STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

In the Matter of Remedial Action by:	AGREED ORDER
Big B LLC	No. DE 16307
BNSF Railway Company	
RE: Big B Mini Mart 1611 S. Canyon Road Ellensburg, WA 98926	

TO: Big B LLC
c/o Mr. Surjit Singh
912 Koala Drive
Omak, WA 98841

BNSF Railway Company
c/o Mr. Scott MacDonald
605 Puyallup Avenue
Tacoma, WA 98421

TABLE OF CONTENTS

I. INTRODUCTION

The mutual objective of the State of Washington, Department of Ecology (Ecology), Big B LLC (Big B), and BNSF Railway Company (BNSF) under this Agreed Order (Order) is to provide for remedial action at a facility where there has been a release or threatened release of hazardous substances. This Order requires Big B and BNSF to (1) implement an interim action to excavate contaminated soil and evaluate the performance of an on-site treatment technology at the Big B Mini Mart Site and evaluate its effectiveness over time, and (2) prepare a Draft Cleanup Action Plan (DCAP) for the Site. Ecology believes the actions required by this Order are in the public interest.

This Agreed Order No. DE 16307 fully supersedes and replaces Agreed Order No. DE 10813.

II. JURISDICTION

This Agreed Order is issued pursuant to the Model Toxics Control Act (MTCA), RCW 70.105D.050(1).

III. PARTIES BOUND

This Agreed Order shall apply to and be binding upon the Parties to this Order, their successors and assigns. The undersigned representative of each party hereby certifies that he or she is fully authorized to enter into this Order and to execute and legally bind such party to comply with this Order. Big B and BNSF agree to undertake all actions required by the terms and conditions of this Order. No change in ownership or corporate status shall alter Big B's or BNSF's responsibility under this Order. Big B and BNSF shall provide a copy of this Order to all agents, contractors, and subcontractors retained to perform work required by this Order, and shall ensure that all work undertaken by such agents, contractors, and subcontractors complies with this Order.

IV. DEFINITIONS

Unless otherwise specified herein, the definitions set forth in RCW 70.105D and WAC 173-340 shall control the meanings of the terms in this Order.

A. Site: The Site is referred to as Big B Mini Mart, Cleanup Site ID No. 4901. The Site constitutes a facility under RCW 70.105D.020(8). The Site is defined as the location where a hazardous substance, other than a consumer product in consumer use, has been deposited, stored, disposed of, or placed, or otherwise come to be located. Based upon factors currently known to Ecology, the Site is generally located at 1611 South Canyon Road in Ellensburg, Washington (Kittitas County Parcel Nos. 958654 and 278533), as shown in the Site Location Diagram (Exhibit A).

B. Potentially Liable Persons (PLPs): Refers to Big B LLC (Big B); BNSF Railway Company (BNSF); Short Stop, LLC; Neela Tara, Inc.; Gurmit Singh Kaila; and Balbir Singh.

C. Subject PLPs: Refers to Big B and BNSF, the PLPs subject to this Order.

D. Parties: Refers to the State of Washington, Department of Ecology and the Subject PLPs.

E. Agreed Order or Order: Refers to this Order and each of the exhibits to this Order. All exhibits are integral and enforceable parts of this Order.

V. FINDINGS OF FACT

Ecology makes the following findings of fact, without any express or implied admissions of such facts by the Subject PLPs:

A. Based upon factors currently known to Ecology, the Site is generally located at 1611 South Canyon Road in Ellensburg, Washington, as shown in the Site Location Diagram (Exhibit A). The Site includes Kittitas County Parcel Nos. 958654 and 278533.

a. BNSF, or a BNSF predecessor, was the owner of both parcels comprising the Site from 1971 until 2014.

b. Big B is the current owner of Kittitas County Parcel No. 958654. Big B purchased this parcel from BNSF on June 30, 2014.

c. BNSF is the current owner of Kittitas County Parcel No. 278533, where the mainline railroad tracks are located. This track is a critical part of BNSF's Interstate Railway Network.

B. A gasoline/diesel station and convenience store (Gas Station) operated at the Site prior to June 30, 2014.

a. A BNSF predecessor began leasing the Site to Robert L. Zbinden and Alice B. Zbinden (the Zbindens), doing business as Zbinden Oil Company, in approximately April 1971.

b. The Zbindens operated the Gas Station located at the Site from approximately 1971 through 1985. On or about December 31, 1985, the Zbindens sold Zbinden Oil Company, including all of the company's assets and the business name, to Wenatchee Petroleum Company.

c. On February 1, 1986, a BNSF predecessor entered into a new lease with the Zbindens, doing business as Zbinden Oil Company, for a term of fifteen (15) years (Lease No. 249,120). Also on February 1, 1986, a BNSF predecessor entered into a Consent to Transfer of Possession for the leased premises from the Zbindens to Bernhard E. Schneider and Freda M. Schneider (the Schneiders). On or about March 1, 1986, the Zbindens sold certain assets and the business name of "Big Z Mini-Mart" to the Schneiders.

d. The Schneiders operated the Gas Station from March 1986 through August 1989. On September 15, 1989, a BNSF predecessor entered into a Consent to Transfer of Possession for the leased premises from the Zbindens to Gurmit Singh Kaila and Balbir Singh, doing business as Big B Mini Mart. In September 1989, the Schneiders sold certain assets and the business name of "Big B Mini-Mart" to Gurmit Singh Kaila and Balbir Singh.

e. On October 1, 1989, BNSF entered into a new lease with Gurmit Singh Kaila and Balbir Singh, doing business as Big B Mini-Mart (Lease No. 500,069).

f. In October 1990, Ecology learned that a diesel release was discovered at the Site during an excavation to replace an underground storage tank (UST). In December 1990, Balbir Singh performed an independent remedial action to remove some of

the diesel-contaminated soil and free product from the Site, leaving soil and groundwater impacted with diesel- and other petroleum-range hydrocarbons.

g. In the spring of 1991, Ecology performed a Site Hazard Assessment and ultimately assigned a hazard ranking of "3" to the Site.

h. On May 30, 2001, BNSF entered into a lease with Gurmit Singh Kaila, doing business as Big B Mini Mart (Lease No. 524,365). On March 12, 2004, an Ecology UST inspector issued a Notice of Non-Compliance to Gurmit Singh Kaila, doing business as Big B Mini Mart, for failure to maintain and provide records, failure to comply with release detection requirements, and failure to comply with corrosion protection requirements.

i. On March 12, 2008, Gurmit Singh Kaila was criminally indicted for structuring bank transactions to evade reporting, in violation of 31 U.S.C. § 5324, for financial transactions conducted between 2003 and 2007 involving over $4 million. Gurmit Singh Kaila ultimately entered into a plea agreement and received an 11-month prison sentence.

j. Neela Tara, Inc. operated the Gas Station from approximately September 2007 through at least January 2009.

k. Short Stop, LLC operated the Gas Station from approximately November 2009 through at least August 2014.

l. In April 2011, an Ecology UST inspector detected liquid consisting of petroleum hydrocarbons floating on groundwater in multiple monitoring or observation wells at the Site. The estimated thickness of free product or light non-aqueous phase liquid (LNAPL) was at least 0.04 feet (approximately 0.5 inch).

m. In February 2014, the U.S. Environmental Protection Agency (EPA) issued a Resource Conservation and Recovery Act (RCRA) Complaint and Compliance Order to Gurinder Bains, Nabin Joshi, and Short Stop LLC, collectively doing business as Flying B #29, for failing to monitor USTs located at the Site in order to

detect petroleum releases and failing to equip the UST piping with cathodic protection. The violations were ultimately resolved in a RCRA Consent Agreement and Final Order that required Gurinder Bains, Nabin Joshi, and Short Stop LLC to pay a civil penalty in the amount of $11,222 to the EPA.

n. On June 30, 2014, BNSF sold what is now the Big B parcel to Big B.

o. In July 2014, the four USTs located at the Site were emptied and placed into temporary closure. In October 2016, the four USTs were removed and in April 2017, all USTs were recorded as permanently closed.

C. Historic testing of groundwater at the Site showed that petroleum hydrocarbon contamination exceeded MTCA cleanup standards, and in some cases was present in excess of soil saturation levels above MTCA cleanup standards.

D. On March 23, 2015, Ecology entered into Agreed Order No. DE 10813 (2015 Order) with BNSF, Big B, and Short Stop LLC. The 2015 Order required BNSF, Big B, and Short Stop LLC to conduct certain remedial actions at the Site, including a remedial investigation and feasibility study (RI/FS).

a. In October 2016, an interim action for the removal of light non-aqueous phase liquid (LNAPL) was initiated by Big B with the installation of piezometers to delineate the lateral extent of LNAPL at the Site. The field portion of the interim action concluded in November 2017 due to diminishing free product recovery after the removal of approximately 364 gallons of LNAPL and the reduction of the LNAPL footprint across the Site. An Interim Action Report, dated April 27, 2017, summarized the hydraulic recovery of LNAPL at the Site.

b. Big B submitted a draft RI/FS Report to Ecology in August 2018. The feasibility study selected a preferred remedial alternative based on the criteria listed in WAC 173-340-360 together with a Disproportionate Cost Analysis and Big B's internal consideration of its anticipated redevelopment of the Site as a fueling station.

c. On December 10, 2018, Ecology sent written notification to BNSF, Big B, and Short Stop LLC that the remedial actions required by the 2015 Order had been satisfactorily completed.

VI. ECOLOGY DETERMINATIONS

Ecology makes the following determinations, without any express or implied admissions of such determinations (and underlying facts) by the Subject PLPs.

A. Big B is an "owner or operator" as defined in RCW 70.105D.020(22) of a "facility" as defined in RCW 70.105D.020(8). Big B is the current owner of Kittitas County Parcel No. 958654.

B. BNSF is an "owner or operator" as defined in RCW 70.105D.020(22) of a "facility" as defined in RCW 70.105D.020(8). BNSF is the current owner of Kittitas County Parcel No. 278533. From 1971 to 2014, BNSF was also the owner of what is now identified as Kittitas County Parcel No. 958654.

C. Based upon all factors known to Ecology, a "release" or "threatened release" of "hazardous substance(s)" as defined in RCW 70.105D.020(32) and (13), respectively, has occurred at the Site.

D. Based upon credible evidence, Ecology issued a PLP status letter to BNSF dated May 19, 2011, pursuant to RCW 70.105D.040, .020(26), and WAC 173-340-500. After providing for notice and opportunity for comment, reviewing any comments submitted, and concluding that credible evidence supported a finding of potential liability, Ecology issued a determination that BNSF is a PLP under RCW 70.105D.040 and notified BNSF of this determination by letter dated January 6, 2012.

E. Based upon credible evidence, Ecology issued a PLP status letter to Gurmit Singh Kaila dated May 19, 2011, pursuant to RCW 70.105D.040, .020(26), and WAC 173-340-500. After providing for notice and opportunity for comment, reviewing any comments submitted, and concluding that credible evidence supported a finding of potential liability, Ecology issued a

determination that Gurmit Singh Kaila is a PLP under RCW 70.105D.040 and notified Gurmit Singh Kaila of this determination by letter dated January 6, 2012.

F. Based upon credible evidence, Ecology issued a PLP status letter to Short Stop, LLC dated May 19, 2011, pursuant to RCW 70.105D.040, .020(26), and WAC 173-340-500. After providing for notice and opportunity for comment, reviewing any comments submitted, and concluding that credible evidence supported a finding of potential liability, Ecology issued a determination that Short Stop, LLC is a PLP under RCW 70.105D.040 and notified Short Stop, LLC of this determination by letter dated January 6, 2012.

G. Based upon credible evidence, Ecology issued a PLP status letter to Big B dated July 8, 2014, pursuant to RCW 70.105D.040, .020(26), and WAC 173-340-500. After providing for notice and opportunity for comment, reviewing any comments submitted, and concluding that credible evidence supported a finding of potential liability, Ecology issued a determination that Big B is a PLP under RCW 70.105D.040 and notified Big B of this determination by letter dated August 7, 2014.

H. Based upon credible evidence, Ecology issued a PLP status letter to Balbir Singh dated December 18, 2014, pursuant to RCW 70.105D.040, .020(26), and WAC 173-340-500. After providing for notice and opportunity for comment, reviewing any comments submitted, and concluding that credible evidence supported a finding of potential liability, Ecology issued a determination that Balbir Singh is a PLP under RCW 70.105D.040 and notified Balbir Singh of this determination by letter dated March 5, 2015.

I. Based upon credible evidence, Ecology issued a PLP status letter to Neela Tara, Inc. dated December 22, 2014, pursuant to RCW 70.105D.040, .020(26), and WAC 173-340-500. By letter dated January 15, 2015, Neela Tara, Inc. voluntarily waived its rights to notice and comment and accepted Ecology's determination that Neela Tara, Inc. is a PLP under RCW 70.105D.040.

J. Pursuant to RCW 70.105D.030(1) and .050(1), Ecology may require PLPs to investigate or conduct other remedial actions with respect to any release or threatened release of

hazardous substances, whenever it believes such action to be in the public interest. Based on the foregoing facts, Ecology believes the remedial actions required by this Order are in the public interest.

K. Under WAC 173-340-430, an interim action is a remedial action that is technically necessary to reduce a threat to human health or the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance, that corrects a problem that may become substantially worse or cost substantially more to address if the remedial action is delayed, or that is needed to provide for completion of a site hazard assessment, remedial investigation/feasibility study, or design of a cleanup action plan. The Interim Action required by this Order involves the excavation of contaminated soil in order to remove contaminant source mass from the Site. The Interim Action also involves a site-specific pilot test of land farming, a component of the preferred remedial alternative outlined in the RI/FS Report. The pilot test will generate the necessary data to evaluate the effectiveness of this on-site treatment technology at the Site and to inform the design of the final cleanup action for the Site. Based on these circumstances, Ecology has determined that an interim action is warranted under WAC 173-340-430. Either party may propose an additional interim action under this Order. If the Parties are in agreement concerning the additional interim action, the Parties will follow the process in Section VII.G. If the Parties are not in agreement, Ecology reserves its authority to require additional interim action(s) under a separate order or other enforcement action under RCW 70.105D, or to undertake the interim action(s) itself.

VII. WORK TO BE PERFORMED

Based on the Findings of Fact and Ecology Determinations, it is hereby ordered that the Subject PLPs take the following remedial actions at the Site. These remedial actions must be conducted in accordance with WAC 173-340:

A. The Subject PLPs shall conduct a pilot test of an on-site treatment technology as an interim action, in accordance with the schedule and terms of the Scope of Work and Schedule (Exhibit B) and the Interim Action Work Plan (Exhibit C). The purpose of the interim action is to

remove contaminant source mass and to evaluate the effectiveness of the land treatment component of the RI/FS Report's preferred remedial alternative.

1. Within forty-five (45) calendar days of the effective date of this Order, the Subject PLPs shall begin implementing the interim action pursuant to the schedule and terms of the Ecology-approved Interim Action Work Plan (Exhibit C).
2. Within forty-five (45) calendar days of completion of the field work required by the Interim Action Work Plan, the Subject PLPs shall submit an Interim Action Report to Ecology. The Interim Action Report must describe the remedial actions taken pursuant to the Interim Action Work Plan and any deviations thereof. The Interim Action Report shall also describe the results of the land treatment pilot study in sufficient detail for Ecology to evaluate the performance of this treatment method at the Site and to determine its effectiveness over time, including the identification of any factors that may affect the feasibility of implementing such treatment on a larger scale.

B. The Subject PLPs shall prepare a DCAP for the Site in accordance with the schedule and terms of the Scope of Work and Schedule (Exhibit B).

1. Within forty-five (45) calendar days of submission of the Interim Action Report, the Subject PLPs shall submit an Agency Review DCAP for Ecology's review. The Agency Review DCAP must be consistent with the requirements of WAC 173-340-380 and should also include the following elements, as appropriate, with a level of detail commensurate with site-specific conditions and the nature and complexity of the proposed cleanup action: construction plans and specifications; an Engineering Design Report (EDR); an Operations & Maintenance (O&M) Plan; a Sampling and Analysis Plan and Quality Assurance Project Plan (SAP/QAPP); and a Compliance Monitoring Plan.
2. Within forty-five (45) calendar days of receipt of Ecology's comments on the Agency Review DCAP, the Subject PLPs will incorporate Ecology's comments

and submit a Public Review DCAP for Ecology's review and approval. Upon Ecology's approval, the Public Review DCAP will be issued for public comment as required under WAC 173-340-600(14).

3. Following the public comment period, Ecology will review all comments received and, if necessary, will submit additional comments to the Subject PLPs. Within forty-five (45) calendar days of receipt of Ecology's comments on the Public Review DCAP, the Subject PLPs will incorporate Ecology's comments and submit a Revised Public Review DCAP for Ecology's review and approval. Upon resolution of all comments, Ecology will publish the document as the Final CAP for the Site.

C. MTCA establishes that PLPs are strictly, jointly, and severally liable for the remediation of the Site, as the Site is defined in the Order. To effectuate the work to be performed under this Order in the most efficient manner, Big B has elected to take primary responsibility for performing the interim action and preparing a DCAP for the Site. However, in the event that Big B should become unable to complete performance of the work required by this Order, Ecology shall provide written notice to BNSF that Big B is unable to complete the work and that BNSF must take on the responsibility to perform the remaining work, if any, to the extent allowed by applicable law. Within thirty (30) calendar days of BNSF's receipt of such notice, BNSF and Ecology shall meet to determine a schedule for completion of the work required by this Order. This schedule may include, at Ecology's discretion, delay of the work until it can be incorporated into a final remedial action for the Site.

D. If the Subject PLPs learn of a significant change in conditions at the Site, including but not limited to a statistically significant increase in contaminant and/or chemical concentrations in groundwater, if applicable, Subject PLPs, within seven (7) calendar days of learning of the change in condition, shall notify Ecology in writing of said change and provide Ecology with any reports or records (including laboratory analyses, sampling results) relating to the change in conditions.

