,187	12
11/18/2018	134,621,303	12
11/19/2018	134,638,367	12
11/20/2018	134,655,447	12
11/21/2018	134,672,423	12
11/22/2018	134,689,255	12
11/23/2018	134,706,479	12
11/24/2018	134,724,183	12
11/25/2018	134,741,483	12
11/26/2018	134,758,247	12
11/27/2018	134,775,547	12
11/28/2018	134,790,999	11
11/29/2018	134,813,639	16
11/30/2018	134,837,311	16
12/1/2018	134,859,547	15
12/2/2018	134,881,959	16
12/3/2018	134,904,235	15
12/4/2018	134,921,331	12
12/5/2018	134,921,331	0
12/6/2018	134,921,331	0
12/7/2018	134,940,735	13
12/8/2018	134,963,255	16
12/9/2018	134,985,891	16
12/10/2018	135,008,767	16
NPDES Permit Discharge Limit¹		100

Table 1
HCC Water Treatment System Discharge Flow Rates
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067

Date	Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)	Calculated Average Daily Flow Rate ¹ (gallons per minute)
12/11/2018	135,031,903	16
12/12/2018	135,055,715	17
12/13/2018	135,072,567	12
12/14/2018	135,094,987	16
12/15/2018	135,094,987	0
12/16/2018	135,094,987	0
12/17/2018	135,100,339	2
12/18/2018	135,122,839	16
12/19/2018	135,144,739	15
12/20/2018	135,161,939	14
12/21/2018	135,186,415	15
12/22/2018	135,211,779	18
12/23/2018	135,236,127	17
12/24/2018	135,259,855	16
12/25/2018	135,282,979	16
12/26/2018	135,305,475	16
12/27/2018	135,327,323	15
12/28/2018	135,349,343	15
12/29/2018	135,373,495	17
12/30/2018	135,398,415	17
12/31/2018	135,421,943	16
NPDES Permit Discharge Limit¹		100

NOTES:

¹Discharge 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 ¹ (micrograms per liter)			ORO ¹ (micrograms per liter)			Calculated NWTPH-Dx ² (micrograms per liter)
			Result	MDL	MRL	Result	MDL	MRL	
Treatment System Influent (Primary GAC Vessel Influent)	1/4/2018	BEFORE GAC 010418	620	14	24	270	9.3	47	890
	1/10/2018	BEFORE GAC-11018	530	14	24	420	9.3	48	950
	1/15/2018	BEFORE GAC-11518	520	14	24	310	9.3	47	830
	1/23/2018	BEFORE GAC-12318	580	14	24	320	9.3	48	900
	1/30/2018	BEFORE GAC-013018	460	62	62	240	91	90	700
	2/7/2018	BEFORE GAC 020718	510	62	62	280	92	91	790
	2/13/2018	BEFORE GAC-21318	530	62	62	250	91	90	780
	2/22/2018	BEFORE GAC-22218	510	62	62	330	91	90	840
	2/28/2018	BEFORE GAC-22818	440	62	62	260	92	91	700
	3/7/2018	BEFORE GAC-030718	390	62	62	210	91	90	600
	3/14/2018	BEFORE GAC-31418	400	61	61	220	91	90	620
	3/20/2018	BEFORE GAC-32018	650 J	61	61	320 J	91	91	970 J
	3/28/2018	BEFORE GAC-32818	86	62	62	180	91	91	266
	4/4/2018	BEFORE GAC-4418	680	62	62	350	92	92	1,030
	4/11/2018	BEFORE GAC-41118	480	62	62	250	91	91	730
	4/19/2018	BEFORE GAC-041918	500	62	62	310	91	91	810
	4/26/2018	BEFORE GAC-42618	480	62	62	260	91	91	740
	5/1/2018	BEFORE GAC-5118	450	62	62	240	91	91	690
	5/10/2018	BEFORE GAC-51018	460	62	62	270	92	92	730
	5/17/2018	BEFORE GAC-051718	370	62	62	210	91	91	580
	5/23/2018	BEFORE GAC-52318	520 J	62	62	210 J	91	91	730 J
	5/29/2018	BEFORE GAC-52918	560	62	62	250	91	91	810
	6/7/2018	BEFORE GAC-060718	580	61	61	290	91	91	870
	6/15/2018	BEFORE GAC-61518	560	62	62	270	91	91	830
	6/19/2018	BEFORE GAC-61918	630	62	62	330	91	91	960
	6/28/2018	BEFORE GAC-62818	350	62	62	140	91	91	490
	7/5/2018	BEFORE GAC-070518	530	62	62	190	91	91	720
	7/12/2018	BEFORE GAC-71218	530	62	62	240	91	91	770
7/18/2018	BEFORE GAC-071818	510	62	62	210	91	91	720	
7/26/2018	BEFORE GAC-072618	510	61	61	200	91	91	710	

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 ¹ (micrograms per liter)			ORO ¹ (micrograms per liter)			Calculated NWTPH-Dx ² (micrograms per liter)
			Result	MDL	MRL	Result	MDL	MRL	
Treatment System Influent (Primary GAC Vessel Influent)	8/1/2018	BEFORE GAC-080118	110	62	62	< 91	91	91	156
	8/9/2018	BEFORE GAC-8918	580	62	62	220	91	91	800
	8/16/2018	BEFORE GAC-81618	480	62	62	210	91	91	690
	8/22/2018	BEFORE GAC-082218	420	62	62	160	91	91	580
	8/29/2018	BEFORE GAC-82918	860	62	62	220	91	91	1,080
	9/4/2018	BEFORE GAC-9418	490 J	62	62	210 J	91	91	700 J
	9/11/2018	BEFORE GAC-91118	200	62	62	< 91	91	91	246
	9/20/2018	BEFORE GAC-92018	460	62	62	190	91	91	650
	9/27/2018	BEFORE GAC-92718	340	62	62	110	91	91	450
	10/2/2018	BEFORE GAC-100218	430	62	62	160	91	91	590
	10/9/2018	BEFORE GAC-10918	520	310	310	< 460	460	460	750
	10/18/2018	BEFORE GAC-101818	670	62	62	350	91	91	1,020
	10/25/2018	BEFORE GAC-102518	520	62	62	200	91	91	720
	10/30/2018	BEFORE GAC-103018	600	62	62	250	91	91	850
	11/8/2018	BEFORE GAC-110818	590	62	62	270	91	91	860
	11/15/2018	BEFORE GAC-111518	620	61	61	380	91	91	1,000
	11/21/2018	BEFORE GAC-112118	820	62	62	440	91	91	1,260
	11/28/2018	BEFORE GAC-112818	410	61	61	280	91	91	690
	12/4/2018	BEFORE GAC-120418	530	62	62	340	91	91	870
	12/9/2018	BEFORE GAC-12918	600	61	61	320	91	91	920
12/21/2018	BEFORE GAC-122118	450	62	62	360	91	91	810	
12/28/2018	BEFORE GAC - 122818	710	62	62	630	91	91	1,340	

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 ¹ (micrograms per liter)			ORO ¹ (micrograms per liter)			Calculated NWTPH-Dx ² (micrograms per liter)
			Result	MDL	MRL	Result	MDL	MRL	
Treatment System Effluent (Secondary GAC Vessel Effluent)	1/4/2018	HCC EFF 010418	< 24	14	24	< 48	9.3	48	< 12
	1/10/2018	HCC EFF-11018	< 24	14	24	< 47	9.3	47	< 12
	1/15/2018	HCC EFF-11518	< 24	14	24	< 48	9.3	48	< 12
	1/23/2018	HCC EFF-12318	< 24	14	24	< 48	9.3	48	< 12
	1/30/2018	HCC EFF-013018	< 62	62	62	< 90	91	90	< 77
	2/7/2018	HCC EFF 020718	< 62	62	62	< 91	92	91	< 77
	2/13/2018	HCC EFF-21318	< 62	62	62	< 90	91	90	< 77
	2/22/2018	HCC EFF-22218	< 62	62	62	< 91	92	91	< 77
	2/28/2018	HCC EFF-22818	< 62	62	62	< 91	92	91	< 77
	3/7/2018	HCC EFF-030718	< 62	62	62	< 90	91	90	< 77
	3/14/2018	HCC EFF-31418	< 62	62	62	< 90	91	90	< 77
	3/20/2018	HCC EFF-32018	< 62	62	62	< 91	91	91	< 77
	3/28/2018	HCC EFF-32818	< 62	62	62	< 91	91	91	< 77
	4/4/2018	HCC EFF-4418	< 62	62	62	< 92	92	92	< 77
	4/11/2018	HCC EFF-41118	< 62	62	62	< 91	91	91	< 77
	4/19/2018	HCC EFF-041918	< 62	62	62	< 91	91	91	< 77
	4/26/2018	HCC EFF-42618	< 62	62	62	< 91	91	91	< 77
	5/1/2018	HCC EFF-5118	< 62	62	62	< 91	91	91	< 77
	5/10/2018	HCC EFF-51018	< 61	61	61	< 91	91	91	< 76
	5/17/2018	HCC EFF-051718	< 62	62	62	< 92	92	92	< 77
	5/23/2018	HCC EFF-52318	< 62	62	62	< 91	91	91	< 77
	5/29/2018	HCC EFF-52918	< 62	62	62	< 91	91	91	< 77
	6/7/2018	HCC EFF-060718	< 61	61	61	< 91	91	91	< 76
	6/15/2018	HCC EFF-61518	< 62	62	62	< 91	91	91	< 77
	6/19/2018	HCC EFF-61918	< 62	62	62	< 91	91	91	< 77
6/28/2018	HCC EFF-62818	< 62	62	62	< 91	91	91	< 77	
7/5/2018	HCC EFF-070518	< 62	62	62	< 91	91	91	< 77	
7/12/2018	HCC EFF-71218	< 61	61	61	< 91	91	91	< 76	
7/18/2018	HCC EFF-071818	79	62	62	< 91	91	91	125	
NPDES Permit Discharge Limit³									208

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 ¹ (micrograms per liter)			ORO ¹ (micrograms per liter)			Calculated NWTPH-Dx ² (micrograms per liter)
			Result	MDL	MRL	Result	MDL	MRL	
Treatment System Effluent (Secondary GAC Vessel Effluent)	7/26/2018	HCC EFF-072618	< 62	62	62	< 91	91	91	< 77
	8/1/2018	HCC EFF-080118	< 62	62	62	< 91	91	91	< 77
	8/9/2018	HCC EFF-8918	< 62	62	62	< 91	91	91	< 77
	8/16/2018	HCC EFF-81618	< 62	62	62	< 91	91	91	< 77
	8/22/2018	HCC EFF-082218	< 62	62	62	< 91	91	91	< 77
	8/29/2018	HCC EFF-82918	< 62	62	62	< 91	91	91	< 77
	9/4/2018	HCC EFF-9418	< 62 UJ	62	62	< 91 UJ	91	91	< 77 UJ
	9/11/2018	HCC EFF-91118	< 62	62	62	< 91	91	91	< 77
	9/20/2018	HCC EFF-92018	< 62	62	62	< 91	91	91	< 77
	9/27/2018	HCC EFF-92718	< 62	62	62	< 91	91	91	< 77
	10/2/2018	HCC EFF-100218	< 62	62	62	< 91	91	91	< 77
	10/9/2018	HCC EFF-10918	< 62	62	62	< 91	91	91	< 77
	10/18/2018	HCC EFF-101818	< 62	62	62	< 91	91	91	< 77
	10/25/2018	HCC EFF-102518	< 62	62	62	< 91	91	91	< 77
	10/30/2018	HCC EFF-103018	< 62	62	62	< 91	91	91	< 77
	11/8/2018	HCC EFF-110818	< 61	61	61	< 91	91	91	< 76
	11/15/2018	HCC EFF-111518	< 62	62	62	< 91	91	91	< 77
	11/21/2018	HCC EFF-112118	< 62	62	62	< 91	91	91	< 77
	11/28/2018	HCC EFF-112818	< 61	61	61	< 91	91	91	< 76
	12/4/2018	HCC EFF-120418	< 62	62	62	< 91	91	91	< 77
12/9/2018	HCC EFF-12918	< 62	62	62	< 91	91	91	< 77	
12/21/2018	HCC EFF-122118	< 62	62	62	< 91	91	91	< 77	
12/28/2018	HCC EFF - 122818	< 62	62	62	< 91	91	91	< 77	
NPDES Permit Discharge Limit³									208

NOTES:

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

¹Analyzed by Washington State Department of Ecology Method NWTPH-Dx.

²Sum 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.

³Discharge 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

NPDES = National Pollutant Discharge Elimination System

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: 683-067

Sample Date	pH ¹ (Standard Units)
1/4/2018	8.04
1/10/2018	7.69
1/15/2018	7.91
1/23/2018	8.40
1/30/2018	8.21
2/7/2018	8.29
2/13/2018	7.98
2/22/2018	7.80
2/28/2018	8.10
3/7/2018	8.34
3/14/2018	8.33
3/20/2018	8.08
3/28/2018	8.17
4/4/2018	8.16
4/11/2018	7.93
4/19/2018	8.22
4/26/2018	8.46
5/1/2018	8.12
5/10/2018	8.20
5/17/2018	8.05
5/23/2018	7.96
5/29/2018	7.84
6/7/2018	7.78
6/15/2018	7.88
6/19/2018	7.68
6/28/2018	7.98
7/5/2018	7.85
7/12/2018	7.73
7/18/2018	7.71
7/26/2018	7.58
8/1/2018	7.38
8/9/2018	7.40
8/16/2018	7.30
8/22/2018	7.48
8/29/2018	7.54
9/4/2018	7.61
9/11/2018	7.50
9/20/2018	7.57
9/27/2018	7.54
10/2/2018	7.53
10/9/2018	7.53
10/18/2018	7.68
10/25/2018	7.58
10/30/2018	7.57
11/8/2018	7.48
11/15/2018	7.53
11/21/2018	7.53
11/28/2018	7.63
12/4/2018	7.46
12/9/2018	7.50
12/21/2018	7.58
12/28/2018	7.60
NPDES Permit Discharge Limit²	6.5-8.5

NOTES:

¹Data reported previously in NPDES Discharge Monitoring Reports pursuant to NPDES Permit No. WA0032123.

²Discharge 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: 683-067

Sample Date	Sample Identification	Analytical Results (micrograms per liter)	
		Total Lead ¹	Total Arsenic ¹
01/04/2018	HCC EFF 010418	< 0.80	< 1.0
02/07/2018	HCC EFF 020718	< 0.80	< 1.0
03/07/2018	HCC EFF-030718	< 0.80	< 1.0
04/04/2018	HCC EFF-4418	< 4.0	< 5.0
05/01/2018	HCC EFF-5118	< 0.80	< 1.0
06/07/2018	HCC EFF-060718	< 0.80	< 1.0
07/05/2018	HCC EFF-070518	< 0.80	< 1.0
08/01/2018	HCC EFF-080118	< 0.80	< 1.0
09/04/2018	HCC EFF-9418	< 0.80	< 1.0
10/02/2018	HCC EFF-100218	< 0.80	< 1.0
11/08/2018	HCC EFF-110818	< 0.80	< 1.0
12/04/2018	HCC EFF-120418	< 0.80	< 1.0
NPDES Permit Discharge Limit²		17.5	360

NOTES:

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

HCC = Hydraulic Control and Containment
NPDES = National Pollutant Discharge Elimination System

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

²Discharge limit specified in NPDES Permit No. WA0032123.

**Table 5
HCC System Barrier Wall Groundwater Elevations
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067**

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
1/1/2018	926.85	927.82	924.24	3.58	927.27	921.19	6.08	926.83	921.33	5.50	923.90	919.67	4.23	925.82	918.29	7.53	924.91	918.72	6.19	920.64
1/2/2018	926.65	927.49	923.98	3.51	926.89	921.18	5.71	926.44	921.32	5.12	923.66	919.48	4.18	925.46	918.12	7.34	924.53	918.48	6.05	920.41
1/3/2018	926.47	927.14	923.82	3.32	926.56	921.18	5.38	926.09	921.32	4.77	923.47	919.40	4.07	925.19	918.09	7.10	924.21	918.37	5.84	920.22
1/4/2018	926.33	926.86	923.70	3.16	926.33	921.18	5.15	925.84	921.33	4.51	923.32	919.36	3.96	925.00	918.03	6.97	923.97	918.32	5.65	920.10
1/5/2018	926.17	926.54	923.58	2.96	926.17	921.19	4.98	925.81	921.33	4.48	923.20	919.29	3.91	924.77	918.06	6.71	923.73	918.26	5.47	919.95
1/6/2018	926.17	926.38	923.54	2.84	926.09	921.16	4.93	925.72	921.33	4.39	923.14	919.35	3.79	924.67	918.24	6.43	923.61	918.33	5.28	919.96
1/7/2018	926.14	926.33	923.55	2.78	926.05	921.16	4.89	925.68	921.34	4.34	923.10	919.37	3.73	924.64	918.21	6.43	923.57	918.33	5.24	919.95
1/8/2018	926.17	926.38	923.59	2.79	926.08	921.16	4.92	925.70	921.33	4.37	923.13	919.38	3.75	924.69	918.24	6.45	923.61	918.35	5.26	919.99
1/9/2018	926.32	926.40	923.62	2.78	926.15	921.19	4.96	925.78	921.32	4.46	923.18	919.39	3.79	924.71	918.08	6.63	923.64	918.37	5.27	920.01
1/10/2018	926.48	926.80	923.90	2.90	926.61	921.16	5.45	926.28	921.32	4.96	923.43	919.48	3.95	925.10	918.08	7.02	924.04	918.49	5.55	920.28
1/11/2018	926.90	927.32	924.15	3.17	926.98	921.20	5.78	926.58	921.32	5.26	923.73	919.50	4.23	925.41	918.11	7.30	924.37	918.86	5.51	920.55
1/12/2018	927.29	928.15	925.08	3.07	927.98	921.18	6.80	927.51	921.29	6.22	924.36	920.03	4.33	926.35	918.97	7.38	925.53	919.10	6.43	921.25
1/13/2018	927.29	928.27	924.98	3.29	927.81	921.17	6.64	927.30	921.32	5.98	924.15	920.34	3.81	926.19	919.13	7.06	925.38	919.40	5.98	921.13
1/14/2018	927.16	928.16	924.76	3.40	927.62	921.16	6.46	927.13	921.31	5.82	924.04	920.22	3.82	926.03	918.84	7.19	925.19	919.25	5.94	920.97
1/15/2018	926.94	927.81	924.34	3.47	927.25	921.18	6.07	926.76	921.30	5.46	923.72	919.94	3.78	925.65	918.93	6.72	924.75	918.96	5.79	920.67
1/16/2018	926.82	927.52	924.13	3.39	926.92	921.18	5.74	926.42	921.31	5.11	923.52	919.84	3.68	925.32	918.88	6.44	924.43	918.86	5.57	920.52
1/17/2018	926.73	927.27	924.05	3.22	926.75	921.17	5.58	926.21	921.31	4.90	923.39	919.78	3.61	925.18	918.80	6.38	924.24	918.78	5.46	920.42
1/18/2018	926.87	927.40	924.29	3.11	927.00	921.17	5.83	926.55	921.31	5.24	923.64	919.98	3.66	925.42	918.84	6.58	924.46	919.02	5.44	920.65
1/19/2018	926.84	927.36	924.24	3.12	926.90	921.17	5.73	926.41	921.30	5.11	923.51	919.89	3.62	925.35	918.51	6.84	924.41	918.89	5.52	920.54
1/20/2018	926.81	927.47	924.23	3.24	927.04	921.17	5.87	926.59	921.29	5.30	923.64	919.79	3.85	925.48	918.78	6.70	924.53	918.79	5.74	920.60
1/21/2018	926.72	927.37	924.15	3.22	926.88	921.17	5.71	926.41	921.32	5.09	923.51	919.68	3.83	925.33	918.52	6.81	924.39	918.65	5.74	920.48
1/22/2018	926.74	927.33	924.10	3.23	926.92	921.17	5.75	926.47	921.31	5.16	923.60	919.63	3.97	925.37	918.43	6.94	924.38	918.60	5.78	920.51
1/23/2018	926.74	927.32	924.07	3.25	926.85	921.15	5.70	926.37	921.32	5.05	923.51	919.57	3.94	925.29	918.13	7.16	924.34	918.52	5.82	920.43
1/24/2018	926.86	927.72	924.42	3.30	927.42	921.16	6.26	927.04	921.32	5.72	923.96	919.66	4.30	925.83	918.34	7.49	924.91	918.65	6.26	920.76
1/25/2018	926.80	927.67	924.24	3.43	927.25	921.16	6.09	926.89	921.32	5.57	923.86	919.61	4.25	925.70	918.59	7.11	924.78	918.60	6.18	920.61
1/26/2018	926.67	927.47	924.06	3.41	927.02	921.15	5.87	926.60	921.34	5.26	923.58	919.48	4.10	925.42	918.34	7.08	924.47	918.47	6.00	920.44
1/27/2018	926.83	927.38	924.03	3.35	927.02	921.20	5.82	926.61	921.33	5.28	923.60	919.47	4.13	925.41	918.31	7.10	924.43	918.46	5.97	920.50
1/28/2018	926.88	927.61	924.26	3.35	927.37	921.17	6.20	927.03	921.31	5.72	923.97	919.57	4.40	925.78	918.53	7.25	924.85	918.60	6.25	920.71
1/29/2018	926.82	927.74	924.25	3.49	927.32	921.16	6.16	926.92	921.32	5.60	923.77	919.58	4.19	925.69	918.22	7.47	924.77	918.58	6.19	920.64
1/30/2018	927.22	928.11	924.96	3.15	927.74	921.19	6.55	927.30	921.31	5.99	924.11	920.37	3.74	926.08	919.14	6.94	925.25	919.42	5.83	921.08
1/31/2018	927.04	927.94	924.53	3.41	927.45	921.19	6.26	927.03	921.32	5.71	923.90	920.00	3.90	925.83	918.78	7.05	924.95	919.03	5.92	920.80
2/1/2018	926.87	927.72	924.24	3.48	927.23	921.18	6.05	926.82	921.32	5.50	923.77	919.77	4.00	925.63	918.34	7.29	924.70	918.76	5.94	920.63
2/2/2018	927.14	927.81	924.38	3.43	927.54	921.19	6.35	927.13	921.31	5.82	924.09	919.81	4.28	925.86	918.40	7.46	924.93	918.97	5.96	920.88
2/3/2018	927.24	927.95	924.87	3.08	927.61	921.18	6.43	927.17	921.31	5.86	924.03	920.45	3.58	925.96	919.16	6.80	925.12	919.50	5.62	921.03
2/4/2018	928.08	928.26	925.74	2.52	928.08	921.19	6.89	927.52	921.31	6.21	924.40	921.91	2.49	926.32	920.93	5.39	925.53	921.04	4.49	921.82
2/5/2018	928.43	928.53	926.40	2.13	928.15	921.82	6.33	927.54	922.25	5.29	924.27	922.86	1.41	926.47	921.86	4.61	925.75	921.78	3.97	922.43
2/6/2018	927.79	928.41	925.82	2.59	927.93	921.17	6.76	927.35	921.34	6.01	924.09	921.69	2.40	926.23	920.61	5.62	925.46	920.69	4.77	921.68
2/7/2018	927.43	928.21	925.23	2.98	927.65	921.18	6.47	927.13	921.35	5.78	923.91	920.87	3.04	925.94	919.53	6.41	925.12	919.88	5.24	921.14
2/8/2018	927.23	927.98	924.80	3.18	927.34	921.17	6.17	926.84	921.36	5.48	923.74	920.53	3.21	925.68	919.30	6.38	924.83	919.55	5.28	920.84
2/9/2018	927.23	927.72	924.79	2.93	927.15	921.16	5.99	926.66	921.37	5.29	923.65	920.64	3.01	925.51	919.71	5.80	924.66	919.65	5.01	920.82
2/10/2018	927.02	927.54	924.51	3.03	926.97	921.16	5.81	926.50	921.35	5.15	923.51	920.29	3.22	925.35	918.90	6.45	924.47	919.32	5.15	920.66
2/11/2018	926.89	927.35	924.25	3.10	926.82	921.17	5.65	926.36	921.36	5.00	923.39	920.03	3.36	925.20	918.58	6.62	924.28	919.05	5.23	920.49
2/12/2018	926.71	927.10	924.02	3.08	926.62	921.19	5.43	926.19	921.36	4.83	923.30	919.81	3.49	925.02	918.56	6.46	924.07	918.83	5.24	920.35
2/13/2018	926.57	926.88	923.86	3.02	926.45	921.15	5.30	926.02	921.35	4.67	923.17	919.65	3.52	924.86	918.21	6.65	923.90	918.65	5.25	920.22
2/14/2018	926.44	926.66	923.74	2.92	926.27	921.17	5.10	925.86	921.37	4.49	923.16	919.58	3.58	924.74	918.11	6.63	923.76	918.56	5.20	920.12
2/15/2018	926.31	926.48	923.65	2.83	926.17	921.16	5.01	925.75	921.33	4.42	923.03	919.49	3.54	924.64	918.25	6.39	923.66	918.46	5.20	920.06
2/16/2018	926.40	926.38	923.62	2.76	926.15	921.16	4.99	925.73	921.34	4.39	923.06	919.44	3.62	924.63	918.04	6.59	923.62	918.43	5.19	920.07
2/17/2018	926.55	926.85	924.01	2.84	926.80	921.16	5.64	926.51	921.37	5.14	923.51	919.52	3.99	925.18	918.05	7.13	924.17	918.54	5.63	920.43

**Table 5
HCC System Barrier Wall Groundwater Elevations
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067**

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
2/18/2018	926.76	927.45	924.38	3.07	927.21	921.18	6.03	926.92	921.36	5.56	923.87	919.65	4.22	925.69	918.44	7.25	924.79	918.67	6.12	920.65
2/19/2018	926.61	927.33	924.10	3.23	926.95	921.18	5.77	926.59	921.35	5.24	923.66	919.51	4.15	925.44	918.48	6.96	924.55	918.48	6.07	920.46
2/20/2018	926.44	927.08	923.87	3.21	926.69	921.18	5.51	926.29	921.35	4.94	923.48	919.38	4.10	925.20	918.36	6.84	924.25	918.34	5.91	920.26
2/21/2018	926.30	926.81	923.70	3.11	926.42	921.19	5.23	926.02	921.35	4.67	923.30	919.30	4.00	924.94	917.96	6.98	923.96	918.24	5.72	920.12
2/22/2018	926.18	926.51	923.60	2.91	926.16	921.15	5.01	925.75	921.31	4.44	923.10	919.14	3.96	924.70	918.00	6.70	923.65	918.11	5.54	920.03
2/23/2018	926.03	926.29	923.51	2.78	925.98	921.17	4.81	925.55	921.25	4.30	923.02	919.08	3.94	924.50	918.06	6.44	923.48	918.08	5.40	919.86
2/24/2018	925.93	926.13	923.48	2.65	925.84	921.16	4.68	925.44	921.30	4.14	922.91	919.02	3.89	924.33	918.04	6.29	923.33	918.05	5.28	919.75
2/25/2018	925.91	926.06	923.46	2.60	925.74	921.14	4.60	925.34	921.31	4.03	922.85	919.04	3.81	924.22	917.77	6.45	923.20	918.08	5.12	919.70
2/26/2018	925.86	925.97	923.45	2.52	925.64	921.13	4.51	925.29	921.32	3.97	922.78	919.04	3.74	924.13	917.74	6.39	923.10	918.06	5.04	919.63
2/27/2018	925.88	925.84	923.43	2.41	925.59	921.15	4.44	925.15	921.31	3.84	922.78	919.00	3.78	924.12	917.77	6.35	923.03	918.04	4.99	919.65
2/28/2018	925.84	925.81	923.48	2.33	925.54	921.10	4.44	925.17	921.32	3.85	922.75	918.98	3.77	924.08	917.90	6.18	922.99	918.02	4.97	919.64
3/1/2018	925.85	925.73	923.46	2.27	925.50	921.09	4.41	925.13	921.29	3.84	922.73	918.97	3.76	924.10	917.75	6.35	922.94	917.98	4.96	919.61
3/2/2018	925.89	925.85	923.48	2.37	925.67	921.09	4.58	925.36	921.28	4.08	922.81	919.01	3.80	924.14	917.64	6.50	923.02	918.01	5.01	919.63
3/3/2018	925.84	925.82	923.45	2.37	925.59	921.09	4.50	925.27	921.30	3.97	922.76	918.98	3.78	924.08	917.40	6.68	922.96	917.95	5.01	919.59
3/4/2018	925.81	925.81	923.43	2.38	925.53	921.07	4.46	925.19	921.32	3.87	922.76	918.97	3.79	924.13	917.88	6.25	922.89	917.92	4.97	919.59
3/5/2018	925.78	925.77	923.40	2.37	925.49	921.03	4.46	925.18	921.30	3.88	922.75	918.94	3.81	924.08	917.64	6.44	922.87	917.88	4.99	919.57
3/6/2018	925.84	925.81	923.43	2.38	925.58	921.06	4.52	925.27	921.28	3.99	922.82	918.97	3.85	924.14	917.45	6.69	922.99	917.91	5.08	919.65
3/7/2018	925.82	925.91	923.44	2.47	925.61	921.02	4.59	925.33	921.28	4.05	922.87	918.97	3.90	924.19	917.44	6.75	923.05	917.89	5.16	919.62
3/8/2018	925.81	925.89	923.44	2.45	925.58	921.03	4.55	925.27	921.30	3.97	922.85	918.96	3.89	924.20	917.39	6.81	923.00	917.88	5.12	919.63
3/9/2018	926.52	926.70	924.05	2.65	926.63	921.04	5.59	926.46	921.28	5.18	923.70	919.25	4.45	925.18	918.15	7.03	924.16	918.28	5.88	920.33
3/10/2018	926.49	927.00	924.01	2.99	926.79	921.01	5.78	926.43	921.29	5.14	923.63	919.27	4.36	925.24	917.87	7.37	924.33	918.23	6.10	920.35
3/11/2018	926.34	926.95	923.82	3.13	926.54	921.00	5.54	926.27	921.29	4.98	923.51	919.18	4.33	925.10	917.92	7.18	924.17	918.12	6.05	920.18
3/12/2018	926.40	926.78	923.69	3.09	926.42	920.98	5.44	926.11	921.28	4.83	923.41	919.10	4.31	924.99	917.70	7.29	923.96	918.03	5.93	920.08
3/13/2018	926.44	926.76	923.67	3.09	926.39	921.03	5.36	926.04	921.28	4.76	923.38	919.20	4.18	924.91	917.91	7.00	923.94	918.14	5.80	920.15
3/14/2018	926.53	926.99	923.83	3.16	926.54	920.98	5.56	926.17	921.27	4.90	923.52	919.36	4.16	925.16	918.35	6.81	924.17	918.30	5.87	920.30
3/15/2018	926.52	927.03	923.85	3.18	926.48	920.99	5.49	926.02	921.28	4.74	923.40	919.34	4.06	925.06	917.91	7.15	924.09	918.27	5.82	920.29
3/16/2018	926.42	926.87	923.73	3.14	926.29	921.00	5.29	925.83	921.28	4.55	923.31	919.26	4.05	924.92	918.42	6.50	923.93	918.17	5.76	920.15
3/17/2018	926.30	926.67	923.64	3.03	926.09	920.99	5.10	925.62	921.28	4.34	923.19	919.23	3.96	924.74	918.07	6.67	923.73	918.10	5.63	920.03
3/18/2018	926.16	926.47	923.54	2.93	925.86	920.98	4.88	925.43	921.28	4.15	923.08	919.19	3.89	924.57	918.21	6.36	923.54	918.03	5.51	919.90
3/19/2018	926.09	926.27	923.48	2.79	925.73	921.01	4.72	925.26	921.29	3.97	922.97	919.18	3.79	924.41	918.03	6.38	923.39	918.05	5.34	919.87
3/20/2018	926.00	926.13	923.47	2.66	925.67	921.13	4.54	925.16	921.32	3.84	922.84	919.09	3.75	924.34	917.88	6.46	923.33	918.03	5.30	919.83
3/21/2018	925.91	926.01	923.44	2.57	925.55	921.15	4.40	925.06	921.33	3.73	922.76	919.10	3.66	924.23	917.97	6.26	923.19	918.01	5.18	919.79
3/22/2018	925.87	925.91	923.40	2.51	925.45	921.15	4.30	924.94	921.33	3.61	922.69	919.09	3.60	924.12	918.01	6.11	923.04	917.99	5.05	919.73
3/23/2018	925.87	925.83	923.39	2.44	925.42	921.15	4.27	924.90	921.33	3.57	922.66	919.12	3.54	924.07	917.89	6.18	922.97	918.02	4.95	919.70
3/24/2018	925.85	925.78	923.40	2.38	925.37	921.16	4.21	924.89	921.34	3.55	922.64	919.10	3.54	924.02	918.09	5.93	922.91	918.00	4.91	919.69
3/25/2018	925.83	925.73	923.40	2.33	925.34	921.16	4.18	924.83	921.34	3.49	922.54	919.08	3.46	923.99	917.94	6.05	922.89	917.96	4.93	919.66
3/26/2018	925.79	925.70	923.37	2.33	925.30	921.17	4.13	924.78	921.33	3.45	922.59	919.04	3.55	923.95	918.02	5.93	922.83	917.94	4.89	919.62
3/27/2018	926.33	926.16	923.66	2.50	925.92	921.17	4.75	925.57	921.33	4.24	923.27	919.11	4.16	924.50	917.68	6.82	923.33	918.24	5.09	920.01
3/28/2018	926.42	926.67	924.05	2.62	926.46	921.16	5.30	926.06	921.32	4.74	923.35	919.40	3.95	925.00	918.03	6.97	924.05	918.40	5.65	920.32
3/29/2018	926.43	926.82	923.90	2.92	926.37	921.16	5.21	925.89	921.31	4.58	923.25	919.35	3.90	924.95	918.02	6.93	924.01	918.31	5.70	920.25
3/30/2018	926.34	926.69	923.79	2.90	926.20	921.16	5.04	925.66	921.32	4.34	923.06	919.27	3.79	924.78	917.86	6.92	923.83	918.24	5.59	920.12
3/31/2018	926.26	926.52	923.68	2.84	926.03	921.16	4.87	925.50	921.32	4.18	923.03	919.26	3.77	924.65	918.23	6.42	923.67	918.23	5.44	920.03
4/1/2018	926.18	926.39	923.60	2.79	925.89	921.17	4.72	925.39	921.33	4.06	922.95	919.27	3.68	924.52	918.25	6.27	923.54	918.19	5.35	919.98
4/2/2018	926.16	926.32	923.62	2.70	925.93	921.17	4.76	925.45	921.32	4.13	922.93	919.26	3.67	924.56	918.01	6.55	923.57	918.19	5.38	920.02
4/3/2018	926.15	926.38	923.67	2.71	925.98	921.17	4.81	925.52	921.33	4.19	923.03	919.23	3.80	924.62	917.93	6.69	923.62	918.18	5.44	920.03
4/4/2018	926.07	926.30	923.61	2.69	925.86	921.17	4.69	925.39	921.33	4.06	922.95	919.19	3.76	924.51	918.14	6.37	923.52	918.13	5.39	919.97
4/5/2018	926.23	926.45	923.75	2.70	926.11	921.18	4.93	925.68	921.33	4.35	923.15	919.27	3.88	924.72	918.22	6.50	923.72	918.25	5.47	920.13
4/6/2018	926.35	926.56	923.83	2.73	926.19	921.17	5.02	925.74	921.33	4.41	923.19	919.38	3.81	924.77	918.04	6.73	923.78	918.37	5.41	920.19

**Table 5
HCC System Barrier Wall Groundwater Elevations
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067**

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
4/7/2018	926.55	926.69	923.91	2.78	926.37	921.16	5.21	925.97	921.34	4.63	923.39	919.62	3.77	924.93	918.59	6.34	923.94	918.59	5.35	920.32
4/8/2018	927.07	927.31	924.48	2.83	927.03	921.17	5.86	926.67	921.31	5.36	923.91	920.25	3.66	925.48	919.32	6.16	924.54	919.53	5.01	920.80
4/9/2018	927.07	927.86	924.94	2.92	927.47	921.16	6.31	927.06	921.32	5.74	924.00	920.42	3.58	925.88	919.17	6.71	925.12	919.40	5.72	921.05
4/10/2018	926.92	927.77	924.54	3.23	927.23	921.16	6.07	926.79	921.33	5.46	923.83	920.12	3.71	925.68	918.87	6.81	924.87	919.12	5.75	920.81
4/11/2018	926.95	927.61	924.43	3.18	927.12	921.16	5.96	926.70	921.32	5.38	923.76	920.13	3.63	925.57	919.06	6.51	924.74	919.12	5.62	920.74
4/12/2018	926.84	927.45	924.26	3.19	927.01	921.17	5.84	926.66	921.33	5.33	923.70	919.98	3.72	925.47	918.87	6.60	924.62	918.95	5.67	920.63
4/13/2018	926.89	927.45	924.24	3.21	927.11	921.16	5.95	926.72	921.32	5.40	923.88	919.87	4.01	925.56	918.90	6.66	924.67	918.86	5.81	920.71
4/14/2018	927.27	928.10	925.18	2.92	927.91	921.16	6.75	927.45	921.31	6.14	924.29	920.52	3.77	926.24	919.47	6.77	925.49	919.54	5.95	921.36
4/15/2018	927.36	928.29	925.19	3.10	927.84	921.16	6.68	927.32	921.32	6.00	924.17	920.62	3.55	926.15	919.47	6.68	925.42	919.61	5.81	921.27
4/16/2018	927.43	928.14	924.89	3.25	927.70	921.17	6.53	927.20	921.32	5.88	924.17	920.37	3.80	926.01	919.33	6.68	925.21	919.35	5.86	921.13
4/17/2018	927.37	928.38	925.27	3.11	928.07	921.16	6.91	927.54	921.32	6.22	924.31	920.46	3.85	926.39	919.48	6.91	925.66	919.47	6.19	921.36
4/18/2018	927.14	928.18	924.80	3.38	927.65	921.16	6.49	927.16	921.32	5.84	924.01	920.16	3.85	925.99	919.17	6.82	925.24	919.13	6.11	921.00
4/19/2018	926.95	927.90	924.36	3.54	927.31	921.17	6.14	926.85	921.33	5.52	923.81	919.88	3.93	925.69	918.87	6.82	924.87	918.84	6.03	920.72
4/20/2018	926.79	927.57	924.09	3.48	926.98	921.17	5.81	926.51	921.33	5.18	923.59	919.71	3.88	925.40	918.26	7.14	924.56	918.66	5.90	920.53
4/21/2018	926.66	927.23	923.96	3.27	926.70	921.17	5.53	926.24	921.33	4.91	923.44	919.64	3.80	925.17	918.17	7.00	924.29	918.59	5.70	920.40
4/22/2018	926.55	926.97	923.84	3.13	926.49	921.18	5.31	926.01	921.33	4.68	923.30	919.60	3.70	924.98	918.50	6.48	924.09	918.53	5.56	920.30
4/23/2018	926.47	926.75	923.76	2.99	926.29	921.17	5.12	925.81	921.31	4.50	923.13	919.53	3.60	924.83	918.32	6.51	923.90	918.46	5.44	920.20
4/24/2018	926.40	926.57	923.70	2.87	926.13	921.18	4.95	925.64	921.30	4.34	923.00	919.50	3.50	924.68	918.47	6.21	923.73	918.44	5.29	920.14
4/25/2018	926.43	926.43	923.72	2.71	926.00	921.18	4.82	925.48	921.30	4.18	922.90	919.60	3.30	924.52	918.55	5.97	923.60	918.54	5.06	920.12
4/26/2018	926.56	926.40	923.86	2.54	925.97	921.18	4.79	925.45	921.31	4.14	922.85	919.84	3.01	924.47	918.48	5.99	923.54	918.80	4.74	920.18
4/27/2018	926.79	926.48	924.21	2.27	926.05	921.18	4.87	925.50	921.31	4.19	922.88	920.29	2.59	924.48	919.14	5.34	923.61	919.24	4.37	920.34
4/28/2018	927.01	926.59	924.58	2.01	926.15	921.19	4.96	925.61	921.31	4.30	922.99	920.69	2.30	924.59	919.32	5.27	923.73	919.65	4.08	920.55
4/29/2018	926.92	926.67	924.53	2.14	926.17	921.19	4.98	925.62	921.32	4.30	923.06	920.49	2.57	924.67	919.00	5.67	923.80	919.42	4.38	920.49
4/30/2018	926.78	926.60	924.31	2.29	926.10	921.19	4.91	925.57	921.31	4.26	923.03	920.20	2.83	924.62	918.79	5.83	923.75	919.17	4.58	920.36
5/1/2018	926.67	926.50	924.15	2.35	926.02	921.19	4.83	925.50	921.31	4.19	922.91	920.03	2.88	924.56	918.95	5.61	923.68	919.02	4.66	920.28
5/2/2018	926.58	926.41	924.00	2.41	925.93	921.18	4.75	925.42	921.31	4.11	922.84	919.92	2.92	924.48	918.96	5.52	923.57	918.89	4.68	920.20
5/3/2018	926.59	926.33	924.02	2.31	925.88	921.19	4.69	925.34	921.31	4.03	922.80	919.98	2.82	924.41	918.91	5.50	923.52	918.96	4.56	920.20
5/4/2018	926.73	926.34	924.21	2.13	925.90	921.18	4.72	925.34	921.31	4.03	922.79	920.24	2.55	924.46	919.24	5.22	923.53	919.20	4.33	920.29
5/5/2018	926.84	926.41	924.39	2.02	925.95	921.18	4.77	925.39	921.31	4.08	922.82	920.38	2.44	924.42	919.00	5.42	923.57	919.34	4.23	920.37
5/6/2018	926.95	926.49	924.53	1.96	926.00	921.19	4.81	925.44	921.31	4.13	922.85	920.59	2.26	924.49	919.49	5.00	923.63	919.55	4.08	920.47
5/7/2018	927.19	926.58	924.92	1.66	926.10	921.19	4.91	925.51	921.32	4.19	922.90	921.15	1.75	924.58	920.19	4.39	923.76	920.10	3.66	920.74
5/8/2018	927.29	926.71	925.08	1.63	926.19	921.16	5.03	925.52	921.32	4.20	922.96	921.33	1.63	924.67	919.92	4.75	923.89	920.27	3.62	920.85
5/9/2018	927.94	926.88	925.87	1.01	926.51	921.36	5.15	925.97	921.84	4.13	923.22	922.49	0.73	924.98	921.45	3.53	924.24	921.37	2.87	921.46
5/10/2018	927.60	927.10	925.62	1.48	926.57	921.17	5.40	925.97	921.35	4.62	923.26	921.82	1.44	925.10	920.65	4.45	924.34	920.75	3.59	921.26
5/11/2018	927.27	927.08	925.13	1.95	926.53	921.16	5.37	926.00	921.36	4.64	923.27	921.14	2.13	925.06	920.04	5.02	924.32	920.08	4.24	920.93
5/12/2018	927.03	927.00	924.73	2.27	926.44	921.15	5.29	925.89	921.35	4.54	923.20	920.66	2.54	924.97	919.59	5.38	924.19	919.61	4.58	920.66
5/13/2018	927.09	926.88	924.73	2.15	926.36	921.16	5.20	925.80	921.36	4.44	923.13	920.83	2.30	924.89	919.74	5.15	924.07	919.79	4.28	920.68
5/14/2018	927.33	926.92	925.08	1.84	926.38	921.15	5.23	925.80	921.35	4.45	923.12	921.36	1.76	924.89	920.31	4.58	924.13	920.30	3.83	920.90
5/15/2018	927.58	927.02	925.47	1.55	926.47	921.16	5.31	925.86	921.36	4.50	923.18	921.81	1.37	924.96	920.73	4.23	924.23	920.75	3.48	921.16
5/16/2018	927.67	927.13	925.64	1.49	926.52	921.16	5.36	925.91	921.36	4.55	923.22	921.94	1.28	925.04	920.73	4.31	924.31	920.88	3.43	921.26
5/17/2018	927.49	927.12	925.44	1.68	926.49	921.16	5.33	925.89	921.36	4.53	923.21	921.62	1.59	925.02	920.41	4.61	924.26	920.55	3.71	921.08
5/18/2018	927.26	927.03	925.09	1.94	926.38	921.17	5.21	925.82	921.36	4.46	923.14	921.15	1.99	924.93	919.91	5.02	924.14	920.09	4.05	920.83
5/19/2018	927.08	926.90	924.80	2.10	926.28	921.17	5.11	925.72	921.36	4.36	923.08	920.81	2.27	924.81	919.53	5.28	924.01	919.76	4.25	920.63
5/20/2018	927.04	926.78	924.73	2.05	926.20	921.16	5.04	925.63	921.36	4.27	923.02	920.81	2.21	924.73	919.72	5.01	923.91	919.76	4.15	920.58
5/21/2018	926.95	926.69	924.64	2.05	926.12	921.17	4.95	925.57	921.36	4.21	922.97	920.67	2.30	924.62	919.28	5.34	923.83	919.62	4.21	920.51
5/22/2018	926.92	926.62	924.59	2.03	926.07	921.17	4.90	925.51	921.37	4.14	922.92	920.64	2.28	924.60	919.40	5.20	923.77	919.57	4.20	920.46
5/23/2018	927.06	926.60	924.76	1.84	926.12	921.16	4.96	925.60	921.37	4.23	922.97	920.91	2.06	924.64	919.68	4.96	923.79	919.86	3.93	920.58
5/24/2018	927.22	926.66	925.04	1.62	926.11	921.17	4.94	925.52	921.36	4.16	922.94	921.31	1.63	924.65	920.01	4.64	923.84	920.20	3.64	920.77

