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2600 Lou Menk Drive
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21 March 2014

Aimee Reynolds
Project Manager
Montana Department of Environmental Quality
Remediation Division
1100 North Last Chance Gulch
Helena, MT 59620-0901

Re: ***Joint Livingston Remediation Group (LRG) and BNSF Railway Company (BNSF) Work Plan Submittal – Former Electric Shop and Locomotive Shop Manway Remedial Design Study Work Plan***

Dear Aimee,

BNSF Railway Company (BNSF) joins the Livingston Remediation Group (LRG) in seeking the Montana Department of Environmental Quality's (DEQ's) approval to implement work specified in the Revised Former Electric Shop and Locomotive Shop Manway Remedial Design Study Work Plan prepared by Water & Environmental Technologies, Inc. (WET) and approved by the LRG. The Work Plan has been revised to address comments in DEQ's letter to BNSF dated February 27, 2014.

Upon receipt of DEQ's acceptance of the above-mentioned Work Plan, BNSF's consultant will be present to provide oversight of the LRG contractor's execution of the specified scope of work.

Please feel free to contact me with any questions.

Sincerely,

Allen Stegman

ENCLOSURE

cc: David Erickson/WET
Levi Fernandes, Kennedy/Jenks Consultants
Courtney Lawellin
Lezlie Nelson/LRG

FORMER ELECTRIC SHOP AND LOCOMOTIVE SHOP MANWAY REMEDIAL DESIGN STUDY WORK PLAN

BNSF Livingston Shop Complex Facility, Livingston, Montana

Prepared for:

Livingston Restoration Group

Livingston, MT

Prepared by:

Water & Environmental Technologies, PC

Moonlight Professional Building
480 East Park Street, Suite 200
Butte, MT 59701

March 2014

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List of Acronyms

BNSF	BNSF Railway Company
CVOC	chlorinated volatile organic compound
DEQ	Montana Department of Environmental Quality
DNAPL	dense non-aqueous phase liquid
Energy	Energy Laboratories
EPA	United States Environmental Protection Agency
ERCL	Environmental Requirements, Criteria, and Limitations
eV	electron volts
HASP	Health and Safety Plan
IDW	investigation-derived waste
ISCO	in situ chemical oxidation
LRG	Livingston Restoration Group
MRL	Montana Rail Link
NAPL	non-aqueous phase liquid
OSS	OILSCREENSOIL™
PCE	tetrachloroethene
PID	photoionization detector
PPE	personal protective equipment
QAPP	Quality Assurance Project Plan
QA/QC	quality assurance/quality control
RA	remedial action
RD	remedial design
RD/RA	Remedial Design/Remedial Action
ROD	Record of Decision
SAP	Sampling and Analysis Plan
SI	Supplemental Investigation
SIM	selective ion monitoring
SOG	Standard Operating Guideline
SPLP	synthetic precipitation leaching procedure
SVE	soil vapor extraction

THASP	Task-Specific Health and Safety Plan
TIC	Tentatively Identified Compounds
VOC	volatile organic compound
WET	Water and Environmental Technologies, PC

1.0 INTRODUCTION

Water and Environmental Technologies, PC (WET) has prepared this Work Plan on behalf of the Livingston Restoration Group (LRG) for a Remedial Design (RD) Study to be conducted in and around the industrial sewer manways associated with the former Electric Shop and Locomotive Shop structures located on the Burlington Northern Livingston Shop Complex Facility (Facility) in Livingston, Montana. The Facility location is shown on Figure 1.

This Work Plan provides details for a subsurface RD study to provide information about the characteristics, distribution, and treatability of chlorinated volatile organic compound (CVOC) containing soils in the vicinity of the former Electric Shop and Locomotive Shop industrial sewer line manways at the Facility (Figure 1). Based upon prior investigative observations (e.g., staining, sheens, odors), some of the soils in both the vadose and saturated zones beneath the manways contain residues that may continue to be sources of the dissolved CVOCs in groundwater. Boring placement and soil sampling procedures are intended to allow for the acquisition of information and data adequate to: (1) approximate the relative contribution of the CVOC-containing soils (CVOC "source" soils) around the manways to dissolved CVOC concentrations that persist in proximal alluvial aquifer groundwater, (2) describe the approximate geometry (shape) and volumes of manway area soils containing residual CVOC-bearing materials that continue to be a source of dissolved CVOCs in groundwater, and (3) evaluate in situ and ex situ manway area source material remedial options to eliminate or reduce the contribution of such source materials around the manways to dissolved CVOCs in groundwater. The investigation will incorporate sonic drilling methods to allow full penetration through the alluvium to reach bedrock, and provide continuous core samples for characterization.

All field procedures will be conducted in accordance with the Montana Department of Environmental Quality (DEQ)-approved Facility-Wide Sampling and Analysis Plan (Facility-Wide SAP) (Kennedy/Jenks Consultants 2006) and Quality Assurance Project Plan (QAPP) (Appendix B of Facility-Wide SAP), as required by the DEQ. Facility-Wide documents were originally formed to avoid redundancy. Deviations and/or modifications to the Facility-Wide SAP are provided in supplemental investigation (SI) and remedial design/remedial action (RD/RA) work plans. To simplify the review process and operational control of the Facility by DEQ, all work plans prepared by WET will be submitted following this protocol and will adhere to the methods provided in the documents, unless otherwise noted. Field activities will adhere to methodologies described in Standard Operating Guidelines (SOGs) identified in Appendix A of the Facility-Wide SAP. Field procedures in the Facility-Wide SAP will not be included in work plans provided modifications/additions to a protocol or procedure are not proposed.

Investigation-derived waste (IDW) generated during implementation of this work plan will include soil cuttings, well development water, decontamination water, and all disposable personal protective equipment (PPE) or sampling equipment. The IDW will be managed as described in the Facility-Wide SAP unless otherwise directed by the DEQ.

1.1 BACKGROUND

The former Electric Shop and Locomotive Shop each have floor drain sewer systems that are used to collect fluids generated during repair operations (Figure 2). Historically, fluids entering the drains

conveyed CVOCs and hydrocarbons originating from repair/maintenance operations in both structures. The primary areas of concern include two sets of manways; one located at the northeast corner of the former Electric Shop (MH-3); and the second set located immediately east of the Locomotive Shop (MH-1 and MH-2) (see Figure 2). The two sets of manways are joined by the primary sewer line carrying drain effluent to the on-site wastewater treatment plant.

Previous investigations at the Facility confirmed past leakage from the manways. Soil vapor extraction (SVE) has been used to treat vadose zone soils in the manways areas and in-situ chemical oxidation (ISCO) has been used to treat manway area saturated zone soils. The ISCO applications likely removed or destroyed CVOC mass in the saturated soils beneath the water table in the manway areas resulting in a short-term reduction in dissolved CVOC concentrations in alluvial groundwater. However, CVOC concentrations rebounded following the ISCO applications and continue to persist indicating that additional remedial action may need to be performed to further reduce or eliminate this dissolved CVOC source.

1.2 OBJECTIVES

The objectives of this RD study are to: (1) further characterize the physical/chemical nature of soil matrices in both the vadose and saturated zones beneath the manways which contain residues that may continue to be sources of the dissolved CVOCs in groundwater; (2) test CVOC-containing soil to acquire CVOC soil-to-groundwater leaching/partitioning information, (3) characterize the approximate geometry (shape) and volumes of manway area CVOC "source" soils ; and (4) acquire bench scale empirical data about the performance of chemical oxidants on manway area CVOC-impacted soils. The data collected during this investigation will compliment historical data collected in the vicinity for delineation, and ultimately will be used to determine remedial alternatives to address vadose and saturated zone contamination.

1.3 HEALTH AND SAFETY PLAN

A task-specific health and safety plan (THASP) has been prepared and is included in Appendix A. In addition to the THASP, work will be conducted in conjunction with the *Facility-Wide Health and Safety Plan (Revision No. 3)* (Facility-Wide HASP) (Kennedy/Jenks Consultants 2008). Daily safety briefings will be conducted to discuss scope of work and health and safety considerations.

1.4 ACCESS

Site access will be coordinated with Montana Rail Link (MRL) and BNSF Railway Company (BNSF).

1.5 ENVIRONMENTAL REQUIREMENTS, CRITERIA AND LIMITATIONS (ERCLs)

Environmental requirements, criteria, and limitations (ERCLs) have been developed by DEQ for the Facility and are included in Attachment A of the Record of Decision (ROD) (DEQ 2001). WET completed an analysis of the implementation of the activities included in this work plan for compliance with the ERCLs for the Facility (Appendix B). The activities included in this work plan comply with ERCLs for the Facility.

2.0 SUBSURFACE INVESTIGATION

2.1 BORING/WELL LOG REVIEW

Boring logs for previous drilling operations in the vicinity of the manway and sewer line system will be reviewed for information regarding extent and nature of petroleum and CVOCs. Each boring will be included in an analysis attempting to establish the geometry and degree of contamination in the vadose zone. Boring locations for this investigation will then be selected to complete a characterization of the geometry of the manway area CVOC-impacted soils adequate to determine if a remedial action is needed and potentially to design a focused remedial action for the manway areas.

2.2 SOIL EXPLORATIONS

The boreholes will be advanced to bedrock using rotosonic drilling techniques to minimize disturbance of samples and allow accurate screening of soils. In addition, test pitting or trenching will be performed around select manways. The soil borings and excavations will be logged and the soil from borings and excavations will be field screened across the entire vertical interval to assess the potential presence of volatile organic compounds (VOCs) and/or petroleum hydrocarbons. Field screening techniques include:

- Visual inspection of soils to identify petroleum hydrocarbon staining.
- Sheen tests using deionized water to assess the potential presence of separate phase petroleum hydrocarbons in soil samples.
- Organic vapor headspace monitoring using a photoionization detector [PID; 11.7 electron volts (eV)] to identify the potential presence of VOCs in soil samples (see SOGs-4A and 4B).
- Field screening using a hydrophobic field screening method [i.e., Red Oil O dye, OILSCREENSOIL™ (OSS), or other suitable dye] to test for the presence of dense non-aqueous phase liquids (DNAPL) (See SOG D-02).

Because exfiltration of industrial wastewater line fluids from the bottoms of the manways may be the primary mode by which CVOCs were released to the subsurface in the manway areas, the excavation/trenching work will be conducted immediately adjacent to select manways, trenching out radially along accessible pathways free of utilities. Excavations will be advanced to the maximum depth attainable or to the point soils become unstable and the excavation unmanageable. After excavation activities, soil borings will be "stepped out" laterally from the manways and/or trenches on an iterative basis based upon real time evaluations of the field conditions encountered (Figure 3). At each Manway location (MH-3, and the MH-1/MH-2 set), one soil boring will be drilled directly through the bottom of each manway or as close to the manway as possible on the down-gradient side. Final excavation and soil boring locations may vary from those shown in Figure 3 due to obstructions, utilities, and field conditions encountered. Actual trench and borehole locations will be documented in the RD Study Report (See Section 4.0).

Soil sampling will emphasize collection of soil samples that are stained/discolored by petroleum or other substances, contain residual non-aqueous phase liquids (NAPLs), and/or exhibit measurable VOCs during field screening. Multiple borings may be drilled in close proximity to one another (or even "twinned" side by side) in order to obtain sufficient volumes and samples for duplicate analysis of representative CVOC "source" soil for analytical and bench scale testing.

Field screening will be performed for both unsaturated and saturated zone soils at each boring or test pit trenching location. Where field screening suggests that VOCs may be present at appreciable concentrations within the vadose zone, the unsaturated soil sample with the highest headspace PID measurement will be submitted for laboratory CVOC analysis. Representative samples of soils that are stained/discolored by petroleum or other substance, including those containing residual NAPLs, will also be collected and analyzed. If fine-grained deposits and/or weathered bedrock are encountered that appear to contain NAPLs and/or are discolored, representative sample(s) of these materials will also be collected for analyses. If field observations indicate that additional samples may provide important information, opportunistic samples will be collected and submitted for physical/chemical testing.

Subsurface sampling procedures for soil borings are outlined in SOG-7, and test pits in SOG-11. Test pit sampling will be conducted from open excavations. Field personnel will log borehole and test pits using the procedures described in SOG-13. Data collected during borehole advancement and from test pits (e.g., soil conditions, sampling locations/depths, depth to groundwater, etc.) will be documented in a field notebook and on appropriate field forms, (i.e., boring log), as specified in the Facility Wide SAP and SOG-13.

Test pits will be excavated to the desired depth and length using the trackhoe. The excavator bucket will be decontaminated between test pit locations by either brushing off residual soil and/or steam cleaning. Actual sampling depths and locations will vary from test pit to test pit. Representative samples will be collected by using a stainless steel or plastic scoop. Samples collected will be placed in laboratory supplied containers in a way that will minimize headspace in the sample container. Where possible and practicable, subsurface soil samples will be collected from the test pit sidewalls and/or excavation floor using a hand auger or similar device without entering the excavation. If attempts to retrieve a sample using a hand auger or similar device fail, then a sample may be collected from the excavator bucket. Samples collected from the excavator bucket will be distinguished as such for reporting purposes.

2.3 SOIL TRENCH AND BORING LOCATIONS

Soil trenching will be conducted in the vicinity of Manway MH-3 and along the northern end of the former Electric Shop as utilities allow. Initial soil borings will be advanced in support of trenching activities and when appropriate, directly through or immediately adjacent to manway structures. All locations will be chosen using criteria defined in section 2.1, in an attempt to acquire data adequate to fulfill the RD study objectives.

2.4 SOIL SAMPLING AND ANALYSIS

During advancement of soil borings, samples will be collected continuously and screened for the presence of hydrocarbons and/or other wastewater-related substances. The samples will be screened in the field as described above in section 2.2. A subset of the soil samples collected will be selected for laboratory testing. Both samples that show indications of petroleum sheens (or other substances) and samples that appear to be unaffected by wastewater releases will be selected for laboratory testing in order to: (1) document the spatial limits of the potential CVOC-impacted soils and (2) characterize the chemical composition of other substances that may have been co-deposited in the porous matrix of the impacted soils along with tetrachloroethene (PCE)-containing wastewater. The soil samples selected for analyses will be placed in laboratory supplied containers and shipped to Energy Laboratories in Billings, Montana

(Energy) or another appropriately certified laboratory. Soil samples will be analyzed for VOC using United States Environmental Protection Agency (EPA) Method 8260, 8270 in selective ion monitoring (SIM) mode, if necessary (with reporting of tentatively identified compounds or TICs), and hydrocarbon scan using EPA Method 8015 modified. Representative soil samples will also be selected and analyzed for general properties including total organic carbon, soil bulk density, particle size distribution, and porosity.

2.5 CVOC LEACHING POTENTIAL

Some saturated zone soil samples that, based upon field screening and follow-up EPH screening, contain petroleum residue and/or other substances which may serve to retain PCE within the soil matrix will be selected for evaluation of soil-water CVOC leaching potential using a modified synthetic precipitation leaching procedure (SPLP) methodology that is intended to represent an empirical partitioning between the bulk soil mass, including contained NAPL, and contracting water. The modified SPLP procedure was developed by Kennedy/Jenks Consultants and Energy Laboratories of Billings, Montana (Kennedy/Jenks Consultants 2011). The modified methodology is designed to minimize agitation of the soil samples. Because the soil samples selected for testing may contain petroleum as a NAPL within the soil pore spaces, NAPL may be artificially introduced into the SPLP extract by agitation of the soil sample normally used in SPLP testing. The agitation of soil samples in the SPLP test was intended to simulate conditions encountered in heterogeneous waste materials and is not analogous to subsurface conditions that occur during leaching processes in natural soils induced by infiltration or advective movement of groundwater. It is difficult or impossible to completely separate and remove the petroleum and entrained organics (such as CVOCs) that would be artificially mixed into the water extract by agitation and the reported analytical results for an extract derived from the standard SPLP may not accurately reflect the soil-water partitioning of the constituents of interest. Soil samples will be prepared by removing any gravel sized particles greater than 0.375 inch. Gravel sized particles will removed from the sample by hand (using appropriate PPE as opposed to sieving to reduce sample disturbance. Each sample collected for SPLP analysis will also include an analysis for total organic carbon. The SPLP procedure will be performed in accordance with EPA Method 1312 with the following modifications:

- Once the extraction fluid (i.e., extraction fluid #2) has been added to the extractor vessel the rotary extractor device will not be used. The extraction fluid #2 will be amended with sodium azide to a concentration of 0.5 percent to sterilize the media and reduce the potential effect of biodegradation. Sampling bungs or siphon tubes (made of inert materials such as glass) will be positioned immediately above the soil-water interface in the vessel to allow water samples to be withdrawn from the vessel near the interface. The closed extractor vessel will be placed in a secure location with the temperature conditions specified in EPA Method 1312 and left undisturbed. The extractor vessels used will be 2- or 4-liter sterile glass jars with Teflon-lined lids.

