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2013 AS-BUILT COMPLETION REPORT

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

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April 28, 2014

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APPENDICES

(Provided on compact disc in print copy)

ACRONYMS AND ABBREVIATIONS

AECOM	AECOM Environment
As-Built Report	*2013 As-Built Completion Report, BNSF Former Maintenance and Fueling Facility, Skykomish, Washington,* Consent Decree No. 07-2-33672-9 SEA dated April 28, 2014 prepared by Farallon Consulting, L.L.C. (this report)
bgs	below ground surface
BNSF	BNSF Railway Company
CAP	Cleanup Action Plan dated October 2007, prepared by the Washington State Department of Ecology
Ecology	Washington State Department of Ecology
EMB Consulting	EMB Consulting, LLC
Farallon	Farallon Consulting, L.L.C.
G&O	Gray & Osborne, Inc.
HCC	Hydraulic control and containment
HRA	Historical Research Associates, Inc.
Inca	Inca Engineers
LNAPL	light nonaqueous-phase liquid
MARVAC	Marine Vacuum Service, Inc.
mg/kg	milligrams per kilogram
SAP	Sampling and Analysis Plan
Schoolyard	schoolyard adjacent to the Skykomish School
Site	BNSF Railway Company Former Maintenance and Fueling Facility in Skykomish, Washington
SHF	soil handling facility
Strider	Strider Construction Co. Inc.
Town	Town of Skykomish, Washington
UST	underground storage tank
VDL	vertical delineation limit
2010 CMP	2010 Compliance Monitoring Plan Update dated April 30, 2010 prepared by AECOM Environment
2010 EDR	2010 Engineering Design Report dated May 3, 2010 prepared by AECOM Environment
2013 AMP	Skykomish Schoolyard Area Air and Noise Monitoring Plan dated June 4, 2013 prepared by EMB Consulting, LLC
2013 CMP	Addendum #2 2010 Compliance Monitoring Plan Update dated June 26, 2013 prepared by Farallon Consulting, L.L.C.

2013 CPS	2013 Schoolyard Excavation Supplement Construction Plans and Specifications dated June 5, 2013 prepared by Farallon Consulting, L.L.C.
2013 TEP	2013 Technical Execution Plan dated June 10, 2013, prepared by Strider Construction Co. Inc.

1.0 INTRODUCTION

This 2013 As-Built Completion Report (As-Built Report) was prepared pursuant to the requirements of Section 400 of Chapter 173-340 of the Washington Administrative Code and describes the 2013 remediation construction activities completed at the Skykomish School for the BNSF Railway Company (BNSF) as part of the remedial action underway at the Former Maintenance and Fueling Facility in Skykomish, Washington (herein referred to as the Site) (Figure 1). Site remediation activities are being conducted in accordance with the Cleanup Action Plan for BNSF Former Maintenance and Fueling Facility dated October 2007, prepared by the Washington State Department of Ecology (Ecology) (CAP). The remediation activities completed at the Site in 2013 were approved by Ecology and undertaken by BNSF pursuant to Consent Decree No. 07-2-33672-9 SEA between BNSF and Ecology, and are part of an integrated and comprehensive remedial action for the Site. The overall cleanup approach for the Site is described in the Master Engineering Design Report (RETEC Group, Inc. 2008).

The original Skykomish Schoolyard excavation prism was outlined in the 2010 Construction Specifications dated March 29, 2010 prepared by AECOM (2010a) (2010 CPS). This excavation was partially completed during 2010 construction under a limited access agreement with the Skykomish School District. In 2013, BNSF obtained access to the Skykomish School property to complete excavation of the schoolyard. Farallon Consulting, L.L.C. (Farallon) was selected by BNSF to provide supplemental design services for the 2013 excavation of the remaining portions of the schoolyard adjacent to the Skykomish School (herein referred to as the Schoolyard). Farallon retained the Schoolyard excavation prism as described in the 2010 CPS with the exception of the northeast corner. Cleanup in this area is anticipated to be completed beginning in 2015 as part of remediation beneath the School Building. The 2013 scope of work is described in the 2013 Schoolyard Excavation Supplement Construction Plans and Specifications dated June, 5, 2013, prepared by Farallon (2013a) (2013 CPS).

The remediation and compliance monitoring work is also described in the 2010 Engineering Design Report dated May 3, 2010, prepared by AECOM Environment (AECOM) (2010d) (2010 EDR); the Compliance Monitoring Plan Update dated April 30, 2010, prepared by AECOM (2010b) (2010 CMP); the 2011 Remediation As-Built Completion Report dated June 22, 2012, prepared by AECOM (2012); and the Addendum #2 2010 Compliance Monitoring Plan Update dated June 26, 2013, prepared by Farallon (2013b) (2013 CMP). This 2013 As-Built Report summarizes the remediation construction activities that were completed at the Site in 2013. This report also summarizes the monitoring activities completed in association with the Schoolyard remediation.

The remainder of this As-Built Report is organized into the following sections:

- **Section 2**: **Project Management and Organization.** This section describes the roles and responsibilities of BNSF; the general contractor, Strider Construction Co. Inc. (Strider) and its subcontractors; and Farallon and its subcontractors in the completion of the 2013 remediation activities.
- **Section 3: Site Preparation.** This section describes the general Site preparation activities that were completed prior to the start of construction.

- **Section 4**: **Remediation Construction Activities.** This section describes the 2013 remediation construction activities, including activities described in the 2010 EDR, the Sampling and Analysis Plan dated April 30, 2010 prepared by AECOM (2010c) (SAP), and the 2013 CPS.
- **Section 5**: **Restoration Activities.** This section describes the restoration activities that occurred following the removal of petroleum- and metals-contaminated soil from the Site, including the restoration activities described in the 2013 CPS.
- **Section 6: Remaining Work to be Completed.** This section describes the remaining remediation activities described in the planning documents that will begin or will be completed after 2013.
- **Section 7: Summary and Conclusions.** This section provides an overview of the 2013 remediation activities at the Site and includes summary conclusions of the activities and work completed.
- **Section 8: References.** This section lists the documents cited in this report.

2.0 PROJECT MANAGEMENT AND ORGANIZATION

As described in the 2010 CPS, AECOM prepared the cleanup action planning documentation pertaining to the excavation of petroleum- and metals-contaminated soil in the Schoolyard within the Site (Figure 2). In 2013, Farallon was selected by BNSF to provide supplemental design and construction observation services for the excavation and load-out of contaminated soil from the Schoolyard, and the associated Schoolyard restoration. In this capacity, Farallon served as liaison for BNSF with contractors, the Town of Skykomish (Town), the Skykomish School District, and local stakeholders. During remediation and construction activities, Farallon provided weekly status updates to BNSF, the Skykomish School, the Town, and Ecology representatives. Copies of the 2013 Weekly Status Updates are provided in Appendix A. Ecology retained responsibility for regulatory oversight of the remediation project. Brief descriptions of the roles of each contractor, subcontractor, and consultant involved in the 2013 remediation activities are provided below.

2.1 GENERAL CONTRACTOR

Strider was selected by BNSF to perform the construction activities in accordance with the 2013 CPS, as well as the development and implementation of the 2013 Technical Execution Plan dated June 10, 2013, prepared by Strider (2013) for BNSF (2013 TEP). Strider performed excavation, backfilling, and grading of remediation areas; loading of excavated material for disposal; restoration; and infrastructure improvements.

Subcontractors to Strider and the services they provided included the following:

- Inca Engineers (Inca): Land surveying;
- National Fence Rentals: Temporary site security fencing;
- Holocene Drilling Inc.: Inclinometer installation;
- Lakeside Industries: Paving for soil-handling facility expansion;
- Marine Vacuum Service, Inc. (MARVAC): Oil recovery;
- GeoTest Services, Inc.: Compaction testing;
- Woodinville Custom Concrete: Concrete pathway restoration;
- P&G Landscaping: Schoolyard sod installation;
- Burke-Darrow, Inc.: Irrigation system installation; and
- Economy Fence: Permanent fence installation.

2.2 CONSULTANTS AND CONTRACTORS TO BNSF

The following firms provided the services indicated below under contract to BNSF in support of this project:

- Farallon: Supplemental design; construction observation; compliance monitoring in accordance with the 2010 CMP, the 2013 CMP, and the 2013 CPS; and BNSF liaison with contractors, the Town, and local stakeholders;
- TestAmerica Laboratories, Inc.: Laboratory analysis of soil samples;
- Republic Services, Inc.: Disposal of contaminated soil; and
- Jacobs Associates: Geotechnical monitoring and construction support.