**Table 5
HCC System Barrier Wall Groundwater Elevations
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067**

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
5/25/2018	927.09	926.67	924.89	1.78	926.09	921.18	4.91	925.52	921.36	4.16	922.93	921.12	1.81	924.65	919.75	4.90	923.82	919.94	3.88	920.64
5/26/2018	926.93	926.59	924.65	1.94	926.02	921.17	4.85	925.46	921.35	4.11	922.90	920.57	2.33	924.57	919.43	5.14	923.74	919.61	4.13	920.47
5/27/2018	926.70	926.49	924.36	-	925.92	921.17	-	925.39	921.33	-	922.83	920.21	-	924.49	919.03	-	923.61	919.23	-	920.27
5/28/2018	926.61	926.35	924.20	-	925.82	921.17	-	925.30	921.36	-	922.77	920.23	-	924.40	918.95	-	923.50	919.16	-	920.18
5/29/2018	926.55	926.25	924.10	-	925.75	921.18	-	925.23	921.34	-	922.73	920.22	-	924.32	918.87	-	923.43	919.06	-	920.13
5/30/2018	926.43	926.16	923.95	2.21	925.66	921.18	4.48	925.13	921.35	3.78	922.67	920.06	2.61	924.25	918.69	5.56	923.33	918.90	4.43	920.05
5/31/2018	926.32	926.05	923.82	2.23	925.55	921.18	4.37	925.03	921.31	3.72	922.62	919.96	2.66	924.17	918.57	5.60	923.23	918.78	4.45	919.96
6/1/2018	926.22	925.93	923.71	2.22	925.45	921.18	4.27	924.92	921.33	3.59	922.56	919.65	2.91	924.09	918.45	5.64	923.08	918.65	4.43	919.89
6/2/2018	926.12	925.82	923.63	2.19	925.35	921.18	4.17	924.84	921.35	3.49	922.51	919.53	2.98	924.00	918.36	5.64	922.96	918.56	4.40	919.81
6/3/2018	926.13	925.74	923.61	2.13	925.30	921.18	4.12	924.78	921.35	3.43	922.47	919.74	2.73	923.94	918.39	5.55	922.91	918.61	4.30	919.80
6/4/2018	926.18	925.71	923.66	2.05	925.28	921.18	4.10	924.74	921.34	3.40	922.45	919.71	2.74	923.91	918.47	5.44	922.88	918.69	4.19	919.82
6/5/2018	926.15	925.71	923.64	2.07	925.26	921.17	4.09	924.73	921.35	3.38	922.44	919.67	2.77	923.88	918.43	5.45	922.84	918.61	4.23	919.79
6/6/2018	926.09	925.68	923.58	-	925.22	921.18	-	924.69	921.32	-	922.42	919.60	-	923.88	918.36	-	922.80	918.54	-	919.75
6/7/2018	926.09	925.64	923.59	-	925.18	921.19	-	924.66	921.33	-	922.39	919.66	-	923.83	918.41	-	922.76	918.61	-	919.76
6/8/2018	926.13	925.66	923.60	-	925.29	921.18	-	924.78	921.33	-	922.46	919.70	-	923.91	918.46	-	922.86	918.62	-	919.79
6/9/2018	926.08	925.63	923.57	-	925.19	921.18	-	924.66	921.33	-	922.40	919.64	-	923.84	918.41	-	922.77	918.57	-	919.76
6/10/2018	926.12	925.63	923.62	-	925.21	921.18	-	924.70	921.33	-	922.39	919.70	-	923.85	918.46	-	922.78	918.61	-	919.79
6/11/2018	926.06	925.67	923.59	-	925.32	921.18	-	924.86	921.34	-	922.51	919.63	-	924.00	918.38	-	922.92	918.53	-	919.78
6/12/2018	925.98	925.62	923.51	-	925.18	921.19	-	924.69	921.34	-	922.42	919.49	-	923.87	918.24	-	922.80	918.40	-	919.70
6/13/2018	925.93	925.55	923.45	2.10	925.10	921.19	3.91	924.58	921.34	3.24	922.36	919.44	2.92	923.79	918.20	5.59	922.72	918.34	4.38	919.66
6/14/2018	926.03	925.55	923.52	2.03	925.18	921.19	3.99	924.71	921.34	3.37	922.40	919.53	2.87	923.82	918.29	5.53	922.76	918.44	4.32	919.72
6/15/2018	926.00	925.57	923.50	2.07	925.16	921.17	3.99	924.64	921.34	3.30	922.39	919.48	2.91	923.83	918.25	5.58	922.74	918.40	4.34	919.68
6/16/2018	925.96	925.54	923.47	2.07	925.12	921.17	3.95	924.57	921.35	3.22	922.36	919.45	2.91	923.78	918.22	5.56	922.69	918.36	4.33	919.66
6/17/2018	925.99	925.54	923.49	2.05	925.11	921.19	3.92	924.60	921.35	3.25	922.35	919.48	2.87	923.77	918.27	5.50	922.70	918.39	4.31	919.68
6/18/2018	926.10	925.57	923.55	2.02	925.15	921.18	3.97	924.58	921.34	3.24	922.35	919.60	2.75	923.77	918.37	5.40	922.72	918.51	4.21	919.72
6/19/2018	926.17	925.64	923.64	2.00	925.20	921.18	4.02	924.64	921.34	3.30	922.38	919.73	2.65	923.86	918.48	5.38	922.77	918.64	4.13	919.78
6/20/2018	926.25	925.70	923.74	1.96	925.26	921.15	4.11	924.69	921.35	3.34	922.42	919.84	2.58	923.91	918.62	5.29	922.84	918.77	4.07	919.83
6/21/2018	926.26	925.76	923.78	1.98	925.31	921.19	4.12	924.76	921.34	3.42	922.50	919.85	2.65	923.96	918.62	5.34	922.88	918.78	4.10	919.85
6/22/2018	926.21	925.77	923.73	2.04	925.31	921.17	4.14	924.80	921.34	3.46	922.61	919.76	2.85	924.01	918.54	5.47	922.94	918.70	4.24	919.82
6/23/2018	926.12	925.73	923.64	2.09	925.37	921.15	4.22	924.93	921.34	3.59	922.56	919.65	2.91	924.03	918.43	5.60	922.96	918.59	4.37	919.78
6/24/2018	926.03	925.69	923.56	2.13	925.33	921.16	4.17	924.91	921.34	3.57	922.62	919.54	3.08	924.02	918.32	5.70	922.90	918.46	4.44	919.73
6/25/2018	926.07	925.65	923.57	2.08	925.33	921.16	4.17	924.92	921.33	3.59	922.65	919.62	3.03	924.03	918.41	5.62	922.92	918.55	4.37	919.76
6/26/2018	926.08	925.70	923.58	2.12	925.41	921.16	4.25	925.01	921.34	3.67	922.71	919.63	3.08	924.10	918.42	5.68	923.02	918.56	4.46	919.81
6/27/2018	925.98	925.65	923.51	2.14	925.28	921.16	4.12	924.80	921.34	3.46	922.57	919.48	3.09	924.03	918.27	5.76	922.91	918.40	4.51	919.72
6/28/2018	925.88	925.54	923.43	2.11	925.12	921.16	3.96	924.61	921.33	3.28	922.47	919.39	3.08	923.89	918.17	5.72	922.73	918.30	4.43	919.64
6/29/2018	925.79	925.45	923.36	2.09	925.01	921.17	3.84	924.51	921.32	3.19	922.40	919.45	2.95	923.78	918.10	5.68	922.61	918.23	4.38	919.57
6/30/2018	925.72	925.34	923.31	2.03	924.93	921.17	3.76	924.42	921.32	3.10	922.34	919.37	2.97	923.73	918.06	5.67	922.52	918.16	4.36	919.51
7/1/2018	925.74	925.28	923.32	1.96	924.90	921.17	3.73	924.38	921.32	3.06	922.30	919.32	2.98	923.67	918.08	5.59	922.45	918.21	4.24	919.52
7/2/2018	925.78	925.29	923.34	1.95	924.90	921.17	3.73	924.38	921.33	3.05	922.29	919.33	2.96	923.65	918.11	5.54	922.43	918.25	4.18	919.52
7/3/2018	925.77	925.30	923.32	1.98	924.90	921.17	3.73	924.39	921.31	3.08	922.30	919.33	2.97	923.63	918.09	5.54	922.43	918.22	4.21	919.51
7/4/2018	925.71	925.25	923.31	1.94	924.86	921.17	3.69	924.35	921.31	3.04	922.29	919.11	3.18	923.63	918.05	5.58	922.41	918.15	4.26	919.48
7/5/2018	925.69	925.24	923.28	1.96	924.83	921.16	3.67	924.33	921.31	3.02	922.27	919.12	3.15	923.59	918.01	5.58	922.38	918.14	4.24	919.46
7/6/2018	925.70	925.21	923.26	1.95	924.82	921.17	3.65	924.31	921.31	3.00	922.26	919.24	3.02	923.59	918.04	5.55	922.36	918.18	4.18	919.46
7/7/2018	925.72	925.19	923.27	1.92	924.83	921.17	3.66	924.31	921.31	3.00	922.25	919.28	2.97	923.58	918.03	5.55	922.36	918.18	4.18	919.47
7/8/2018	925.66	925.19	923.28	1.91	924.81	921.17	3.64	924.29	921.32	2.97	922.24	919.11	3.13	923.57	917.97	5.60	922.36	918.12	4.24	919.43
7/9/2018	925.63	925.15	923.23	1.92	924.76	921.18	3.58	924.25	921.31	2.94	922.23	919.19	3.04	923.55	917.90	5.65	922.31	918.07	4.24	919.41
7/10/2018	925.60	925.10	923.24	1.86	924.74	921.18	3.56	924.22	921.31	2.91	922.19	919.07	3.12	923.52	917.89	5.63	922.26	918.05	4.21	919.40
7/11/2018	925.56	925.08	923.17	1.91	924.69	921.17	3.52	924.20	921.30	2.90	922.17	919.17	3.00	923.49	917.85	5.64	922.25	918.02	4.23	919.36

**Table 5
HCC System Barrier Wall Groundwater Elevations
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067**

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
7/12/2018	925.54	925.06	923.18	1.88	924.66	921.18	3.48	924.16	921.32	2.84	922.14	919.06	3.08	923.45	917.84	5.61	922.20	917.99	4.21	919.34
7/13/2018	925.51	925.01	923.16	1.85	924.63	921.18	3.45	924.14	921.32	2.82	922.14	919.06	3.08	923.42	917.82	5.60	922.16	917.98	4.18	919.34
7/14/2018	925.51	924.97	923.17	1.80	924.59	921.18	3.41	924.11	921.33	2.78	922.10	919.05	3.05	923.41	917.83	5.58	922.12	917.98	4.14	919.31
7/15/2018	925.46	924.94	923.14	1.80	924.58	921.18	3.40	924.07	921.31	2.76	922.10	919.08	3.02	923.35	917.82	5.53	922.10	917.99	4.11	919.32
7/16/2018	925.45	924.93	923.15	1.78	924.64	921.18	3.46	924.24	921.32	2.92	922.20	919.09	3.11	923.38	917.83	5.55	922.12	917.98	4.14	919.30
7/17/2018	925.42	924.91	923.12	1.79	924.55	921.18	3.37	924.09	921.31	2.78	922.12	919.02	3.10	923.38	917.80	5.58	922.08	917.95	4.13	919.28
7/18/2018	925.40	924.85	923.09	1.76	924.52	921.18	3.34	924.00	921.31	2.69	922.07	919.08	2.99	923.31	917.77	5.54	922.04	917.92	4.12	919.26
7/19/2018	925.35	924.83	923.08	1.75	924.47	921.18	3.29	923.96	921.32	2.64	922.02	919.09	2.93	923.28	917.75	5.53	921.96	917.88	4.08	919.23
7/20/2018	925.31	924.78	923.07	1.71	924.41	921.18	3.23	923.91	921.32	2.59	922.00	919.10	2.90	923.21	917.71	5.50	921.92	917.83	4.09	919.09
7/21/2018	925.28	924.73	923.05	1.68	924.36	921.18	3.18	923.85	921.30	2.55	921.96	919.10	2.86	923.15	917.68	5.47	921.84	917.80	4.04	919.00
7/22/2018	925.25	924.67	923.03	1.64	924.30	921.18	3.12	923.83	921.31	2.52	921.94	919.11	2.83	923.10	917.65	5.45	921.80	917.78	4.02	918.97
7/23/2018	925.18	924.61	923.01	1.60	924.25	921.19	3.06	923.75	921.32	2.43	921.90	919.10	2.80	923.04	917.63	5.41	921.73	917.75	3.98	918.94
7/24/2018	925.16	924.59	922.98	1.61	924.33	921.18	3.15	923.90	921.32	2.58	921.97	919.10	2.87	923.10	917.64	5.46	921.77	917.72	4.05	918.91
7/25/2018	925.14	924.56	922.96	1.60	924.22	921.19	3.03	923.74	921.32	2.42	921.86	919.10	2.76	923.02	917.59	5.43	921.65	917.67	3.98	918.89
7/26/2018	925.11	924.49	922.94	1.55	924.18	921.19	2.99	923.67	921.32	2.35	921.86	919.10	2.76	922.97	917.57	5.40	921.62	917.68	3.94	918.85
7/27/2018	925.09	924.47	922.93	1.54	924.16	921.19	2.97	923.69	921.32	2.37	921.87	919.10	2.77	922.94	917.57	5.37	921.55	917.65	3.90	918.83
7/28/2018	925.05	924.45	922.92	1.53	924.22	921.19	3.03	923.83	921.32	2.51	921.97	919.11	2.86	922.99	917.58	5.41	921.64	917.66	3.98	918.82
7/29/2018	925.02	924.41	922.89	1.52	924.19	921.19	3.00	923.81	921.32	2.49	921.94	919.11	2.83	922.95	917.57	5.38	921.61	917.65	3.96	918.82
7/30/2018	924.98	924.38	922.88	1.50	924.10	921.20	2.90	923.64	921.32	2.32	921.83	919.12	2.71	922.90	917.54	5.36	921.55	917.64	3.91	918.78
7/31/2018	924.94	924.30	922.85	1.45	923.98	921.18	2.80	923.51	921.33	2.18	921.76	919.12	2.64	922.79	917.51	5.28	921.42	917.59	3.83	918.74
8/1/2018	924.92	924.25	922.83	1.42	923.91	921.18	2.73	923.42	921.33	2.09	921.69	919.12	2.57	922.70	917.50	5.20	921.32	917.58	3.74	918.70
8/2/2018	924.90	924.18	922.81	1.37	923.84	921.16	2.68	923.33	921.32	2.01	921.63	919.13	2.50	922.59	917.47	5.12	921.21	917.56	3.65	918.66
8/3/2018	924.82	924.13	922.80	1.33	923.78	921.19	2.59	923.27	921.32	1.95	921.58	919.12	2.46	922.51	917.44	5.07	921.13	917.53	3.60	918.62
8/4/2018	924.81	924.07	922.77	1.30	923.73	921.16	2.57	923.20	921.32	1.88	921.54	919.11	2.43	922.43	917.43	5.00	921.04	917.53	3.51	918.57
8/5/2018	924.80	924.03	922.76	1.27	923.67	921.17	2.50	923.14	921.33	1.81	921.50	919.12	2.38	922.36	917.41	4.95	920.96	917.50	3.46	918.53
8/6/2018	924.75	923.98	922.74	1.24	923.62	921.17	2.45	923.10	921.33	1.77	921.45	919.11	2.34	922.29	917.36	4.93	920.88	917.47	3.41	918.48
8/7/2018	924.71	923.95	922.72	1.23	923.57	921.16	2.41	923.04	921.33	1.71	921.40	919.11	2.29	922.21	917.34	4.87	920.80	917.45	3.35	918.43
8/8/2018	924.70	923.89	922.70	1.19	923.52	921.18	2.34	922.96	921.33	1.63	921.35	919.10	2.25	922.14	917.30	4.84	920.70	917.41	3.29	918.39
8/9/2018	924.65	923.84	922.69	1.15	923.46	921.16	2.30	922.93	921.33	1.60	921.30	919.12	2.18	922.06	917.29	4.77	920.61	917.39	3.22	918.33
8/10/2018	924.63	923.78	922.66	1.12	923.38	921.16	2.22	922.81	921.31	1.50	921.22	919.10	2.12	921.94	917.28	4.66	920.51	917.39	3.12	918.28
8/11/2018	924.58	923.74	922.65	1.09	923.33	921.16	2.17	922.75	921.30	1.45	921.14	919.09	2.05	921.85	917.27	4.58	920.40	917.37	3.03	918.22
8/12/2018	924.59	923.71	922.64	1.07	923.29	921.17	2.12	922.69	921.32	1.37	921.10	919.10	2.00	921.76	917.26	4.50	920.34	917.38	2.96	918.21
8/13/2018	924.60	923.70	922.63	1.07	923.27	921.16	2.11	922.68	921.31	1.37	921.07	919.10	1.97	921.71	917.25	4.46	920.29	917.36	2.93	918.18
8/14/2018	924.57	923.67	922.62	1.05	923.27	921.16	2.11	922.64	921.31	1.33	921.05	919.10	1.95	921.67	917.24	4.43	920.25	917.33	2.92	918.15
8/15/2018	924.52	923.64	922.61	1.03	923.22	921.17	2.05	922.60	921.31	1.29	921.01	919.10	1.91	921.61	917.21	4.40	920.18	917.31	2.87	918.11
8/16/2018	924.48	923.60	922.60	1.00	923.16	921.17	1.99	922.55	921.31	1.24	920.97	919.10	1.87	921.55	917.20	4.35	920.11	917.28	2.83	918.07
8/17/2018	924.45	923.54	922.56	0.98	923.11	921.17	1.94	922.49	921.29	1.20	920.92	919.12	1.80	921.47	917.18	4.29	920.04	917.24	2.80	917.99
8/18/2018	924.40	923.51	922.54	0.97	923.05	921.17	1.88	922.45	921.31	1.14	920.87	919.11	1.76	921.39	917.16	4.23	919.97	917.23	2.74	917.93
8/19/2018	924.39	923.47	922.54	0.93	923.02	921.17	1.85	922.40	921.31	1.09	920.83	919.10	1.73	921.32	917.20	4.12	919.87	917.22	2.65	917.89
8/20/2018	924.37	923.43	922.52	0.91	922.97	921.17	1.80	922.34	921.31	1.03	920.77	919.11	1.66	921.26	917.20	4.06	919.78	917.20	2.58	917.85
8/21/2018	924.32	923.38	922.50	0.88	922.91	921.16	1.75	922.29	921.30	0.99	920.73	919.11	1.62	921.16	917.20	3.96	919.69	917.20	2.49	917.80
8/22/2018	924.27	923.34	922.48	-	922.85	921.16	-	922.24	921.29	-	920.69	919.10	-	921.11	917.18	-	919.58	917.23	-	917.73
8/23/2018	924.25	923.30	922.46	-	922.80	921.17	-	922.17	921.29	-	920.62	919.11	-	921.03	917.18	-	919.48	917.22	-	917.62
8/24/2018	924.22	923.26	922.44	-	922.77	921.18	-	922.12	921.30	-	920.57	919.11	-	920.96	917.18	-	919.39	917.24	-	917.58
8/25/2018	924.19	923.22	922.42	-	922.73	921.17	-	922.08	921.31	-	920.51	919.11	-	920.87	917.18	-	919.29	917.24	-	917.53
8/26/2018	924.17	923.18	922.41	-	922.66	921.19	-	922.02	921.31	-	920.46	919.11	-	920.82	917.18	-	919.22	917.25	-	917.50
8/27/2018	924.20	923.15	922.38	-	922.66	921.18	-	922.01	921.29	-	920.42	919.12	-	920.77	917.19	-	919.18	917.25	-	917.49
8/28/2018	924.21	923.16	922.39	-	922.65	921.19	-	922.00	921.30	-	920.41	919.11	-	920.75	917.19	-	919.16	917.24	-	917.49

**Table 5
HCC System Barrier Wall Groundwater Elevations
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067**

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
8/29/2018	924.16	923.14	922.38	-	922.62	921.18	-	921.97	921.31	-	920.40	919.12	-	920.73	917.19	-	919.10	917.25	-	917.46
8/30/2018	924.13	923.10	922.36	-	922.58	921.19	-	921.94	921.30	-	920.36	919.12	-	920.70	917.19	-	919.06	917.25	-	917.42
8/31/2018	924.11	923.09	922.35	-	922.53	921.18	-	921.89	921.30	-	920.33	919.12	-	920.64	917.18	-	919.00	917.24	-	917.40
9/1/2018	924.09	923.03	922.31	-	922.52	921.20	-	921.84	921.31	-	920.28	919.13	-	920.60	917.19	-	918.93	917.25	-	917.38
9/2/2018	924.06	923.01	922.31	-	922.46	921.19	-	921.82	921.31	-	920.26	919.13	-	920.56	917.19	-	918.88	917.25	-	917.35
9/3/2018	924.04	922.95	922.30	-	922.43	921.20	-	921.77	921.31	-	920.22	919.13	-	920.50	917.19	-	918.83	917.24	-	917.31
9/4/2018	924.01	922.93	922.30	-	922.39	921.19	-	921.70	921.31	-	920.18	919.13	-	920.44	917.20	-	918.79	917.24	-	917.28
9/5/2018	923.98	922.92	922.27	-	922.34	921.20	-	921.67	921.31	-	920.14	919.13	-	920.37	917.20	-	918.74	917.24	-	917.24
9/6/2018	923.93	922.87	922.25	-	922.30	921.19	-	921.63	921.30	-	920.11	919.12	-	920.31	917.21	-	918.70	917.23	-	917.21
9/7/2018	923.92	922.82	922.29	0.53	922.27	921.20	1.07	921.55	921.31	0.24	920.06	919.13	0.93	920.24	917.20	3.04	918.65	917.23	1.42	917.18
9/8/2018	923.93	922.78	922.31	0.47	922.23	921.18	1.05	921.50	921.31	0.19	920.03	919.14	0.89	920.16	917.20	2.96	918.60	917.23	1.37	917.16
9/9/2018	923.89	922.75	922.26	0.49	922.21	921.19	1.02	921.47	921.31	0.16	919.99	919.14	0.85	920.11	917.20	2.91	918.57	917.24	1.33	917.15
9/10/2018	923.89	922.73	922.25	0.48	922.20	921.20	1.00	921.47	921.31	0.16	919.98	919.14	0.84	920.07	917.21	2.86	918.56	917.23	1.33	917.15
9/11/2018	923.94	922.75	922.24	0.51	922.22	921.18	1.04	921.47	921.30	0.17	919.96	919.14	0.82	920.06	917.20	2.86	918.59	917.23	1.36	917.21
9/12/2018	924.04	922.82	922.27	0.55	922.31	921.16	1.15	921.57	921.29	0.28	920.02	919.14	0.88	920.16	917.20	2.96	918.69	917.23	1.46	917.27
9/13/2018	924.07	922.89	922.28	0.61	922.37	921.17	1.20	921.63	921.30	0.33	920.08	919.13	0.95	920.25	917.19	3.06	918.74	917.22	1.52	917.31
9/14/2018	924.09	922.94	922.29	0.65	922.44	921.17	1.27	921.71	921.31	0.40	920.15	919.11	1.04	920.39	917.21	3.18	918.80	917.22	1.58	917.33
9/15/2018	924.06	922.97	922.30	0.67	922.45	921.17	1.28	921.74	921.31	0.43	920.20	919.14	1.06	920.48	917.20	3.28	918.82	917.23	1.59	917.32
9/16/2018	924.02	922.94	922.29	0.65	922.44	921.18	1.26	921.73	921.31	0.42	920.22	919.14	1.08	920.49	917.20	3.29	918.82	917.22	1.60	917.34
9/17/2018	924.24	923.04	922.37	0.67	922.64	921.18	1.46	921.94	921.29	0.65	920.34	919.13	1.21	920.65	917.20	3.45	919.01	917.22	1.79	917.49
9/18/2018	924.25	923.19	922.42	0.77	922.73	921.18	1.55	922.03	921.28	0.75	920.42	919.12	1.30	920.77	917.20	3.57	919.14	917.22	1.92	917.52
9/19/2018	924.19	923.22	922.41	0.81	922.73	921.19	1.54	922.04	921.28	0.76	920.49	919.13	1.36	920.86	917.21	3.65	919.18	917.22	1.96	917.50
9/20/2018	924.11	923.18	922.39	0.79	922.67	921.19	1.48	922.01	921.29	0.72	920.48	919.12	1.36	920.83	917.20	3.63	919.13	917.22	1.91	917.44
9/21/2018	924.04	923.10	922.36	0.74	922.59	921.19	1.40	921.92	921.30	0.62	920.44	919.13	1.31	920.80	917.20	3.60	919.05	917.22	1.83	917.40
9/22/2018	924.02	923.04	922.35	0.69	922.53	921.20	1.33	921.86	921.30	0.56	920.36	919.14	1.22	920.68	917.21	3.47	918.97	917.22	1.75	917.37
9/23/2018	924.43	923.27	922.56	0.71	923.00	921.19	1.81	922.41	921.28	1.13	920.72	919.14	1.58	921.06	917.23	3.83	919.50	917.37	2.13	917.81
9/24/2018	924.55	923.54	922.63	0.91	923.17	921.21	1.96	922.49	921.28	1.21	920.83	919.12	1.71	921.26	917.24	4.02	919.75	917.34	2.41	917.98
9/25/2018	924.49	923.65	922.64	1.01	923.20	921.20	2.00	922.55	921.29	1.26	920.94	919.12	1.82	921.46	917.19	4.27	919.86	917.32	2.54	917.93
9/26/2018	924.36	923.60	922.60	1.00	923.14	921.21	1.93	922.52	921.29	1.23	920.97	919.11	1.86	921.52	917.21	4.31	919.83	917.27	2.56	917.87
9/27/2018	924.29	923.53	922.55	0.98	923.04	921.20	1.84	922.45	921.29	1.16	920.93	919.11	1.82	921.46	917.20	4.26	919.74	917.26	2.48	917.78
9/28/2018	924.18	923.43	922.51	0.92	922.94	921.20	1.74	922.34	921.28	1.06	920.85	919.13	1.72	921.33	917.20	4.13	919.61	917.24	2.37	917.70
9/29/2018	924.11	923.32	922.47	0.85	922.81	921.18	1.63	922.20	921.29	0.91	920.73	919.12	1.61	921.16	917.20	3.96	919.45	917.24	2.21	917.56
9/30/2018	924.02	923.22	922.42	0.80	922.69	921.20	1.49	922.07	921.29	0.78	920.59	919.13	1.46	920.97	917.20	3.77	919.25	917.23	2.02	917.46
10/1/2018	924.00	923.12	922.38	0.74	922.56	921.20	1.36	921.93	921.29	0.64	920.44	919.11	1.33	920.78	917.20	3.58	919.05	917.22	1.83	917.37
10/2/2018	924.20	923.13	922.51	0.62	922.78	921.21	1.57	922.23	921.29	0.94	920.56	919.11	1.45	920.83	917.20	3.63	919.24	917.22	2.02	917.57
10/3/2018	924.54	923.43	922.63	0.80	923.08	921.18	1.90	922.47	921.30	1.17	920.70	919.11	1.59	921.10	917.22	3.88	919.63	917.32	2.31	917.91
10/4/2018	924.58	923.71	922.69	1.02	923.27	921.18	2.09	922.61	921.29	1.32	920.90	919.12	1.78	921.38	917.22	4.16	919.88	917.33	2.55	918.04
10/5/2018	924.57	923.83	922.71	1.12	923.35	921.19	2.16	922.71	921.30	1.41	921.05	919.12	1.93	921.62	917.19	4.43	920.01	917.32	2.69	918.02
10/6/2018	924.64	923.90	922.74	1.16	923.49	921.19	2.30	922.90	921.29	1.61	921.18	919.11	2.07	921.81	917.21	4.60	920.19	917.32	2.87	918.14
10/7/2018	924.72	924.03	922.76	1.27	923.59	921.19	2.40	922.99	921.29	1.70	921.29	919.12	2.17	921.99	917.22	4.77	920.34	917.33	3.01	918.21
10/8/2018	924.70	924.08	922.76	1.32	923.61	921.17	2.44	923.02	921.30	1.72	921.38	919.11	2.27	922.14	917.21	4.93	920.41	917.32	3.09	918.20
10/9/2018	924.74	924.09	922.80	1.29	923.69	921.21	2.48	923.11	921.29	1.82	921.44	919.11	2.33	922.22	917.23	4.99	920.50	917.36	3.14	918.27
10/10/2018	924.90	924.21	922.83	1.38	923.83	921.17	2.66	923.22	921.28	1.94	921.51	919.11	2.40	922.32	917.40	4.92	920.61	917.44	3.17	918.37
10/11/2018	924.89	924.33	922.87	1.46	923.90	921.21	2.69	923.30	921.28	2.02	921.58	919.12	2.46	922.46	917.29	5.17	920.69	917.41	3.28	918.38
10/12/2018	924.81	924.34	922.88	1.46	923.97	921.21	2.76	923.48	921.29	2.19	921.77	919.11	2.66	922.57	917.29	5.28	920.81	917.40	3.41	918.36
10/13/2018	924.70	924.28	922.78	1.50	923.97	921.19	2.78	923.53	921.29	2.24	921.81	919.11	2.70	922.65	917.16	5.49	920.82	917.39	3.43	918.32
10/14/2018	924.59	924.18	922.70	1.48	923.81	921.17	2.64	923.29	921.29	2.00	921.65	919.12	2.53	922.54	917.23	5.31	920.67	917.34	3.33	918.23
10/15/2018	924.49	924.03	922.67	1.36	923.59	921.18	2.41	923.05	921.29	1.76	921.50	919.12	2.38	922.32	917.20	5.12	920.45	917.29	3.16	918.09

**Table 5
HCC System Barrier Wall Groundwater Elevations
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067**

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
10/16/2018	924.39	923.89	922.67	1.22	923.42	921.18	2.24	922.87	921.29	1.58	921.35	919.11	2.24	922.10	917.20	4.90	920.24	917.26	2.98	917.98
10/17/2018	924.31	923.74	922.64	1.10	923.26	921.21	2.05	922.70	921.29	1.41	921.22	919.11	2.11	921.88	917.21	4.67	920.06	917.25	2.81	917.88
10/18/2018	924.23	923.61	922.61	1.00	923.11	921.15	1.96	922.55	921.28	1.27	921.06	919.12	1.94	921.63	917.22	4.41	919.87	917.25	2.62	917.76
10/19/2018	924.16	923.48	922.59	0.89	922.96	921.21	1.75	922.39	921.29	1.10	920.90	919.12	1.78	921.40	917.23	4.17	919.66	917.25	2.41	917.66
10/20/2018	924.09	923.37	922.56	0.81	922.82	921.19	1.63	922.23	921.29	0.94	920.75	919.11	1.64	921.17	917.20	3.97	919.44	917.23	2.21	917.54
10/21/2018	924.04	923.24	922.53	0.71	922.69	921.20	1.49	922.08	921.28	0.80	920.59	919.12	1.47	920.95	917.21	3.74	919.23	917.24	1.99	917.45
10/22/2018	923.98	923.14	922.50	0.64	922.58	921.21	1.37	921.94	921.29	0.65	920.45	919.11	1.34	920.77	917.20	3.57	919.01	917.23	1.78	917.36
10/23/2018	923.92	923.04	922.48	0.56	922.46	921.21	1.25	921.80	921.29	0.51	920.32	919.11	1.21	920.60	917.18	3.42	918.85	917.25	1.60	917.28
10/24/2018	923.89	922.96	922.44	0.52	922.38	921.21	1.17	921.71	921.29	0.42	920.21	919.12	1.09	920.43	917.21	3.22	918.72	917.24	1.48	917.22
10/25/2018	923.86	922.88	922.41	0.47	922.30	921.21	1.09	921.60	921.29	0.31	920.10	919.12	0.98	920.28	917.20	3.08	918.62	917.24	1.38	917.17
10/26/2018	924.66	923.48	923.46	0.02	923.43	921.21	2.22	923.17	921.29	1.88	921.53	919.12	2.41	921.38	917.23	4.15	919.66	917.53	2.13	918.11
10/27/2018	925.32	924.48	923.41	1.07	924.22	921.20	3.02	923.54	921.29	2.25	921.47	919.12	2.35	922.18	917.72	4.46	920.62	917.91	2.71	918.64
10/28/2018	926.16	925.48	924.00	1.48	925.41	921.19	4.22	924.96	921.29	3.67	922.63	919.78	2.85	923.43	918.37	5.06	921.76	918.54	3.22	919.38
10/29/2018	926.36	926.31	924.09	2.22	925.79	921.17	4.62	925.24	921.29	3.95	922.83	919.60	3.23	924.26	918.33	5.93	922.84	918.58	4.26	919.75
10/30/2018	926.25	926.48	923.93	2.55	925.89	921.19	4.70	925.35	921.31	4.04	922.98	919.32	3.66	924.53	917.94	6.59	923.28	918.32	4.96	919.72
10/31/2018	926.34	926.48	923.93	2.55	926.03	921.19	4.84	925.56	921.31	4.25	923.26	919.22	4.04	924.72	918.19	6.53	923.42	918.24	5.18	919.80
11/1/2018	926.80	927.09	924.44	2.65	926.80	921.20	5.60	926.39	921.30	5.09	923.89	919.92	3.97	925.33	918.85	6.48	924.16	919.01	5.15	920.49
11/2/2018	928.57	928.06	926.57	1.49	928.06	921.68	6.38	927.58	922.11	5.47	924.38	922.86	1.52	926.42	921.49	4.93	925.58	921.69	3.89	922.22
11/3/2018	927.78	928.37	925.85	2.52	927.80	921.18	6.62	927.33	921.33	6.00	924.16	921.53	2.63	926.31	920.39	5.92	925.49	920.41	5.08	921.60
11/4/2018	928.52	928.59	926.33	2.26	928.32	921.22	7.10	927.70	921.59	6.11	924.56	922.34	2.22	926.79	920.89	5.90	925.93	921.22	4.71	922.30
11/5/2018	928.16	928.59	925.94	2.65	928.21	921.17	7.04	927.66	921.34	6.32	924.44	921.71	2.73	926.67	920.58	6.09	925.81	920.61	5.20	921.84
11/6/2018	928.03	928.62	925.85	2.77	928.18	921.20	6.98	927.64	921.32	6.32	924.40	921.48	2.92	926.64	920.35	6.29	925.80	920.35	5.45	921.69
11/7/2018	927.57	928.40	925.27	3.13	927.84	921.20	6.64	927.40	921.34	6.06	924.16	920.78	3.38	926.29	919.33	6.96	925.42	919.68	5.74	921.18
11/8/2018	927.19	928.11	924.63	3.48	927.50	921.21	6.29	927.12	921.33	5.79	923.94	920.20	3.74	925.94	918.82	7.12	925.01	919.12	5.89	920.77
11/9/2018	926.90	927.78	924.25	3.53	927.18	921.20	5.98	926.79	921.33	5.46	923.76	919.81	3.95	925.63	918.49	7.14	924.66	918.79	5.87	920.47
11/10/2018	926.65	927.43	924.00	3.43	926.85	921.18	5.67	926.49	921.33	5.16	923.57	919.57	4.00	925.35	918.16	7.19	924.32	918.54	5.78	920.22
11/11/2018	926.45	927.07	923.81	3.26	926.55	921.19	5.36	926.18	921.32	4.86	923.41	919.42	3.99	925.11	918.15	6.96	924.00	918.38	5.62	920.00
11/12/2018	926.28	926.78	923.68	3.10	926.28	921.19	5.09	925.92	921.31	4.61	923.32	919.30	4.02	924.91	918.09	6.82	923.73	918.26	5.47	919.80
11/13/2018	926.11	926.54	923.57	2.97	926.08	921.18	4.90	925.72	921.32	4.40	923.14	919.22	3.92	924.74	917.83	6.91	923.49	918.16	5.33	919.66
11/14/2018	925.99	926.30	923.49	2.81	925.90	921.18	4.72	925.49	921.33	4.16	923.02	919.16	3.86	924.55	917.71	6.84	923.26	918.09	5.17	919.55
11/15/2018	925.95	926.16	923.44	2.72	925.76	921.18	4.58	925.36	921.33	4.03	922.92	919.21	3.71	924.41	917.75	6.66	923.08	918.13	4.95	919.49
11/16/2018	925.90	926.04	923.42	2.62	925.67	921.18	4.49	925.26	921.32	3.94	922.87	919.20	3.67	924.32	917.95	6.37	922.94	918.14	4.80	919.48
11/17/2018	925.85	925.96	923.40	2.56	925.58	921.18	4.40	925.17	921.33	3.84	922.81	919.20	3.61	924.25	918.08	6.17	922.85	918.11	4.74	919.43
11/18/2018	925.78	925.90	923.37	2.53	925.51	921.17	4.34	925.08	921.33	3.75	922.76	919.14	3.62	924.18	917.98	6.20	922.76	918.05	4.71	919.39
11/19/2018	925.69	925.80	923.33	2.47	925.41	921.18	4.23	925.00	921.34	3.66	922.70	919.14	3.56	924.11	917.92	6.19	922.64	917.99	4.65	919.31
11/20/2018	925.65	925.73	923.29	2.44	925.33	921.18	4.15	924.92	921.35	3.57	922.65	919.13	3.52	924.02	917.58	6.44	922.57	917.95	4.62	919.26
11/21/2018	925.62	925.64	923.26	2.38	925.27	921.20	4.07	924.85	921.33	3.52	922.60	919.12	3.48	923.95	917.84	6.11	922.49	917.91	4.58	919.21
11/22/2018	925.59	925.58	923.25	2.33	925.20	921.18	4.02	924.79	921.35	3.44	922.57	919.15	3.42	923.90	917.82	6.08	922.43	917.91	4.52	919.17
11/23/2018	925.94	925.97	923.50	2.47	925.83	921.20	4.63	925.61	921.35	4.26	923.11	919.15	3.96	924.45	917.86	6.59	922.97	918.13	4.84	919.51
11/24/2018	926.12	926.29	923.67	2.62	926.05	921.18	4.87	925.71	921.33	4.38	923.14	919.22	3.92	924.71	917.74	6.97	923.42	918.18	5.24	919.69
11/25/2018	926.07	926.34	923.62	2.72	925.95	921.18	4.77	925.54	921.33	4.21	923.04	919.16	3.88	924.54	917.68	6.86	923.34	918.10	5.24	919.62
11/26/2018	926.17	926.23	923.54	2.69	925.88	921.18	4.70	925.49	921.35	4.14	923.08	919.14	3.94	924.61	917.94	6.67	923.24	918.06	5.18	919.58
11/27/2018	927.33	927.12	924.98	2.14	927.08	921.18	5.90	926.77	921.33	5.44	923.89	921.07	2.82	925.46	919.59	5.87	924.42	920.01	4.41	920.82
11/28/2018	927.59	927.97	925.62	2.35	927.58	921.18	6.40	927.15	921.34	5.81	924.06	921.40	2.66	926.08	919.96	6.12	925.20	920.34	4.86	921.40
11/29/2018	927.26	927.94	924.89	3.05	927.32	921.18	6.14	926.86	921.34	5.52	923.87	920.53	3.34	925.86	919.01	6.85	924.91	919.48	5.43	920.89
11/30/2018	926.99	927.69	924.35	3.34	927.03	921.20	5.83	926.56	921.33	5.23	923.68	920.02	3.66	925.58	918.87	6.71	924.57	918.99	5.58	920.54
12/1/2018	926.79	927.39	924.07	3.32	926.78	921.18	5.60	926.31	921.33	4.98	923.54	919.74	3.80	925.36	918.59	6.77	924.29	918.73	5.56	920.31
12/2/2018	926.58	927.09	923.87	3.22	926.52	921.19	5.33	926.05	921.33	4.72	923.37	919.54	3.83	925.13	918.38	6.75	924.01	918.53	5.48	920.13

**Table 5
HCC System Barrier Wall Groundwater Elevations
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067**

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
12/3/2018	926.39	926.82	923.73	3.09	926.27	921.19	5.08	925.79	921.33	4.46	923.23	919.41	3.82	924.91	918.02	6.89	923.75	918.39	5.36	919.93
12/4/2018	926.24	926.58	923.62	2.96	926.08	921.20	4.88	925.65	921.33	4.32	923.18	919.32	3.86	924.75	918.31	6.44	923.56	918.29	5.27	919.78
12/5/2018	926.10	926.37	923.53	2.84	925.95	921.18	4.77	925.56	921.33	4.23	923.11	919.25	3.86	924.56	917.80	6.76	923.40	918.21	5.19	919.66
12/6/2018	925.96	926.20	923.46	2.74	925.80	921.17	4.63	925.42	921.32	4.10	923.03	919.18	3.85	924.52	918.14	6.38	923.26	918.14	5.12	919.56
12/7/2018	925.81	926.01	923.39	2.62	925.55	921.17	4.38	925.09	921.32	3.77	922.81	919.12	3.69	924.31	917.78	6.53	922.97	918.06	4.91	919.47
12/8/2018	925.69	925.85	923.34	2.51	925.37	921.19	4.18	924.93	921.32	3.61	922.70	919.08	3.62	924.17	917.82	6.35	922.78	918.01	4.77	919.40
12/9/2018	925.64	925.72	923.31	2.41	925.25	921.19	4.06	924.77	921.32	3.45	922.61	919.11	3.50	924.05	917.58	6.47	922.63	917.98	4.65	919.32
12/10/2018	925.59	925.60	923.26	2.34	925.15	921.18	3.97	924.67	921.31	3.36	922.53	919.11	3.42	923.95	917.56	6.39	922.52	917.96	4.56	919.28
12/11/2018	926.34	926.01	923.50	2.51	925.69	921.18	4.51	925.27	921.31	3.96	923.14	919.12	4.02	924.35	917.97	6.38	922.81	918.08	4.73	919.65
12/12/2018	926.71	926.91	924.27	2.64	926.79	921.18	5.61	926.48	921.31	5.17	923.64	919.83	3.81	925.43	918.72	6.71	924.34	918.82	5.52	920.43
12/13/2018	927.17	927.69	924.58	3.11	927.51	921.18	6.33	927.18	921.31	5.87	924.15	919.95	4.20	926.03	918.66	7.37	925.00	918.98	6.02	920.84
12/14/2018	927.07	927.89	924.47	3.42	927.35	921.17	6.18	926.95	921.31	5.64	923.91	919.95	3.96	925.92	918.67	7.25	924.93	918.94	5.99	920.71
12/15/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/16/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/17/2018	926.58	927.14	923.83	3.31	926.69	921.18	5.51	926.32	921.30	5.02	923.51	919.51	4.00	925.29	918.40	6.89	924.18	918.46	5.72	920.15
12/18/2018	926.97	927.50	924.18	3.32	927.22	921.17	6.05	926.88	921.29	5.59	923.99	919.79	4.20	925.76	918.59	7.17	924.62	918.82	5.80	920.58
12/19/2018	927.23	927.88	924.70	3.18	927.53	921.17	6.36	927.12	921.31	5.81	924.03	920.28	3.75	926.04	919.13	6.91	925.07	919.24	5.83	920.90
12/20/2018	927.11	927.93	924.46	3.47	927.36	921.16	6.20	926.93	921.32	5.61	923.87	920.02	3.85	925.88	918.60	7.28	924.88	919.01	5.87	920.70
12/21/2018	927.06	927.84	924.35	3.49	927.31	921.16	6.15	926.90	921.32	5.58	923.87	919.95	3.92	925.84	918.58	7.26	924.83	918.93	5.90	920.66
12/22/2018	926.88	927.68	924.17	3.51	927.06	921.19	5.87	926.62	921.33	5.29	923.67	919.69	3.98	925.61	918.38	7.23	924.57	918.66	5.91	920.43
12/23/2018	926.68	927.39	923.97	3.42	926.74	921.18	5.56	926.30	921.33	4.97	923.48	919.52	3.96	925.33	918.38	6.95	924.25	918.48	5.77	920.21
12/24/2018	926.55	927.15	923.89	3.26	926.60	921.17	5.43	926.18	921.32	4.86	923.43	919.44	3.99	925.22	918.06	7.16	924.10	918.39	5.71	920.14
12/25/2018	926.40	926.94	923.80	3.14	926.39	921.19	5.20	925.95	921.32	4.63	923.28	919.35	3.93	925.04	917.96	7.08	923.90	918.28	5.62	919.99
12/26/2018	926.26	926.71	923.68	3.03	926.20	921.18	5.02	925.72	921.31	4.41	923.16	919.28	3.88	924.85	918.11	6.74	923.70	918.19	5.51	919.85
12/27/2018	926.13	926.47	923.59	2.88	925.98	921.19	4.79	925.50	921.32	4.18	923.02	919.21	3.81	924.67	917.89	6.78	923.48	918.12	5.36	919.72
12/28/2018	925.98	926.26	923.50	2.76	925.78	921.18	4.60	925.30	921.31	3.99	922.90	919.16	3.74	924.49	917.92	6.57	923.28	918.05	5.23	919.62
12/29/2018	926.25	926.28	923.66	2.62	925.98	921.19	4.79	925.56	921.32	4.24	923.07	919.24	3.83	924.65	918.08	6.57	923.41	918.16	5.25	919.81
12/30/2018	927.36	927.57	925.05	2.52	927.52	921.18	6.34	927.17	921.31	5.86	924.14	920.51	3.63	926.03	919.32	6.71	925.05	919.49	5.56	921.04
12/31/2018	927.06	927.97	924.67	3.30	927.48	921.18	6.30	927.03	921.30	5.73	923.93	920.05	3.88	925.99	918.64	7.35	925.04	919.06	5.98	920.81
Average Elevation Differential				2.23			4.33			3.68			3.03			5.78			4.46	
Maximum Elevation Differential				3.58			7.1			6.32			4.45			7.53			6.43	

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

"-" denotes no data available

Table 6
Stabilized Field Parameter Values at HCC System Monitoring Wells
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067

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	3/28/2018	GW-1-032818	3.93	182.6	6.15	0.092	5.7
	6/19/2018	GW-1-061918	1.41	300.3	6.24	0.097	11.2
	9/12/2018	GW-1-091218	0.74	110.0	6.27	0.086	11.5
	12/11/2018	GW-1-121118	64.5	254.0	5.88	0.058	6.2
GW-2	3/28/2018	GW-2-032818	2.38	141.8	6.37	0.080	6.9
	6/19/2018	GW-2-061918	0.72	74.6	6.20	0.081	12.1
	9/12/2018	GW-2-091218	1.16	251.5	6.24	0.086	11.7
	12/11/2018	GW-2-121118	7.48	254.3	6.80	0.052	7.2
GW-3	3/28/2018	GW-3-032818	3.36	167.7	6.05	0.097	6.9
	6/20/2018	GW-3-062018	1.46	200.1	5.98	0.094	11.0
	9/12/2018	GW-3-091218	1.69	-33.5	5.97	0.082	12.0
	12/11/2018	GW-3-121118	5.22	155.2	5.90	0.080	5.1
GW-4	3/27/2018	GW-4-032718	2.41	106.4	6.24	0.091	6.3
	6/20/2018	GW-4-062018	3.58	120.8	6.43	0.098	10.3
	9/11/2018	GW-4-091118	3.31	197.8	6.08	0.073	10.0
	12/11/2018	GW-4-121118	5.14	377.5	6.90	0.095	7.4
EW-1	3/27/2018	EW-1-032718	3.11	263.2	6.13	0.070	5.9
	6/19/2018	EW-1-061918	2.45	325.4	6.11	0.067	9.5
	9/12/2018	EW-1-091218	0.71	294.3	6.12	0.065	9.0
	12/12/2018	EW-1-121218	0.91	294.2	6.06	0.097	9.8
EW-2A	3/27/2018	EW-2A-032718	8.29	199.5	6.15	0.068	5.0
	6/20/2018	EW-2A-062018	6.37	212.1	5.80	0.051	9.4
	9/11/2018	EW-2A-091118	5.72	58.9	5.84	0.059	9.5
	12/11/2018	EW-2A-121118	6.39	164.3	5.93	0.092	6.3
5-W-43	3/27/2018	5-W-43-032718	3.76	281.6	6.20	0.067	5.3
	6/19/2018	5-W-43-061918	3.02	244.2	6.01	0.069	10.0
	9/12/2018	5-W-43-091218	1.57	298.2	5.99	0.077	10.4
	12/11/2018	5-W-43-121118	3.08	333.9	6.04	0.095	8.7
2A-W-40	3/28/2018	2A-W-40-032818	10.24	213.3	6.64	0.044	6.6
	6/19/2018	2A-W-40-061918	8.12	180.5	6.49	0.051	9.7
	9/12/2018	2A-W-40-091218	6.56	128.4	6.72	0.057	10.0
	12/11/2018	2A-W-40-121118	12.43	185.7	7.19	0.028	4.1

Table 6
Stabilized Field Parameter Values at HCC System Monitoring Wells
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067

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-41	3/28/2018	2A-W-41-032818	6.09	80.3	6.39	0.149	7.4
	6/20/2018	2A-W-41-062018	7.05	100.0	6.27	0.144	12.2
	9/12/2018	2A-W-41-091218	1.17	-104.9	6.45	0.189	11.4
	12/12/2018	2A-W-41-121218	4.86	76.4	6.24	0.150	9.8
1B-W-23	3/28/2018	1B-W-23-032818	11.50	163.3	6.45	0.062	6.1
	6/20/2018	1B-W-23-062018	9.66	372.1	6.25	0.086	12.7
	9/12/2018	1B-W-23-091218	8.02	220.5	6.31	0.129	15.2
	12/11/2018	1B-W-23-121118	10.21	391.5	6.19	0.054	7.6
2A-W-42	3/28/2018	2A-W-42-032818	4.27	170.6	6.22	0.166	6.9
	6/20/2018	2A-W-42-062018	2.39	192.6	5.97	0.124	11.8
	9/11/2018	2A-W-42-091118	5.12	225.1	5.93	0.172	11.6
	12/11/2018	2A-W-42-121118	2.03	169.7	6.00	0.153	8.5

NOTES:

Field parameters are not measured at sentry wells in barrier wall treatment gates.

