

**TASK M REMEDIAL ACTION PLAN FOR ASBESTOS-CONTAINING  
MATERIALS (REVISION No. 2)  
Burlington Northern Livingston Shop Complex**

**Revision Tracking Form**

<b>Submittal Date</b>	<b>Revision Date</b>	<b>Revision No.</b>	<b>Pages to be Replaced and/or Added</b>	<b>Comments</b>
7/20/12	July 2012	3	Table of Contents (Pages iv and v)	Prepared at request of DEQ.
7/20/12	July 2012	3	Table 2 (New)	

Notes:

- 1) Insert this tracking form in the front of the *Task M Remedial Action Plan for Asbestos-Containing Materials (Revision No.2)* dated April 2012.
- 2) Pages replaced (shaded yellow). New information added (shaded green).

# Kennedy/Jenks Consultants

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2 April 2012

Ms. Aimee Reynolds  
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Subject: Task M Remedial Action Plan for Asbestos-Containing Materials (Revision No. 2)  
Burlington Northern Livingston Shop Complex - Livingston, Montana  
K/J 1196021.16

Dear Ms. Reynolds:

On behalf of the BNSF Railway Company (BNSF), Kennedy/Jenks Consultants is pleased to submit three (3) hard copies and one (1) electronic copy of the *Task M Remedial Action Plan for Asbestos-Containing Materials (Revision No. 2), Burlington Northern Livingston Shop Complex - Livingston, Montana*. The remedial action plan has been revised to address comments provided by the Montana Department of Environmental Quality (DEQ) in a letter to BNSF dated 21 March 2011. The following table indicates the location in the revised plan where each comment is addressed.

BNSF requests that DEQ provide written confirmation when it considers the Task M remedial activities to be "complete" so BNSF knows when the 90-day timeframe for submittal of the Task M Remedial Action Report begins.

DEQ Comment Number	Report Section Title	Comment
1	1.1 Objectives	Language in the last bullet has been modified, as required by DEQ.
2	3.1 Remedial Alternatives	As required by DEQ, an anticipated route the asbestos waste transporter will likely take from the Livingston railyard (including anticipated streets within the City of Livingston) to High Plains Sanitary Landfill in Great Falls, Montana has been provided.
3	3.3.1 Transfer Pit	<p>Text states that asbestos-containing material (ACM) and/or ACM/soil mix will be adequately wetted and properly contained in leak-tight containers/covered stockpiles to prevent airborne emissions. Additional language has been added that the stored containers/stockpiles will be labeled with the generator's name and location at which the waste was generated, and secured storage areas will be have warning signs posted.</p> <p>As required by DEQ, additional language has been added regarding marking vehicles used to during loading and unloading of waste in accordance with 40 CFR Part 61, Subpart M.</p> <p>As required by DEQ, the following language has been added to Section 3.3: "BNSF will comply with the permitting requirements of DEQ's Asbestos Control Program."</p>

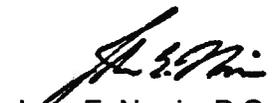
Ms. Aimee Reynolds  
 Montana Department of Environmental Quality  
 2 April 2012  
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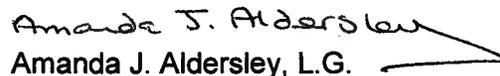
DEQ Comment Number	Report Section Title	Comment
4	Appendix A ERCLs	Text states ACM will be stored adequately wet and packed in leak-tight containers/covered stockpiles to prevent airborne emissions. Additional language has been added per DEQ's Comment#3 regarding labeling/posting signs etc.
5	Appendix A ERCLs	The Asbestos Regulation in Building Construction and Demolition ERCL has been highlighted as well-suited to Task M, as required by DEQ. Additional language has been added regarding notification to fire department, labeling and posting of warning signs, adequately wetting during removal, storage, transportation, and dust emission control. In its letter to BNSF dated 6 March 2012, DEQ approved the use of High Plains Sanitary Landfill in Great Falls, Montana for disposal of ACM from the Livingston railyard, subject to public comment.