2.3 SUBCONSULTANTS TO FARALLON

The following firms provided the services indicated below under contract to Farallon in support of this project:

- EMB Consulting, LLC (EMB Consulting): Development and implementation of the Skykomish School Air and Noise Monitoring Plan;
- Sayler Data Solutions, Inc.: Third-party data validation services; and
- Historical Research Associates, Inc. (HRA): Development and implementation of the Archaeological Monitoring Plan.

2.4 CONSULTANTS TO TOWN OF SKYKOMISH

Gray & Osborne, Inc. (G&O) provided design and construction observation of the sanitary side sewer connection.

3.0 SITE PREPARATION

The following section describes the general site preparation activities that were completed prior to the start of construction for the BNSF excavation and stockpile load-out activities.

3.1 PRE-CONSTRUCTION MEETING

A pre-construction meeting was held on June 13, 2013 in the Town prior to mobilization. Meeting attendees included representatives of BNSF, Strider, Farallon, the Skykomish School, the Town, HRA, Jacobs Associates, EMB Consulting, and Ecology. The key items discussed in the meeting included:

- Roles and responsibilities;
- Key Site documents;
- Communication protocol;
- Site health and safety;
- Daily health and safety briefings;
- Project contacts;
- Submittal procedures; and
- Anticipated construction schedule.

3.2 TEMPORARY FACILITIES AND CONTROLS

The temporary facilities and controls implemented were outlined in the 2013 CPS and the 2013 TEP. This section documents the temporary facilities and controls employed during the project work to define the limits of work, control surface water runoff during construction operations, coordinate truck traffic, and maintain Site security.

3.2.1 Construction Trailer

Strider provided a construction trailer that was located south of the soil-handling facility (SHF) within the BSNF railyard. The construction trailer included separate field offices for the Site Superintendent and the Project Engineer, and a meeting room for daily health and safety meetings. Portable restrooms were provided during construction activities at the SHF and at Schoolyard locations within the Site (Figure 1).

3.2.2 Temporary Erosion and Sediment Controls

Temporary erosion and sediment controls were set up prior to breaking ground for the construction activities. Catch basin inserts were installed in stormwater catch basins along West River Drive and Sixth Street. Silt fencing was installed around the remediation excavation area to control sediment and silt runoff.

3.2.3 Temporary Traffic Control

3.2.3.1 Street Traffic Controls

West River Drive between Sixth Street and the Shawver Property was closed during the hours of construction. To minimize truck traffic on Town streets, Strider hauled soil from the Schoolyard to the SHF (see Section 3.2.6) located in the BNSF railyard (Figure 1).

During school bus loading and unloading at the Skykomish School, construction vehicle traffic was temporarily stopped. School bus loading and unloading occurred along Railroad Avenue between Fifth and Sixth Streets between 7:20 and 7:40 a.m., and between 11:55 a.m. and 12:15 p.m. Monday through Wednesday.

3.2.3.2 Railroad Flagger Traffic Controls

On June 20, 2013, the Strider Superintendent, Farallon Project Engineer, and BNSF Roadmaster met to coordinate ingress and egress to the SHF. The railroad track adjacent to the SHF was locked out to allow Strider to transport soil to the facility. No railroad flaggers were required for this work.

3.2.4 Temporary Site Security

A 6-foot-tall temporary fence was installed around the perimeter of the Schoolyard to maintain Site security throughout the duration of the project. The fence was installed to allow ingress and egress to the School doors on the east side of the Schoolyard. Fence access along West River Drive was locked at the completion of work each day. Signs were posted around the play area south of the Schoolyard as notification that the play area was closed for the duration of construction.

3.2.5 Construction Water Treatment System

Two 20,000-gallon temporary storage tanks were set up in series at the SHF for collection of runoff from the SHF stockpile. Stockpile runoff was pumped to the temporary storage tank to allow for settling. Once settling had occurred and water was no longer turbid, construction water was pumped to the water treatment plant for the Site hydraulic control and containment (HCC) system for further treatment, and was subsequently discharged to the South Fork of the Skykomish River under the existing National Pollutant Discharge Elimination System permit. After the SHF pad had been cleaned, construction water in the temporary storage tanks appeared to remain moderately turbid following a period of settling. Bag and cartridge filters were set up in series to remove fine sediment from construction water before it was pumped to the HCC system. A total of approximately 65,000 gallons of construction water from the SHF was treated and discharged during 2013 remediation activities.

3.2.6 Soil Handling Facility

The SHF is located on BNSF railyard property and is covered by asphalt pavement placed over a high-density polyethylene liner (Figure 1). The east end of the SHF is surrounded by two rows of ecology blocks to contain the stockpiled contaminated soil. A surface water collection sump was installed at the low point of the SHF to collect runoff from within the footprint of the SHF.

A small trash pump conveyed surface water from the sump to the Construction Water Treatment System through polyvinyl chloride piping.

3.3 SURVEYING

In accordance with the 2013 CPS, Inca conducted a professional land survey on June 20, 2013 to collect baseline survey data of the settlement monitoring points prior to the start of construction. Following the baseline survey, Strider performed settlement monitoring during construction using a total station. The survey data generated prior to and during construction were provided to Jacobs Associates for analysis. In addition to performing settlement monitoring, Strider collected topographical survey data of the excavation prior to groundbreaking, and after each of the following events: removal of overburden material, removal of contaminated soil, placement of stabilization aggregate fill, placement of structural aggregate fill, and replacement of overburden.

3.4 UTILITY POTHOLING

Strider construction provided a one-call utility locate of the Schoolyard block prior to commencement of construction activities to locate utilities up to the Skykomish School property line. Strider subcontracted Applied Professional Services, Inc. to perform an additional locate of all utilities within the Skykomish School property. A utility locate marking indicated that a conduit containing a power line was present along the north edge of the excavation area and within the bounds of the excavation. To document the exact location and depth of the power conduit, a representative from the utility company was contacted to observe Strider digging a series of potholes using hand tools to expose the surface of the conduit. Prior to backfilling the potholes, the Strider Field Surveyor collected survey data of the conduit location.

3.5 PROTECTION MONITORING

Protection monitoring was performed during the remediation and construction activities conducted at the Schoolyard, as defined in the 2010 CMP and the 2013 CMP. EMB Consulting (2013) prepared the Skykomish Schoolyard Area Air and Noise Monitoring Plan dated June 4, 2013 (2013 AMP) to provide the methods and procedures for the baseline and protection monitoring to be performed during the 2013 remediation and construction activities conducted at the Site.

3.5.1 Air Monitoring

In accordance with the 2013 AMP, air monitoring was performed at the Site by EMB Consulting and Farallon. Prior to the commencement of remediation and construction activities, air samples were collected inside the Skykomish School building to establish baseline petroleum concentrations. During the remediation and construction activities, air samples were collected as part of protection monitoring to measure concentrations of respirable dust, lead and arsenic, petroleum, and diesel exhaust. Air monitoring activities were documented in weekly Air and Noise Monitoring Reports. None of the contaminants of concern were detected during the 2013 construction activities at or above the project action limits specified in the 2013 AMP. Weekly Air and Noise Monitoring Reports are provided in Appendix B.

3.5.2 Noise Monitoring

In accordance with the 2013 AMP, noise monitoring was performed at the Site by EMB Consulting and Farallon. Prior to commencement of remediation and construction activities, noise monitoring was performed to establish baseline noise levels. Measurements were collected outside and inside the Skykomish School building, and inside the Community Center on the east side of Sixth Street. During remediation and construction activities, noise measurements were collected outside the Skykomish School building and outside the Community Center. Noise monitoring activities were documented in weekly Air and Noise Monitoring Reports. During the 2013 construction activities, no noise levels were measured at or above the project action limits specified in the 2013 AMP. Air and Noise Monitoring Reports are provided in Appendix B.

3.5.3 Weather Monitoring

Weather monitoring was performed by EMB Consulting and Farallon in accordance with the 2013 AMP. A weather station on the roof of the HCC treatment building recorded temperature, wind speed and direction, and precipitation at 30-minute intervals during daylight hours. Recorded weather data are summarized in the Air and Noise Monitoring Reports provided in Appendix B.

3.6 SETTLEMENT AND VIBRATION MONITORING

In accordance with the 2013 CPS, structure settlement points were placed on the Skykomish School building, and surface settlement points were installed around the Teacherage and Shawver Property as shown in the 2013 CPS. Two inclinometer devices were installed in the Schoolyard adjacent to the Skykomish School building. Prior to commencement of construction and remediation activities, Inca collected a baseline survey of each established settlement monitoring point.