HCC = Hydraulic Control and Containment
mS/cm = milliSiemens per centimeter

Table 7
Total Petroleum Hydrocarbon Concentrations in Groundwater
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067

Well	Date	Sample Identification	DRO (µg/l) ¹			ORO (µg/l) ¹			Calculated NWTPH-Dx ² (µg/l)
			Result	MDL	MRL	Result	MDL	MRL	
Sentry Wells									
S1-AD	3/26/2018	S1-AD-032618	< 62	62	62	< 91	91	91	< 77
	9/10/2018	S1-AD-091018	< 62	62	62	< 91	91	91	< 77
	12/12/2018	S1-AD-121218	< 62	62	62	< 91	91	91	< 77
S1-AU	3/26/2018	S1-AU-032618	< 62	62	62	< 92	92	92	< 77
	9/10/2018	S1-AU-091018	< 62	62	62	< 91	91	91	< 77
	12/12/2018	S1-AU-121218	< 62	62	62	< 91	91	91	< 77
S1-BD	3/26/2018	S1-BD-032618	< 62	62	62	< 91	91	91	< 77
	9/10/2018	S1-BD-091018	< 62	62	62	< 92	92	92	< 77
	12/12/2018	S1-BD-121218	< 62	62	62	< 91	91	91	< 77
S1-BU	3/26/2018	S1-BU-032618	< 62	62	62	< 91	91	91	< 77
	9/10/2018	S1-BU-091018	< 62	62	62	< 92	92	92	< 77
	12/12/2018	S1-BU-121218	< 62	62	62	< 92	92	92	< 77
S2-AD	3/26/2018	S2-AD-032618	< 62	62	62	< 91	91	91	< 77
	9/10/2018	S2-AD-091018	< 62	62	62	< 92	92	92	< 77
	12/12/2018	S2-AD-121218	< 62	62	62	< 92	92	92	< 77
S2-AU	3/26/2018	S2-AU-032618	< 62	62	62	< 91	91	91	< 77
	9/10/2018	S2-AU-091018	< 62	62	62	< 92	92	92	< 77
	12/12/2018	S2-AU-121218	< 62	62	62	< 91	91	91	< 77
S2-BD	3/26/2018	S2-BD-032618	< 63	63	63	< 93	93	93	< 78
	9/10/2018	S2-BD-091018	420	62	62	140	91	91	560
	10/2/2018	S2-BD-100218 ⁴	< 62	62	62	< 91	91	91	< 77
	12/12/2018	S2-BD-121218	< 62	62	62	< 92	92	92	< 77
S2-BU	3/26/2018	S2-BU-032618	< 63	63	63	650 J	93	93	682 J
	9/10/2018	S2-BU-091018	< 62	62	62	< 91	91	91	< 77
	10/2/2018	S2-BU-100218 ⁴	< 62	62	62	< 91	91	91	< 77
	12/12/2018	S2-BU-121218	< 62	62	62	< 91	91	91	< 77

Table 7
Total Petroleum Hydrocarbon Concentrations in Groundwater
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067

Well	Date	Sample Identification	DRO (µg/l) ¹			ORO (µg/l) ¹			Calculated NWTPH-Dx ² (µg/l)
			Result	MDL	MRL	Result	MDL	MRL	
S3-AD	3/26/2018	S3-AD-032618	< 63	63	63	< 93	93	93	< 78
	9/11/2018	S3-AD-091118	< 62	62	62	< 91	91	91	< 77
	12/13/2018	S3-AD-121318	< 61	61	61	< 91	91	91	< 76
S3-AU	3/26/2018	S3-AU-032618	< 62	62	62	< 92	92	92	< 77
	9/11/2018	S3-AU-091118	< 62	62	62	< 91	91	91	< 77
	12/13/2018	S3-AU-121318	< 62	62	62	< 91	91	91	< 77
S3-BD	3/26/2018	S3-BD-032618	< 62	62	62	210 J	92	92	241 J
	9/11/2018	S3-BD-091118	< 62	62	62	< 92	92	92	< 77
	12/13/2018	S3-BD-121318	< 61	61	61	< 91	91	91	< 76
S3-BU	3/26/2018	S3-BU-032618	< 62	62	62	< 91	91	91	< 77
	9/11/2018	S3-BU-091118	< 62	62	62	< 91	91	91	< 77
	12/13/2018	S3-BU-121318	< 62	62	62	< 91	91	91	< 77
S3-CD	3/26/2018	S3-CD-032618	< 62	62	62	< 92	92	92	< 77
	9/11/2018	S3-CD-091118	< 62	62	62	< 91	91	91	< 77
	12/13/2018	S3-CD-121318	< 61	61	61	< 91	91	91	< 76
S3-CU	3/26/2018	S3-CU-032618	< 62	62	62	< 91	91	91	< 77
	9/11/2018	S3-CU-091118	< 62	62	62	< 91	91	91	< 77
	12/13/2018	S3-CU-121318	62	62	62	< 91	91	91	108
S4-AD	3/27/2018	S4-AD-032718	< 62	62	62	< 92	92	92	< 77
	9/11/2018	S4-AD-091118	< 62	62	62	< 91	91	91	< 77
	12/13/2018	S4-AD-121318	< 62	62	62	< 91	91	91	< 77
S4-AU	3/27/2018	S4-AU-032718	< 62	62	62	< 92	92	92	< 77
	9/11/2018	S4-AU-091118	< 62	62	62	< 91	91	91	< 77
	12/13/2018	S4-AU-121318	< 62	62	62	< 91	91	91	< 77
S4-BD	3/27/2018	S4-BD-032718	< 62	62	62	< 92	92	92	< 77
	9/11/2018	S4-BD-091118	< 62	62	62	< 91	91	91	< 77
	12/13/2018	S4-BD-121318	< 61	61	61	< 91	91	91	< 76

Table 7
Total Petroleum Hydrocarbon Concentrations in Groundwater
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067

Well	Date	Sample Identification	DRO (µg/l) ¹			ORO (µg/l) ¹			Calculated NWTPH-Dx ² (µg/l)
			Result	MDL	MRL	Result	MDL	MRL	
S4-BU	3/27/2018	S4-BU-032718	< 62	62	62	120 J	91	91	151 J
	9/11/2018	S4-BU-091118	< 62	62	62	< 91	91	91	< 77
	12/13/2018	S4-BU-121318	< 62	62	62	< 92	92	92	< 77
S4-CD	3/27/2018	S4-CD-032718	< 62	62	62	< 91	91	91	< 77
	9/11/2018	S4-CD-091118	< 62	62	62	< 91	91	91	< 77
	12/13/2018	S4-CD-121318	< 61	61	61	< 91	91	91	< 76
S4-CU	3/27/2018	S4-CU-032718	< 62	62	62	< 91	91	91	< 77
	9/11/2018	S4-CU-091118	180	62	62	< 91	91	91	226
	12/13/2018	S4-CU-121318	< 62	62	62	< 91	91	91	< 77
Hydraulic Control and Containment System Monitoring Wells									
GW-1	3/28/2018	GW-1-032818	< 62	62	62	< 92	92	92	< 77
	6/19/2018	GW-1-061918	< 62	62	62	< 91	91	91	< 77
	9/12/2018	GW-1-091218	< 62	62	62	< 91	91	91	< 77
	12/11/2018	GW-1-121118	< 62	62	62	< 92	92	92	< 77
GW-2	3/28/2018	GW-2-032818	< 62	62	62	< 91	91	91	< 77
	6/19/2018	GW-2-061918	< 61	61	61	< 91	91	91	< 76
	9/12/2018	GW-2-091218	< 62	62	62	< 91	91	91	< 77
	12/11/2018	GW-2-121118	130	62	62	270	91	91	400
GW-3	3/28/2018	GW-3-032818	130	62	62	< 92	92	92	176
			< 62 ³	62	62	< 92 ³	92	92	< 77 ³
	6/20/2018	GW-3-062018	420	62	62	180	91	91	600
			140 ³	62	62	< 91 ³	91	91	186 ³
	9/12/2018	GW-3-091218	260	62	62	140	91	91	400
< 62 ³			62	62	< 91 ³	91	91	< 77 ³	
12/11/2018	GW-3-121118	280 130 ³ J	61 61	61 61	120 < 91 ³ J	91 91	91 91	400 176 ³ J	
Site-Specific Remediation Level									477

Table 7
Total Petroleum Hydrocarbon Concentrations in Groundwater
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067

Well	Date	Sample Identification	DRO (µg/l) ¹			ORO (µg/l) ¹			Calculated NWTPH-Dx ² (µg/l)
			Result	MDL	MRL	Result	MDL	MRL	
GW-4	3/27/2018	GW-4-032718	< 63	63	63	< 92	92	92	< 78
	6/20/2018	GW-4-062018	< 62	62	62	< 91	91	91	< 77
	9/11/2018	GW-4-091118	< 61	61	61	< 91	91	91	< 76
	12/11/2018	GW-4-121118	< 62	62	62	< 91	91	91	< 77
EW-1	3/27/2018	EW-1-032718	< 62	62	62	< 91	91	91	< 77
	6/19/2018	EW-1-061918	< 62	62	62	< 91	91	91	< 77
	9/12/2018	EW-1-091218	< 61	61	61	< 91	91	91	< 76
	12/12/2018	EW-1-121218	< 62	62	62	< 91	91	91	< 77
EW-2A	3/27/2018	EW-2A-032718	< 62	62	62	< 92	92	92	< 77
	6/20/2018	EW-2A-062018	< 62	62	62	< 91	91	91	< 77
	9/11/2018	EW-2A-091118	< 62	62	62	< 91	91	91	< 77
	12/11/2018	EW-2A-121118	71	62	62	< 91	91	91	117
5-W-43	3/27/2018	5-W-43-032718	< 62	62	62	< 91	91	91	< 77
	6/19/2018	5-W-43-061918	< 61	61	61	< 91	91	91	< 76
	9/12/2018	5-W-43-091218	< 62	62	62	< 91	91	91	< 77
	12/11/2018	5-W-43-121118	< 61	61	61	< 90	90	90	< 76
2A-W-40	3/28/2018	2A-W-40-032818	< 62	62	62	< 92	92	92	< 77
	6/19/2018	2A-W-40-061918	< 62	62	62	< 92	92	92	< 77
	9/12/2018	2A-W-40-091218	< 62	62	62	< 91	91	91	< 77
	12/11/2018	2A-W-40-121118	79	62	62	95	92	92	174
2A-W-41	3/28/2018	2A-W-41-032818	280	62	62	160	92	92	440
			290 ³	62	62	150 ³	92	92	440 ³
	6/20/2018	2A-W-41-062018	130	62	62	< 91	91	91	176
			< 62 ³	62	62	< 91 ³	91	91	< 77 ³
9/12/2018	2A-W-41-091218	460	62	62	210	91	91	670	
		120 ³	62	62	< 91 ³	91	91	166 ³	
12/12/2018	2A-W-41-121218	210	61	61	230	91	91	440	
		< 61 ³	61	61	< 91 ³	91	91	< 76 ³	
Site-Specific Remediation Level									477

Table 7
Total Petroleum Hydrocarbon Concentrations in Groundwater
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067

Well	Date	Sample Identification	DRO (µg/l) ¹			ORO (µg/l) ¹			Calculated NWTPH-Dx ² (µg/l)
			Result	MDL	MRL	Result	MDL	MRL	
1B-W-23	3/28/2018	1B-W-23-032818	< 62	62	62	< 92	92	92	< 77
	6/20/2018	1B-W-23-062018	< 62	62	62	< 92	92	92	< 77
	9/12/2018	1B-W-23-091218	70	62	62	120	91	91	190
	12/11/2018	1B-W-23-121118	< 62	62	62	< 92	92	92	< 77
2A-W-42	3/28/2018	2A-W-42-032818	110	62	62	< 92	92	92	156
	6/20/2018	2A-W-42-062018	100	62	62	< 91	91	91	146
	9/11/2018	2A-W-42-091118	< 62	62	62	< 91	91	91	< 77
	12/11/2018	2A-W-42-121118	170	61	61	110	91	91	280
Site-Specific Remediation Level									477

NOTES:

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

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

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

²Sum of DRO and ORO, using half the method detection limit for non-detect results.

³Sample analyzed by Ecology Method NWTPH-Dx with silica gel cleanup.

⁴Wells S2-BD and S2-BU were resampled in October 2018 due to elevated NWTPH-Dx concentrations reported in the September 2018 sample from well S2-BD.

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

Table 8
Groundwater Elevations and LNAPL Thicknesses
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067

Location	Measuring Point Elevation ¹ (feet NAVD88)	Date	Depth to Water ² (feet)	Water Level Elevation ¹ (feet NAVD88)	LNAPL Thickness (feet)
GW-1	928.24	3/26/2018	10.65	917.59	—
		6/18/2018	9.99	918.25	—
		9/10/2018	11.71	916.53	—
		12/10/2018	10.73	917.51	—
GW-2	930.29	3/26/2018	12.68	917.61	—
		6/18/2018	12.17	918.12	—
		9/10/2018	13.68	916.61	—
		12/10/2018	12.81	917.48	—
GW-3	935.82	3/26/2018	14.56	921.26	—
		6/18/2018	14.17	921.65	—
		9/10/2018	15.35	920.47	—
		12/10/2018	14.12	921.70	—
GW-4	934.68	3/26/2018	10.52	924.16	—
		6/18/2018	10.35	924.33	—
		9/10/2018	12.14	922.54	—
		12/10/2018	10.66	924.02	—
EW-1	928.72	3/26/2018	10.05	918.67	—
		6/18/2018	9.82	918.90	—
		9/10/2018	11.88	916.84	—
		12/10/2018	10.42	918.30	—
EW-2A	936.2	3/26/2018	10.35	925.85	—
		6/18/2018	9.94	926.26	—
		9/10/2018	12.32	923.88	—
		12/10/2018	10.40	925.80	—
5-W-43	926.18	3/26/2018	7.80	918.38	—
		6/18/2018	7.54	918.64	—
		9/10/2018	9.51	916.67	—
		12/10/2018	8.19	917.99	—
2A-W-40	933.34	3/26/2018	12.25	921.09	—
		6/18/2018	11.81	921.53	—
		9/10/2018	14.26	919.08	—
		12/10/2018	12.26	921.08	—
2A-W-41	935.22	3/26/2018	17.53	917.69	—
		6/18/2018	16.96	918.26	—
		9/10/2018	18.49	916.73	—
		12/10/2018	17.60	917.62	—
1B-W-23	936.25	3/26/2018	16.95	919.30	—
		6/18/2018	17.34	918.91	—
		9/10/2018	17.70	918.55	—
		12/10/2018	16.54	919.71	—
2A-W-42	935.37	3/26/2018	13.10	922.27	—
		6/18/2018	13.11	922.26	—
		9/10/2018	13.58	921.79	—
		12/10/2018	13.35	922.02	—
PZ-1	935.38	3/26/2018	10.98	924.40	—
		6/18/2018	9.43	925.95	—
		9/10/2018	11.65	923.73	—
		12/10/2018	9.92	925.46	—
PZ-2N	934.35	3/26/2018	13.31	921.04	—
		6/18/2018	11.66	922.69	—
		9/10/2018	12.99	921.36	—
		12/10/2018	11.97	922.38	—
PZ-2S	934.94	3/26/2018	10.11	924.83	—
		6/18/2018	9.71	925.23	—
		9/10/2018	11.56	923.38	—
		12/10/2018	8.68	926.26	—

Table 8
Groundwater Elevations and LNAPL Thicknesses
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067

Location	Measuring Point Elevation ¹ (feet NAVD88)	Date	Depth to Water ² (feet)	Water Level Elevation ¹ (feet NAVD88)	LNAPL Thickness (feet)
PZ-3N	934.41	3/26/2018	15.20	919.21	—
		6/18/2018	13.93	920.48	—
		9/10/2018	14.00	920.41	—
		12/10/2018	14.02	920.39	—
PZ-3S	934.45	3/26/2018	10.38	924.07	—
		6/18/2018	9.25	925.20	—
		9/10/2018	12.20	922.25	—
		12/10/2018	9.27	925.18	—
PZ-4N	935.27	3/28/2018	14.64	920.63	—
		6/18/2018	14.59	920.68	—
		9/10/2018	14.65	920.62	—
		12/10/2018	14.64	920.63	—
PZ-4S	935.31	3/26/2018	11.76	923.55	—
		6/18/2018	10.69	924.62	—
		9/10/2018	13.85	921.46	—
		12/10/2018	10.63	924.68	—
PZ-5N	933.15	3/26/2018	16.71	916.44	—
		6/18/2018	14.91	918.24	—
		9/10/2018	15.18	917.97	—
		12/10/2018	15.58	917.57	—
PZ-5S	933.46	3/26/2018	9.19	924.27	Heavy Trace
		6/18/2018	11.30	922.16	1.81
		9/10/2018	15.05	918.41	1.85
		12/10/2018	11.05	922.41	1.63
PZ-6N	931.17	3/26/2018	14.99	916.18	—
		6/18/2018	12.97	918.20	—
		9/10/2018	14.50	916.67	—
		12/10/2018	13.62	917.55	—
PZ-6S	931.41	3/26/2018	8.51	922.90	1.02
		6/18/2018	7.69	923.72	0.06
		9/10/2018	11.60	919.81	0.11
		12/10/2018	8.40	923.01	0.76
PZ-7N	930.37	3/26/2018	14.03	916.34	—
		6/18/2018	12.09	918.28	—
		9/10/2018	14.50	915.87	—
		12/10/2018	12.75	917.62	—
PZ-7S	930.4	3/26/2018	8.88	921.52	—
		6/18/2018	7.67	922.73	—
		9/10/2018	11.87	918.53	—
		12/10/2018	7.83	922.57	—
PZ-8	929.48	3/26/2018	10.92	918.56	—
		6/18/2018	9.56	919.92	—
		9/10/2018	12.20	917.28	—
		12/10/2018	10.05	919.43	—
RW-01	932.84	3/26/2018	8.82	924.02	—
		6/18/2018	8.89	923.95	—
		9/10/2018	11.63	921.21	—
		12/10/2018	9.29	923.55	—
RW-02	933.84	3/26/2018	9.80	924.04	—
		6/18/2018	9.84	924.00	—
		9/10/2018	12.58	921.26	—
		12/10/2018	10.14	923.70	—
RW-03	933.80	3/26/2018	9.76	924.04	—
		6/18/2018	9.89	923.91	—
		9/10/2018	12.52	921.28	Light Trace
		12/10/2018	10.14	923.66	Light Trace

Table 8
Groundwater Elevations and LNAPL Thicknesses
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067

Location	Measuring Point Elevation ¹ (feet NAVD88)	Date	Depth to Water ² (feet)	Water Level Elevation ¹ (feet NAVD88)	LNAPL Thickness (feet)
RW-04	931.86	3/26/2018	7.44	924.42	Light Trace
		6/18/2018	8.89	922.97	Light Trace
		9/10/2018	13.35	918.51	Heavy Trace
		12/10/2018	6.04	925.82	Light Trace
RW-05	928.53	3/26/2018	10.50	918.03	—
		6/18/2018	9.64	918.89	Light Trace
		9/10/2018	12.53	916.00	Light Trace
		12/10/2018	8.92	919.61	0.01
RW-06	928.53	3/26/2018	10.37	918.16	—
		6/18/2018	9.54	918.99	—
		9/10/2018	11.85	916.68	Light Trace
		12/10/2018	8.84	919.69	Light Trace
RW-07	933.06	3/26/2018	8.36	924.70	Heavy Trace
		6/18/2018	8.51	924.55	Heavy Trace
		9/10/2018	11.68	921.38	0.07
		12/10/2018	8.44	924.62	Light Trace
RW-08	931.85	3/26/2018	9.69	922.16	Heavy Trace
		6/18/2018	8.86	922.99	Heavy Trace
		9/10/2018	11.98	919.87	Heavy Trace
		12/10/2018	7.72	924.13	Light Trace
RW-09	933.96	3/26/2018	8.72	925.24	—
		6/18/2018	8.57	925.39	Light Trace ⁴
		9/10/2018	10.60	923.36	—
		12/10/2018	8.99	924.97	—
EG-EV-South Chamber ³	NA	12/10/2018	NA	NA	—
EG-EV-North Chamber ³	NA	12/10/2018	NA	NA	—
EG-CV-South Chamber ³	NA	12/10/2018	NA	NA	—
EG-CV-North Chamber ³	NA	12/10/2018	NA	NA	—
EG-WV-South Chamber (formerly EG-WV)	934.31	3/26/2018	10.13	924.18	—
		6/18/2018	8.42	925.89	—
		9/10/2018	10.46	923.85	—
		12/10/2018	8.84	925.47	—
EG-WV-North Chamber	934.31	—	—	—	—
		6/18/2018	8.41	925.90	—
		9/10/2018	10.46	923.85	—
		12/10/2018	8.84	925.47	—
CG-EV-South Chamber ³	NA	12/10/2018	NA	NA	Light Trace
CG-EV-North Chamber ³	NA	12/10/2018	NA	NA	—
CG-CV-South Chamber ³	NA	12/10/2018	NA	NA	—
CG-CV-North Chamber ³	NA	12/10/2018	NA	NA	—
CG-WV-South Chamber (formerly CG-WV)	937.09	3/26/2018	13.22	923.87	—
		6/18/2018	8.75	928.34	Light Trace
		9/10/2018	11.55	925.54	—
		12/10/2018	9.04	928.05	Light Trace
CG-WV-North Chamber	937.09	—	—	—	—
		6/18/2018	8.66	928.43	—
		9/10/2018	11.46	925.63	—
		12/10/2018	9.02	928.07	—

Table 8
Groundwater Elevations and LNAPL Thicknesses
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Farallon PN: 683-067

Location	Measuring Point Elevation ¹ (feet NAVD88)	Date	Depth to Water ² (feet)	Water Level Elevation ¹ (feet NAVD88)	LNAPL Thickness (feet)
WG-EV-South Chamber (formerly WG-EV)	931.84	3/26/2018	13.61	918.23	—
		6/18/2018	8.45	923.39	Light Trace
		9/10/2018	10.41	921.43	Light Trace
		12/10/2018	8.81	923.03	Light Trace
WG-EV-North Chamber	931.84	—	—	—	—
		6/18/2018	8.42	923.42	—
		9/10/2018	10.38	921.46	Slight Light Sheen
		12/10/2018	8.81	923.03	—
WG-WV-South Chamber ³	NA	12/10/2018	NA	NA	—
WG-WV-North Chamber ³	NA	12/10/2018	NA	NA	—
FWG-EV-South Chamber ³	NA	12/10/2018	NA	NA	—
FWG-EV-North Chamber ³	NA	12/10/2018	NA	NA	—
FWG-WV-South Chamber (formerly FWG-WV)	930.76	3/26/2018	9.41	921.35	—
		6/18/2018	5.14	925.62	—
		9/10/2018	7.93	922.83	—
		12/10/2018	5.08	925.68	—
FWG-WV-North Chamber	930.76	3/26/2018	9.41	921.35	—
		6/18/2018	5.09	925.67	—
		9/10/2018	7.91	922.85	—
		12/10/2018	5.08	925.68	—

NOTES:

— denotes LNAPL was not observed.

¹In feet referenced to North American Vertical Datum of 1988 (NAVD88).

²In feet below measuring point (top of well casing, vault, etc.).

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

⁴Interface probe malfunction suspected.

LNAPL = light nonaqueous-phase liquid

NA = not applicable

**APPENDIX A
LABORATORY ANALYTICAL REPORTS
(PROVIDED ON COMPACT DISC IN HARDCOPY REPORT)**

2018 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: 683-067

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-74080-1

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

For:

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

Attn: Gerald Portele



Authorized for release by:
1/9/2018 2:21:06 PM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.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.

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Case Narrative

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

TestAmerica Job ID: 580-74080-1

Job ID: 580-74080-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-74080-1

Comments

No additional comments.

Receipt

The samples were received on 1/4/2018 1:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was -0.9° C.

GC Semi VOA

Method(s) 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 010418 (580-74080-1).

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: Skyhomish HCC System

TestAmerica Job ID: 580-74080-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-74080-1

Client Sample ID: Before GAC 010418

Lab Sample ID: 580-74080-1

Date Collected: 01/04/18 08:00

Matrix: Water

Date Received: 01/04/18 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)	0.62		0.024		mg/L		01/05/18 10:15	01/08/18 20:23	1
Motor Oil (>C24-C36)	0.27		0.047		mg/L		01/05/18 10:15	01/08/18 20:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	75		50 - 150				01/05/18 10:15	01/08/18 20:23	1

Client Sample Results

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

TestAmerica Job ID: 580-74080-1

Client Sample ID: HCC EFF 010418

Lab Sample ID: 580-74080-2

Date Collected: 01/04/18 08:10

Matrix: Water

Date Received: 01/04/18 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)	ND		0.024		mg/L		01/05/18 10:15	01/08/18 20:45	1
Motor Oil (>C24-C36)	ND		0.048		mg/L		01/05/18 10:15	01/08/18 20:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	73		50 - 150				01/05/18 10:15	01/08/18 20:45	1

Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		01/05/18 15:44	01/08/18 09:57	1
Lead	ND		0.00080		mg/L		01/05/18 15:44	01/08/18 09:57	1



QC Sample Results

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

TestAmerica Job ID: 580-74080-1

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

Lab Sample ID: MB 580-264650/1-A
Matrix: Water
Analysis Batch: 264765

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 264650

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.025		mg/L		01/05/18 10:15	01/08/18 19:17	1
Motor Oil (>C24-C36)	ND		0.050		mg/L		01/05/18 10:15	01/08/18 19:17	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	75		50 - 150	01/05/18 10:15	01/08/18 19:17	1

Lab Sample ID: LCS 580-264650/2-A
Matrix: Water
Analysis Batch: 264765

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 264650

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.410		mg/L		82	59 - 112
Motor Oil (>C24-C36)	0.500	0.421		mg/L		84	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	81		50 - 150

Lab Sample ID: LCSD 580-264650/3-A
Matrix: Water
Analysis Batch: 264765

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 264650

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.381		mg/L		76	59 - 112	7	16
Motor Oil (>C24-C36)	0.500	0.407		mg/L		81	64 - 120	3	17

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	77		50 - 150

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-264709/14-A
Matrix: Water
Analysis Batch: 264789

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 264709

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		01/05/18 15:44	01/08/18 09:53	1
Lead	ND		0.00080		mg/L		01/05/18 15:44	01/08/18 09:53	1

Lab Sample ID: LCS 580-264709/15-A
Matrix: Water
Analysis Batch: 264789

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 264709

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.100	0.0952		mg/L		95	85 - 115
Lead	0.100	0.0916		mg/L		92	85 - 115

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-74080-1

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

Lab Sample ID: LCSD 580-264709/16-A
Matrix: Water
Analysis Batch: 264789

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 264709

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.100	0.101		mg/L		101	85 - 115	6	20
Lead	0.100	0.0964		mg/L		96	85 - 115	5	20

Lab Sample ID: 580-73955-L-1-C MS
Matrix: Water
Analysis Batch: 264789

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 264709

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0015		0.100	0.0971		mg/L		96	70 - 130
Lead	ND		0.100	0.0912		mg/L		91	70 - 130

Lab Sample ID: 580-73955-L-1-D MSD
Matrix: Water
Analysis Batch: 264789

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 264709

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0015		0.100	0.0984		mg/L		97	70 - 130	1	20
Lead	ND		0.100	0.0938		mg/L		94	70 - 130	3	20

Lab Sample ID: 580-73955-L-1-B DU
Matrix: Water
Analysis Batch: 264789

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 264709

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	0.0015		0.00148		mg/L		0.1	20
Lead	ND		ND		mg/L		NC	20

Lab Chronicle

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

TestAmerica Job ID: 580-74080-1

Client Sample ID: Before GAC 010418

Lab Sample ID: 580-74080-1

Date Collected: 01/04/18 08:00

Matrix: Water

Date Received: 01/04/18 13:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			264650	01/05/18 10:15	REY	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264765	01/08/18 20:23	T1W	TAL SEA

Client Sample ID: HCC EFF 010418

Lab Sample ID: 580-74080-2

Date Collected: 01/04/18 08:10

Matrix: Water

Date Received: 01/04/18 13:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			264650	01/05/18 10:15	REY	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	264765	01/08/18 20:45	T1W	TAL SEA
Total/NA	Prep	200.8			264709	01/05/18 15:44	ASJ	TAL SEA
Total/NA	Analysis	200.8		1	264789	01/08/18 09:57	FCW	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-74080-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-18

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-74080-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-74080-1	Before GAC 010418	Water	01/04/18 08:00	01/04/18 13:20
580-74080-2	HCC EFF 010418	Water	01/04/18 08:10	01/04/18 13:20

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-74080-1

Login Number: 74080

List Source: TestAmerica Seattle

List Number: 1

Creator: Hobbs, Kenneth F

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ 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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-74291-1

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: Gerald Portele



Authorized for release by:
1/17/2018 10:38:29 AM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.com

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

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Case Narrative

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

TestAmerica Job ID: 580-74291-1

Job ID: 580-74291-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-74291-1

Comments

No additional comments.

GC Semi VOA

Method(s) NWTPH-Dx: The continuing calibration verification (CCV) associated with batch 580-265244 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. The following samples are impacted: HCC EFF-11018 (580-74291-2) and (CCVRT 580-265244/3).

Method(s) NWTPH-Dx: The %D of surrogate o-Terphenyl for CCV associated with batch 580-265244 was outside the high control limits. All associated samples fell within acceptance criteria for o-Terphenyl; therefore, the data have been reported.
HCC EFF-11018 (580-74291-2) and (CCVRT 580-265244/3)

Method(s) 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-11018 (580-74291-1).

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

TestAmerica Job ID: 580-74291-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-74291-1

Client Sample ID: Before GAC-11018

Lab Sample ID: 580-74291-1

Date Collected: 01/10/18 10:00

Matrix: Water

Date Received: 01/11/18 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)	0.53		0.024		mg/L		01/15/18 10:53	01/16/18 14:12	1
Motor Oil (>C24-C36)	0.42		0.048		mg/L		01/15/18 10:53	01/16/18 14:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	76		50 - 150				01/15/18 10:53	01/16/18 14:12	1

Client Sample Results

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

TestAmerica Job ID: 580-74291-1

Client Sample ID: HCC EFF-11018

Lab Sample ID: 580-74291-2

Date Collected: 01/10/18 10:00

Matrix: Water

Date Received: 01/11/18 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)	ND		0.024		mg/L		01/15/18 10:53	01/15/18 21:48	1
Motor Oil (>C24-C36)	ND		0.047		mg/L		01/15/18 10:53	01/15/18 21:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	74		50 - 150				01/15/18 10:53	01/15/18 21:48	1



QC Sample Results

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

TestAmerica Job ID: 580-74291-1

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

Lab Sample ID: MB 580-265199/1-A
Matrix: Water
Analysis Batch: 265244

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 265199

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.025		mg/L		01/15/18 10:53	01/15/18 20:20	1
Motor Oil (>C24-C36)	ND		0.050		mg/L		01/15/18 10:53	01/15/18 20:20	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	76		50 - 150				01/15/18 10:53	01/15/18 20:20	1

Lab Sample ID: MB 580-265199/1-A
Matrix: Water
Analysis Batch: 265273

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 265199

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.025		mg/L		01/15/18 10:53	01/16/18 14:36	1
Motor Oil (>C24-C36)	ND		0.050		mg/L		01/15/18 10:53	01/16/18 14:36	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	64		50 - 150				01/15/18 10:53	01/16/18 14:36	1

Lab Sample ID: LCS 580-265199/2-A
Matrix: Water
Analysis Batch: 265244

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 265199

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	0.500	0.402		mg/L		80	59 - 112
Motor Oil (>C24-C36)	0.500	0.442		mg/L		88	64 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
<i>o</i> -Terphenyl	86		50 - 150				

Lab Sample ID: LCSD 580-265199/3-A
Matrix: Water
Analysis Batch: 265244

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 265199

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	0.500	0.421		mg/L		84	59 - 112	5	16
Motor Oil (>C24-C36)	0.500	0.466		mg/L		93	64 - 120	5	17
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	78		50 - 150						

Lab Chronicle

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

TestAmerica Job ID: 580-74291-1

Client Sample ID: Before GAC-11018

Lab Sample ID: 580-74291-1

Date Collected: 01/10/18 10:00

Matrix: Water

Date Received: 01/11/18 13:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			265199	01/15/18 10:53	REY	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	265273	01/16/18 14:12	ADB	TAL SEA

Client Sample ID: HCC EFF-11018

Lab Sample ID: 580-74291-2

Date Collected: 01/10/18 10:00

Matrix: Water

Date Received: 01/11/18 13:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			265199	01/15/18 10:53	REY	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	265244	01/15/18 21:48	W1T	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-74291-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-18

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-74291-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-74291-1	Before GAC-11018	Water	01/10/18 10:00	01/11/18 13:20
580-74291-2	HCC EFF-11018	Water	01/10/18 10:00	01/11/18 13:20

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-74291-1

Login Number: 74291

List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ 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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-74359-1

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

For:

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

Attn: Gerald Portele



Authorized for release by:
1/19/2018 2:00:12 PM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.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.

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Case Narrative

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

TestAmerica Job ID: 580-74359-1

Job ID: 580-74359-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-74359-1

Comments

No additional comments.

Receipt

The samples were received on 1/16/2018 2:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was -0.4° C.

GC Semi VOA

Method(s) 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-11518 (580-74359-1).

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: Skyhomish HCC System

TestAmerica Job ID: 580-74359-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-74359-1

Client Sample ID: Before GAC-11518

Lab Sample ID: 580-74359-1

Date Collected: 01/15/18 09:10

Matrix: Water

Date Received: 01/16/18 14:00

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		0.024		mg/L		01/17/18 10:08	01/18/18 13:50	1
Motor Oil (>C24-C36)	0.31		0.047		mg/L		01/17/18 10:08	01/18/18 13:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	68		50 - 150				01/17/18 10:08	01/18/18 13:50	1

Client Sample Results

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

TestAmerica Job ID: 580-74359-1

Client Sample ID: HCC EFF-11518

Lab Sample ID: 580-74359-2

Date Collected: 01/15/18 09:10

Matrix: Water

Date Received: 01/16/18 14:00

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		0.024		mg/L		01/17/18 10:08	01/18/18 14:12	1
Motor Oil (>C24-C36)	ND		0.048		mg/L		01/17/18 10:08	01/18/18 14:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	71		50 - 150				01/17/18 10:08	01/18/18 14:12	1



QC Sample Results

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

TestAmerica Job ID: 580-74359-1

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

Lab Sample ID: MB 580-265392/1-A

Matrix: Water

Analysis Batch: 265480

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 265392

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.025		mg/L		01/17/18 09:34	01/18/18 12:44	1
Motor Oil (>C24-C36)	ND		0.050		mg/L		01/17/18 09:34	01/18/18 12:44	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	62		50 - 150				01/17/18 09:34	01/18/18 12:44	1

Lab Sample ID: LCS 580-265392/2-A

Matrix: Water

Analysis Batch: 265480

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 265392

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.361		mg/L		72	59 - 112
Motor Oil (>C24-C36)	0.500	0.427		mg/L		85	64 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
<i>o</i> -Terphenyl	81		50 - 150				

Lab Sample ID: LCSD 580-265392/3-A

Matrix: Water

Analysis Batch: 265480

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 265392

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.332		mg/L		66	59 - 112	8	16
Motor Oil (>C24-C36)	0.500	0.385		mg/L		77	64 - 120	10	17
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	72		50 - 150						

Lab Chronicle

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

TestAmerica Job ID: 580-74359-1

Client Sample ID: Before GAC-11518

Lab Sample ID: 580-74359-1

Date Collected: 01/15/18 09:10

Matrix: Water

Date Received: 01/16/18 14:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			265392	01/17/18 10:08	REY	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	265480	01/18/18 13:50	W1T	TAL SEA

Client Sample ID: HCC EFF-11518

Lab Sample ID: 580-74359-2

Date Collected: 01/15/18 09:10

Matrix: Water

Date Received: 01/16/18 14:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			265392	01/17/18 10:08	REY	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	265480	01/18/18 14:12	W1T	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-74359-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-18

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-74359-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-74359-1	Before GAC-11518	Water	01/15/18 09:10	01/16/18 14:00
580-74359-2	HCC EFF-11518	Water	01/15/18 09:10	01/16/18 14:00

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-74359-1

Login Number: 74359

List Source: TestAmerica Seattle

List Number: 1

Creator: Hobbs, Kenneth F

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ 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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-74616-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
1/29/2018 12:39:27 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

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

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Case Narrative

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

TestAmerica Job ID: 580-74616-1

Job ID: 580-74616-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-74616-1**

Comments

No additional comments.

Receipt

The samples were received on 1/24/2018 3:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was -0.4° C.

GC Semi VOA

Method(s) 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-12318 (580-74616-1).

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

TestAmerica Job ID: 580-74616-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-74616-1

Client Sample ID: Before GAC-12318

Lab Sample ID: 580-74616-1

Date Collected: 01/23/18 08:45

Matrix: Water

Date Received: 01/24/18 15:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.58		0.024		mg/L		01/26/18 09:24	01/26/18 19:55	1
Motor Oil (>C24-C36)	0.32		0.048		mg/L		01/26/18 09:24	01/26/18 19:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	74		50 - 150				01/26/18 09:24	01/26/18 19:55	1

Client Sample Results

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

TestAmerica Job ID: 580-74616-1

Client Sample ID: HCC EFF-12318

Lab Sample ID: 580-74616-2

Date Collected: 01/23/18 08:45

Matrix: Water

Date Received: 01/24/18 15:00

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		0.024		mg/L		01/26/18 09:24	01/26/18 20:16	1
Motor Oil (>C24-C36)	ND		0.048		mg/L		01/26/18 09:24	01/26/18 20:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	69		50 - 150				01/26/18 09:24	01/26/18 20:16	1

QC Sample Results

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

TestAmerica Job ID: 580-74616-1

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

Lab Sample ID: MB 580-266042/1-A

Matrix: Water

Analysis Batch: 266114

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 266042

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.025		mg/L		01/26/18 09:24	01/26/18 18:26	1
Motor Oil (>C24-C36)	ND		0.050		mg/L		01/26/18 09:24	01/26/18 18:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	69		50 - 150	01/26/18 09:24	01/26/18 18:26	1

Lab Sample ID: LCS 580-266042/2-A

Matrix: Water

Analysis Batch: 266114

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 266042

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.391		mg/L		78	59 - 112
Motor Oil (>C24-C36)	0.500	0.453		mg/L		91	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	81		50 - 150

Lab Sample ID: LCSD 580-266042/3-A

Matrix: Water

Analysis Batch: 266114

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 266042

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.398		mg/L		80	59 - 112	2	16
Motor Oil (>C24-C36)	0.500	0.442		mg/L		88	64 - 120	3	17

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	83		50 - 150

Lab Chronicle

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

TestAmerica Job ID: 580-74616-1

Client Sample ID: Before GAC-12318

Lab Sample ID: 580-74616-1

Date Collected: 01/23/18 08:45

Matrix: Water

Date Received: 01/24/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			266042	01/26/18 09:24	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	266114	01/26/18 19:55	ADB	TAL SEA

Client Sample ID: HCC EFF-12318

Lab Sample ID: 580-74616-2

Date Collected: 01/23/18 08:45

Matrix: Water

Date Received: 01/24/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			266042	01/26/18 09:24	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	266114	01/26/18 20:16	ADB	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-74616-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-18

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-74616-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-74616-1	Before GAC-12318	Water	01/23/18 08:45	01/24/18 15:00
580-74616-2	HCC EFF-12318	Water	01/23/18 08:45	01/24/18 15:00

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-74616-1

Login Number: 74616

List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is <= 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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-74780-1

Client Project/Site: Skykomish HCC System
Sampling Event: Skykomish - GAC/HCC
Revision: 1

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
4/27/2018 4:58:46 PM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.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.

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Case Narrative

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

TestAmerica Job ID: 580-74780-1

Job ID: 580-74780-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-74780-1**

Comments

Report was revised to set the reporting limit to the method detection limit at client request.

No additional comments.

Receipt

The samples were received on 1/31/2018 1:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.5° C.

Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

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

TestAmerica Job ID: 580-74780-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-74780-1

Client Sample ID: Before GAC-013018

Lab Sample ID: 580-74780-1

Date Collected: 01/30/18 15:20

Matrix: Water

Date Received: 01/31/18 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		0.062		mg/L		02/02/18 14:36	02/02/18 18:28	1
Motor Oil (>C24-C36)	0.24		0.090		mg/L		02/02/18 14:36	02/02/18 18:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	82		50 - 150				02/02/18 14:36	02/02/18 18:28	1



Client Sample Results

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

TestAmerica Job ID: 580-74780-1

Client Sample ID: HCC EFF-013018

Lab Sample ID: 580-74780-2

Date Collected: 01/30/18 15:30

Matrix: Water

Date Received: 01/31/18 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		0.062		mg/L		02/02/18 14:36	02/02/18 18:50	1
Motor Oil (>C24-C36)	ND		0.090		mg/L		02/02/18 14:36	02/02/18 18:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	85		50 - 150				02/02/18 14:36	02/02/18 18:50	1

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QC Sample Results

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

TestAmerica Job ID: 580-74780-1

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

Lab Sample ID: MB 580-266580/1-A
Matrix: Water
Analysis Batch: 266591

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 266580

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		02/02/18 14:36	02/02/18 17:23	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		02/02/18 14:36	02/02/18 17:23	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	92		50 - 150				02/02/18 14:36	02/02/18 17:23	1

Lab Sample ID: LCS 580-266580/2-A
Matrix: Water
Analysis Batch: 266591

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 266580

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)	0.500	0.473		mg/L		95	59 - 112		
Motor Oil (>C24-C36)	0.500	0.476		mg/L		95	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
<i>o</i> -Terphenyl	100		50 - 150						

Lab Sample ID: LCSD 580-266580/3-A
Matrix: Water
Analysis Batch: 266591

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 266580

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.482		mg/L		96	59 - 112	2	16
Motor Oil (>C24-C36)	0.500	0.498		mg/L		100	64 - 120	4	17
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	95		50 - 150						

Lab Chronicle

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

TestAmerica Job ID: 580-74780-1

Client Sample ID: Before GAC-013018

Date Collected: 01/30/18 15:20

Date Received: 01/31/18 13:00

Lab Sample ID: 580-74780-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			266580	02/02/18 14:36	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	266591	02/02/18 18:28	TL1	TAL SEA

Client Sample ID: HCC EFF-013018

Date Collected: 01/30/18 15:30

Date Received: 01/31/18 13:00

Lab Sample ID: 580-74780-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			266580	02/02/18 14:36	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	266591	02/02/18 18:50	TL1	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-74780-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-74780-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-74780-1	Before GAC-013018	Water	01/30/18 15:20	01/31/18 13:00
580-74780-2	HCC EFF-013018	Water	01/30/18 15:30	01/31/18 13:00

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-74780-1

Login Number: 74780

List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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?	False	Refer to Job Narrative for details.
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-74983-1

Client Project/Site: Skyhomish HCC System
Sampling Event: Skykomish - GAC/HCC
Revision: 1

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
4/27/2018 5:29:37 PM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.com

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

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Case Narrative

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

TestAmerica Job ID: 580-74983-1

Job ID: 580-74983-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-74983-1**

Comments

Report was revised to set the reporting limit to the method detection limit at client request.

No additional comments.

Receipt

The samples were received on 2/8/2018 1:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.0° C.

GC Semi VOA

Method(s) 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 020718 (580-74983-1).