- Since agitation will not be performed, bottle extraction vessels will be used for both volatiles and non-volatile extractions. Bottles for SPLP testing of volatiles will be completely filled to minimize headspace.

- Once the extractor vessel has been closed it may be left undisturbed for up to 8 days to assure equilibrium is reached. A biocide will be incorporated to inhibit any biodegradation during the diffusion process.

- Care will be taken in collecting the extract sample for analysis to avoid entraining any particulates or NAPL. Water will be carefully withdrawn through the sampling bungs and/or siphon tubes with in-line glass fiber filters at a low flow rate that minimizes potential agitation of the soil-water interface and the potential for loss of volatiles during sample collection.

Both the solid (soil) phases and extracts will be analyzed for CVOC using EPA Method 8260.

2.6 BENCH SCALE TESTING FOR IN SITU TREATMENT

Based upon the nature of the soils encountered during the boring and sampling program and the results of soil chemical analyses and soil-water partitioning tests, representative CVOC "source" soils samples may be selected for bench-scale tests to evaluate ISCO. Oxidants evaluated will be identified in consultation with the bench scale testing service (PRIMA Environmental Inc., El Dorado Hill, California) and may include permanganate, ozone, ozone plus peroxide, persulfate, activated persulfate, hydrogen peroxide, and catalyzed hydrogen peroxide (Fenton's reagent). Testing would include measurement of soil oxidant demand, evaluation of contaminant removal, estimation of reagent dose and time required for contaminant removal, evaluation of potential secondary effects, and assessment of the ability of secondary effects to attenuate post-treatment. A bench-scale testing work plan will be prepared for DEQ review and approval.

2.7 SAMPLE SHIPPING AND HANDLING

Shipping and handling, and chain-of-custody procedures that will be followed are provided in Section B2.3 of the Facility-Wide QAPP and in SOG-3 (Appendix A of the Facility-Wide SAP).

2.8 QUALITY ASSURANCE QUALITY CONTROL (QA/QC)

QA/QC will be performed in accordance with the QAPP contained in the Appendix B of the Facility-Wide SAP. QC samples will be collected and analyzed for both field and laboratory operations to monitor precision and accuracy for the soil sampling activities. Field QC samples will include field duplicate (i.e., collocated) and blank samples. Collocated soil samples from the sonic drilling cores will be collected as "duplicates" for analysis during drilling at a frequency of ten percent. Sufficient sample volume will be collected to enable the laboratory to perform QA analyses (e.g., matrix spike and matrix spike duplicate analysis).

3.0 SCHEDULE

WET will begin scheduling RD Study activities following final approval by the DEQ. Field activities will begin following procurement and award of the drilling contract.

4.0 DELIVERABLE

WET will prepare a report outlining the results of the investigation within 90 days of receiving laboratory analytical results of soil sampling activities. The report will include descriptions of field activities, including tables outlining field screening results, figures showing trench/borehole locations and geological cross sections, as applicable, tabulated analytical laboratory results and data validation summaries, boring logs, and test pit logs if applicable.

5.0 REFERENCES

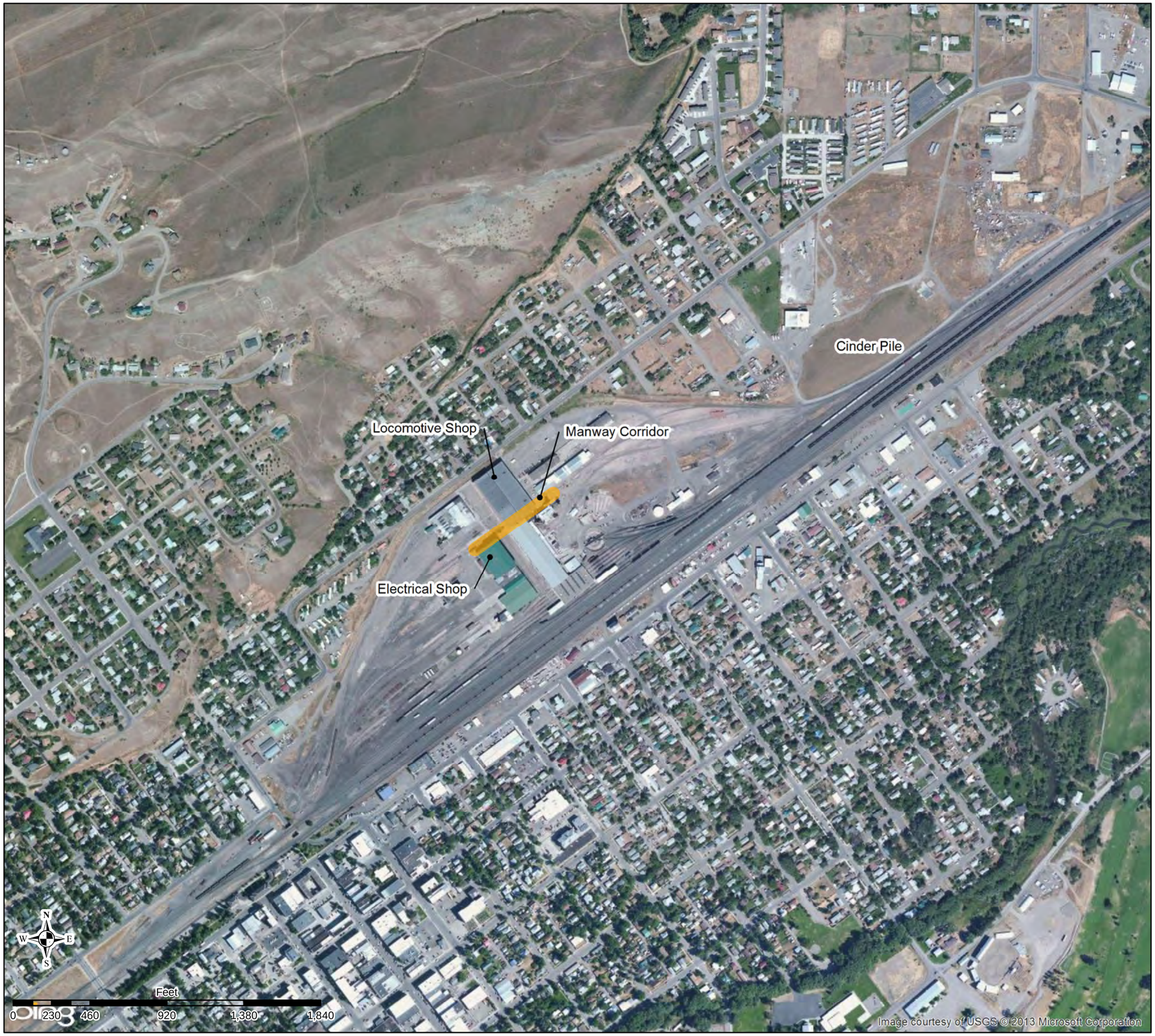
DEQ. 2001. Record of Decision, Burlington Northern Livingston Shop Complex. Montana Department of Environmental Quality, Remediation Division, September 2001.

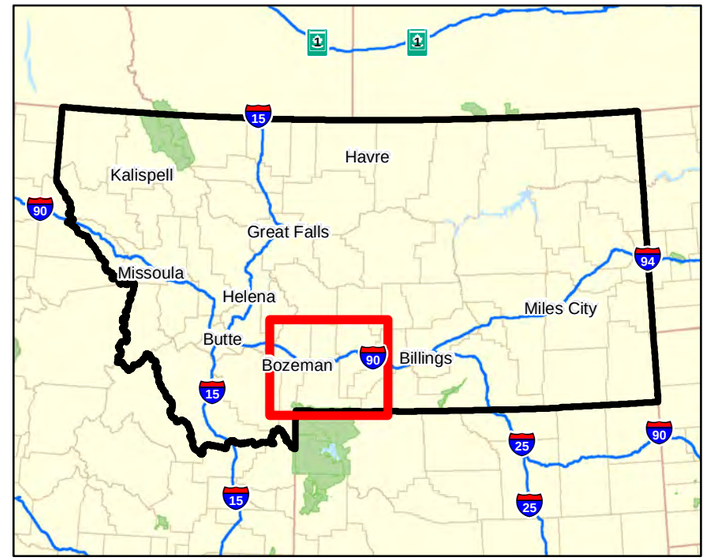
Kennedy/Jenks Consultants. 2006. Final Facility-Wide Sampling and Analysis Plan, Burlington Northern Livingston Shop Complex, Livingston, Montana, Kennedy/Jenks Consultants, March 2006.

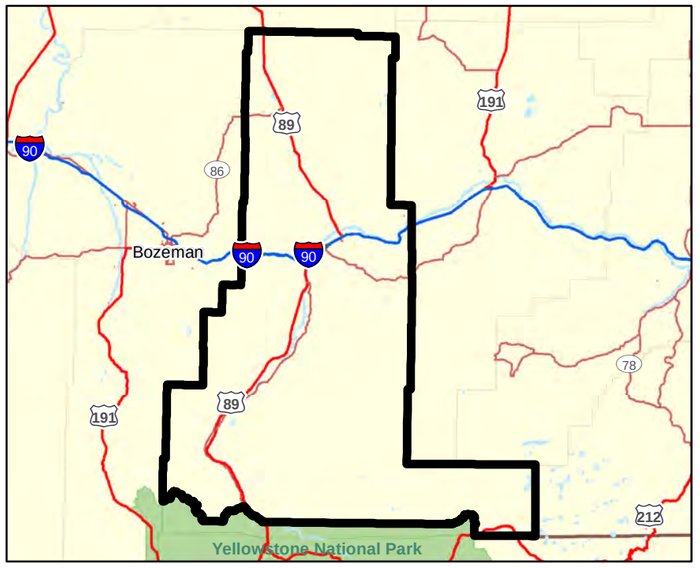
Kennedy/Jenks Consultants. 2008. Facility-Wide Health and Safety Plan (Revision No. 3), Burlington Northern Livingston Shop Complex, Livingston, Montana, Kennedy/Jenks Consultants, May 2008.

Kennedy/Jenks Consultants. 2011. Chemical Fate and Transport Analysis – 3rd Revised Supplemental Sampling and Analysis Plan, Former Burlington Northern Missoula Facility, BNSF Railway Company, Missoula, Montana. February 2011 (Updated March 2011). Kennedy/Jenks Consultants, Federal Way, WA.

FIGURES







WATER & ENVIRONMENTAL TECHNOLOGIES, PC

SITE LOCATION

Burlington Northern Livingston Shop Complex

Job#: LRGM01 Task 3

Date: 9/23/2013

FIGURE 1

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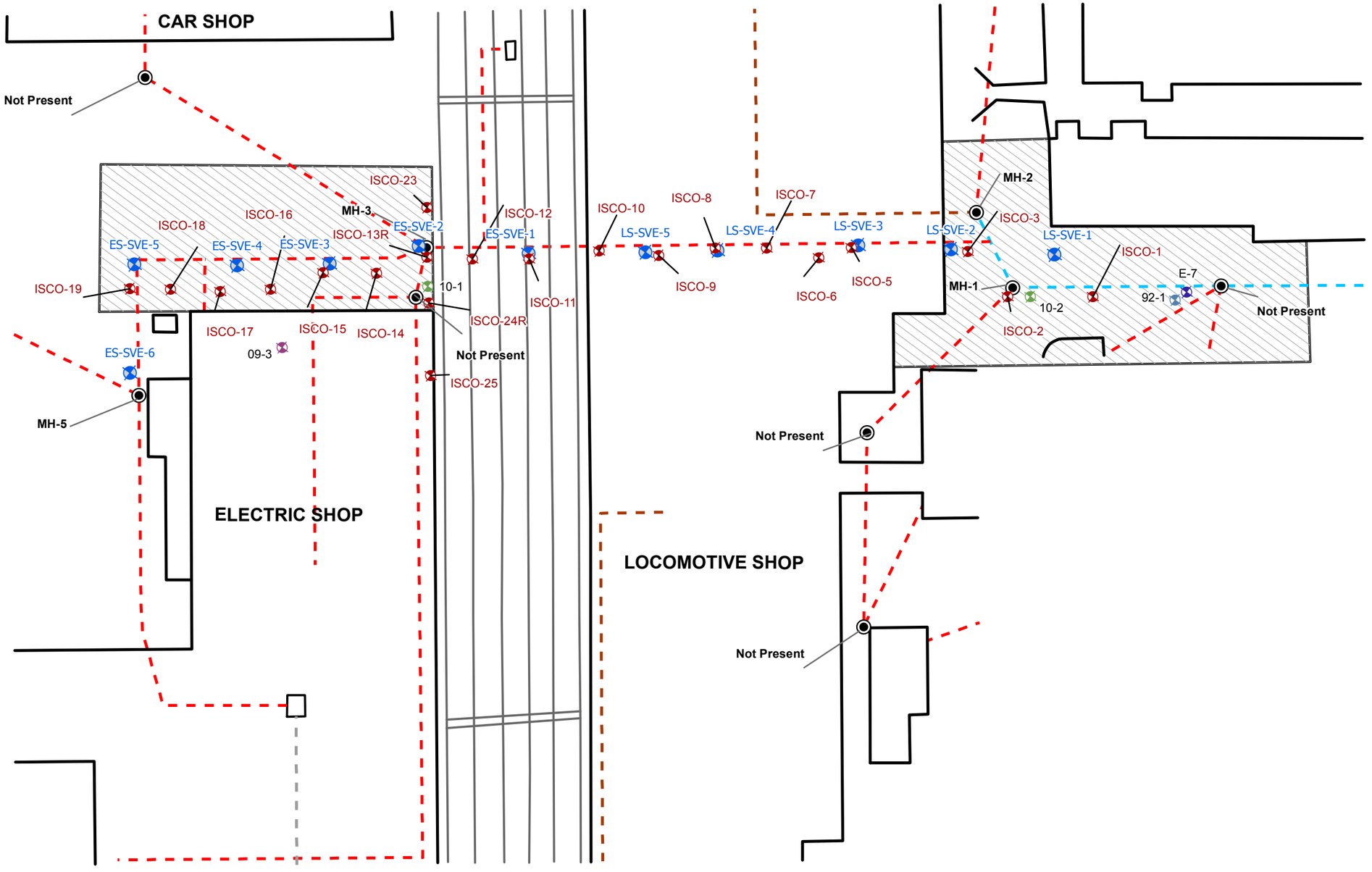

Legend

- Bedrock Monitoring Well
- Extraction Well
- ISCO Well
- Monitoring Well
- Soil Boring
- Manway
- Soil Vapor Extraction Well
- Original/Replaced Industrial Wastewater Sewer Line
- Sleeved Industrial Wastewater Sewer Line
- Old Industrial Wastewater Sewer Line
- Area of Investigation