E. The Subject PLPs shall submit to Ecology written monthly Progress Reports that describe the actions taken during the previous month to implement the requirements of this Order. All Progress Reports shall be submitted by the tenth (10th) day of the month in which they are due after the effective date of this Order. Unless otherwise specified by Ecology, Progress Reports and any other documents submitted pursuant to this Order shall be sent by electronic mail to Ecology's project coordinator. The Progress Reports shall include the following:

1. A list of on-site activities that have taken place during the month.
2. Detailed description of any deviations from required tasks not otherwise documented in project plans or amendment requests.
3. Description of all deviations from the Scope of Work and Schedule (Exhibit B) during the current month and any planned deviations in the upcoming month.
4. For any deviations in schedule, a plan for recovering lost time and maintaining compliance with the schedule.
5. All raw data (including laboratory analyses) received during the previous quarter (if not previously submitted to Ecology), together with a detailed description of the underlying samples collected.
6. A list of deliverables for the upcoming month if different from the schedule.

F. All plans or other deliverables submitted by the Subject PLPs for Ecology's review and approval under the Scope of Work and Schedule (Exhibit B) shall, upon Ecology's approval, become integral and enforceable parts of this Order.

G. If the Parties agree on an additional interim action under Section VI.K, the Subject PLPs shall prepare and submit to Ecology an Interim Action Work Plan, including a scope of work and schedule, by the date determined by Ecology. Ecology will provide public notice and opportunity to comment on the Interim Action Work Plan in accordance with WAC 173-340-600(16). The Subject PLPs shall not conduct the interim action until Ecology approves the Interim Action Work Plan. Upon approval by Ecology, the Interim Action Work Plan

becomes an integral and enforceable part of this Order, and the Subject PLPs are required to conduct the interim action in accordance with the approved Interim Action Work Plan.

H. If Ecology determines that the Subject PLPs have failed to make sufficient progress or failed to implement the remedial action, in whole or in part, Ecology may, after notice to the Subject PLPs and providing BNSF an opportunity to cure pursuant to Section VII.C, perform any or all portions of the remedial action or at Ecology's discretion allow the Subject PLPs opportunity to correct. In an emergency, Ecology is not required to provide notice to the Subject PLPs, or an opportunity for dispute resolution. The Subject PLPs shall reimburse Ecology for the costs of doing such work in accordance with Section VIII.A (Remedial Action Costs). Ecology reserves the right to enforce requirements of this Order under Section X (Enforcement).

I. Except where necessary to abate an emergency situation or where required by law, the Subject PLPs shall not perform any remedial actions at the Site outside those remedial actions required by this Order to address the contamination that is the subject of this Order, unless Ecology concurs, in writing, with such additional remedial actions pursuant to Section VIII.J. (Amendment of Order). In the event of an emergency, or where actions are taken as required by law, the Subject PLPs must notify Ecology in writing of the event and remedial action(s) planned or taken as soon as practical but no later than within twenty-four (24) hours of the discovery of the event.

VIII. TERMS AND CONDITIONS

A. Payment of Remedial Action Costs

The Subject PLPs shall pay to Ecology costs incurred by Ecology pursuant to this Order and consistent with WAC 173-340-550(2). These costs shall include work performed by Ecology or its contractors for, or on, the Site under RCW 70.105D, including remedial actions and Order preparation, negotiation, oversight, and administration. These costs shall include work performed both prior to and subsequent to the issuance of this Order. Ecology's costs shall include costs of direct activities and support costs of direct activities as defined in WAC 173-340-550(2).

For all Ecology costs incurred, the Subject PLPs shall pay the required amount within thirty (30) calendar days of receiving from Ecology an itemized statement of costs that includes a

summary of costs incurred, an identification of involved staff, and the amount of time spent by involved staff members on the project. A general statement of work performed will be provided upon request. Itemized statements shall be prepared quarterly. Pursuant to WAC 173-340-550(4), failure to pay Ecology's costs within ninety (90) calendar days of receipt of the itemized statement of costs will result in interest charges at the rate of twelve percent (12%) per annum, compounded monthly.

In addition to other available relief, pursuant to RCW 19.16.500, Ecology may utilize a collection agency and/or, pursuant to RCW 70.105D.055, file a lien against real property subject to the remedial actions to recover unreimbursed remedial action costs.

B. Designated Project Coordinators

The project coordinator for Ecology is:

John Mefford
Department of Ecology – Central Region Office
1250 W. Alder Street
Union Gap, WA 98903
509-454-7836
john.mefford@ecy.wa.gov

The project coordinator for Big B LLC is:

Tom Colligan
Floyd | Snider
601 Union Street, Suite 600
Seattle, WA 98101
206-292-2078
Tom.colligan@floydsnider.com

The project coordinator for BNSF Railway Company is:

Scott MacDonald
605 Puyallup Avenue
Tacoma, WA 98421
206-625-6376
Scott.macdonald@bnsf.com

Each project coordinator shall be responsible for overseeing the implementation of this Order. Ecology's project coordinator will be Ecology's designated representative for the Site. To the maximum extent possible, communications between Ecology and the Subject PLPs, and all documents, including reports, approvals, and other correspondence concerning the activities

performed pursuant to the terms and conditions of this Order shall be directed through the project coordinators. The project coordinators may designate, in writing, working level staff contacts for all or portions of the implementation of the work to be performed required by this Order.

Any party may change its respective project coordinator. Written notification shall be given to the other party at least ten (10) calendar days prior to the change.

C. Performance

All geologic and hydrogeologic work performed pursuant to this Order shall be under the supervision and direction of a geologist or hydrogeologist licensed by the State of Washington or under the direct supervision of an engineer registered by the State of Washington, except as otherwise provided for by RCW 18.43 and 18.220.

All engineering work performed pursuant to this Order shall be under the direct supervision of a professional engineer registered by the State of Washington, except as otherwise provided for by RCW 18.43.130.

All construction work performed pursuant to this Order shall be under the direct supervision of a professional engineer or a qualified technician under the direct supervision of a professional engineer. The professional engineer must be registered by the State of Washington, except as otherwise provided for by RCW 18.43.130.

Any documents submitted containing geologic, hydrogeologic, or engineering work shall be under the seal of an appropriately licensed professional as required by RCW 18.43 and 18.220.

The Subject PLPs shall notify Ecology in writing of the identity of any engineer(s) and geologist(s), contractor(s) and subcontractor(s), and others to be used in carrying out the terms of this Order, in advance of their involvement at the Site.

D. Access

Subject to the paragraphs below, Ecology or any Ecology authorized representative shall have access to enter and freely move about all property at the Site that is located east of the fence (as depicted in Exhibit A) that the Subject PLPs either own, control, or have access rights to at all reasonable times for the purposes of, *inter alia*: inspecting records, operation logs, and contracts

related to the work being performed pursuant to this Order; reviewing the Subject PLPs' progress in carrying out the terms of this Order; conducting such tests or collecting such samples as Ecology may deem necessary; using a camera, sound recording, or other documentary type equipment to record work done pursuant to this Order; and verifying the data submitted to Ecology by the Subject PLPs. The Subject PLPs shall make all reasonable efforts to secure access rights for those properties within the Site not owned or controlled by the Subject PLPs where remedial activities or investigations will be performed pursuant to this Order. Ecology or any Ecology authorized representative shall give reasonable notice before entering any Site property owned or controlled by the Subject PLPs east of the fence line (as depicted in Exhibit A) unless an emergency prevents such notice. All persons who access the Site pursuant to this section shall comply with any applicable health and safety plan(s). Ecology employees and their representatives shall not be required to sign any liability release or waiver as a condition of Site property access.

1. *Access to BNSF Right-of-Way.* The BNSF right-of-way (ROW), which includes an active rail line, is depicted in Exhibit A.

a. *Ecology Access to BNSF ROW.* For any Ecology access to the BNSF ROW, Ecology will be responsible for the safety of its employees, agents, contractors and/or designees entering the Premises. Ecology agrees that it and its employees, agents, contractors and/or designees entering the Premises will only use the Premises in such a manner as not to be a source of danger to or to unreasonably interfere with the existence or use of tracks, roadbed, or property of BNSF. If instructed to cease using the BNSF ROW at any time by BNSF's personnel due to any hazardous condition, Ecology agrees to temporarily do so. Ecology's agreement to terminate its activities shall not limit Ecology's authority to seek further sampling or investigations pursuant to any applicable state law. Ecology agrees that BNSF has no duty or obligation to monitor Ecology's use of the Premises to determine the safety thereof, it being solely Ecology's responsibility to ensure that Ecology's activities on the Premises are safe.

b. *Big B Access to BNSF ROW.* BNSF has a prescribed process for third-party requests to access railroad property and has advised Big B and its contractors of that process. To the extent Big B needs access to BNSF's ROW to implement the remedial actions required by this Order, Big B will follow BNSF's prescribed access process. In addition, Big B and BNSF agree to work in good faith to negotiate an access agreement with reasonable terms.

2. *BNSF Access to Big B Property.* As described in Section VII.C, Big B has elected to take primary responsibility for performing the remedial actions required by this Order. In the event that Big B fails to perform any work required by Ecology under this Order or fails to perform such work to Ecology's satisfaction, Big B hereby grants full access to the Big B property to BNSF and BNSF contractors in order to perform such work.

E. Sampling, Data Submittal, and Availability

With respect to the implementation of this Order, the Subject PLPs shall make the results of all sampling, laboratory reports, and/or test results generated by it or on its behalf available to Ecology. Pursuant to WAC 173-340-840(5), all sampling data shall be submitted to Ecology in both printed and electronic formats in accordance with Section VII (Work to be Performed), Ecology's Toxics Cleanup Program Policy 840 (Data Submittal Requirements), and/or any subsequent procedures specified by Ecology for data submittal.

If requested by Ecology, the Subject PLPs shall allow Ecology and/or its authorized representative to take split or duplicate samples of any samples collected by the Subject PLPs pursuant to implementation of this Order. The Subject PLPs shall notify Ecology seven (7) calendar days in advance of any sample collection or work activity at the Site. Ecology shall, upon request, allow the Subject PLPs and/or their authorized representative(s) to take split or duplicate samples of any samples collected by Ecology pursuant to the implementation of this Order, provided that doing so does not interfere with Ecology's sampling. Without limitation on Ecology's rights under Section VIII.D (Access), Ecology shall notify the Subject PLPs prior to any sample collection activity unless an emergency prevents such notice.

In accordance with WAC 173-340-830(2)(a), all hazardous substance analyses shall be conducted by a laboratory accredited under WAC 173-50 for the specific analyses to be conducted, unless otherwise approved by Ecology.

F. Public Participation

RCW 70.105D.030(2)(a) requires that, at a minimum, this Order be subject to concurrent public notice. Ecology shall be responsible for providing this public notice and reserves the right to modify or withdraw any provisions of this Order should public comment disclose facts or considerations which indicate to Ecology that this Order is inadequate or improper in any respect.

Ecology shall maintain the responsibility for public participation at the Site. However, the Subject PLPs shall cooperate with Ecology, and shall:

1. If agreed to by Ecology, develop appropriate mailing lists and prepare drafts of public notices and fact sheets at important stages of the remedial action, such as the submission of work plans, remedial investigation/feasibility study reports, cleanup action plans, and engineering design reports. As appropriate, Ecology will edit, finalize, and distribute such fact sheets and prepare and distribute public notices of Ecology's presentations and meetings.

2. Notify Ecology's project coordinator prior to the preparation of all press releases and fact sheets, and before meetings related to remedial action work to be performed at the Site with the interested public and/or local governments. Likewise, Ecology shall notify the Subject PLPs prior to the issuance of all press releases and fact sheets related to the Site, and before meetings related to the Site with the interested public and local governments. For all press releases, fact sheets, meetings, and other outreach efforts by the Subject PLPs that do not receive prior Ecology approval, the Subject PLPs shall clearly indicate to its audience that the press release, fact sheet, meeting, or other outreach effort was not sponsored or endorsed by Ecology.

3. When requested by Ecology, participate in public presentations on the progress of the remedial action at the Site. Participation may be through attendance at public meetings to assist in answering questions or as a presenter.

4. When requested by Ecology, arrange and/or continue information repositories to be located at the following locations:

a. **Ellensburg Public Library**
209 N. Ruby Street
Ellensburg, WA 98926

b. **Ecology's Central Regional Office**
1250 W. Alder Street
Union Gap, WA 98903

At a minimum, copies of all public notices, fact sheets, and documents relating to public comment periods shall be promptly placed in these repositories. A copy of all documents related to this Site shall be maintained in the repository at Ecology's Central Regional Office in Union Gap, Washington.

G. Retention of Records

During the pendency of this Order, and for ten (10) years from the date of completion of work performed pursuant to this Order, the Subject PLPs shall preserve all records, reports, documents, and underlying data in its possession relevant to the implementation of this Order and shall make copies of this Order available to its project contractors and subcontractors and instruct them to retain documents as required by this Decree. Upon request of Ecology, the Subject PLPs shall make all records available to Ecology and allow access for review within a reasonable time.

Nothing in this Order is intended to waive any right the Subject PLPs may have under applicable law to limit disclosure of documents protected by the attorney work-product privilege and/or the attorney-client privilege. If the Subject PLPs withhold any requested records based on an assertion of privilege, the Subject PLPs shall provide Ecology with a privilege log specifying the records withheld and the applicable privilege. No Site-related data collected pursuant to this Order shall be considered privileged.

H. Resolution of Disputes

1. In the event that the Subject PLPs elect to invoke dispute resolution, the Subject PLPs must utilize the procedure set forth below.

a. Upon the triggering event (receipt of Ecology's project coordinator's written decision or an itemized billing statement), the Subject PLPs have fourteen (14) calendar days within which to notify Ecology's project coordinator in writing of its dispute (Informal Dispute Notice).

b. The Parties' project coordinators shall then confer in an effort to resolve the dispute informally. The Parties shall informally confer for up to fourteen (14) calendar days from receipt of the Informal Dispute Notice. If the project coordinators cannot resolve the dispute within those 14 calendar days, then within seven (7) calendar days Ecology's project coordinator shall issue a written decision (Informal Dispute Decision) stating: the nature of the dispute; the Subject PLPs' position with regards to the dispute; Ecology's position with regards to the dispute; and the extent of resolution reached by informal discussion.

c. The Subject PLPs may then request regional management review of the dispute. This request (Formal Dispute Notice) must be submitted in writing to the Central Region Toxics Cleanup Section Manager within seven (7) calendar days of receipt of Ecology's Informal Dispute Decision. The Formal Dispute Notice shall include a written statement of dispute setting forth: the nature of the dispute; the disputing Party's position with respect to the dispute; and the information relied upon to support its position.

d. The Section Manager shall conduct a review of the dispute and shall issue a written decision regarding the dispute (Decision on Dispute) within thirty (30) calendar days of receipt of the Formal Dispute Notice. The Decision on Dispute shall be Ecology's final decision on the disputed matter.

2. The Parties agree to only utilize the dispute resolution process in good faith and agree to expedite, to the extent possible, the dispute resolution process whenever it is used.

3. Implementation of these dispute resolution procedures shall not provide a basis for delay of any activities required in this Order, unless Ecology agrees in writing to a schedule extension.

4. In case of a dispute, failure to either proceed with the work required by this Order or timely invoke dispute resolution may result in Ecology's determination that insufficient progress is being made in preparation of a deliverable, and may result in Ecology undertaking the work under Section VII.H (Work to be Performed) or initiating enforcement under Section X (Enforcement).

I. Extension of Schedule

1. The Subject PLPs' request for an extension of schedule shall be granted only when a request for an extension is submitted in a timely fashion, generally at least thirty (30) calendar days prior to expiration of the deadline for which the extension is requested, and good cause exists for granting the extension. All extensions shall be requested in writing. The request shall specify:

a. The deadline that is sought to be extended.

b. The length of the extension sought.

c. The reason(s) for the extension.

d. Any related deadline or schedule that would be affected if the extension were granted.

2. The burden shall be on the Subject PLPs to demonstrate to the satisfaction of Ecology that the request for such extension has been submitted in a timely fashion and that good cause exists for granting the extension. Good cause may include, but may not be limited to:

a. Circumstances beyond the reasonable control and despite the due diligence of the Subject PLPs including delays caused by unrelated third parties or Ecology, such as (but not limited to) delays by Ecology in reviewing, approving, or modifying documents submitted by the Subject PLPs.

b. Acts of God, including fire, flood, blizzard, extreme temperatures, storm, or other unavoidable casualty.

c. Endangerment as described in Section VIII.K (Endangerment).

However, neither increased costs of performance of the terms of this Order nor changed economic circumstances shall be considered circumstances beyond the reasonable control of the Subject PLPs.

3. Ecology shall act upon the Subject PLPs' written request for extension in a timely fashion. Ecology shall give the Subject PLPs written notification of any extensions granted pursuant to this Order. A requested extension shall not be effective until approved by Ecology. Unless the extension is a substantial change, it shall not be necessary to amend this Order pursuant to Section VIII.J (Amendment of Order) when a schedule extension is granted.

4. At the Subject PLPs' request, an extension shall only be granted for such period of time as Ecology determines is reasonable under the circumstances. Ecology may grant schedule extensions exceeding ninety (90) calendar days only as a result of one of the following:

a. Delays in the issuance of a necessary permit which was applied for in a timely manner.

b. Other circumstances deemed exceptional or extraordinary by Ecology.

c. Endangerment as described in Section VIII.K (Endangerment).

J. Amendment of Order

The project coordinators may verbally agree to minor changes to the work to be performed without formally amending this Order. Minor changes will be documented in writing by Ecology within seven (7) calendar days of verbal agreement.

Except as provided in Section VIII.L (Reservation of Rights), substantial changes to the work to be performed shall require formal amendment of this Order. This Order may only be formally amended by the written consent of both Ecology and the Subject PLPs. Ecology will provide its written consent to a formal amendment only after public notice and opportunity to comment on the formal amendment.