During construction activities, Strider monitored settlement points using a total station as described in the 2013 CPS. The survey data were provided to Jacobs Associates, which reviewed the survey, vibration monitoring, and inclinometer data; and summarized conclusions in weekly reports provided to Farallon. Following the construction activities, Jacobs Associates provided Farallon with a *Schoolyard Excavation Supplement Final Summary Instrument & Survey Monitoring Report* (2013), which is provided in Appendix C.

3.7 ARCHAEOLOGICAL MONITORING, PROTECTION, AND DOCUMENTATION

During excavation, archaeological monitoring was performed by HRA from the surface level to an excavation depth of approximately 5 feet below ground surface (bgs) in accordance with the protocols and recommendations documented in an Archaeological Resources Monitoring and Discovery Plan for the BNSF Railway Former Maintenance and Fueling Facility being prepared by Northwest Archaeological Associates, Inc. as referenced in the *DRAFT—Archaeological Monitoring Report for the Skykomish Schoolyard Area Remediation, BNSF Former Maintenance and Fueling Facility, Skykomish, Washington* dated December 2013, prepared by HRA (2013) (HRA Draft Archaeological Report). On June 25, 2013 HRA observed historic-period archaeological site 45KI1157 (a former outhouse building). The 45KI1157 site was left

undisturbed and was monitored by HRA until June 26, 2013, when the Washington State Department of Archaeology and Historic Preservation gave approval to demolish the 45KI1157 site and continue construction. No additional archaeological sites were observed during construction activities. A detailed summary of the archaeological monitoring that occurred during the 2013 Schoolyard excavation is provided in the HRA Draft Archaeological Report (Appendix D).

4.0 REMEDIATION CONSTRUCTION ACTIVITIES

The 2013 remediation construction scope of work included the following activities that were described in the 2010 EDR and the 2013 CPS:

- Pre-characterization of overburden soil;
- Excavation and load-out of metals-contaminated soil from the Schoolyard;
- Excavation and stockpiling of overburden soil;
- Excavation and load-out of petroleum-contaminated soil from the Schoolyard; and
- Oil recovery during excavation below groundwater elevation.

4.1 REMEDIATION DESIGN BASIS AND OBJECTIVES

The remediation design basis and objectives are described in the 2013 CPS and 2010 CMP. The excavation prism shown in the 2013 CPS was carried forward from the 2010 CPS prepared by AECOM (2010a). The excavation prism defined by AECOM was approved by Ecology and BNSF prior to the 2010 construction activities. A portion of the Schoolyard area was excavated in 2010 under a limited access agreement with the Skykomish School District. The excavation prism described in the 2013 CPS was modified by Farallon to overlap the 2010 excavation described in the 2011 Remediation As-Built Completion Report (AECOM 2012) except for a section of the northeast Schoolyard. Remediation in this area is anticipated to begin in 2015 as part of the final phase of cleanup in Skykomish. The objectives of the 2013 remediation are described in the 2013 CMP. In general, soil inside the Schoolyard with concentrations exceeding established Site cleanup and remediation levels as defined in the CAP were to be excavated and removed to a disposal facility off the Site. Soil with concentrations exceeding the remediation level left in place was covered with a geomembrane liner and will be addressed during future remediation phases, as described in Section 4.4.3, Installation and Removal of Geomembrane Liner.

4.2 OVERBURDEN SAMPLING AND TEST PIT EXCAVATIONS

In accordance with the 2010 CMP and the 2013 CMP, prior to excavation the areas within the excavation boundaries were divided into approximately 25- by 25-foot grids that were measured off surveyed excavation corners, and marked using construction staking as shown on Figure 3. Samples were collected from the approximate center of each grid at a depth that was approximately halfway between the vertical delineation limit (VDL) and the ground surface (i.e., approximately 2.5 feet bgs). The sample locations for the overburden soil area are depicted on Figure 3. Soil samples were collected directly from the excavator bucket. The overburden soil samples were analyzed for total petroleum hydrocarbons as diesel-range organics (DRO) and as oil-range organics (ORO) by Northwest Method NWTPH-Dx. No odor or staining was noted in the overburden soil samples. DRO and ORO (collectively herein referred to as NWTPH-Dx) were not detected at concentrations at or exceeding the level established for reuse of 1,870 milligrams per kilogram (mg/kg) based on the sum of the concentrations of these constituents in

the overburden soil samples. The overburden soil sample analytical results are summarized in Table 1.

Following receipt of the laboratory analytical results for the overburden soil samples, the overburden soil was excavated, loaded, and stockpiled in designated areas adjacent to the SHF pending reuse. The exception to this approach was the overburden soil from the area designated as the metals excavation area as shown on Figure 4. Soil from the ground surface down to 2 feet bgs from the metals excavation area was excavated and stockpiled in the SHF as described in Section 4.3, Metals-Contaminated Soil Excavation.

The 2010 CPS described an isolated "Bull's-Eye" excavation area in grids G11 and G12 as not contiguous with the overall excavation prism because the elevated NWTPH-Dx concentrations at this location were determined to be anomalous. The 2013 CPS maintained the excavation prism to include this excavation area and required additional test pit excavations to further investigate soil quality at this location.

On June 24, 2013, three exploratory test pits were excavated in the vicinity of the "Bull's-Eye" in grid locations G11, G12, and G13 to depths of approximately 8.0, 8.0, and 7.5 feet bgs, respectively. Groundwater was encountered at approximately 6 feet bgs in each of the test pits. No staining, odor, or sheen was noted in any of the test pits. The limits of the Schoolyard excavation were later extended to incorporate grids G11, G12, and G13 based on staining and the presence of light nonaqueous-phase liquid (LNAPL) observed along the south wall of the excavation in grid F11 as described in Section 4.4.2., Schoolyard Petroleum-Contaminated Soil Over Excavation.

4.3 METALS-CONTAMINATED SOIL EXCAVATION

As required by the CAP, areas within the School property contaminated by lead and arsenic at concentrations exceeding the cleanup levels of 250 and 20 mg/kg, respectively, were to be excavated to a minimum depth of 2 feet bgs, or to a depth that resulted in soil concentrations less than cleanup levels. The metals-contaminated area in the 2013 CPS was clearly marked using survey staking and caution tape prior to excavation. This area was divided into 25- by 25-foot grids designated as MT1, MT2, and MT3 as shown on Figure 4.

In accordance with the 2010 CMP and the 2013 CMP, confirmation soil samples were collected from the center of each of grids MT1, MT2, and MT3 at a depth of 2 feet bgs and at a maximum spacing of 25-foot intervals along the excavation sidewalls as shown on Figure 4. The metals confirmation soil samples collected from grids MT1, MT2, and MT3 were analyzed for lead and arsenic content by U.S. Environmental Protection Agency (EPA) Method 6020. Neither lead nor arsenic was detected at concentrations exceeding the cleanup levels of 250 and 20 mg/kg, respectively, in the confirmation soil samples collected. The analytical data for the metals area soil samples are summarized in Table 2.

Following receipt of the laboratory analysis data for metals-contaminated soil samples, grids MT1, MT2, and MT3 were excavated to a depth of 2 feet bgs. This soil was stockpiled in the SHF and covered with plastic sheeting.

4.4 PETROLEUM-CONTAMINATED SOIL EXCAVATION

As required by the CAP, soil in areas within the northwest portion of the Skykomish School property contaminated by NWTPH-Dx at concentrations exceeding the cleanup level of 3,400 mg/kg was to be excavated and disposed of at an appropriate Subtitle D waste disposal facility. The petroleum-contaminated area defined in the 2013 CPS was clearly marked using survey staking and marking paint. This area was divided into 25- by 25-foot grids as shown on Figure 5. The excavation activities were divided by the VDL. As defined in the 2013 CMP, the Schoolyard VDL and the overburden extents have been conservatively designated such that soil above the VDL is above the water table fluctuation zone and generally is not contaminated with petroleum hydrocarbons.

4.4.1 Schoolyard Petroleum Confirmation Sampling

In accordance with the 2010 CMP and the 2013 CMP, performance soil samples were collected from each of the grid locations. Samples were collected at the excavation bottom in the approximate center of each grid. The planned bottom of excavation was generally defined in the 2013 CPS as elevation 910 feet above mean sea level in the northwest Schoolyard and 913 feet above mean sea level in the southeast Schoolyard. Soil from these approximate elevations included a layer of silt that occurred near these elevations that served to constrain the vertical migration of petroleum contamination. For the grids with sloping sidewalls along the excavation boundaries, soil samples were collected at the toe of the excavation slope at the approximate center of the grid. Additional discrete samples were collected from visually impacted areas within the excavation, which included grid locations C14, D14, E14, F13, and F14 (Figure 5). Following collection of soil confirmation samples, the final excavation elevations were surveyed using the total station. The locations of the soil samples collected at the final limits of the excavation are shown on Figure 5.