N W E S

Feet

0 65 130

WATER & ENVIRONMENTAL TECHNOLOGIES, PC

MANWAY INVESTIGATION AREAS

BNSF Livinston Shop Complex

Job#: LRGM01 Task 4

Date: 3/21/2014

FIGURE 2

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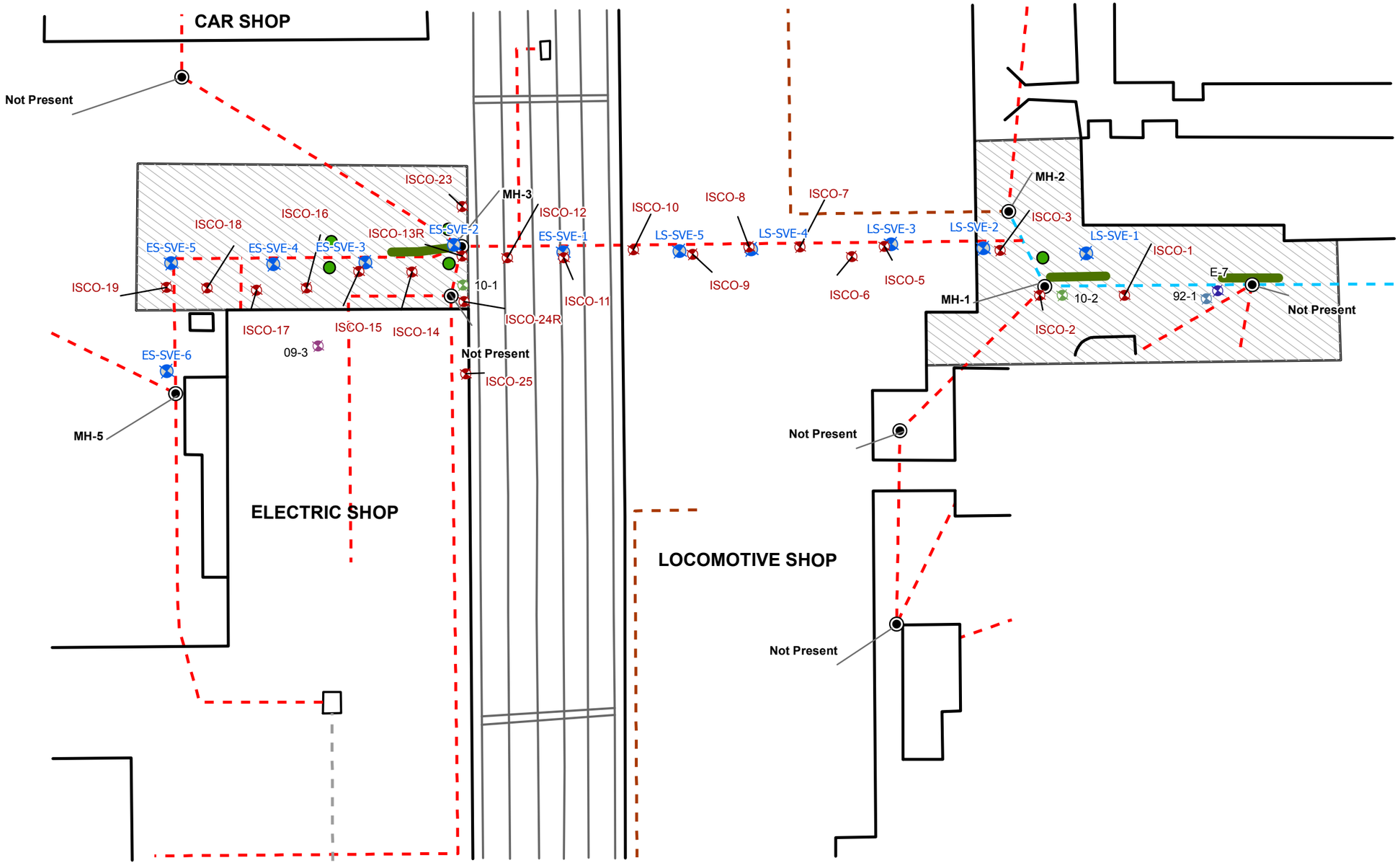

Legend

- Bedrock Monitoring Well
- Extraction Well
- ISCO Well
- Monitoring Well
- Soil Boring
- Manway
- Soil Vapor Extraction Well
- Initial Boring Location
- Original/Replaced Industrial Wastewater Sewer Line
- Sleeved Industrial Wastewater Sewer Line
- Old Industrial Wastewater Sewer Line
- Excavation
- Area of Investigation

N W E S

Feet

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WATER & ENVIRONMENTAL TECHNOLOGIES, PC

PROPOSED TRENCH AND INTERNAL BORING LOCATIONS

BNSF Livinston Shop Complex

Job#: LRGM01 Task 4

Date: 3/21/2014

FIGURE 3

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APPENDIX A

Task-Specific Health and Safety Plan

Appendix A

Task-Specific Health and Safety Plan

Date Approved by Kennedy/Jenks Consultants Regional Safety Supervisor:

Task Site Safety Officer: Patrick Thomson Phone: 406-782-5220

Task Field Site Safety Officer: Patrick Thomson Phone: 406-490-0329 (cell)

Task Description:
LRG Task 4 addresses monitoring and cleanup of chlorinated volatile organic compounds (CVOCs) in vadose zone sediments around and beneath the Electric Shop and Locomotive Shop floor drain sewer manways, and the underlying alluvial aquifer. New boreholes will be advanced and new soil/groundwater treatment/monitoring wells will be installed and developed.

The Task involves advancing borings and constructing monitoring wells using conventional drilling techniques, collecting soil samples from the borings for bench-scale and remedial design testing.

Additional health and safety procedures are explained herein. Field work performed during the Task will adhere to safety protocols specified in the *Facility-Wide Health and Safety Plan (Revision No. 3)* (HASP) dated May 2008.

Task-specific health and safety protocols, and additional health and safety protocols and/or deviations from the *Facility-Wide Health and Safety Plan (Revision No. 3)*, if applicable, are outlined in this task-specific HASP.

Summary Inf	Summary Information				
Activity	**Approx. Start Date**	**Approx. Duration (Days)**	**Field Personnel**	**CPR**	**First Aid**
Construction and development of groundwater monitoring wells.	TBD	4 weeks	Patrick Thomson Steve Nichols John Babcock	X X X	X X X
Overseeing advancement of soil borings and soil sample collection.	TBD	3 weeks	Patrick Thomson Steve Nichols John Babcock TBD	X X X	X X X

HAZWOPER and BNSF Safety Training:

___No _x_ Yes Field personnel 40-hour and 8-hour HAZWOPER trained.

Field personnel to wear a photographic identification badge and carry proof of current BNSF training when working at the Livingston railyard.

Applicable Sampling and Analysis Plan (SAP) and Standard Operating Guidelines (SOGs):

1. *Final Facility-Wide Sampling and Analysis Plan*

2. SOG-1, -2, -3, -4A, -4B, -5, -7, -8, -12, -13, -14, -15, -16 (Appendix A of *Final Facility-Wide Sampling and Analysis Plan*)

3. Task-specific SAP in *Task F Stage 1 – Part 2 Pilot Test Work Plan for VOC-Containing Alluvial Aquifer Groundwater*, Section 6.0.

Study Area:

The design area includes the area in the vicinity of the former Electric Shop and Locomotive Shop.

Locations of test areas and new wells to be constructed and sampled are shown on Figure 2

Task involves work within 25 feet of track:

___No _x_ Yes If yes, describe means of work clearance and track control:

If work is to be performed within 25 feet of track, Montana Rail Link (MRL) will be notified that a flagger will need to be present at the work area. The flagger will oversee worker safety at the work area.

Health and Safety Risks: Potential exposure to VOCs in soils and groundwater during drilling (well installation and boring advancement) and sampling procedures. Use caution for potential presence of black widow spiders in wellhead enclosures.

Physical Hazards:

Hazards associated with operating a drilling rig (noise, dust, overhead equipment falling, high-pressure pneumatic lines), underground utilities, equipment hauling, traffic control, and slip and trip. Potential electric hazards associated with operating.

Potential Chemical Hazards:

Chemicals of Concern	**TWA-PEL/TLV in parts per million (ppm)**
Tetrachloroethene	100 ppm / 25 ppm
Trichloroethene	100 ppm / 25 ppm
Cis-1,2-Dichloroethene	200 ppm / 25 ppm
Vinyl chloride	1 ppm / 1 ppm
Chlorobenzene	75 ppm / 75 ppm
1,4-Dichlorobenzene	75 ppm / 10 ppm
Sodium Permanganate	Not established

Personal Protective Equipment (PPE):

_**X**_Initial–Level D: Hard hat, boots (steel-toe and shank), safety glasses (with side shields), orange-reflective vest, and hearing protection as needed when at Livingston railyard and during drilling activities.

List additional equipment (e.g., boot covers, Tyvek® coveralls, etc.): Coveralls and latex/chemical resistant gloves, as necessary.

___Upgrade-Level C: All of above plus half-face respirator with _____ cartridges

Personal Protective Equipment (PPE) continued: Other: (describe): Wear chemical resistant overalls, nitrile gloves. Provide an eye wash kit with two bottles, 1-liter each of buffered eyewash solution at chemical feed/mixing tank area.

Safety Measures and Monitoring:

Follow *Facility-Wide Health and Safety Plan (Revision No. 3)* guidance. Do not enter any areas not intended for normal occupancy (e.g., confined spaces).

Criteria for upgrading PPE *(list threshold values in breathing zones, or other triggers for upgrading PPE)*: Withdraw from area and re-assess PPE requirements if there are noticeable odors in work area.

Work Zones:

Work zones will be established during construction of groundwater monitoring wells and advancement of soil boring. No special work zones will be established around the wellhead for groundwater sampling. All field personnel (including subcontractors) must check in/check out with site safety officer (SSO) or field site safety officer (FSSO) on a daily basis.

Other Work Requirements:

Work only in areas with proper illumination or bring sufficient lighting to assess area for hazards.

Community Protection Measures:

Activities associated with drilling/well installation will be conducted on the railroad property. Therefore, no community protection measures are warranted. If necessary, access to the area will be cordoned off with flagging and/or fences/barricades. Assure that field activities do not present a hazard to traffic movement.

Task-Specific Training or Medical Surveillance Requirements:

Task-Specific Hazardous Materials: Chlorinated volatile organic compounds present and adhered to vadose zone and saturated zone sediments.

Task-Specific Decontamination Procedures:

If accidentally exposed to chemicals, flush skin with water for 5 minutes. If chemicals get in eyes, flush with eyewash, then water, and seek medical attention.

Task-Specific Contact Telephone Numbers:

1. Patrick Thomson (406) 782-5220

2. See *Facility-Wide Health and Safety Plan (Revision No. 3)* (Table 3) for additional emergency contact information

Task-Specific Coordination Requirements with BNSF and MRL:

Schedule drilling activities with MRL prior to beginning activity.

Task-Specific Requirements from the Facility-Wide HASP:

Follow all applicable requirements of *Facility-Wide Health and Safety Plan (Revision No. 3)*.

Task-Specific Deviations from Facility-Wide HASP:

None

Emergency Response (Contingency) Plan:

See *Facility-Wide Health and Safety Plan (Revision No. 3)* (Section 7.0)

Hazardous Material Used for Task (Attach MSDSs and Submit to BNSF and MRL): See *Facility-Wide Health and Safety Plan (Revision No. 3)* (Appendix A – Hazard Communication and Material Safety Data Sheets.
Map and Directions to Hospital: See attached figure.
SIGNATURES
Task Manager: Patrick Thomson (406) 782-5220
Project Manager: Dave Erickson (406) 782-5220 Cell (406) 490-2915
Site Safety Officer: Patrick Thomson (406) 490-0329

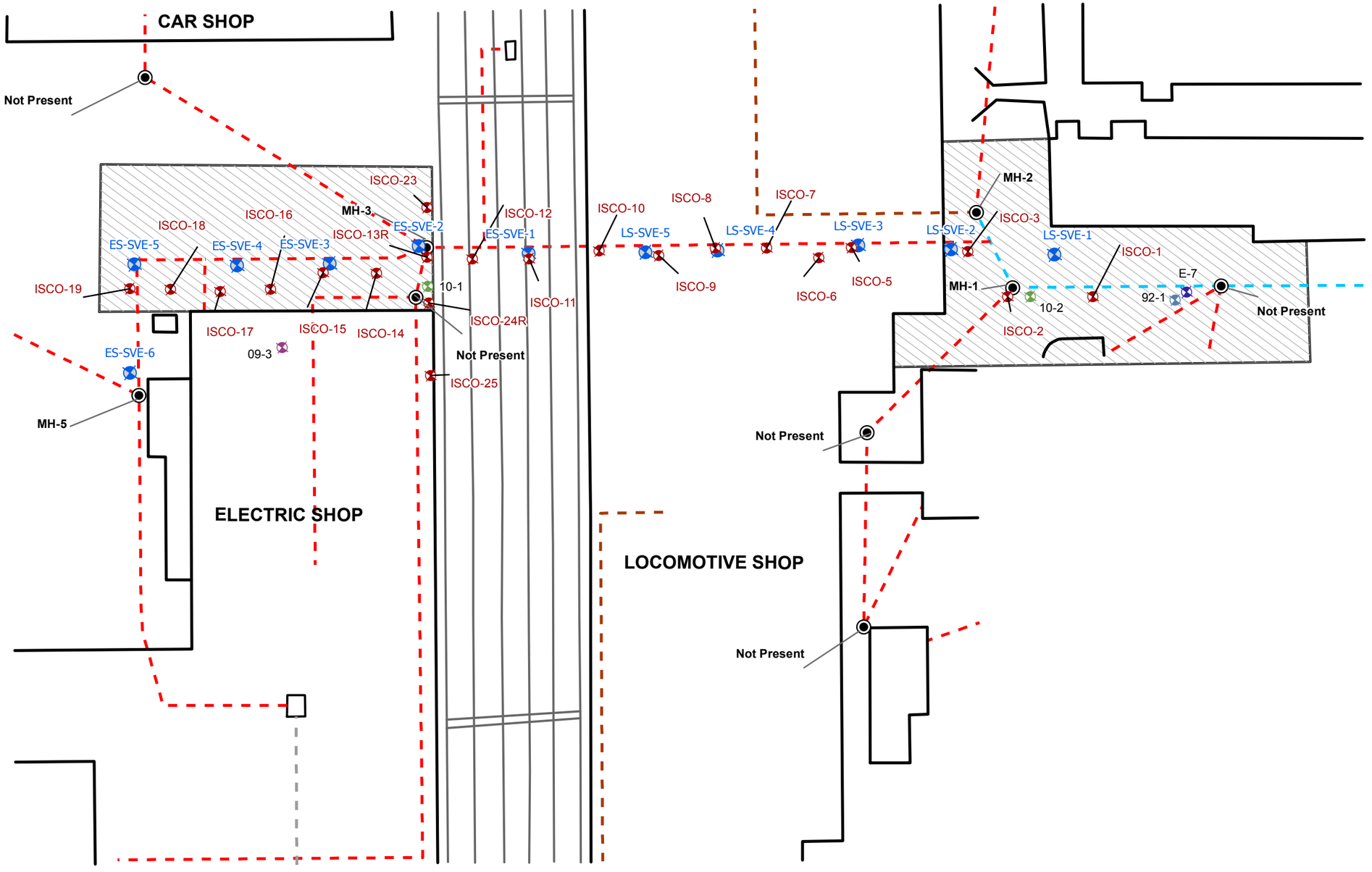
ATTACHMENTS

Attachment 1 – Locations of Field Activities
• Figure 2 from LRG *Task 4 Manway Work Plan for VOC-Containing Alluvial Aquifer Groundwater*

Attachment 2 – Route to Hospital
• Hospital Location and Route Map – Figure 3 from *Facility-Wide Health and Safety Plan Revision No. 3)*