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: Skyhomish HCC System

TestAmerica Job ID: 580-74983-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-74983-1

Client Sample ID: Before GAC 020718

Lab Sample ID: 580-74983-1

Date Collected: 02/07/18 09:30

Matrix: Water

Date Received: 02/08/18 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)	0.51		0.062		mg/L		02/09/18 08:38	02/09/18 16:20	1
Motor Oil (>C24-C36)	0.28		0.091		mg/L		02/09/18 08:38	02/09/18 16:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	73		50 - 150				02/09/18 08:38	02/09/18 16:20	1

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Client Sample Results

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

TestAmerica Job ID: 580-74983-1

Client Sample ID: HCC EFF 020718

Lab Sample ID: 580-74983-2

Date Collected: 02/07/18 09:40

Matrix: Water

Date Received: 02/08/18 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		0.062		mg/L		02/09/18 08:38	02/09/18 16:42	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		02/09/18 08:38	02/09/18 16:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	70		50 - 150				02/09/18 08:38	02/09/18 16:42	1

Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		02/12/18 11:36	02/12/18 22:52	1
Lead	ND		0.00080		mg/L		02/12/18 11:36	02/12/18 22:52	1

QC Sample Results

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

TestAmerica Job ID: 580-74983-1

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

Lab Sample ID: MB 580-267006/1-A
Matrix: Water
Analysis Batch: 267017

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 267006

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		02/09/18 08:38	02/09/18 14:30	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		02/09/18 08:38	02/09/18 14:30	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	71		50 - 150	02/09/18 08:38	02/09/18 14:30	1

Lab Sample ID: LCS 580-267006/2-A
Matrix: Water
Analysis Batch: 267017

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 267006

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.387		mg/L		77	59 - 112
Motor Oil (>C24-C36)	0.500	0.438		mg/L		88	64 - 120

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

Lab Sample ID: LCSD 580-267006/3-A
Matrix: Water
Analysis Batch: 267017

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 267006

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.399		mg/L		80	59 - 112	3	16
Motor Oil (>C24-C36)	0.500	0.443		mg/L		89	64 - 120	1	17

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	86		50 - 150

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-267133/14-A
Matrix: Water
Analysis Batch: 267187

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 267133

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		02/12/18 11:36	02/12/18 22:48	1
Lead	ND		0.00080		mg/L		02/12/18 11:36	02/12/18 22:48	1

Lab Sample ID: LCS 580-267133/15-A
Matrix: Water
Analysis Batch: 267187

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 267133

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.100	0.0990		mg/L		99	85 - 115
Lead	0.100	0.0968		mg/L		97	85 - 115

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-74983-1

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

Lab Sample ID: LCSD 580-267133/16-A
Matrix: Water
Analysis Batch: 267187

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 267133

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	0.100	0.0987		mg/L		99	85 - 115	0	20
Lead	0.100	0.0961		mg/L		96	85 - 115	1	20

Lab Sample ID: 580-74983-2 MS
Matrix: Water
Analysis Batch: 267187

Client Sample ID: HCC EFF 020718
Prep Type: Total/NA
Prep Batch: 267133

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	ND		0.100	0.0963		mg/L		96	70 - 130		
Lead	ND		0.100	0.0930		mg/L		93	70 - 130		

Lab Sample ID: 580-74983-2 MSD
Matrix: Water
Analysis Batch: 267187

Client Sample ID: HCC EFF 020718
Prep Type: Total/NA
Prep Batch: 267133

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	ND		0.100	0.0957		mg/L		96	70 - 130	1	20
Lead	ND		0.100	0.0953		mg/L		95	70 - 130	2	20

Lab Sample ID: 580-74983-2 DU
Matrix: Water
Analysis Batch: 267187

Client Sample ID: HCC EFF 020718
Prep Type: Total/NA
Prep Batch: 267133

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

Lab Chronicle

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

TestAmerica Job ID: 580-74983-1

Client Sample ID: Before GAC 020718

Date Collected: 02/07/18 09:30

Date Received: 02/08/18 13:00

Lab Sample ID: 580-74983-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			267006	02/09/18 08:38	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	267017	02/09/18 16:20	ADB	TAL SEA

Client Sample ID: HCC EFF 020718

Date Collected: 02/07/18 09:40

Date Received: 02/08/18 13:00

Lab Sample ID: 580-74983-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			267006	02/09/18 08:38	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	267017	02/09/18 16:42	ADB	TAL SEA
Total/NA	Prep	200.8			267133	02/12/18 11:36	PAB	TAL SEA
Total/NA	Analysis	200.8		1	267187	02/12/18 22:52	FCW	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-74983-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-74983-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-74983-1	Before GAC 020718	Water	02/07/18 09:30	02/08/18 13:00
580-74983-2	HCC EFF 020718	Water	02/07/18 09:40	02/08/18 13:00

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-74983-1

Login Number: 74983

List Number: 1

Creator: Hobbs, Kenneth F

List Source: TestAmerica 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	

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-75104-1

Client Project/Site: Skykomish HCC System
Sampling Event: Skykomish - GAC/HCC
Revision: 1

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
4/30/2018 3:17:30 PM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.com

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

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Case Narrative

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

TestAmerica Job ID: 580-75104-1

Job ID: 580-75104-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-75104-1**

Comments

Report was revised to set the reporting limit to the method detection limit at client request.

No additional comments.

Receipt

The samples were received on 2/14/2018 2:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.1° C.

GC Semi VOA

Method(s) NWTPH-Dx: Continuing calibration verification (CCV) standard associated with batch 580-267426 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. (CCV 580-267426/15) and (CCVRT 580-267426/4)

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

TestAmerica Job ID: 580-75104-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-75104-1

Client Sample ID: Before GAC-21318

Lab Sample ID: 580-75104-1

Date Collected: 02/13/18 09:00

Matrix: Water

Date Received: 02/14/18 14:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.53		0.062		mg/L		02/15/18 10:14	02/15/18 21:53	1
Motor Oil (>C24-C36)	0.25		0.090		mg/L		02/15/18 10:14	02/15/18 21:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	66		50 - 150				02/15/18 10:14	02/15/18 21:53	1

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Client Sample Results

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

TestAmerica Job ID: 580-75104-1

Client Sample ID: HCC EFF-21318

Lab Sample ID: 580-75104-2

Date Collected: 02/13/18 09:00

Matrix: Water

Date Received: 02/14/18 14:00

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		0.062		mg/L		02/15/18 10:14	02/15/18 22:20	1
Motor Oil (>C24-C36)	ND		0.090		mg/L		02/15/18 10:14	02/15/18 22:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	64		50 - 150				02/15/18 10:14	02/15/18 22:20	1

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QC Sample Results

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

TestAmerica Job ID: 580-75104-1

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

Lab Sample ID: MB 580-267366/1-A
Matrix: Water
Analysis Batch: 267426

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 267366

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		02/15/18 10:14	02/15/18 20:31	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		02/15/18 10:14	02/15/18 20:31	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	68		50 - 150				02/15/18 10:14	02/15/18 20:31	1

Lab Sample ID: LCS 580-267366/2-A
Matrix: Water
Analysis Batch: 267426

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 267366

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)	0.500	0.383		mg/L		77	59 - 112		
Motor Oil (>C24-C36)	0.500	0.402		mg/L		80	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
<i>o</i> -Terphenyl	76		50 - 150						

Lab Sample ID: LCSD 580-267366/3-A
Matrix: Water
Analysis Batch: 267426

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 267366

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.425		mg/L		85	59 - 112	11	16
Motor Oil (>C24-C36)	0.500	0.449		mg/L		90	64 - 120	11	17
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	83		50 - 150						

Lab Chronicle

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

TestAmerica Job ID: 580-75104-1

Client Sample ID: Before GAC-21318

Date Collected: 02/13/18 09:00

Date Received: 02/14/18 14:00

Lab Sample ID: 580-75104-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			267366	02/15/18 10:14	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	267426	02/15/18 21:53	ADB	TAL SEA

Client Sample ID: HCC EFF-21318

Date Collected: 02/13/18 09:00

Date Received: 02/14/18 14:00

Lab Sample ID: 580-75104-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			267366	02/15/18 10:14	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	267426	02/15/18 22:20	ADB	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-75104-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-75104-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-75104-1	Before GAC-21318	Water	02/13/18 09:00	02/14/18 14:00
580-75104-2	HCC EFF-21318	Water	02/13/18 09:00	02/14/18 14:00

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-75104-1

Login Number: 75104

List Source: TestAmerica Seattle

List Number: 1

Creator: Hobbs, Kenneth F

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.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-75285-1

Client Project/Site: BNSF Skykomish NPDES
Sampling Event: Skykomish - GAC/HCC
Revision: 2

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
4/30/2018 3:45:13 PM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.com

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

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Case Narrative

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

TestAmerica Job ID: 580-75285-1

Job ID: 580-75285-1

Laboratory: TestAmerica Seattle

Narrative

Revised 3-19-18 to remove comment regarding NWTPH-Dx CCVs as it does not apply to the samples reported in this SDG.

Job Narrative 580-75285-1

Comments

Report was revised to set the reporting limit to the method detection limit at client request.

No additional comments.

Receipt

The samples were received on 2/23/2018 11:55 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0° C.

GC Semi VOA

Method(s) 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-22218 (580-75285-1).

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: BNSF Skykomish NPDES

TestAmerica Job ID: 580-75285-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-75285-1

Client Sample ID: Before GAC-22218

Lab Sample ID: 580-75285-1

Date Collected: 02/22/18 08:00

Matrix: Water

Date Received: 02/23/18 11:55

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.51		0.062		mg/L		02/26/18 09:13	02/26/18 23:04	1
Motor Oil (>C24-C36)	0.33		0.090		mg/L		02/26/18 09:13	02/26/18 23:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	70		50 - 150				02/26/18 09:13	02/26/18 23:04	1

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Client Sample Results

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

TestAmerica Job ID: 580-75285-1

Client Sample ID: HCC EFF-22218

Lab Sample ID: 580-75285-2

Date Collected: 02/22/18 08:00

Matrix: Water

Date Received: 02/23/18 11:55

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		0.062		mg/L		02/26/18 09:13	02/26/18 23:24	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		02/26/18 09:13	02/26/18 23:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	64		50 - 150				02/26/18 09:13	02/26/18 23:24	1



QC Sample Results

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

TestAmerica Job ID: 580-75285-1

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

Lab Sample ID: MB 580-267958/1-A
Matrix: Water
Analysis Batch: 267983

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 267958

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		02/26/18 09:13	02/26/18 21:44	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		02/26/18 09:13	02/26/18 21:44	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	76		50 - 150				02/26/18 09:13	02/26/18 21:44	1

Lab Sample ID: LCS 580-267958/2-A
Matrix: Water
Analysis Batch: 267983

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 267958

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)	0.500	0.430		mg/L		86	59 - 112		
Motor Oil (>C24-C36)	0.500	0.487		mg/L		97	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
<i>o</i> -Terphenyl	91		50 - 150						

Lab Sample ID: LCSD 580-267958/3-A
Matrix: Water
Analysis Batch: 267983

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 267958

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.427		mg/L		85	59 - 112	1	16
Motor Oil (>C24-C36)	0.500	0.499		mg/L		100	64 - 120	2	17
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	93		50 - 150						

Lab Chronicle

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

TestAmerica Job ID: 580-75285-1

Client Sample ID: Before GAC-22218

Date Collected: 02/22/18 08:00

Date Received: 02/23/18 11:55

Lab Sample ID: 580-75285-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			267958	02/26/18 09:13	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	267983	02/26/18 23:04	T1W	TAL SEA

Client Sample ID: HCC EFF-22218

Date Collected: 02/22/18 08:00

Date Received: 02/23/18 11:55

Lab Sample ID: 580-75285-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			267958	02/26/18 09:13	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	267983	02/26/18 23:24	T1W	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-75285-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-75285-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-75285-1	Before GAC-22218	Water	02/22/18 08:00	02/23/18 11:55
580-75285-2	HCC EFF-22218	Water	02/22/18 08:00	02/23/18 11:55

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-75285-1

Login Number: 75285

List Source: TestAmerica 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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-75384-1

Client Project/Site: Skykomish HCC System
Sampling Event: Skykomish - GAC/HCC
Revision: 1

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
4/30/2018 4:08:16 PM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.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.

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Case Narrative

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

TestAmerica Job ID: 580-75384-1

Job ID: 580-75384-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative
580-75384-1

Comments

Report was revised to set the reporting limit to the method detection limit at client request.

No additional comments.

Receipt

The samples were received on 2/28/2018 2:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was -0.1° C.

GC Semi VOA

Method(s) 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-22818 (580-75384-1).

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

TestAmerica Job ID: 580-75384-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-75384-1

Client Sample ID: Before GAC-22818

Lab Sample ID: 580-75384-1

Date Collected: 02/28/18 07:45

Matrix: Water

Date Received: 02/28/18 14:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.44		0.062		mg/L		03/01/18 10:37	03/02/18 19:50	1
Motor Oil (>C24-C36)	0.26		0.091		mg/L		03/01/18 10:37	03/02/18 19:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	73		50 - 150				03/01/18 10:37	03/02/18 19:50	1

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Client Sample Results

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

TestAmerica Job ID: 580-75384-1

Client Sample ID: HCC EFF-22818

Lab Sample ID: 580-75384-2

Date Collected: 02/28/18 07:45

Matrix: Water

Date Received: 02/28/18 14:10

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		0.062		mg/L		03/01/18 10:37	03/02/18 20:12	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		03/01/18 10:37	03/02/18 20:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	68		50 - 150				03/01/18 10:37	03/02/18 20:12	1



QC Sample Results

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

TestAmerica Job ID: 580-75384-1

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

Lab Sample ID: MB 580-268161/1-A
Matrix: Water
Analysis Batch: 268251

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 268161

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		03/01/18 10:37	03/02/18 18:22	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		03/01/18 10:37	03/02/18 18:22	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	69		50 - 150				03/01/18 10:37	03/02/18 18:22	1

Lab Sample ID: LCS 580-268161/2-A
Matrix: Water
Analysis Batch: 268251

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268161

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.380		mg/L		76	59 - 112
Motor Oil (>C24-C36)	0.500	0.399		mg/L		80	64 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
<i>o</i> -Terphenyl	85		50 - 150				

Lab Sample ID: LCSD 580-268161/3-A
Matrix: Water
Analysis Batch: 268251

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 268161

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.400		mg/L		80	59 - 112	5	16
Motor Oil (>C24-C36)	0.500	0.410		mg/L		82	64 - 120	3	17
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	84		50 - 150						

Lab Chronicle

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

TestAmerica Job ID: 580-75384-1

Client Sample ID: Before GAC-22818

Date Collected: 02/28/18 07:45

Date Received: 02/28/18 14:10

Lab Sample ID: 580-75384-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			268161	03/01/18 10:37	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	268251	03/02/18 19:50	T1W	TAL SEA

Client Sample ID: HCC EFF-22818

Date Collected: 02/28/18 07:45

Date Received: 02/28/18 14:10

Lab Sample ID: 580-75384-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			268161	03/01/18 10:37	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	268251	03/02/18 20:12	T1W	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-75384-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-75384-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-75384-1	Before GAC-22818	Water	02/28/18 07:45	02/28/18 14:10
580-75384-2	HCC EFF-22818	Water	02/28/18 07:45	02/28/18 14:10

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-75384-1

Login Number: 75384

List Number: 1

Creator: Blankinship, Tom X

List Source: TestAmerica 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	

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-75613-1

Client Project/Site: Skykomish HCC System
Sampling Event: Skykomish - GAC/HCC
Revision: 1

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
4/27/2018 1:49:33 PM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.com

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

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Case Narrative

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

TestAmerica Job ID: 580-75613-1

Job ID: 580-75613-1

Laboratory: TestAmerica Seattle

Narrative

The reporting limit has been set to the method detection limit at client request.

Job Narrative 580-75613-1

Comments

No additional comments.

Receipt

The samples were received on 3/8/2018 1:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.8° C.

GC Semi VOA

Method(s) NWTPH-Dx: Surrogate recovery for the following sample was outside control limits: HCC EFF-030718 (580-75613-2). 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.

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

TestAmerica Job ID: 580-75613-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-75613-1

Client Sample ID: Before GAC-030718

Lab Sample ID: 580-75613-1

Date Collected: 03/07/18 15:40

Matrix: Water

Date Received: 03/08/18 13:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.39		0.062		mg/L		03/09/18 12:31	03/12/18 12:40	1
Motor Oil (>C24-C36)	0.21		0.090		mg/L		03/09/18 12:31	03/12/18 12:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	67		50 - 150				03/09/18 12:31	03/12/18 12:40	1



Client Sample Results

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

TestAmerica Job ID: 580-75613-1

Client Sample ID: HCC EFF-030718

Lab Sample ID: 580-75613-2

Date Collected: 03/07/18 15:50

Matrix: Water

Date Received: 03/08/18 13:40

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		0.062		mg/L		03/09/18 12:31	03/12/18 13:01	1
Motor Oil (>C24-C36)	ND		0.090		mg/L		03/09/18 12:31	03/12/18 13:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	48	X	50 - 150				03/09/18 12:31	03/12/18 13:01	1

Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		03/09/18 11:07	03/12/18 12:33	1
Lead	ND		0.00080		mg/L		03/09/18 11:07	03/12/18 12:33	1

QC Sample Results

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

TestAmerica Job ID: 580-75613-1

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

Lab Sample ID: MB 580-268732/1-A
Matrix: Water
Analysis Batch: 268815

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 268732

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		03/09/18 12:31	03/12/18 11:38	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		03/09/18 12:31	03/12/18 11:38	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	81		50 - 150				03/09/18 12:31	03/12/18 11:38	1

Lab Sample ID: LCS 580-268732/2-A
Matrix: Water
Analysis Batch: 268815

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268732

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.426		mg/L		85	59 - 112
Motor Oil (>C24-C36)	0.500	0.463		mg/L		93	64 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
<i>o</i> -Terphenyl	86		50 - 150				

Lab Sample ID: LCSD 580-268732/3-A
Matrix: Water
Analysis Batch: 268815

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 268732

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.411		mg/L		82	59 - 112	4	16
Motor Oil (>C24-C36)	0.500	0.454		mg/L		91	64 - 120	2	17
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	77		50 - 150						

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-268703/14-A
Matrix: Water
Analysis Batch: 268854

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 268703

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		03/09/18 11:07	03/12/18 12:25	1
Lead	ND		0.00080		mg/L		03/09/18 11:07	03/12/18 12:25	1

Lab Sample ID: LCS 580-268703/15-A
Matrix: Water
Analysis Batch: 268854

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268703

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.100	0.0984		mg/L		98	85 - 115
Lead	0.100	0.0946		mg/L		95	85 - 115

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-75613-1

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

Lab Sample ID: LCSD 580-268703/16-A
Matrix: Water
Analysis Batch: 268854

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 268703

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	0.100	0.0972		mg/L		97	85 - 115	1	20
Lead	0.100	0.0920		mg/L		92	85 - 115	3	20

Lab Sample ID: 580-75613-2 MS
Matrix: Water
Analysis Batch: 268854

Client Sample ID: HCC EFF-030718
Prep Type: Total/NA
Prep Batch: 268703

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	ND		0.100	0.100		mg/L		100	70 - 130		
Lead	ND		0.100	0.0944		mg/L		94	70 - 130		

Lab Sample ID: 580-75613-2 MSD
Matrix: Water
Analysis Batch: 268854

Client Sample ID: HCC EFF-030718
Prep Type: Total/NA
Prep Batch: 268703

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	ND		0.100	0.101		mg/L		101	70 - 130	0	20
Lead	ND		0.100	0.0946		mg/L		95	70 - 130	0	20

Lab Sample ID: 580-75613-2 DU
Matrix: Water
Analysis Batch: 268854

Client Sample ID: HCC EFF-030718
Prep Type: Total/NA
Prep Batch: 268703

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	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

TestAmerica Job ID: 580-75613-1

Client Sample ID: Before GAC-030718

Date Collected: 03/07/18 15:40

Date Received: 03/08/18 13:40

Lab Sample ID: 580-75613-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			268732	03/09/18 12:31	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	268815	03/12/18 12:40	ADB	TAL SEA

Client Sample ID: HCC EFF-030718

Date Collected: 03/07/18 15:50

Date Received: 03/08/18 13:40

Lab Sample ID: 580-75613-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			268732	03/09/18 12:31	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	268815	03/12/18 13:01	ADB	TAL SEA
Total/NA	Prep	200.8			268703	03/09/18 11:07	PAB	TAL SEA
Total/NA	Analysis	200.8		1	268854	03/12/18 12:33	FCW	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-75613-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-75613-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-75613-1	Before GAC-030718	Water	03/07/18 15:40	03/08/18 13:40
580-75613-2	HCC EFF-030718	Water	03/07/18 15:50	03/08/18 13:40

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-75613-1

Login Number: 75613

List Number: 1

Creator: Hobbs, Kenneth F

List Source: TestAmerica 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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-75757-1

Client Project/Site: Skykomish HCC System
Sampling Event: Skykomish - GAC/HCC
Revision: 1

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
4/27/2018 1:21:37 PM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.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.

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Case Narrative

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

TestAmerica Job ID: 580-75757-1

Job ID: 580-75757-1

Laboratory: TestAmerica Seattle

Narrative

The reporting limit has been set to the method detection limit at client request.

Job Narrative 580-75757-1

Comments

No additional comments.

Receipt

The samples were received on 3/14/2018 4:45 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

GC Semi VOA

Method(s) 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-31418 (580-75757-1).

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

TestAmerica Job ID: 580-75757-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-75757-1

Client Sample ID: Before GAC-31418

Lab Sample ID: 580-75757-1

Date Collected: 03/14/18 08:00

Matrix: Water

Date Received: 03/14/18 16:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.40		0.061		mg/L		03/16/18 14:27	03/17/18 16:14	1
Motor Oil (>C24-C36)	0.22		0.090		mg/L		03/16/18 14:27	03/17/18 16:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	68		50 - 150				03/16/18 14:27	03/17/18 16:14	1

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Client Sample Results

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

TestAmerica Job ID: 580-75757-1

Client Sample ID: HCC EFF-31418

Lab Sample ID: 580-75757-2

Date Collected: 03/14/18 08:00

Matrix: Water

Date Received: 03/14/18 16:45

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		0.062		mg/L		03/16/18 14:27	03/17/18 16:42	1
Motor Oil (>C24-C36)	ND		0.090		mg/L		03/16/18 14:27	03/17/18 16:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	64		50 - 150				03/16/18 14:27	03/17/18 16:42	1

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QC Sample Results

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

TestAmerica Job ID: 580-75757-1

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

Lab Sample ID: MB 580-269275/1-A
Matrix: Water
Analysis Batch: 269318

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 269275

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		03/16/18 14:27	03/17/18 14:51	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		03/16/18 14:27	03/17/18 14:51	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	67		50 - 150				03/16/18 14:27	03/17/18 14:51	1

Lab Sample ID: LCS 580-269275/2-A
Matrix: Water
Analysis Batch: 269318

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 269275

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)	0.500	0.376		mg/L		75	59 - 112		
Motor Oil (>C24-C36)	0.500	0.395		mg/L		79	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
<i>o</i> -Terphenyl	76		50 - 150						

Lab Sample ID: LCSD 580-269275/3-A
Matrix: Water
Analysis Batch: 269318

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 269275

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.385		mg/L		77	59 - 112	2	16
Motor Oil (>C24-C36)	0.500	0.395		mg/L		79	64 - 120	0	17
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	77		50 - 150						

Lab Chronicle

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

TestAmerica Job ID: 580-75757-1

Client Sample ID: Before GAC-31418

Date Collected: 03/14/18 08:00

Date Received: 03/14/18 16:45

Lab Sample ID: 580-75757-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			269275	03/16/18 14:27	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	269318	03/17/18 16:14	ADB	TAL SEA

Client Sample ID: HCC EFF-31418

Date Collected: 03/14/18 08:00

Date Received: 03/14/18 16:45

Lab Sample ID: 580-75757-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			269275	03/16/18 14:27	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	269318	03/17/18 16:42	ADB	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-75757-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-75757-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-75757-1	Before GAC-31418	Water	03/14/18 08:00	03/14/18 16:45
580-75757-2	HCC EFF-31418	Water	03/14/18 08:00	03/14/18 16:45

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-75757-1

Login Number: 75757

List Number: 1

Creator: Hobbs, Kenneth F

List Source: TestAmerica 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	

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THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-75929-1

Client Project/Site: Skykomish HCC System
Sampling Event: Skykomish - GAC/HCC
Revision: 1

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
4/26/2018 4:23:12 PM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.com

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

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Case Narrative

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

TestAmerica Job ID: 580-75929-1

Job ID: 580-75929-1

Laboratory: TestAmerica Seattle

Narrative

The reporting limit has been set to the method detection limit at client request.

Job Narrative 580-75929-1

Comments

No additional comments.

Receipt

The samples were received on 3/21/2018 2:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.6° C.

GC Semi VOA

Method(s) NWTPH-Dx: The continuing calibration verification (CCV) associated with batch 580-269782 recovered above the upper control limit for #2 Diesel (C10-C24) and Motor Oil (>C24-C36). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: HCC EFF-32018 (580-75929-2), (CCV 580-269782/13) and (CCVRT 580-269782/3).

Method(s) NWTPH-Dx: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for batch preparation batch 580-269721 and analytical batch 580-269782 recovered outside control limits for the following analytes: #2 Diesel (C10-C24) and Motor Oil (>C24-C36). The %Recoveries for the LCS/LCSD were within control limits, however. (LCSD 580-269721/3-A)

Method(s) 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-32018 (580-75929-1).

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

TestAmerica Job ID: 580-75929-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
*	RPD of the LCS and LCSD exceeds the 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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-75929-1

Client Sample ID: Before GAC-32018

Lab Sample ID: 580-75929-1

Date Collected: 03/20/18 08:00

Matrix: Water

Date Received: 03/21/18 14:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.65	*	0.061		mg/L		03/23/18 09:09	03/26/18 12:36	1
Motor Oil (>C24-C36)	0.32	*	0.091		mg/L		03/23/18 09:09	03/26/18 12:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	76		50 - 150				03/23/18 09:09	03/26/18 12:36	1



Client Sample Results

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

TestAmerica Job ID: 580-75929-1

Client Sample ID: HCC EFF-32018

Lab Sample ID: 580-75929-2

Date Collected: 03/20/18 08:00

Matrix: Water

Date Received: 03/21/18 14:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND	*	0.062		mg/L		03/23/18 09:09	03/23/18 20:22	1
Motor Oil (>C24-C36)	ND	*	0.091		mg/L		03/23/18 09:09	03/23/18 20:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	84		50 - 150				03/23/18 09:09	03/23/18 20:22	1

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QC Sample Results

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

TestAmerica Job ID: 580-75929-1

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

Lab Sample ID: MB 580-269721/1-A
Matrix: Water
Analysis Batch: 269782

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 269721

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		03/23/18 09:09	03/23/18 18:31	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		03/23/18 09:09	03/23/18 18:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	114		50 - 150	03/23/18 09:09	03/23/18 18:31	1

Lab Sample ID: LCS 580-269721/2-A
Matrix: Water
Analysis Batch: 269782

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 269721

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.551		mg/L		110	59 - 112
Motor Oil (>C24-C36)	0.500	0.568		mg/L		114	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	107		50 - 150

Lab Sample ID: LCSD 580-269721/3-A
Matrix: Water
Analysis Batch: 269782

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 269721

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.458	*	mg/L		92	59 - 112	19	16
Motor Oil (>C24-C36)	0.500	0.465	*	mg/L		93	64 - 120	20	17

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

Lab Chronicle

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

TestAmerica Job ID: 580-75929-1

Client Sample ID: Before GAC-32018

Date Collected: 03/20/18 08:00

Date Received: 03/21/18 14:20

Lab Sample ID: 580-75929-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			269721	03/23/18 09:09	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	269850	03/26/18 12:36	ADB	TAL SEA

Client Sample ID: HCC EFF-32018

Date Collected: 03/20/18 08:00

Date Received: 03/21/18 14:20

Lab Sample ID: 580-75929-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			269721	03/23/18 09:09	NDB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	269782	03/23/18 20:22	W1T	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-75929-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-75929-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-75929-1	Before GAC-32018	Water	03/20/18 08:00	03/21/18 14:20
580-75929-2	HCC EFF-32018	Water	03/20/18 08:00	03/21/18 14:20

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-75929-1

Login Number: 75929

List Source: TestAmerica 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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-76133-1

Client Project/Site: Skyhomish HCC System
Sampling Event: Skykomish - GAC/HCC
Revision: 1

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
4/26/2018 4:12:30 PM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.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.

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Case Narrative

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

TestAmerica Job ID: 580-76133-1

Job ID: 580-76133-1

Laboratory: TestAmerica Seattle

Narrative

The reporting limit has been set to the method detection limit at client request.

Job Narrative 580-76133-1

Comments

No additional comments.

Receipt

The samples were received on 3/28/2018 2:35 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.1° C.

GC Semi VOA

Method(s) NWTPH-Dx: The following continuing calibration verification (CCV) standard associated with batch 580-270175 recovered outside acceptance criteria for %D for surrogate o-Terphenyl. Since the %Recovery is within the acceptance criteria for the surrogate; therefore, the data have been reported. Before GAC-32818 (580-76133-1), HCC EFF-32818 (580-76133-2) and (CCVRT 580-270175/3)

Method(s) 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-32818 (580-76133-1).

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: Skyhomish HCC System

TestAmerica Job ID: 580-76133-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-76133-1

Client Sample ID: Before GAC-32818

Lab Sample ID: 580-76133-1

Date Collected: 03/28/18 07:40

Matrix: Water

Date Received: 03/28/18 14:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.086		0.062		mg/L		03/29/18 09:12	03/30/18 11:44	1
Motor Oil (>C24-C36)	0.18		0.091		mg/L		03/29/18 09:12	03/30/18 11:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	90		50 - 150				03/29/18 09:12	03/30/18 11:44	1

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Client Sample Results

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

TestAmerica Job ID: 580-76133-1

Client Sample ID: HCC EFF-32818

Lab Sample ID: 580-76133-2

Date Collected: 03/28/18 07:40

Matrix: Water

Date Received: 03/28/18 14:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		03/29/18 09:12	03/30/18 12:06	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		03/29/18 09:12	03/30/18 12:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	85		50 - 150				03/29/18 09:12	03/30/18 12:06	1

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QC Sample Results

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

TestAmerica Job ID: 580-76133-1

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

Lab Sample ID: MB 580-270137/1-A
Matrix: Water
Analysis Batch: 270227

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 270137

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		03/29/18 09:12	03/30/18 10:37	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		03/29/18 09:12	03/30/18 10:37	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	82		50 - 150				03/29/18 09:12	03/30/18 10:37	1

Lab Sample ID: LCS 580-270137/2-A
Matrix: Water
Analysis Batch: 270227

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 270137

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)	0.500	0.394		mg/L		79	59 - 112		
Motor Oil (>C24-C36)	0.500	0.462		mg/L		92	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
<i>o</i> -Terphenyl	89		50 - 150						

Lab Sample ID: LCSD 580-270137/3-A
Matrix: Water
Analysis Batch: 270227

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 270137

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.390		mg/L		78	59 - 112	1	16
Motor Oil (>C24-C36)	0.500	0.458		mg/L		92	64 - 120	1	17
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	88		50 - 150						

Lab Chronicle

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

TestAmerica Job ID: 580-76133-1

Client Sample ID: Before GAC-32818

Date Collected: 03/28/18 07:40

Date Received: 03/28/18 14:35

Lab Sample ID: 580-76133-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			270137	03/29/18 09:12	APR	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	270227	03/30/18 11:44	ADB	TAL SEA

Client Sample ID: HCC EFF-32818

Date Collected: 03/28/18 07:40

Date Received: 03/28/18 14:35

Lab Sample ID: 580-76133-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			270137	03/29/18 09:12	APR	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	270227	03/30/18 12:06	ADB	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-76133-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-76133-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-76133-1	Before GAC-32818	Water	03/28/18 07:40	03/28/18 14:35
580-76133-2	HCC EFF-32818	Water	03/28/18 07:40	03/28/18 14:35

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-76133-1

Login Number: 76133

List Number: 1

Creator: Hobbs, Kenneth F

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-76359-1

Client Project/Site: Skykomish HCC System
Sampling Event: Skykomish - GAC/HCC
Revision: 1

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
4/26/2018 4:00:26 PM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.com

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

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Case Narrative

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

TestAmerica Job ID: 580-76359-1

Job ID: 580-76359-1

Laboratory: TestAmerica Seattle

Narrative

The reporting limit has been set to the method detection limit at client request.

**Job Narrative
580-76359-1**

Comments

No additional comments.

Receipt

The samples were received on 4/5/2018 2:45 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.5° C.

GC Semi VOA

Method(s) NWTPH-Dx: The continuing calibration verification (CCV) standard associated with batch 580-270910 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. (CCV 580-270910/14), (CCV 580-270910/25) and (CCV 580-270910/29)

Method(s) NWTPH-Dx: The continuing calibration verification (CCV) associated with batch 580-270910 recovered above the upper control limit for #2 Diesel (C10-C24) and Motor Oil (>C24-C36). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: HCC EFF-4418 (580-76359-2) and (CCV 580-270910/25).

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: Skykomish HCC System

TestAmerica Job ID: 580-76359-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-76359-1

Client Sample ID: Before GAC-4418

Lab Sample ID: 580-76359-1

Date Collected: 04/04/18 07:40

Matrix: Water

Date Received: 04/05/18 14:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.68		0.062		mg/L		04/06/18 13:47	04/10/18 12:39	1
Motor Oil (>C24-C36)	0.35		0.092		mg/L		04/06/18 13:47	04/10/18 12:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	82		50 - 150				04/06/18 13:47	04/10/18 12:39	1

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Client Sample Results

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

TestAmerica Job ID: 580-76359-1

Client Sample ID: HCC EFF-4418

Lab Sample ID: 580-76359-2

Date Collected: 04/04/18 07:40

Matrix: Water

Date Received: 04/05/18 14:45

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		0.062		mg/L		04/06/18 13:47	04/10/18 01:47	1
Motor Oil (>C24-C36)	ND		0.092		mg/L		04/06/18 13:47	04/10/18 01:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	70		50 - 150				04/06/18 13:47	04/10/18 01:47	1

Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050		mg/L		04/06/18 13:18	04/09/18 16:55	5
Lead	ND		0.0040		mg/L		04/06/18 13:18	04/09/18 16:55	5

QC Sample Results

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

TestAmerica Job ID: 580-76359-1

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

Lab Sample ID: MB 580-270830/1-A
Matrix: Water
Analysis Batch: 270910

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 270830

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		04/06/18 13:47	04/09/18 17:15	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		04/06/18 13:47	04/09/18 17:15	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	68		50 - 150				04/06/18 13:47	04/09/18 17:15	1

Lab Sample ID: MB 580-270830/1-A
Matrix: Water
Analysis Batch: 270988

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 270830

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		04/06/18 13:47	04/10/18 11:14	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		04/06/18 13:47	04/10/18 11:14	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	62		50 - 150				04/06/18 13:47	04/10/18 11:14	1

Lab Sample ID: LCS 580-270830/2-A
Matrix: Water
Analysis Batch: 270910

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 270830

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.362		mg/L		72	59 - 112
Motor Oil (>C24-C36)	0.500	0.386		mg/L		77	64 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
<i>o</i> -Terphenyl	65		50 - 150				

Lab Sample ID: LCSD 580-270830/3-A
Matrix: Water
Analysis Batch: 270910

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 270830

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.381		mg/L		76	59 - 112	5	16
Motor Oil (>C24-C36)	0.500	0.399		mg/L		80	64 - 120	3	17
Surrogate	%Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	73		50 - 150						

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-270825/14-A
Matrix: Water
Analysis Batch: 270972

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 270825

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		04/06/18 13:18	04/09/18 16:43	1

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-76359-1

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

Lab Sample ID: MB 580-270825/14-A
Matrix: Water
Analysis Batch: 270972

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 270825

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.00080		mg/L		04/06/18 13:18	04/09/18 16:43	1

Lab Sample ID: LCS 580-270825/15-A
Matrix: Water
Analysis Batch: 270972

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 270825

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.100	0.101		mg/L		101	85 - 115
Lead	0.100	0.0982		mg/L		98	85 - 115

Lab Sample ID: LCSD 580-270825/16-A
Matrix: Water
Analysis Batch: 270972

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 270825

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Arsenic	0.100	0.0989		mg/L		99	85 - 115	2	20
Lead	0.100	0.0985		mg/L		99	85 - 115	0	20

Lab Sample ID: 580-76359-2 MS
Matrix: Water
Analysis Batch: 270972

Client Sample ID: HCC EFF-4418
Prep Type: Total/NA
Prep Batch: 270825

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Arsenic	ND		0.100	0.0949		mg/L		95	70 - 130
Lead	ND		0.100	0.0956		mg/L		96	70 - 130

Lab Sample ID: 580-76359-2 MSD
Matrix: Water
Analysis Batch: 270972

Client Sample ID: HCC EFF-4418
Prep Type: Total/NA
Prep Batch: 270825

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Arsenic	ND		0.100	0.0986		mg/L		99	70 - 130	4	20
Lead	ND		0.100	0.0983		mg/L		98	70 - 130	3	20

Lab Sample ID: 580-76359-2 DU
Matrix: Water
Analysis Batch: 270972

Client Sample ID: HCC EFF-4418
Prep Type: Total/NA
Prep Batch: 270825

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: Skykomish HCC System

TestAmerica Job ID: 580-76359-1

Client Sample ID: Before GAC-4418

Date Collected: 04/04/18 07:40

Date Received: 04/05/18 14:45

Lab Sample ID: 580-76359-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			270830	04/06/18 13:47	APR	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	270988	04/10/18 12:39	ERZ	TAL SEA

Client Sample ID: HCC EFF-4418

Date Collected: 04/04/18 07:40

Date Received: 04/05/18 14:45

Lab Sample ID: 580-76359-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			270830	04/06/18 13:47	APR	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	270910	04/10/18 01:47	T1W	TAL SEA
Total/NA	Prep	200.8			270825	04/06/18 13:18	ASJ	TAL SEA
Total/NA	Analysis	200.8		5	270972	04/09/18 16:55	HJM	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-76359-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-76359-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-76359-1	Before GAC-4418	Water	04/04/18 07:40	04/05/18 14:45
580-76359-2	HCC EFF-4418	Water	04/04/18 07:40	04/05/18 14:45

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TestAmerica Seattle

5755 8th Street East

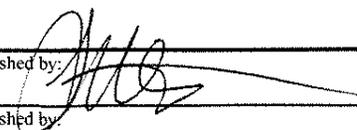
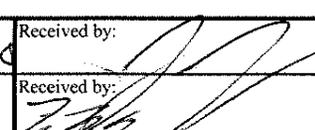
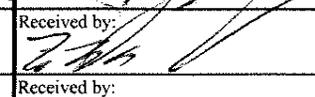
Tacoma, WA 98424

phone 253.922.2310 fax 253.922.5047

Chain of Custody Record



TestAmerica Laboratories, Inc.

Client Contact Farallon Consulting 975 5th Avenue Northwest Issaquah, WA 98027 (425) 295-0800 Phone (425) 295-0850 FAX Project Name: Skykomish HCC System Site: WO #: TT0100-M07		Project Manager: Jerry Portele Tel/Fax: 425-295-0839		Site Contact: David Johnson Lab Contact: Kristine Allen		Date: 4-4-2018 Carrier:		COC No: 1 of 2 COCs Job No. Invoice attention to: Bruce Shepard, BNSF SDG No. Sampler: TW Sample Specific Notes:																						
Analysis Turnaround Time Calendar (C) or Work Days (W) TAT if different from Below <u>3 days</u> <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Filtered Sample NWTPL-Dx w/o silica gel cleanup Total As, Pb (EPA 200.8)		Loc: 580 76359		*** See instructions below *** See instructions below		Therm. ID <u>A7 Cor 0.5° Unc 0.1°</u> Cooler Dsc: <u>Lg Reb</u> Wet/Packs Packing: <u>Double</u> Custody Seal: Yes <u>No</u>																						
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Sample Identification</th> <th>Sample Date</th> <th>Sample Time</th> <th>Sample Type</th> <th>Matrix</th> <th># of Cont.</th> <th>Filtered Sample</th> <th>NWTPL-Dx</th> <th>Total As, Pb</th> </tr> </thead> <tbody> <tr> <td>Before GAC- <u>4418</u></td> <td><u>4-4-18</u></td> <td><u>7:40</u></td> <td>Grab</td> <td>W</td> <td>2</td> <td>X</td> <td></td> <td></td> </tr> <tr> <td>HCC EFF- <u>4418</u></td> <td><u>4-4-18</u></td> <td><u>7:40</u></td> <td>Grab</td> <td>W</td> <td>3</td> <td>X</td> <td>X</td> <td></td> </tr> </tbody> </table>										Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	NWTPL-Dx	Total As, Pb	Before GAC- <u>4418</u>	<u>4-4-18</u>	<u>7:40</u>	Grab	W	2	X			HCC EFF- <u>4418</u>	<u>4-4-18</u>	<u>7:40</u>
Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	NWTPL-Dx	Total As, Pb																						
Before GAC- <u>4418</u>	<u>4-4-18</u>	<u>7:40</u>	Grab	W	2	X																								
HCC EFF- <u>4418</u>	<u>4-4-18</u>	<u>7:40</u>	Grab	W	3	X	X																							
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____						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																								
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown						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																								
Relinquished by: 		Company: <u>Glacier</u>		Date/Time: <u>4-4-18 13240</u>		Received by: 		Company: _____																						
Relinquished by: _____		Company: _____		Date/Time: _____		Received by: 		Company: <u>TA SEA</u>																						
Relinquished by: _____		Company: _____		Date/Time: _____		Received by: _____		Company: _____																						

Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-76359-1

Login Number: 76359

List Source: TestAmerica Seattle

List Number: 1

Creator: Hobbs, Kenneth F

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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-76595-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
4/23/2018 12:50:35 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

LINKS

Review your project
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Have a Question?



Visit us at:
www.testamericainc.com

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.

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Case Narrative

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

TestAmerica Job ID: 580-76595-1

Job ID: 580-76595-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-76595-1

Comments

Reporting limit set to the MDL at client request.

No additional comments.

Receipt

The samples were received on 4/13/2018 1:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.8° C.

GC Semi VOA

Method(s) 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-41118 (580-76595-1).

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

TestAmerica Job ID: 580-76595-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-76595-1

Client Sample ID: Before GAC-41118

Lab Sample ID: 580-76595-1

Date Collected: 04/11/18 05:40

Matrix: Water

Date Received: 04/13/18 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)	0.48		0.062		mg/L		04/16/18 13:50	04/17/18 18:31	1
Motor Oil (>C24-C36)	0.25		0.091		mg/L		04/16/18 13:50	04/17/18 18:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	63		50 - 150				04/16/18 13:50	04/17/18 18:31	1



Client Sample Results

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

TestAmerica Job ID: 580-76595-1

Client Sample ID: HCC EFF-41118

Lab Sample ID: 580-76595-2

Date Collected: 04/11/18 05:40

Matrix: Water

Date Received: 04/13/18 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		0.062		mg/L		04/17/18 09:07	04/17/18 20:44	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		04/17/18 09:07	04/17/18 20:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	85		50 - 150				04/17/18 09:07	04/17/18 20:44	1

QC Sample Results

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

TestAmerica Job ID: 580-76595-1

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

Lab Sample ID: MB 580-271499/1-A
Matrix: Water
Analysis Batch: 271539

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 271499

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		04/16/18 13:50	04/17/18 17:25	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		04/16/18 13:50	04/17/18 17:25	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	89		50 - 150				04/16/18 13:50	04/17/18 17:25	1

Lab Sample ID: LCS 580-271499/2-A
Matrix: Water
Analysis Batch: 271539

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 271499

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.376		mg/L		75	59 - 112
Motor Oil (>C24-C36)	0.500	0.443		mg/L		89	64 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
<i>o</i> -Terphenyl	80		50 - 150				

Lab Sample ID: LCSD 580-271499/3-A
Matrix: Water
Analysis Batch: 271539

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 271499

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.369		mg/L		74	59 - 112	2	16
Motor Oil (>C24-C36)	0.500	0.433		mg/L		87	64 - 120	2	17
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	76		50 - 150						

Lab Sample ID: MB 580-271517/1-A
Matrix: Water
Analysis Batch: 271542

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 271517

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		04/17/18 09:07	04/17/18 14:29	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		04/17/18 09:07	04/17/18 14:29	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	86		50 - 150				04/17/18 09:07	04/17/18 14:29	1

Lab Sample ID: LCS 580-271517/2-A
Matrix: Water
Analysis Batch: 271542

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 271517

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.342		mg/L		68	59 - 112
Motor Oil (>C24-C36)	0.500	0.409		mg/L		82	64 - 120

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-76595-1

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

Lab Sample ID: LCS 580-271517/2-A
Matrix: Water
Analysis Batch: 271542

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 271517

<i>Surrogate</i>	<i>LCS</i> <i>%Recovery</i>	<i>LCS</i> <i>Qualifier</i>	<i>Limits</i>
<i>o-Terphenyl</i>	87		50 - 150

Lab Sample ID: LCSD 580-271517/3-A
Matrix: Water
Analysis Batch: 271542

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 271517

<i>Analyte</i>	<i>Spike</i> <i>Added</i>	<i>LCSD</i> <i>Result</i>	<i>LCSD</i> <i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec.</i> <i>Limits</i>	<i>RPD</i>	<i>RPD</i> <i>Limit</i>
#2 Diesel (C10-C24)	0.500	0.367		mg/L		73	59 - 112	7	16
Motor Oil (>C24-C36)	0.500	0.446		mg/L		89	64 - 120	9	17

<i>Surrogate</i>	<i>LCSD</i> <i>%Recovery</i>	<i>LCSD</i> <i>Qualifier</i>	<i>Limits</i>
<i>o-Terphenyl</i>	91		50 - 150

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Lab Chronicle

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

TestAmerica Job ID: 580-76595-1

Client Sample ID: Before GAC-41118

Date Collected: 04/11/18 05:40

Date Received: 04/13/18 13:30

Lab Sample ID: 580-76595-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			271499	04/16/18 13:50	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	271539	04/17/18 18:31	ADB	TAL SEA

Client Sample ID: HCC EFF-41118

Date Collected: 04/11/18 05:40

Date Received: 04/13/18 13:30

Lab Sample ID: 580-76595-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			271517	04/17/18 09:07	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	271542	04/17/18 20:44	ADB	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-76595-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-76595-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-76595-1	Before GAC-41118	Water	04/11/18 05:40	04/13/18 13:30
580-76595-2	HCC EFF-41118	Water	04/11/18 05:40	04/13/18 13:30

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-76595-1

Login Number: 76595

List Source: TestAmerica 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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-76737-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
4/24/2018 11:58:23 AM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

LINKS

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results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

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.

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Case Narrative

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

TestAmerica Job ID: 580-76737-1

Job ID: 580-76737-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-76737-1**

Comments

The reporting limit has been set to the method detection limit at client request.

No additional comments.

Receipt

The samples were received on 4/20/2018 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.4° C.

GC Semi VOA

Method(s) 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-041918 (580-76737-1).