When requesting a change to the Order, the Subject PLPs shall submit a written request to Ecology for approval. Ecology shall indicate its approval or disapproval in writing and in a timely

manner after the written request is received. If Ecology determines that the change is substantial, then the Order must be formally amended. Reasons for the disapproval of a proposed change to this Order shall be stated in writing. If Ecology does not agree to a proposed change, the disagreement may be addressed through the dispute resolution procedures described in Section VIII.H (Resolution of Disputes).

K. Endangerment

In the event Ecology determines that any activity being performed at the Site under this Order is creating or has the potential to create a danger to human health or the environment on or surrounding the Site, Ecology may direct the Subject PLPs to cease such activities for such period of time as it deems necessary to abate the danger. The Subject PLPs shall immediately comply with such direction.

In the event the Subject PLPs determine that any activity being performed at the Site under this Order is creating or has the potential to create a danger to human health or the environment, the Subject PLPs may cease such activities. The Subject PLPs shall notify Ecology's project coordinator as soon as possible, but no later than twenty-four (24) hours after making such determination or ceasing such activities. Upon Ecology's direction, the Subject PLPs shall provide Ecology with documentation of the basis for the determination or cessation of such activities. If Ecology disagrees with the Subject PLPs' cessation of activities, it may direct the Subject PLPs to resume such activities.

If Ecology concurs with or orders a work stoppage pursuant to this section, the Subject PLPs' obligations with respect to the ceased activities shall be suspended until Ecology determines the danger is abated, and the time for performance of such activities, as well as the time for any other work dependent upon such activities, shall be extended in accordance with Section VIII.I (Extension of Schedule) for such period of time as Ecology determines is reasonable under the circumstances.

Nothing in this Order shall limit the authority of Ecology, its employees, agents, or contractors to take or require appropriate action in the event of an emergency.

L. Reservation of Rights

This Order is not a settlement under RCW 70.105D. Ecology's signature on this Order in no way constitutes a covenant not to sue or a compromise of any of Ecology's rights or authority. Ecology will not, however, bring an action against the Subject PLPs to recover remedial action costs paid to and received by Ecology under this Order. In addition, Ecology will not take additional enforcement actions against the Subject PLPs regarding remedial actions required by this Order, provided the Subject PLPs comply with this Order.

Ecology nevertheless reserves its rights under RCW 70.105D, including the right to require additional or different remedial actions at the Site should it deem such actions necessary to protect human health or the environment, and to issue orders requiring such remedial actions. Ecology also reserves all rights regarding any injury to, destruction of, or loss of natural resources resulting from the release or threatened release of hazardous substances at the Site.

By entering into this Order, the Subject PLPs do not admit to any liability for the Site. Although the Subject PLPs are committing to conducting the work required by this Order under the terms of this Order, the Subject PLPs expressly reserve all rights available under law, including but not limited to the right to seek cost recovery or contribution against third parties, and the right to assert any defenses to liability in the event of enforcement.

M. Transfer of Interest in Property

No voluntary conveyance or relinquishment of title, easement, leasehold, or other interest in any portion of the Site shall be consummated by the Subject PLPs without provision for continued implementation of all requirements of this Order and implementation of any remedial actions found to be necessary as a result of this Order.

Prior to the Subject PLPs' transfer of any interest in all or any portion of the Site, and during the effective period of this Order, the Subject PLPs shall provide a copy of this Order to any prospective purchaser, lessee, transferee, assignee, or other successor in said interest; and, at least thirty (30) calendar days prior to any transfer, the Subject PLPs shall notify Ecology of said transfer. Upon transfer of any interest, the Subject PLPs shall notify all transferees of the

restrictions on the activities and uses of the property under this Order and incorporate any such use restrictions into the transfer documents.

N. Compliance with Applicable Laws

1. *Applicable Laws.* All actions carried out by the Subject PLPs pursuant to this Order shall be done in accordance with all applicable federal, state, and local requirements, including requirements to obtain necessary permits or approvals, except as provided in RCW 70.105D.090. At this time, no federal, state, or local requirements have been identified as being applicable to the actions required by this Order. The Subject PLPs have a continuing obligation to identify additional applicable federal, state, and local requirements which apply to actions carried out pursuant to this Order, and to comply with those requirements. As additional federal, state, and local requirements are identified by Ecology or the Subject PLPs, Ecology will document in writing if they are applicable to actions carried out pursuant to this Order, and the Subject PLPs must implement those requirements.

2. *Relevant and Appropriate Requirements.* All actions carried out by the Subject PLPs pursuant to this Order shall be done in accordance with relevant and appropriate requirements identified by Ecology. At this time, no relevant and appropriate requirements have been identified as being applicable to the actions required by this Order. If additional relevant and appropriate requirements are identified by Ecology or the Subject PLPs, Ecology will document in writing if they are applicable to actions carried out pursuant to this Order and the Subject PLPs must implement those requirements.

3. Pursuant to RCW 70.105D.090(1), the Subject PLPs may be exempt from the procedural requirements of RCW 70.94, 70.95, 70.105, 77.55, 90.48, and 90.58 and of any laws requiring or authorizing local government permits or approvals. However, the Subject PLPs shall comply with the substantive requirements of such permits or approvals. For permits and approvals covered under RCW 70.105D.090(1) that have been issued by local government, the Parties agree that Ecology has the non-exclusive ability under this Order to enforce those local government permits and/or approvals. The exempt permits or approvals and the applicable substantive

requirements of those permits or approvals, as they are known at the time of the execution of this Order, have been identified in Exhibit D.

4. The Subject PLPs have a continuing obligation to determine whether additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Order. In the event either Ecology or the Subject PLPs determines that additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Order, it shall promptly notify the other party of its determination. Ecology shall determine whether Ecology or the Subject PLPs shall be responsible to contact the appropriate state and/or local agencies. If Ecology so requires, the Subject PLPs shall promptly consult with the appropriate state and/or local agencies and provide Ecology with written documentation from those agencies of the substantive requirements those agencies believe are applicable to the remedial action. Ecology shall make the final determination on the additional substantive requirements that must be met by the Subject PLPs and on how the Subject PLPs must meet those requirements. Ecology shall inform the Subject PLPs in writing of these requirements. Once established by Ecology, the additional requirements shall be enforceable requirements of this Order. The Subject PLPs shall not begin or continue the remedial action potentially subject to the additional requirements until Ecology makes its final determination.

Pursuant to RCW 70.105D.090(2), in the event Ecology determines that the exemption from complying with the procedural requirements of the laws referenced in RCW 70.105D.090(1) would result in the loss of approval from a federal agency that is necessary for the state to administer any federal law, the exemption shall not apply and the Subject PLPs shall comply with both the procedural and substantive requirements of the laws referenced in RCW 70.105D.090(1), including any requirements to obtain permits or approvals.

O. Indemnification

The Subject PLPs agree to indemnify and save and hold the State of Washington, its employees, and agents harmless from any and all claims or causes of action (1) for death or injuries to persons, or (2) for loss or damage to property, to the extent arising from or on account of acts

or omissions of the Subject PLPs, their officers, employees, agents, or contractors in entering into and implementing this Order. However, the Subject PLPs shall not indemnify the State of Washington nor save nor hold its employees and agents harmless from any claims or causes of action to the extent arising out of the negligent acts or omissions of the State of Washington, or the employees or agents of the State, in entering into or implementing this Order.

IX. SATISFACTION OF ORDER

The provisions of this Order shall be deemed satisfied upon the Subject PLPs' receipt of written notification from Ecology that the Subject PLPs have completed the remedial activity required by this Order, as amended by any modifications, and that the Subject PLPs have complied with all other provisions of this Agreed Order.

X. ENFORCEMENT

Pursuant to RCW 70.105D.050, this Order may be enforced as follows:

A. The Attorney General may bring an action to enforce this Order in a state or federal court.

B. The Attorney General may seek, by filing an action, if necessary, to recover amounts spent by Ecology for investigative and remedial actions and orders related to the Site.

C. A liable party who refuses, without sufficient cause, to comply with any term of this Order will be liable for:

1. Up to three (3) times the amount of any costs incurred by the State of Washington as a result of its refusal to comply.

2. Civil penalties of up to twenty-five thousand dollars ($25,000) per day for each day it refuses to comply.

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/ / /

D. This Order is not appealable to the Washington Pollution Control Hearings Board. This Order may be reviewed only as provided under RCW 70.105D.060.

Effective date of this Order: MAY 20 2019

BIG B LLC

Surjit Singh
Member
912 Koala Drive
Omak, WA 98841
509-560-1111

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Valerie Bound

Valerie Bound
Section Manager, Toxics Cleanup Program
Central Regional Office
1250 W. Alder Street
Union Gap, WA 98903
509-454-7886

BNSF RAILWAY COMPANY

John Lovenburg
Environmental Vice President
BNSF Railway Company
2500 Lou Menk Drive, AOB-3
Fort Worth, TX 76131
817-352-1459

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EXHIBIT A

SITE LOCATION DIAGRAM

Legend

- 8-inch-Diameter Sump
- Direct Push Probe
- Monitoring Well
- Piezometer
- Piezometer Decommissioned on 10/25/2016 or Damaged
- Test Pit
- F — Fuel
- P — Power
- SS — Sanitary Sewer
- W — Water
- Approximate Property Line
- Fence
- BNSF Railroad Berm
- Approximate Extent of 1990 Excavation
- Approximate Extent of Recovery Trench for Skimmer System

MW-1A
TP-21
Former Fuel Dispensers
TP-20
TP-22
FS-3
PZ-22
FS-1
FS-2
PZ-21
TP-18
TP-19
PZ-19
PZ-18
TP-17
TP-9
TP-16
Former 4,000-gallon Gasoline UST
PZ-20
TP-15
TP-14
PZ-17
Former 10,000-gallon USTs
TP-12
PZ-16
Former Fuel Dispensers
PZ-15
MW-8
MW-3
TP-1
MW-2
TP-13
ASPHALT
PZ-13
TP-10
PZ-12
BUILDING
PZ-14
PZ-11
TP-11
C/L BNSF
C/L CANYON ROA
MW-10
TP-4
1,000-gallon Holding Tank
MW-7
PZ-10
PZ-7
TP-6
PZ-26
TP-7
Air Compressor Shed
PZ-9
TP-8
PZ-8
PZ-6
TP-5
SIDEWAL
Former 12,000-gallon Baffled UST Backfilled with Peagravel
PZ-27
PZ-4
PZ-5
MW-9
East Sump
PZ-3
TP-3
PZ-2
North Sump
MW-5A
P1
PZ-28
TP-2
PZ-1
P4
P5
MW-4A
MW-12/P6
P2
P9
MW-15/P3
PZ-29
MW-13/ P10
MW-1
P7
MW-14
P13
P11
P8
P14
PZ-23
P12
West Sump
P15
MW-11
PZ-24
P16
P17
MW-10
MW-5R
B-3
PZ-25
TOAD'S (ASTRO) STATION
B-2
P18
MW-2
MW-9
B-1
Subsurface Concrete Containment Wall
MW-8
MW-3

Note:
· CAD basemap provided by Cruse & Associates. May 15, 2015.

Abbreviations:
sq feet = Square feet
UST = Underground storage tank

0 15 30
Scale in Feet

N

FLOYD | SNIDER
strategy ▪ science ▪ engineering

Big B Mini Mart
Ellensburg, Washington

Exhibit A
Site Map

I:\GIS\Projects\CL-Ellensburg\MXD\Landfarm Interim Action Work Plan\Exhibit A.mxd
4/5/2019

EXHIBIT B

SCOPE OF WORK AND SCHEDULE

Deliverable	**Completion Time**[1]
Implement interim action	Within 45 calendar days of the effective date of this Agreed Order
Submit Interim Action Report	Within 45 calendar days of completion of the field work required by the Interim Action Work Plan
Submit Agency Review DCAP	Within 45 calendar days of submission of the Interim Action Report
Submit Public Review DCAP	Within 45 calendar days of receipt of Ecology's comments on the Agency Review DCAP
Submit Revised Public Review DCAP	Within 45 calendar days of receipt of Ecology's comments on the Public Review DCAP
Submit Progress Reports	Monthly

[1] If the date for a required submission or performance falls on a weekend or federal holiday, the date for such submission or performance shall automatically be extended to the first succeeding business day.

EXHIBIT C

INTERIM ACTION WORK PLAN

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strategy ▪ science ▪ engineering

Two Union Square
601 Union Street, Suite 600
Seattle, WA 98101
tel: 206.292.2078 fax: 206.682.7867

April 15, 2019

Mr. John Mefford
Washington State Department of Ecology
1250 West Alder Street
Union Gap, WA 98903-0009

SUBJECT: INTERIM ACTION PILOT TEST WORK PLAN
Big B Mini Mart
1611 Canyon Road
Ellensburg, Washington

Dear Mr. Mefford:

Floyd|Snider has prepared this Interim Action Pilot Test Work Plan in response to a Washington State Department of Ecology (Ecology) email dated February 20 concerning the need for an interim action (IA) pilot test of landfarming at the Big B Mini Mart Site (the Site) located in Ellensburg, Washington. Landfarming is a key component of the preferred cleanup action described in the final Remedial Investigation and Feasibility Study (RI/FS). The pilot test will provide useful information on the performance of on-site landfarming at the Site and help determine its effectiveness over time as a remedial component of the preferred cleanup action as described in the RI/FS for this Site.

DESCRIPTION

The IA will consist of two key activities: (1) excavation of contaminated soils in an area known to contain residual light non-aqueous phase liquids (LNAPL) following underground storage tank decommissioning and a prior IA involving free product recovery in 2016; and (2) landfarming of the excavated soils within the Site boundary as shown on Figure 1. The area to be excavated is approximately 1,600 square feet in size and will run parallel to the existing east-west section of the previously-installed LNAPL recovery trench. Big B may choose to expand the excavation area to include impacted soils on the BNSF property if there is an access agreement between Big B's contractor and BNSF at the time of excavation field work.

The sequence of activities for the pilot test will be as follows:

- Meet with the City of Ellensburg to discuss local requirements and obtain site development permit and a grade and fill permit. A solid waste permit is not required if the landfarming operation is conducted within a 90-day period.
- Possible control of odors. An air permit is not required to establish emission limits, but control of odors may be required.

- Mobilization to the site and location of underground utilities.
- Collection of LNAPL thickness measurements in all on- and off-property wells and piezometers.
- Abandonment of monitoring well MW-5A by a licensed driller.[1]
- Removal of any aboveground piezometers that would interfere with construction activities.
- Removal of asphalt in the excavation area.
- Setting up temporary erosion and stormwater controls as required by the grade and fill permit. This may include hay bales or straw waddles surrounding the land farm test plot, the covering of any stormwater drains, the covering of stockpiled soil, and daily sweeping of the work area, amongst other requirements. These will be implemented to keep soil confined to the property and to prevent soil from entering stormwater drains, either on- or off-site.
- Removal of the top 3 feet of what is expected to be clean overburden soils. During removal, the soil will be field screened for evidence of hydrocarbons (sheen test, PID readings, odor). If field indications of petroleum are noted, then that soil will be considered contaminated and moved to the land farm area. If the overburden soil appears free of contamination, it will be stockpiled nearby. The size of the overburden stockpile is not expected to be greater than 200 cubic yards.
- Soil deeper than 3 feet below ground surface (bgs) is expected to be impacted by petroleum hydrocarbons. This soil will be excavated out to no more than 1 foot below the water table (expected to occur between 4 and 6 feet bgs). If free-product is observed running out of the excavated soil, it will be allowed to drain back into the excavation (e.g., via drain holes in the excavator bucket) or captured using a vacuum hose and/or adsorbent pads.
- The sidewalls of the excavation will be left on a 1:1 slope and will be left no deeper than 4 feet prior to backfilling to avoid the need for shoring.
- Any oil or sheen observed on the groundwater surface exposed during excavation will be recovered to the extent practical using a vacuum truck, pump, or adsorbent pads. Recovered product will be placed in the 1,000-gallon tank that was used for the LNAPL recovery trench and is still present on the property.
- Excavated soil, once free of drainable liquids, will be removed from the excavation and placed through a mechanical grate or similar device to remove cobbles, which will be separately stockpiled.
- The cobble-free soil will then be transported to the landfarming area as shown on Figure 1. It is expected that between 150 and 200 cubic yards of soil will be

[1] If the excavation is expanded onto BNSF property, then well MW-4A will also be abandoned.

transported to the land farm area in total. Soil will be placed on asphaltic concrete lying within the bermed land farm area.

- After the excavation is complete, it will be backfilled with the clean overburden soil and removed cobbles such that the remaining excavation depth is 4 feet or less.
- The soil in the land farm area will be uniformly spread out to an average thickness of between 12 and 18 inches.
- Should odors be observed that interfere with use of adjacent properties and/or complaints are received, soil will be covered with plastic until odors abate.
- Should wind erosion of soil be noted, then the land farm area will be covered with plastic sheeting secured with sandbags.
- Once spread out, the soil in the land farm area will be divided into five equal windrowed sub-areas, or decision units, and a representative baseline sample will be collected from the center point of each decision unit at a depth of approximately half of the thickness of treatment layer (6 to 9 inches).
- The samples will be analyzed for the site contaminants of concerns (COCs), including gasoline-range organics, diesel-range organics, benzene, toluene, ethylbenzene, and xylene compounds and naphthalene, as well as nitrogen, phosphorus and potassium (NPK). The analytical methods to be used include NWTPH-Dx and NWTPH-Gx and EPA Method 8260. Soil samples for volatile organic compounds analysis (EPA Method 8260) will be field-collected using Method 5035. Further details on sampling and analysis protocols are in Attachment 1.[2]
- The soil in the land farm area will be rototilled or turned over by backhoe once every 2 weeks. During the time onsite, the best management practices for prevention of runoff from the Site will be inspected and remedied, as needed.
- Nitrogen and phosphorus fertilizer will be added if low levels of NPK are observed. Ideally, the nitrogen level should be maintained to a ratio of no greater than 1/100 of the total petroleum hydrocarbon concentration.
- Soil pH will be checked after 1 month to ensure it is within optimal range of between 6 and 8 standard units, with the optimum pH range ideally between 6.5 and 7.5.
- Moisture will be checked weekly and added by spray hose if the soil appears to be drying out. The optimum soil moisture range for biodegradation is between 10% and 35%.
- After 1 month of landfarming, a second set of samples will be collected from each of the five decision units.
- If COC levels in each of the second set of samples are less than 80% of the Model Toxics Control Act (MTCA) Method A cleanup levels, then the landfarming activities will cease.