Attachment 1

Locations of Field Activities



Legend

- Bedrock Monitoring Well
- Extraction Well
- ISCO Well
- Monitoring Well
- Soil Boring
- Manway
- Soil Vapor Extraction Well
- Original/Replaced Industrial Wastewater Sewer Line
- Sleeved Industrial Wastewater Sewer Line
- Old Industrial Wastewater Sewer Line
- Area of Investigation

N W E S

Feet

0 65 130

WATER & ENVIRONMENTAL TECHNOLOGIES, PC

MANWAY INVESTIGATION AREAS

BNSF Livinston Shop Complex

Job#: LRGM01 Task 4

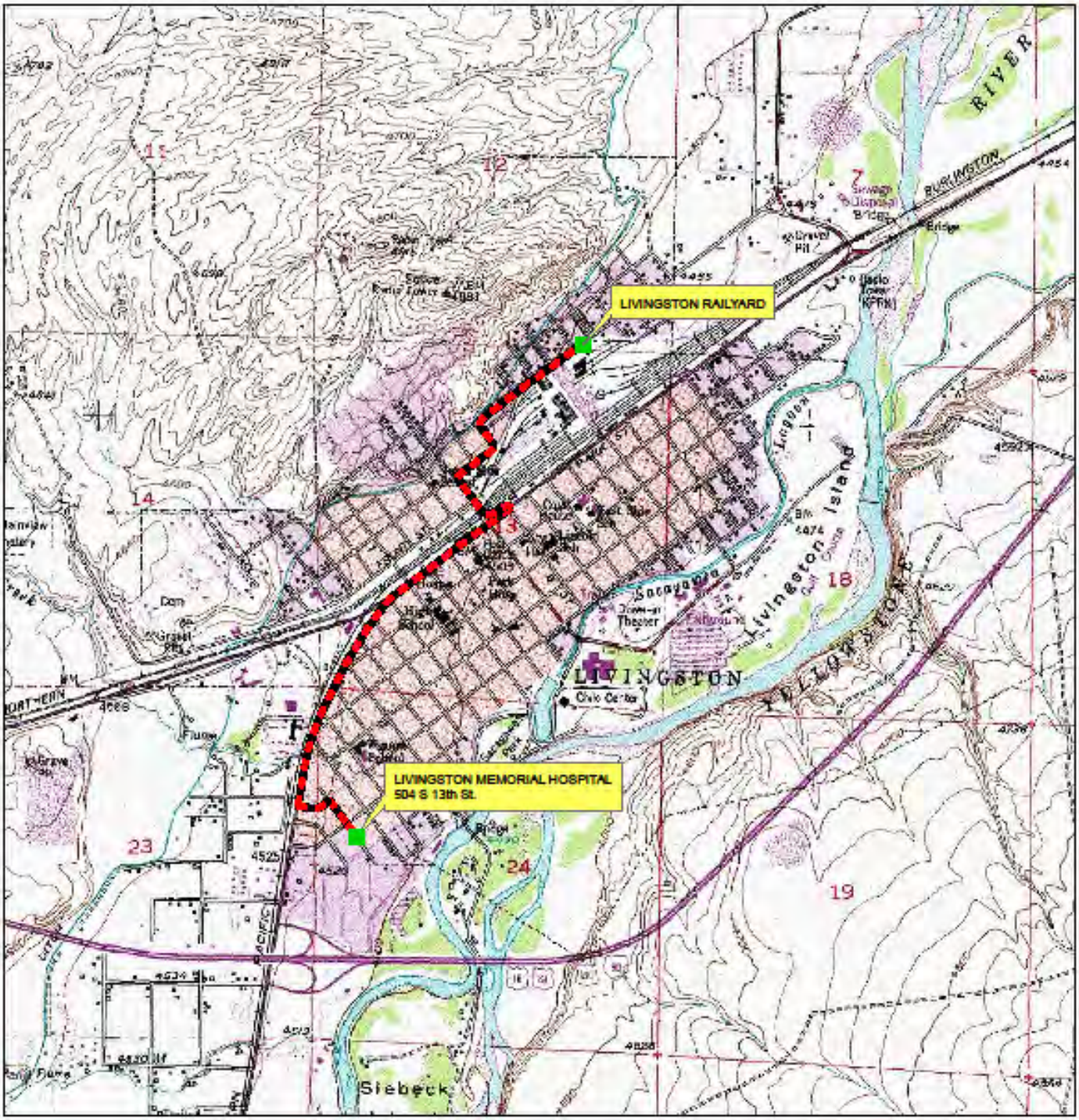
Date: 3/21/2014

FIGURE 2

Path: K:\PROJECTS\LRGM01-Livingston Restoration Group\Work Plans\Task 4 - Manway\Manway RDS DEQ Deliverables

Attachment 2

Route to Hospital



Directions to Hospital

Proceed Southwest on E. Gallatin St.

Turn LEFT onto N. Main St.

Turn RIGHT onto Park St. (US-89)

Turn LEFT onto S. 13th St.

Hospital is on LEFT at 504 S. 13th St.

0 90 180 360 540 720 Miles

WATER & ENVIRONMENTAL TECHNOLOGIES, PC

DRIVING DIRECTIONS TO HOSPITAL

Livingston Montana

Job#: LRGM01	**FIGURE 2**
Date: 8/14/2013	

APPENDIX B

Analysis of Environmental Requirements, Criteria, and Limitations

APPENDIX B

ANALYSIS OF ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS (ERCLS)[(a)] FOR LRG MANWAY INVESTIGATION
Burlington Northern Livingston Shop Complex

Federal or State ERCL Citation	Description	Compliance
FEDERAL AND STATE CONTAMINANT SPECIFIC ERCLS		
Surface and Groundwater Quality Standards (Applicable)		
Section 75-5-605, Montana Code Annotated (MCA)	Causing of Pollution Section 75-5-605 of the Montana Water Quality Act prohibits the causing of pollution of any state waters. Section 75-5-103(21)(a)(i) defines pollution as contamination or other alteration of physical, chemical, or biological properties of state waters which exceeds that permitted by the water quality standards.	Activities proposed in the work plan will not impact surface water. To ensure the aquifer is not degraded/polluted, IDW generated during field activities associated with this task will be managed according to the hazardous and solid waste procedures specified in the Final Facility-Wide Sampling and Analysis Plan and the SAP Addendum (Facility-Wide SAP) (see in particular, Section 8.4 and Appendices 1 and 2). All development and decontamination water will be treated to the groundwater cleanup levels presented in the ROD and will meet all applicable permit requirements as specified in Petroleum Cleanup General Permit MTG7900013 before discharge to the Yellowstone River or will be disposed of according to the Facility-Wide SAP. This task is being conducted to evaluate the concentrations of volatile organic compounds (VOCs) in vadose zone and saturated alluvial zone soils. Soil results from this task will be compared to the cleanup levels presented in the Record of Decision (ROD) (DEQ 2001). Activities proposed in the this Work Plan will not degrade water quality.
	Placement of Wastes Section 75-5-605, MCA states that it is unlawful to place or cause to be placed any wastes where they will cause pollution of any state waters. Any permitted placement of waste is not placement if the agency's permitting authority contains provisions for review of the placement of materials to ensure it will not cause pollution to state waters.	Investigation-derived waste (IDW) generated during field activities associated with this task will be managed as outlined in Section 8.4 of the Facility-Wide Sampling and Analysis Plan (Facility-Wide SAP). Management of IDW will not cause pollution of any state waters.
Section 75-5-303, MCA	Nondegradation Section 75-5-303, MCA states that existing uses of state waters and the level of water quality necessary to protect the uses must be maintained and protected, with certain limited exceptions. .	To ensure the aquifer is not degraded/polluted, IDW generated during field activities associated with this task will be managed as outlined in the Facility-Wide SAP. This task is being conducted to evaluate the concentrations of volatile organic compounds (VOCs) in vadose zone and saturated alluvial zone soils. Soil results from this task will be compared to the cleanup levels presented in the Record of Decision (ROD) (DEQ 2001). Soil that that contains contamination that exceeds the relevant ROD cleanup levels will be disposed of according to the hazardous and solid waste procedures specified in the Facility-Wide SAP. All development and decontamination water will be treated to the groundwater cleanup levels presented in the ROD and will meet all applicable permit requirements as specified in Petroleum Cleanup General Permit MTG7900013 before discharge to the Yellowstone River or will be disposed of according to the Facility-Wide SAP. Activities proposed in the this Work Plan will not degrade water quality.
Groundwater Quality Standards		
40 Code of Federal Regulations (CFR) 141	Maximum Contaminant Levels and Maximum Contaminant Level Goals (Well-Suited) Because the aquifer affected by the site is currently and has been used as a drinking water source, the MCLs and non-zero MCLGs specified in 40 CFR Part 141 (Primary Drinking Water Standards) are well-suited requirements which are ultimately to be attained by the remedy for the site[1]. Because many of the MCLs are equivalent with the State groundwater standards, the Primary Drinking Water Standards are listed below with the State groundwater standards.	this task is being conducted to identify the presence, if any, and concentrations of VOCs in the vadose zone and saturated alluvial soils. Groundwater results from this task will be compared to the groundwater cleanup levels presented in the ROD (DEQ 2001). This task is being conducted to evaluate the concentrations of volatile organic compounds (VOCs) in vadose zone and saturated alluvial zone soils. Soil results from this task will be compared to the cleanup levels presented in the Record of Decision (ROD) (DEQ 2001). Soil that contains contamination that exceeds the relevant ROD cleanup levels will be disposed of according to the hazardous and solid waste procedures specified in the Facility-Wide SAP. All development and decontamination water will be treated to the groundwater cleanup levels presented in the ROD and will meet all applicable permit requirements as specified in Petroleum Cleanup General Permit MTG7900013 before discharge to the Yellowstone River or will be disposed of according to the Facility-Wide SAP. Activities proposed in the this Work Plan will not degrade water quality.
40 CFR 143.3	Secondary Maximum Contaminant Levels (Well-Suited) Because the aquifer affected by the site is currently and has been used as a drinking water source, the Secondary Maximum Contaminant Levels (SMCLs) specified in 40 CFR Part 143.3 are well-suited requirements which are ultimately to be attained by the remedy for the site. 40 CFR 143.3 contains standards for color, odor (3 threshold odor number) and corrosivity which are well-suited to the remedial action.	
Administrative Rules of Montana (ARM) 17.30.1006	Montana Groundwater Pollution Control System (Applicable) ARM 17.30.1006 classifies groundwater into Classes I through IV based upon its specific conductance and establishes the groundwater quality standards applicable with respect to each groundwater classification. Based upon its specific conductance, the groundwater at the site must meet the standards for Class I groundwater. These standards are applicable. Concentrations of substances in Class I may not exceed the human health standards for groundwater listed in department Circular WQB-7.[2] For the primary contaminants of concern, the Circular WQB-7 standards and MCLs are listed below. For all contaminants of concern except vinyl chloride, the MCLs and Circular WQB-7 standards are equivalent.[3] All levels are ug/l and are dissolved phase. VOCs: Tetrachloroethene - 5.0; Trichloroethene - 5.0; Cis-1,2-Dichloroethene - 70; Vinyl chloride - 0.15; Chlorobenzene - 100; 1,4-Dichlorobenzene - 75 PAHs (SVOCs): Acenaphthene - 420; Anthracene - 2,100; Benzo(a)anthracene - 0.48; Benzo(a)pyrene - 0.048; Benzo(b)fluoranthene - 0.48; Benzo(k)fluoranthene - 4.79; Chrysene - 48; Dibenzo(a,h)anthracene - 0.048; Fluoranthene - 280; Fluorene - 280; Indeno(1,2,3-cd)pyrene - 0.48; Naphthalene - 28; Pyrene - 210 Lead - 15 For concentrations of parameters for which human health standards are not listed in WQB-7, ARM 17.30.1006 allows no increase of a parameter to a level that renders the waters harmful, detrimental or injurious to the beneficial uses listed for Class I water. This includes the following petroleum constituents. All levels are "µg/L" and are dissolved phase.	To ensure the aquifer is not degraded/polluted, IDW generated during field activities associated with this task will be managed as outlined in the Facility-Wide SAP. This task is being conducted to evaluate the concentrations of volatile organic compounds (VOCs) in vadose zone and saturated alluvial zone soils. Soil results from this task will be compared to the cleanup levels presented in the Record of Decision (ROD) (DEQ 2001). Soil that contains contamination that exceeds the relevant ROD cleanup levels will be disposed of according to the hazardous and solid waste procedures specified in the Facility-Wide SAP. All development and decontamination water will be treated to the groundwater cleanup levels presented in the ROD and will meet all applicable permit requirements as specified in Petroleum Cleanup General Permit MTG7900013 before discharge to the Yellowstone River or will be disposed of according to the Facility-Wide SAP. Activities proposed in the this Work Plan will not degrade water quality.
ARM 17.30.1011	ARM 17.30.1011 provides that any groundwater whose existing quality is higher than the standard for its classification must be maintained at that high quality unless degradation may be allowed under the principles established in Section 75-5-303, MCA, and the nondegradation rules at ARM Title 17,chapter 30, subchapter 7.	

ANALYSIS OF ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS (ERCLS)[a] FOR LRG MANWAY INVESTIGATION
Burlington Northern Livingston Shop Complex

Federal or State ERCL Citation	Description	Compliance
Surface Water Quality Standards (Applicable)		
Montana Water Quality Act, Section 75-5-101, et seq., MCA Federal Clean Water Act, 33 U.S.C. §§ 1251, et seq.	The Montana Water Quality Act, Sections 75-5-101 et seq., establishes requirements for restoring and maintaining the quality of surface and ground waters and the federal Clean Water Act, 33 U.S.C. Sections 1251 et seq., establishes requirements for restoring and maintaining the quality of surface waters. Under these Acts the state has authority to adopt water quality standards designed to protect beneficial uses of each water body and to designate uses for each water body. Montana's regulations classify state waters according to quality, place restrictions on the discharge of pollutants to state waters and prohibit the degradation of state waters.	To ensure state waters are not degraded/polluted, IDW generated during field activities associated with this task will be managed as outlined in the Facility-Wide SAP. Activities proposed in the work plan do not include any purging of groundwater. Activities proposed in this work plan will not impact surface water runoff at the Facility.
ARM 17.30.611	ARM 17.30.611(1) (Applicable) provides that the waters of the Yellowstone River drainage upstream of the Laurel water supply intake, which includes the Livingston area, are classified "B-1" for water use.	
ARM 17.30.623	ARM 17.30.623 provides that concentrations of carcinogenic, bioconcentrating, toxic or harmful parameters which would remain in the water after conventional water treatment may not exceed the applicable standards set forth in department Circular WQB-7.	
WQB-7 standards	WQB-7 provides that "For surface waters the Standard is the more restrictive of either the Aquatic Life Standard or the Human Health Standard." For the primary Contaminants of Concern the Circular WQB-7 standards are the same as listed above in groundwater.	
ARM 17.30.623	The B-1 classification standards at ARM 17.30.623 also include the following criteria: 1) Dissolved oxygen concentration must not be reduced below the levels given in department Circular WQB-7; 2) Hydrogen ion concentration (pH) must be maintained within the range of 6.5 to 9.5; 3) the maximum allowable increase above naturally occurring turbidity is 5 nephelometric turbidity units; 4) Temperature increases must be kept within prescribed limits; 5) No increase are allowed above naturally occurring concentrations of sediment, settleable solids, oils, floating solids, which will or is likely to create a nuisance or render the waters harmful, detrimental, or injurious to public health, recreation, safety, welfare, livestock, wild animals, birds, fish or other wildlife. 6) True color must be kept within specified limits.	
ARM 17.30.637	ARM 17.30.637 which prohibits discharges containing substances that will: (a) settle to form objectionable sludge deposits or emulsions beneath the surface of the water or upon adjoining shorelines; (b) create floating debris, scum, a visible oil film (or be present in concentrations at or in excess of 10 milligrams per liter) or globules of grease or other floating materials; (c) produce odors, colors or other conditions which create a nuisance or render undesirable tastes to fish flesh or make fish inedible; (d) create concentrations or combinations of materials which are toxic or harmful to human, animal, plant or aquatic life; (e) create conditions which produce undesirable aquatic life.	
ARM 17.30.705	ARM 17.30.705 provides that for any surface water, existing and anticipated uses and the water quality necessary to protect these uses must be maintained and protected unless degradation is allowed under the nondegradation rules at ARM 17.30.708.	
Water Quality Act, Title 17, Chapter 30, Sub-Chapters 6 and 13 and ARM 17.30.1332	<u>Stormwater Runoff (Applicable)</u> Pursuant to authority under the Water Quality Act, Title 17, Chapter 30, Sub-Chapter 6, and Title 17, Chapter 30, Sub-Chapter 13, including ARM 17.30.1332, the Water Quality Division issues general stormwater permits for certain activities. For construction activities, the following permit must be obtained: General Discharge Permit for Storm Water Associated with Construction Activity, Permit No. MTR100000 (May 19, 1997). Generally, the permits require the permittee to implement Best Management Practices (BMP) and to take all reasonable steps to minimize or prevent any discharge which has a reasonable likelihood of adversely affecting human health or the environment. However, if there is evidence indicating potential or realized impacts on water quality due to any storm water discharge associated with the activity, an individual MPDES permit or alternative general permit may be required.	Activities proposed in the this task work plan will not impact surface water runoff at the Facility.
Ambient Air Quality Standards (Applicable)		
	The following standards are applicable at the site[4]:	Although particulates may be generated during well installation, activities proposed in the this task are not expected to result in exceedances of ambient air quality standards. Borehole installation will include wetting and other best management practices related to fugitive dust control. Remedial actions will be halted if significant dust is generated and will not resume until adequate dust control measures are in place. These dust control measures will ensure that ambient air standards will not be exceeded during the proposed remedial action.
40 CFR 50.12 and ARM 17.8.222	40 CFR 50.12 and ARM 17.8.222. Ambient air quality standard for lead. Lead concentrations in the ambient air shall not exceed the following 90-day average: 1.5 micrograms lead per cubic meter of air.	
40 CFR 50.9 and ARM 17.8.213 40 CFR 50.10	40 CFR 50.9 and ARM 17.8.213. Ambient air quality standard for ozone. No person shall cause or contribute to concentrations of ozone in the ambient air exceeding: 0.10 ppm 1-hour average (0.12 ppm federal standard). 40 CFR 50.10 establishes a daily maximum 8-hour average 0.08 parts per million (ppm).	
ARM 17.8.220	ARM 17.8.220. Ambient air quality standard for settled particulate matter. Particulate matter concentrations in the ambient air shall not exceed the following 30-day average: 10 grams per square meter.	