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

TestAmerica Job ID: 580-76737-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-76737-1

Client Sample ID: Before GAC-041918

Lab Sample ID: 580-76737-1

Date Collected: 04/19/18 13:50

Matrix: Water

Date Received: 04/20/18 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.50		0.062		mg/L		04/23/18 09:57	04/23/18 17:40	1
Motor Oil (>C24-C36)	0.31		0.091		mg/L		04/23/18 09:57	04/23/18 17:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	87		50 - 150				04/23/18 09:57	04/23/18 17:40	1

Client Sample Results

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

TestAmerica Job ID: 580-76737-1

Client Sample ID: HCC EFF-041918

Lab Sample ID: 580-76737-2

Date Collected: 04/19/18 14:00

Matrix: Water

Date Received: 04/20/18 09:45

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		0.062		mg/L		04/23/18 09:57	04/23/18 18:03	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		04/23/18 09:57	04/23/18 18:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	85		50 - 150				04/23/18 09:57	04/23/18 18:03	1

QC Sample Results

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

TestAmerica Job ID: 580-76737-1

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

Lab Sample ID: MB 580-272006/1-A
Matrix: Water
Analysis Batch: 272015

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 272006

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		04/23/18 09:57	04/23/18 15:47	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		04/23/18 09:57	04/23/18 15:47	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	87		50 - 150	04/23/18 09:57	04/23/18 15:47	1

Lab Sample ID: LCS 580-272006/2-A
Matrix: Water
Analysis Batch: 272015

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 272006

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.368		mg/L		74	59 - 112
Motor Oil (>C24-C36)	0.500	0.424		mg/L		85	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	86		50 - 150

Lab Sample ID: LCSD 580-272006/3-A
Matrix: Water
Analysis Batch: 272015

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 272006

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.342		mg/L		68	59 - 112	7	16
Motor Oil (>C24-C36)	0.500	0.400		mg/L		80	64 - 120	6	17

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	83		50 - 150

Lab Chronicle

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

TestAmerica Job ID: 580-76737-1

Client Sample ID: Before GAC-041918

Lab Sample ID: 580-76737-1

Date Collected: 04/19/18 13:50

Matrix: Water

Date Received: 04/20/18 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			272006	04/23/18 09:57	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	272015	04/23/18 17:40	ADB	TAL SEA

Client Sample ID: HCC EFF-041918

Lab Sample ID: 580-76737-2

Date Collected: 04/19/18 14:00

Matrix: Water

Date Received: 04/20/18 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			272006	04/23/18 09:57	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	272015	04/23/18 18:03	ADB	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-76737-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-76737-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-76737-1	Before GAC-041918	Water	04/19/18 13:50	04/20/18 09:45
580-76737-2	HCC EFF-041918	Water	04/19/18 14:00	04/20/18 09:45

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-76737-1

Login Number: 76737

List Source: TestAmerica Seattle

List Number: 1

Creator: Hobbs, Kenneth F

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	



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-76929-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
5/3/2018 12:06:22 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

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

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Case Narrative

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

TestAmerica Job ID: 580-76929-1

Job ID: 580-76929-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-76929-1**

Comments

No additional comments.

Receipt

The samples were received on 4/30/2018 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.3° C.

GC Semi VOA

Method(s) 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-42618 (580-76929-1).

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

TestAmerica Job ID: 580-76929-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-76929-1

Client Sample ID: Before GAC-42618

Lab Sample ID: 580-76929-1

Date Collected: 04/26/18 10:35

Matrix: Water

Date Received: 04/30/18 09:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.48		0.062		mg/L		05/01/18 14:58	05/02/18 18:08	1
Motor Oil (>C24-C36)	0.26		0.091		mg/L		05/01/18 14:58	05/02/18 18:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	63		50 - 150				05/01/18 14:58	05/02/18 18:08	1

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Client Sample Results

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

TestAmerica Job ID: 580-76929-1

Client Sample ID: HCC EFF-42618

Lab Sample ID: 580-76929-2

Date Collected: 04/26/18 10:35

Matrix: Water

Date Received: 04/30/18 09:50

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		0.062		mg/L		05/01/18 14:58	05/02/18 18:38	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		05/01/18 14:58	05/02/18 18:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	62		50 - 150				05/01/18 14:58	05/02/18 18:38	1

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QC Sample Results

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

TestAmerica Job ID: 580-76929-1

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

Lab Sample ID: MB 580-272699/1-A
Matrix: Water
Analysis Batch: 272740

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 272699

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		05/01/18 14:58	05/02/18 15:44	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		05/01/18 14:58	05/02/18 15:44	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	64		50 - 150				05/01/18 14:58	05/02/18 15:44	1

Lab Sample ID: LCS 580-272699/2-A
Matrix: Water
Analysis Batch: 272740

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 272699

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)	0.500	0.372		mg/L		74	59 - 112		
Motor Oil (>C24-C36)	0.500	0.431		mg/L		86	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
<i>o</i> -Terphenyl	80		50 - 150						

Lab Sample ID: LCSD 580-272699/3-A
Matrix: Water
Analysis Batch: 272740

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 272699

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.347		mg/L		69	59 - 112	7	16
Motor Oil (>C24-C36)	0.500	0.404		mg/L		81	64 - 120	6	17
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	74		50 - 150						

Lab Chronicle

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

TestAmerica Job ID: 580-76929-1

Client Sample ID: Before GAC-42618

Date Collected: 04/26/18 10:35

Date Received: 04/30/18 09:50

Lab Sample ID: 580-76929-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			272699	05/01/18 14:58	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	272740	05/02/18 18:08	ADB	TAL SEA

Client Sample ID: HCC EFF-42618

Date Collected: 04/26/18 10:35

Date Received: 04/30/18 09:50

Lab Sample ID: 580-76929-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			272699	05/01/18 14:58	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	272740	05/02/18 18:38	ADB	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-76929-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-76929-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-76929-1	Before GAC-42618	Water	04/26/18 10:35	04/30/18 09:50
580-76929-2	HCC EFF-42618	Water	04/26/18 10:35	04/30/18 09:50

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-76929-1

Login Number: 76929

List Number: 1

Creator: Blankinship, Tom X

List Source: TestAmerica 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	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-76998-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
5/7/2018 9:40:25 AM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

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

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Case Narrative

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

TestAmerica Job ID: 580-76998-1

Job ID: 580-76998-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-76998-1**

Comments

No additional comments.

Receipt

The samples were received on 5/2/2018 12:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.1° C.

GC Semi VOA

Method(s) 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-5118 (580-76998-1).

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: Skykomish HCC System

TestAmerica Job ID: 580-76998-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-76998-1

Client Sample ID: Before GAC-5118

Lab Sample ID: 580-76998-1

Date Collected: 05/01/18 08:20

Matrix: Water

Date Received: 05/02/18 12:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.45		0.062		mg/L		05/04/18 09:10	05/04/18 21:47	1
Motor Oil (>C24-C36)	0.24		0.091		mg/L		05/04/18 09:10	05/04/18 21:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	70		50 - 150				05/04/18 09:10	05/04/18 21:47	1

Client Sample Results

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

TestAmerica Job ID: 580-76998-1

Client Sample ID: HCC EFF-5118

Lab Sample ID: 580-76998-2

Date Collected: 05/01/18 08:20

Matrix: Water

Date Received: 05/02/18 12:30

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		0.062		mg/L		05/04/18 09:10	05/04/18 22:15	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		05/04/18 09:10	05/04/18 22:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	61		50 - 150				05/04/18 09:10	05/04/18 22:15	1

Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		05/03/18 12:58	05/04/18 09:38	1
Lead	ND		0.00080		mg/L		05/03/18 12:58	05/04/18 09:38	1



QC Sample Results

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

TestAmerica Job ID: 580-76998-1

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

Lab Sample ID: MB 580-272971/1-A
Matrix: Water
Analysis Batch: 273036

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 272971

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		05/04/18 09:10	05/04/18 20:22	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		05/04/18 09:10	05/04/18 20:22	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	68		50 - 150	05/04/18 09:10	05/04/18 20:22	1

Lab Sample ID: LCS 580-272971/2-A
Matrix: Water
Analysis Batch: 273036

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 272971

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.364		mg/L		73	59 - 112
Motor Oil (>C24-C36)	0.500	0.396		mg/L		79	64 - 120

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

Lab Sample ID: LCSD 580-272971/3-A
Matrix: Water
Analysis Batch: 273036

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 272971

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.365		mg/L		73	59 - 112	0	16
Motor Oil (>C24-C36)	0.500	0.421		mg/L		84	64 - 120	6	17

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	86		50 - 150

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-272884/14-A
Matrix: Water
Analysis Batch: 273007

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 272884

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		05/03/18 12:58	05/04/18 08:40	1
Lead	ND		0.00080		mg/L		05/03/18 12:58	05/04/18 08:40	1

Lab Sample ID: LCS 580-272884/15-A
Matrix: Water
Analysis Batch: 273007

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 272884

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.100	0.0936		mg/L		94	85 - 115
Lead	0.100	0.0938		mg/L		94	85 - 115

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-76998-1

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

Lab Sample ID: LCSD 580-272884/16-A
Matrix: Water
Analysis Batch: 273007

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 272884

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.100	0.0956		mg/L		96	85 - 115	2	20
Lead	0.100	0.0942		mg/L		94	85 - 115	0	20

Lab Sample ID: 580-76832-A-3-C MS
Matrix: Water
Analysis Batch: 273007

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 272884

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND		0.100	0.0925		mg/L		92	70 - 130
Lead	0.0012		0.100	0.0927		mg/L		92	70 - 130

Lab Sample ID: 580-76832-A-3-D MSD
Matrix: Water
Analysis Batch: 273007

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 272884

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		0.100	0.0934		mg/L		93	70 - 130	1	20
Lead	0.0012		0.100	0.0937		mg/L		93	70 - 130	1	20

Lab Sample ID: 580-76832-A-3-B DU
Matrix: Water
Analysis Batch: 273007

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 272884

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	ND		ND		mg/L		NC	20
Lead	0.0012		0.00124		mg/L		3	20

Lab Chronicle

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

TestAmerica Job ID: 580-76998-1

Client Sample ID: Before GAC-5118

Lab Sample ID: 580-76998-1

Date Collected: 05/01/18 08:20

Matrix: Water

Date Received: 05/02/18 12:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			272971	05/04/18 09:10	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	273036	05/04/18 21:47	ADB	TAL SEA

Client Sample ID: HCC EFF-5118

Lab Sample ID: 580-76998-2

Date Collected: 05/01/18 08:20

Matrix: Water

Date Received: 05/02/18 12:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			272971	05/04/18 09:10	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	273036	05/04/18 22:15	ADB	TAL SEA
Total/NA	Prep	200.8			272884	05/03/18 12:58	ASJ	TAL SEA
Total/NA	Analysis	200.8		1	273007	05/04/18 09:38	FCW	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-76998-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-76998-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-76998-1	Before GAC-5118	Water	05/01/18 08:20	05/02/18 12:30
580-76998-2	HCC EFF-5118	Water	05/01/18 08:20	05/02/18 12:30

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TestAmerica Seattle

5755 8th Street East

Tacoma, WA 98424

phone 253.922.2310 fax 253.922.5047

Chain of Custody Record

76998

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact		Project Manager: Jerry Portele				Site Contact: David Johnson		Date: 5-1-18		COC No:	
Farallon Consulting		Tel/Fax: 425-295-0839				Lab Contact: Kristine Allen		Carrier:		2 of 2 COCs	
975 5th Avenue Northwest		Analysis Turnaround Time Calendar (C) or Work Days (W) TAT if different from Below <u>3 days</u> <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day				Filtered Sample NW/TPH-Dx w/o silica gel cleanup Total As, Pb (EPA 200.8)				Job No. Invoice attention to:	
Issaquah, WA 98027										Bruce Shepard, BNSF	
(425) 295-0800 Phone										SDG No.	
(425) 295-0850 FAX										Sampler: <u>SW</u>	
Project Name: Skykomish HCC System										Sample Specific Notes:	
Site:											
WO #: TT0100-M07											
Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.						
Before GAC- 5118	5-1-18	08:20	Grab	W	2	X					*** See instructions below
HCC EFF- 5118	5-1-18	08:20	Grab	W	3	X	X				*** See instructions below
								Therm. ID: <u>A2</u> Cor: <u>0.1</u> Unc: <u>0.3</u> Cooler Dsc: <u>Ly Red</u> Packing: <u>Bubble</u> FedEx: Cust. Seal: Yes ___ No <u>X</u> UPS: Wet/Packs/Dry Ice/None Lab Cour: <u>X</u> Other:			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other						2 4 1					
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown						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											
Relinquished by: <u>[Signature]</u>		Company: <u>Glacier</u>		Date/Time: <u>5-1-18 13:10</u>		Received by: <u>[Signature]</u>		Company:		Date/Time: <u>5/1/18</u>	
Relinquished by:		Company:		Date/Time:		Received by: <u>[Signature]</u>		Company: <u>TASEH</u>		Date/Time: <u>5/2/18 1230</u>	
Relinquished by:		Company:		Date/Time:		Received by:		Company:		Date/Time:	

Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-76998-1

Login Number: 76998

List Source: TestAmerica 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	



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-77247-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
5/16/2018 11:11:47 AM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

LINKS

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results through
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Have a Question?



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www.testamericainc.com

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.

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Case Narrative

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

TestAmerica Job ID: 580-77247-1

Job ID: 580-77247-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-77247-1**

Comments

No additional comments.

Receipt

The samples were received on 5/11/2018 2:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.1° C.

GC Semi VOA

Method(s) 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-51018 (580-77247-1).

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

TestAmerica Job ID: 580-77247-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-77247-1

Client Sample ID: Before GAC-51018

Lab Sample ID: 580-77247-1

Date Collected: 05/10/18 11:30

Matrix: Water

Date Received: 05/11/18 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)	0.46		0.062		mg/L		05/14/18 10:29	05/15/18 18:08	1
Motor Oil (>C24-C36)	0.27		0.092		mg/L		05/14/18 10:29	05/15/18 18:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	70		50 - 150				05/14/18 10:29	05/15/18 18:08	1

Client Sample Results

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

TestAmerica Job ID: 580-77247-1

Client Sample ID: HCC EFF-51018

Lab Sample ID: 580-77247-2

Date Collected: 05/10/18 11:30

Matrix: Water

Date Received: 05/11/18 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		0.061		mg/L		05/14/18 10:29	05/15/18 18:34	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		05/14/18 10:29	05/15/18 18:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	70		50 - 150				05/14/18 10:29	05/15/18 18:34	1



QC Sample Results

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

TestAmerica Job ID: 580-77247-1

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

Lab Sample ID: MB 580-273741/1-A

Matrix: Water

Analysis Batch: 273843

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 273741

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		05/14/18 10:29	05/15/18 16:19	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		05/14/18 10:29	05/15/18 16:19	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	71		50 - 150	05/14/18 10:29	05/15/18 16:19	1

Lab Sample ID: LCS 580-273741/2-A

Matrix: Water

Analysis Batch: 273843

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 273741

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.347		mg/L		69	59 - 112
Motor Oil (>C24-C36)	0.500	0.466		mg/L		93	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	88		50 - 150

Lab Sample ID: LCSD 580-273741/3-A

Matrix: Water

Analysis Batch: 273843

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 273741

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.306		mg/L		61	59 - 112	12	16
Motor Oil (>C24-C36)	0.500	0.463		mg/L		93	64 - 120	1	17

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	82		50 - 150

Lab Chronicle

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

TestAmerica Job ID: 580-77247-1

Client Sample ID: Before GAC-51018

Lab Sample ID: 580-77247-1

Date Collected: 05/10/18 11:30

Matrix: Water

Date Received: 05/11/18 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			273741	05/14/18 10:29	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	273843	05/15/18 18:08	TL1	TAL SEA

Client Sample ID: HCC EFF-51018

Lab Sample ID: 580-77247-2

Date Collected: 05/10/18 11:30

Matrix: Water

Date Received: 05/11/18 14:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			273741	05/14/18 10:29	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	273843	05/15/18 18:34	TL1	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-77247-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-77247-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-77247-1	Before GAC-51018	Water	05/10/18 11:30	05/11/18 14:15
580-77247-2	HCC EFF-51018	Water	05/10/18 11:30	05/11/18 14:15

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-77247-1

Login Number: 77247

List Source: TestAmerica 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	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-77411-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
5/23/2018 4:09:44 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.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.

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Case Narrative

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

TestAmerica Job ID: 580-77411-1

Job ID: 580-77411-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-77411-1**

Comments

No additional comments.

Receipt

The samples were received on 5/18/2018 2:34 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.2° C.

GC Semi VOA

Method(s) NWTPH-Dx: Detected hydrocarbons appear to be due to heavily weathered diesel. Before GAC-051718 (580-77411-1)

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

TestAmerica Job ID: 580-77411-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-77411-1

Client Sample ID: Before GAC-051718

Lab Sample ID: 580-77411-1

Date Collected: 05/17/18 09:50

Matrix: Water

Date Received: 05/18/18 14:34

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		0.062		mg/L		05/21/18 10:58	05/23/18 11:08	1
Motor Oil (>C24-C36)	0.21		0.091		mg/L		05/21/18 10:58	05/23/18 11:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	71		50 - 150				05/21/18 10:58	05/23/18 11:08	1

Client Sample Results

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

TestAmerica Job ID: 580-77411-1

Client Sample ID: HCC EFF-051718

Lab Sample ID: 580-77411-2

Date Collected: 05/17/18 10:00

Matrix: Water

Date Received: 05/18/18 14:34

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		0.062		mg/L		05/21/18 10:58	05/23/18 11:30	1
Motor Oil (>C24-C36)	ND		0.092		mg/L		05/21/18 10:58	05/23/18 11:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	73		50 - 150				05/21/18 10:58	05/23/18 11:30	1



QC Sample Results

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

TestAmerica Job ID: 580-77411-1

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

Lab Sample ID: MB 580-274267/1-A

Matrix: Water

Analysis Batch: 274430

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 274267

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		05/21/18 10:58	05/23/18 09:41	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		05/21/18 10:58	05/23/18 09:41	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	67		50 - 150				05/21/18 10:58	05/23/18 09:41	1

Lab Sample ID: LCS 580-274267/2-A

Matrix: Water

Analysis Batch: 274430

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 274267

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.337		mg/L		67	50 - 120
Motor Oil (>C24-C36)	0.500	0.416		mg/L		83	64 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
<i>o</i> -Terphenyl	81		50 - 150				

Lab Sample ID: LCSD 580-274267/3-A

Matrix: Water

Analysis Batch: 274430

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 274267

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.314		mg/L		63	50 - 120	7	26
Motor Oil (>C24-C36)	0.500	0.435		mg/L		87	64 - 120	5	24
Surrogate	%Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	87		50 - 150						

Lab Chronicle

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

TestAmerica Job ID: 580-77411-1

Client Sample ID: Before GAC-051718

Lab Sample ID: 580-77411-1

Date Collected: 05/17/18 09:50

Matrix: Water

Date Received: 05/18/18 14:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			274267	05/21/18 10:58	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	274430	05/23/18 11:08	NMI	TAL SEA

Client Sample ID: HCC EFF-051718

Lab Sample ID: 580-77411-2

Date Collected: 05/17/18 10:00

Matrix: Water

Date Received: 05/18/18 14:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			274267	05/21/18 10:58	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	274430	05/23/18 11:30	NMI	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-77411-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-77411-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-77411-1	Before GAC-051718	Water	05/17/18 09:50	05/18/18 14:34
580-77411-2	HCC EFF-051718	Water	05/17/18 10:00	05/18/18 14:34

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TestAmerica Seattle

5755 8th Street East

Tacoma, WA 98424
phone 253.922.2310 fax 253.922.5047

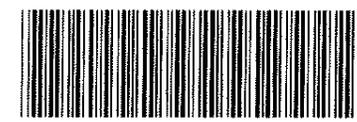
Loc: 580
77411



Chain of Custody Record

TestAmerica Laboratories, Inc.

Client Contact Farallon Consulting 975 5th Avenue Northwest Issaquah, WA 98027 (425) 295-0800 Phone (425) 295-0850 FAX Project Name: Skykomish HCC System Site: WO #: TT0100-M07		Project Manager: Jerry Portele Tel/Fax: 425-295-0839		Site Contact: David Johnson Lab Contact: Kristine Allen		Date: Carrier:		COC No: 1 of 2 COCs Job No. Invoice attention to: Bruce Shepard, BNSF SDG No. Sampler: Sample Specific Notes:						
Analysis Turnaround Time Calendar (C) or Work Days (W) <u>W</u> TAT if different from Below <u>X</u> <input type="checkbox"/> 2 weeks 3 DAY <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Filtered Sample NWTPH-Dx w/o silica gel cleanup		2 1		Therm. ID: <u>AZ</u> Cor: <u>12</u> Unc: <u>14</u> Cooler Desc: <u>Log Box</u> Packing: <u>SUB</u> FedEx: Cust. Seal: Yes <u>X</u> No (Wet)Packs/Dry Ice/None Other:		*** See instructions below *** See instructions below						
Sample Identification										Sample Date	Sample Time	Sample Type	Matrix	# of Coats
Before GAC- 051718										5/17/18	950	Grab	W	2
HCC EFF- 051718										5/17/18	1000	Grab	W	2
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3; 5=NaOH; 6= Other														
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/>				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														
Relinquished by: <u>[Signature]</u>		Company: <u>Farallon</u>		Date/Time: <u>5/17/18 1300</u>		Received by: <u>B. Hall</u>		Company: <u>SEA TA</u>						
Relinquished by: <u>B. Hall @ Lab</u>		Company: <u>SEA TA</u>		Date/Time: <u>5-18-18 1434</u>		Received by: <u>B. Hall</u>		Company: <u>SEA TA</u>						
Relinquished by:		Company:		Date/Time:		Received by:		Company:						



580-77411 Chain of Custody

Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-77411-1

Login Number: 77411

List Source: TestAmerica Seattle

List Number: 1

Creator: Gall, Brandon A

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
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?	False	No Name
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-77567-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
5/31/2018 12:20:20 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

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

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Case Narrative

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

TestAmerica Job ID: 580-77567-1

Job ID: 580-77567-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative
580-77567-1

Comments

No additional comments.

Receipt

The samples were received on 5/25/2018 3:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.7° 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

TestAmerica Job ID: 580-77567-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-77567-1

Client Sample ID: Before GAC-52318

Lab Sample ID: 580-77567-1

Date Collected: 05/23/18 06:15

Matrix: Water

Date Received: 05/25/18 15:10

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		0.062		mg/L		05/29/18 13:15	05/30/18 14:12	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		05/29/18 13:15	05/30/18 14:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	103		50 - 150				05/29/18 13:15	05/30/18 14:12	1

Client Sample Results

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

TestAmerica Job ID: 580-77567-1

Client Sample ID: HCC EFF-52318

Lab Sample ID: 580-77567-2

Date Collected: 05/23/18 06:15

Matrix: Water

Date Received: 05/25/18 15:10

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		0.062		mg/L		05/29/18 13:15	05/30/18 13:52	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		05/29/18 13:15	05/30/18 13:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	101		50 - 150				05/29/18 13:15	05/30/18 13:52	1

QC Sample Results

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

TestAmerica Job ID: 580-77567-1

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

Lab Sample ID: MB 580-274884/1-A

Matrix: Water

Analysis Batch: 274968

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 274884

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		05/29/18 13:15	05/30/18 10:49	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		05/29/18 13:15	05/30/18 10:49	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	101		50 - 150				05/29/18 13:15	05/30/18 10:49	1

Lab Sample ID: LCS 580-274884/2-A

Matrix: Water

Analysis Batch: 274968

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 274884

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.419		mg/L		84	50 - 120
Motor Oil (>C24-C36)	0.500	0.497		mg/L		99	64 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
<i>o</i> -Terphenyl	96		50 - 150				

Lab Sample ID: LCSD 580-274884/3-A

Matrix: Water

Analysis Batch: 274968

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 274884

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.432		mg/L		86	50 - 120	3	26
Motor Oil (>C24-C36)	0.500	0.505		mg/L		101	64 - 120	2	24
Surrogate	%Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	99		50 - 150						

Lab Chronicle

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

TestAmerica Job ID: 580-77567-1

Client Sample ID: Before GAC-52318

Lab Sample ID: 580-77567-1

Date Collected: 05/23/18 06:15

Matrix: Water

Date Received: 05/25/18 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			274884	05/29/18 13:15	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	274968	05/30/18 14:12	AEK	TAL SEA

Client Sample ID: HCC EFF-52318

Lab Sample ID: 580-77567-2

Date Collected: 05/23/18 06:15

Matrix: Water

Date Received: 05/25/18 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			274884	05/29/18 13:15	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	274968	05/30/18 13:52	AEK	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-77567-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-77567-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-77567-1	Before GAC-52318	Water	05/23/18 06:15	05/25/18 15:10
580-77567-2	HCC EFF-52318	Water	05/23/18 06:15	05/25/18 15:10

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-77567-1

Login Number: 77567

List Source: TestAmerica Seattle

List Number: 1

Creator: Hobbs, Kenneth F

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-77567-2

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
6/18/2018 4:05:54 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

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.

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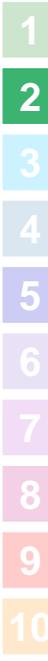


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Case Narrative

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

TestAmerica Job ID: 580-77567-2

Job ID: 580-77567-2

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-77567-2**

Comments

No additional comments.

Receipt

The samples were received on 5/25/2018 3:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.7° C.

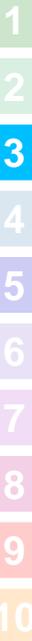
Receipt Exceptions

The following sample Before GAC-52318 (580-77567-1) was re-extracted and analyzed outside of holding time due to the results not matching historical data.

GC Semi VOA

Method(s) NWTPH-Dx: The following sample was re-extracted and re-analyzed outside of analytical holding time: Before GAC-52318 (580-77567-1).

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

TestAmerica Job ID: 580-77567-2

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.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-77567-2

Client Sample ID: Before GAC-52318

Lab Sample ID: 580-77567-1

Date Collected: 05/23/18 06:15

Matrix: Water

Date Received: 05/25/18 15:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.52	H	0.062		mg/L		06/15/18 09:11	06/18/18 12:10	1
Motor Oil (>C24-C36)	0.21	H	0.091		mg/L		06/15/18 09:11	06/18/18 12:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	68		50 - 150				06/15/18 09:11	06/18/18 12:10	1



QC Sample Results

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

TestAmerica Job ID: 580-77567-2

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

Lab Sample ID: MB 580-276345/1-A

Matrix: Water

Analysis Batch: 276521

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 276345

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		06/15/18 09:11	06/18/18 11:04	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		06/15/18 09:11	06/18/18 11:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	71		50 - 150	06/15/18 09:11	06/18/18 11:04	1

Lab Sample ID: LCS 580-276345/2-A

Matrix: Water

Analysis Batch: 276521

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 276345

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.406		mg/L		81	50 - 120
Motor Oil (>C24-C36)	0.500	0.427		mg/L		85	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	76		50 - 150

Lab Sample ID: LCSD 580-276345/3-A

Matrix: Water

Analysis Batch: 276521

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 276345

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.436		mg/L		87	50 - 120	7	26
Motor Oil (>C24-C36)	0.500	0.460		mg/L		92	64 - 120	7	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	94		50 - 150

Lab Chronicle

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

TestAmerica Job ID: 580-77567-2

Client Sample ID: Before GAC-52318

Lab Sample ID: 580-77567-1

Date Collected: 05/23/18 06:15

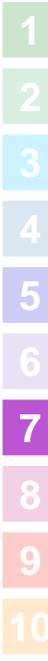
Matrix: Water

Date Received: 05/25/18 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			276345	06/15/18 09:11	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	276521	06/18/18 12:10	ERZ	TAL SEA

Laboratory References:

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



Accreditation/Certification Summary

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

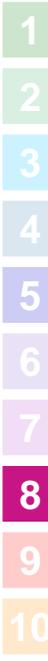
TestAmerica Job ID: 580-77567-2

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-77567-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-77567-1	Before GAC-52318	Water	05/23/18 06:15	05/25/18 15:10

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-77567-2

Login Number: 77567

List Source: TestAmerica Seattle

List Number: 1

Creator: Hobbs, Kenneth F

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.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	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	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-77658-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
6/4/2018 2:07:03 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

LINKS

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results through
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Have a Question?



Visit us at:
www.testamericainc.com

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.

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Case Narrative

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

TestAmerica Job ID: 580-77658-1

Job ID: 580-77658-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative
580-77658-1

Comments

No additional comments.

Receipt

The samples were received on 5/30/2018 1:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.4° 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

TestAmerica Job ID: 580-77658-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-77658-1

Client Sample ID: Before GAC-52918

Lab Sample ID: 580-77658-1

Date Collected: 05/29/18 08:30

Matrix: Water

Date Received: 05/30/18 13:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.56		0.062		mg/L		06/01/18 09:44	06/04/18 11:44	1
Motor Oil (>C24-C36)	0.25		0.091		mg/L		06/01/18 09:44	06/04/18 11:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	77		50 - 150				06/01/18 09:44	06/04/18 11:44	1



Client Sample Results

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

TestAmerica Job ID: 580-77658-1

Client Sample ID: HCC EFF-52918

Lab Sample ID: 580-77658-2

Date Collected: 05/29/18 08:30

Matrix: Water

Date Received: 05/30/18 13:40

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		0.062		mg/L		06/01/18 09:44	06/04/18 12:03	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		06/01/18 09:44	06/04/18 12:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	87		50 - 150				06/01/18 09:44	06/04/18 12:03	1

QC Sample Results

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

TestAmerica Job ID: 580-77658-1

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

Lab Sample ID: MB 580-275170/1-A

Matrix: Water

Analysis Batch: 275284

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 275170

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		06/01/18 09:44	06/04/18 10:43	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		06/01/18 09:44	06/04/18 10:43	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	100		50 - 150				06/01/18 09:44	06/04/18 10:43	1

Lab Sample ID: LCS 580-275170/2-A

Matrix: Water

Analysis Batch: 275284

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 275170

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.358		mg/L		72	50 - 120
Motor Oil (>C24-C36)	0.500	0.454		mg/L		91	64 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
<i>o</i> -Terphenyl	94		50 - 150				

Lab Sample ID: LCSD 580-275170/3-A

Matrix: Water

Analysis Batch: 275284

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 275170

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.394		mg/L		79	50 - 120	9	26
Motor Oil (>C24-C36)	0.500	0.487		mg/L		97	64 - 120	7	24
Surrogate	%Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	92		50 - 150						

Lab Chronicle

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

TestAmerica Job ID: 580-77658-1

Client Sample ID: Before GAC-52918

Lab Sample ID: 580-77658-1

Date Collected: 05/29/18 08:30

Matrix: Water

Date Received: 05/30/18 13:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			275170	06/01/18 09:44	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	275284	06/04/18 11:44	AEK	TAL SEA

Client Sample ID: HCC EFF-52918

Lab Sample ID: 580-77658-2

Date Collected: 05/29/18 08:30

Matrix: Water

Date Received: 05/30/18 13:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			275170	06/01/18 09:44	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	275284	06/04/18 12:03	AEK	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-77658-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-77658-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-77658-1	Before GAC-52918	Water	05/29/18 08:30	05/30/18 13:40
580-77658-2	HCC EFF-52918	Water	05/29/18 08:30	05/30/18 13:40

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-77658-1

Login Number: 77658

List Source: TestAmerica 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	



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-77914-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
6/14/2018 4:26:41 PM

Kayse Zalmi, Project Manager I
(253)922-2310

kayse.zalmi@testamericainc.com

Designee for

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

LINKS

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results through
TotalAccess

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www.testamericainc.com

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

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Case Narrative

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

TestAmerica Job ID: 580-77914-1

Job ID: 580-77914-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-77914-1

Receipt

The samples were received on 6/8/2018 1:35 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0° C.

Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

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.



Definitions/Glossary

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

TestAmerica Job ID: 580-77914-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-77914-1

Client Sample ID: Before GAC-060718

Lab Sample ID: 580-77914-1

Date Collected: 06/07/18 16:20

Matrix: Water

Date Received: 06/08/18 13:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.58		0.061		mg/L		06/11/18 11:09	06/12/18 11:44	1
Motor Oil (>C24-C36)	0.29		0.091		mg/L		06/11/18 11:09	06/12/18 11:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	92		50 - 150				06/11/18 11:09	06/12/18 11:44	1

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Client Sample Results

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

TestAmerica Job ID: 580-77914-1

Client Sample ID: HCC EFF-060718

Lab Sample ID: 580-77914-2

Date Collected: 06/07/18 16:30

Matrix: Water

Date Received: 06/08/18 13:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.061		mg/L		06/11/18 11:09	06/12/18 12:04	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		06/11/18 11:09	06/12/18 12:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	93		50 - 150				06/11/18 11:09	06/12/18 12:04	1

Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		06/13/18 09:01	06/13/18 14:10	1
Lead	ND		0.00080		mg/L		06/13/18 09:01	06/13/18 14:10	1



QC Sample Results

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

TestAmerica Job ID: 580-77914-1

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

Lab Sample ID: MB 580-275926/1-A
Matrix: Water
Analysis Batch: 275993

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 275926

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		06/11/18 11:09	06/12/18 10:44	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		06/11/18 11:09	06/12/18 10:44	1
Surrogate	%Recovery	MB Qualifier	Limits						
<i>o</i> -Terphenyl	98		50 - 150						
				Prepared	Analyzed	Dil Fac			
				06/11/18 11:09	06/12/18 10:44	1			

Lab Sample ID: LCS 580-275926/2-A
Matrix: Water
Analysis Batch: 275993

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 275926

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)	0.500	0.398		mg/L		80	50 - 120		
Motor Oil (>C24-C36)	0.500	0.473		mg/L		95	64 - 120		
Surrogate	%Recovery	LCS Qualifier	Limits						
<i>o</i> -Terphenyl	89		50 - 150						

Lab Sample ID: LCSD 580-275926/3-A
Matrix: Water
Analysis Batch: 275993

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 275926

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.434		mg/L		87	50 - 120	9	26
Motor Oil (>C24-C36)	0.500	0.507		mg/L		101	64 - 120	7	24
Surrogate	%Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	95		50 - 150						

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-276105/14-A
Matrix: Water
Analysis Batch: 276219

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 276105

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		06/13/18 09:01	06/13/18 14:01	1
Lead	ND		0.00080		mg/L		06/13/18 09:01	06/13/18 14:01	1

Lab Sample ID: LCS 580-276105/15-A
Matrix: Water
Analysis Batch: 276219

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 276105

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
Arsenic	0.100	0.0956		mg/L		96	85 - 115		
Lead	0.100	0.0949		mg/L		95	85 - 115		

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-77914-1

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

Lab Sample ID: LCSD 580-276105/16-A
Matrix: Water
Analysis Batch: 276219

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 276105

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	0.100	0.0967		mg/L		97	85 - 115	1	20
Lead	0.100	0.0953		mg/L		95	85 - 115	0	20

Lab Sample ID: 580-77914-2 MS
Matrix: Water
Analysis Batch: 276219

Client Sample ID: HCC EFF-060718
Prep Type: Total/NA
Prep Batch: 276105

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	ND		0.100	0.0970		mg/L		97	70 - 130		
Lead	ND		0.100	0.0955		mg/L		95	70 - 130		

Lab Sample ID: 580-77914-2 MSD
Matrix: Water
Analysis Batch: 276219

Client Sample ID: HCC EFF-060718
Prep Type: Total/NA
Prep Batch: 276105

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	ND		0.100	0.0995		mg/L		99	70 - 130	3	20
Lead	ND		0.100	0.0971		mg/L		97	70 - 130	2	20

Lab Sample ID: 580-77914-2 DU
Matrix: Water
Analysis Batch: 276219

Client Sample ID: HCC EFF-060718
Prep Type: Total/NA
Prep Batch: 276105

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	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

TestAmerica Job ID: 580-77914-1

Client Sample ID: Before GAC-060718

Date Collected: 06/07/18 16:20

Date Received: 06/08/18 13:35

Lab Sample ID: 580-77914-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			275926	06/11/18 11:09	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	275993	06/12/18 11:44	CJ	TAL SEA

Client Sample ID: HCC EFF-060718

Date Collected: 06/07/18 16:30

Date Received: 06/08/18 13:35

Lab Sample ID: 580-77914-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			275926	06/11/18 11:09	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	275993	06/12/18 12:04	CJ	TAL SEA
Total/NA	Prep	200.8			276105	06/13/18 09:01	CJB	TAL SEA
Total/NA	Analysis	200.8		1	276219	06/13/18 14:10	FCW	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-77914-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

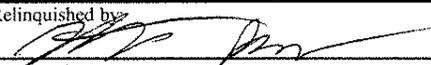
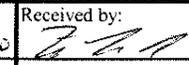
TestAmerica Job ID: 580-77914-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-77914-1	Before GAC-060718	Water	06/07/18 16:20	06/08/18 13:35
580-77914-2	HCC EFF-060718	Water	06/07/18 16:30	06/08/18 13:35

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Chain of Custody Record

77914

Client Contact		Project Manager: Jerry Portele		Site Contact: David Johnson		Date:		COC No:			
Farallon Consulting		Tel/Fax: 425-295-0839		Lab Contact: Kristine Allen		Carrier:		_____ of _____ COCs			
975 5th Avenue Northwest		Analysis Turnaround Time		Filtered Sample NWTPH-Dx w/o silica gel cleanup Total As, Pb (EPA 200.8)				Job No. Invoice attention to:			
Issaquah, WA 98027		Calendar (C) or Work Days (W)						Bruce Shepard, BNSF			
(425) 295-0800 Phone		TAT if different from Below						SDG No.			
(425) 295-0850 FAX		<input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day						3 DAY			
Project Name: Skykomish HCC System								Sampler:			
Site:								Sample Specific Notes:			
WO #: TT0100-M07											
Sample Identification		Sample Date	Sample Time	Sample Type	Matrix	# of Cont.					
Before GAC- 060718		6/7/18	1620	Grab	W	2	X		*** See instructions below		
HCC EFF- 060718		6/7/18	1630	Grab	W	3	X	X	*** See instructions below		
 <p>580-77914 Chain of Custody</p>											
Therm. ID: A2 Cor: 1.0 ^{1.0} Unc: 0.9 ° Cooler Dsc: Red Red Packing: Bubble FedEx: Cust. Seal: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> UPS: Wet/Packs/Dry Ice/None Lab Cour: <input checked="" type="checkbox"/> Other:											
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other						2 4 1					
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown						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											
Relinquished by:		Company:		Date/Time:		Received by:		Company:			
		Farallo		6/7/18 1800				TASTE			
Relinquished by:		Company:		Date/Time:		Received by:		Company:			
Relinquished by:		Company:		Date/Time:		Received by:		Company:			

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-77914-1

Login Number: 77914

List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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?	False	Refer to Job Narrative for details.
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-78174-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
6/20/2018 3:40:49 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

LINKS

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results through
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www.testamericainc.com

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.

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Case Narrative

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

TestAmerica Job ID: 580-78174-1

Job ID: 580-78174-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-78174-1**

Comments

No additional comments.

Receipt

The samples were received on 6/19/2018 1:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 6.2° C.

GC Semi VOA

Method(s) NWTPH-Dx: Continuing calibration verification (CCV) standard associated with batch 580-276776 recovered outside %Drift acceptance criteria for o-Terphenyl surrogate. The %Recovery is within acceptance criteria for the surrogate in the CCV and associated samples where matrix does not interfere; therefore, the data are qualified and reported. (CCVRT 580-276776/3)

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

TestAmerica Job ID: 580-78174-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-78174-1

Client Sample ID: Before GAC-61518

Lab Sample ID: 580-78174-1

Date Collected: 06/15/18 08:50

Matrix: Water

Date Received: 06/19/18 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)	0.56		0.062		mg/L		06/19/18 16:01	06/20/18 12:15	1
Motor Oil (>C24-C36)	0.27		0.091		mg/L		06/19/18 16:01	06/20/18 12:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	91		50 - 150				06/19/18 16:01	06/20/18 12:15	1



Client Sample Results

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

TestAmerica Job ID: 580-78174-1

Client Sample ID: HCC EFF-61518

Lab Sample ID: 580-78174-2

Date Collected: 06/15/18 08:50

Matrix: Water

Date Received: 06/19/18 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		0.062		mg/L		06/19/18 16:01	06/20/18 12:37	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		06/19/18 16:01	06/20/18 12:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	94		50 - 150				06/19/18 16:01	06/20/18 12:37	1



QC Sample Results

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

TestAmerica Job ID: 580-78174-1

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

Lab Sample ID: MB 580-276724/1-A

Matrix: Water

Analysis Batch: 276776

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 276724

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		06/19/18 16:01	06/20/18 11:09	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		06/19/18 16:01	06/20/18 11:09	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	96		50 - 150				06/19/18 16:01	06/20/18 11:09	1

Lab Sample ID: LCS 580-276724/2-A

Matrix: Water

Analysis Batch: 276776

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 276724

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.430		mg/L		86	50 - 120
Motor Oil (>C24-C36)	0.500	0.486		mg/L		97	64 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
<i>o</i> -Terphenyl	109		50 - 150				

Lab Sample ID: LCSD 580-276724/3-A

Matrix: Water

Analysis Batch: 276776

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 276724

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.441		mg/L		88	50 - 120	3	26
Motor Oil (>C24-C36)	0.500	0.510		mg/L		102	64 - 120	5	24
Surrogate	%Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	104		50 - 150						

Lab Chronicle

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

TestAmerica Job ID: 580-78174-1

Client Sample ID: Before GAC-61518

Lab Sample ID: 580-78174-1

Date Collected: 06/15/18 08:50

Matrix: Water

Date Received: 06/19/18 13:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			276724	06/19/18 16:01	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	276776	06/20/18 12:15	AEK	TAL SEA

Client Sample ID: HCC EFF-61518

Lab Sample ID: 580-78174-2

Date Collected: 06/15/18 08:50

Matrix: Water

Date Received: 06/19/18 13:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			276724	06/19/18 16:01	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	276776	06/20/18 12:37	AEK	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-78174-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-78174-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-78174-1	Before GAC-61518	Water	06/15/18 08:50	06/19/18 13:15
580-78174-2	HCC EFF-61518	Water	06/15/18 08:50	06/19/18 13:15

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-78174-1

Login Number: 78174

List Source: TestAmerica 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	



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-78178-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
6/22/2018 1:50:48 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

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.

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Case Narrative

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

TestAmerica Job ID: 580-78178-1

Job ID: 580-78178-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-78178-1**

Comments

No additional comments.

Receipt

The samples were received on 6/19/2018 1:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6° C.

GC Semi VOA

Method(s) NWTPH-Dx: The %D of surrogate (o-Terphenyl) for CCV associated with batch 580-276936 was outside the higher control limits. All associated sample surrogate fell within acceptance criteria; 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: Skyhomish HCC System

TestAmerica Job ID: 580-78178-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-78178-1

Client Sample ID: Before GAC-61918

Lab Sample ID: 580-78178-1

Date Collected: 06/19/18 07:15

Matrix: Water

Date Received: 06/19/18 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)	0.63		0.062		mg/L		06/20/18 09:38	06/21/18 16:28	1
Motor Oil (>C24-C36)	0.33		0.091		mg/L		06/20/18 09:38	06/21/18 16:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	94		50 - 150				06/20/18 09:38	06/21/18 16:28	1



Client Sample Results

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

TestAmerica Job ID: 580-78178-1

Client Sample ID: HCC EFF-61918

Lab Sample ID: 580-78178-2

Date Collected: 06/19/18 07:15

Matrix: Water

Date Received: 06/19/18 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		0.062		mg/L		06/20/18 09:38	06/21/18 16:50	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		06/20/18 09:38	06/21/18 16:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	91		50 - 150				06/20/18 09:38	06/21/18 16:50	1

QC Sample Results

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

TestAmerica Job ID: 580-78178-1

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

Lab Sample ID: MB 580-276772/1-A

Matrix: Water

Analysis Batch: 276936

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 276772

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		06/20/18 09:38	06/21/18 15:23	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		06/20/18 09:38	06/21/18 15:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	108		50 - 150	06/20/18 09:38	06/21/18 15:23	1

Lab Sample ID: LCS 580-276772/2-A

Matrix: Water

Analysis Batch: 276936

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 276772

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.467		mg/L		93	50 - 120
Motor Oil (>C24-C36)	0.500	0.532		mg/L		106	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	94		50 - 150

Lab Sample ID: LCSD 580-276772/3-A

Matrix: Water

Analysis Batch: 276936

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 276772

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.474		mg/L		95	50 - 120	1	26
Motor Oil (>C24-C36)	0.500	0.538		mg/L		108	64 - 120	1	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	102		50 - 150

Lab Chronicle

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

TestAmerica Job ID: 580-78178-1

Client Sample ID: Before GAC-61918

Lab Sample ID: 580-78178-1

Date Collected: 06/19/18 07:15

Matrix: Water

Date Received: 06/19/18 13:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			276772	06/20/18 09:38	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	276936	06/21/18 16:28	W1T	TAL SEA

Client Sample ID: HCC EFF-61918

Lab Sample ID: 580-78178-2

Date Collected: 06/19/18 07:15

Matrix: Water

Date Received: 06/19/18 13:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			276772	06/20/18 09:38	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	276936	06/21/18 16:50	W1T	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-78178-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-78178-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-78178-1	Before GAC-61918	Water	06/19/18 07:15	06/19/18 13:15
580-78178-2	HCC EFF-61918	Water	06/19/18 07:15	06/19/18 13:15

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-78178-1

Login Number: 78178

List Source: TestAmerica Seattle

List Number: 1

Creator: Hobbs, Kenneth F

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ 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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-78475-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
7/5/2018 3:07:27 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

LINKS

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

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Case Narrative

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

TestAmerica Job ID: 580-78475-1

Job ID: 580-78475-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative
580-78475-1

Comments

No additional comments.

Receipt

The samples were received on 6/29/2018 12:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4° 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

TestAmerica Job ID: 580-78475-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-78475-1

Client Sample ID: Before GAC-62818

Lab Sample ID: 580-78475-1

Date Collected: 06/28/18 12:00

Matrix: Water

Date Received: 06/29/18 12:30

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		0.062		mg/L		07/02/18 09:10	07/03/18 14:26	1
Motor Oil (>C24-C36)	0.14		0.091		mg/L		07/02/18 09:10	07/03/18 14:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	73		50 - 150				07/02/18 09:10	07/03/18 14:26	1



Client Sample Results

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

TestAmerica Job ID: 580-78475-1

Client Sample ID: HCC EFF-62818

Lab Sample ID: 580-78475-2

Date Collected: 06/28/18 12:00

Matrix: Water

Date Received: 06/29/18 12:30

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		0.062		mg/L		07/02/18 09:10	07/03/18 14:53	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		07/02/18 09:10	07/03/18 14:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	70		50 - 150				07/02/18 09:10	07/03/18 14:53	1

QC Sample Results

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

TestAmerica Job ID: 580-78475-1

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

Lab Sample ID: MB 580-277910/1-A

Matrix: Water

Analysis Batch: 277995

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 277910

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		07/02/18 09:10	07/03/18 12:37	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		07/02/18 09:10	07/03/18 12:37	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	77		50 - 150	07/02/18 09:10	07/03/18 12:37	1

Lab Sample ID: LCS 580-277910/2-A

Matrix: Water

Analysis Batch: 277995

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 277910

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.403		mg/L		81	50 - 120
Motor Oil (>C24-C36)	0.500	0.492		mg/L		98	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	89		50 - 150

Lab Sample ID: LCSD 580-277910/3-A

Matrix: Water

Analysis Batch: 277995

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 277910

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.405		mg/L		81	50 - 120	0	26
Motor Oil (>C24-C36)	0.500	0.504		mg/L		101	64 - 120	2	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	92		50 - 150

Lab Chronicle

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

TestAmerica Job ID: 580-78475-1

Client Sample ID: Before GAC-62818

Lab Sample ID: 580-78475-1

Date Collected: 06/28/18 12:00

Matrix: Water

Date Received: 06/29/18 12:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			277910	07/02/18 09:10	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	277995	07/03/18 14:26	CJ	TAL SEA

Client Sample ID: HCC EFF-62818

Lab Sample ID: 580-78475-2

Date Collected: 06/28/18 12:00

Matrix: Water

Date Received: 06/29/18 12:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			277910	07/02/18 09:10	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	277995	07/03/18 14:53	CJ	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-78475-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-78475-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-78475-1	Before GAC-62818	Water	06/28/18 12:00	06/29/18 12:30
580-78475-2	HCC EFF-62818	Water	06/28/18 12:00	06/29/18 12:30

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-78475-1

Login Number: 78475

List Source: TestAmerica 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	



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-78660-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
7/12/2018 4:12:19 PM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.com

LINKS

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www.testamericainc.com

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.