NWTPH-Dx was detected at concentrations exceeding the cleanup level of 3,400 mg/kg in the discrete soil samples collected from the east sidewalls of grids C14 and D14 (Figure 5). Soil adjacent to grids C14 and D14 toward the east was left in place and covered with a liner as described in Section 4.4.3, Installation and Removal of Geomembrane Liner. This soil will be addressed during implementation of the Hot Water Flushing cleanup planned for the area beneath and adjacent to the Skykomish School building which is anticipated to occur in 2015.

NWTPH-Dx was not detected at concentrations exceeding the cleanup level of 3,400 mg/kg in the remaining confirmation soil samples collected. The confirmation soil sample results are summarized in Table 3.

4.4.2 Schoolyard Petroleum-Contaminated Soil Over Excavation

On July 27, 2013, staining and LNAPL were observed along the south wall of the excavation in grid F11. As a result, the extent of the excavation was expanded approximately 35 feet south to incorporate grid G11 and portions of grids G10 and G12 to remove the contaminated soil along the wall in grid F11. This additional area of excavation was initially staked using survey staking. At the request of Jacobs Associates, additional structural settlement monitoring points were installed along the covered play area southwest of these grids before over-excavation commenced in grids G11, G12, and G13. Following the additional excavation, confirmation soil

samples were collected from the toe of the excavation slope in grids G11, G12, and G13. Additional discrete soil samples were collected from the excavation slopes at a depth of approximately 7 feet bgs. NWTPH-Dx was not detected at concentrations at or exceeding the cleanup level of 3,400 mg/kg in the soil samples collected from grids G11, G12, or G13 following over-excavation. The soil sample analytical results are summarized in Table 3. Figure 6 shows the final excavation limits prior to backfill activities.

4.4.3 Installation and Removal of Geomembrane Liner

In accordance with the 2013 CPS, the existing geomembrane liner previously installed during the 2006 and 2011 remediation activities in the area was removed where encountered in the excavation. Geomembrane liner was removed from the northern and western excavation slopes. Prior to backfilling, a 36-millimeter geomembrane liner was installed along the eastern excavation slope based on the results obtained from confirmation soil samples from grids C14 and D14 with concentrations of NWTPH-Dx exceeding the remediation level. A 36-millimeter geomembrane liner was also installed as a conservative measure along the southern excavation slope, even though soil confirmation samples from the area contained NWTPH-Dx at concentrations less than the remediation level. Figure 6 shows the approximate limits of liner sections removed during the 2013 excavation and the liner installed along the eastern and southern slopes.

4.5 SOIL SAMPLE ANALYTICAL DATA VALIDATION

Sayler Data Solutions, Inc. reviewed the resultant analytical data to ensure that the quality assurance/quality control criteria established in the 2010 CMP, 2013 CMP, and SAP were satisfied. The laboratory analytical reports for the samples collected during the 2013 remediation excavation activities are provided in Appendix E. The Data Validation Report prepared by Sayler Data Solutions, Inc. is provided in Appendix F.

4.6 OIL RECOVERY

In accordance with the 2013 CPS and as described in the 2013 TEP, oil recovery was performed by MARVAC during excavation and backfill activities that occurred below groundwater elevation. MARVAC used a combination of booms, absorbent pads, water jets, and vacuum trucks to divert and collect oil from the excavation so that clean soil and backfill would not be contaminated. Approximately 7,600 gallons of oily water was recovered from the excavation and transported to the MARVAC oil recycling facility in Seattle, Washington.

4.7 BIRD CONTROL

In accordance with the 2013 CPS and as described in the 2013 TEP, bird deterrents were installed around the excavation during periods when groundwater was exposed. Strider placed reflective spin wheels and plastic owl decoys along the perimeter of the excavation to keep birds from flying into the excavation and coming into contact with LNAPL. No birds were observed to come into contact with LNAPL over the duration of the excavation.

4.8 SOIL HANDLING FACILITY EXPANSION

On July 1, 2013 following the start of excavation for petroleum-contaminated soil, Farallon received notice that railcars for loading out the soil from the SHF would not be available until late July. This required that the petroleum-contaminated soil excavated from the Schoolyard be stockpiled in the SHF pending arrival of the railcars. The capacity of the existing SHF was insufficient for this purpose, requiring expansion of the facility area. During the week of July 1, 2013, approximately 5,000 square feet of area adjacent to the SHF was paved with asphalt, and one additional water collection sump was installed to accommodate storage of the additional petroleum-contaminated soil.

5.0 RESTORATION ACTIVITIES

The following sections describe the Site restoration activities that were completed following the 2013 soil excavation at the Skykomish School property.

5.1 BACKFILL, PLACEMENT, AND COMPACTION

In accordance with the 2013 CPS and as described in the 2013 TEP, following excavation and receipt of confirmation sampling results, the Schoolyard excavation area was backfilled. Backfill material placed below the groundwater table elevation of approximately 917 feet above mean sea level at the conclusion of the excavation was not tested for compaction. The stabilization aggregate below this elevation consisted of well-graded coarse angular rock with little fines, which is designed to self-compact. Following placement of the stabilization aggregate, the excavation was backfilled with imported structural aggregate, and overburden soil that had been stockpiled adjacent to the SHF. This material was placed in approximately 8-inch lifts and compacted by driving a bulldozer and a filled dump truck over the material. No vibratory equipment was used for compaction to minimize vibration to adjacent building foundations. Contractor submittals for the structural and stabilization fill materials are provided in Appendix G.

Compaction testing of the structural and native overburden fill material was completed by Jacobs Associates and GeoTest Services, Inc. Jacobs Associates performed field compaction testing using a field probe. GeoTest Services, Inc. performed field density tests of the structural backfill and native overburden fill material at eight separate locations within the excavation. Each of the field tests measured the percent compaction to be equal to or greater than the specified 85 percent compaction required, as defined in the 2013 CPS. The field density test results are summarized in Appendix H.

5.2 SCHOOL SANITARY SEWER IMPROVEMENTS

In accordance with the 2013 CPS, the existing septic tank drain field piping was removed and replaced with a septic tank effluent side sewer pipe connecting the School sewer system to the existing public sanitary sewer stub located along Railroad Avenue. Prior to installation of the sanitary side sewer pipe, the connection points were potholed and surveyed to confirm elevations. During potholing, it was observed that the 15- to 20-foot length of the existing pipe connecting the effluent junction box (D-Box) to the drain field consisted of 4-inch perforated pipe that was in poor condition. In addition, the D-Box was not fully sealed, and had an additional abandoned sewer connection to the north that had not been shown on the existing system as-built drawing.

On July 18, 2013, Farallon met with the G&O Design Engineer and the Town Public Works representative to discuss the connection to the D-Box. To avoid excessive inflow into the Town sanitary sewer system, the existing perforated pipe was removed, the D-Box was sealed using grout at each pipe connection point, and the abandoned sewer connection to the north was plugged using grout. Approximately 220 linear feet of Schedule 80 polyvinyl chloride sanitary sewer pipe was installed to connect the existing D-Box to the public sanitary sewer line located

along Railroad Avenue. G&O was on the Site to observe the sanitary sewer pipe installation and pressure testing of the new side sewer connection. The sanitary sewer pipeline as-built is provided in Appendix I.

5.3 SCHOOLYARD IRRIGATION SYSTEM

In accordance with the 2013 CPS, an irrigation system was installed to provide irrigation coverage to the grass-covered area of the Schoolyard. The irrigation system plans presented in the 2013 CPS provided only the framework for the irrigation system. A detailed irrigation design was provided by Burke-Darrow, Inc. to achieve full coverage of the Schoolyard. The irrigation piping and connections were pressure-tested prior to backfilling. The irrigation system as-built is provided in Appendix J.

5.4 SCHOOLYARD SURFACE RESTORATION

In accordance with the 2013 CPS, the surface of the Schoolyard was restored to match existing Site conditions. Schoolyard restoration activities included placement of 12 inches of topsoil and sod in disturbed areas, installation of permanent fencing along West River Drive, placement of supplemental pea gravel in the play area, replacement of concrete pathways adjacent to the play structure, restoration of a drip-line trench along the covered play area slab, and removal of settlement monitoring, bird deterrent, and erosion-control equipment.

On August 16, 2013 following substantial completion of the restoration activities, Farallon met with Strider and the Skykomish School District at the Schoolyard to develop a final punch list of remaining restoration items to be completed. The following week, Strider completed all of the remaining restoration tasks at the Schoolyard. Photographs of Schoolyard surface conditions following site restoration are provided in Appendix K.