[2] Attachment 1 is adopted for the limited scope of work that is outlined in the Work Plan, as applicable for the medium of interest.

- If COC levels are between 80% and 100% of the MTCA Method A cleanup levels in any one of the five quadrants, then an additional sample will be collected from that decision unit. If the second sample result is less than the cleanup level, than the landfarming activities will cease in that decision unit.
- If COC levels are greater than the MTCA Method A cleanup levels in any one decision unit, soil tilling will occur in that area for one additional month.
- Soil in a sub-area that has concentrations less than cleanup levels will be returned to the excavation area and will be subject to future bioventing to further reduce contaminant levels as part of the final cleanup action.
- If after 2 months of landfarming soil cleanup levels have not been achieved, then additional treatment will be considered, including addition of chemical oxidants, additional soil amendments, twice weekly tilling, or thin-spreading of the piles.
- If after 3 months of treatment soil cleanup levels in any sub-area have not been achieved, arrangements will be made to transport that soil for off-site disposal at a permitted facility.

HOW THE PROPOSED INTERIM ACTION MEETS THE CRITERIA

The above activities meet the MTCA criteria by providing a partial cleanup for a part of the Site. The IA is not intending to achieve cleanup standards. Achievement of cleanup standards will be accomplished through performance of the final cleanup action of the Site, a completion date that is not currently known. However, this IA will not foreclose reasonable alternatives for the final cleanup action.

HEALTH AND SAFETY

The existing Health and Safety Plan, Attachment 2, prepared for past RI and IA activities is sufficient in detail to cover the activities in this work plan. Site personnel doing active work are required to be 40-hour OSHA/WISHA trained. The project area will be fenced off from the public.

DISPOSAL OF WASTES

Any recovered LNAPL/water mixture will be stored on-site in the existing double-walled, 1,000-gallon, fiberglass, aboveground storage tank that is already on-site. The LNAPL/wastewater mix will be properly disposed of at a facility permitted to receive such materials. Documentation will be provided to Ecology for verification of receipt, quantities, and transportation and disposal dates. Oil-adsorbent pads will be placed in containers and sent off-site for disposal as solid waste.

SCHEDULE

This Interim Action Work Plan summarizes the proposed activities. Once the plan is approved by Ecology, a detailed construction schedule will be provided to Ecology. Ideally, this work will

commence in late spring and will be completed before late fall during ideal temperatures and weather.

VARIANCE FROM PLAN

If any of the major elements of this plan are not expected to be followed, Ecology will receive a request for variance stating the proposed change and the reason for the change. Additional actions may be taken based on Ecology's review and the nature of the proposed changes.

PREPARATION OF AN INTERIM ACTION REPORT

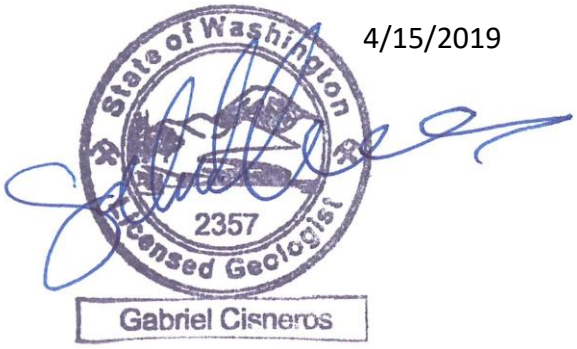
Within 30 days following completion of the proposed IA activities, a report documenting the activities will be prepared. The report will include the following:

- A detailed description of the work performed
- A site figure with the as-built limits of the excavation area
- Waste disposal receipts
- All analytical results

EVALUATION

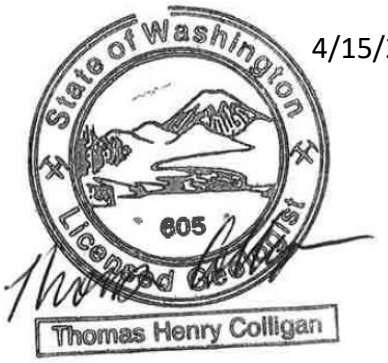
The performance of the landfarming pilot test will be assessed by comparing the results of the initial samples collected prior to landfarming with results obtained after 1, 2, or possibly 3 months of treatment.

Sincerely,



4/15/2019

Gabe Cisneros, LG
Geologist

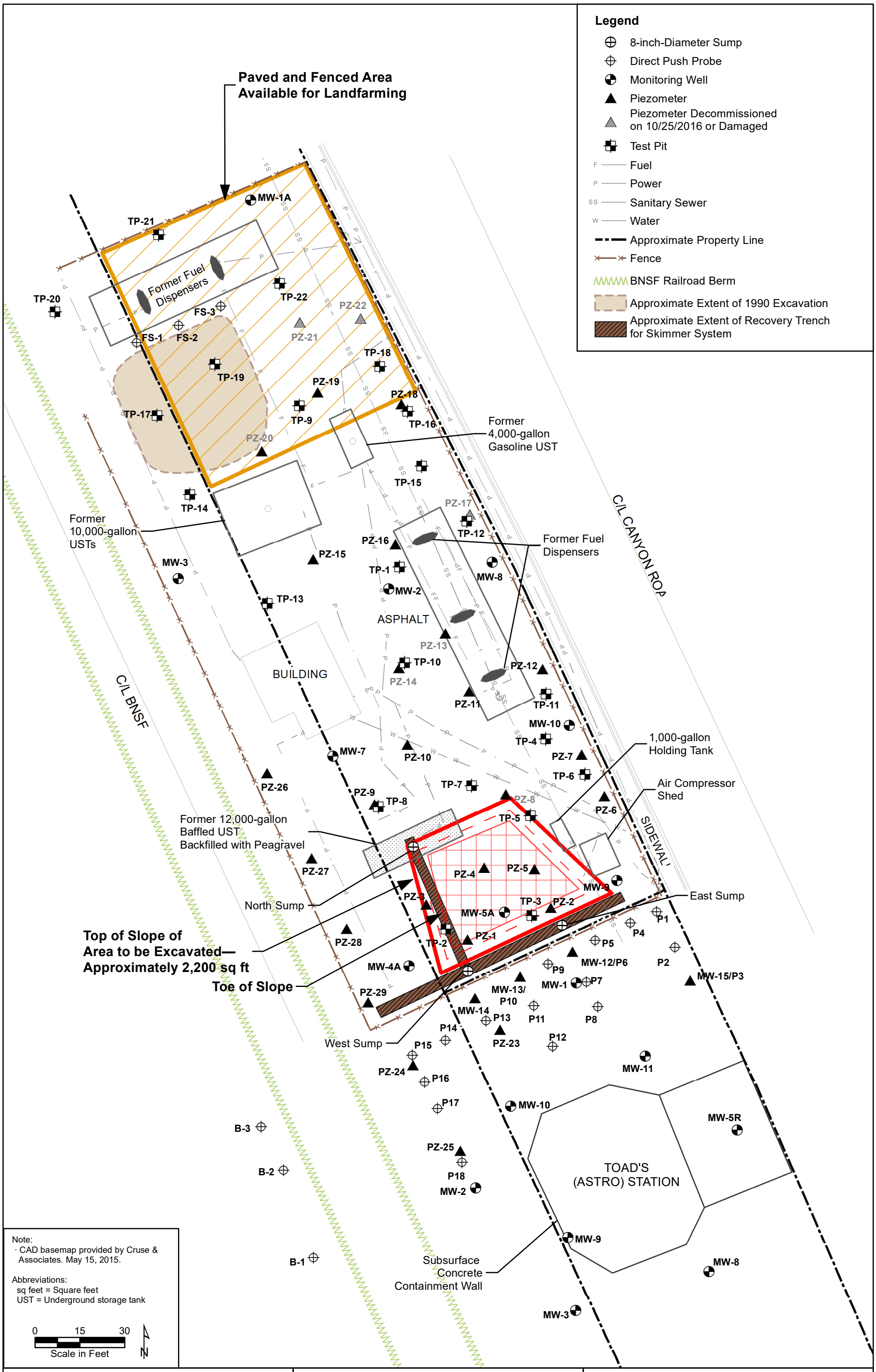


4/15/2019

Tom Colligan, LHG
Sr. Hydrogeologist & Associate Principal

Encl.: Figure 1 – Site Map
Attachment 1 – Site Investigation Work Plan
Attachment 2 – Health and Safety Plan
Cc: Valerie K. Fairwell, Cascadia Law Group PLLC
Surgit Singh, Big B LLC
Scott MacDonald, BNSF Railway Company

Figure



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Landfarm Interim Action Work Plan
Big B Mini Mart
Ellensburg, Washington

Figure 1
Site Map

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4/5/2019

Attachment 1
Site Investigation Work Plan

Table of Contents

List of Tables

List of Figures

List of Abbreviations and Acronyms

Acronym/ Abbreviation	Definition
DO	Dissolved oxygen
Ecology	Washington State Department of Ecology
EIM	Environmental Information Management
LCS	Laboratory control sample
LNAPL	Light non-aqueous phase liquid
mg/L	Milligrams per liter
MS/MSD	Matrix spike/matrix spike duplicate

Acronym/ Abbreviation	Definition
NTU	Nephelometric Turbidity Unit
PID	Photoionization detector
PVC	Polyvinyl chloride
QA/QC	Quality assurance/quality control
RI/FS	Remedial Investigation/Feasibility Study
RPD	Relative percent difference
SAP/QAPP	Sampling and Analysis Plan/Quality Assurance Project Plan
USCS	Unified Soil Classification System
USEPA	U.S. Environmental Protection Agency
VOC	Volatile organic compound

1.0 Project Description

This Sampling and Analysis Plan/Quality Assurance Project Plan (SAP/QAPP) presents the specific field protocols and field and laboratory quality assurance/quality control (QA/QC) procedures associated with the draft Remedial Investigation/Feasibility Study (RI/FS) Work Plan activities for the Big B Mini Mart Site located in Ellensburg, Washington.

1.1 INTRODUCTION

The RI/FS Work Plan describes general site investigation field activities to be performed as part of the RI, including the following:

- **Utility surveys** via existing maps and conductible survey
- **Groundwater and light non-aqueous phase liquid (LNAPL) sampling** via new and existing wells
- **Soil sampling** via test pits
- **Site survey** of well elevations and site features

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2.0 Project Organization and Responsibility

The various QA field, laboratory, and management responsibilities of key project personnel are defined below.

2.1 MANAGEMENT RESPONSIBILITIES

Tom Colligan—Floyd|Snider Project Manager

Tom Colligan, Project Manager, will have overall responsibility for project implementation. As Project Manager he will be responsible for maintaining QA on this project and ensuring that the RI/FS Work Plan objectives are met. The Project Manager will perform the following:

- Approve the SAP/QAPP.
- Monitor project activity and quality.
- Provide overview of field activities to Washington State Department of Ecology (Ecology).
- Prepare and review the draft Site Investigation and RI/FS reports.
- Provide technical representation of project activities at meetings.

2.2 QUALITY ASSURANCE RESPONSIBILITIES

Chell Black—Floyd|Snider Data Manager

The Data Manager will be responsible for the data validation of all sample results from the analytical laboratories and for entering the data into a database. Additional responsibilities include the following:

- Review laboratory reports.
- Load analytical data to Ecology's Environmental Information Management (EIM) database.
- Advise on data corrective action procedures.
- Perform QA/QC on analytical data reports.
- Perform database management and queries.

2.3 LABORATORY RESPONSIBILITIES

An Ecology-accredited laboratory will perform all analytical services in support of the RI/FS work activities.

Laboratory Project Manager
The Laboratory Project Manager will be responsible for the following:

- Coordinating laboratory analyses with Floyd|Snider.
- Reviewing and approving of final analytical reports.
- Scheduling sample analyses.
- Overseeing data review.

2.4 FIELD RESPONSIBILITIES

Gabriel Cisneros—Floyd|Snider Field Lead

The Field Lead will be responsible for leading and coordinating the day-to-day activities in the field. The Field Lead will report directly to the Floyd|Snider Project Manager.

Specific responsibilities include the following:

- Coordinating with the Project Manager.
- Coordinating and managing field staff including sampling staff and drillers.
- Reviewing field data including field logs and field measurement data.
- Adhering to the work schedule.
- Coordinating and overseeing subcontractors.
- Preparing the Site Investigation and RI/FS Reports.

3.0 Laboratory Quality Assurance Objectives

The objective of this section is to clarify laboratory data QA objectives for field sampling and laboratory analyses. Specific procedures for sampling, chain of custody, laboratory instrument calibration, laboratory analysis, reporting of data, internal QC, audits, preventative maintenance of field/laboratory equipment, and corrective actions are described in subsequent sections of this SAP/QAPP.

3.1 LABORATORY QUALITY ASSURANCE OBJECTIVES

The quality of analytical data generated is assessed by the frequency and type of internal QC checks developed for analysis type. Laboratory results will be evaluated against QA objectives by reviewing results for analysis of method blanks, matrix spikes (MS), duplicate samples, laboratory control samples, calibrations, performance evaluation samples, and interference checks as specified by the specific analytical methods. Data quality objectives are summarized in Table B.1.

3.2 PRECISION

Precision measures the reproducibility of measurements under a given set of conditions. Specifically, precision is a quantitative measure of the variability of a group of measurements compared to their average values. Analytical precision is measured through MS/matrix spike duplicate (MSD) samples for organic analysis and through laboratory duplicate samples for inorganic analyses.

Analytical precision measurements will be carried out on project-specific samples at a minimum laboratory duplicate frequency of 1 per laboratory analysis group or 1 in 20 samples, whichever is more frequent per matrix analyzed, as practical. Laboratory precision will be evaluated against quantitative relative percent difference (RPD) performance criteria.

Field precision will be evaluated by the collection of blind field duplicates at a minimum frequency of 1 per laboratory analysis group or 1 in 20 samples. Currently, no performance criteria have been established for field duplicates. Field duplicate precision will, therefore, be screened against a RPD of 75 percent for all samples. However, no data will be qualified based solely on field duplicate precision.

Precision measurements can be affected by the nearness of a chemical concentration to the method detection limit, where the percent error (expressed as RPD) increases. The equation used to express precision is as follows:

$$RPD = \frac{(C_1 - C_2) \times 100\%}{(C_1 + C_2)/2}$$

Where:

RPD = relative percent difference
C_1 = larger of the two observed values
C_2 = smaller of the two observed values

3.3 ACCURACY

Accuracy is an expression of the degree to which a measured or computed value represents the true value. Analytical accuracy may be assessed by analyzing "spiked" samples with known standards (surrogates, laboratory control samples [LCS], and/or MS) and measuring the percent recovery. Accuracy measurements on MS samples will be carried out at a minimum frequency of 1 in 20 samples per matrix analyzed. Because MS/MSDs measure the effects of potential matrix interferences of a specific matrix, the laboratory will perform MS/MSDs only on samples from this investigation and not from other projects. Surrogate recoveries will be determined for every sample analyzed for organics.

Laboratory accuracy will be evaluated against quantitative laboratory control sample, MS, and surrogate spike recoveries using limits for each applicable analyte. Accuracy can be expressed as a percentage of the true or reference value, or as a percent recovery in those analyses where reference materials are not available and spiked samples are analyzed. The equation used to express accuracy is as follows:

$$\%R = 100\% \times (S-U)/C_{sa}$$

Where:

%R = percent recovery
S = measured concentration in the spiked aliquot
U = measured concentration in the unspiked aliquot
C_{sa} = actual concentration of spike added

3.4 REPRESENTATIVENESS

Representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Care will be taken in the design of the sampling program to ensure sample locations are properly selected, sufficient numbers of samples are collected to accurately reflect conditions at the location(s), and samples are representative of the sampling location(s). A sufficient volume of sample will be collected at each sampling location to minimize bias or errors associated with sample particle size and heterogeneity.

3.5 COMPARABILITY

Comparability is a qualitative parameter expressing the confidence with which one dataset can be compared to another. In order to insure results are comparable, samples will be analyzed using standard U.S. Environmental Protection Agency (USEPA) methods and protocols. Calibration and reference standards will be traceable to certified standards and standard data reporting formats will be employed. Data will also be reviewed to verify that precision and accuracy criteria were achieved and, if not, that data were appropriately qualified.

3.6 COMPLETENESS

Completeness is a measure of the amount of data that are determined to be valid in proportion to the amount of data collected. Completeness will be calculated as follows:

$$C = \frac{\text{(Number of acceptable data points)} \times 100}{\text{(Total number of data points)}}$$

The data quality objective for completeness for all components of this project is 95 percent. Data that were qualified as estimated because the QC criteria were not met will be considered valid for the purpose of assessing completeness. Data that were qualified as rejected will not be considered valid for the purpose of assessing completeness.

3.7 QUALITY CONTROL PROCEDURES

QC samples will be collected and analyzed as described in this section.

3.7.1 Field Quality Control Procedures

Trip blanks will be included in each cooler with samples being analyzed for volatile organic compounds (VOCs) to ensure the sample containers do not contribute to any detected analyte concentrations and to identify any artifacts of improper sample handling, storage, or shipping. All field QC samples will be documented in the field logbook and verified by the QA Manager or designee. A blind field duplicate will be collected at a frequency of 1 in 20 samples to assess site heterogeneity.

3.7.2 Laboratory Quality Control Procedures

Laboratory Quality Control Criteria. Certain samples will be spiked and the recoveries of spiked compounds compared to the QC criteria. Results of the laboratory QC samples from each sample group will be reviewed by the analyst immediately after a sample group has been analyzed. The QC sample results will then be evaluated to determine whether control limits were exceeded. If control limits are exceeded in the sample group, corrective action (e.g., method modifications followed by reprocessing the affected samples) will be initiated prior to processing a subsequent group of samples.