If you have any questions regarding the revised plan, please contact us at (253) 835-6400.

Very truly yours,

KENNEDY/JENKS CONSULTANTS

  
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**Task M**  
**Remedial Action Plan for**  
**Asbestos-Containing Materials**  
**(Revision No. 2)**

**Burlington Northern Livingston Shop Complex**  
**Livingston, Montana**

**BNSF Railway Company**

**K/J 1296021.16**  
**April 2012**

**Kennedy/Jenks Consultants**

**TASK M REMEDIAL ACTION PLAN FOR ASBESTOS-  
CONTAINING MATERIALS  
(REVISION NO. 2)**

**Burlington Northern Livingston Shop Complex  
Livingston, Montana**

**Prepared for**

**BNSF RAILWAY COMPANY**

**Prepared by**

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**K/J 1296021.16**

**April 2012**

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## LIST OF ACRONYMS

<u>Abbreviation</u>	<u>Description</u>
ARM	Administrative Rule of Montana
ACM	asbestos-containing material
ACP	Asbestos Control Program
API	American Petroleum Institute
bgs	below ground surface
BMP	best management practice (BMPs for plural)
BN	Burlington Northern
BNSF	BNSF Railway Company
BRA	baseline risk assessment
CARB	California Air Resources Board
CECRA	Comprehensive Environmental Cleanup and Responsibility Act
COC	contaminant of concern (COCs for plural)
DEQ	Montana Department of Environmental Quality
ERCL	environmental requirement, criterion, and limitation (ERCLs for plural)
EMR	EMR, Inc.
FS	feasibility study
GPS	global positioning system
HASP	Health and Safety Plan
IDW	investigation-derived waste
MCA	Montana Code Annotated
MRL	Montana Rail Link
NESHAP	National Emission Standards for Hazardous Air Pollutants
QAPP	Quality Assurance Project Plan
PID	photoionization detector
PLM	polarized light microscopy
QA	quality assurance
QC	quality control
RA	remedial action
RI	remedial investigation
ROD	Record of Decision
SAP	Sampling and Analysis Plan
SOG	Standard Operating Guideline (SOGs for plural)
VOC	volatile organic compound (VOCs for plural)

## **1.0 INTRODUCTION**

This Task M Remedial Action Plan for Asbestos-Containing Materials (ACM RAP) addresses the requirements in the Montana Department of Environmental Quality's (DEQ's) letter to the BNSF Railway Company (BNSF) dated 4 November 2011 to prepare a remedial action plan for asbestos-containing materials (ACMs) observed in surface soil, track structure, and debris at the Livingston railyard in Livingston, Montana.

The Livingston railyard is part of the Burlington Northern (BN) Livingston Shop Complex Facility which is being addressed under Montana's Comprehensive Environmental Cleanup and Responsibility Act (CECRA). CECRA defines a "Facility" to include "any site or area where a hazardous or deleterious substance has been deposited, stored, disposed of, placed or otherwise come to be located" [Section 75-10-701(4)(a)(ii), Montana Code Annotated (MCA)].

The Facility is located in Park County, Montana, with the majority of it within the City of Livingston. Livingston is approximately 23 miles east of Bozeman, Montana, and 119 miles west of Billings, Montana. The Facility location is shown on Figure 1. A copy of the Facility location map from the Record of Decision (ROD) (DEQ 2001) is also provided in the ROD figures section of this work plan, as required by DEQ. Main features of the Livingston railyard are shown on Figure 2.

The DEQ has selected a remedial action for the Facility based on the Administrative Record, including: the results of a remedial investigation (RI) (Envirocon 1994), feasibility studies (FSs) (Envirocon 1998a,b), and a baseline risk assessment (BRA) (Camp Dresser & McKee 1993); the Proposed Plan; public comments received, including those from the potentially liable person; and other related information. The selected remedial action for the Facility is set forth in the Record of Decision (ROD) (DEQ 2001). Tasks for the remedial action are referenced in a letter from the Director of DEQ to BNSF dated 17 April 2006. As specified in the 17 April 2006 letter, a subset of the tasks is covered by the *Statement of Work for Spring 2005 Activities* (Spring 2005

SOW) and is administered according to the terms and conditions of the Modified Partial Consent Decree entered into by the parties in 1989. The remaining tasks, among which Task M is included, are not covered by the Spring 2005 SOW. Task M covers investigation of newly-identified potential source areas, newly-identified potential COC-affected areas, newly-identified potential COC-affected media, and newly-identified potential contaminants of concern.