ANALYSIS OF ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS (ERCLS)[a] FOR LRG MANWAY INVESTIGATION
Burlington Northern Livingston Shop Complex

Federal or State ERCL Citation	Description	Compliance
40 CFR 50.6 and ARM 17.8.223	40 CFR 50.6 and ARM 17.8.223. Ambient air quality standards for PM-10. PM-10 concentrations in the ambient air shall not exceed the following standards: 150 micrograms/cubic meter of air, 24-hour average; and 50 micrograms/cubic meter of air, expected annual average.	Although particulates may be generated during well installation, activities proposed in the this task are not expected to result in exceedances of ambient air quality standards. Borehole installation will include wetting and other best management practices, as described above.
40 CFR 50.8 and ARM 17.8.212	40 CFR 50.8 and ARM 17.8.212. Ambient air quality standards for carbon monoxide. Carbon monoxide concentrations in the ambient air shall not exceed the following standards: 9 ppm 8-hour average; and 23 ppm for a 1-hour average (35 ppm for federal).	
Emission Standards (Applicable)		
Sections 75-2-101, et seq., MCA,	Montana has promulgated standards to regulate emissions of certain contaminants into the air. The state emission standards are enforceable under the Montana Clean Air Act, Sections 75-2-101 et seq., MCA.	Although particulates may be generated during well installation, activities proposed in the this task are not expected to result in exceedances of ambient air quality standards. Borehole installation will include wetting and other
ARM 17.8.304	ARM 17.8.304. Visible Air Contaminants. No source may discharge emissions into the atmosphere that exhibit an opacity of 20 percent or greater, averaged over six consecutive minutes. This standard is limited to point sources, but excludes wood waste burners, incinerators, and motor vehicles.	
ARM 17.8.308	ARM 17.8.308. Airborne Particulate Matter. Emissions of airborne particulate matter from any stationary source shall not exhibit an opacity of 20 percent or greater, averaged over six consecutive minutes. This standard applies to the production, handling, transportation, or storage of any material; to the use of streets, roads, or parking lots; and to construction or demolition projects.	
ARM 17.8.315	ARM 17.8.315. Odors. If a business or other activity will create odors, those odors must be controlled, and no business or activity may cause a public nuisance.	Activities proposed in the this task work plan will not generate odors. No open burning will be conducted during implementation of this task.
ARM 17.8.604	ARM 17.8.604. Prohibited open burning. Open burning of numerous specific materials, including but not limited to oil and petroleum products and hazardous wastes, is prohibited.	
ARM 17.8.705	ARM 17.8.705 requires that permits be obtained for the construction, installation, alteration, or use of specified air contaminant sources. All air permits required for remedial actions must be obtained.	Activities proposed in the this task work plan do not require air permits.
ARM 17.8.715	ARM 17.8.715 requires sources for which air quality permits are required to use best available control technology (BACT) or to meet the lowest achievable emission rate (LAER), as applicable.	
FEDERAL LOCATION SPECIFIC ERCLS		
Criteria Classification of Solid Waste Disposal Facilities and Practices (Applicable and Well-Suited)		
40 CFR 257	Under the selected remedy, no solid or hazardous waste (other than media treated to cleanup levels) may be disposed on-site. The standards therefore are pertinent to the cinder pile (well-suited) and placement of ex situ soils treated to cleanup levels (applicable) and post-jurisdictional wastes (applicable). The criteria contained in 40 CFR Part 257, establish standards with which solid waste disposal must comply to avoid possible adverse effects on health or the environment. 40 CFR Part 257 includes the following standards: Section 257.3-1(a) requires that facilities or practices in the floodplain not result in the washout of solid waste so as to pose a hazard to human life, wildlife, or land or water resources. Section 257.3-2 provides for the protection of threatened or endangered species. Section 257.3-3 provides that a facility shall not cause the discharge of pollutants into waters of the United States. Section 257.3-4 states that a facility or practice shall not contaminate underground drinking water.	IDW (i.e., soil, water) will be generated during implementation of this task. Depending on the constituents and concentrations present and upon approval from the Montana Department of Environmental Quality (DEQ), this soil may be landspread at the Livingston railyard, or treated, if feasible, and landspread at the Livingston railyard. Alternatively, non-hazardous IDW will be disposed off of the Facility at an appropriate permitted disposal facility. See the Facility-Wide SAP for additional information on how non-hazardous IDW will be managed to comply with these ERCLs. Landspreading of soil, if approved by DEQ, will not occur in areas of a floodplain, will not be conducted in a manner to cause discharge of pollutants into water, and will not be conducted in a manner that contaminates underground drinking water sources or impacts endangered or threatened species. Other IDW or solid waste generated during implementation of this task will be disposed off of the Facility at an appropriate permitted disposal facility.
The Endangered Species Act (Well-Suited)		
16 U.S.C. §§ 1531 – 1544, 50 CFR Part 402, 40 CFR 6.302(h), 40 CFR 257.3-2	This statute and implementing regulations (16 U.S.C. § 1531 et seq., 50 CFR Part 402, 40 CFR 6.302(h), and 40 CFR 257.3-2) require that any federal activity or federally authorized activity may not jeopardize the continued existence of any threatened or endangered species or destroy or adversely modify a critical habitat. Compliance with this requirement involves consultation with the U.S. Fish and Wildlife Service (USFWS) and a determination of whether there are listed or proposed species or critical habitats present at the Site, and, if so, whether any proposed activities will impact such wildlife or habitat. No endangered or threatened species was identified onsite although the Yellowstone Trout is treated as a species of special concern by the State. Any action affecting federal or State endangered or threatened species must comply with all listed requirements.	Activities proposed in the this task work plan will not impact endangered species. According to the ROD, no endangered species or threatened species were identified at the Facility, although the Yellowstone Trout is treated as a species of special concern by the State.
Sections 87-5-106, -107, -111, and -201, MCA	Sections 87-5-106, 107, and 111, MCA (Applicable): Endangered species should be protected in order to maintain and to the extent possible enhance their numbers. These sections list endangered species, prohibited acts and penalties. See also, §§ 87-5-106 and 87-5-201, MCA, (Applicable) concerning protection of wild birds, nests and eggs.	
ARM 12.5.201	ARM 12.5.201 (Applicable). Certain activities are prohibited with respect to specified endangered species.	

ANALYSIS OF ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS (ERCLS)[(a)] FOR LRG MANWAY INVESTIGATION
Burlington Northern Livingston Shop Complex

Federal or State ERCL Citation	Description	Compliance
Migratory Bird Treaty Act (Well-Suited)		
16 U.S.C. §§ 703, et seq.	This requirement (16 U.S.C. § 703 et seq.) establishes a federal responsibility for the protection of the international migratory bird resource and requires continued consultation with the USFWS during remedial design and remedial action to ensure that the cleanup of the site does not unnecessarily impact migratory birds.	Activities proposed in the this task work plan will not impact migratory birds. Migratory birds may be present near the Facility. However, the Livingston railyard does not provide the majority of habitat for these species relative to the surrounding area, and no features exist that are particularly attractive to these species.
Bald Eagle Protection Act (Well-Suited)		
16 U.S.C. §§ 668, et seq.	This requirement (16 U.S.C. § 668 et seq.) establishes a federal responsibility for protection of bald and golden eagles, and requires continued consultation with the USFWS during remedial design and remedial action to ensure that any cleanup of the site does not unnecessarily adversely affect the bald and golden eagle.	Activities proposed in the this task work plan will not impact bald eagles. Bald eagles may be present near the Facility. However, the Livingston railyard does not provide the majority of habitat for these species relative to the surrounding area, and no features exist that are particularly attractive to these species.
Historic Sites, Buildings, Objects, and Antiquities Act (Well-Suited)		
16 U.S.C. 461, et seq.	These requirements, found at 16 U.S.C. 461 et seq., provide that, in conducting an environmental review of a proposed action, the responsible official shall consider the existence and location of natural landmarks using information provided by the National Park Service pursuant to 36 CFR 62.6(d) to avoid undesirable impacts upon such landmarks. No historic sites were identified.	Activities proposed in the this task work plan will not impact historic sites. According to the ROD, no historic sites were identified at the Livingston railyard.
Fish and Wildlife Coordination Act (Well-Suited)		
16 U.S.C. 661, et seq. and 40 CFR 6.302(g)	These standards are found at 16 U.S.C. § 661 et seq. and 40 CFR 6.302(g) and require that federally funded or authorized projects ensure that any modification of any stream or other water body affected by a funded or authorized action provide for adequate protection of fish and wildlife resources.	Activities proposed in the this task work plan do not involve the modification of any stream or other water body.
Floodplain Management Order (Well-Suited)		
40 CFR Part 6, Appendix A, Executive Order No. 11,988	This requirement (40 CFR Part 6, Appendix A, Executive Order No. 11,988) mandates that federally funded or authorized actions within the 100 year floodplain avoid, to the maximum extent possible, adverse impacts associated with development of a floodplain.	Activities proposed in this task work plan do not involve locating any wells or borings in the floodplain or floodway. Soil boring or excavation activites are not anticipated to impact the floodplain or floodway.
Protection of Wetlands Order (Well-Suited)		
40 CFR Part 6, Appendix A, Executive Order No. 11,990 Section 404(b)(1), 33 U.S.C. Section 1344(b)(1)	This requirement (40 CFR Part 6, Appendix A, Executive Order No. 11,990) mandates that federal agencies and potentially responsible parties avoid, to the extent possible, the adverse impacts associated with the destruction or loss of wetlands and to avoid support of new construction in wetlands if a practicable alternative exists. Section 404(b)(1), 33 U.S.C. § 1344(b)(1), also prohibits the discharge of dredged or fill material into waters of the United States. Together, these requirements create a "no net loss" of wetlands standard.	According to Montana's Natural Resource Information System (NRIS), no wetlands have been identified in the Livingston area. Activities proposed in the this task work plan will not impact wetlands.
STATE LOCATION SPECIFIC ERCLS		
Solid Waste Management Regulations (Applicable and Well-Suited)		
Solid Waste Management Act, Sections 75-10-201 et seq., MCA	Regulations promulgated under the Solid Waste Management Act, Sections 75-10-201 et seq., MCA, specify requirements that apply to the location of any solid waste management facility. Under the selected remedy, no solid or hazardous waste (other than media treated to cleanup levels) may be disposed on-site. The standards therefore are pertinent to the cinder pile (well-suited) and placement of ex situ soils treated to cleanup levels (applicable) and post-jurisdictional wastes (applicable).	Non-hazardous IDW uch as personal protective equipment (PPE) and IDW (i.e., soil, water) that has determined to be nonhazardous through analytical testing and receipt of a "no longer contained-in" determination from DEQ, if applicable, generated during implementation of this task will be contained in 55-gallon drums or other appropriate containers and temporarily stored in a centralized storage area pending characterization and final disposition. If investigation-derived soil or water cannot be landspread at the Livingston railyard, it will be disposed off of the Facility along with other non-hazardous IDW at an appropriate permitted disposal facility. Any other solid waste (i.e., plastic wrapping, cardboard, non-indigenous waste, etc.) will be contained in a plastic bag (if necessary) [double-bagged (if necessary)], and placed in a garbage can for collection and appropriate disposal as solid waste. Activities proposed in the this task work plan do not involve the cinder pile or propose treatment of soil. If treatment of soil is proposed, a SAP addendum containing a treatment plan will be submitted to DEQ as discussed in Section 8.4.2 of the Facility-Wide SAP. See Section 8.4 of the Facility-Wide SAP for additional information regarding the management of IDW.
ARM 17.50.505(1)	Under ARM 17.50.505(1), a facility for the treatment, storage or disposal of solid wastes: (a) must be located where a sufficient acreage of suitable land is available for solid waste management; (b) may not be located in a 100-year floodplain; (c) may be located only in areas which will prevent the pollution of ground and surface waters and public and private water supply systems; (d) must be located to allow for reclamation and reuse of the land; (e) drainage structures must be installed where necessary to prevent surface runoff from entering waste management areas; and (f) where underlying geological formations contain rock fractures or fissures which may lead to pollution of the ground water or areas in which springs exist that are hydraulically connected to a proposed disposal facility, only Class III disposal facilities may be approved.	IDW (i.e., soil, water) generated during implementation of this task will be contained in 55-gallon drums or other appropriate containers and stored inside/near the Forest Products Building and/or the Former C&P Packing Building (see Section 8.4.4.1 of Facility-Wide SAP). The Forest Products Building and/or Former C&P Packing Building and surrounding areas represent sufficient acreage for IDW management. These buildings are not located in the floodplain or floodway. IDW will be stored in appropriate containers to prevent pollution of groundwater, surface water, and public and private water supply systems. See Section 8.4 of the Facility-Wide SAP for additional information regarding the management of IDW.