All primary chemical standards and standard solutions used in this project will be traceable to documented and reliable commercial sources. Standards will be validated to determine their accuracy by comparison with an independent standard. Any impurities identified in the standard will be documented.

The following paragraphs summarize the procedures that will be used to assess data quality throughout sample analysis.

Laboratory Duplicates. Analytical duplicates provide information on the precision of the analysis and are useful in assessing potential sample heterogeneity and matrix effects. Analytical duplicates are subsamples of the original sample that are prepared and analyzed as a separate

sample. A minimum of 1 laboratory duplicate will be analyzed per sample group or for every 20 samples, whichever is more frequent.

Matrix Spikes and Matrix Spike Duplicates. Analysis of MS samples provides information on the extraction efficiency of the method on the sample matrix. By performing MSD analyses, information on the precision of the method is also provided for organic analyses. A minimum of 1 MS/MSD will be analyzed for every sample group or for every 20 samples analyzed by the laboratory.

Laboratory Control Samples. A LCS is a method blank sample carried throughout the same process as the samples to be analyzed, with a known amount of standard added. The blank spike compound recovery assesses analytical accuracy in the absence of any sample heterogeneity or matrix effects.

Surrogate Spikes. All project samples analyzed for organic compounds will be spiked with appropriate surrogate compounds as defined in the analytical methods. Surrogate recoveries will be reported by the laboratories; however, no sample result will be corrected for recovery using these values.

Method Blanks. Method blanks are analyzed to assess possible laboratory contamination at all stages of sample preparation and analysis. A minimum of 1 method blank will be analyzed for every extraction batch or for every 20 samples, whichever is more frequent.

4.0 Sample Handling and Custody Documentation

Sample possession and handling must be traceable from the time of sample collection, through laboratory and data analysis, to the time sample results are reported. A sample log form and field logbook entries will be completed for each location occupied and each sample collected.

4.1 SAMPLE HANDLING

To control the integrity of the samples during transit to the laboratory and during hold prior to analysis, established preservation and storage measures will be taken. Sample containers will be labeled with the client name, location name/number, sample number, sampling date and time, required analyses, and initials of the individual processing the sample. The Field Lead will check all container labels, custody form entries, and logbook entries for completeness and accuracy at the end of each sampling day.

4.2 SAMPLE CHAIN-OF-CUSTODY

Sample labeling and custody documentation will be performed as described in this document. Custody procedures will be used for all samples at all stages in the analytical or transfer process and for all data and data documentation, whether in hardcopy or electronic format.

4.3 SAMPLE PRESERVATION

Samples requiring field preservation will be placed into pre-preserved sample jars supplied by the laboratory (i.e., VOCs and metals depending on media). Immediately after the sample jars are filled with each media, they will be placed in the appropriate cooler with a sufficient number of ice packs (or crushed ice) to keep them cool through the completion of that day's sampling and transport to the laboratory.

4.4 SAMPLE SHIPMENT

Technical field staff will be responsible for all sample tracking and custody procedures in the field. The Field Lead will be responsible for final sample inventory and will maintain sample custody documentation. At the end of each day, and prior to transfer, custody form entries will be made for all samples. Each shipment of coolers will be accompanied by custody forms; the forms will be signed at each point of transfer and will include sample numbers. All custody forms will be completed in indelible ink. Copies of all forms will be retained as appropriate and included as appendices to QA/QC reports to management.

Prior to shipping, sample containers will be wrapped and securely packed inside the cooler with ice packs or crushed ice by the field technician or designee. The original, signed custody forms will be transferred with the cooler. The cooler will be secured and appropriately sealed and labeled for immediate shipping or transport via vehicle. Samples will be delivered to the laboratory under custody following completion of sampling activities.

4.5 SAMPLE RECEIPT

The designated sample custodian at the laboratory will accept custody of the samples and verify that the chain-of-custody form matches the samples received. The laboratory Project Manager will ensure that the custody forms are properly signed upon receipt of the samples and will note questions or observations concerning sample integrity on the custody forms. The laboratory will contact the QA Manager immediately if discrepancies are discovered between the custody forms and the sample shipment upon receipt. The Laboratory Project Manager, or designee, will specifically note any coolers that do not contain ice packs or are not sufficiently cold upon receipt.

5.0 Data Reduction, Validation, and Reporting

Initial data reduction, evaluation, and reporting at the laboratory will be carried out as described in the appropriate analytical protocols and the laboratory's QA Manual. QC data resulting from methods and procedures described in this document will also be reported.

5.1 DATA REDUCTION AND REPORTING

The laboratory will be responsible for internal checks on data reporting and will correct errors identified during the QA review. The analytical laboratories will be required, where applicable, to report the following:

- **Project Narrative.** This summary, in the form of a cover letter, will discuss problems, if any, encountered during any aspect of analysis. This summary should discuss, but not be limited to, QC, sample shipment, sample storage, and analytical difficulties. Any problems encountered (actual or perceived) and their resolutions will be documented in as much detail as necessary.
- **Sample IDs.** Records will be produced that clearly match all blind duplicate QA samples with laboratory sample IDs.
- **Chain-of-Custody Records.** Legible copies of the custody forms will be provided as part of the data package. This documentation will include the time of receipt and condition of each sample received by the laboratory. Additional internal tracking of sample custody by the laboratory will also be documented.
- **Sample Results**. The data package will summarize the results for each sample analyzed. The summary will include the following information when applicable:
  - All field sample identification codes and the corresponding laboratory identification codes:
    - Sample matrix.
    - Date of sample extraction.
    - Date and time of analysis.
    - Weight and/or volume used for analysis.
    - Final dilution volumes or concentration factor for the sample.
    - Percent moisture in solid samples.
    - Identification of the instrument used for analysis.
    - Method reporting and quantitation limits.
  - Analytical results reported with reporting units identified.
  - All data qualifiers and their definitions.
  - Electronic data deliverables.
- **Quality Assurance/Quality Control Summaries.** This section will contain the results of all QA/QC procedures. Each QA/QC sample analysis will be documented with the

same information required for the sample results (refer above). No recovery or blank corrections will be made by the laboratory. The required summaries are listed below; additional information may be requested.

- **Method Blank Analysis.** The method blank analyses associated with each sample and the concentration of all compounds of interest identified in these blanks will be reported.
- **Surrogate Spike Recovery.** All surrogate spike recovery data for organic compounds will be reported. The name and concentration of all compounds added, percent recoveries, and range of recoveries will be listed.
- **Matrix Spike Recovery.** All MS recovery data for metals and organic compounds will be reported. The name and concentration of all compounds added, percent recoveries, and range of recoveries will be listed. The RPD for all duplicate analyses will be reported.
- **Matrix Duplicate.** The RPD for all matrix duplicate analyses will be reported.
- **Blind Duplicates.** Blind duplicates will be reported in the same format as any other sample. RPDs will be calculated for duplicate samples and evaluated as part of the data quality review.

5.2 DATA VALIDATION

Once data are received from the laboratory, the Floyd|Snider data manager will perform QC of the data. Specific procedures will be followed to assess data precision, accuracy, and completeness of the laboratory data.

A data quality review of the analytical data will follow USEPA National Functional Guidelines in accordance with the QAPP limits (USEPA 2013a and USEPA 2013b). All chemical data will be reviewed with regard to the following:

- Chain of custody/documentation.
- Sample preservation and holding times.
- Instrument performance (calibration, tuning, sensitivity).
- Method blanks.
- Reporting limits.
- Surrogate recoveries.
- MS/MS recoveries.
- LCS recoveries.
- Laboratory and field duplicate RPDs.

A brief Data Validation Summary Report will be prepared documenting the QC review. Final validated data will be entered into the Floyd|Snider project database and uploaded to Ecology's EIM system.

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6.0 Corrective Actions

Corrective action procedures are described in this section.

Corrective Action for Field Sampling. The Field Lead will be responsible for correcting field errors in sampling or documenting equipmen malfunctions during the field sampling effort and will be responsible for resolving situations in the field that may result in non-compliance with this SAP/QAPP. All corrective measures will be immediately documented in the field logbook. Substantial deviations from the RI/FS Work Plan will be reported immediately to the project manager who will then report the deviation to Ecology.

Corrective Action for Laboratory Analyses. The laboratory is required to comply with their Standard Operating Procedures. The Laboratory Project Manager will be responsible for ensuring that appropriate corrective actions are initiated as required for conformance with this SAP/QAPP. All laboratory personnel will be responsible for reporting problems that may compromise the quality of the data.

If any QC sample exceeds the project-specified control limits, the analyst will identify and correct the anomaly before continuing with the sample analysis. The analyst will document the corrective action taken in a memorandum submitted to the QA Manager. A narrative describing the anomaly, the steps taken to identify and correct the anomaly, and the treatment of the relevant sample batch (i.e., recalculation, reanalysis, and/or re-extraction) will be submitted with the data package.

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7.0 Field Investigation Procedures

The following sections describe the specific protocols that will be used to gather site data to be used in the Site Investigation Work Plan. Refer to the work plan for the specific sampling methods.

7.1 UNDERGROUND UTILITY INVESTIGATION PROTOCOLS

A public utility locate notification will be completed in accordance with state law at least 3 business days prior to the start of the investigation. Public utility locate information will be provided to the drilling contractor prior to the start of work. In addition, a private locate will be performed to define the location of the underground storage tank piping and utilities beneath the property.

7.2 GROUNDWATER AND LNAPL SAMPLING PROTOCOL

Up to four new groundwater monitoring wells will be installed and developed according to standard industry procedures. The wells will be 2-inch-diameter polyvinyl chloride (PVC) and drilled using an 8–inch outside diameter hollow-stem auger with samples collected at 2.5-foot intervals. The screened interval shall be 10 feet long and the well will be screened across the water table observed at the time of drilling. All wells will be surface-mounted as described in the Site Investigation Work Plan.

Groundwater samples will be collected from all monitoring wells after purging with low-flow techniques, using a peristaltic pump and disposable polyethylene tubing as described below.

7.2.1 Monitoring Well Development

All newly installed wells will be developed by surging with a bailer or surge block followed by well evacuation. All down-hole well development tools will be decontaminated prior to use for each well. Surging and evacuation will be repeated until evacuated water is visibly clean and essentially sand-free. During well evacuation, water samples will be collected for field determination and documentation of temperature, specific conductivity, and pH. Well development will proceed until field parameters stabilize to within ±10 percent on three consecutive measurements or until 10 well volumes have been purged.

7.2.2 Monitoring Well Sampling Procedure

Groundwater and LNAPL samples will be collected from all site wells adhering to following the procedure:

1. After the protective casing has been opened, the condition of the monument/well will be observed and noted on the field log.
2. A decontaminated water level indicator will be used to measure depth-to-water from the top of the PVC well casing. The depth-to-water measurement will be accurate to the nearest 0.01 foot.

3. Wells will be gauged for measurable LNAPL thickness using an interface probe.
4. If LNAPL is observed, a disposable bailer will be used to collect a product sample instead of a sample of groundwater for dissolved constituents.
5. Disposable, new polyethylene tubing will be lowered into the well to the midpoint depth of the screened interval or, if the groundwater level is below this depth, the midpoint depth of the water column. A peristaltic pump will be used to begin purging the water. Purge water will be collected and disposed of as described in Section 7.6.
6. The well will be purged at rates that maintain less than 0.1 foot of drawdown in the well and generate non-turbid water (less than 10 Nephelometric Turbidity Units [NTU]). Generally this translates to a flow-rate of less than 0.5 liters/minute.
7. During purging, field parameters (temperature, pH, dissolved oxygen [DO], conductivity, salinity, and turbidity) in the purge water as well as depth-to-water will be recorded at 3- to 5-minute intervals. If the field measurements for turbidity, DO, and electrical conductivity are approximately stable (within 10 percent) for three consecutive readings, the groundwater sample will be collected. If DO is less than 5 milligrams per liter (mg/L), three consecutive readings within 1 mg/L will be considered stable. If turbidity readings are negative values, the measurement will be recorded as less than 1 NTU. Because these field parameters (particularly turbidity) may not reach these stringent stabilization criteria at a particular well, collection of each groundwater sample will be based on the field personnel's best professional judgment at the time of sampling. The last set of field parameters measured during purging will represent field parameters for the groundwater sample.
8. The groundwater sample will be collected by directly filling the laboratory-provided bottles from the pump discharge line (maintaining the same flow rate as purging). All labeled, filled bottles will immediately be placed in coolers packed with ice. Samples collected for dissolved metals analysis will be filtered at the laboratory.

7.2.3 Groundwater and LNAPL Sample Nomenclature and Handling Procedures

The sample number format for monitoring well groundwater samples will be the well number. Groundwater screening samples will be "boring number-screen top depth-screen bottom depth" For example, an example collected from MW-4 from 4 to 14 feet would be labeled "MW4-4-14'." Every groundwater sample will have a unique identifier, and the collection date will be known from the bottle label and chain-of-custody form. The sample format for monitoring wells with LNAPL will be the same as above but with "LNAPL" at the end of the identifier. For example, an LNAPL sample from Monitoring Well MW-2 would be labeled "MW2-4-14-LNAPL." Sample labels will also include the time of collection and initials of sampler on the bottle label.

The samples will be shipped overnight or delivered to the laboratory on the day following collection to ensure that the analytical holding times, specified in Table B.2, are met.

7.2.4 Laboratory Analysis

The analyses to be performed on groundwater and LNAPL samples collected during the site investigation are summarized in Table B.3.

7.3 SOIL SAMPLING PROTOCOL

Soil samples will be collected from excavated test pits. Soil samples will be collected from selected test pit locations shown on Figure B.1. Test pit locations may be moved to a limited degree if underground or aboveground utility locations, and/or site operational constraints are present.

7.3.1 Test Pit Sampling Procedure

Test pits will be excavated and sampled according to the following procedure:

1. An excavator will be used to remove soil at the direction of a field technician.
2. The test pit sidewall soils will be photographed and logged by a field technician according to Unified Soil Classification System (USCS) and standard practices for the environmental industry. Test pit logs will record the location, date, name of person logging, and sample depth. The presence of debris, photoionization detector (PID) readings, and other evidence of contamination (visual and/or odors) will also be noted by a field technician according to USCS and consistent with the procedures outlined above.
3. Soil samples from the test pit sidewalls will be screened for organic vapors using a PID. Selected intervals showing elevated PID response will be analyzed. These soil intervals will be sampled directly from the sidewall using USEPA Method 5035A (for VOCs and gasoline-range organics/benzene, toluene, ethylbenzene, and xylenes only). This preservation method uses a Teflon corer to collect a sealed sample that minimizes loss of volatiles during sampling and transport.
4. Soil samples for other analyses will be collected from sand-sized material in the test pit sidewall, or from the excavator bucket if the test pit is not accessible, using a decontaminated stainless steel scoop or trowel. Soil samples will be placed in a decontaminated stainless steel bowl and homogenized until the soil is uniform in color and texture. Homogenized samples will be placed in laboratory-provided clean jars.
5. All labeled, filled sample jars will be placed in a field cooler packed with ice. Standard chain-of-custody procedures will be implemented for all sampling events.
6. Soil from the test pits will be stockpiled on the property within the fenced area. Samples from the stockpiled soil will be collected and processed as described in Section 7.3.3.
7. The test pit will be backfilled with clean stockpiled soil or clean imported soil.

7.3.2 Soil Sample Nomenclature and Handling Procedures

The sample number format for test pit soil samples will be “test pit location-top depth-bottom depth.” For example, a surface sample collected from TP-5 from 0 to 0.5 feet would be labeled “TP5-0-0.5.” A duplicate sample would be labeled “TP5-0-0.5’-B.” Every soil sample will have a

unique identifier, and the collection date will be known from the sample bottle and chain-of-custody form. Sample labels will include the time of collection and initials of sampler on the bottle label.

The samples will be shipped overnight or delivered to the laboratory on the day following collection or as soon as possible following collection to ensure that analytical holding times specified in Table B.2 are met.

7.3.3 Stockpiled Soil

During test pit activities, visibly-impacted soil will be stockpiled separately from otherwise clean soil. Only clean overburden soil from test pits will be placed back into the test pit and compacted following completion of test pit sampling. Visibly contaminated soil from all the test pits will be combined into a single stockpile along with soil from the monitoring well installation activities. The stockpiled soil will be covered with plastic, and surrounded by a straw waddle, and sampled for disposal according to Table 6.9 in Ecology's September 2011 Guidance for Remediation Petroleum Contaminated Soil (Ecology 2011).

7.3.4 Laboratory Analysis

The analyses to be performed on soil samples collected from the test pits and stockpiled soil during the site investigation are summarized in Table B.3.

7.4 EQUIPMENT DECONTAMINATION

Field sampling equipment, such as the augers, split-spoons, and a water level indicator will be cleaned between each use. Equipment for reuse will be decontaminated according to the procedure below, before each sample interval.

1. Water will be sprayed over equipment to dislodge and remove any remaining sediments.
2. Surfaces of equipment contacting sample material will be scrubbed with brushes using an Alconox solution.
3. Scrubbed equipment will be rinsed and scrubbed with clean water.
4. Equipment will undergo a final spray rinse of deionized water.

7.5 SURVERYING

All wells, test pits, and site features, such as building corners, will be professionally surveyed after sampling is complete. Site mapping will be conducted using the Washington State Plane North Coordinate System and the North American Vertical Datum of 1988.

7.6 INVESTIGATION-DERIVED WASTE MANAGEMENT

Investigation-derived waste solids, including soil, if free of visual evidence of contamination, will be placed in their original location at the site when possible. Visibly contaminated soil from all

the test pits will be combined into a single stockpile along with soil from the monitoring well installation activities. Profiling and disposal of contaminated waste will be coordinated by Floyd|Snider.

Investigation-derived waste liquids, such as well development waters and decontamination fluids will be drummed on-site and appropriately labeled. Profiling and disposal of contaminated waste waters will be coordinated by Floyd|Snider.