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Case Narrative

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

TestAmerica Job ID: 580-78660-1

Job ID: 580-78660-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-78660-1**

Comments

No additional comments.

Receipt

The samples were received on 7/6/2018 1:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.8° 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: Skykomish HCC System

TestAmerica Job ID: 580-78660-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-78660-1

Client Sample ID: Before GAC-070518

Lab Sample ID: 580-78660-1

Date Collected: 07/05/18 11:45

Matrix: Water

Date Received: 07/06/18 13:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.53		0.062		mg/L		07/09/18 09:18	07/10/18 14:39	1
Motor Oil (>C24-C36)	0.19		0.091		mg/L		07/09/18 09:18	07/10/18 14:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	88		50 - 150				07/09/18 09:18	07/10/18 14:39	1

Client Sample Results

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

TestAmerica Job ID: 580-78660-1

Client Sample ID: HCC EFF-070518

Lab Sample ID: 580-78660-2

Date Collected: 07/05/18 11:55

Matrix: Water

Date Received: 07/06/18 13:50

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		0.062		mg/L		07/09/18 09:18	07/10/18 15:06	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		07/09/18 09:18	07/10/18 15:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	79		50 - 150				07/09/18 09:18	07/10/18 15:06	1

Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		07/09/18 15:41	07/10/18 16:20	1
Lead	ND		0.00080		mg/L		07/09/18 15:41	07/10/18 16:20	1



QC Sample Results

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

TestAmerica Job ID: 580-78660-1

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

Lab Sample ID: MB 580-278400/1-A
Matrix: Water
Analysis Batch: 278519

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 278400

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		07/09/18 09:18	07/10/18 12:50	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		07/09/18 09:18	07/10/18 12:50	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	85		50 - 150	07/09/18 09:18	07/10/18 12:50	1

Lab Sample ID: LCS 580-278400/2-A
Matrix: Water
Analysis Batch: 278519

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 278400

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.434		mg/L		87	50 - 120
Motor Oil (>C24-C36)	0.500	0.521		mg/L		104	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	98		50 - 150

Lab Sample ID: LCSD 580-278400/3-A
Matrix: Water
Analysis Batch: 278649

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 278400

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.434		mg/L		87	50 - 120	0	26
Motor Oil (>C24-C36)	0.500	0.476		mg/L		95	64 - 120	9	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	97		50 - 150

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-278467/14-A
Matrix: Water
Analysis Batch: 278640

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 278467

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		07/09/18 15:41	07/10/18 15:21	1
Lead	ND		0.00080		mg/L		07/09/18 15:41	07/10/18 15:21	1

Lab Sample ID: LCS 580-278467/15-A
Matrix: Water
Analysis Batch: 278640

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 278467

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.100	0.0946		mg/L		95	85 - 115
Lead	0.100	0.0952		mg/L		95	85 - 115

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-78660-1

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

Lab Sample ID: LCSD 580-278467/16-A
Matrix: Water
Analysis Batch: 278640

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 278467

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
							Limits	RPD		
Arsenic	0.100	0.0958		mg/L		96	85 - 115	1	20	
Lead	0.100	0.0966		mg/L		97	85 - 115	2	20	

Lab Sample ID: 580-78673-A-1-C MS
Matrix: Water
Analysis Batch: 278640

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 278467

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.	
									Limits	RPD
Arsenic	0.0010		0.100	0.0986		mg/L		98	70 - 130	
Lead	0.0011		0.100	0.0987		mg/L		98	70 - 130	

Lab Sample ID: 580-78673-A-1-D MSD
Matrix: Water
Analysis Batch: 278640

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 278467

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec.	
									Limits	RPD
Arsenic	0.0010		0.100	0.0985		mg/L		98	70 - 130	0
Lead	0.0011		0.100	0.0981		mg/L		97	70 - 130	1

Lab Sample ID: 580-78673-A-1-B DU
Matrix: Water
Analysis Batch: 278640

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 278467

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD	
								Limit	Limit
Arsenic	0.0010		ND		mg/L		NC		20
Lead	0.0011		0.00112		mg/L		0		20

Lab Chronicle

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

TestAmerica Job ID: 580-78660-1

Client Sample ID: Before GAC-070518

Lab Sample ID: 580-78660-1

Date Collected: 07/05/18 11:45

Matrix: Water

Date Received: 07/06/18 13:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			278400	07/09/18 09:18	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	278519	07/10/18 14:39	ERZ	TAL SEA

Client Sample ID: HCC EFF-070518

Lab Sample ID: 580-78660-2

Date Collected: 07/05/18 11:55

Matrix: Water

Date Received: 07/06/18 13:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			278400	07/09/18 09:18	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	278519	07/10/18 15:06	ERZ	TAL SEA
Total/NA	Prep	200.8			278467	07/09/18 15:41	CJB	TAL SEA
Total/NA	Analysis	200.8		1	278640	07/10/18 16:20	FCW	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-78660-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-78660-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-78660-1	Before GAC-070518	Water	07/05/18 11:45	07/06/18 13:50
580-78660-2	HCC EFF-070518	Water	07/05/18 11:55	07/06/18 13:50

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-78660-1

Login Number: 78660

List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ 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?	False	Refer to Job Narrative for details.
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-78821-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
7/17/2018 5:02:22 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

LINKS

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www.testamericainc.com

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.

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Case Narrative

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

TestAmerica Job ID: 580-78821-1

Job ID: 580-78821-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-78821-1**

Comments

No additional comments.

Receipt

The samples were received on 7/13/2018 11:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.3° 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: Skykomish HCC System

TestAmerica Job ID: 580-78821-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-78821-1

Client Sample ID: Before GAC-71218

Lab Sample ID: 580-78821-1

Date Collected: 07/12/18 15:38

Matrix: Water

Date Received: 07/13/18 11:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.53		0.062		mg/L		07/16/18 09:37	07/16/18 20:33	1
Motor Oil (>C24-C36)	0.24		0.091		mg/L		07/16/18 09:37	07/16/18 20:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	83		50 - 150				07/16/18 09:37	07/16/18 20:33	1

Client Sample Results

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

TestAmerica Job ID: 580-78821-1

Client Sample ID: HCC EFF-71218

Lab Sample ID: 580-78821-2

Date Collected: 07/12/18 15:38

Matrix: Water

Date Received: 07/13/18 11:30

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		0.061		mg/L		07/16/18 09:37	07/16/18 20:55	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		07/16/18 09:37	07/16/18 20:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	81		50 - 150				07/16/18 09:37	07/16/18 20:55	1

QC Sample Results

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

TestAmerica Job ID: 580-78821-1

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

Lab Sample ID: MB 580-279090/1-A

Matrix: Water

Analysis Batch: 279178

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 279090

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		07/16/18 09:37	07/16/18 19:02	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		07/16/18 09:37	07/16/18 19:02	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	84		50 - 150	07/16/18 09:37	07/16/18 19:02	1

Lab Sample ID: LCS 580-279090/2-A

Matrix: Water

Analysis Batch: 279178

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 279090

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.396		mg/L		79	50 - 120
Motor Oil (>C24-C36)	0.500	0.432		mg/L		86	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	94		50 - 150

Lab Sample ID: LCSD 580-279090/3-A

Matrix: Water

Analysis Batch: 279178

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 279090

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.447		mg/L		89	50 - 120	12	26
Motor Oil (>C24-C36)	0.500	0.467		mg/L		93	64 - 120	8	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	102		50 - 150

Lab Chronicle

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

TestAmerica Job ID: 580-78821-1

Client Sample ID: Before GAC-71218

Lab Sample ID: 580-78821-1

Date Collected: 07/12/18 15:38

Matrix: Water

Date Received: 07/13/18 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			279090	07/16/18 09:37	SPS	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	279178	07/16/18 20:33	AEK	TAL SEA

Client Sample ID: HCC EFF-71218

Lab Sample ID: 580-78821-2

Date Collected: 07/12/18 15:38

Matrix: Water

Date Received: 07/13/18 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			279090	07/16/18 09:37	SPS	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	279178	07/16/18 20:55	AEK	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-78821-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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- 1
- 2
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- 10
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Sample Summary

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

TestAmerica Job ID: 580-78821-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-78821-1	Before GAC-71218	Water	07/12/18 15:38	07/13/18 11:30
580-78821-2	HCC EFF-71218	Water	07/12/18 15:38	07/13/18 11:30

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- 9
- 10
- 11

TestAmerica Seattle

5755 8th Street East

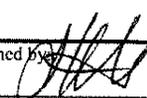
Tacoma, WA 98424

phone 253.922.2310 fax 253.922.5047



Chain of Custody Record

TestAmerica Laboratories, Inc.

Client Contact Farallon Consulting 975 5th Avenue Northwest Issaquah, WA 98027 (425) 295-0800 Phone (425) 295-0850 FAX Project Name: Skykomish HCC System Site: WO #: TT0100-M07		Project Manager: Jerry Portele Tel/Fax: 425-295-0839		Site Contact: David Johnson Lab Contact: Kristine Allen		Date: 7-12-18 Carrier:		COC No: 2 of 2 COCs Job No. Invoice attention to: Bruce Shepard, BNSF SDG No. Sampler: TW Sample Specific Notes: *** See instructions below *** See instructions below	
		Analysis Turnaround Time Calendar (C) or Work Days (W) TAT if different from Below <u>3 days</u> <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Filtered Sample NWT/PH-Dx w/o silica gel cleanup		Loc: 580 78821			
Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.				
Before GAC- 71218	7-12-18	338	Grab	W	2	X			
HCC EFF- 71218	7-12-18	338	Grab	W	2	X			
						 580-78821 Chain of Custody			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other						2 1			
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown						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									
Relinquished by: 	Company: <u>Ugover</u>	Date/Time: <u>7/12/18</u>	Received by: <u>B. Gall</u>	Company: <u>SEA TA</u>	Date/Time: <u>7/13/18 1130</u>				
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:				
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:				

Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-78821-1

Login Number: 78821

List Source: TestAmerica Seattle

List Number: 1

Creator: Hobbs, Kenneth F

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	



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-78994-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
7/24/2018 5:07:08 PM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.com

LINKS

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results through
TotalAccess

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www.testamericainc.com

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.

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Case Narrative

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

TestAmerica Job ID: 580-78994-1

Job ID: 580-78994-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-78994-1

Comments

No additional comments.

Receipt

The samples were received on 7/19/2018 4:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.0° C.

GC Semi VOA

Method(s) 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-071818 (580-78994-1).

Method(s) NWTPH-Dx: The peak profile present in this sample HCC EFF-071818 (580-78994-2) is atypical of a hydrocarbon pattern and consists of discrete peaks

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

TestAmerica Job ID: 580-78994-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-78994-1

Client Sample ID: Before GAC-071818

Lab Sample ID: 580-78994-1

Date Collected: 07/18/18 16:00

Matrix: Water

Date Received: 07/19/18 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)	0.51		0.062		mg/L		07/22/18 12:47	07/23/18 10:29	1
Motor Oil (>C24-C36)	0.21		0.091		mg/L		07/22/18 12:47	07/23/18 10:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	81		50 - 150				07/22/18 12:47	07/23/18 10:29	1



Client Sample Results

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

TestAmerica Job ID: 580-78994-1

Client Sample ID: HCC EFF-071818

Lab Sample ID: 580-78994-2

Date Collected: 07/18/18 16:10

Matrix: Water

Date Received: 07/19/18 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)	0.079		0.062		mg/L		07/22/18 12:47	07/23/18 10:51	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		07/22/18 12:47	07/23/18 10:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	91		50 - 150				07/22/18 12:47	07/23/18 10:51	1



QC Sample Results

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

TestAmerica Job ID: 580-78994-1

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

Lab Sample ID: MB 580-279740/1-A

Matrix: Water

Analysis Batch: 279755

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 279740

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		07/22/18 12:47	07/23/18 09:24	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		07/22/18 12:47	07/23/18 09:24	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	97		50 - 150	07/22/18 12:47	07/23/18 09:24	1

Lab Sample ID: LCS 580-279740/2-A

Matrix: Water

Analysis Batch: 279755

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 279740

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.462		mg/L		92	50 - 120
Motor Oil (>C24-C36)	0.500	0.526		mg/L		105	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	104		50 - 150

Lab Sample ID: LCSD 580-279740/3-A

Matrix: Water

Analysis Batch: 279755

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 279740

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.423		mg/L		85	50 - 120	9	26
Motor Oil (>C24-C36)	0.500	0.522		mg/L		104	64 - 120	1	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	105		50 - 150

Lab Chronicle

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

TestAmerica Job ID: 580-78994-1

Client Sample ID: Before GAC-071818

Lab Sample ID: 580-78994-1

Date Collected: 07/18/18 16:00

Matrix: Water

Date Received: 07/19/18 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			279740	07/22/18 12:47	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	279755	07/23/18 10:29	W1T	TAL SEA

Client Sample ID: HCC EFF-071818

Lab Sample ID: 580-78994-2

Date Collected: 07/18/18 16:10

Matrix: Water

Date Received: 07/19/18 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			279740	07/22/18 12:47	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	279755	07/23/18 10:51	W1T	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-78994-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-78994-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-78994-1	Before GAC-071818	Water	07/18/18 16:00	07/19/18 16:00
580-78994-2	HCC EFF-071818	Water	07/18/18 16:10	07/19/18 16:00

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TestAmerica Seattle

5755 8th Street East

Tacoma, WA 98424

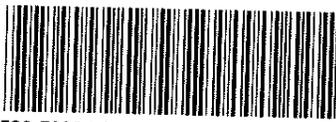
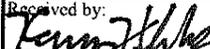
phone 253.922.2310 fax 253.922.5047

Chain of Custody Record

TestAmerica

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TestAmerica Laboratories, Inc.

Client Contact		Project Manager: Jerry Portele			Site Contact: David Johnson			Date:		COC No:		
Farallon Consulting		Tel/Fax: 425-295-0839			Lab Contact: Kristine Allen			Carrier:		of COCs		
975 5th Avenue Northwest		Analysis Turnaround Time			Filtered Sample NWT/PH-Dx w/o silica gel cleanup			Loc: 580 78994		Job No. Invoice attention to: Bruce Shepard, BNSF		
Issaquah, WA 98027		Calendar (C) or Work Days (W)								SDG No.		
(425) 295-0800 Phone		TAT if different from Below <u>3 DAY</u>								Sampler:		
(425) 295-0850 FAX		<input type="checkbox"/> 2 weeks								Sample Specific Notes:		
Project Name: Skykomish HCC System		<input type="checkbox"/> 1 week										
Site:		<input type="checkbox"/> 2 days										
WO #: TT0100-M07		<input type="checkbox"/> 1 day										
Sample Identification		Sample Date	Sample Time	Sample Type	Matrix	# of Cont.						
Before GAC- 071818		7/18/18	1600	Grab	W	2	X	*** See instructions below				
HCC EFF- 071818		7/18/18	1610	Grab	W	2	X	*** See instructions below				
 580-78994 Chain of Custody												
Therm. ID: <u>A2</u> Cor: <u>3.0</u> Unc: <u>2.9</u> Cooler Dsc: <u>19 BTCS in Real</u> Packing: <u>Sub</u> FedEx: Cust. Seal: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Lab Cour: <u>X</u> <input checked="" type="checkbox"/> Packs/Dry Ice/None Other:												
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other							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					
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown							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					
Relinquished by:		Company:		Date/Time:		Received by:		Company:		Date/Time:		
		Farallon		7/18/18 1600				TASEJ		7-19-18 1600		
Relinquished by:		Company:		Date/Time:		Received by:		Company:		Date/Time:		
Relinquished by:		Company:		Date/Time:		Received by:		Company:		Date/Time:		

Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-78994-1

Login Number: 78994

List Source: TestAmerica Seattle

List Number: 1

Creator: Hobbs, Kenneth F

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	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-79180-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
8/1/2018 3:36:07 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

LINKS

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

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Case Narrative

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

TestAmerica Job ID: 580-79180-1

Job ID: 580-79180-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-79180-1**

Comments

No additional comments.

Receipt

The samples were received on 7/27/2018 4:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

GC Semi VOA

Method(s) 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-072618 (580-79180-1).

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

TestAmerica Job ID: 580-79180-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-79180-1

Client Sample ID: Before GAC-072618

Lab Sample ID: 580-79180-1

Date Collected: 07/26/18 14:35

Matrix: Water

Date Received: 07/28/18 16:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.51		0.061		mg/L		07/30/18 09:11	07/31/18 12:23	1
Motor Oil (>C24-C36)	0.20		0.091		mg/L		07/30/18 09:11	07/31/18 12:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	79		50 - 150				07/30/18 09:11	07/31/18 12:23	1



Client Sample Results

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

TestAmerica Job ID: 580-79180-1

Client Sample ID: HCC EFF-072618

Lab Sample ID: 580-79180-2

Date Collected: 07/26/18 14:45

Matrix: Water

Date Received: 07/28/18 16:30

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		0.062		mg/L		07/30/18 09:11	07/31/18 12:44	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		07/30/18 09:11	07/31/18 12:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	91		50 - 150				07/30/18 09:11	07/31/18 12:44	1



QC Sample Results

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

TestAmerica Job ID: 580-79180-1

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

Lab Sample ID: MB 580-280356/1-A

Matrix: Water

Analysis Batch: 280443

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 280356

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		07/30/18 09:11	07/31/18 11:18	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		07/30/18 09:11	07/31/18 11:18	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	91		50 - 150	07/30/18 09:11	07/31/18 11:18	1

Lab Sample ID: LCS 580-280356/2-A

Matrix: Water

Analysis Batch: 280443

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 280356

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.418		mg/L		84	50 - 120
Motor Oil (>C24-C36)	0.500	0.504		mg/L		101	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	97		50 - 150

Lab Sample ID: LCSD 580-280356/3-A

Matrix: Water

Analysis Batch: 280443

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 280356

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.411		mg/L		82	50 - 120	2	26
Motor Oil (>C24-C36)	0.500	0.504		mg/L		101	64 - 120	0	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	100		50 - 150

Lab Chronicle

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

TestAmerica Job ID: 580-79180-1

Client Sample ID: Before GAC-072618

Lab Sample ID: 580-79180-1

Date Collected: 07/26/18 14:35

Matrix: Water

Date Received: 07/28/18 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			280356	07/30/18 09:11	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	280443	07/31/18 12:23	CJ	TAL SEA

Client Sample ID: HCC EFF-072618

Lab Sample ID: 580-79180-2

Date Collected: 07/26/18 14:45

Matrix: Water

Date Received: 07/28/18 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			280356	07/30/18 09:11	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	280443	07/31/18 12:44	CJ	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-79180-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-79180-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-79180-1	Before GAC-072618	Water	07/26/18 14:35	07/28/18 16:30
580-79180-2	HCC EFF-072618	Water	07/26/18 14:45	07/28/18 16:30

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-79180-1

Login Number: 79180

List Source: TestAmerica Seattle

List Number: 1

Creator: Hobbs, Kenneth F

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ 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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-79306-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
8/7/2018 4:59:44 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

LINKS

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results through
TotalAccess

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www.testamericainc.com

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.

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Case Narrative

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

TestAmerica Job ID: 580-79306-1

Job ID: 580-79306-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-79306-1**

Comments

No additional comments.

Receipt

The samples were received on 8/2/2018 4:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.6° 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

TestAmerica Job ID: 580-79306-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-79306-1

Client Sample ID: Before GAC-080118

Lab Sample ID: 580-79306-1

Date Collected: 08/01/18 10:15

Matrix: Water

Date Received: 08/02/18 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)	0.11		0.062		mg/L		08/05/18 09:09	08/07/18 10:54	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		08/05/18 09:09	08/07/18 10:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	85		50 - 150				08/05/18 09:09	08/07/18 10:54	1



Client Sample Results

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

TestAmerica Job ID: 580-79306-1

Client Sample ID: HCC EFF-080118

Lab Sample ID: 580-79306-2

Date Collected: 08/01/18 10:25

Matrix: Water

Date Received: 08/02/18 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		0.062		mg/L		08/05/18 09:09	08/07/18 11:15	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		08/05/18 09:09	08/07/18 11:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	75		50 - 150				08/05/18 09:09	08/07/18 11:15	1

Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		08/03/18 11:56	08/06/18 12:07	1
Lead	ND		0.00080		mg/L		08/03/18 11:56	08/06/18 12:07	1



QC Sample Results

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

TestAmerica Job ID: 580-79306-1

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

Lab Sample ID: MB 580-280858/1-A
Matrix: Water
Analysis Batch: 280966

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 280858

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		08/05/18 09:09	08/07/18 09:48	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		08/05/18 09:09	08/07/18 09:48	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	89		50 - 150	08/05/18 09:09	08/07/18 09:48	1

Lab Sample ID: LCS 580-280858/2-A
Matrix: Water
Analysis Batch: 280966

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 280858

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.447		mg/L		89	50 - 120
Motor Oil (>C24-C36)	0.500	0.448		mg/L		90	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	112		50 - 150

Lab Sample ID: LCSD 580-280858/3-A
Matrix: Water
Analysis Batch: 280966

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 280858

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.438		mg/L		88	50 - 120	2	26
Motor Oil (>C24-C36)	0.500	0.441		mg/L		88	64 - 120	2	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	106		50 - 150

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-280780/14-A
Matrix: Water
Analysis Batch: 280961

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 280780

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		08/03/18 11:56	08/06/18 12:03	1
Lead	ND		0.00080		mg/L		08/03/18 11:56	08/06/18 12:03	1

Lab Sample ID: LCS 580-280780/15-A
Matrix: Water
Analysis Batch: 280961

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 280780

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.100	0.0869		mg/L		87	85 - 115
Lead	0.100	0.106		mg/L		106	85 - 115

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-79306-1

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

Lab Sample ID: LCSD 580-280780/16-A

Matrix: Water

Analysis Batch: 280961

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 280780

Analyte	Spike Added	LCSD		Unit	D	%Rec	%Rec.		RPD	Limit
		Result	Qualifier				Limits	RPD		
Arsenic	0.100	0.0869		mg/L		87	85 - 115	0	20	
Lead	0.100	0.106		mg/L		106	85 - 115	0	20	

Lab Sample ID: 580-79306-2 MS

Matrix: Water

Analysis Batch: 280961

Client Sample ID: HCC EFF-080118

Prep Type: Total/NA

Prep Batch: 280780

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	%Rec.	
				Result	Qualifier				Limits	RPD
Arsenic	ND		0.100	0.0919		mg/L		92	70 - 130	
Lead	ND		0.100	0.103		mg/L		103	70 - 130	

Lab Sample ID: 580-79306-2 MSD

Matrix: Water

Analysis Batch: 280961

Client Sample ID: HCC EFF-080118

Prep Type: Total/NA

Prep Batch: 280780

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec.		RPD	Limit
				Result	Qualifier				Limits	RPD		
Arsenic	ND		0.100	0.0860		mg/L		86	70 - 130	7	20	
Lead	ND		0.100	0.101		mg/L		101	70 - 130	2	20	

Lab Sample ID: 580-79306-2 DU

Matrix: Water

Analysis Batch: 280961

Client Sample ID: HCC EFF-080118

Prep Type: Total/NA

Prep Batch: 280780

Analyte	Sample Result	Sample Qualifier	DU		Unit	D	RPD	Limit
			Result	Qualifier				
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

TestAmerica Job ID: 580-79306-1

Client Sample ID: Before GAC-080118

Lab Sample ID: 580-79306-1

Date Collected: 08/01/18 10:15

Matrix: Water

Date Received: 08/02/18 16:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			280858	08/05/18 09:09	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	280966	08/07/18 10:54	AEK	TAL SEA

Client Sample ID: HCC EFF-080118

Lab Sample ID: 580-79306-2

Date Collected: 08/01/18 10:25

Matrix: Water

Date Received: 08/02/18 16:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			280858	08/05/18 09:09	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	280966	08/07/18 11:15	AEK	TAL SEA
Total/NA	Prep	200.8			280780	08/03/18 11:56	T1H	TAL SEA
Total/NA	Analysis	200.8		1	280961	08/06/18 12:07	FCW	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-79306-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-79306-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-79306-1	Before GAC-080118	Water	08/01/18 10:15	08/02/18 16:15
580-79306-2	HCC EFF-080118	Water	08/01/18 10:25	08/02/18 16:15

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Chain of Custody Record

TestAmerica Laboratories, Inc.

Client Contact		Project Manager: Jerry Portele		Site Contact: David Johnson		Date:		COC No:	
Farallon Consulting		Tel/Fax: 425-295-0839		Lab Contact: Kristine Allen		Carrier:		1 of 2 COCs	
975 5th Avenue Northwest		Analysis Turnaround Time		Filtered Sample NW/TPH-Dx w/o silica gel cleanup Total As, Pb (EPA 200.8)		Loc: 580 79306		Job No. Invoice attention to:	
Issaquah, WA 98027		Calendar (C) or Work Days (W) 3 DAY						Bruce Shepard, BNSF	
(425) 295-0800 Phone		TAT if different from Below X						SDG No.	
(425) 295-0850 FAX		<input type="checkbox"/> 2 weeks 3 DAY <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day						Sampler:	
Project Name: Skykomish HCC System								Sample Specific Notes:	
Site:									
WO #: TT0100-M07									
Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.				
Before GAC- 070118	8/1/18	1015	Grab	W	2	X			*** See instructions below
HCC EFF- 080118	8/1/18	1025	Grab	W	3	X	X		*** See instructions below
						<p>580-79306 Chain of Custody</p>			
						Therm. ID: 5 Cor: 5.6 ° Unc: 5.6 ° Cooler Dsc: Ly Blue Packing: P/B FedEx: _____ Cust. Seal: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> UPS: _____ Lab Cour: X Other: _____			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other						2 4 1			
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/>						<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									
Relinquished by:		Company:		Date/Time:		Received by:		Date/Time:	
		Farallon		8/2/18 530				8-2-18 1615	
Relinquished by:		Company:		Date/Time:		Received by:		Date/Time:	
Relinquished by:		Company:		Date/Time:		Received by:		Date/Time:	

Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-79306-1

Login Number: 79306

List Source: TestAmerica Seattle

List Number: 1

Creator: Hobbs, Kenneth F

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ 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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-79505-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
8/15/2018 11:19:53 AM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.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.

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Case Narrative

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

TestAmerica Job ID: 580-79505-1

Job ID: 580-79505-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-79505-1**

Comments

No additional comments.

Receipt

The samples were received on 8/10/2018 3:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.1° 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

TestAmerica Job ID: 580-79505-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-79505-1

Client Sample ID: Before GAC-8918

Lab Sample ID: 580-79505-1

Date Collected: 08/09/18 08:40

Matrix: Water

Date Received: 08/10/18 15:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.58		0.062		mg/L		08/13/18 10:36	08/15/18 05:47	1
Motor Oil (>C24-C36)	0.22		0.091		mg/L		08/13/18 10:36	08/15/18 05:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	75		50 - 150				08/13/18 10:36	08/15/18 05:47	1

Client Sample Results

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

TestAmerica Job ID: 580-79505-1

Client Sample ID: HCC EFF-8918

Lab Sample ID: 580-79505-2

Date Collected: 08/09/18 08:40

Matrix: Water

Date Received: 08/10/18 15:00

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		0.062		mg/L		08/13/18 10:36	08/15/18 06:15	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		08/13/18 10:36	08/15/18 06:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	88		50 - 150				08/13/18 10:36	08/15/18 06:15	1

QC Sample Results

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

TestAmerica Job ID: 580-79505-1

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

Lab Sample ID: MB 580-281409/1-A

Matrix: Water

Analysis Batch: 281544

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 281409

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		08/13/18 10:36	08/15/18 04:26	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		08/13/18 10:36	08/15/18 04:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	84		50 - 150	08/13/18 10:36	08/15/18 04:26	1

Lab Sample ID: LCS 580-281409/2-A

Matrix: Water

Analysis Batch: 281544

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 281409

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.408		mg/L		82	50 - 120
Motor Oil (>C24-C36)	0.500	0.483		mg/L		97	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	94		50 - 150

Lab Sample ID: LCSD 580-281409/3-A

Matrix: Water

Analysis Batch: 281544

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 281409

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.445		mg/L		89	50 - 120	9	26
Motor Oil (>C24-C36)	0.500	0.484		mg/L		97	64 - 120	0	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	98		50 - 150

Lab Chronicle

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

TestAmerica Job ID: 580-79505-1

Client Sample ID: Before GAC-8918

Lab Sample ID: 580-79505-1

Date Collected: 08/09/18 08:40

Matrix: Water

Date Received: 08/10/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			281409	08/13/18 10:36	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	281544	08/15/18 05:47	ERZ	TAL SEA

Client Sample ID: HCC EFF-8918

Lab Sample ID: 580-79505-2

Date Collected: 08/09/18 08:40

Matrix: Water

Date Received: 08/10/18 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			281409	08/13/18 10:36	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	281544	08/15/18 06:15	ERZ	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-79505-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-79505-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-79505-1	Before GAC-8918	Water	08/09/18 08:40	08/10/18 15:00
580-79505-2	HCC EFF-8918	Water	08/09/18 08:40	08/10/18 15:00

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-79505-1

Login Number: 79505

List Source: TestAmerica Seattle

List Number: 1

Creator: Gall, Brandon A

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	Not present
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	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-79683-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet

Kristine D. Allen

Authorized for release by:
8/22/2018 1:38:34 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

LINKS

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www.testamericainc.com

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.

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Case Narrative

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

TestAmerica Job ID: 580-79683-1

Job ID: 580-79683-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-79683-1

Comments

No additional comments.

Receipt

The samples were received on 8/17/2018 12:55 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.8° C.

Receipt Exceptions

The following sample was received at the laboratory without a sample collection time documented on the chain of custody: Before GAC-81618 (580-79683-1). Logged in per time on sample container.

GC Semi VOA

Method(s) 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-81618 (580-79683-1).

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

TestAmerica Job ID: 580-79683-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-79683-1

Client Sample ID: Before GAC-81618

Lab Sample ID: 580-79683-1

Date Collected: 08/16/18 13:35

Matrix: Water

Date Received: 08/17/18 12:55

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.48		0.062		mg/L		08/20/18 15:12	08/21/18 10:53	1
Motor Oil (>C24-C36)	0.21		0.091		mg/L		08/20/18 15:12	08/21/18 10:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	77		50 - 150				08/20/18 15:12	08/21/18 10:53	1

Client Sample Results

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

TestAmerica Job ID: 580-79683-1

Client Sample ID: HCC EFF-81618

Lab Sample ID: 580-79683-2

Date Collected: 08/16/18 13:35

Matrix: Water

Date Received: 08/17/18 12:55

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		0.062		mg/L		08/20/18 15:12	08/21/18 11:15	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		08/20/18 15:12	08/21/18 11:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	88		50 - 150				08/20/18 15:12	08/21/18 11:15	1



QC Sample Results

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

TestAmerica Job ID: 580-79683-1

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

Lab Sample ID: MB 580-282006/1-A

Matrix: Water

Analysis Batch: 282046

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 282006

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		08/20/18 15:12	08/21/18 09:47	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		08/20/18 15:12	08/21/18 09:47	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	92		50 - 150	08/20/18 15:12	08/21/18 09:47	1

Lab Sample ID: LCS 580-282006/2-A

Matrix: Water

Analysis Batch: 282046

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 282006

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.468		mg/L		94	50 - 120
Motor Oil (>C24-C36)	0.500	0.499		mg/L		100	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	107		50 - 150

Lab Sample ID: LCSD 580-282006/3-A

Matrix: Water

Analysis Batch: 282046

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 282006

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.481		mg/L		96	50 - 120	3	26
Motor Oil (>C24-C36)	0.500	0.492		mg/L		98	64 - 120	1	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	100		50 - 150

Lab Chronicle

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

TestAmerica Job ID: 580-79683-1

Client Sample ID: Before GAC-81618

Lab Sample ID: 580-79683-1

Date Collected: 08/16/18 13:35

Matrix: Water

Date Received: 08/17/18 12:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			282006	08/20/18 15:12	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	282046	08/21/18 10:53	W1T	TAL SEA

Client Sample ID: HCC EFF-81618

Lab Sample ID: 580-79683-2

Date Collected: 08/16/18 13:35

Matrix: Water

Date Received: 08/17/18 12:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			282006	08/20/18 15:12	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	282046	08/21/18 11:15	W1T	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-79683-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-79683-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-79683-1	Before GAC-81618	Water	08/16/18 13:35	08/17/18 12:55
580-79683-2	HCC EFF-81618	Water	08/16/18 13:35	08/17/18 12:55

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-79683-1

Login Number: 79683

List Source: TestAmerica Seattle

List Number: 1

Creator: Gall, Brandon A

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	Not present
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.	False	No date or time on COC, logged in per container labels.
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-79848-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
8/28/2018 1:17:56 PM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.com

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

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Case Narrative

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

TestAmerica Job ID: 580-79848-1

Job ID: 580-79848-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative
580-79848-1

Comments

No additional comments.

Receipt

The samples were received on 8/23/2018 4:55 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 6.3° C.

Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

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

TestAmerica Job ID: 580-79848-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-79848-1

Client Sample ID: Before GAC-082218

Lab Sample ID: 580-79848-1

Date Collected: 08/22/18 12:10

Matrix: Water

Date Received: 08/23/18 16:55

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.42		0.062		mg/L		08/26/18 15:32	08/28/18 01:09	1
Motor Oil (>C24-C36)	0.16		0.091		mg/L		08/26/18 15:32	08/28/18 01:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	85		50 - 150				08/26/18 15:32	08/28/18 01:09	1



Client Sample Results

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

TestAmerica Job ID: 580-79848-1

Client Sample ID: HCC EFF-082218

Lab Sample ID: 580-79848-2

Date Collected: 08/22/18 12:20

Matrix: Water

Date Received: 08/23/18 16:55

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		0.062		mg/L		08/26/18 15:32	08/28/18 01:36	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		08/26/18 15:32	08/28/18 01:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	81		50 - 150				08/26/18 15:32	08/28/18 01:36	1



QC Sample Results

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

TestAmerica Job ID: 580-79848-1

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

Lab Sample ID: MB 580-282514/1-A

Matrix: Water

Analysis Batch: 282534

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 282514

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		08/26/18 15:32	08/27/18 23:46	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		08/26/18 15:32	08/27/18 23:46	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	86		50 - 150	08/26/18 15:32	08/27/18 23:46	1

Lab Sample ID: LCS 580-282514/2-A

Matrix: Water

Analysis Batch: 282534

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 282514

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.433		mg/L		87	50 - 120
Motor Oil (>C24-C36)	0.500	0.483		mg/L		97	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	99		50 - 150

Lab Sample ID: LCSD 580-282514/3-A

Matrix: Water

Analysis Batch: 282534

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 282514

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.436		mg/L		87	50 - 120	1	26
Motor Oil (>C24-C36)	0.500	0.526		mg/L		105	64 - 120	8	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	97		50 - 150

Lab Chronicle

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

TestAmerica Job ID: 580-79848-1

Client Sample ID: Before GAC-082218

Lab Sample ID: 580-79848-1

Date Collected: 08/22/18 12:10

Matrix: Water

Date Received: 08/23/18 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			282514	08/26/18 15:32	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	282534	08/28/18 01:09	CJ	TAL SEA

Client Sample ID: HCC EFF-082218

Lab Sample ID: 580-79848-2

Date Collected: 08/22/18 12:20

Matrix: Water

Date Received: 08/23/18 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			282514	08/26/18 15:32	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	282534	08/28/18 01:36	CJ	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-79848-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-79848-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-79848-1	Before GAC-082218	Water	08/22/18 12:10	08/23/18 16:55
580-79848-2	HCC EFF-082218	Water	08/22/18 12:20	08/23/18 16:55

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-79848-1

Login Number: 79848

List Source: TestAmerica 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	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-79980-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet

Kristine D. Allen

Authorized for release by:
9/6/2018 2:49:00 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

LINKS

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results through
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www.testamericainc.com

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.

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Case Narrative

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

TestAmerica Job ID: 580-79980-1

Job ID: 580-79980-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-79980-1**

Comments

No additional comments.

Receipt

The samples were received on 8/30/2018 12:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.5° C.

GC Semi VOA

Method(s) NWTPH-Dx: Continuing calibration verification (CCV) standard associated with batch 580-283243 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. (CCV 580-283243/10) and (CCVRT 580-283243/3)

Method(s) NWTPH-Dx: Surrogate recovery for the following sample was outside control limits: Before GAC-82918 (580-79980-1). 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: Skykomish HCC System

TestAmerica Job ID: 580-79980-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-79980-1

Client Sample ID: Before GAC-82918

Lab Sample ID: 580-79980-1

Date Collected: 08/29/18 13:20

Matrix: Water

Date Received: 08/30/18 12:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.86		0.062		mg/L		09/04/18 13:14	09/05/18 16:48	1
Motor Oil (>C24-C36)	0.22		0.091		mg/L		09/04/18 13:14	09/05/18 16:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	181	X	50 - 150				09/04/18 13:14	09/05/18 16:48	1

Client Sample Results

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

TestAmerica Job ID: 580-79980-1

Client Sample ID: HCC EFF-82918

Lab Sample ID: 580-79980-2

Date Collected: 08/29/18 13:20

Matrix: Water

Date Received: 08/30/18 12:50

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		0.062		mg/L		09/04/18 13:14	09/05/18 17:10	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		09/04/18 13:14	09/05/18 17:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	99		50 - 150				09/04/18 13:14	09/05/18 17:10	1



QC Sample Results

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

TestAmerica Job ID: 580-79980-1

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

Lab Sample ID: MB 580-283146/1-A

Matrix: Water

Analysis Batch: 283243

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 283146

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		09/04/18 13:14	09/05/18 15:13	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		09/04/18 13:14	09/05/18 15:13	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	102		50 - 150	09/04/18 13:14	09/05/18 15:13	1

Lab Sample ID: LCS 580-283146/2-A

Matrix: Water

Analysis Batch: 283243

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 283146

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.493		mg/L		99	50 - 120
Motor Oil (>C24-C36)	0.500	0.517		mg/L		103	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	120		50 - 150

Lab Sample ID: LCSD 580-283146/3-A

Matrix: Water

Analysis Batch: 283243

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 283146

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.464		mg/L		93	50 - 120	6	26
Motor Oil (>C24-C36)	0.500	0.520		mg/L		104	64 - 120	1	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	119		50 - 150

Lab Chronicle

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

TestAmerica Job ID: 580-79980-1

Client Sample ID: Before GAC-82918

Lab Sample ID: 580-79980-1

Date Collected: 08/29/18 13:20

Matrix: Water

Date Received: 08/30/18 12:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			283146	09/04/18 13:14	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	283243	09/05/18 16:48	TL1	TAL SEA

Client Sample ID: HCC EFF-82918

Lab Sample ID: 580-79980-2

Date Collected: 08/29/18 13:20

Matrix: Water

Date Received: 08/30/18 12:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			283146	09/04/18 13:14	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	283243	09/05/18 17:10	TL1	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-79980-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-79980-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-79980-1	Before GAC-82918	Water	08/29/18 13:20	08/30/18 12:50
580-79980-2	HCC EFF-82918	Water	08/29/18 13:20	08/30/18 12:50

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TestAmerica Seattle

5755 8th Street East

Tacoma, WA 98424

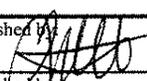
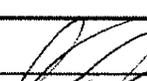
phone 253.922.2310 fax 253.922.5047

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact		Project Manager: Jerry Portele		Site Contact: David Johnson		Date: 8-29-18		COC No:	
Farallon Consulting		Tel/Fax: 425-295-0839		Lab Contact: Kristine Allen		Carrier:		1 of 2 COCs	
975 5th Avenue Northwest		Analysis Turnaround Time		Filtered Sample NW/TPH-Dx w/o silica gel cleanup		Loc: 580 79980		Job No. Invoice attention to:	
Issaquah, WA 98027		Calendar (C) or Work Days (W)						Bruce Shepard, BNSF	
(425) 295-0800 Phone		TAT if different from Below 3 DAY						SDG No.	
(425) 295-0850 FAX		<input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day						Sampler: TW	
Project Name: Skykomish HCC System								Sample Specific Notes:	
Site:									
WO #: TT0100-M07									
Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.				
Before GAC- 82918	8-27-18	13:20	Grab	W	2	X			*** See instructions below
HCC EFF- 82918	8-28-18	13:20	Grab	W	2	X			*** See instructions below
						 580-79980 Chain of Custody			
						Therm. ID: A2 Cor: 1.5 ° Unc: 1.4 ° Cooler Dsc: Med Red Packing: Bubble FedEx: Cust. Seal: Yes No X UPS: Wet/Packs/Dry Ice/None Lab Cour: Y Other:			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other						2			
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown						<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									
Relinquished by: 	Company: Glexer	Date/Time: 8-29-18 15:55	Received by: 	Company: TASEA	Date/Time: 8/29/18 15:55				
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:				
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:				

Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-79980-1

Login Number: 79980

List Source: TestAmerica Seattle

List Number: 1

Creator: Hobbs, Kenneth F

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	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-80173-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
9/12/2018 3:12:17 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

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

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Case Narrative

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

TestAmerica Job ID: 580-80173-1

Job ID: 580-80173-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative
580-80173-1

Comments

No additional comments.

Receipt

The samples were received on 9/7/2018 4:55 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 6.9° C.

Samples were received at the laboratory outside the required temperature criteria: The temperature was 6.9°C on receipt.

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

TestAmerica Job ID: 580-80173-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-80173-1

Client Sample ID: Before GAC-9418

Lab Sample ID: 580-80173-1

Date Collected: 09/04/18 17:20

Matrix: Water

Date Received: 09/07/18 16:55

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.49		0.062		mg/L		09/10/18 18:29	09/10/18 23:55	1
Motor Oil (>C24-C36)	0.21		0.091		mg/L		09/10/18 18:29	09/10/18 23:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	77		50 - 150				09/10/18 18:29	09/10/18 23:55	1

Client Sample Results

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

TestAmerica Job ID: 580-80173-1

Client Sample ID: HCC EFF-9418

Lab Sample ID: 580-80173-2

Date Collected: 09/04/18 17:20

Matrix: Water

Date Received: 09/07/18 16:55

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		0.062		mg/L		09/10/18 18:29	09/11/18 00:23	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		09/10/18 18:29	09/11/18 00:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	75		50 - 150				09/10/18 18:29	09/11/18 00:23	1

Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		09/11/18 10:02	09/11/18 15:54	1
Lead	ND		0.00080		mg/L		09/11/18 10:02	09/11/18 15:54	1

QC Sample Results

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

TestAmerica Job ID: 580-80173-1

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

Lab Sample ID: MB 580-283659/1-A
Matrix: Water
Analysis Batch: 283665

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 283659

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		09/10/18 18:29	09/10/18 22:04	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		09/10/18 18:29	09/10/18 22:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	82		50 - 150	09/10/18 18:29	09/10/18 22:04	1

Lab Sample ID: LCS 580-283659/2-A
Matrix: Water
Analysis Batch: 283665

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 283659

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.415		mg/L		83	50 - 120
Motor Oil (>C24-C36)	0.500	0.481		mg/L		96	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	93		50 - 150

Lab Sample ID: LCSD 580-283659/3-A
Matrix: Water
Analysis Batch: 283665

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 283659

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.419		mg/L		84	50 - 120	1	26
Motor Oil (>C24-C36)	0.500	0.479		mg/L		96	64 - 120	0	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	90		50 - 150

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-283682/14-A
Matrix: Water
Analysis Batch: 283752

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 283682

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		09/11/18 10:02	09/11/18 15:04	1
Lead	ND		0.00080		mg/L		09/11/18 10:02	09/11/18 15:04	1

Lab Sample ID: LCS 580-283682/15-A
Matrix: Water
Analysis Batch: 283752

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 283682

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.100	0.0909		mg/L		91	85 - 115
Lead	0.100	0.0901		mg/L		90	85 - 115

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-80173-1

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

Lab Sample ID: LCSD 580-283682/16-A
Matrix: Water
Analysis Batch: 283752

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 283682

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.100	0.0966		mg/L		97	85 - 115	6	20
Lead	0.100	0.0954		mg/L		95	85 - 115	6	20

Lab Sample ID: 580-80225-B-1-C MS
Matrix: Water
Analysis Batch: 283752

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 283682

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND		0.100	0.0955		mg/L		95	70 - 130
Lead	ND		0.100	0.0961		mg/L		95	70 - 130

Lab Sample ID: 580-80225-B-1-D MSD
Matrix: Water
Analysis Batch: 283752

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 283682

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		0.100	0.0976		mg/L		97	70 - 130	2	20
Lead	ND		0.100	0.0965		mg/L		96	70 - 130	0	20

Lab Sample ID: 580-80225-B-1-B DU
Matrix: Water
Analysis Batch: 283752

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 283682

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	ND		0.00101		mg/L		NC	20
Lead	ND		ND		mg/L		NC	20

Lab Chronicle

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

TestAmerica Job ID: 580-80173-1

Client Sample ID: Before GAC-9418

Lab Sample ID: 580-80173-1

Date Collected: 09/04/18 17:20

Matrix: Water

Date Received: 09/07/18 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			283659	09/10/18 18:29	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	283665	09/10/18 23:55	W1T	TAL SEA

Client Sample ID: HCC EFF-9418

Lab Sample ID: 580-80173-2

Date Collected: 09/04/18 17:20

Matrix: Water

Date Received: 09/07/18 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			283659	09/10/18 18:29	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	283665	09/11/18 00:23	W1T	TAL SEA
Total/NA	Prep	200.8			283682	09/11/18 10:02	T1H	TAL SEA
Total/NA	Analysis	200.8		1	283752	09/11/18 15:54	FCW	TAL SEA

Laboratory References:

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



Accreditation/Certification Summary

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

TestAmerica Job ID: 580-80173-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-80173-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-80173-1	Before GAC-9418	Water	09/04/18 17:20	09/07/18 16:55
580-80173-2	HCC EFF-9418	Water	09/04/18 17:20	09/07/18 16:55

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-80173-1

Login Number: 80173

List Source: TestAmerica 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.	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	

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-80293-1

Client Project/Site: Skykomish HCC System
Sampling Event: Skykomish - GAC/HCC
Revision: 1

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
9/20/2018 11:14:09 AM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.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.