5.5 STOCKPILE SOIL HANDLING AND DISPOSAL

The metals- and petroleum-contaminated soil was temporarily stockpiled in the SHF, loaded into railcars, and transported off the Site to the Republic Services, Inc. Subtitle D waste disposal facility in Roosevelt, Washington. Metals-contaminated soil was stockpiled separately and covered with plastic sheeting to control dust. The soil was loaded into the railcars using a front-end loader with an on-board scale to maximize the quantity of soil loaded into each railcar without exceeding load limits. A total of 232 tons of metals-contaminated soil and 7,675 tons of petroleum-contaminated soil were transported to the disposal facility. Soil disposal documentation from Republic Services Inc. is provided in Appendix L.

5.5.1 Waste Classification Soil Sampling

Additional soil samples were collected from soil stockpiles for waste classification. To determine the disposal requirements for soil excavated from the metals-contaminated area, stockpile samples were collected from the metals stockpile in the SHF. Lead was detected at a concentration at or exceeding the cleanup level of 250 mg/kg in three of the stockpile soil samples. The soil sample with the highest concentration of lead was analyzed following extraction using the toxicity characteristic leaching procedure (TCLP) by EPA Method 1311.

The TCLP data showed that the metals stockpile in the SHF could be disposed of as non-hazardous material. The TCLP data results are provided in Appendix E. The waste classification soil sample results are summarized in Table 4.

Following removal of the petroleum- and metals-contaminated soil stockpiled in the SHF, the SHF pad was cleaned by Strider. The pad cleaning resulted in generation of a stockpile of residual soil. To determine the disposal requirements for residual soil collected during cleaning of the SHF pad, three stockpile samples were collected from the residual soil stockpile. NWTPH-Dx was detected at a concentration exceeding the reuse level of 1,870 mg/kg in one of the three stockpile samples collected. The waste classification soil sample results are summarized in Table 4. The 7 tons of residual soil was removed from the SHF and transported to the Republic Services, Inc. Subtitle D waste disposal facility in Roosevelt, Washington.

6.0 WORK TO BE COMPLETED AFTER 2013

This section describes the remediation activities identified in the 2010 EDR and the 2010 CPS that were either not completed during the 2013 construction season or were rescheduled for a later time. Subsequent as-built report documentation will describe the completion of these activities.

6.1 HYDRAULIC CONTROL AND CONTAINMENT SYSTEM OPERATION

The HCC system is operated on a 24-hour, 7-day-per-week basis, in accordance with the *Operations and Maintenance Manual for Hydraulic Control and Containment System* (AECOM 2011). 2013 HCC system operations covered the period from January 1 through December 31, 2013. The 2013 HCC System Operations Report will be completed by Farallon in 2014.

6.2 CLEANUP BENEATH THE SCHOOL BUILDING

The final phase of cleanup in Skykomish involves remediation of petroleum-contaminated soil and groundwater beneath and immediately adjacent to the Skykomish School building. The final phase of cleanup will be accomplished with a Hot Water Flushing remediation system. Access agreement negotiations and development of plans and specifications are ongoing in conjunction with the Skykomish School District. At this time, BNSF anticipates installing the Hot Water Flushing remediation system in 2015, subject to access negotiations.

6.3 UTILITY AND TOWN RESTORATION

Final Town right-of-way restoration was completed east of Sixth Street during the 2011 construction season. Permanent storm sewer, water, electrical utilities, roadways, sidewalks, and landscaping were installed east of Sixth Street. Final restoration from Sixth Street westward is anticipated to be completed after the remedial work at the School has been completed.

7.0 SUMMARY AND CONCLUSIONS

During 2013, soil excavation, loading, transport, and disposal activities occurred at the Site on behalf of BNSF. The quantities of material removed from the Site and disposed of during the 2013 Skykomish remediation activities included the following:

- A total of 232 tons of metals-contaminated soil was excavated from the Schoolyard and transported to the Republic Services, Inc. Subtitle D landfill in Roosevelt, Washington for disposal.
- A total of 7,675 tons of petroleum-contaminated soil was excavated from the Schoolyard and transported to the Republic Services, Inc. Subtitle D landfill in Roosevelt, Washington for disposal.

Metals-contaminated soil in the areas described in the 2010 CPS was excavated and loaded out for disposal and this effort is complete. The only remaining soil and groundwater requiring remediation at the Site, as described in the 2010 CPS, is beneath and immediately adjacent to the Skykomish School Building. Remediation of this remaining petroleum-contaminated soil and groundwater is planned to begin following installation of the Hot Water Flushing remediation system. Installation of the Hot Water Flushing remediation system is anticipated to be completed in 2015, subject to access negotiations with the School District. Planning, design, and engineering efforts to implement this remediation approach are currently underway.

8.0 REFERENCES

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FIGURES

2013 AS-BUILT COMPLETION REPORT
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Consent Decree No. 07-2-33672-9 SEA

Farallon PN: 683-043

SKYKOMISH RIVER

SKYKOMISH RIVER

WEST RIVER DRIVE

EAST RIVER DRIVE

SCHOOLYARD EXCAVATION AREA

SCHOOL BUILDING

SIXTH STREET

FIFTH STREET

FOURTH STREET

THIRD STREET

SECOND STREET

RAILROAD AVE.

RAILROAD AVE.

FIFTH STREET

SOIL HANDLING FACILITY

OLD CASCADE HIGHWAY

MALONEY CREEK

LEGEND

BNSF PROPERTY LINE

SOIL HANDLING FACILITY LIMITS

SOIL HANDLING FACILITY LIMITS

100 0 200

SCALE IN FEET

N

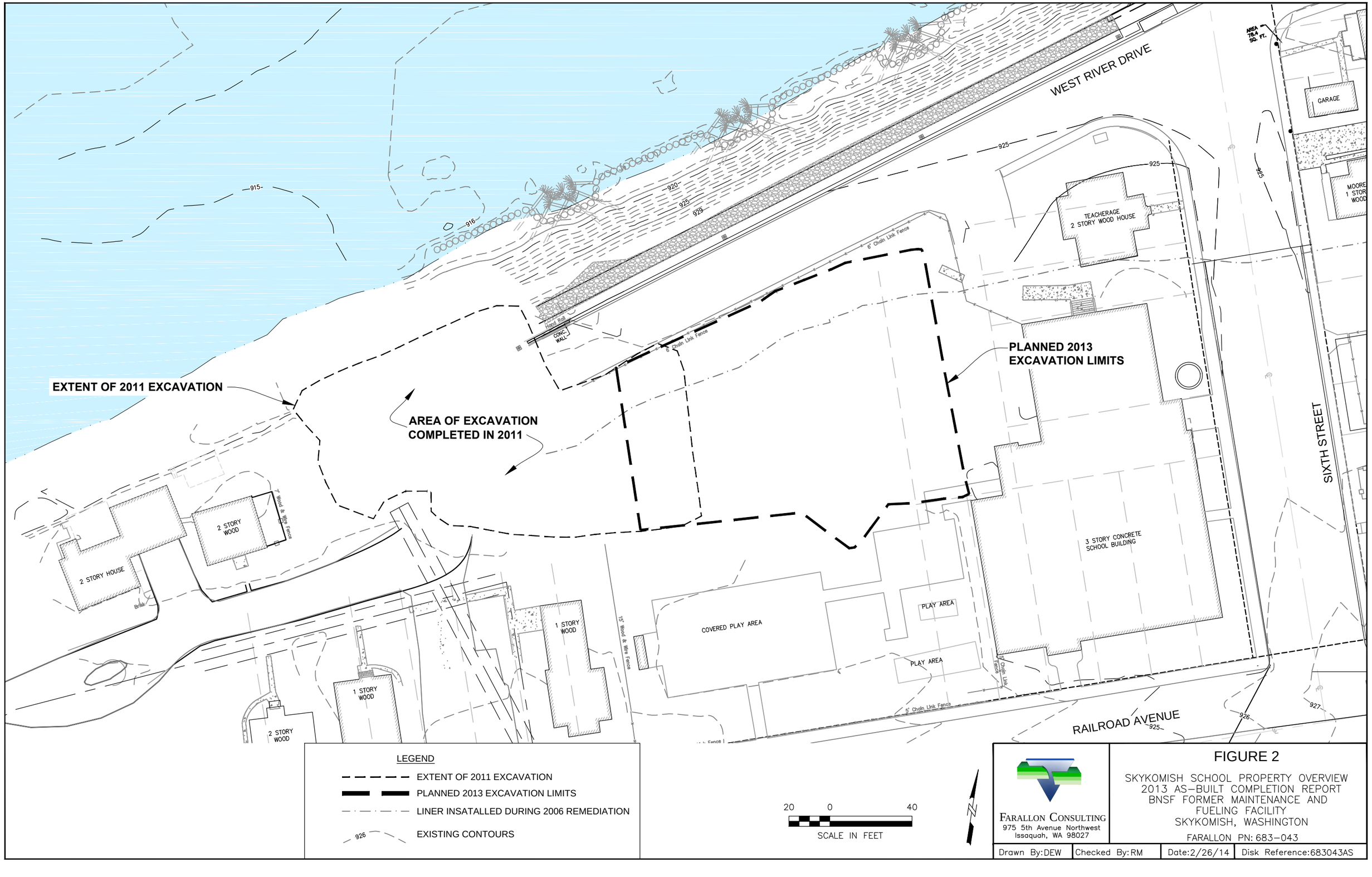
FARALLON CONSULTING
975 5th Avenue Northwest
Issaquah, WA 98027