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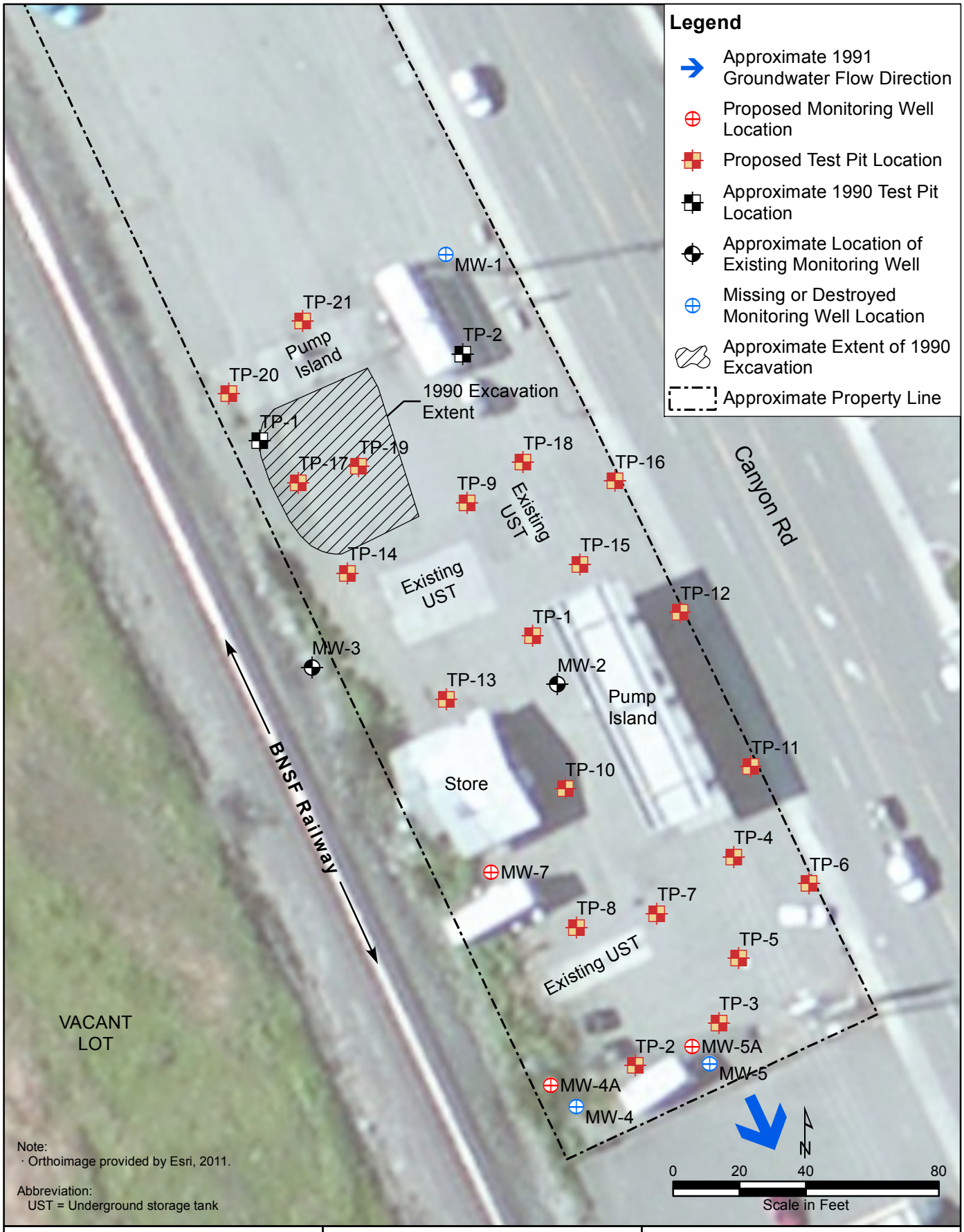

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Site Investigation Work Plan
Big B Mini Mart
Ellensburg, Washington

Figure B.1
Proposed Well and Test Pit Locations

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12/9/2014

Table B.1
Data Quality Assurance Criteria

Parameter	Reference	Precision (Relative Percent Difference)	Accuracy (Percent Difference from Standard)	Completeness (Percentage of Data Validated)
Soil				
DRO	NWTPH-Dx	± 20%	± 50%	95%
GRO	NWTPH-Gx	± 20%	± 50%	95%
VOCs				
Benzene	USEPA Method 8260	± 20%	± 50%	95%
Toluene				
Ethylbenzene				
Xylenes				
Ethanol				
Naphthalene				
Methyl tert-Butyl Ether				
Ethylene Dichloride				
n-Hexane				
Ethylene Dibromide				
Metals				
Lead	USEPA Method 6020	± 20%	± 50%	95%
Water or LNAPL				
DRO	NWTPH-Dx	± 20%	± 60%	95%
GRO	NWTPH-Gx	± 20%	± 60%	95%
VOCs				
Benzene	USEPA Method 8260	± 20%	± 50%	95%
Toluene				
Ethylbenzene				
Xylenes				
Ethanol				
Naphthalene				
Methyl tert-Butyl Ether				
Ethylene Dichloride				
n-Hexane				
Ethylene Dibromide	USEPA Method 8011			
Metals (total)				
Lead	USEPA Method 6020	± 20%	± 50%	95%

Abbreviations:

BTEX	Benzene, toluene, ethylbenzene, and xylenes
DRO	Diesel-range organics
GRO	Gasoline-range organics
LNAPL	Light non-aqueous phase liquid
VOC	Volatile organic compound

Table B.2
Analytical Requirements, Methods, Preservation, Bottle Type, and Holding Times

Parameter	Reference	Bottle Type	Preservative	Holding Time
Soil				
DRO	NWTPH-Dx	(1) 4-oz WMG	None, cool to ≤6˚C	14 days to extract, then 40 to analyze
GRO	NWTPH-Gx	(4) Glass 40 ml VOA vials with PTFE Septum	Methanol and cool to ≤6 ˚C or none and cool to ≤6 ˚C	14 days to analyze with MeOH preservation or if none, 2 days at ≤6 ˚C, 14 days at ≤-7 ˚C
VOCs				
Benzene	USEPA Method 8260	(4) Glass 40 ml VOA vials with PTFE Septum (GRO and VOCs taken from the same 4 VOA vials)	Methanol and cool to ≤6 ˚C or none and cool to ≤6 ˚C	14 days to analyze with MeOH preservation or if none, 2 days at ≤6 ˚C, 14 days at ≤-7 ˚C
Toluene				
Ethylbenzene				
Xylenes				
Ethanol				
Methyl tert-Butyl Ether				
Ethylene Dichloride				
Naphthalenes				
n-Hexane				
Ethylene Dibromide				
Metals				
Lead	USEPA Method 6020	(1) 4-oz WMG	None, cool to ≤6 ˚C	6 months (or freeze for 1 year) 28 days for mercury
Water or LNAPL				
DRO	NWTPH-Dx	(2) 500-mL amber glass	None, cool to ≤6 ˚C	7 days to extract, then 40 days to analyze
GRO	NWTPH-Gx	(5) 40-mL VOA vials with PTFE Septum	Hydrochloric acid to pH ≤2.0, cool to ≤6 ˚C	14 days to analyze
VOCs				
Benzene	USEPA Method 8260	(5) 40-mL VOA vials with PTFE Septum (GRO and VOCs taken from the same 5 VOA vials)	Hydrochloric acid to pH ≤2.0, cool to ≤6 ˚C	14 days to analyze
Toluene				
Ethylbenzene				
Xylenes				
Methyl tert-Butyl Ether				
Ethylene Dichloride				
Naphthalenes				
n-Hexane				
Ethylene Dibromide	USEPA Method 8011			
Metals (total)				
Lead	USEPA Method 6020	(1) 500-mL HDPE	Nitric acid, cool to ≤6 ˚C	6 months

Abbreviations:

˚C	Degrees Celsius	oz	Ounce
BTEX	Benzene, toluene, ethylbenzene, xylenes	PTFE	Polytetrafluoroethylene (Teflon)
DRO	Diesel-range organics	VOA	Volatile organic analysis
GRO	Gasoline-range organics	VOC	Volatile organic compound
HDPE	High-density polyethylene	WMG	Wide-mouth glass jar
MeOH	Methanol	oz	Ounce
mL	Milliliter	PTFE	Polytetrafluoroethylene (Teflon)

Table B.3
Analytical Methods, Detection Limits, and Reporting Limits

Parameter	Reference	Units	Estimated Detection Limit	Reporting Limit/PQL
Soil				
DRO	NWTPH-Dx	mg/kg	5	25–50
GRO	NWTPH-Gx		0.3	2
VOCs				
Benzene	USEPA Method 8260C	mg/kg	0.006	0.02
Toluene			0.002	0.02
Ethylbenzene			0.002	0.02
Xylenes			0.006	0.06
Ethanol			25	50
Naphthalene			0.002	0.02
Methyl tert-Butyl Ether			0.00004-0.00007	0.005
Ethylene Dibromide			0.0025	0.005
Ethylene Dichloride			0.00004–0.00007	0.005
n-Hexane			0.00004–0.00007	0.005
Metals				
Lead	USEPA Method 6020	mg/kg	0.02	1
Water or LNAPL				
DRO	NWTPH-Dx	µg/L	9	50
GRO	NWTPH-Gx		6	100
VOCs				
Benzene	USEPA Method 8260C	µg/L	0.02	1
Toluene			0.03	1
Ethylbenzene			0.03	1
Xylenes			0.09	3
Ethanol			500	1,000
Naphthalene			0.14	2
Methyl tert-Butyl Ether			0.07	2
Ethylene Dichloride			0.05	2
n-Hexane			0.17	5
Ethylene Dibromide	USEPA Method 8011B		0.002	0.01
Metals (total)				
Lead	USEPA Method 6020A or 200.8	µg/L	0.07	1

Abbreviations:

BTEX	Benzene, toluene, ethylbenzene, xylenes
DRO	Diesel-range organics
GRO	Gasoline-range organics
µg/L	Micrograms per liter
µg/kg	Micrograms per kilogram
mg/L	Milligrams per liter
mg/kg	Milligrams per kilogram
PQL	Practical quantitation limit
VOC	Volatile organic compound

Attachment 2
Health and Safety Plan

Table of Contents

List of Appendices

List of Acronyms and Abbreviations

Acronym/ Abbreviation	Definition
bgs	Below ground surface
COC	Contaminant of concern
CRZ	Contamination reduction zone
EZ	Exclusion zone
HSO	Health and Safety Officer
HASP	Health and Safety Plan
HAZWOP	Hazardous Waste Operations
LNAPL	Light non-aqueous phase liquid
PID	Photoionization detector
PM	Project Manager
PPE	Personal protective equipment
SS	Site Supervisor
SSO	Site Safety Officer
STEL	Short-Term Exposure Limit
SZ	Support zone
TWA	Time-Weighted Average
UST	Underground Storage Tank
VOC	Volatile organic compound
WAC	Washington Administrative Code

1.0 Plan Objectives and Applicability

This Health and Safety Plan (HASP) has been written to comply with the standards prescribed by the Occupational Safety and Health Act (OSHA) and the Washington Industrial Safety and Health Act (WISHA).

The purpose of this HASP is to establish protection standards and mandatory safe practices and procedures for all personnel involved with investigation activities at Big B Mini Mart Service Station (Site). This HASP assigns responsibilities, establishes standard operating procedures, and provides for contingencies that may occur during field work activities. This plan consists of site descriptions, a summary of work activities, an identification and evaluation of chemical and physical hazards, monitoring procedures, personnel responsibilities, a description of site zones, decontamination and disposal practices, emergency procedures, and administrative requirements.

The provisions and procedures outlined by this HASP apply to all Floyd|Snider personnel on-site. Contractors, subcontractors, other oversight personnel, and all other persons involved with the field work activities described herein are required to develop and comply with their own HASP. All Floyd|Snider staff conducting field activities are required to read this HASP and indicate that they understand its contents by signing the Health and Safety Officer/Site Supervisors' (HSO/SS') copy of this plan.

It should be noted that this HASP is based on information that was available as of the date indicated on the title page. It is possible that additional hazards that are not specifically addressed by this HASP may exist at the work site, or may be created as a result of on-site activities. It is the firm belief of Floyd|Snider that active participation in health and safety procedures and acute awareness of on-site conditions by all workers is crucial to the health and safety of everyone involved. Should project personnel identify a site condition that is not addressed by this HASP and have any questions or concerns about site conditions, they should immediately notify the HSO/SS and an addendum will be provided to this HASP.

The HSO/SS has field responsibility for ensuring that the provisions outlined herein adequately protect worker health and safety and that the procedures outlined by this HASP are properly implemented. In this capacity, the HSO/SS will conduct regular site inspections to ensure that this HASP remains current with potentially changing site conditions. The HSO/SS has the authority to make health and safety decisions that may not be specifically outlined in this HASP, should site conditions warrant such actions. In the event that the HSO/SS leaves the site while work is in progress, an alternate Site Safety Officer (SSO) will be designated. Personnel responsibilities are further described in Section 4.0.

This HASP has been reviewed by the Project Manager (PM) and the HSO/SS prior to commencement of work activities. All Floyd|Snider personnel shall review the plan and be familiar with on-site health and safety procedures. A copy of the HASP will be on-site at all times.

2.0 Emergency Contacts and Information

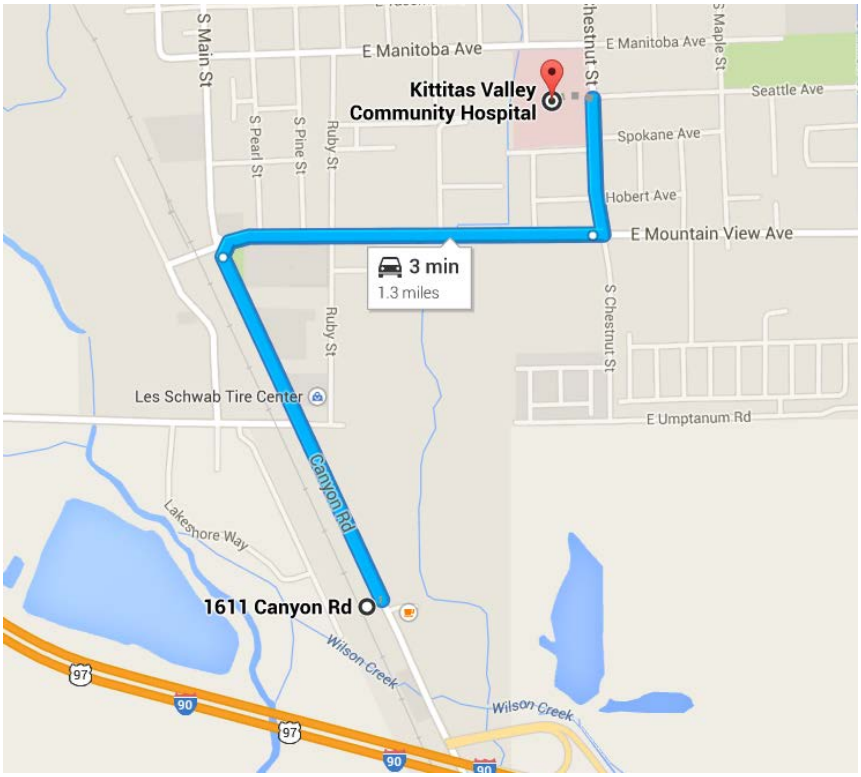
2.1 DIAL 911

In the event of any emergency, dial 911 to reach fire, police, and first aid.

2.2 HOSPITAL AND POISON CONTROL

Nearest Hospital Location and Telephone: Refer to Figure 1 below for map and directions to the hospital.	Kittitas Valley Community Hospital 603 South Chestnut Street Ellensburg, WA 98926 (509) 962-9841
Washington Poison Control Center:	(800) 222-1222

Figure 1 - Hospital Directions



1. Start at: 1611 Canyon Road in Ellensburg, WA 98926
2. Head north-northwest on Canyon Road toward Umptanum Road 0.5 mi
3. Turn right onto W Mountain View Ave 0.5 mi
4. Turn left onto S Chestnut Street 0.2 mi
5. Arrive at: Kittitas Valley Community Hospital-ER; 603 S Chestnut Street, Ellensburg, Washington

2.3 PROVIDE INFORMATION TO EMERGENCY PERSONNEL

All Floyd|Snider project personnel should be prepared to give the following information:

Information to Give to Emergency Personnel	
Site Location:	Big B Mini Mart Service Station 1611 Canyon Road Ellensburg, WA 98926 **Nearest Cross Street:** I-90 to the south or Umptanum Rd to the north
Number that You are Calling from:	This information can be found on the phone you are calling from.
Type of Accident or Type(s) of Injuries:	Describe accident and/or incident and number of personnel needing assistance.

2.4 FLOYD|SNIDER AND BIG B MINI MART EMERGENCY CONTACTS

After contacting emergency response crews as necessary, contact the Floyd|Snider project manager and a Floyd|Snider principal to report the emergency. The Floyd|Snider project manager may then contact Surgit Singh, or direct the field staff to do so.

Floyd|Snider Emergency Contacts:

Contact	Office Phone Number	Cell Phone Number
Tom Colligan, PM	(206) 292-2078	(206) 276-8527
Gabe Cisneros, HSO/SS		(206) 582-8223
Kate Snider, Principal		(206) 375-0762

Big B Mini Mart Emergency Contacts:

Contact	Office Phone Number	Cell Phone Number
Surgit Singh	N/A	(509) 560-1111

Utility Company Emergency Contacts:

Contact	Normal Business Hours Phone Numbers (8 a.m. to 5 p.m.)	After Hours Emergency Phone Number
Puget Sound Energy – Electric	(888) 728-9343	(888) 225-5773
Puget Sound Energy – Natural Gas	(888) 728-9343	(888) 225-5773
City of Ellensburg – Water, Gas, Electric	(509) 962-7230	(509) 962-7230
Ellensburg Energy SVCS	(509) 962-7124	(509) 962-7224
Ellensburg Telephone	(509) 985-1203	(509) 925-1425

3.0 Background Information

3.1 SITE BACKGROUND

The property is located at 1611 Canyon Road in Ellensburg, WA and is currently a temporarily closed gasoline service station with upgrades planned for the near future. The property is approximately 1.5 acres and includes two pump islands, a convenience store, two steel 10,000-gallon underground storage tanks (USTs), a 4,000-gallon steel UST on the north side of the store, and a 12,000-gallon baffled steel UST (8,000 gallons of diesel and 4,000 gallons of unleaded gasoline) on the south end of the property. The planned upgrades envision the removal of all tanks, dispensers, and product lines and replacement with upgraded tanks, lines, and dispensers.