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Case Narrative

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

TestAmerica Job ID: 580-80293-1

Job ID: 580-80293-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-80293-1

Comments

Report was revised 9-20-18 to provide more detail in the case narrative.

No additional comments.

Receipt

The samples were received on 9/12/2018 2:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.8° C.

GC Semi VOA

Method(s) NWTPH-Dx: Surrogate recovery for the following sample was outside control limits: Before GAC-91118 (580-80293-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) NWTPH-Dx: The continuing calibration verification (CCV) associated with batch 580-284126 recovered above the upper control limit for #2 Diesel (C10-C24). (CCVRT 580-284291/3) The data for the samples associated with this CCV that were non-detect for #2 Diesel (C10-C24). have been reported (HCC EFF-91118 (580-80293-2). Sample Before GAC-91118 (580-80293-1) had a detection for #2 Diesel (C10-C24) and was re-analyzed in a new analytical batch with a passing CCV. The #2 Diesel (C10-C24) results from the re-analysis was reported for sample Before GAC-91118 (580-80293-1).

Method(s) NWTPH-Dx: The %D of surrogate (o-Terphenyl) for CCV associated with batch 580-284291 was outside the lower control limits. All associated sample surrogate fell within acceptance criteria; therefore, the data have been reported. (CCV 580-284291/14) and (CCVRT 580-284291/3)

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

TestAmerica Job ID: 580-80293-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-80293-1

Client Sample ID: Before GAC-91118

Lab Sample ID: 580-80293-1

Date Collected: 09/11/18 13:15

Matrix: Water

Date Received: 09/12/18 14:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Motor Oil (>C24-C36)	ND		0.091		mg/L		09/14/18 09:45	09/17/18 17:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	48	X	50 - 150				09/14/18 09:45	09/17/18 17:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.20		0.062		mg/L		09/14/18 09:45	09/18/18 21:34	1

Client Sample Results

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

TestAmerica Job ID: 580-80293-1

Client Sample ID: HCC EFF-91118

Lab Sample ID: 580-80293-2

Date Collected: 09/11/18 13:15

Matrix: Water

Date Received: 09/12/18 14:00

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		0.062		mg/L		09/14/18 09:45	09/17/18 17:52	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		09/14/18 09:45	09/17/18 17:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	91		50 - 150				09/14/18 09:45	09/17/18 17:52	1

QC Sample Results

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

TestAmerica Job ID: 580-80293-1

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

Lab Sample ID: MB 580-283973/1-A

Matrix: Water

Analysis Batch: 284126

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 283973

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		09/14/18 09:45	09/17/18 16:24	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		09/14/18 09:45	09/17/18 16:24	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	86		50 - 150				09/14/18 09:45	09/17/18 16:24	1

Lab Sample ID: LCS 580-283973/2-A

Matrix: Water

Analysis Batch: 284126

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 283973

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.455		mg/L		91	50 - 120
Motor Oil (>C24-C36)	0.500	0.440		mg/L		88	64 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
<i>o</i> -Terphenyl	105		50 - 150				

Lab Sample ID: LCSD 580-283973/3-A

Matrix: Water

Analysis Batch: 284126

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 283973

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.519		mg/L		104	50 - 120	13	26
Motor Oil (>C24-C36)	0.500	0.537		mg/L		107	64 - 120	20	24
Surrogate	%Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	140		50 - 150						

Lab Chronicle

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

TestAmerica Job ID: 580-80293-1

Client Sample ID: Before GAC-91118

Lab Sample ID: 580-80293-1

Date Collected: 09/11/18 13:15

Matrix: Water

Date Received: 09/12/18 14:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			283973	09/14/18 09:45	KS	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	284126	09/17/18 17:30	T1W	TAL SEA
Total/NA	Prep	3510C	RA		283973	09/14/18 09:45	KS	TAL SEA
Total/NA	Analysis	NWTPH-Dx	RA	1	284291	09/18/18 21:34	CJ	TAL SEA

Client Sample ID: HCC EFF-91118

Lab Sample ID: 580-80293-2

Date Collected: 09/11/18 13:15

Matrix: Water

Date Received: 09/12/18 14:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			283973	09/14/18 09:45	KS	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	284126	09/17/18 17:52	T1W	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-80293-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-80293-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-80293-1	Before GAC-91118	Water	09/11/18 13:15	09/12/18 14:00
580-80293-2	HCC EFF-91118	Water	09/11/18 13:15	09/12/18 14:00

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-80293-1

Login Number: 80293

List Source: TestAmerica 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	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-80521-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
9/26/2018 4:49:35 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

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

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Case Narrative

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

TestAmerica Job ID: 580-80521-1

Job ID: 580-80521-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative
580-80521-1

Comments

No additional comments.

Receipt

The samples were received on 9/21/2018 1:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.5° 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: Skykomish NPDES HCC System

TestAmerica Job ID: 580-80521-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-80521-1

Client Sample ID: Before GAC-92018

Lab Sample ID: 580-80521-1

Date Collected: 09/20/18 08:30

Matrix: Water

Date Received: 09/21/18 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		0.062		mg/L		09/25/18 07:32	09/26/18 01:51	1
Motor Oil (>C24-C36)	0.19		0.091		mg/L		09/25/18 07:32	09/26/18 01:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	69		50 - 150				09/25/18 07:32	09/26/18 01:51	1

Client Sample Results

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

TestAmerica Job ID: 580-80521-1

Client Sample ID: HCC EFF-92018

Lab Sample ID: 580-80521-2

Date Collected: 09/20/18 08:30

Matrix: Water

Date Received: 09/21/18 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		0.062		mg/L		09/25/18 07:32	09/26/18 02:18	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		09/25/18 07:32	09/26/18 02:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	74		50 - 150				09/25/18 07:32	09/26/18 02:18	1



QC Sample Results

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

TestAmerica Job ID: 580-80521-1

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

Lab Sample ID: MB 580-284824/1-A

Matrix: Water

Analysis Batch: 284904

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 284824

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		09/25/18 07:32	09/26/18 00:02	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		09/25/18 07:32	09/26/18 00:02	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	72		50 - 150				09/25/18 07:32	09/26/18 00:02	1

Lab Sample ID: LCS 580-284824/2-A

Matrix: Water

Analysis Batch: 284904

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 284824

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.366		mg/L		73	50 - 120
Motor Oil (>C24-C36)	0.500	0.433		mg/L		87	64 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
<i>o</i> -Terphenyl	79		50 - 150				

Lab Sample ID: LCSD 580-284824/3-A

Matrix: Water

Analysis Batch: 284904

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 284824

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.363		mg/L		73	50 - 120	1	26
Motor Oil (>C24-C36)	0.500	0.443		mg/L		89	64 - 120	2	24
Surrogate	%Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	85		50 - 150						

Lab Chronicle

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

TestAmerica Job ID: 580-80521-1

Client Sample ID: Before GAC-92018

Lab Sample ID: 580-80521-1

Date Collected: 09/20/18 08:30

Matrix: Water

Date Received: 09/21/18 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			284824	09/25/18 07:32	KS	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	284904	09/26/18 01:51	JCM	TAL SEA

Client Sample ID: HCC EFF-92018

Lab Sample ID: 580-80521-2

Date Collected: 09/20/18 08:30

Matrix: Water

Date Received: 09/21/18 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			284824	09/25/18 07:32	KS	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	284904	09/26/18 02:18	JCM	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-80521-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-80521-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-80521-1	Before GAC-92018	Water	09/20/18 08:30	09/21/18 13:00
580-80521-2	HCC EFF-92018	Water	09/20/18 08:30	09/21/18 13:00

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-80521-1

Login Number: 80521

List Source: TestAmerica 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	



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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-80689-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
10/3/2018 12:36:37 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.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.

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Case Narrative

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

TestAmerica Job ID: 580-80689-1

Job ID: 580-80689-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-80689-1**

Comments

No additional comments.

Receipt

The samples were received on 9/28/2018 4:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.6° C.

GC Semi VOA

Method(s) 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-92718 (580-80689-1).

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

TestAmerica Job ID: 580-80689-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-80689-1

Client Sample ID: Before GAC-92718

Lab Sample ID: 580-80689-1

Date Collected: 09/27/18 10:15

Matrix: Water

Date Received: 09/28/18 16:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.34		0.062		mg/L		10/02/18 11:51	10/02/18 19:56	1
Motor Oil (>C24-C36)	0.11		0.091		mg/L		10/02/18 11:51	10/02/18 19:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	87		50 - 150				10/02/18 11:51	10/02/18 19:56	1

Client Sample Results

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

TestAmerica Job ID: 580-80689-1

Client Sample ID: HCC EFF-92718

Lab Sample ID: 580-80689-2

Date Collected: 09/27/18 10:15

Matrix: Water

Date Received: 09/28/18 16:30

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		0.062		mg/L		10/02/18 11:51	10/02/18 20:16	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		10/02/18 11:51	10/02/18 20:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	92		50 - 150				10/02/18 11:51	10/02/18 20:16	1

QC Sample Results

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

TestAmerica Job ID: 580-80689-1

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

Lab Sample ID: MB 580-285458/1-A

Matrix: Water

Analysis Batch: 285517

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 285458

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		10/02/18 11:51	10/02/18 18:56	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		10/02/18 11:51	10/02/18 18:56	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	96		50 - 150	10/02/18 11:51	10/02/18 18:56	1

Lab Sample ID: LCS 580-285458/2-A

Matrix: Water

Analysis Batch: 285517

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 285458

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.396		mg/L		79	50 - 120
Motor Oil (>C24-C36)	0.500	0.446		mg/L		89	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	95		50 - 150

Lab Sample ID: LCSD 580-285458/3-A

Matrix: Water

Analysis Batch: 285517

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 285458

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.408		mg/L		82	50 - 120	3	26
Motor Oil (>C24-C36)	0.500	0.458		mg/L		92	64 - 120	3	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	92		50 - 150

Lab Chronicle

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

TestAmerica Job ID: 580-80689-1

Client Sample ID: Before GAC-92718

Lab Sample ID: 580-80689-1

Date Collected: 09/27/18 10:15

Matrix: Water

Date Received: 09/28/18 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			285458	10/02/18 11:51	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	285517	10/02/18 19:56	W1T	TAL SEA

Client Sample ID: HCC EFF-92718

Lab Sample ID: 580-80689-2

Date Collected: 09/27/18 10:15

Matrix: Water

Date Received: 09/28/18 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			285458	10/02/18 11:51	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	285517	10/02/18 20:16	W1T	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-80689-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-80689-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-80689-1	Before GAC-92718	Water	09/27/18 10:15	09/28/18 16:30
580-80689-2	HCC EFF-92718	Water	09/27/18 10:15	09/28/18 16:30

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TestAmerica Seattle

5755 8th Street East

Tacoma, WA 98424

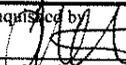
phone 253.922.2310 fax 253.922.5047

Chain of Custody Record

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TestAmerica Laboratories, Inc.

Client Contact		Project Manager: Jerry Portele		Site Contact: David Johnson		Date: 9-27-18		COC No:	
Farallon Consulting		Tel/Fax: 425-295-0839		Lab Contact: Kristine Allen		Carrier:		2 of 2 COCs	
975 5th Avenue Northwest		Analysis Turnaround Time		Filtered Sample NWT/PH-Dx w/o silica gel cleanup				Job No. Invoice attention to:	
Issaquah, WA 98027		Calendar (C) or Work Days (W)						Bruce Shepard, BNSF	
(425) 295-0800 Phone		TAT if different from Below <u>3 days</u>						SDG No.	
(425) 295-0850 FAX		<input type="checkbox"/> 2 weeks						80689	
Project Name: Skykomish HCC System		<input type="checkbox"/> 1 week						Sampler: JW	
Site:		<input type="checkbox"/> 2 days		Sample Specific Notes:					
WO #: TT0100-M07		<input type="checkbox"/> 1 day							
Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.				
Before GAC- 92718	9-27-18	10:15	Grab	W	2	X			*** See instructions below
HCC EFF- 92718	9-27-18	10:15	Grab	W	2	X			*** See instructions below
						 580-80689 Chain of Custody			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other						Therm. ID: A2 Cor: 0.6 Unc: 0.3 Cooler Desc: L Blue Packing: Bubble FedEx: Cust. Seal: Yes No 4 UPS: Wet/Packs/Dry Ice/None Lab Cour: 4 Other:			
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown						<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									
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:				
	G14024	9-27-18 13:26			9/27/18 13:18				
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:				
				TA-SEA	9/28/18 1630				
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:				

Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-80689-1

Login Number: 80689

List Source: TestAmerica 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	

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-80795-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
10/8/2018 1:44:15 PM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.com

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

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Case Narrative

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

TestAmerica Job ID: 580-80795-1

Job ID: 580-80795-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-80795-1**

Comments

No additional comments.

Receipt

The samples were received on 10/3/2018 2:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

GC Semi VOA

Method(s) NWTPH-Dx: The %D of surrogate (o-Terphenyl) for CCV associated with batch 580-285879 was outside the upper control limits. All associated sample surrogate fell within acceptance criteria; therefore, the data have been reported. (CCV 580-285879/21)

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.

Definitions/Glossary

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

TestAmerica Job ID: 580-80795-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-80795-1

Client Sample ID: Before GAC-100218

Lab Sample ID: 580-80795-1

Date Collected: 10/02/18 10:40

Matrix: Water

Date Received: 10/03/18 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)	0.43		0.062		mg/L		10/07/18 14:09	10/07/18 20:26	1
Motor Oil (>C24-C36)	0.16		0.091		mg/L		10/07/18 14:09	10/07/18 20:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	79		50 - 150				10/07/18 14:09	10/07/18 20:26	1

Client Sample Results

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

TestAmerica Job ID: 580-80795-1

Client Sample ID: HCC EFF-100218

Lab Sample ID: 580-80795-2

Date Collected: 10/02/18 10:50

Matrix: Water

Date Received: 10/03/18 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		0.062		mg/L		10/07/18 14:09	10/07/18 20:48	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		10/07/18 14:09	10/07/18 20:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	86		50 - 150				10/07/18 14:09	10/07/18 20:48	1

Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		10/04/18 17:35	10/05/18 11:35	1
Lead	ND		0.00080		mg/L		10/04/18 17:35	10/05/18 11:35	1



QC Sample Results

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

TestAmerica Job ID: 580-80795-1

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

Lab Sample ID: MB 580-285878/1-A
Matrix: Water
Analysis Batch: 285879

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 285878

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		10/07/18 14:09	10/07/18 18:59	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		10/07/18 14:09	10/07/18 18:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	91		50 - 150	10/07/18 14:09	10/07/18 18:59	1

Lab Sample ID: LCS 580-285878/2-A
Matrix: Water
Analysis Batch: 285879

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 285878

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.446		mg/L		89	50 - 120
Motor Oil (>C24-C36)	0.500	0.481		mg/L		96	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	102		50 - 150

Lab Sample ID: LCSD 580-285878/3-A
Matrix: Water
Analysis Batch: 285879

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 285878

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.453		mg/L		91	50 - 120	2	26
Motor Oil (>C24-C36)	0.500	0.491		mg/L		98	64 - 120	2	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	104		50 - 150

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-285713/15-A
Matrix: Water
Analysis Batch: 285788

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 285713

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		10/04/18 17:35	10/05/18 10:41	1
Lead	ND		0.00080		mg/L		10/04/18 17:35	10/05/18 10:41	1

Lab Sample ID: LCS 580-285713/16-A
Matrix: Water
Analysis Batch: 285788

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 285713

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.100	0.0954		mg/L		95	85 - 115
Lead	0.100	0.0939		mg/L		94	85 - 115

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-80795-1

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

Lab Sample ID: LCSD 580-285713/17-A
Matrix: Water
Analysis Batch: 285788

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 285713

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
							Limits	RPD		
Arsenic	0.100	0.0980		mg/L		98	85 - 115	3	20	
Lead	0.100	0.0942		mg/L		94	85 - 115	0	20	

Lab Sample ID: 580-80754-B-3-C MS
Matrix: Water
Analysis Batch: 285788

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 285713

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.	
									Limits	RPD
Arsenic	ND		0.100	0.0947		mg/L		95	70 - 130	
Lead	ND		0.100	0.0936		mg/L		93	70 - 130	

Lab Sample ID: 580-80754-B-3-D MSD
Matrix: Water
Analysis Batch: 285788

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 285713

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec.	
									Limits	RPD
Arsenic	ND		0.100	0.0986		mg/L		99	70 - 130	4
Lead	ND		0.100	0.0964		mg/L		96	70 - 130	3

Lab Sample ID: 580-80754-B-3-B DU
Matrix: Water
Analysis Batch: 285788

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 285713

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD	
								Limit	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

TestAmerica Job ID: 580-80795-1

Client Sample ID: Before GAC-100218

Lab Sample ID: 580-80795-1

Date Collected: 10/02/18 10:40

Matrix: Water

Date Received: 10/03/18 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			285878	10/07/18 14:09	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	285879	10/07/18 20:26	CJ	TAL SEA

Client Sample ID: HCC EFF-100218

Lab Sample ID: 580-80795-2

Date Collected: 10/02/18 10:50

Matrix: Water

Date Received: 10/03/18 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			285878	10/07/18 14:09	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	285879	10/07/18 20:48	CJ	TAL SEA
Total/NA	Prep	200.8			285713	10/04/18 17:35	JKM	TAL SEA
Total/NA	Analysis	200.8		1	285788	10/05/18 11:35	FCW	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-80795-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-80795-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-80795-1	Before GAC-100218	Water	10/02/18 10:40	10/03/18 14:50
580-80795-2	HCC EFF-100218	Water	10/02/18 10:50	10/03/18 14:50

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-80795-1

Login Number: 80795

List Source: TestAmerica Seattle

List Number: 1

Creator: Hobbs, Kenneth F

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ 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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-81004-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet

Kristine D. Allen

Authorized for release by:
10/15/2018 5:05:44 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.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.

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Case Narrative

Client: Farallon Consulting LLC
Project/Site: SkykomishHCC System

TestAmerica Job ID: 580-81004-1

Job ID: 580-81004-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-81004-1**

Comments

No additional comments.

Receipt

The samples were received on 10/10/2018 5:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.8° C.

GC Semi VOA

Method(s) 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-10918 (580-81004-1).

Method(s) NWTPH-Dx: The following sample was diluted due to the nature of the sample matrix: Before GAC-10918 (580-81004-1). Elevated reporting limits (RLs) are provided.

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: SkykomishHCC System

TestAmerica Job ID: 580-81004-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

Client: Farallon Consulting LLC
 Project/Site: SkykomishHCC System

TestAmerica Job ID: 580-81004-1

Client Sample ID: Before GAC-10918

Lab Sample ID: 580-81004-1

Date Collected: 10/09/18 10:50

Matrix: Water

Date Received: 10/10/18 17:00

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		0.31		mg/L		10/14/18 16:54	10/15/18 01:34	5
Motor Oil (>C24-C36)	ND		0.46		mg/L		10/14/18 16:54	10/15/18 01:34	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	96		50 - 150				10/14/18 16:54	10/15/18 01:34	5



Client Sample Results

Client: Farallon Consulting LLC
 Project/Site: SkykomishHCC System

TestAmerica Job ID: 580-81004-1

Client Sample ID: HCC EFF-10918

Lab Sample ID: 580-81004-2

Date Collected: 10/09/18 10:50

Matrix: Water

Date Received: 10/10/18 17:00

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		0.062		mg/L		10/14/18 16:54	10/15/18 01:56	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		10/14/18 16:54	10/15/18 01:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	92		50 - 150				10/14/18 16:54	10/15/18 01:56	1

QC Sample Results

Client: Farallon Consulting LLC
 Project/Site: SkykomishHCC System

TestAmerica Job ID: 580-81004-1

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

Lab Sample ID: MB 580-286482/1-A

Matrix: Water

Analysis Batch: 286486

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 286482

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		10/14/18 16:54	10/15/18 00:29	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		10/14/18 16:54	10/15/18 00:29	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	103		50 - 150				10/14/18 16:54	10/15/18 00:29	1

Lab Sample ID: LCS 580-286482/2-A

Matrix: Water

Analysis Batch: 286486

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 286482

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.456		mg/L		91	50 - 120
Motor Oil (>C24-C36)	0.500	0.526		mg/L		105	64 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
<i>o</i> -Terphenyl	95		50 - 150				

Lab Sample ID: LCSD 580-286482/3-A

Matrix: Water

Analysis Batch: 286486

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 286482

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.504		mg/L		101	50 - 120	10	26
Motor Oil (>C24-C36)	0.500	0.548		mg/L		110	64 - 120	4	24
Surrogate	%Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	94		50 - 150						

Lab Chronicle

Client: Farallon Consulting LLC
Project/Site: SkykomishHCC System

TestAmerica Job ID: 580-81004-1

Client Sample ID: Before GAC-10918

Lab Sample ID: 580-81004-1

Date Collected: 10/09/18 10:50

Matrix: Water

Date Received: 10/10/18 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			286482	10/14/18 16:54	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		5	286486	10/15/18 01:34	W1T	TAL SEA

Client Sample ID: HCC EFF-10918

Lab Sample ID: 580-81004-2

Date Collected: 10/09/18 10:50

Matrix: Water

Date Received: 10/10/18 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			286482	10/14/18 16:54	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	286486	10/15/18 01:56	W1T	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

Client: Farallon Consulting LLC
Project/Site: SkykomishHCC System

TestAmerica Job ID: 580-81004-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

Client: Farallon Consulting LLC
Project/Site: SkykomishHCC System

TestAmerica Job ID: 580-81004-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-81004-1	Before GAC-10918	Water	10/09/18 10:50	10/10/18 17:00
580-81004-2	HCC EFF-10918	Water	10/09/18 10:50	10/10/18 17:00

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-81004-1

Login Number: 81004

List Source: TestAmerica 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	



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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-81219-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
10/25/2018 11:18:03 AM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.com

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

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Case Narrative

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

TestAmerica Job ID: 580-81219-1

Job ID: 580-81219-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-81219-1**

Comments

No additional comments.

Receipt

The samples were received on 10/19/2018 2:35 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0° 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

TestAmerica Job ID: 580-81219-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-81219-1

Client Sample ID: Before GAC-101818

Lab Sample ID: 580-81219-1

Date Collected: 10/18/18 14:15

Matrix: Water

Date Received: 10/19/18 14:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.67		0.062		mg/L		10/24/18 14:30	10/24/18 21:39	1
Motor Oil (>C24-C36)	0.35		0.091		mg/L		10/24/18 14:30	10/24/18 21:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	100		50 - 150				10/24/18 14:30	10/24/18 21:39	1



Client Sample Results

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

TestAmerica Job ID: 580-81219-1

Client Sample ID: HCC EFF-101818

Lab Sample ID: 580-81219-2

Date Collected: 10/18/18 14:25

Matrix: Water

Date Received: 10/19/18 14:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		10/24/18 14:30	10/24/18 22:01	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		10/24/18 14:30	10/24/18 22:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	97		50 - 150				10/24/18 14:30	10/24/18 22:01	1



QC Sample Results

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

TestAmerica Job ID: 580-81219-1

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

Lab Sample ID: MB 580-287308/1-A

Matrix: Water

Analysis Batch: 287360

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 287308

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		10/24/18 14:30	10/24/18 19:46	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		10/24/18 14:30	10/24/18 19:46	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	95		50 - 150				10/24/18 14:30	10/24/18 19:46	1

Lab Sample ID: LCS 580-287308/2-A

Matrix: Water

Analysis Batch: 287360

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 287308

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.477		mg/L		95	50 - 120
Motor Oil (>C24-C36)	0.500	0.534		mg/L		107	64 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
<i>o</i> -Terphenyl	103		50 - 150				

Lab Sample ID: LCSD 580-287308/3-A

Matrix: Water

Analysis Batch: 287360

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 287308

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.433		mg/L		87	50 - 120	10	26
Motor Oil (>C24-C36)	0.500	0.515		mg/L		103	64 - 120	4	24
Surrogate	%Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	103		50 - 150						

Lab Chronicle

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

TestAmerica Job ID: 580-81219-1

Client Sample ID: Before GAC-101818

Lab Sample ID: 580-81219-1

Date Collected: 10/18/18 14:15

Matrix: Water

Date Received: 10/19/18 14:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			287308	10/24/18 14:30	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	287360	10/24/18 21:39	CJ	TAL SEA

Client Sample ID: HCC EFF-101818

Lab Sample ID: 580-81219-2

Date Collected: 10/18/18 14:25

Matrix: Water

Date Received: 10/19/18 14:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			287308	10/24/18 14:30	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	287360	10/24/18 22:01	CJ	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-81219-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-81219-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-81219-1	Before GAC-101818	Water	10/18/18 14:15	10/19/18 14:35
580-81219-2	HCC EFF-101818	Water	10/18/18 14:25	10/19/18 14:35

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-81219-1

Login Number: 81219

List Source: TestAmerica Seattle

List Number: 1

Creator: Hobbs, Kenneth F

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ 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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-81449-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:

11/5/2018 1:31:38 PM

Sheri Cruz, Project Manager I
(253)922-2310

sheri.cruz@testamericainc.com

Designee for

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.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.

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Case Narrative

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

TestAmerica Job ID: 580-81449-1

Job ID: 580-81449-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-81449-1**

Comments

No additional comments.

Receipt

The samples were received on 10/30/2018 2:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.8° C.

GC Semi VOA

Method(s) NWTPH-Dx: The %D of surrogate (o-Terphenyl) for CCV associated with batch 580-288142 was outside the upper control limits. All associated sample surrogate fell within acceptance criteria; therefore, the data have been reported. (CCV 580-288142/14)

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

TestAmerica Job ID: 580-81449-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-81449-1

Client Sample ID: Before GAC-102518

Lab Sample ID: 580-81449-1

Date Collected: 10/25/18 11:15

Matrix: Water

Date Received: 10/30/18 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)	0.52		0.062		mg/L		11/02/18 07:48	11/04/18 14:50	1
Motor Oil (>C24-C36)	0.20		0.091		mg/L		11/02/18 07:48	11/04/18 14:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	87		50 - 150				11/02/18 07:48	11/04/18 14:50	1

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Client Sample Results

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

TestAmerica Job ID: 580-81449-1

Client Sample ID: HCC EFF-102518

Lab Sample ID: 580-81449-2

Date Collected: 10/25/18 11:15

Matrix: Water

Date Received: 10/30/18 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		0.062		mg/L		11/02/18 07:48	11/04/18 15:12	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		11/02/18 07:48	11/04/18 15:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	77		50 - 150				11/02/18 07:48	11/04/18 15:12	1



QC Sample Results

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

TestAmerica Job ID: 580-81449-1

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

Lab Sample ID: MB 580-288023/1-A
Matrix: Water
Analysis Batch: 288142

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 288023

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		11/02/18 07:48	11/04/18 13:21	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		11/02/18 07:48	11/04/18 13:21	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	87		50 - 150				11/02/18 07:48	11/04/18 13:21	1

Lab Sample ID: LCS 580-288023/2-A
Matrix: Water
Analysis Batch: 288142

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 288023

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)	0.500	0.435		mg/L		87	50 - 120		
Motor Oil (>C24-C36)	0.500	0.459		mg/L		92	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
<i>o</i> -Terphenyl	87		50 - 150						

Lab Sample ID: LCSD 580-288023/3-A
Matrix: Water
Analysis Batch: 288142

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 288023

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.428		mg/L		86	50 - 120	2	26
Motor Oil (>C24-C36)	0.500	0.466		mg/L		93	64 - 120	2	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	89		50 - 150						

Lab Chronicle

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

TestAmerica Job ID: 580-81449-1

Client Sample ID: Before GAC-102518

Lab Sample ID: 580-81449-1

Date Collected: 10/25/18 11:15

Matrix: Water

Date Received: 10/30/18 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			288023	11/02/18 07:48	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	288142	11/04/18 14:50	CJ	TAL SEA

Client Sample ID: HCC EFF-102518

Lab Sample ID: 580-81449-2

Date Collected: 10/25/18 11:15

Matrix: Water

Date Received: 10/30/18 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			288023	11/02/18 07:48	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	288142	11/04/18 15:12	CJ	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-81449-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-81449-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-81449-1	Before GAC-102518	Water	10/25/18 11:15	10/30/18 14:50
580-81449-2	HCC EFF-102518	Water	10/25/18 11:15	10/30/18 14:50

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-81449-1

Login Number: 81449

List Number: 1

Creator: Hobbs, Kenneth F

List Source: TestAmerica 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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-81451-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:

11/5/2018 1:56:41 PM

Sheri Cruz, Project Manager I
(253)922-2310

sheri.cruz@testamericainc.com

Designee for

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

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.

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Case Narrative

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

TestAmerica Job ID: 580-81451-1

Job ID: 580-81451-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative
580-81451-1

Comments

No additional comments.

Receipt

The samples were received on 10/30/2018 2:55 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0° C.

Receipt Exceptions

The COC requests metals analysis but no container was received for this analysis. HCC EFF-103018 (580-81451-2)

Metals container was not received - analysis canceled.

GC Semi VOA

Method(s) NWTPH-Dx: The %D of surrogate (o-Terphenyl) for CCV associated with batch 580-288142 was outside the upper control limits. All associated sample surrogate fell within acceptance criteria; therefore, the data have been reported. (CCV 580-288142/14)

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

TestAmerica Job ID: 580-81451-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-81451-1

Client Sample ID: Before GAC-103018

Lab Sample ID: 580-81451-1

Date Collected: 10/30/18 07:30

Matrix: Water

Date Received: 10/30/18 14:55

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.60		0.062		mg/L		11/02/18 07:48	11/04/18 15:56	1
Motor Oil (>C24-C36)	0.25		0.091		mg/L		11/02/18 07:48	11/04/18 15:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	75		50 - 150				11/02/18 07:48	11/04/18 15:56	1

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Client Sample Results

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

TestAmerica Job ID: 580-81451-1

Client Sample ID: HCC EFF-103018

Lab Sample ID: 580-81451-2

Date Collected: 10/30/18 07:30

Matrix: Water

Date Received: 10/30/18 14:55

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		0.062		mg/L		11/02/18 07:48	11/04/18 16:18	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		11/02/18 07:48	11/04/18 16:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	79		50 - 150				11/02/18 07:48	11/04/18 16:18	1



QC Sample Results

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

TestAmerica Job ID: 580-81451-1

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

Lab Sample ID: MB 580-288023/1-A
Matrix: Water
Analysis Batch: 288142

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 288023

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		11/02/18 07:48	11/04/18 13:21	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		11/02/18 07:48	11/04/18 13:21	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	87		50 - 150				11/02/18 07:48	11/04/18 13:21	1

Lab Sample ID: LCS 580-288023/2-A
Matrix: Water
Analysis Batch: 288142

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 288023

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)	0.500	0.435		mg/L		87	50 - 120		
Motor Oil (>C24-C36)	0.500	0.459		mg/L		92	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
<i>o</i> -Terphenyl	87		50 - 150						

Lab Sample ID: LCSD 580-288023/3-A
Matrix: Water
Analysis Batch: 288142

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 288023

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.428		mg/L		86	50 - 120	2	26
Motor Oil (>C24-C36)	0.500	0.466		mg/L		93	64 - 120	2	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	89		50 - 150						

Lab Chronicle

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

TestAmerica Job ID: 580-81451-1

Client Sample ID: Before GAC-103018

Lab Sample ID: 580-81451-1

Date Collected: 10/30/18 07:30

Matrix: Water

Date Received: 10/30/18 14:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			288023	11/02/18 07:48	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	288142	11/04/18 15:56	CJ	TAL SEA

Client Sample ID: HCC EFF-103018

Lab Sample ID: 580-81451-2

Date Collected: 10/30/18 07:30

Matrix: Water

Date Received: 10/30/18 14:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			288023	11/02/18 07:48	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	288142	11/04/18 16:18	CJ	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-81451-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-81451-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-81451-1	Before GAC-103018	Water	10/30/18 07:30	10/30/18 14:55
580-81451-2	HCC EFF-103018	Water	10/30/18 07:30	10/30/18 14:55

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-81451-1

Login Number: 81451

List Number: 1

Creator: Hobbs, Kenneth F

List Source: TestAmerica 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.	False	
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	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-81724-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
11/14/2018 12:18:57 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

LINKS

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results through
TotalAccess

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www.testamericainc.com

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.

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Case Narrative

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

TestAmerica Job ID: 580-81724-1

Job ID: 580-81724-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative
580-81724-1

Comments

No additional comments.

Receipt

The samples were received on 11/9/2018 2:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.7° C.

Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

GC Semi VOA

Method(s) 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-110818 (580-81724-1).

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: Skykomish HCC System

TestAmerica Job ID: 580-81724-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-81724-1

Client Sample ID: Before GAC-110818

Lab Sample ID: 580-81724-1

Date Collected: 11/08/18 09:45

Matrix: Water

Date Received: 11/09/18 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)	0.59		0.062		mg/L		11/12/18 07:49	11/14/18 03:10	1
Motor Oil (>C24-C36)	0.27		0.091		mg/L		11/12/18 07:49	11/14/18 03:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	83		50 - 150				11/12/18 07:49	11/14/18 03:10	1

Client Sample Results

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

TestAmerica Job ID: 580-81724-1

Client Sample ID: HCC EFF-110818

Lab Sample ID: 580-81724-2

Date Collected: 11/08/18 09:55

Matrix: Water

Date Received: 11/09/18 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)	ND		0.061		mg/L		11/12/18 07:49	11/14/18 03:37	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		11/12/18 07:49	11/14/18 03:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	75		50 - 150				11/12/18 07:49	11/14/18 03:37	1

Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		11/12/18 10:27	11/13/18 16:39	1
Lead	ND		0.00080		mg/L		11/12/18 10:27	11/13/18 16:39	1



QC Sample Results

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

TestAmerica Job ID: 580-81724-1

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

Lab Sample ID: MB 580-288613/1-A

Matrix: Water

Analysis Batch: 288779

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 288613

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		11/12/18 07:49	11/13/18 18:37	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		11/12/18 07:49	11/13/18 18:37	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	74		50 - 150	11/12/18 07:49	11/13/18 18:37	1

Lab Sample ID: LCS 580-288613/2-A

Matrix: Water

Analysis Batch: 288779

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 288613

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.419		mg/L		84	50 - 120
Motor Oil (>C24-C36)	0.500	0.487		mg/L		97	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	86		50 - 150

Lab Sample ID: LCSD 580-288613/3-A

Matrix: Water

Analysis Batch: 288779

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 288613

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.404		mg/L		81	50 - 120	4	26
Motor Oil (>C24-C36)	0.500	0.487		mg/L		97	64 - 120	0	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	91		50 - 150

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-288639/14-A

Matrix: Water

Analysis Batch: 288776

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 288639

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		11/12/18 10:27	11/13/18 11:53	1
Lead	ND		0.00080		mg/L		11/12/18 10:27	11/13/18 11:53	1

Lab Sample ID: LCS 580-288639/15-A

Matrix: Water

Analysis Batch: 288776

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 288639

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.100	0.104		mg/L		104	85 - 115
Lead	0.100	0.101		mg/L		101	85 - 115

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-81724-1

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

Lab Sample ID: LCSD 580-288639/16-A
Matrix: Water
Analysis Batch: 288776

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 288639

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.100	0.103		mg/L		103	85 - 115	1	20
Lead	0.100	0.102		mg/L		102	85 - 115	1	20

Lab Sample ID: 580-81539-A-1-C MS
Matrix: Water
Analysis Batch: 288776

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 288639

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0016		0.100	0.106		mg/L		104	70 - 130
Lead	ND		0.100	0.101		mg/L		100	70 - 130

Lab Sample ID: 580-81539-A-1-D MSD
Matrix: Water
Analysis Batch: 288776

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 288639

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0016		0.100	0.105		mg/L		104	70 - 130	1	20
Lead	ND		0.100	0.103		mg/L		102	70 - 130	2	20

Lab Sample ID: 580-81539-A-1-B DU
Matrix: Water
Analysis Batch: 288776

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 288639

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	0.0016		0.00160		mg/L		0.2	20
Lead	ND		ND		mg/L		NC	20

Lab Chronicle

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

TestAmerica Job ID: 580-81724-1

Client Sample ID: Before GAC-110818

Lab Sample ID: 580-81724-1

Date Collected: 11/08/18 09:45

Matrix: Water

Date Received: 11/09/18 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			288613	11/12/18 07:49	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	288779	11/14/18 03:10	Z1R	TAL SEA

Client Sample ID: HCC EFF-110818

Lab Sample ID: 580-81724-2

Date Collected: 11/08/18 09:55

Matrix: Water

Date Received: 11/09/18 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			288613	11/12/18 07:49	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	288779	11/14/18 03:37	Z1R	TAL SEA
Total/NA	Prep	200.8			288639	11/12/18 10:27	T1H	TAL SEA
Total/NA	Analysis	200.8		1	288841	11/13/18 16:39	FCW	TAL SEA

Laboratory References:

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



Accreditation/Certification Summary

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

TestAmerica Job ID: 580-81724-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-81724-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-81724-1	Before GAC-110818	Water	11/08/18 09:45	11/09/18 14:30
580-81724-2	HCC EFF-110818	Water	11/08/18 09:55	11/09/18 14:30

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-81724-1

Login Number: 81724

List Source: TestAmerica 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?	False	Refer to Job Narrative for details.
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	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-81869-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
11/21/2018 1:17:17 PM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.com

LINKS

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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.

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Case Narrative

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

TestAmerica Job ID: 580-81869-1

Job ID: 580-81869-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative
580-81869-1

Comments

No additional comments.

Receipt

The samples were received on 11/15/2018 3:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4° C.

Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

GC Semi VOA

Method(s) 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-111518 (580-81869-1).

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

TestAmerica Job ID: 580-81869-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-81869-1

Client Sample ID: Before GAC-111518

Lab Sample ID: 580-81869-1

Date Collected: 11/15/18 09:40

Matrix: Water

Date Received: 11/15/18 15:50

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		0.061		mg/L		11/19/18 07:42	11/20/18 14:51	1
Motor Oil (>C24-C36)	0.38		0.091		mg/L		11/19/18 07:42	11/20/18 14:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	90		50 - 150				11/19/18 07:42	11/20/18 14:51	1

Client Sample Results

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

TestAmerica Job ID: 580-81869-1

Client Sample ID: HCC EFF-111518

Lab Sample ID: 580-81869-2

Date Collected: 11/15/18 09:50

Matrix: Water

Date Received: 11/15/18 15:50

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		0.062		mg/L		11/19/18 07:42	11/20/18 15:11	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		11/19/18 07:42	11/20/18 15:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	93		50 - 150				11/19/18 07:42	11/20/18 15:11	1



QC Sample Results

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

TestAmerica Job ID: 580-81869-1

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

Lab Sample ID: MB 580-289239/1-A

Matrix: Water

Analysis Batch: 289346

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 289239

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		11/19/18 07:42	11/20/18 13:31	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		11/19/18 07:42	11/20/18 13:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	95		50 - 150	11/19/18 07:42	11/20/18 13:31	1

Lab Sample ID: LCS 580-289239/2-A

Matrix: Water

Analysis Batch: 289346

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 289239

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.403		mg/L		81	50 - 120
Motor Oil (>C24-C36)	0.500	0.455		mg/L		91	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	90		50 - 150

Lab Sample ID: LCSD 580-289239/3-A

Matrix: Water

Analysis Batch: 289346

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 289239

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.380		mg/L		76	50 - 120	6	26
Motor Oil (>C24-C36)	0.500	0.414		mg/L		83	64 - 120	9	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	97		50 - 150

Lab Chronicle

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

TestAmerica Job ID: 580-81869-1

Client Sample ID: Before GAC-111518

Lab Sample ID: 580-81869-1

Date Collected: 11/15/18 09:40

Matrix: Water

Date Received: 11/15/18 15:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			289239	11/19/18 07:42	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	289346	11/20/18 14:51	W1T	TAL SEA

Client Sample ID: HCC EFF-111518

Lab Sample ID: 580-81869-2

Date Collected: 11/15/18 09:50

Matrix: Water

Date Received: 11/15/18 15:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			289239	11/19/18 07:42	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	289346	11/20/18 15:11	W1T	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-81869-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-81869-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-81869-1	Before GAC-111518	Water	11/15/18 09:40	11/15/18 15:50
580-81869-2	HCC EFF-111518	Water	11/15/18 09:50	11/15/18 15:50

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-81869-1

Login Number: 81869

List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ 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?	False	
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-82007-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
12/5/2018 1:31:46 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

LINKS

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results through
TotalAccess

Have a Question?



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www.testamericainc.com

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.

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Case Narrative

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

TestAmerica Job ID: 580-82007-1

Job ID: 580-82007-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-82007-1

Comments

No additional comments.

Receipt

The samples were received on 11/21/2018 4:05 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.7° C.

GC Semi VOA

Method(s) 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-112118 (580-82007-1).

Method(s) NWTPH-Dx: The laboratory control sample duplicate (LCSD) for preparation batch 580-289812 and analytical batch 580-289946 recovered outside control limits for the following analytes: Motor Oil (>C24-C36). These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data have been reported.

Method(s) NWTPH-Dx: The following sample was re-extracted for high failing motor oil in the original extractions LCS/D. Before GAC-112118 (580-82007-1). The data from the re-extraction is reported only.

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

TestAmerica Job ID: 580-82007-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-82007-1

Client Sample ID: Before GAC-112118

Lab Sample ID: 580-82007-1

Date Collected: 11/21/18 07:50

Matrix: Water

Date Received: 11/21/18 16:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.82		0.062		mg/L		11/28/18 11:34	11/29/18 20:45	1
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>o-Terphenyl</i>	92		50 - 150				11/28/18 11:34	11/29/18 20:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Motor Oil (>C24-C36)	0.44		0.091		mg/L		12/04/18 07:26	12/04/18 23:05	1
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>o-Terphenyl</i>	86		50 - 150				12/04/18 07:26	12/04/18 23:05	1

Client Sample Results

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

TestAmerica Job ID: 580-82007-1

Client Sample ID: HCC EFF-112118

Lab Sample ID: 580-82007-2

Date Collected: 11/21/18 08:00

Matrix: Water

Date Received: 11/21/18 16:05

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		0.062		mg/L		11/28/18 11:34	11/29/18 21:07	1
Motor Oil (>C24-C36)	ND	*	0.091		mg/L		11/28/18 11:34	11/29/18 21:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	88		50 - 150				11/28/18 11:34	11/29/18 21:07	1

QC Sample Results

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

TestAmerica Job ID: 580-82007-1

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

Lab Sample ID: MB 580-289812/1-A

Matrix: Water

Analysis Batch: 289946

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 289812

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		11/28/18 11:34	11/29/18 16:21	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		11/28/18 11:34	11/29/18 16:21	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	97		50 - 150				11/28/18 11:34	11/29/18 16:21	1

Lab Sample ID: LCS 580-289812/2-A

Matrix: Water

Analysis Batch: 289946

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 289812

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.497		mg/L		99	50 - 120
Motor Oil (>C24-C36)	0.500	0.573		mg/L		115	64 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
<i>o</i> -Terphenyl	82		50 - 150				

Lab Sample ID: LCSD 580-289812/3-A

Matrix: Water

Analysis Batch: 289946

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 289812

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.536		mg/L		107	50 - 120	8	26
Motor Oil (>C24-C36)	0.500	0.610	*	mg/L		122	64 - 120	6	24
Surrogate	%Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	94		50 - 150						

Lab Sample ID: MB 580-290197/1-A

Matrix: Water

Analysis Batch: 290230

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 290197

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		12/04/18 07:26	12/04/18 21:45	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		12/04/18 07:26	12/04/18 21:45	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	90		50 - 150				12/04/18 07:26	12/04/18 21:45	1

Lab Sample ID: LCS 580-290197/2-A

Matrix: Water

Analysis Batch: 290230

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 290197

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.402		mg/L		80	50 - 120
Motor Oil (>C24-C36)	0.500	0.442		mg/L		88	64 - 120

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-82007-1

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

Lab Sample ID: LCS 580-290197/2-A

Matrix: Water

Analysis Batch: 290230

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 290197

<i>Surrogate</i>	<i>%Recovery</i>	<i>LCS Qualifier</i>	<i>Limits</i>
<i>o-Terphenyl</i>	94		50 - 150

Lab Sample ID: LCSD 580-290197/3-A

Matrix: Water

Analysis Batch: 290230

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 290197

<i>Analyte</i>	<i>Spike Added</i>	<i>LCSD Result</i>	<i>LCSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>	<i>RPD</i>	<i>Limit</i>
#2 Diesel (C10-C24)	0.500	0.438		mg/L		88	50 - 120	9	26
Motor Oil (>C24-C36)	0.500	0.470		mg/L		94	64 - 120	6	24

<i>Surrogate</i>	<i>%Recovery</i>	<i>LCSD Qualifier</i>	<i>Limits</i>
<i>o-Terphenyl</i>	94		50 - 150

Lab Chronicle

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

TestAmerica Job ID: 580-82007-1

Client Sample ID: Before GAC-112118

Lab Sample ID: 580-82007-1

Date Collected: 11/21/18 07:50

Matrix: Water

Date Received: 11/21/18 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			289812	11/28/18 11:34	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	289946	11/29/18 20:45	TL1	TAL SEA
Total/NA	Prep	3510C	RE		290197	12/04/18 07:26	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx	RE	1	290230	12/04/18 23:05	JCM	TAL SEA

Client Sample ID: HCC EFF-112118

Lab Sample ID: 580-82007-2

Date Collected: 11/21/18 08:00

Matrix: Water

Date Received: 11/21/18 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			289812	11/28/18 11:34	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	289946	11/29/18 21:07	TL1	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-82007-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-82007-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-82007-1	Before GAC-112118	Water	11/21/18 07:50	11/21/18 16:05
580-82007-2	HCC EFF-112118	Water	11/21/18 08:00	11/21/18 16:05

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TestAmerica Seattle

5755 8th Street East

Tacoma, WA 98424

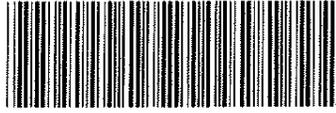
phone 253.922.2310 fax 253.922.5047

Loc: 580
82007



Chain of Custody Record

TestAmerica Laboratories, Inc.