ANALYSIS OF ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS (ERCLS)[a] FOR LRG MANWAY INVESTIGATION
Burlington Northern Livingston Shop Complex

Federal or State ERCL Citation	Description	Compliance
Floodplain and Floodway Management Act and Regulations (Applicable)		
	A portion of the site is in a designated floodplain. The following standards are included here to indicate the restrictions on any related activities that might occur in or affect the floodway or floodplain.	The proposed area(s) where the borings and test pits are to be located are not located in the floodway or floodplain. Therefore, the activities proposed in the manway investigation work plan will not impact a floodway or floodplain.
Section 76-5-401, MCA and ARM 36.15.601	Residential, certain agricultural, industrial-commercial, recreational and other uses are permissible within the designated floodway, provided they do not require structures other than portable structures, fill or permanent storage of materials or equipment. Section 76-5-401, MCA; ARM 36.15.601.	
Section 76-5-402, MCA and ARM 36.15.701	In the flood fringe (i.e., within the floodplain but outside the floodway), residential, commercial, industrial, and other structures may be permitted subject to certain conditions relating to placement of fill, roads, and floodproofing. Section 76-5-402, MCA; ARM 36.15.701.	
ARM 36.15.602(6)	Domestic water supply wells may be permitted, even within the floodway, provided the well casing and well meets certain conditions. ARM 36.15.602(6).	
ARM 36.15.602(5), 36.15.605, and 36.15.703	Solid and hazardous waste disposal and storage of toxic, flammable, hazardous, or explosive materials are prohibited anywhere in floodways or floodplains. ARM 36.15.602(5), 36.15.605, and 36.15.703.	
Section 76-5-402, MCA	The following are prohibited in a floodway: buildings for living purposes or place of assembly or permanent use by human beings; any structure or excavation that will cause water to be diverted from the established floodway, cause erosion, obstruct the natural flow of water, or reduce the carrying capacity of the floodway; and the construction or permanent storage of an object subject to flotation or movement during flood level periods. Section 76-5-402, MCA.	
Section 76-5-406, MCA and ARM 36.15.216	Section 76-5-406, MCA and ARM 36.15.216 contain substantive factors which address obstruction or use within the floodway or floodplain.	
ARM 36.15.604, ARM 36.15.602(1), and ARM 36.15.603	Further conditions or restrictions that generally apply to specific activities within the floodway or floodplain can be found at ARM 36.15.604 (increase in upstream elevation or significantly increase flood velocities); ARM 36.15.602(1) (excavation of material from pits or pools); ARM 36.15.603 (water diversions or changes in place of diversion).	
ARM 36.15.701(3)(c)	ARM 36.15.701(3)(c) requires that roads, streets, highways and rail lines must be designed to minimize increases in flood heights.	
ARM 36.15.701(3)(d)	Structures and facilities for liquid or solid waste treatment and disposal must be floodproofed to ensure that no pollutants enter flood waters and may be allowed and approved only in accordance with DEQ regulations, which include certain additional prohibitions on such disposal. ARM 36.15.701(3)(d).	
ARM 36.15.702(2)	Standards applied to residential, commercial or industrial structures are found at ARM 36.15.702(2).	
ARM 36.15.606	Flood control works are subject to ARM 36.15.606, which requires compliance with safety standards for levees, floodwalls, and riprap.	
ARM 36.15.901	ARM 36.15.901 requires electrical systems to be flood-proofed.	
FEDERAL AND STATE ACTION SPECIFIC ERCLS		
Federal Hazardous Waste Management Regulations (Applicable)		
42 U.S.C. §§ 6901 et seq., and Montana Hazardous Waste Act, Sections 75-10-401 et seq., MCA	The Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Sections 6901 et seq., and the Montana Hazardous Waste Act, Sections 75-10-401 et seq., MCA, and regulations under these acts establish a regulatory structure for the generation, transportation, treatment, storage and disposal of hazardous wastes. These requirements are applicable to substances and actions at the site which involve the active management of hazardous wastes. Burlington Northern operated the site and generated waste through 1986-7. Therefore, in certain instances, disposal was not pre-jurisdictional and the hazardous waste requirements are applicable now. However, DEQ does not have the documentation showing the dates of individual discharges, and therefore has, for purposes of this ROD, made a determination to treat all historic waste and media containing waste as pre-jurisdictional (in accord with the NCP and EPA guidance). Therefore, under this ROD, the historic waste which is characteristic or listed becomes hazardous upon excavation (generation).	These activities are being conducted in the area containing F-listed constituents, IDW generated during the pilot test will be suspected of containing F-listed constituents and will be managed as a hazardous waste unless analytical testing shows otherwise (i.e., no detections of PCE, or detections of PCE below the relevant ROD cleanup levels and receipt of a "no longer contained-in" determination from DEQ under RCRA). Any hazardous IDW (i.e., soil, water) generated during implementation of this task will be managed as outlined in the Facility-Wide SAP, in accordance with the applicable requirements of these ERCLs. While DEQ has the authority to waive non-substantive permit requirements for remedial actions conducted entirely at the Facility, that authority does not extend to permitted activities such as transporting and disposing of hazardous waste off of the Facility. DEQ has determined that a hazardous waste transporter is not required to transport hazardous waste from a work area to the centralized storage area, provided transportation remains within the Facility. If hazardous waste needs to be transported outside the Facility, a hazardous waste transporter will be used and the hazardous waste will be manifested, labelled and containerized. Any hazardous IDW generated during implementation of this task will be contained in 55-gallon drums or tank(s) and stored inside/near the Forest Products Building and/or the Former C&P Packing Building (see Section 8.4.4 of Facility-Wide SAP). Figures 4, 5, and 6 in the Facility-Wide SAP depict how IDW generated during implementation of this task will be disposed of in accordance with these ERCLs. Environmental samples containing RCRA-regulated constituents submitted to the analytical laboratory are exempt from RCRA; however, they become subject to RCRA again when they are disposed of by the analytical laboratory. Analytical laboratory will dispose of environmental samples in accordance with state and federal regulations.

ANALYSIS OF ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS (ERCLS)[a] FOR LRG MANWAY INVESTIGATION
Burlington Northern Livingston Shop Complex

Federal or State ERCL Citation	Description	Compliance
Identification and Listing of Hazardous Waste		
40 CFR 261 ARM 17.54.501-502	Wastes may be designated as hazardous by either of two methods: listing or demonstration of a hazardous characteristic. Listed wastes are the specific types of wastes determined by EPA to be hazardous as identified in 40 CFR Part 261, Subpart D (40 CFR 261.30 - 261.33). Listed wastes are designated hazardous by virtue of their origin or source, and must be managed as hazardous wastes regardless of the concentration of hazardous constituents. Characteristic wastes are those that by virtue of concentrations of hazardous constituents demonstrate the characteristic of ignitability, corrosivity, reactivity or toxicity, as described at 40 CFR Part 261, Subpart C. Certain of the wastes at the site demonstrate the characteristic of toxicity, and are therefore characteristic hazardous wastes upon excavation. The site also contains F001 and F002 which are listed hazardous wastes for chlorinated solvents. The various media and wastes at the site contaminated by the F001 and F002 wastes are also hazardous wastes pursuant to 40 CFR Part 261 upon excavation. The RCRA requirements specified below are applicable requirements for the treatment, storage and disposal of these wastes. See 40 CFR 261.31 (Hazardous Waste Numbers F001 and F002) and ARM 17.54.501. These ERCLs apply to remedial activities; on-going operations must comply with State and federal requirements and permits. EPA has advised EPA Regions and States that conservative, health-based levels derived from direct exposure pathways would clearly be acceptable as "contained-in" levels. [See memorandum from Sylvia K. Lowrance to Jeff Zelikson, Region IX, (January 24, 1989)]. EPA and many States specify conservative, risk-based levels calculated with standard conservative exposure assumptions (usually based on unrestricted access), or site-specific risk assessments. 61 FR at 18795 (April 29, 1996); 63 FR 28556 (May 26, 1998) [Part I of II]. For the BN Livingston Shop Complex, soils treated to below cleanup levels will be allowed to return to the site (from, for example, the electric shop) to an approved location in compliance with RCRA. For media which contain hazardous waste, all standards are applicable except for disposal requirements for "contained-out" soils. For all non-media wastes, the standards are applicable. However, no on-site disposal of hazardous waste is allowed under the selected remedy. Therefore, all hazardous wastes, including all media not treated to cleanup levels must be disposed off-site at a regulated subtitle C facility. These standards specifically apply to free product removed from within the solvent plume. For free product removed from outside the solvent plume 40 CFR Part 279 is applicable.	These activities are being conducted in the area containing F-listed constituents, IDW generated during the work will be suspected of containing F-listed constituents and will be managed as a hazardous waste unless analytical testing shows otherwise (i.e., no detections of PCE, or detections of PCE below the relevant ROD cleanup levels and receipt of a "no longer contained-in" determination from DEQ under RCRA). IDW (i.e., soil, water) generated during implementation of this task will be designated hazardous or non-hazardous based on analytical testing and will be managed accordingly as outlined in the Facility-Wide SAP in accordance with these ERCLs. Any IDW that contains a listed waste will be managed as a hazardous waste until BNSF seeks and obtains a "no longer contained in" determination from DEQ, as appropriate.
ARM 17.53.111 and 112, MCA	Because of the presence of listed and characteristic hazardous waste, the permit requirements specified in ARM 17.53.112 are applicable. However, DEQ is exempting remedial actions involving hazardous waste from RCRA permit requirements pursuant to 75-10-721(3), MCA (1993) as long as substantive requirements are met. This does not, however, affect the requirement to comply with ARM 17.53.111, Registration and EPA Identification Numbers for Generators and Transporters. Workplans will require detailed information on compliance with all procedural and substantive standards (as well as all ERCLs). Set out below are the hazardous waste requirements that are applicable for the types of waste management units or the waste management practices anticipated in the remedial actions at the site.	BNSF has obtained a hazardous waste identification number for the Livingston railyard (EPA ID No. MTT310010087).
Standards for Transporters of Hazardous Waste		
40 CFR Part 263	The RCRA regulations at 40 CFR Part 263, establish standards that apply to transporters of hazardous waste. These standards include requirements for immediate action for hazardous waste discharges. These standards are applicable for any on-site transportation. These standards are independently applicable (see Other Laws section) for any off-site transportation.	Any hazardous IDW (i.e., soil, water) generated during implementation of this task will be managed/transported in accordance Section 8.4 of the Facility-Wide SAP. DEQ has determined that a hazardous waste transporter is not required to transport hazardous waste from a work area to the centralized storage area, provided transportation remains within the Facility. If hazardous waste needs to be transported outside the Facility, a hazardous waste transporter will be used and the hazardous waste will be manifested, labelled and containerized. Hazardous waste that is disposed off of the Facility at a permitted hazardous waste (Subtitle C) disposal facility will be transported by a hazardous waste transporter and will be manifested.
Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities		
40 CFR 264, Subpart B	General Facility Standards The regulations at 40 CFR 264, Subpart B, establish general facility requirements. These standards include requirements for general waste analysis, security and location standards.	Any hazardous IDW (i.e., soil, water) generated during implementation of this task will be managed in accordance with the Facility-Wide SAP.

ANALYSIS OF ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS (ERCLS)[a] FOR LRG MANWAY INVESTIGATION
Burlington Northern Livingston Shop Complex

Federal or State ERCL Citation	Description	Compliance
40 CFR 264, Subpart F	Releases from Solid Waste Management Units The regulations at 40 CFR 264, Subpart F, establish requirements for groundwater protection for RCRA-regulated solid waste management units (i.e., waste piles, surface impoundments, land treatment units, and landfills). The regulations at Subpart F establish monitoring requirements for RCRA-regulated solid waste management units (i.e., waste piles, surface impoundments, land treatment units, and landfills). Subpart F provides for three general types of groundwater monitoring: detection monitoring (40 CFR 264.98); compliance monitoring (40 CFR 264.99); and corrective action monitoring (40 CFR 264.100). Monitoring wells must be cased according to 264.97(c). Monitoring is required during the active life of a hazardous waste management unit. If hazardous waste remains, monitoring is required for a period necessary to protect human health and the environment.	IDW (i.e., soil, water) generated during implementation of this task will be appropriately containerized and stored in drums, tanks, or other appropriate containers, , as described in Section 8.4.4 of the Facility-Wide SAP.
40 CFR Part 264, Subpart G	Closure and Post-Closure Monitoring and Maintenance of Waste Management or Disposal Facilities 40 CFR Part 264, Subpart G, establishes that hazardous waste management facilities must be closed in such a manner as to (a) minimize the need for further maintenance and (b) control, minimize or eliminate, to the extent necessary to protect public health and the environment, post-closure escape of hazardous wastes, hazardous constituents, leachate, contaminated runoff or hazardous waste decomposition products to the ground or surface waters or to the atmosphere. Requirements for facilities requiring post-closure care include the following: the facilities must undertake appropriate monitoring and maintenance actions, control public access, and control postclosure use of the property to ensure that the integrity of the final cover, liner, or containment system is not disturbed. In addition, all contaminated equipment, structures and soil must be properly disposed of or decontaminated unless exempt and free liquids must be removed or solidified, the wastes stabilized, and the waste management unit covered.	IDW (i.e., soil, water) generated during implementation of this task will be either landspread at the Livingston railyard (with DEQ approval), incorporated into the final remedy (with DEQ approval), or removed from the Facility and disposed of at a permitted disposal facility (hazardous or non-hazardous, as appropriate). IDW generated during the this task SI Work Plan will not be stored in soil waste management or disposal facilities.
40 CFR Part 264, Subparts I and J 40 CFR 261.7	Waste Containers and Tanks 40 CFR Part 264, Subparts I and J apply to owners and operators of facilities that store hazardous waste in containers, and store or treat hazardous waste in tanks, respectively. These regulations are applicable to any storage or treatment in these units at the site. The related provisions of 40 CFR 261.7, residues of hazardous waste in empty containers, are also applicable.	Any hazardous IDW (i.e., soil, water) generated during implementation of this task will be contained in either 55-gallon drums or tank(s) and stored in a centralized storage area (Forest Products Building and/or Former C&P Packing Building) as outlined in Section 8.4.4 of the Facility-Wide SAP.
40 CFR Part 264, Subpart L	Waste Piles 40 CFR Part 264, Subpart L, applies to owners and operators of facilities that store or treat hazardous waste in piles. The regulations include requirements for the use of run-on and run-off control systems and collection and holding systems to prevent the release of contaminants from waste piles. These regulations are applicable to any storage in waste piles at the site.	Any hazardous IDW (i.e., soil, water) generated during implementation of this task will be stored in 55-gallons drums or tanks(s) not in waste piles or staging piles. If treatment of soil is proposed, a SAP addendum containing a treatment plan will be submitted to DEQ as discussed in Section 8.4.2 of the Facility-Wide SAP.
40 CFR 264.554	Staging Piles 40 CFR 264.554 sets forth a new storage unit called the staging pile. A staging pile must be located within the contiguous property under the control of the owner/operator where the wastes to be managed in the staging pile originated. The staging pile must be designed so as to prevent or minimize releases of hazardous wastes and hazardous constituents into the environment, and minimize or adequately control cross-media transfer, as necessary to protect human health and the environment (for example, through the use of liners, covers, run-off/run-on controls, as appropriate). The staging pile must not operate for more than two years and cannot be used for treatment.	
40 CFR Part 268	RCRA Land Disposal Restrictions Since the wastes to be treated are listed and characteristic wastes, the RCRA Land Disposal Restrictions (LDRs) treatment levels set forth in 40 CFR Part 268 are applicable requirements including the treatment levels for F001 and F002 listed wastes for the disposal of hazardous wastes generated at the site. With the exception of treated soils, hazardous wastes are prohibited from disposal on-site.	Any hazardous IDW (i.e., soil, water) generated during implementation of this task will be managed in accordance with Section 8.4 of the Facility-Wide SAP. Figures 4, 5, and 6 in the Facility-Wide SAP depict how IDW generated during implementation of this task will be disposed of in accordance with these ERCLs. If investigation-derived soil or water is proposed for landspreading, documentation showing that concentrations are below relevant ROD cleanup levels and LDR standards will be included in the request to DEQ.
HWIR Media Rule (63 Fed. Reg. 65874)	The HWIR Media Rule, promulgated at 63 Fed. Reg. 65874 (November 30, 1998) allows listed waste treated to levels protective of human health and the environment to be disposed on-site without triggering land ban or minimum technology requirements for these disposal requirements. Treated soils containing hazardous waste will need to meet cleanup levels to avoid triggering land ban or minimum technology requirements for these disposal requirements.	
40 CFR 268.45	Hazardous debris Since on-site disposal of solid and hazardous wastes is prohibited at the site, any hazardous debris remaining on-site must comply with 40 CFR 268.45 prior to off-site disposal as a solid waste (all off-site disposal must also comply with LDR certification requirements, which apply to these wastes). If the debris does not fully comply with 40 CFR 268.45, it must be disposed off-site at a regulated subtitle C facility.	If any hazardous debris is generated during implementation of this task, it will be managed hazardous waste as as outlined in the Facility-Wide SAP.