FIGURE 1

TOWN OF SKYKOMISH OVERVIEW
2013 AS-BUILT COMPLETION REPORT
BNSF FORMER MAINTENANCE AND FUELING FACILITY
SKYKOMISH, WASHINGTON

FARALLON PN: 683-043

Drawn By: DEW	Checked By: RM	Date: 2/26/14	Disk Reference: 683043AS



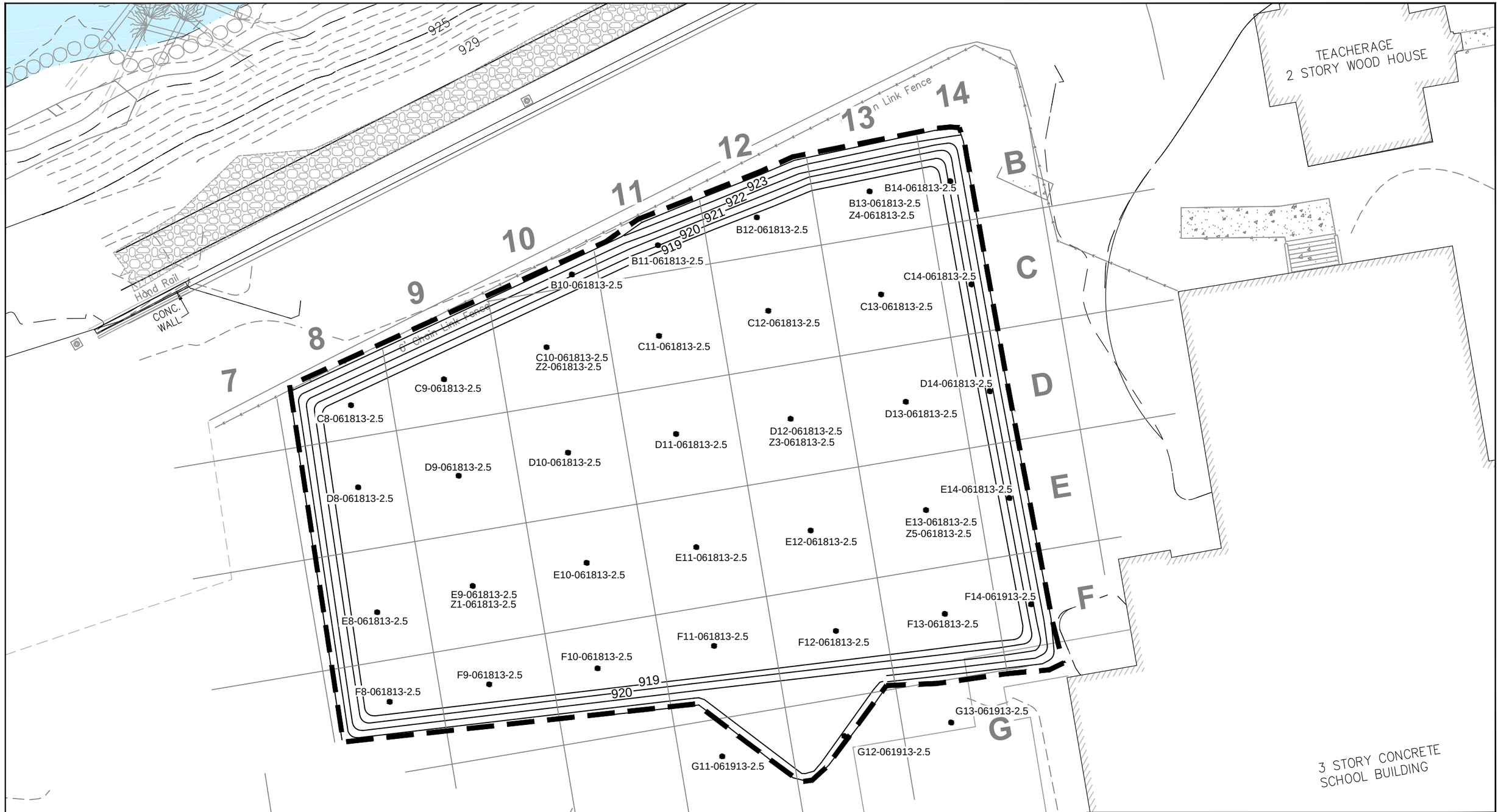
FARALLON CONSULTING
975 5th Avenue Northwest
Issaquah, WA 98027

FIGURE 2

SKYKOMISH SCHOOL PROPERTY OVERVIEW
2013 AS-BUILT COMPLETION REPORT
BNSF FORMER MAINTENANCE AND FUELING FACILITY
SKYKOMISH, WASHINGTON

FARALLON PN: 683-043

Drawn By: DEW	Checked By: RM	Date: 2/26/14	Disk Reference: 683043AS



LEGEND

G11-061913-2.5 ● APPROXIMATE LOCATION OF OVERBURDEN SOIL SAMPLE

PLANNED 2013 EXCAVATION LIMITS

920 PLANNED 2013 OVERBURDEN EXCAVATION CONTOURS

926 EXISTING CONTOURS

10 0 20

SCALE IN FEET

N

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975 5th Avenue Northwest
Issaquah, WA 98027

FIGURE 3

OVERBURDEN SOIL SAMPLE LOCATIONS
2013 AS-BUILT COMPLETION REPORT
BNSF FORMER MAINTENANCE AND
FUELING FACILITY
SKYKOMISH, WASHINGTON

FARALLON PN: 683-043

Drawn By: DEW	Checked By: RM	Date: 2/26/14	Disk Reference: 683043AS

925
929
6' Chain Link Fence
Hand Rail
CONC. WALL
6' Chain Link Fence
TEACHERAGE
2 STORY WOOD HOUSE
MT1-NE-WL-061913-2.0
MT1-NW-WL-061913-2.0
MT1-061913-2.0
MT4-061913-2.0
MT1
MT1-SE-WL-061913-2.0
MT2-NW-WL-061913-2.0
MT2-061913-2.0
MT3-NW-WL-061913-2.0
MT2
MT3
MT2-SE-WL-061913-2.0
MT5-061913-2.0
MT3-061913-2.0
MT3-SW-WL-061913-2.0
MT3-SE-WL-061913-2.0
3 STORY CONCRETE
SCHOOL BUILDING

LEGEND

MT3-061913-2.0 ◆ APPROXIMATE LOCATION OF METALS SOIL SAMPLE

PLANNED 2013 EXCAVATION LIMITS

METALS EXCAVATIION

926 EXISTING CONTOURS

10 0 20

SCALE IN FEET

N

FARALLON CONSULTING
975 5th Avenue Northwest
Issaquah, WA 98027

FIGURE 4

METALS EXCAVATION SOIL SAMPLE LOCATIONS
2013 AS-BUILT COMPLETION REPORT
BNSF FORMER MAINTENANCE AND
FUELING FACILITY
SKYKOMISH, WASHINGTON

FARALLON PN: 683-043

Drawn By: DEW	Checked By: RM	Date: 2/26/14	Disk Reference: 683043AS

FIGURE 5

BELOW VDL SOIL SAMPLE LOCATIONS
2013 AS-BUILT COMPLETION REPORT
BNSF FORMER MAINTENANCE AND FUELING FACILITY
SKYKOMISH, WASHINGTON

FARALLON PN: 683-043

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Issaquah, WA 98027

Drawn By: DEW	Checked By: RM	Date: 2/26/14	Disk Reference: 683043AS

WEST RIVER DRIVE

SIXTH STREET

RAILROAD AVENUE

2006 LINER
(STILL IN PLACE)

2006 LINER
(REMOVED DURING
2013 EXCAVATION)

2011 LINER
(REMOVED DURING 2013
EXCAVATION)

APPROXIMATE LIMITS OF
GEOMEMBRANE LINER INSTALLED
ALONG SOUTHERN AND EASTERN
SIDESLOPE PRIOR BACKFILL

AREA
78.4
SQ. FT.