The property is on the west side of Canyon Road, just north of Interstate 90, and is surrounded by commercial use properties to the north, south, and east, and a BNSF railway to the west. An Astro gasoline service station is adjacent to the south and a Shell station is located across Canyon Road to the east. Canyon Road is a four-lane major throughway with off- and on-ramp access to I-90, just southeast of the property. Entrances to the property are located northeast and southeast of the fuel dispensers along Canyon Road. The property includes a large undeveloped area on the north side; ecology blocks have been placed in the driveways to prevent truckers from using this portion of the property to park their rigs and containers. The entire southern portion of the property is fenced.

3.2 SCOPE OF WORK

The activities outlined in this revised HASP are in addition to previous activities performed at the Site, which are still applicable and are included in this HASP. The purpose of the interim action activities is to perform UST decommissioning activities and to install a trench to remove light non-aqueous phase liquids (LNAPLs) with the objective to reduce or remove the LNAPL mass and stop LNAPL migration or mobility. In addition, this plan covers investigation of down-gradient soil and groundwater conditions. Floyd|Snider will perform the following scope of work:

- Oversight of UST decommissioning performed by NES Inc., a tank removal contractor, hired by the potentially liable parties
- Oversight of the excavation of a trench from 3 to 7 feet below ground surface (bgs).
- Oversight of the backfilling the trench with pea gravel from 3 to 7 feet bgs.
- Oversight of the installing of two LNAPL recovery sumps within the trench.
- Outfitting the recovery sumps with a pneumatically operated LNAPL skimmers.
- Collect soil samples for analysis.
- Collect groundwater samples and a product sample.

4.0 Primary Responsibilities and Requirements

4.1 PROJECT MANAGER

The PM will have overall responsibility for the completion of the project, including the implementation and review of this HASP. The PM will review health and safety issues as needed and as consulted, and will have authority to allocate resources and personnel to safely accomplish the field work.

The PM will direct all Floyd|Snider personnel involved in field work at the Site. If the project scope changes, the PM will notify the HSO/SS so that the appropriate addendum will be included in the HASP. The PM will ensure that all Floyd|Snider personnel on-site have received the required training, are familiar with the HASP, and understand the procedures to follow should an accident and/or incident occur on-site.

4.2 HEALTH AND SAFETY OFFICER AND SITE SUPERVISOR

The HSO/SS will approve this HASP and any amendments thereof, and will ultimately be responsible for full implementation of all elements of the HASP.

The HSO/SS will advise the PM and project personnel on all potential health and safety issues of the field investigation activities to be conducted at the site. The HSO/SS will specify required exposure monitoring to assess site health and safety conditions, modify the site HASP based on field assessment of health and safety accidents and/or incidents, and recommend corrective action if needed. The HSO/SS will report all accidents and/or incidents to the PM. If the HSO/SS observes unsafe working conditions by Floyd|Snider personnel or any contractor personnel, the HSO/SS will suspend all work until the hazard has been addressed.

4.3 SITE SAFETY OFFICER

The SSO may be a person dedicated to assisting the HSO/SS during field work activities. The SSO will ensure that all personnel have appropriate personal protective equipment (PPE) on-site and PPE is properly used. The SSO will assist the HSO/SS in field observation of Floyd|Snider personnel safety. If a health or safety hazard is observed, the SSO shall suspend all work activity. The SSO will conduct on-site safety meetings daily before work commences. All health and safety equipment will be calibrated daily and records kept in the daily field logbook. The SSO may perform exposure monitoring if needed and will ensure that equipment is properly maintained.

4.4 FLOYD|SNIDER PROJECT PERSONNEL

All Floyd|Snider project personnel involved in field work activities will take precautions to prevent accidents and/or incidents from occurring to themselves and others in the work areas. Employees will report all accidents and/or incidents or other unsafe working conditions to the HSO/SS or SSO immediately. Employees will inform the HSO/SS or SSO of any physical conditions that could impact their ability to perform field work.

4.5 TRAINING REQUIREMENTS

All Floyd|Snider project personnel must comply with applicable regulations specified in Washington Administrative Code (WAC) Chapter 296-843, Hazardous Waste Operations (HAZWOP), administered by the Washington State Department of Labor and Industries (L&I). Project personnel will be 40-hour HAZWOP trained and maintain their training with an annual 8-hour refresher. Personnel with limited tasks and minimal exposure potential will be required to have 24-hour training and a site hazard briefing and be escorted by a trained employee. Personnel with defined tasks that do not include potential contact with disturbed site soils, waste, groundwater, or dust (e.g., surveying, utility locating) are not required to have any level of hazardous waste training beyond a site emergency briefing and hazard orientation by HSO/SS. Floyd|Snider project personnel will fulfill the medical surveillance program requirements.

In addition to the 40-hour course and 8-hour refreshers, the HSO/SS will have completed an 8-hour HAZWOP Supervisor training as required by WAC 296-843-20015. At least one person on-site during field work will have current CPR/First Aid certification. All field personnel will have a minimum of 3 days of hazardous materials field experience under the direction of a skilled supervisor. Documentation of all required training will be maintained on site.

Additional site-specific training that covers on-site hazards, PPE requirements, use and limitations, decontamination procedures, and emergency response information as outlined in this HASP will be given by the HSO/SS before on-site work activities begin. Daily health and safety meetings will be documented on the Daily Tailgate Safety Meeting Form included in this HASP as Appendix A.

4.6 MEDICAL SURVEILLANCE

All Floyd|Snider field personnel are required to participate in Floyd|Snider's medical surveillance program, which includes biennial audiometric and physical examinations for employees involved in HAZWOP projects. The program requires medical clearance before respirator use or participating in HAZWOP activities. Medical examinations must be completed before conducting field work activities and on a biennial basis. These medical monitoring programs must be in compliance with all applicable worker health and safety regulations.

5.0 Hazard Evaluation and Risk Analysis

In general, there are three broad hazard categories that may be encountered during site work: chemical exposure hazards, fire/explosion hazards, and physical hazards. Sections 5.1 through 5.3 discuss the specific hazards that fall within each of these broad categories.

5.1 CHEMICAL EXPOSURE HAZARDS

This section describes potential chemical hazards associated with soil sample collection. Based on previous site investigation information, the chemicals present at this site that have been retained as site contaminants of concern (COCs) are gasoline and diesel range hydrocarbons in soil and gasoline and diesel range hydrocarbons, benzene, toluene, and total xylenes in groundwater.

Human health hazards are presented in the table below. This information covers potential toxic effects that might occur if relatively significant acute and/or chronic exposure were to happen. This information does not mean that such effects will occur from the planned site activities. Potential routes of exposure include inhalation, dermal contact, ingestion, and eye contact. The primary exposure route of concern during site work is ingestion of contaminated soil, though such exposure is considered unlikely and highly preventable. In general, the chemicals that may be encountered at this site are not expected to be present at concentrations that could produce significant exposures. The types of planned work activities and use of monitoring procedures and protective measures will limit potential exposures at this site. The use of appropriate PPE and decontamination practices will assist in controlling exposure through all pathways to the contaminants listed in the table below. In addition a 10.6 eV Photoionization Detector (PID), or equivalent device, will be used to monitor the concentration of organic vapors in workers' breathing zones. Suspend work if the concentration of vapors is measured at 5 ppm or greater over a period of 1 minute, and wait for concentrations to decrease before restarting work or move the work area upwind. If vapor concentrations within the breathing zone remain above these levels, a respirator will be donned. Contractors will follow their own health and safety protocol when concerning elevated organic vapor concentrations during UST decommissioning and trenching activities.

Chemical Hazard	Department of Safety and Health Permissible Exposure Limits (8-hour TWA/STEL)	Highest Concentration	Routes of Exposure	Potential Toxic Effects
Gasoline Range Hydrocarbons	300 ppm/500 ppm	3,700 mg/kg in soil. 2,400 µg/L in groundwater.	Inhalation, skin absorption, ingestion, skin/eye contact	Irritation to eyes, skin, mucus membranes; headache; fatigue; blurred vision; dizziness; slurred speech; confusion; convulsions; liver, kidney damage.

Chemical Hazard	Department of Safety and Health Permissible Exposure Limits (8-hour TWA/STEL)	Highest Concentration	Routes of Exposure	Potential Toxic Effects
Diesel Range Hydrocarbons	N/A	24,000 mg/kg in soil. 3,400 µg/L in groundwater.	Inhalation, skin absorption, ingestion, skin/eye contact	Irritation to eyes, skin, mucus membranes; headache; fatigue; blurred vision; dizziness; slurred speech; confusion; convulsions; liver, kidney damage.
Benzene	1 ppm/5 ppm	1.1 mg/kg in soil. 270 µg/L in groundwater.	Inhalation, skin absorption, ingestion, skin/eye contact	Irritation to eyes, skin, mucus membranes, resp. sys.; headache; fatigue; nausea, staggered gait; blurred vision; dizziness; slurred speech; bone marrow cancer [carc.]
Toluene	200 ppm/300 ppm	11 mg/kg in soil. 3.1 µg/L in groundwater.	Inhalation, skin absorption, ingestion, skin/eye contact	Irritation to eyes, skin, mucus membranes, resp. sys.; confusion; headache; euphoria; dilated pupils; dizziness; anxiety; insomnia; liver and kidney damage
Ethylbenzene	100 ppm/125 ppm	15 mg/kg in soil. 84 µg/L in groundwater.	Inhalation, skin absorption, ingestion, skin/eye contact	Irritation to eyes, skin, resp. sys.; throat irritation; dizziness; weakness; drowsiness; narcosis; kidney damage; hemorrhage of lung tissue.
Xylenes	100 ppm/150 ppm	47 mg/kg in soil. 78 µg/L in groundwater.	Inhalation, skin absorption, ingestion, skin/eye contact	Irritation to eyes, skin, nose, throat; excitement; drowsy; staggered gait; nausea; vomit; abdomen pain; liver and kidney damage

Abbreviations:
STEL Short-Term Exposure Limit
TWA Time-Weighted Average

5.2 FIRE AND EXPLOSION HAZARDS

Flammable and combustible liquid hazards may occur from buried in-place USTs. When on-site storage is necessary, such material will be stored in containers approved by the Washington State Department of Transportation in a location not exposed to strike hazards and provided with secondary containment. A minimum 2-A:20-B fire extinguisher will be located within 25 feet of

the storage location and where refueling occurs. Any subcontractors bringing flammable and combustible liquid hazards to the site are responsible for providing appropriate material for containment and spill response, and the handling of these provisions should be addressed in their respective HASP. Transferring of flammable liquids (e.g., gasoline) will occur only after making positive metal-to-metal connection between the containers, which may be achieved by using a bonding strap. Storage of ignition and combustible materials will be kept away from fueling operations.

5.3 PHYSICAL HAZARDS

When working in or around any hazardous, or potentially hazardous, substances or situations, all site personnel should plan all activities before starting any task. Site personnel shall identify health and safety hazards involved with the work planned and consult with the HSO/SS as to how the task can be performed in the safest manner, and if personnel have any reasons for concern or uncertainty.

All field personnel will adhere to general safety rules including wearing appropriate PPE—hard hats, steel-toed boots, high-visibility vests, safety glasses, gloves, and hearing protection, as appropriate. Eating, drinking, and/or use of tobacco or cosmetics will not be permitted in work areas. Personnel will prevent splashing of liquids containing chemicals and minimize dust emissions.

The following table summarizes a variety of physical hazards that may be encountered at the Site during work activities. For convenience, these hazards have been categorized into several general groupings with recommended preventative measures.

Hazard	Cause	Preventative Measures
Head strike	Falling and/or sharp objects, bumping hazards.	Hard hats will be worn by all personnel at all times when overhead hazards exist, such as during drilling activities and around large, heavy equipment. Maintain a safe distance from equipment that is equivalent to the full, extended reach of all moving parts. Maintain visual contact with equipment operators. Be mindful of your position and keep out of the intended pathway(s) of moving vehicles.
Foot/ankle twist, crush, slip/trip/fall	Sharp objects, dropped objects, uneven, and/or slippery surfaces.	Steel-toed boots must be worn at all times on-site while heavy equipment is present. Pay attention to footing on uneven or wet terrain and do not run. Keep work areas organized and free from unmarked trip hazards. Do not place body parts in areas where articulated or moving parts are present; unless parts have been locked and/or blocked.

Hazard	Cause	Preventative Measures
Engulfment/entrapment from the collapse of an excavation or trench	Excavation collapse	An excavation competent person or someone that has experience around excavations should be on site to enforce safety requirements. Do not enter any excavation or trench that is deeper than 4 ft from the ground surface. Keep equipment away from the edge of a trench or excavation to prevent collapse of the wall of the excavation. Do not stand or walk within 6 ft of the edge of any excavation.
Collect a soil sample from a piece of heavy equipment	Being struck by moving or mobile equipment	Approach equipment to collect environmental samples after the equipment has been grounded and moving parts have been secured, the operator has granted permission, and the operator has removed his/her hands from the controls.
Hand cuts, splinters, and chemical contact	Hands or fingers pinched or crushed, chemical hazards including dermal exposure to laboratory sample preservatives. Cut or splinters from handling sharp/rough objects and tools.	Nitrile safety gloves will be worn to protect the hands from dust and chemicals. Leather or cotton outer gloves will be used when handling sharp-edged rough materials or equipment. Do not collect soil samples from the excavator bucket until the bucket is resting on the ground at least 6 feet away from the test pit, the thumb on the bucket is lowered, eye contact is made with the operator, and the operator's hands are off the controls. Refer to preventive measures for mechanical hazards below.
Eye damage from flying materials, or splash hazards	Sharp objects, poor lighting, exposure due to flying debris or splashes.	Safety glasses will be worn at all times on-site. Care will be taken during decontamination procedures to avoid splashing, or dropping equipment into decontamination water. Face shields may be worn over safety glasses if splashing is occurring during sampling or decontamination.
Electrical hazards	Underground utilities, overhead utilities. Electrical cord hazards, such as well development pumps.	Utility locator service will be used prior to any investigation to locate all underground utilities. Visual inspection of work areas will be conducted prior to starting work. Whenever possible, avoid working under overhead high voltage lines. Make sure that no damage to extension cords occurs. If an extension cord is used, make sure it is the proper size for the load that is being served and rated SJOW or STOW (an "-A" extension is acceptable for either) and inspected prior to use for defects. The plug connection on each end should be of good integrity. Insulation must be intact and extend to the plugs at either end of the cord.

Hazard	Cause	Preventative Measures
Mechanical hazards	Heavy equipment such as drill rigs, excavator, service trucks, etc. Conducting work in road right-of-ways (on the road shoulder).	Ensure the use of competent operators, backup alarms, "kill" switches, regular maintenance, daily mechanical checks on all hoses and cables, and proper guards. Verify that "whip checks" or similar securing devices are installed on "quick-connections," where the failure of high-pressure connections could lead to the whipping of hoses. Discuss the need for plastic sheeting or other methods to contain drips (hydraulic oil, motor oil, etc.) to determine if measures are needed to prevent releases to the ground. Subcontractors will supply their own HASP. All project personnel will make eye contact with operator and obtain a clear OK before approaching or working within swing radius of heavy equipment, staying clear of swing radius. Obey on-site speed limits.
Traffic hazards	Vehicle traffic and hazards when working near right-of-ways.	Multiple field staff will work together (buddy system) and spot traffic for each other. Avoid working with your back to traffic whenever possible. Set up fencing to prevent third parties from entering site.
Noise damage to hearing	Machinery creating more than 85 decibels TWA, less than 115 decibels continuous noise, or peak at less than 140 decibels.	Wear earplugs or protective ear covers when a conversational level of speech is difficult to hear at a distance of 3 feet or if an employee must shout to be understood by nearby coworkers; when in doubt, a sound level meter may be used on-site to document noise exposure.
Strains from improper lifting	Injury due to improper lifting techniques, over-reaching/overextending, lifting overly heavy objects.	Use proper lifting techniques and mechanical devices where appropriate. The proper lifting procedure first involves testing the weight of the load by tipping it. If in doubt, ask for help. Do not attempt to lift a heavy load alone. Take a good stance and plant your feet firmly with legs apart, one foot farther back than the other. Turn the forward foot and point it in the direction of the eventual movement. Make sure you stand on a level area with no slick spots or loose gravel. Use as much of your hands as possible, not just your fingers. Keep your back straight, almost vertical. Bend at the hips, holding load close to your body. Keep the weight of your body over your feet for good balance. Use large leg muscles to lift. Push up with the foot positioned in the rear as you start to lift. Avoid quick, jerky movements and twisting motions. Never try to lift more than you are accustomed to lifting.

Hazard	Cause	Preventative Measures
Cold stress	Cold temperatures and related exposure.	Workers will wear appropriate clothing, and take breaks in a heated environment when working in cold temperatures. **Further detail on cold stress is provided in Section 5.3.1.**
Accidents due to inadequate lighting	Improper illumination.	Work will proceed during daylight hours only, or under sufficient artificial light.
Perform operation and maintenance of a remediation system	General hazards	Operate equipment according to established procedures and/or the manufacturer's recommendations. Inspect and evaluate the exterior and interior of the treatment system enclosure for potential, unanticipated hazards prior to beginning work. Use approved, intrinsically-safe equipment, appliances, and associated switches in hazardous locations. Do not place ignition sources within treatment enclosures or near monitoring points. Post warnings, such as, 'no smoking or open flames' signs, if unauthorized/untrained personnel may approach the system. Keep a spill kit within the compressor shed.