ANALYSIS OF ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS (ERCLS)[a] FOR LRG MANWAY INVESTIGATION
Burlington Northern Livingston Shop Complex

Federal or State ERCL Citation	Description	Compliance
40 CFR Part 270	Substantive Permit Requirements 40 CFR Part 270 sets forth the hazardous waste permit program. The substantive requirements set forth in 40 CFR Part 270, Subpart C (permit conditions), including the requirement to properly operate and maintain all facilities and systems of treatment and control are applicable requirements.	Substantive requirements of RCRA will be met as described in Section 8.4 of the Facility-Wide SAP, including generation, storage, and disposal.
40 CFR Part 279	Used Oil 40 CFR Part 279 sets forth the standards for the management of used oil. For product removed from outside the solvent plume, 40 CFR Part 279 is applicable.	Activities proposed in the this task work plan will not result in the generation of used oil.
State Hazardous Waste Management Regulations (Applicable)		
Sections 75-10-401 et seq., MCA	The Montana Hazardous Waste Act, Sections 75-10-401 et seq., MCA, and regulations under this act establishes a regulatory structure for the generation, transportation, treatment, storage and disposal of hazardous wastes. These requirements are applicable to substances and actions at the site which involve listed and characteristic hazardous wastes.	These activities are being conducted in the area containing F-listed constituents, IDW generated during the pilot test will be suspected of containing F-listed constituents and will be managed as a hazardous waste unless analytical testing shows otherwise (i.e., no detections of PCE, or detections of PCE below the relevant ROD cleanup levels and receipt of a "no longer contained-in" determination from DEQ under RCRA). Any hazardous IDW (i.e., soil, water) generated during implementation of this task will be managed as outlined in the Facility-Wide SAP, in accordance with the applicable requirements of these ERCLs. While DEQ has the authority to waive non-substantive permit requirements for remedial actions conducted entirely at the Facility, that authority does not extend to permitted activities such as transporting and disposing of hazardous waste off of the Facility. DEQ has determined that a hazardous waste transporter is not required to transport hazardous waste from a work area to the centralized storage area, provided transportation remains within the Facility. If hazardous waste needs to be transported outside the Facility, a hazardous waste transporter will be used and the hazardous waste will be manifested, labelled and containerized. Any hazardous IDW generated during implementation of this task will be contained in 55-gallon drums or tank(s) and stored inside/near the Forest Products Building and/or the Former C&P Packing Building (see Section 8.4.4 of Facility-Wide SAP). Figures 4, 5, and 6 in the Facility-Wide SAP depict how IDW generated during implementation of this task will be disposed of in accordance with these ERCLs.
ARM 17.53.501-502	ARM 17.53.501-502 adopts the equivalent of RCRA regulations at 40 CFR Part 261, establishing standards for the identification and listing of hazardous wastes, including standards for recyclable materials and standards for empty containers, with certain State exceptions and additions.	
ARM 17.53.601-604	ARM 17.53.601-604, adopts the equivalent to RCRA regulations at 40 CFR Part 262, establishing standards that apply to generators of hazardous waste, including standards pertaining to the accumulation of hazardous wastes, with certain State exceptions and additions.	
ARM 17.53.701-708	ARM 17.53.701-708, adopts the equivalent to RCRA regulations at 40 CFR Part 263, establishing standards that apply to transporters of hazardous waste, with certain State exceptions and additions.	
ARM 17.53.801-803	ARM 17.53.801-803, adopts the equivalent to RCRA regulations at 40 CFR Part 264, establishing standards that apply to hazardous waste treatment, storage and disposal facilities, with certain State exceptions and additions.	
ARM 17.53.1101-1102	ARM 17.53.1101-1102, adopts the equivalent to RCRA regulations at 40 CFR Part 268, establishing land disposal restrictions, with certain State exceptions and additions.	
Section 75-10-422 MCA	Section 75-10-422 MCA prohibits the unlawful disposal of hazardous wastes.	
ARM 17.53.1101-1102	ARM 17.53.1101-1102, adopts the equivalent to RCRA regulations at 40 CFR Part 270, which establish standards for permitted facilities, with certain State exceptions and additions.	
ARM 17.53.1401	ARM 17.53.1401, adopts the equivalent of RCRA regulations at 40 CFR Part 279 which set forth the standards for the management of used oil.	Activities proposed in the this task work plan will not result in the generation of used oil.
National Emission Standards for Hazardous Air Pollutants (NESHAPs)		
ARM 17.8.341 (Incorporates by reference 40 CFR Part 61)	Asbestos (Well-Suited) The federal Clean Air Act requires the EPA to set emission standards for hazardous air pollutants. 42 U.S.C Section 7412. Implementation and enforcement of these standards in Montana has been delegated to the State. See 40 CFR 61.04(b)(BB). Federal standards for hazardous air pollutants (NESHAPs) at 40 CFR Part 61, are incorporated by reference by ARM 17.8.341. The NESHAPs for asbestos are well-suited to the cinder pile and are discussed in the Asbestos section below; however, the solid waste requirements are the more stringent of the ERCLs that must be complied with with respect to covering of the cinder pile.	Activities proposed in this task work plan will not result in air emissions of asbestos or vinyl chloride.
40 CFR 61.145	40 CFR 61.145. (well-suited). Standard for demolition and renovation. This section contains standards for demolition or renovation of a facility. The standards are designed to reduce or eliminate asbestos emissions from such operations, and include provisions for notification regarding intended project, wetting of asbestos materials, use of exhaust systems, careful movement of asbestos materials, and presence on site of a trained asbestos removal person. This section applies to any demolition or renovation of a structure, installation, building, or waste disposal area at the site containing asbestos materials.	
	40 CFR 61.151. (well-suited). Standard for inactive waste disposal sites for asbestos mills and manufacturing and fabricating operations. There must either be no discharge of visible emissions from the site to the outside air, or the specified covering or treatment methods must be followed. Warning signs must be posted and prior notice must be given to EPA or the State before the waste material is excavated or disturbed.	
40 CFR Part 61, Subpart F	Vinyl Chloride (Applicable) 40 CFR Part 61, Subpart F contains the national emission standard for vinyl chloride. 40 CFR 61.64(b) requires concentrations from vinyl chloride in each exhaust gas stream from each stripper not exceed 10 ppm.	

ANALYSIS OF ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS (ERCLS)[a] FOR LRG MANWAY INVESTIGATION
Burlington Northern Livingston Shop Complex

Federal or State ERCL Citation	Description	Compliance
National Pollutant Discharge Elimination System (NPDES) and the Montana Pollutant Discharge Elimination System (MPDES) (Applicable)		
40 CFR Part 122, Subpart C and ARM 17.30.1342 -.1344	40 CFR Part 122, Subpart C and ARM 17.30.1342-1344 set forth the substantive requirements applicable to all MPDES and NPDES permits. Permits must be obtained for all surface and groundwater systems that are part of remedial actions, including proper operation and maintenance of all facilities and systems of treatment and control.	To ensure state waters are not degraded/polluted, any development or decontamination water will be treated to the groundwater cleanup levels presented in the Record of Decision (ROD) (DEQ 2001) and will meet all applicable permit requirements as specified in Petroleum Cleanup General Permit MTG7900013 before discharge to the Yellowstone River.
Technology-Based Treatment (Applicable)		
40 CFR Part 125 and ARM 17.30.1344	40 CFR Part 125 and ARM 17.30.1344 set forth criteria and standards for dischargers. Based on the source, the technology-based treatment standards include the best practicable control technology (BPT), best conventional pollutant control technology (BCT), or Best Available Technology Economically Achievable (BAT).	To ensure state waters are not degraded/polluted, any development or decontamination water will be treated to the groundwater cleanup levels presented in the Record of Decision (ROD) (DEQ 2001) and will meet all applicable permit requirements as specified in Petroleum Cleanup General Permit MTG7900013 before discharge to the Yellowstone River.
Underground Injection Control Program (Well-Suited)		
40 CFR 146	The Underground Injection Control Program set forth at 40 CFR 146, sets forth the standards and criteria for the injection of substances into aquifers. Wells are classified as Class I through V, depending on the location and the type of substance injected. For all classes, no owner may construct, operate or maintain an injection well in a manner that results in the contamination of an underground source of drinking water at levels that violate MCLs or otherwise adversely affect the health of persons. Each classification may also contain further specific standards, depending on the classification.	Activities proposed in the this task work plan do not involve the construction/operation of underground injection control wells.
Solid Waste Management Regulation (Applicable and Well-Suited)		
ARM 17.50.505	ARM 17.50.505(2) specifies standards for solid waste management facilities, including the requirements that: 1. Class II landfills must confine solid waste and leachate to the disposal facility. If there is the potential for leachate migration, it must be demonstrated that leachate will only migrate to underlying formations which have no hydraulic continuity with any state waters; 2. adequate separation of group II wastes from underlying or adjacent water must be provided; and 3. no new disposal units or lateral expansions may be located in wetlands. ARM 17.50.505 also specifies general soil and hydrogeological requirements pertaining to the location of any solid waste management facility.	Activities proposed in the this task work plan do not involve siting, construction, operation/maintenance, and closure of a solid waste management facility. IDW generated during implementation of this task will be managed as outlined in the Facility-Wide SAP.
ARM 17.50.511	ARM 17.50.511 sets forth general operational and maintenance and design requirements for solid waste facilities using landfilling methods. Specific operational requirements, specified in ARM 17.14.511 are run-on and run-off control systems requirements, requirements that sites be fenced to prevent unauthorized access, and prohibitions of point source and nonpoint source discharges which would violate Clean Water Act requirements.	
ARM 17.50.530	ARM 17.50.530 sets forth the closure requirements for landfills. Class II landfills must meet the following criteria: 1. install a final cover that is designed to minimize infiltration and erosion. 2. design and construct the final cover system to minimize infiltration through the closed unit by the use of an infiltration layer that contains a minimum 18 inches of earthen material and has a permeability less than or equal to the permeability of any bottom liner, barrier layer, or natural subsoils or a permeability no greater than 1 X 10-5 cm/sec, whichever is less; 3. minimize erosion of the final cover by the use of a seed bed layer that contains a minimum of six inches of earthen material that is capable of sustaining native plant growth and protecting the infiltration layer from frost effects and rooting damage; 4. revegetate the final cover with native plant growth within one year of placement of the final cover.[5]	
ARM 17.50.531	ARM 17.50.531 sets forth post closure care requirements for Class II landfills. Post closure care must be conducted for a period sufficient to protect human health and the environment. Post closure care requires maintenance of the integrity and effectiveness of any final cover, including making repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the cover and comply with the groundwater monitoring requirements found at ARM Title 17, chapter 14, subchapter 7.	
Transportation of Solid Waste (Applicable)		
Section 75-10-212	For solid wastes, Section 75-10-212 prohibits dumping or leaving any debris or refuse upon or within 200 yards of any highway, road, street, or alley of the State or other public property, or on privately owned property where hunting, fishing, or other recreation is permitted.	Solid waste (i.e., plastic wrapping, cardboard, non-indigenous waste, etc.) generated during implementation of this task will be contained in a plastic bag (if necessary) [double-bagged (if necessary)], and placed in a garbage can for collection and appropriate disposal as solid waste. IDW generated during implementation of Task F will be managed as outlined in Section 8.4 of the Facility-Wide SAP. Solid waste generated during implementation of pilot test will be transported in a manner to prevent discharge, dumping, spilling, and leaking.
ARM 17.50.523	ARM 17.50.523 requires that such waste must be transported in such a manner as to prevent its discharge, dumping, spilling, or leaking from the transport vehicle.	

ANALYSIS OF ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS (ERCLS)[a] FOR LRG MANWAY INVESTIGATION
Burlington Northern Livingston Shop Complex

Federal or State ERCL Citation	Description	Compliance
Underground Storage Tank (USTs) Regulations (Applicable)		
	These standards are applicable. To the extent certain UST systems were removed prior to the effective date of the regulations, diesel is found separate and distinct from an UST system, or UST regulations are not applicable, the UST requirements remain well-suited since they address situations or problems sufficiently similar to those at the site.	Activities proposed in the this task work plan do not involve USTs.
40 CFR Part 280, Subpart F	40 CFR Part 280, Subpart F sets forth requirements for Release Response and Corrective Action for UST Systems Containing Petroleum or Hazardous Substances. These include initial response, initial abatement measures, site characterization, free product removal, and investigations for soil and groundwater cleanup.	
40 CFR 280.64	40 CFR 280.64 provides that where investigations in connection with leaking underground storage tanks reveal the presence of free product, owners and operators must remove free product to the maximum extent practicable as determined by the implementing agency. This regulation also requires that the free product removal be conducted in a manner that minimizes the spread of contamination into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site, and that properly treats, discharges or disposes of recovery byproducts in compliance with applicable local, State and Federal regulations.	
	40 CFR 280.64 provides that abatement of free product migration is a minimum objective for the design of the free product removal system provides that any flammable products must be handled in a safe and competent manner to prevent fires or explosions.	
40 CFR Part 280, Subpart D	40 CFR Part 280, Subpart D sets forth requirements for release detection.	
40 CFR 280.43	40 CFR 280.43 (well-suited) specifies groundwater monitoring requirements for underground storage tanks and requires continuous monitoring devices or manual methods used to detect the presence of at least 1/8 of an inch of free product on top of the groundwater in the monitoring wells.	
Title 17, Chapter 56, Sub-Chapter 4	The Montana regulations regarding underground storage tanks include similar requirements.	
	Title 17, Chapter 56, Sub-Chapter 4 specifies release detection.	
ARM 17.56.407	ARM 17.56.407 specifies groundwater monitoring requirements for underground storage tanks and requires continuous monitoring devices or manual methods used to detect the presence of at least 1/8 of an inch of free product on top of the groundwater in the monitoring wells.	
Title 17, Chapter 56, Sub-Chapter 6	Title 17, Chapter 56, Sub-Chapter 6 specifies release response and corrective action for tanks containing petroleum or hazardous substances.	
ARM 17.56.602 - 605	ARM 17.56.602 through 605 requires certain mitigation measures including removal of as much of the regulated substance from the system as is necessary to prevent further release into the environment and prevention of further migration of the released substance into surrounding soil and groundwater.	
Asbestos Regulation in Building Construction and Demolition (Well-Suited)		
Sections 50-64-101, et seq., MCA	Sections 50-64-101 et seq., MCA, regulate construction and demolition of structures that contain asbestos.	Activities proposed in the this task work plan do not involve construction or demolition of any asbestos-containing structures.
50-64-104, MCA	Section 50-64-104, MCA. provides for various safeguards to prevent release of asbestos into the air. The prescribed safeguards include notification of the local fire department, posting of warning signs, wetting of surfaces, dust emission control, covering and wetting during transport, and deposition at a landfill where materials are unlikely to be disturbed and where signs warn that asbestos-containing material is buried in the landfill. The listed safeguards are well-suited to the covering of the cinder pile.	
Well Drilling (Applicable)		
Section 85-2-505, MCA	Section 85-2-505, MCA, precludes the wasting of groundwater. Any well producing waters that contaminate other waters must be plugged or capped, and wells must be constructed and maintained so as to prevent waste, contamination, or pollution of groundwater.	Activites proposed in this task work plan do not involve the construction of any monitoring wells.
Section 85-2-516, MCA	Section 85-2-516, MCA states that within 60 days after any well is completed a well log report must be filed by the driller with the Montana Department of Natural Resources and Conservation and the appropriate county clerk and recorder.	
ARM 17.30.641	ARM 17.30.641 provides standards for sampling and analysis of water to determine quality.	
ARM 17.30.646	ARM 17.30.646 requires that bioassay tolerance concentrations be determined in a specified manner.	Bioassays will not be performed during implementation of this task.
ARM 36.21.670-678 and 810	ARM 36.21.670-678 and 810 specifies certain requirements that must be fulfilled when abandoning monitoring wells.	No monitoring wells will be abandoned during implementation of this task.