GARAGE

TEACHERAGE
2 STORY WOOD HOUSE

3 STORY CONCRETE
SCHOOL BUILDING

COVERED PLAY AREA

PLAY AREA

PLAY AREA

2 STORY HOUSE

2 STORY
WOOD

1 STORY
WOOD

1 STORY
WOOD

2 STORY
WOOD

Brick

Hand Rail

CONC.
WALL

6' Chain Link Fence

5' Chain Link Fence

7' Wood & Wire Fence

15' Wood & Wire Fence

915

916

920

923

925

926

927

LEGEND

EXTENT OF 2013 EXCAVATION

2013 EXCAVATION CONTOURS

GEOMEMBRANE LINER INSTALLED IN 2013

20 0 40

SCALE IN FEET

N

FARALLON CONSULTING
975 5th Avenue Northwest
Issaquah, WA 98027

FIGURE 6

FINAL EXCAVATION CONTOURS
2013 AS-BUILT COMPLETION REPORT
BNSF FORMER MAINTENANCE AND
FUELING FACILITY
SKYKOMISH, WASHINGTON

FARALLON PN: 683-043

Drawn By: DEW	Checked By: RM	Date: 2/26/14	Disk Reference: 683043AS

TABLES

2013 AS-BUILT COMPLETION REPORT
BNSF Former Maintenance and Fueling Facility
Skykomish, Washington
Consent Decree No. 07-2-33672-9 SEA

Farallon PN: 683-043

Table 1
Overburden Soil Analytical Data
Skykomish Ongoing Cleanup Activities
Skykomish, Washington
Farallon PN: 683-043

Sample Identification	Sample Location	Sample Date	Analytical Results (milligrams per kilogram)[1]		NWTPH-Dx (DRO+ORO) (milligrams per kilogram)
			DRO	ORO	
B10-061813-2.5	B10	6/18/2013	< 26	< 51	< 38.5
B11-061813-2.5	B11	6/18/2013	< 25	< 50	< 37.5
B12-061813-2.5	B12	6/18/2013	< 25	< 50	< 37.5
B13-061813-2.5	B13	6/18/2013	< 25	< 51	< 38
Z4-061813-2.5[3]	B13	6/18/2013	< 25	< 49	< 37
B14-061813-2.5	B14	6/18/2013	< 26	< 51	< 38.5
C8-061813-2.5	C8	6/18/2013	< 26	< 52	< 39
C9-061813-2.5	C9	6/18/2013	< 25	< 50	< 37.5
C10-061813-2.5	C10	6/18/2013	< 27	< 54	< 40.5
Z2-061813-2.5[3]	C10	6/18/2013	< 24	< 48	< 36
C11-061813-2.5	C11	6/18/2013	< 25	< 50	< 37.5
C12-061813-2.5	C12	6/18/2013	< 24	< 49	< 36.5
C13-061813-2.5	C13	6/18/2013	< 30	< 60	< 45
C14-061813-2.5	C14	6/18/2013	< 25	< 50	< 37.5
D8-061813-2.5	D8	6/18/2013	< 26	< 53	< 39
D9-161813-2.5	D9	6/18/2013	140 Y	330 Y	470
D10-061813-2.5	D10	6/18/2013	< 27	< 54	< 40.5
D11-061813-2.5	D11	6/18/2013	170 Y	170 Y	340
D12-061813-2.5	D12	6/18/2013	110 Y	< 56	110
Z3-061813-2.5[3]	D12	6/18/2013	270 Y	86 Y	356
D13-061813-2.5	D13	6/18/2013	88 Y	< 53	88
D14-061813-2.5	D14	6/18/2013	< 26	< 51	< 38.5
E8-061813-2.5	E8	6/18/2013	<26	< 51	< 39.5
E9-061813-2.5	E9	6/18/2013	< 28	< 56	< 42
Z1-061813-2.5[3]	E9	6/18/2013	< 28	< 55	< 41.5
E10-061813-2.5	E10	6/18/2013	< 32	< 64	< 48
E11-061813-2.5	E11	6/18/2013	< 28	< 56	< 42
E12-061813-2.5	E12	6/18/2013	< 26	< 52	< 39
E13-061813-2.5	E13	6/18/2013	160 J	80	240
Z5-061813-2.5[3]	E13	6/18/2013	< 29	< 58 J	< 43.5
E14-061813-2.5	E14	6/18/2013	< 26	< 52	< 39
F8-061813-2.5	F8	6/18/2013	< 26	< 52	< 39
F9-061813-2.5	F9	6/18/2013	< 25	< 50	< 37.5
F10-061813-2.5	F10	6/18/2013	< 25	< 50	< 37.5
F11-061813-2.5	F11	6/18/2013	< 26	< 52	< 39
F12-061913-2.5	F12	6/19/2013	< 26	< 52	< 39
F13-061813-2.5	F13	6/18/2013	< 29	< 58	< 45.5
F14-061913-2.5	F14	6/19/2013	< 25	< 50	< 37.5
G11-061913-2.5	G11	6/19/2013	< 26	< 52	< 39
G12-061913-2.5	G12	6/19/2013	< 26	< 51	< 38.5
G13-061913-2.5	G13	6/19/2013	< 26	< 51	< 38.5
Remediation Level for Soil[2]					**1,870**

NOTES:

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

Samples collected at 2.5 feet below ground surface.

[1]Analyzed by Northwest Method NWTPH-Dx.

[2]Remediation and Cleanup Levels as defined in the *Cleanup Action Plan for BNSF Former Maintenance and Fueling Facility, Skykomish, Washington.* Prepared by the Washington State Department of Ecology. October 2007.

[3] Duplicate of sample collected from the same grid sample location.

DRO = total petroleum hydrocarbon (TPH) as diesel-range organics

J = The analyte was not detected above the sample-specific reporting limit and is an estimated value.

ORO = TPH as oil-range organics

Y = Denotes that the chromatograph associated with the sample does not match that typical of the Site.

Table 2
Metals Excavation Confirmation Sample Soil Analytical Data
Skykomish Ongoing Cleanup Activities
Skykomish, Washington
Farallon PN: 683-043

Excavation Sample Location	Sample Identification	Grid Sample Location	Sample Date	Analytical Results (milligrams per kilogram)[1]	
				Arsenic	Lead
Bottom	MT1-061913-2.0	MT1	6/19/2013	9.0	110 J
	MT4-061913-2.0[3]	MT1	6/19/2013	7.8	130
	MT2-061913-2.0	MT2	6/19/2013	7.6	130
	MT3-061913-2.0	MT3	6/19/2013	5.9	11
Sidewall	MT1-NW-WL-061913-2.0	Northwest MT1	6/19/2013	13	34
	MT1-NE-WL-061913-2.0	Northeast MT1	6/19/2013	8.9	180
	MT1-SE-WL-061913-2.0	Southeast MT1	6/19/2013	7.4	20
	MT2-NW-WL-061913-2.0	Northwest MT2	6/19/2013	10	40
	MT2-SE-WL-061913-2.0	Southeast MT2	6/19/2013	7.6	78
	MT5-061913-2.0[3]	Southeast MT2	6/19/2013	5.5	110
	MT3-NW-WL-061913-2.0	Northwest MT3	6/19/2013	13	11
	MT3-SE-WL-061913-2.0	Southeast MT3	6/19/2013	9.4	5.6
	MT3-SW-WL-061913-2.0	Southwest MT3	6/19/2013	9.4	140
Cleanup Levels for Soil [2]				**20**	**250**

NOTES:

Samples collected at 2.0 feet below ground surface.

[1] Analyzed by U.S. Environmental Protection Agency Method 6020.

[2] Cleanup Levels as defined in the *Cleanup Action Plan for BNSF Former Maintenance and Fueling Facility, Skykomish, Washington.* Prepared by the Washington State Department of Ecology. October 2007.

[3] Duplicate of sample collected from the same grid sample location.

J = The analyte was not detected above the sample-specific reporting limit and is an estimated value.