5.3.1 Cold Stress

Field work is expected to be completed in winter or spring months; therefore, exposure to cold temperatures may occur. Exposure to moderate levels of cold can cause the body's internal temperature to drop to a dangerously low level, causing hypothermia. Symptoms of hypothermia include: slow, slurred speech; mental confusion; forgetfulness; memory lapses; lack of coordination; and drowsiness.

To prevent hypothermia, site personnel will stay dry and avoid exposure. Site personnel will have access to a warm, dry area, such as a vehicle, to take breaks from the cold weather and warm up. Site personnel will be encouraged to wear sufficient clothing in layers such that outer clothing is wind- and waterproof and inner layers retain warmth (wool or polypropylene), if applicable. Personnel will wear water-protective gear, such as rain coats and pants, during sediment sampling to avoid getting clothing wet. Site personnel will keep hands and feet well-protected at all times. The signs and symptoms and treatment for hypothermia are summarized below.

Signs and Symptoms

- Mild hypothermia (body temperature of 98–90 °F)
  - Shivering
  - Lack of coordination, stumbling, fumbling hands

  - Slurred speech
  - Memory loss
  - Pale, cold skin
- Moderate hypothermia (body temperature of 90–86 °F)
  - Shivering stops
  - Unable to walk or stand
  - Confused and irrational
- Severe hypothermia (body temperature of 86–78 °F)
  - Severe muscle stiffness
  - Very sleepy or unconscious
  - Ice cold skin
  - Death

Treatment of Hypothermia—Proper Treatment Depends on the Severity of the Hypothermia

- Mild hypothermia
  - Move to warm area.
  - Stay active.
  - Remove wet clothes and replace with dry clothes or blankets and cover the head.
  - Drink warm (not hot) sugary drinks.
- Moderate hypothermia
  - All of the above, plus:
    - call 911 for an ambulance.
    - cover all extremities completely.
    - place very warm objects, such as hot packs or water bottles, on the victim's head, neck, chest, and groin.
- Severe hypothermia
  - Call 911 for an ambulance.
  - Treat the victim very gently.
  - Do not attempt to re-warm—the victim should receive treatment in a hospital.

Frostbite

Frostbite occurs when the skin freezes and loses water. In severe cases, amputation of the frostbitten area may be required. While frostbite usually occurs when the temperatures are 30 °F or lower, wind chill factors can allow frostbite to occur in above-freezing temperatures. Frostbite typically affects the extremities, particularly the feet and hands. Frostbite symptoms include cold, tingling, stinging, or aching feeling in the frostbitten area followed by numbness and skin discoloration from red to purple, then white or very pale skin. Should any of these symptoms be

observed, wrap the area in soft cloth, do not rub the affected area, and seek medical assistance. Call 911 if the condition is severe.

Protective Clothing

Wearing the right clothing is the most important way to avoid cold stress. The type of fabric also makes a difference. Cotton loses its insulation value when it becomes wet. Wool, on the other hand, retains its insulation even when wet. The following are recommendations for working in cold environments:

- Wear *at least three layers* of clothing.
  - An outer layer to break the wind and allow some ventilation (like Gortex or nylon)
  - A middle layer of down or wool to absorb sweat and provide insulation even when wet
  - An inner layer of cotton or synthetic weave to allow ventilation
- Wear a hat—up to 40 percent of body heat can be lost when the head is left exposed.
- Wear insulated boots.
- Keep a change of dry clothing available in case work clothes become wet.
- Do not wear tight clothing—loose clothing allows better ventilation.

Work Practices

- Drinking—Drink plenty of liquids, avoiding caffeine and alcohol. It is easy to become dehydrated in cold weather. Workers will be provided access to at least 1 quart of drinking water per hour.
- Work Schedule—If possible, heavy work should be scheduled during the warmer parts of the day. Take breaks out of the cold in heated vehicles.
- Buddy System—Try to work in pairs to keep an eye on each other and watch for signs of cold stress.

5.3.2 Biohazards

Bees and other insects may be encountered during the field work tasks. Persons with allergies to bees will make the HSO/SS aware of their allergies and will avoid areas where bees are identified. Controls such as repellents, hoods, nettings, masks, or other PPE may be used. Report any insect bites or stings to the HSO/SS and seek first aid, if necessary. Inspect the work area for hazardous plants, medical waste (syringes and similar items), and indications of hazardous organisms, and avoid such areas if possible.

Site personnel will maintain a safe distance from any urban wildlife encountered, including stray dogs, raccoons, and rodents, to preclude a bite from a sick or injured animal.

5.3.3 Traffic Hazards

For work being conducted near or alongside a roadway, signs, signals, and barricades should be utilized. Because signs, signals, and barricades do not always provide appropriate protection, spotters will be used to ensure traffic is monitored during work activities along roadways. All workers will wear high visibility reflective neon/orange vests. Although lane closures are not anticipated for off-site work, traffic control plans and city-issued permits will be required for any lane closures. If lane closures are required, an addendum to this HASP will be required to document the health and safety procedures associated with lane closure and use of flaggers.

6.0 Site Monitoring

The following sections describe site monitoring techniques and equipment that are to be used during site field activities. The HSO/SS, or a designated alternate, is responsible for site control and monitoring activities.

6.1 SITE MONITORING

All noise-generating activities will be conducted during the allowable noise-generating hours as stated by the City of Ellensburg. Construction Noise Hours for the City of Ellensburg are between 7:00 a.m. and 9:00 p.m. Monday through Friday.

Visual monitoring for dust will be conducted by the HSO/SS to ensure that inhalation of contaminated soil particles does not occur. If visible dust is present in the work area, either work will cease, and the area will be cleared until the dust settles, or dust masks will be worn. Water may be used to suppress any dust clouds generated during work activities.

A PID will be used on-site for characterization of soil samples collected. This PID will also be used to monitor vapor concentrations in breathing air of total volatile organic compounds (VOCs) in parts per million. Should the PID read a sustained concentration of total VOCs greater than 5 parts per million (ppm) over a period of 1 minute, the HSO/SS will stop work and evacuate the area until vapor concentrations return to background levels. If necessary, actions may be taken to reduce vapor concentrations in the work area by covering exposed soil in drums, or drilling cuttings, moving upwind, or using fans or foam to dissipate vapors from the work area. If vapor concentrations within the breathing zone remain above these levels, a respirator will be donned.

The HSO/SS will visually inspect the work site at least daily to identify any new potential hazards. If new potential hazards are identified, immediate measures will be taken to eliminate or reduce the risks associated with these hazards.

7.0 Hazard Analysis by Task

The following section identifies potential hazards associated with each task listed in Section 3.2 of this HASP.

Task	Potential Hazard
Oversight of UST decommissioning activities, trenching and sump installation with an excavator	Exposure to loud noise; overhead hazards; head, foot, ankle, hand, and eye hazards; electrical and mechanical hazards; lifting hazards; dust inhalation hazards; potential dermal or eye exposure to site contaminants in soil; fall hazards; engulfment; traffic hazards; being struck by heavy equipment (excavator bucket, company vehicles); and heat and cold exposure hazards. Other hazards may include contact with utilities or damage to utilities, incorrectly functioning excavator/fluid release from equipment, pinch points from handling tools and equipment, falling equipment, malfunctioning high-pressure fittings (whip checks) and hydraulic lines, biological hazards, and third parties being in close proximity to work zones.
Collection of soil samples from the excavator bucket	Chemical hazards include potential dermal or eye exposure to site contaminants in soil. Physical hazards include slip, trip, or fall hazards, failing and engulfment into a test pit with excavation collapse, falling equipment, being struck by moving or mobile equipment, pinch points, noise hazards, malfunctioning high pressure pneumatic and hydraulic lines; heat and cold exposure hazards; and biological hazards. Pinch points in areas where articulated or moving parts are present, unless locked and/or blocked.
Oversight of drilling activities and installation of monitoring wells	Exposure to loud noise; overhead hazards; head, foot, ankle, hand, and eye hazards; electrical and mechanical hazards; lifting hazards; dust inhalation hazards; potential dermal or eye exposure to site contaminants in soil; fall hazards; engulfment; traffic hazards; being struck by heavy equipment (drill rig, company vehicles); and heat and cold exposure hazards. Other hazards may include contact with utilities or damage to utilities, incorrectly functioning excavator/fluid release from equipment, pinch points from handling tools and equipment, falling equipment, malfunctioning high-pressure fittings (whip checks) and hydraulic lines, exposure to chemicals; biological hazards, and third parties being in close proximity to work zones.
Development of monitoring wells	Being struck by vehicles, encroachment of the work zone by third parties, pinch points, slip, trip falls, cuts and contusions from handling/moving equipment, lifting hazards and musculoskeletal injuries, electric shock from the use of corded electrical tools and equipment; potential dermal or eye exposure to site contaminants in groundwater; accidental release to ground.

Task	Potential Hazard
Collection of groundwater and floating product samples	Being struck by vehicles, encroachment of the work zone by third parties, pinch points, slip, trip falls, cuts and contusions from handling sample bottles or moving equipment, lifting hazards and musculoskeletal injuries, electric shock from the use of corded electrical tools and equipment; potential dermal or eye exposure to site contaminants in groundwater and floating product; accidental release to ground.
Performing operation and maintenance of the skimmer system	Fire/explosions from ignition sources; release of hazardous energy (electrical, mechanical, pressure); falls from ladders; exposure to chemicals; pinch/crush points, cuts and concussions, and musculoskeletal injuries associated with the removal and replacements of lids or moving heavy objects.

8.0 Personal Protective Equipment

All work involving heavy equipment and drilling will proceed in Level D PPE, which shall include hard hat, high-visibility vest/jacket, steel-toed boots, hearing protection, eye protection, and nitrile gloves.

All personnel will be properly fitted and trained in the use of PPE. The level of protection will be upgraded by the HSO/SS whenever warranted by conditions present in the work area. The HSO/SS will periodically inspect equipment such as gloves and hard hats for defects.

9.0 Site Control and Communication

9.1 SITE CONTROL

Pedestrians and other unauthorized personnel will not be allowed in the work areas. Access to the work site will be restricted to designated personnel. The purpose of site control is to minimize the public's potential exposure to site hazards, to prevent vandalism in the work area, to prevent access by unauthorized persons, and to provide adequate facilities for workers. If members of the public enter the work area, field staff will stop work until the public have left the work area. The site will be fenced to prevent potential third party injuries.

Work area controls and decontamination areas will be provided to limit the potential for chemical exposure associated with site activities, and transfer of contaminated media from one area of the site to another. The support zone (SZ) for the site includes all areas outside the work area and decontamination areas. An exclusion zone/contamination reduction zone (EZ/CRZ) and SZ will be set up for work being conducted within the limits of the site. Only authorized personnel shall be permitted access to the EZ/CRZ. For work being conducted outside the limits of the site (road shoulders), the EZ/CRZ around work locations will be demarcated with cones and/or barrier hazard tape as needed to effectively limit unauthorized access. Staff will decontaminate all equipment and gear as necessary prior to exiting the CRZ. Decontamination areas will be constructed with plastic sheeting on the ground, to reduce transport of contaminated soils from the EZ to the SZ.

9.2 COMMUNICATION

All site work will occur in teams and the primary means of communication on-site and with off-site contacts will be via cell phones. An agreed-upon system of alerting via air horns and/or vehicle horns may be used around heavy equipment to signal an emergency if shouting is ineffective.

10.0 Decontamination

Decontamination procedures will be strictly followed to prevent off-site spread of contaminated soil or water. The HSO/SS will assess the effectiveness of decontamination procedures by visual inspection.

10.1 CONTAMINATION PREVENTION

To avoid personal contact with contaminants, do the following:

- Do not walk through areas of obvious or known contamination.
- Do not directly handle or touch contaminated materials.
- Make sure all PPE have no cuts or tears prior to donning.
- Fasten all closures on suits, and cover with tape, if necessary.
- Take particular care to protect any skin injuries.
- Stay upwind of airborne contaminants.
- Do not carry cigarettes, gum, food, drinks, or similar items into contaminated areas.

To avoid spreading equipment and sample contamination:

- Take care to limit contact with heavy equipment and vehicles.
- If contaminated tools are to be placed on non-contaminated equipment/vehicles for transport to the decontamination pad, use plastic to keep the non-contaminated equipment clean.
- Bag sample containers prior to emplacement of sample material.

The PM and SSO will specify the decontamination requirements for personnel and equipment to be implemented for each task. The exclusion zone and the work site in general must include an established SZ and personnel and equipment decontamination areas. The minimum decontamination that will be required for all field operations will consist of Level D decontamination as described below.

10.2 DECONTAMINATION

The majority of field activities are expected to be conducted using Level D or modified Level D PPE. Decontamination for activities requiring Level D protection will consist of the following:

- Remove and dispose of gloves.

Decontamination procedures are described below:

Decontamination Measures for Soiled PPE

Station Number	Operation	Procedure
1	Equipment Drop	Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths. Segregation at the drop reduces the probability of cross-contamination.
2	Glove Removal	Remove gloves. Deposit in container with plastic liner.
3	Field Wash	Hands and face are thoroughly washed. Shower as soon as possible.

11.0 Emergency Response and Contingency Plan

This section defines the emergency action plan for the Site. It will be rehearsed with all site personnel and reviewed whenever the plan is modified or the HSO/SS believes that site personnel are unclear about the appropriate emergency actions.

A muster point of refuge (that is clear of adjacent hazards and not located downwind of site investigation activities) will be identified by the HSO/SS and communicated to the field team each day. In an emergency, all site personnel and visitors will evacuate to the muster point for roll call. It is important that each person on-site understand their role in an emergency, and that they remain calm and act efficiently to ensure everyone's safety.

After each emergency is resolved, the entire project team will meet and debrief on the incident—the purpose is not to fix blame, but to improve the planning and response to future emergencies. The debriefing will review the sequence of events, what was done well, and what could be improved. The debriefing will be documented in a written format and communicated to the PM. Modifications to the emergency plan will be approved by the PM.

Reasonably foreseeable emergency situations include medical emergencies, accidental release of hazardous materials (such as gasoline or diesel) or hazardous waste, and general emergencies such as vehicle accident, fire, thunderstorm, and earthquake. Expected actions for each potential incident are outlined below.

11.1 MEDICAL EMERGENCIES

In the event of a medical emergency, the following procedures should be used:

1. Stop any imminent hazard if you can safely do so.
2. Remove ill, injured, or exposed person(s) from immediate danger if moving them will clearly not cause them harm and no hazards exist to the rescuers.
3. Evacuate other on-site personnel to a safe place in an upwind or cross-wind direction until it is safe for work to resume.
4. If serious injury or a life-threatening condition exists, call **911** for paramedics, fire department, and police.
    a. Clearly describe the location, injury, and conditions to the dispatcher. Designate a person to go to the site entrance and direct emergency equipment to the injured person(s). Provide the responders with a copy of this HASP to alert them to chemicals of potential concern.
5. Trained personnel may provide first aid/cardiopulmonary resuscitation if it is necessary and safe to do so. Remove contaminated clothing and PPE only if this can be done without endangering the injured person.
6. Call the PM and HSO/SS.
7. Immediately implement steps to prevent recurrence of the accident.

Refer to Figure 1 in Section 2.2 for a map showing the nearest hospital location with phone number and address.

11.2 ACCIDENTAL RELEASE OF HAZARDOUS MATERIALS OR WASTES

The steps to follow after the accidental release of hazardous materials or wastes are as follows:

1. Evacuate all on-site personnel to a safe place in an upwind direction until the HSO/SS determines that it is safe for work to resume.
2. Instruct a designated person to contact the PM and confirm a response.
3. Contain the spill, if it is possible and can be done safely.
4. If the release is not stopped, contact 911 to alert the fire department.
5. Contact the Washington Emergency Management Division at 1-800-258-5990 and the National Response Center at 1-800-424-8802 to report the release. In addition, notify the Washington State Department of Ecology's Central Regional Office at 1-509-575-2490.
6. Initiate cleanup.
7. The PM will submit a written report to the Washington State Department of Ecology in the event of a reportable release of hazardous materials or wastes.

11.3 GENERAL EMERGENCIES

In the case of fire, explosion, earthquake, or imminent hazards, work shall be halted and all on-site personnel will be immediately evacuated to a safe place. The local police/fire department shall be notified if the emergency poses a continuing hazard, by calling 911.

In the event of a thunderstorm, outdoor work will be discontinued until the threat of lightning has abated. During the incipient phase of a fire, the available fire extinguisher(s) may be used by persons trained in putting out fires, if it is safe for them to do so. Contact the fire department as soon as feasible.

11.4 EMERGENCY COMMUNICATIONS

In the case of an emergency, an air horn or vehicle horn will be used as needed to signal the emergency. One long (5-second) blast will be given as the emergency/stop work signal. If the air horn is not working, a vehicle horn and/or overhead waving of arms will be used to signal the emergency. In any emergency, all personnel will evacuate to the designated refuge area and await further instruction.

11.5 EMERGENCY EQUIPMENT

The following minimum emergency equipment will be readily available on-site and functional at all times:

- First Aid Kit—contents approved by the HSO/SS
- Portable fire extinguisher (2-A:10 B/C min)
- Spill Kit
- Flashlight

12.0 Administrative Requirements

12.1 RECORDKEEPING

The HSO/SS, or a designated alternate, will be responsible for keeping attendance lists of personnel present at site health and safety meetings, accident reports, and signatures of all personnel who have read this HASP.

13.0 Approvals

Project Manager	Date
Project Health & Safety Officer	Date

14.0 Signature Page

I have read this Health and Safety Plan and understand its contents. I agree to abide by its provisions and will immediately notify the HSO/SS if site conditions or hazards not specifically designated herein are encountered.

Name (Print)	Signature	Date	Company/Affiliation

EXHIBIT D

PROCEDURALLY EXEMPT PERMITS OR APPROVALS

1. SITE DEVELOPMENT PERMIT.

   The purpose of a site development permit is to provide a mechanism to review activities that involve clearing and removal of vegetation, excavation, grading, and earthwork construction that may or may not be in preparation of site development within the city in order to protect public health, safety, and welfare.

   The mechanism for design review can be one of three review processes: Type I, Type II or Type III.