Client Contact		Project Manager: Jerry Portele		Site Contact: David Johnson		Date:		COC No:		
Farallon Consulting		Tel/Fax: 425-295-0839		Lab Contact: Kristine Allen		Carrier:		1 of 2 COCs		
975 5th Avenue Northwest		Analysis Turnaround Time								
Issaquah, WA 98027		Calendar (C) or Work Days (W)								
(425) 295-0800 Phone		TAT if different from Below 3 DAY								
(425) 295-0850 FAX		<input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day								
Project Name: Skykomish HCC System		Filtered Sample NWTPL-Dx w/o silica gel cleanup								
Site:										
WO #: TT0100-M07										
Sample Identification		Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	*** See instructions below *** See instructions below			
Before GAC- 112118		11/21/18	750	Grab	W	2				
HCC EFF- 112118		11/21/18	800	Grab	W	2				
 580-82007 Chain of Custody										
Therm. ID: <u>K2</u> Cor: <u>1.7</u> Unc: <u>1.4</u> Cooler Dsc: <u>lg Blue</u> Packing: <u>Bubble</u> FedEx: _____ Cust. Seal: Yes <u>No</u> UPS: _____ Blue Ice, <u>Yes</u> , Dry, None Lab Cour: <u>Y</u> Other: _____										
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other							2			1
Possible Hazard Identification							Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown							<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										
Relinquished by: <u>[Signature]</u>		Company: <u>Farallon</u>		Date/Time: <u>11/21/18 10:00</u>		Received by: <u>[Signature]</u>		Company: <u>TA-SEA</u>		
Relinquished by:		Company:		Date/Time:		Received by:		Company:		
Relinquished by:		Company:		Date/Time:		Received by:		Company:		

Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-82007-1

Login Number: 82007

List Source: TestAmerica Seattle

List Number: 1

Creator: Gall, Brandon A

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
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?	False	No Name
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	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-82330-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
12/11/2018 3:34:21 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.com

LINKS

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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.

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Case Narrative

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

TestAmerica Job ID: 580-82330-1

Job ID: 580-82330-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative
580-82330-1

Comments

No additional comments.

Receipt

The samples were received on 12/4/2018 3:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.6° 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

TestAmerica Job ID: 580-82330-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-82330-1

Client Sample ID: Before GAC-112818

Lab Sample ID: 580-82330-1

Date Collected: 11/28/18 06:55

Matrix: Water

Date Received: 12/04/18 15:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.41		0.061		mg/L		12/06/18 08:35	12/07/18 16:49	1
Motor Oil (>C24-C36)	0.28		0.091		mg/L		12/06/18 08:35	12/07/18 16:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	88		50 - 150				12/06/18 08:35	12/07/18 16:49	1



Client Sample Results

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

TestAmerica Job ID: 580-82330-1

Client Sample ID: HCC EFF-112818

Lab Sample ID: 580-82330-2

Date Collected: 11/28/18 06:55

Matrix: Water

Date Received: 12/04/18 15:15

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		0.061		mg/L		12/06/18 08:35	12/07/18 17:09	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		12/06/18 08:35	12/07/18 17:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	103		50 - 150				12/06/18 08:35	12/07/18 17:09	1



QC Sample Results

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

TestAmerica Job ID: 580-82330-1

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

Lab Sample ID: MB 580-290408/1-A

Matrix: Water

Analysis Batch: 290502

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 290408

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		12/06/18 08:35	12/07/18 13:26	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		12/06/18 08:35	12/07/18 13:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	97		50 - 150	12/06/18 08:35	12/07/18 13:26	1

Lab Sample ID: LCS 580-290408/2-A

Matrix: Water

Analysis Batch: 290632

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 290408

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.409		mg/L		82	50 - 120
Motor Oil (>C24-C36)	0.500	0.442		mg/L		88	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	91		50 - 150

Lab Sample ID: LCSD 580-290408/3-A

Matrix: Water

Analysis Batch: 290502

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 290408

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.406		mg/L		81	50 - 120	1	26
Motor Oil (>C24-C36)	0.500	0.440		mg/L		88	64 - 120	0	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	88		50 - 150

Lab Chronicle

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

TestAmerica Job ID: 580-82330-1

Client Sample ID: Before GAC-112818

Lab Sample ID: 580-82330-1

Date Collected: 11/28/18 06:55

Matrix: Water

Date Received: 12/04/18 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			290408	12/06/18 08:35	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	290502	12/07/18 16:49	Z1R	TAL SEA

Client Sample ID: HCC EFF-112818

Lab Sample ID: 580-82330-2

Date Collected: 11/28/18 06:55

Matrix: Water

Date Received: 12/04/18 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			290408	12/06/18 08:35	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	290502	12/07/18 17:09	Z1R	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-82330-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-82330-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-82330-1	Before GAC-112818	Water	11/28/18 06:55	12/04/18 15:15
580-82330-2	HCC EFF-112818	Water	11/28/18 06:55	12/04/18 15:15

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-82330-1

Login Number: 82330

List Source: TestAmerica Seattle

List Number: 1

Creator: Hobbs, Kenneth F

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ 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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



TestAmerica

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-82391-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
12/11/2018 3:19:31 PM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.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.

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Case Narrative

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

TestAmerica Job ID: 580-82391-1

Job ID: 580-82391-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative
580-82391-1

Comments

No additional comments.

Receipt

The samples were received on 12/5/2018 3:25 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.3° C.

Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

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

TestAmerica Job ID: 580-82391-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-82391-1

Client Sample ID: Before GAC-120418

Lab Sample ID: 580-82391-1

Date Collected: 12/04/18 09:05

Matrix: Water

Date Received: 12/05/18 15:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.53		0.062		mg/L		12/06/18 08:35	12/07/18 15:09	1
Motor Oil (>C24-C36)	0.34		0.091		mg/L		12/06/18 08:35	12/07/18 15:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	94		50 - 150				12/06/18 08:35	12/07/18 15:09	1

Client Sample Results

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

TestAmerica Job ID: 580-82391-1

Client Sample ID: HCC EFF-120418

Lab Sample ID: 580-82391-2

Date Collected: 12/04/18 09:15

Matrix: Water

Date Received: 12/05/18 15:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		12/06/18 08:35	12/07/18 15:29	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		12/06/18 08:35	12/07/18 15:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	95		50 - 150				12/06/18 08:35	12/07/18 15:29	1

Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		12/06/18 16:58	12/07/18 18:40	1
Lead	ND		0.00080		mg/L		12/06/18 16:58	12/07/18 18:40	1



QC Sample Results

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

TestAmerica Job ID: 580-82391-1

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

Lab Sample ID: MB 580-290408/1-A
Matrix: Water
Analysis Batch: 290502

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290408

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		12/06/18 08:35	12/07/18 13:26	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		12/06/18 08:35	12/07/18 13:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	97		50 - 150	12/06/18 08:35	12/07/18 13:26	1

Lab Sample ID: LCS 580-290408/2-A
Matrix: Water
Analysis Batch: 290632

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290408

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.409		mg/L		82	50 - 120
Motor Oil (>C24-C36)	0.500	0.442		mg/L		88	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	91		50 - 150

Lab Sample ID: LCSD 580-290408/3-A
Matrix: Water
Analysis Batch: 290502

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290408

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.406		mg/L		81	50 - 120	1	26
Motor Oil (>C24-C36)	0.500	0.440		mg/L		88	64 - 120	0	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	88		50 - 150

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-290498/14-A
Matrix: Water
Analysis Batch: 290621

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290498

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		12/06/18 16:58	12/07/18 18:30	1
Lead	ND		0.00080		mg/L		12/06/18 16:58	12/07/18 18:30	1

Lab Sample ID: LCS 580-290498/15-A
Matrix: Water
Analysis Batch: 290621

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290498

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	1.00	1.12		mg/L		112	85 - 115
Lead	1.00	1.06		mg/L		106	85 - 115

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-82391-1

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

Lab Sample ID: LCSD 580-290498/16-A
Matrix: Water
Analysis Batch: 290621

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290498

Analyte	Spike Added	LCSD		Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
		Result	Qualifier						
Arsenic	1.00	1.12		mg/L		112	85 - 115	0	20
Lead	1.00	1.02		mg/L		102	85 - 115	3	20

Lab Sample ID: 580-82391-2 MS
Matrix: Water
Analysis Batch: 290621

Client Sample ID: HCC EFF-120418
Prep Type: Total/NA
Prep Batch: 290498

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
				Result	Qualifier						
Arsenic	ND		1.00	1.04		mg/L		104	70 - 130		
Lead	ND		1.00	0.982		mg/L		98	70 - 130		

Lab Sample ID: 580-82391-2 MSD
Matrix: Water
Analysis Batch: 290621

Client Sample ID: HCC EFF-120418
Prep Type: Total/NA
Prep Batch: 290498

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
				Result	Qualifier						
Arsenic	ND		1.00	1.09		mg/L		109	70 - 130	4	20
Lead	ND		1.00	1.03		mg/L		103	70 - 130	5	20

Lab Sample ID: 580-82391-2 DU
Matrix: Water
Analysis Batch: 290621

Client Sample ID: HCC EFF-120418
Prep Type: Total/NA
Prep Batch: 290498

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	ND		ND		mg/L		NC	20

Lab Chronicle

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

TestAmerica Job ID: 580-82391-1

Client Sample ID: Before GAC-120418

Lab Sample ID: 580-82391-1

Date Collected: 12/04/18 09:05

Matrix: Water

Date Received: 12/05/18 15:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			290408	12/06/18 08:35	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	290502	12/07/18 15:09	Z1R	TAL SEA

Client Sample ID: HCC EFF-120418

Lab Sample ID: 580-82391-2

Date Collected: 12/04/18 09:15

Matrix: Water

Date Received: 12/05/18 15:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			290408	12/06/18 08:35	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	290502	12/07/18 15:29	Z1R	TAL SEA
Total/NA	Prep	200.8			290498	12/06/18 16:58	JKM	TAL SEA
Total/NA	Analysis	200.8		1	290621	12/07/18 18:40	FCW	TAL SEA

Laboratory References:

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



Accreditation/Certification Summary

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

TestAmerica Job ID: 580-82391-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-82391-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-82391-1	Before GAC-120418	Water	12/04/18 09:05	12/05/18 15:25
580-82391-2	HCC EFF-120418	Water	12/04/18 09:15	12/05/18 15:25

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-82391-1

Login Number: 82391

List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ 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?	False	Refer to Job Narrative for details.
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-82635-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
12/20/2018 9:28:53 AM

Kristine Allen, Manager of Project Management
(253)248-4970

kristine.allen@testamericainc.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.

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Case Narrative

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

TestAmerica Job ID: 580-82635-1

Job ID: 580-82635-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-82635-1**

Comments

No additional comments.

Receipt

The samples were received on 12/13/2018 5:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.2° 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: Skykomish HCC System

TestAmerica Job ID: 580-82635-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-82635-1

Client Sample ID: Before GAC-12918

Lab Sample ID: 580-82635-1

Date Collected: 12/09/18 08:05

Matrix: Water

Date Received: 12/13/18 17:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.60		0.061		mg/L		12/17/18 07:40	12/18/18 04:47	1
Motor Oil (>C24-C36)	0.32		0.091		mg/L		12/17/18 07:40	12/18/18 04:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	79		50 - 150				12/17/18 07:40	12/18/18 04:47	1

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Client Sample Results

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

TestAmerica Job ID: 580-82635-1

Client Sample ID: HCC EFF-12918

Lab Sample ID: 580-82635-2

Date Collected: 12/09/18 08:05

Matrix: Water

Date Received: 12/13/18 17:30

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		0.062		mg/L		12/17/18 07:40	12/18/18 05:09	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		12/17/18 07:40	12/18/18 05:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	75		50 - 150				12/17/18 07:40	12/18/18 05:09	1



QC Sample Results

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

TestAmerica Job ID: 580-82635-1

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

Lab Sample ID: MB 580-291276/1-A
Matrix: Water
Analysis Batch: 291367

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291276

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		12/17/18 07:40	12/18/18 03:42	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		12/17/18 07:40	12/18/18 03:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	76		50 - 150	12/17/18 07:40	12/18/18 03:42	1

Lab Sample ID: LCS 580-291276/2-A
Matrix: Water
Analysis Batch: 291367

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291276

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.419		mg/L		84	50 - 120
Motor Oil (>C24-C36)	0.500	0.470		mg/L		94	64 - 120

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

Lab Sample ID: LCSD 580-291276/3-A
Matrix: Water
Analysis Batch: 291367

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291276

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.444		mg/L		89	50 - 120	6	26
Motor Oil (>C24-C36)	0.500	0.507		mg/L		101	64 - 120	8	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	87		50 - 150

Lab Chronicle

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

TestAmerica Job ID: 580-82635-1

Client Sample ID: Before GAC-12918

Date Collected: 12/09/18 08:05

Date Received: 12/13/18 17:30

Lab Sample ID: 580-82635-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291276	12/17/18 07:40	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291367	12/18/18 04:47	CJ	TAL SEA

Client Sample ID: HCC EFF-12918

Date Collected: 12/09/18 08:05

Date Received: 12/13/18 17:30

Lab Sample ID: 580-82635-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291276	12/17/18 07:40	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291367	12/18/18 05:09	CJ	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-82635-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-82635-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-82635-1	Before GAC-12918	Water	12/09/18 08:05	12/13/18 17:30
580-82635-2	HCC EFF-12918	Water	12/09/18 08:05	12/13/18 17:30

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-82635-1

Login Number: 82635

List Number: 1

Creator: Hobbs, Kenneth F

List Source: TestAmerica 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	

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-82942-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
12/31/2018 2:29:00 PM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.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.

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Case Narrative

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

TestAmerica Job ID: 580-82942-1

Job ID: 580-82942-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-82942-1**

Comments

No additional comments.

Receipt

The samples were received on 12/27/2018 2:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.2° 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: Skykomish HCC System

TestAmerica Job ID: 580-82942-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-82942-1

Client Sample ID: Before GAC-122118

Lab Sample ID: 580-82942-1

Date Collected: 12/21/18 13:05

Matrix: Water

Date Received: 12/27/18 14:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.45		0.062		mg/L		12/30/18 07:34	12/30/18 15:26	1
Motor Oil (>C24-C36)	0.36		0.091		mg/L		12/30/18 07:34	12/30/18 15:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	87		50 - 150				12/30/18 07:34	12/30/18 15:26	1



Client Sample Results

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

TestAmerica Job ID: 580-82942-1

Client Sample ID: HCC EFF-122118

Lab Sample ID: 580-82942-2

Date Collected: 12/21/18 13:05

Matrix: Water

Date Received: 12/27/18 14:00

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		0.062		mg/L		12/30/18 07:34	12/30/18 15:47	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		12/30/18 07:34	12/30/18 15:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	103		50 - 150				12/30/18 07:34	12/30/18 15:47	1



QC Sample Results

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

TestAmerica Job ID: 580-82942-1

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

Lab Sample ID: MB 580-292291/1-A

Matrix: Water

Analysis Batch: 292294

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 292291

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		12/30/18 07:34	12/30/18 13:59	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		12/30/18 07:34	12/30/18 13:59	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	106		50 - 150				12/30/18 07:34	12/30/18 13:59	1

Lab Sample ID: LCS 580-292291/2-A

Matrix: Water

Analysis Batch: 292294

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 292291

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	0.500	0.470		mg/L		94	50 - 120
Motor Oil (>C24-C36)	0.500	0.501		mg/L		100	64 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
<i>o</i> -Terphenyl	71		50 - 150				

Lab Sample ID: LCSD 580-292291/3-A

Matrix: Water

Analysis Batch: 292294

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 292291

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	0.500	0.480		mg/L		96	50 - 120	2	26
Motor Oil (>C24-C36)	0.500	0.511		mg/L		102	64 - 120	2	24
Surrogate	%Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	81		50 - 150						

Lab Chronicle

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

TestAmerica Job ID: 580-82942-1

Client Sample ID: Before GAC-122118

Lab Sample ID: 580-82942-1

Date Collected: 12/21/18 13:05

Matrix: Water

Date Received: 12/27/18 14:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			292291	12/30/18 07:34	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	292294	12/30/18 15:26	Z1R	TAL SEA

Client Sample ID: HCC EFF-122118

Lab Sample ID: 580-82942-2

Date Collected: 12/21/18 13:05

Matrix: Water

Date Received: 12/27/18 14:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			292291	12/30/18 07:34	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	292294	12/30/18 15:47	Z1R	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-82942-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-82942-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-82942-1	Before GAC-122118	Water	12/21/18 13:05	12/27/18 14:00
580-82942-2	HCC EFF-122118	Water	12/21/18 13:05	12/27/18 14:00

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Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-82942-1

Login Number: 82942

List Source: TestAmerica Seattle

List Number: 1

Creator: Hobbs, Kenneth F

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	



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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-82976-1

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

For:

Farallon Consulting LLC
1809 7th Ave. Suite 1111
Seattle, Washington 98101

Attn: Rob Leet



Authorized for release by:
1/3/2019 10:31:57 AM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.com

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

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Case Narrative

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

TestAmerica Job ID: 580-82976-1

Job ID: 580-82976-1

Laboratory: TestAmerica Seattle

Narrative

**Job Narrative
580-82976-1**

Comments

No additional comments.

Receipt

The samples were received on 12/31/2018 12:45 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.0° C.

Receipt Exceptions

The following samples had no Custody Seal on cooler: Before GAC - 122818 (580-82976-1) and HCC EFF - 122818 (580-82976-2)

GC Semi VOA

Method(s) 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 - 122818 (580-82976-1).

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

TestAmerica Job ID: 580-82976-1

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client Sample Results

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

TestAmerica Job ID: 580-82976-1

Client Sample ID: Before GAC - 122818

Lab Sample ID: 580-82976-1

Date Collected: 12/28/18 04:00

Matrix: Water

Date Received: 12/31/18 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)	0.71		0.062		mg/L		01/02/19 08:37	01/02/19 17:43	1
Motor Oil (>C24-C36)	0.63		0.091		mg/L		01/02/19 08:37	01/02/19 17:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	84		50 - 150				01/02/19 08:37	01/02/19 17:43	1

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Client Sample Results

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

TestAmerica Job ID: 580-82976-1

Client Sample ID: HCC EFF - 122818

Lab Sample ID: 580-82976-2

Date Collected: 12/28/18 04:00

Matrix: Water

Date Received: 12/31/18 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		0.062		mg/L		01/02/19 08:37	01/02/19 18:05	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		01/02/19 08:37	01/02/19 18:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	103		50 - 150				01/02/19 08:37	01/02/19 18:05	1



QC Sample Results

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

TestAmerica Job ID: 580-82976-1

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

Lab Sample ID: MB 580-292392/1-A
Matrix: Water
Analysis Batch: 292424

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 292392

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		01/02/19 08:37	01/02/19 15:10	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		01/02/19 08:37	01/02/19 15:10	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	96		50 - 150				01/02/19 08:37	01/02/19 15:10	1

Lab Sample ID: LCS 580-292392/2-A
Matrix: Water
Analysis Batch: 292424

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 292392

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)	0.500	0.444		mg/L		89	50 - 120		
Motor Oil (>C24-C36)	0.500	0.488		mg/L		98	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
<i>o</i> -Terphenyl	88		50 - 150						

Lab Sample ID: LCSD 580-292392/3-A
Matrix: Water
Analysis Batch: 292424

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 292392

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	0.500	0.424		mg/L		85	50 - 120	5	26
Motor Oil (>C24-C36)	0.500	0.474		mg/L		95	64 - 120	3	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	87		50 - 150						

Lab Chronicle

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

TestAmerica Job ID: 580-82976-1

Client Sample ID: Before GAC - 122818

Lab Sample ID: 580-82976-1

Date Collected: 12/28/18 04:00

Matrix: Water

Date Received: 12/31/18 12:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			292392	01/02/19 08:37	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	292424	01/02/19 17:43	W1T	TAL SEA

Client Sample ID: HCC EFF - 122818

Lab Sample ID: 580-82976-2

Date Collected: 12/28/18 04:00

Matrix: Water

Date Received: 12/31/18 12:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			292392	01/02/19 08:37	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	292424	01/02/19 18:05	W1T	TAL SEA

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 580-82976-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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Sample Summary

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

TestAmerica Job ID: 580-82976-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-82976-1	Before GAC - 122818	Water	12/28/18 04:00	12/31/18 12:45
580-82976-2	HCC EFF - 122818	Water	12/28/18 04:00	12/31/18 12:45

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

Login Sample Receipt Checklist

Client: Farallon Consulting LLC

Job Number: 580-82976-1

Login Number: 82976

List Source: TestAmerica Seattle

List Number: 1

Creator: Luna, Francisco J

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	False	Not present
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

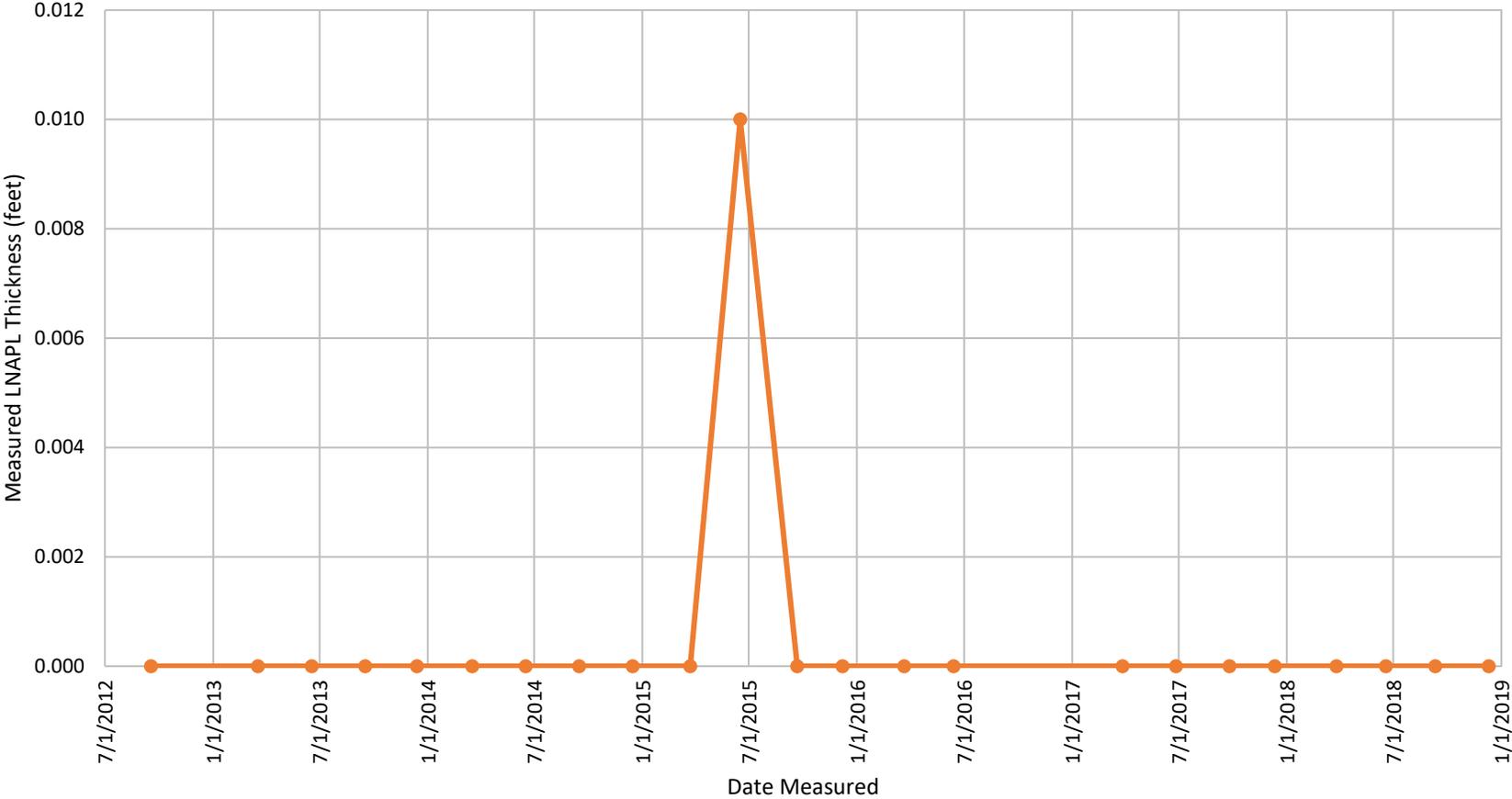


APPENDIX B
LNAPL TREND PLOTS

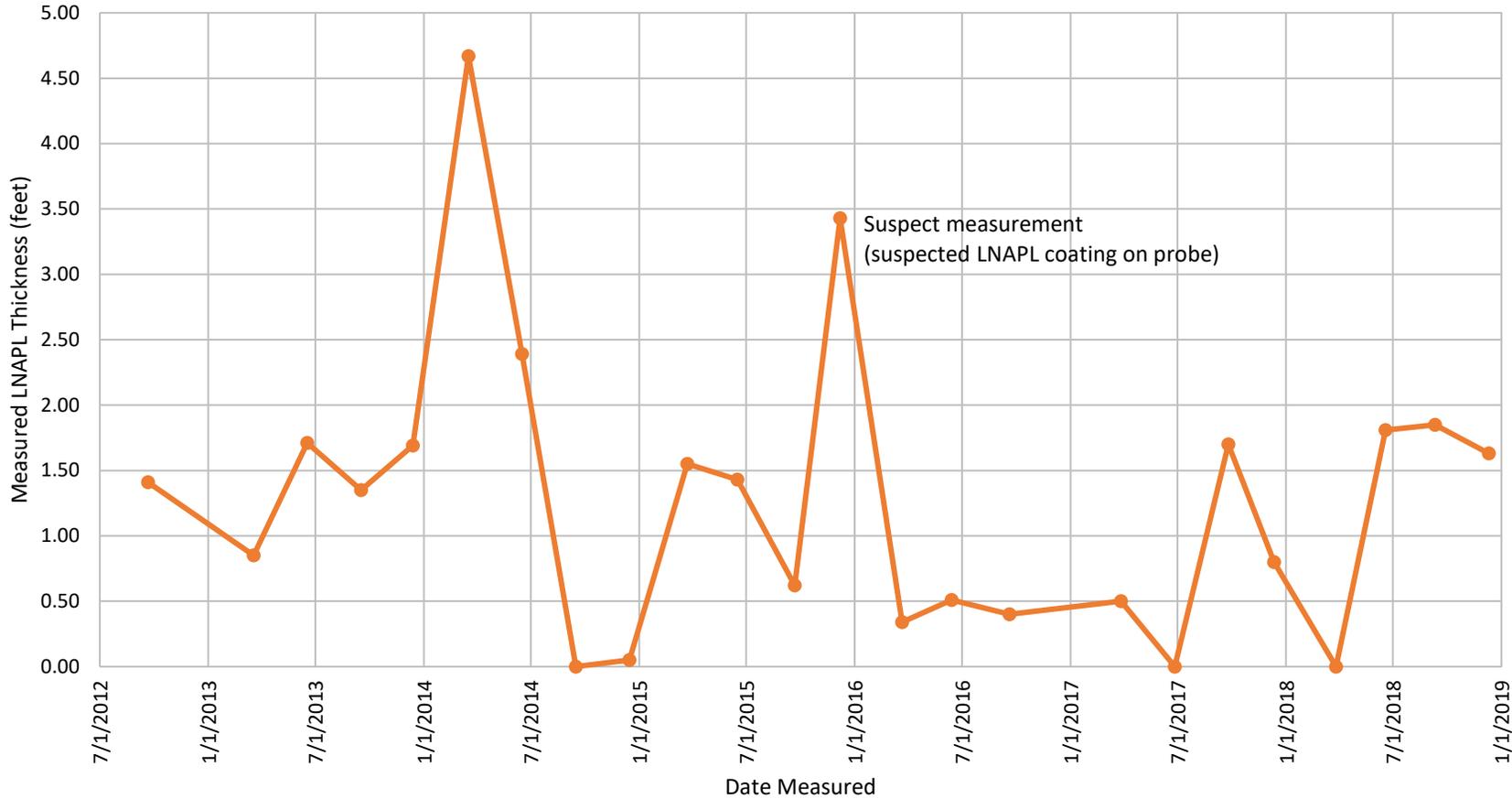
2018 ANNUAL HYDRAULIC CONTROL AND
CONTAINMENT SYSTEM OPERATIONS REPORT
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Consent Decree No. 07-2-33672-9 SEA

Farallon PN: 683-067

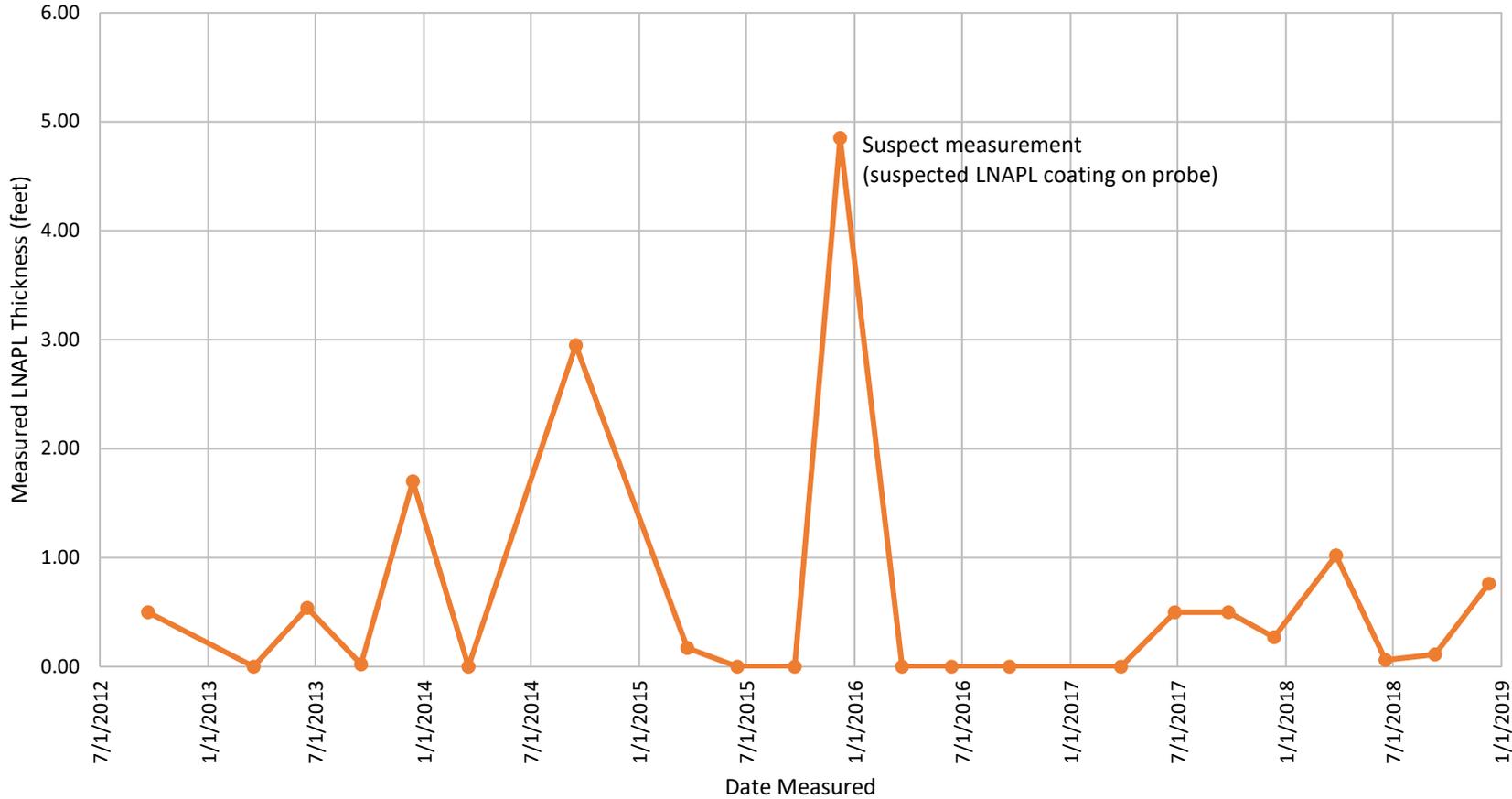
Piezometer PZ-4S LNAPL Thickness Measurements



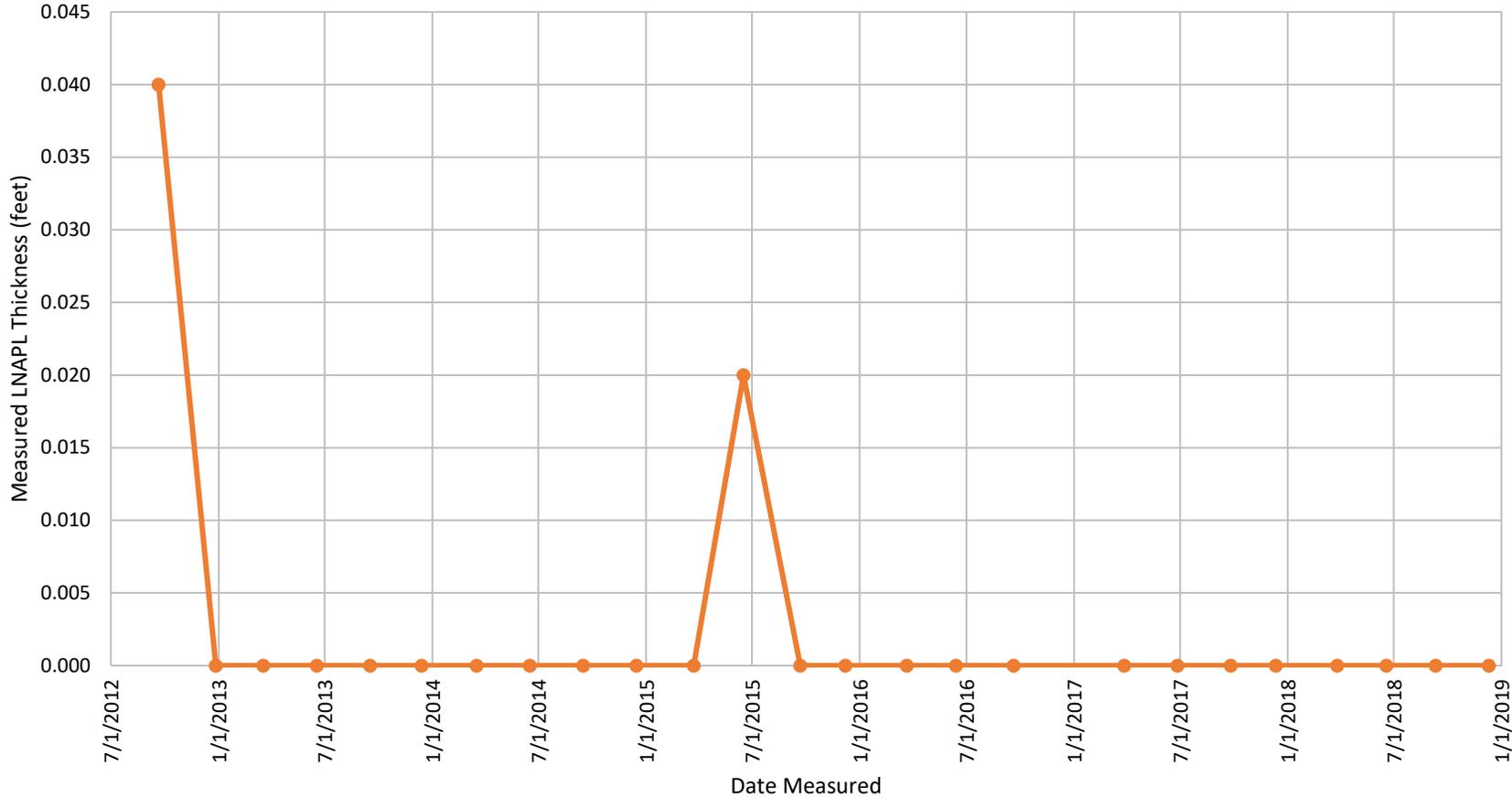
Piezometer PZ-5S LNAPL Thickness Measurements



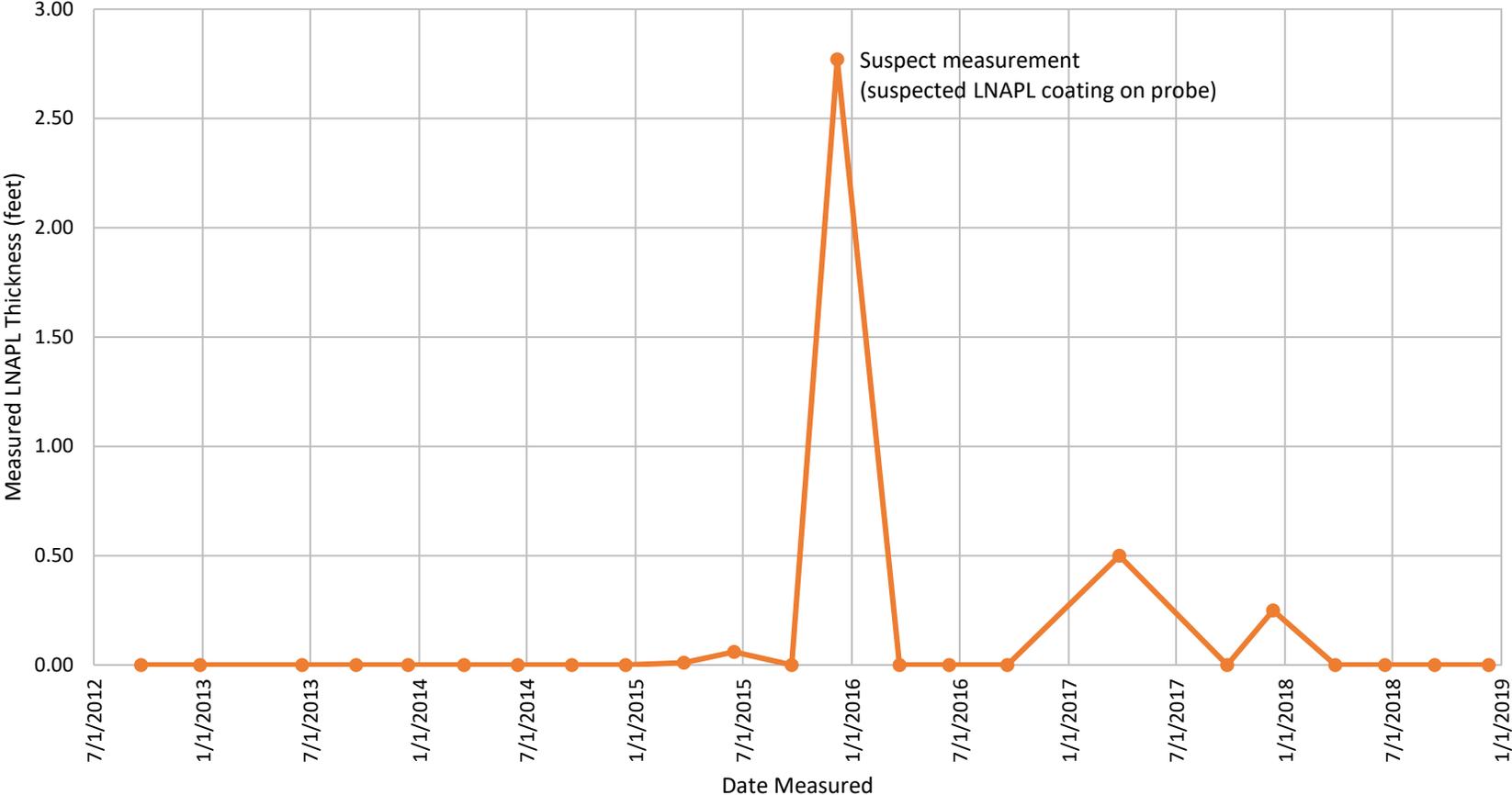
Piezometer PZ-6S LNAPL Thickness Measurements



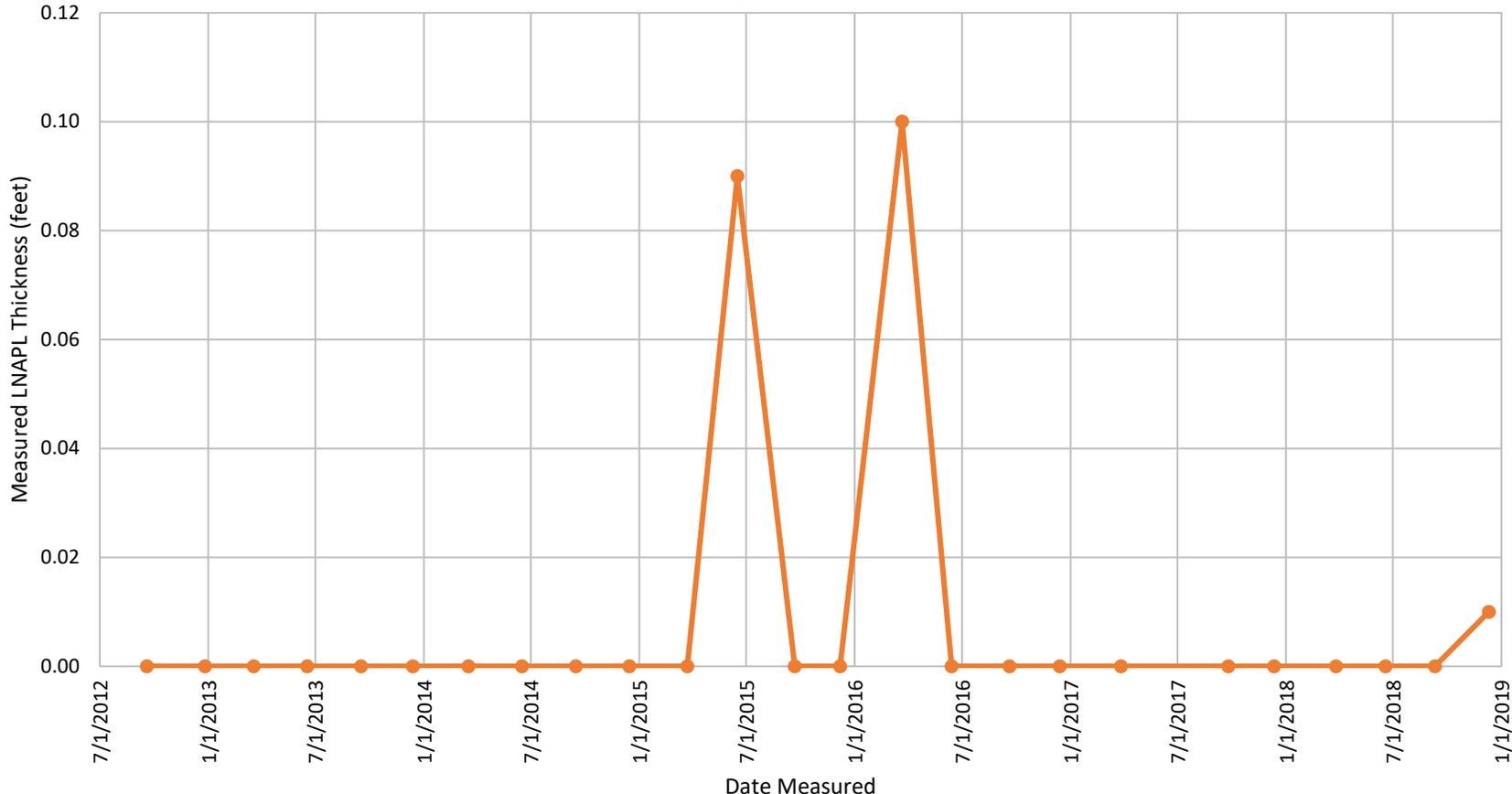
Well RW-03 LNAPL Thickness Measurements



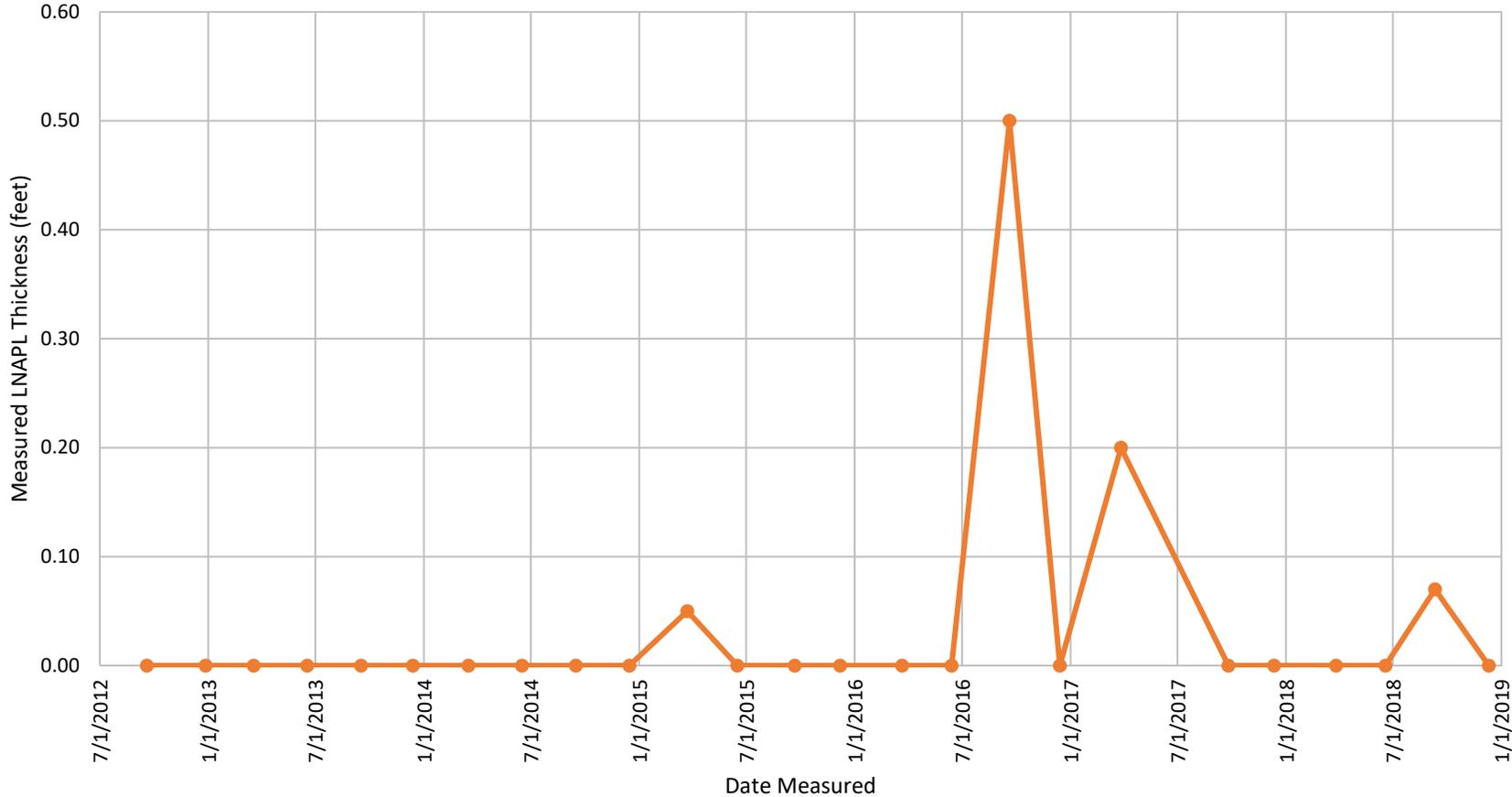
Well RW-04 LNAPL Thickness Measurements



Well RW-05 LNAPL Thickness Measurements



Well RW-07 LNAPL Thickness Measurements



Well RW-08 LNAPL Thickness Measurements