Table 3
Below VDL Excavation Soil Analytical Data
Skykomish Ongoing Cleanup Activities
Skykomish, Washington
Farallon PN: 683-043

Excavation Area	Sample Identification	Grid Sample Location	Sample Date	Sample Depth (feet)[1]	Analytical Results (milligrams per kilogram)[2]		NWTPH-Dx (DRO+ORO) (milligrams per kilogram)
					DRO	ORO	
Bottom	D9-062713-14.0	D9	6/27/2013	14.0	<35	<69	< 52
	E9-062713-14.0	E9	6/27/2013	14.0	<35	<70	< 52.5
	D10-070113-13.0	D10	7/1/2013	13.0	<36	<72	< 54
	E10-070113-14.0	E10	7/1/2013	14.0	< 34	< 68	< 51
	F10-070113-14.0	F10	7/1/2013	14.0	< 36	< 72	< 54
	F10-071013-13.0	F10	7/10/2013	13.0	< 32 J	< 64 J	< 48
	Z6-071013-13.0[4]	F10	7/10/2013	13.0	< 31 J	< 62 J	< 46.5
	C11-070213-13.0	C11	7/2/2013	13.0	< 33	< 65	< 48
	D11-070213-13.0	D11	7/2/2013	13.0	< 33	< 65	< 48
	Z5-070213-13.0[4]	D11	7/2/2013	13.0	< 35	< 70	< 52.5
	E11-070213-13.0	E11	7/2/2013	13.0	< 32	< 65	< 48.5
	F11-070213-13.0	F11	7/2/2013	13.0	< 34	< 68	< 51
	F11-070313-14.0	F11	7/3/2013	14.0	< 36	< 73	< 54.5
	C12-071213-13.0	C12	7/12/2013	13.0	< 33	< 66	< 49.5
	D12-071113-13.0	D12	7/11/2013	13.0	< 33	< 66	< 49.5
	Z-071113-13.0[4]	D12	7/11/2013	13.0	< 33	< 66	< 48.5
	E12-071013-12.0	E12	7/10/2013	12.0	< 34 J	< 69 J	< 51.5
	Z7-071013-12.0[4]	E12	7/10/2013	12.0	< 35 J	< 70 J	< 52.5
	C13-071213-13.0	C13	7/12/2013	13.0	< 31	< 63	< 47
	D13-071113-13.0	D13	7/11/2013	13.0	< 33	< 67	< 50
	E13-071013-12.0	E13	7/10/2013	12.0	< 35 J	< 69 J	< 52
	F13-071013-13.0	F13	7/10/2013	13.0	< 33 J	< 65 J	< 48
Remediation Level for Soil[3]							**3,400**

Table 3
Below VDL Excavation Soil Analytical Data
Skykomish Ongoing Cleanup Activities
Skykomish, Washington
Farallon PN: 683-043

Excavation Area	Sample Identification	Grid Sample Location	Sample Date	Sample Depth (feet)[1]	Analytical Results (milligrams per kilogram)[2]		NWTPH-Dx (DRO+ORO) (milligrams per kilogram)
					DRO	ORO	
Toe of Sidewall	C8-TOE-062713-12.0	C8	6/28/2013	12.0	< 23	< 46	< 34.5
	D8-TOE-062713-12.0	D8	6/28/2013	12.0	< 17	< 34	< 26.5
	E8-TOE-062713-12.0	E8	6/28/2013	12.0	310 Y	640 Y	950
	F8-TOE-062713-12.0	F8	6/28/2013	12.0	79 Y	150 Y	229
	C9-TOE-062713-14.0	C9	6/28/2013	14.0	< 34	< 68	< 51
	F9-TOE-062713-14.0	F9	6/28/2013	14.0	< 27	< 54	< 40.5
	C10-TOE-070113-13.0	C10	7/1/2013	13.0	< 19	< 38	< 28.5
	G10-TOE-070313-14.0	G10	7/3/2013	14.0	< 34	< 68	< 51
	C11-TOE-070213-13.0	C11	7/2/2013	13.0	< 34	< 67	< 50.5
	Z4-070213-13.0[4]	C11	7/2/2013	13.0	< 33	< 67	< 50
	G11-TOE-070313-13.0	G11	7/3/2013	7.0	< 34	< 69	< 51.5
	C12-TOE-071213-13.0	C12	7/12/2013	13.0	< 31	< 62	< 46.5
	Z9-TOE-071213-13.0[4]	C12	7/12/2013	13.0	< 32	< 63	< 47.5
	G12-TOE-070313-13.0	G12	7/3/2013	13.0	< 32	< 64	< 48
	C13-TOE-071213-12.0	C13	7/12/2013	12.0	< 32	< 65	< 48.5
	D14-TOE-071113-13.0	D14	7/11/2013	13.0	< 34	< 67	< 50.5
	E14-TOE-071013-12.0	E14	7/10/2013	12.0	< 32 J	< 64 J	< 48
	F14-TOE-071013-13.0	F14	7/10/2013	13.0	< 35 J	< 70 J	< 52.5
Remediation Level for Soil[3]							**3,400**

Table 3
Below VDL Excavation Soil Analytical Data
Skykomish Ongoing Cleanup Activities
Skykomish, Washington
Farallon PN: 683-043

Excavation Area	Sample Identification	Grid Sample Location	Sample Date	Sample Depth (feet)[1]	Analytical Results (milligrams per kilogram)[2]		NWTPH-Dx (DRO+ORO) (milligrams per kilogram)
					DRO	ORO	
Sidewall	G11-SW-071513-7.0	G11	7/15/2013	7.0	< 27	< 54	< 40.5
	G12-SW-071513-7.0	G12	7/15/2013	7.0	< 26	52	< 32.5
	F13-SW-071213-7.0	F13	7/12/2013	7.0	100 JY	290 JY	390
	Z10-SW-071213-7.0[4]	F13	7/12/2013	7.0	< 26 J	< 52	< 39
	C14-SW-071213-7.0	C14	7/12/2013	7.0	940 Y	4,600	**5,540**
	D14-SW-071113-8.0	D14	7/11/2013	8.0	3,200 Y	3,000 Y	**6,200**
	E14-SW-071213-6.5	E14	7/12/2013	6.5	71 Y	160 Y	231
	F14-SW-071213-7.0	F14	7/12/2013	7.0	330 Y	620 Y	950
Remediation Level for Soil[3]							**3,400**

NOTES:

Results in **bold** denote concentration exceeded applicable cleanup levels.

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

[1]Depth in feet below ground surface.

[2]Analyzed by Northwest Method NWTPH-Dx.

[3]Remediation and Cleanup Levels as defined in the *Cleanup Action Plan for BNSF Former Maintenance and Fueling Facility, Skykomish, Washington* . Prepared by the Washington State Department of Ecology for BNSF Railway Company, October 2007.

[4] Duplicate of sample collected from the same grid sample location.

DRO = total petroleum hydrocarbons (TPH) as diesel-range organics

J = The analyte was not detected above the sample-specific reporting limit, which is an estimated value.

ORO = TPH as oil-range organics

Y = Laboratory qualifier denotes that the chromatograph associated with the sample does not match that typical of the Site.

Table 4
Soil Characterization Analytical Data for Disposal
Skykomish Ongoing Cleanup Activities
Skykomish, Washington
Farallon PN: 683-043

Stockpile Type in Soil Handling Facility	Sample Identification	Sample Date	Analytical Results (milligrams per kilogram)				NWTPH-Dx (DRO + ORO) (milligrams per kilogram)
			Arsenic[2]	Lead[2]	DRO[1]	ORO[1]	
Residual Soil from Soil Handling Facility Pad Cleaning	SHF-1-100713	10/7/2013	3.3	17	170 Y	1,300 Y	1,470
	SHF-2-100713	10/7/2013	4.4	35	150 Y	980 Y	1,130
	SHF-3-100713	10/7/2013	3.3	7.9	210	2,000	**2,210**
Soil from Metals Hot Spot Area	MT-STP-1-071013	7/10/2013	8.6	170	-	-	-
	MT-STP-2-071013	7/10/2013	7.0	160	-	-	-
	MT-STP-3-071013	7/10/2013	10	**830**	-	-	-
	MT-STP-4-071013	7/10/2013	9.6	**300**	-	-	-
	MT-STP-5-071013	7/10/2013	8.9	250	-	-	-
Cleanup/Reuse Levels for Soil[3]			**20**	**250**			**1,870**

NOTES:

Results in **bold** denote concentration exceeded applicable cleanup levels.

-- denotes sample was not analyzed.

[1]Analyzed by Northwest Method NWTPH-Dx.

[2]Analyzed by U.S. Environmental Protection Agency Method 6020.

[3]Resuse and Cleanup Levels as defined in the *Cleanup Action Plan for BNSF Former Maintenance and Fueling Facility, Skykomish, Washington.* Prepared by the Washington State Department of Ecology. October 2007.

DRO = total petroleum hydrocarbons (TPH) as diesel-range organics

ORO = TPH as oil-range organics

Y = Laboratory qualifier denotes that the chromatograph associated with the sample does not match that typical of the Site.