ANALYSIS OF ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS (ERCLS)[a] FOR LRG MANWAY INVESTIGATION
Burlington Northern Livingston Shop Complex

Federal or State ERCL Citation	Description	Compliance
Reclamation Requirements (Well-Suited)		
	Certain portions of the Montana Strip and Underground Mining Reclamation Act and Montana Metal Mining Act are well-suited requirements for certain revegetation and construction activities at the site.	Activities proposed in the this task work plan do not involve any land disturbances that would trigger these requirements.
Section 82-4-231, MCA	Section 82-4-231, MCA: Requires operators to reclaim and revegetate affected lands using most modern technology available.	
Section 82-4-233, MCA	Section 82-4-233, MCA: Operators must plant vegetation that will yield a diverse, effective, and permanent vegetative cover of the same seasonal variety native to the area and capable of self-regeneration.	
Section 82-4-336, MCA	Section 82-4-336, MCA: Disturbed areas must be reclaimed to utility and stability comparable to areas adjacent.	
ARM 17.24.501	ARM 17.24.501: Provides general backfilling and grading requirements.	
ARM 17.24.519	ARM 17.24.519: Pertinent areas where excavation will occur will be regraded to minimize settlement.	
ARM 17.24.631	ARM 17.24.631: Disturbances to the prevailing hydrologic balance will be minimized. Changes in water quality and quantity, in the depth to groundwater and in the location of surface water drainage channels will be minimized, to the extent consistent with the selected response alternatives. Other pollution minimization devices must be used if appropriate, including stabilizing disturbed areas through land shaping, diverting runoff, planting quickly germinating and growing stands of temporary vegetation, mulching, and control of toxic-forming waste materials.	
ARM 17.24.633	ARM 17.24.633: Surface drainage from a disturbed area must be treated by the best technology currently available (BTCA). Treatment must continue until the area is stabilized.	
ARM 17.24.634	ARM 17.24.634: Disturbed drainages will be restored to the approximate pre-disturbance configuration, to the extent consistent with the selected response alternatives.	
ARM 17.24.638	ARM 17.24.638: Sediment control measures must be implemented during operations.	
ARM 17.24.639	ARM 17.24.639: Sets forth requirements for construction and maintenance of sedimentation ponds.	
ARM 17.24.640	ARM 17.24.640: Discharges from sedimentation ponds, permanent and temporary impoundments, must be controlled to reduce erosion and enlargement of stream channels, and to minimize disturbance of the hydrologic balance.	
ARM 17.24.643 - 646	ARM 17.24.643 through 17.24.646: Provisions for groundwater protection, groundwater recharge protection, and groundwater and surface water monitoring.	
ARM 17.24.701 and 702	ARM 17.24.701 and 702: Requirements for redistributing and stockpiling of soil for reclamation. Also outline practices to prevent compaction, slippage, erosion, and deterioration of biological properties of soil will be employed.	
ARM 17.24.711	ARM 17.24.711: Requires that a diverse, effective and permanent vegetative cover of the same seasonal variety and utility as the vegetation native to the area of land to be affected must be established. This provision would not be well-suited in certain instances, for example, where there is dedicated development.	
ARM 17.24.713	ARM 17.24.713: Seeding and planting of disturbed areas must be conducted during the first appropriate period for favorable planting after final seedbed.	
ARM 17.24.714	ARM 17.24.714: Mulch or cover crop or both must be used until adequate permanent cover can be established.	
ARM 17.24.716	ARM 17.24.716: Establishes method of revegetation.	
ARM 17.24.718	ARM 17.24.718: Requires soil amendments, irrigation, management, fencing, or other measures, if necessary to establish a diverse and permanent vegetative cover.	
ARM 17.24.723	ARM 17.24.723: States that operators shall conduct approved periodic measurements of vegetation, soils, and water.	
ARM 17.24.724	ARM 17.24.724: Specifies that revegetation success must be measured by approved unmined reference areas. Required management for these reference areas is set forth.	
ARM 17.24.726	ARM 17.24.726: Sets the required methods for measuring productivity.	
ARM 17.24.728	ARM 17.24.728: Sets requirements for measurements of the composition of vegetation on reclaimed areas.	
ARM 17.24.761	ARM 17.24.761: This specifies fugitive dust control measures which will be employed during excavation and construction activities to minimize the emission of fugitive dust.	

ANALYSIS OF ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS (ERCLS)[(a)] FOR LRG MANWAY INVESTIGATION
Burlington Northern Livingston Shop Complex

Federal or State ERCL Citation	Description	Compliance
Noxious Weeds (Applicable)		
ARM 4.5.201 through .204 Section 7-22-2109(2)(b) Section 7-22-2152 Section 7-22-2101(7)(a), MCA	§ 7-22-2101(7)(a), MCA defines "noxious weeds" as any exotic plant species established or that may be introduced in the state which may render land unfit for agriculture, forestry, livestock, wildlife, or other beneficial uses or that may harm native plant communities and that is designated: (i) as a statewide noxious weed by rule of the department; or (ii) as a district noxious weed by a board, following public notice of intent and a public hearing. Designated noxious weeds are listed in ARM 4.5.201 through 4.5.204 and must be managed consistent with weed management criteria developed under MCA § 7-22-2109(2)(b). Notification and plan must occur as set forth in § 7-22-2152, MCA, as amended.	Activities proposed in the this task work plan do not involve the introduction or planting of plants, nor will land disturbance occur which would trigger these requirements..
OTHER LAWS		
	These laws are laws which are independently applicable rather than ERCLs for the site.	
Section 85-2-101, MCA	Surface Water and Groundwater Act Section 85-2-101, MCA, declares that all waters within the state are the state's property, and may be appropriated for beneficial uses. The wise use of water resources is encouraged for the maximum benefit to the people and with minimum degradation of natural aquatic ecosystems.	Activities proposed in the this task work plan will not require any surface water or groundwater to be appropriated.
Parts 3 and 4 of Title 85, Chapter 2, MCA	Groundwater and Surface Water Appropriation Parts 3 and 4 of Title 85, Chapter 2, MCA, set out requirements for obtaining water rights and appropriating and utilizing water. All requirements of these parts are laws which must be complied with in any action using or affecting waters of the state.	Activities proposed in the this task work plan will not require any water rights to be obtained.
Section 85-2-507, MCA Section 85-2-506, MCA	Controlled Ground Water Area Pursuant to Section 85-2-507 MCA, the Department of Natural Resources and Conservation may grant either a permanent or a temporary controlled ground water area. The maximum allowable time for a temporary area is four years.[6] Pursuant to 85-2-506 MCA, designation of a controlled groundwater area may be proposed if (a) that ground water withdrawals are in excess of recharge to the aquifer or aquifers within the ground water area; (b) that excessive ground water withdrawals are very likely to occur in the near future because of consistent and significant increases in withdrawals from within the ground water area; (c) that significant disputes regarding priority of rights, amounts of ground water in use by appropriators, or priority of type of use are in progress within the ground water area; (d) that ground water levels or pressures in the area in question are declining or have declined excessively; (e) that excessive ground water withdrawals would cause contaminant migration; (f) that ground water withdrawals adversely affecting ground water quality within the ground water area are occurring or are likely to occur; or (g) that water quality within the ground water area is not suited for a specific beneficial use defined by 85-2-102(2)(a).	Activities proposed in the this task work plan will not require a controlled groundwater area.
29 CFR Part 1910	Occupational Safety and Health Act The federal Occupational Safety and Health Act regulations found at 29 CFR 1910 are applicable to worker protection during conduct of RI/FS or remedial activities.	Field activities associated with this task will be conducted in accordance with the Facility-Wide Health and Safety Plan (HASP) and the task-specific HASP addendum.
ARM 17.74.101 ARM 17.74.102	Montana Occupational Health Act ARM Section 17.74.101, along with the similar federal standard in 29 CFR 1910.95, addresses occupational noise. ARM Section 17.74.102, along with the similar federal standard in 29 CFR 1910.1000 addresses occupational air contaminants.	
Sections 50-71-201, 202, and 203, MCA	Montana Safety Act Sections 50-71-201, 202 and 203, MCA, state that every employer must provide and maintain a safe place of employment, provide and require use of safety devices and safeguards, and ensure that operations and processes are reasonably adequate to render the place of employment safe.	Water & Environmental Technologies has a comprehensive Injury and Illness Prevention Program designed to help ensure the health and safety of its employees and provide a safe and healthful work environment. In addition, Water & Environmental Technologies has a Corporate Health and Safety Program and Hazardous Communication Program.
Section 50-78-201, 202, and 204, MCA	Employee and Community Hazardous Chemical Information Act Sections 50-78-201, 202, and 204, MCA, state that each employer must post notice of employee rights, maintain at the work place a list of chemical names of each chemical in the work place, and indicate the work area where the chemical is stored or used. Employees must be informed of the chemicals at the work place and trained in the proper handling of the chemicals.	
40 CFR Part 262 and ARM 17.53.601-604	Standards for Generators of Hazardous Waste The RCRA regulations at 40 CFR Part 262 and ARM 17.53.601-604 establish standards that apply to generators of hazardous waste. These standards include requirements for obtaining an EPA identification number and maintaining certain records and filing certain reports. These standards are applicable for any waste which will transported off-site.	Hazardous IDW (i.e., soil, water) generated during implementation of this task will be managed as outlined in Section 8.4 of the Facility-Wide SAP and comply with these requirements. BNSF has obtained a hazardous waste identification number for the Livingston railyard (EPA ID No. MTT310010087).

ANALYSIS OF ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS (ERCLS)[(a)] FOR LRG MANWAY INVESTIGATION
Burlington Northern Livingston Shop Complex

Federal or State ERCL Citation	Description	Compliance
40 CFR Part 263 and ARM 17.53.701-708	Standards for Transporters of Hazardous Waste The RCRA regulations at 40 CFR Part 263 and ARM 17.53.701-708 establish standards that apply to transporters of hazardous waste. These standards include requirements for immediate action for hazardous waste discharges. These standards are applicable for any off-site transportation.	Hazardous IDW (i.e., soil, water) generated during implementation of this task will be managed in accordance with Section 8.4 of the Facility-Wide SAP and comply with these requirements.
40 CFR 268 and ARM 17.53.1101-1102	RCRA Land Disposal Restrictions Since the wastes to be treated are listed and characteristic wastes, the RCRA Land Disposal Restrictions (LDRs) treatment levels set forth in 40 CFR Part 268 and ARM 17.53.1101-1102 are applicable requirements including the treatment levels for F001 and F002 listed wastes for the disposal of hazardous wastes generated at the site.	Hazardous IDW (i.e., soil, water) generated during implementation of this task will be managed in accordance with Section 8.4 of the Facility-Wide SAP and comply with these requirements.
49 CFR Chapter I, Subchapters B and C and ARM 23.5.101	Oil Transportation 49 CFR Chapter I, Subchapter B (Oil Transportation) and Subchapter C (Hazardous Materials) and ARM. 23.5.101 apply to transporters of oil and hazardous materials. These standards are applicable for any off-site transportation of oil meeting the quantity requirements set forth in Subchapter B or for the transportation of hazardous materials such as the transportation of asbestos-containing waste material.	Activities proposed in the this task work plan do not involve the use of oil and will not generate used oil.
Sections 75-2-501 et seq., MCA	Montana Asbestos Control Act The Montana Asbestos Control Act, Sections 75-2-501 et seq., MCA, and implementing rules establish standards and procedures for accreditation of asbestos-related occupations and control of the work performed by persons in asbestos-related occupations.	Activities proposed in the this task work plan do not involve asbestos work.
Sections 75-2-502(4) and -511, MCA, and ARM 17.74.302(3)	A permit from DEQ is required before any person can conduct an asbestos project. The definition of "asbestos project" includes the encapsulation, enclosure, removal, transportation, or disposal of asbestos-containing waste. Section 75-2-502(4), MCA; ARM 17.74.302(3). In addition, a person who inspects, plans, designs, supervises, contracts for or works on an asbestos project must meet DEQ training and accreditation requirements. See also Section 75-2-511, MCA.	
ARM 17.74.314	ARM 17.74.314 states that no person may engage in an asbestos-type occupation unless accredited in that occupation or may employ or subcontract with nonaccredited individuals or contractors. No person may conduct an asbestos abatement project without a permit.	
ARM 17.74.335 29 CFR 1926.58 40 CFR 763.120-121 40 CFR Part 61, Subpart M	ARM 17.74.335 states that asbestos abatement projects require a DEQ permit. The permit conditions include but are not limited to: a. a requirement that all work performed be in accordance with 29 CFR 1926.58 (asbestos standards for the construction industry); and 40 CFR 763.120, 121 (requirements for asbestos abatement projects); b. a requirement that all asbestos be properly disposed in an approved asbestos disposal facility. "Approved asbestos disposal facility" is defined at ARM 17.54.302(1) as a A9properly operated and licensed class II landfill as described in ARM 17.50.504; c. a requirement that asbestos be disposed in accordance with 40 CFR Part 61, Subpart M (National Emission Standard for Asbestos). See discussion above on National Emission Standard for Asbestos.	
ARM 17.74.338	ARM 17.74.338 requires an accredited asbestos abatement supervisor be physically present at all times at the work-site where a permitted asbestos abatement project is being performed and must be accessible to all workers. On-site air monitoring must be conducted by an accredited asbestos contractor/supervisor, an engineer or industrial hygienist.	
ARM 17.74.341	ARM 17.74.341 requires records of each asbestos abatement project be retained for a minimum of 30 years and must be made available to DEQ at any reasonable time. This section provides a noninclusive list of the records to be retained.	
40 CFR Part 92	Locomotive Emissions 40 CFR Part 92 establishes control of air pollution from locomotives and locomotive engines.	Activities proposed in the this task work plan do not involve the use of locomotives.

Notes:

(a) These ERCLs were developed by the Montana Department of Environmental Quality and were included in Appendix A of the *Record of Decision* (ROD) (DEQ 2001).

[1] *Montana Maximum Contaminant Levels:*
Pursuant to the Public Water Safety Act, 75-6-101 et. seq., MCA and ARM 17.38.204, the MCLs specified in 40 CFR Part 141 (Primary Drinking Water Standards) are incorporated.

[2] *Montana Department of Environmental Quality, Planning, Prevention and Assistance Division, Circular WQB-7, Montana Numeric Water Quality Standards (September, 1999).*

[3] *For vinyl chloride, the WQB-7 standard is 0.15 µg/L.*

[4] *Each of the ambient air quality standards includes in its terms specific requirements and methodologies for monitoring and determining levels. Such requirements are also applicable requirements. In addition, ARM 17.8.204 and 17.8.206, Ambient Air Monitoring; Methods and Data, respectively (Applicable), require that all ambient air monitoring, sampling and data collection, recording, analysis and transmittal shall be in compliance with the Montana Quality Assurance Manual except when more stringent requirements are determined by DEQ to be necessary.*

[5] *ARM 17.50.530(1)(b) allows the department to approve an alternative final cover design if it achieves the reduction in infiltration and protection from erosion to a level at least as equivalent as the stated criteria.*

[6] *If a temporary controlled ground water area is granted, the statute requires DNRC to commence studies to determine the designation or modification of a permanent controlled ground water area.*