In the 4 November 2011 letter to BNSF, DEQ states that asbestos was identified as a contaminant of concern (COC) in the ROD and the ROD (Pages 45 and 51) states that for asbestos found outside of the cinder pile at levels greater than one (1) percent, remediation alternatives must be considered and the asbestos remediated. This activity involves remediation of newly-identified source areas, which is part of Task M.

DEQ has required BNSF to submit a RAP to provide for “complete removal and proper disposal of all ACM found outside of the Cinder Pile of the Facility”. DEQ also required that the RAP include provisions for characterization of solvents [i.e., volatile organic compounds (VOCs)] and petroleum hydrocarbons in any soil that may be removed as part of the Task M remedial activities.

## **1.1 OBJECTIVES**

This ACM RAP addresses the identification, removal, and proper disposal of potential ACM present on surface soil, track ballast, and in debris piles at the Livingston railyard in accordance with DEQ’s 4 November 2011 letter and the subsequent scoping meeting between the parties on 22 November 2011. In the 4 November 2011 letter, DEQ identified the following areas where potential ACM was observed and needs to be addressed at the railyard based on the visual reconnaissance conducted in October 2011 (see Section 2.2):

- Transfer pit between the Locomotive and Electric Shops
- Debris piles in front (north) of the Waste Water Treatment Plants

- Area near the northern wall of the former American Petroleum Institute (API) separator ponds.
- Areas of ACM-containing debris on the ground surface [that could not be picked up during the October 2011 visual reconnaissance(see Section 2.2)] in Grid 6C, Grids 17D and 18D, Grids 25A, 26A and 27A, vicinity of the Electric Shop (outside of the transfer pit), and vicinity of debris stockpiles (see Figure 3).

The primary objectives of the ACM RAP are as follows:

- Remove (pickup) and properly dispose visibly exposed ACM on the ground surface at the Livingston railyard that was not picked up during the October 2011 visual reconnaissance due to the limitations on the amount of debris that could be removed without a permit (see Sections 1.5 and 2.2). Areas of ACM-containing debris on the ground surface include Grid 6C, Grids 17D and 18D, Grids 25A, 26A, and 27A, vicinity of the Electric Shop (outside of the transfer pit), and vicinity of debris stockpiles.
- Investigate the contents of the debris piles to evaluate the potential presence of ACM, while also screening for the possible presence of solvents or petroleum hydrocarbons [including polynuclear aromatic hydrocarbons (PAHs)] in the piles.
- Characterize the spatial distribution of ACM at the transfer pit, debris piles, and former API separator ponds to identify volumes and geometry of soil/debris requiring removal. ACM is defined as any material that contains greater than one (1) percent asbestos. Soils at the transfer pit, debris piles, and former API separator ponds will also be evaluated for the potential presence of solvents and petroleum hydrocarbons (including PAHs) to allow for the appropriate management/disposal of any soil that may be removed during removal of ACM.
- Remove and properly dispose ACM delineated in all the areas described above, perform confirmation sampling (as appropriate and required), and restore the areas (as necessary).

## **1.2 RA PLAN ORGANIZATION**

This ACM RAP is organized as follows:

- The remainder of Section 1.0 includes a discussion of health and safety; environmental requirements, criteria, and limitations (ERCLs); and permits.
- Section 2.0 summarizes previous activities conducted at the Livingston railyard regarding potential asbestos-containing debris.
- Section 3.0 presents the task-specific remedial design study sampling and analysis plan [which will be used in conjunction with the Facility-Wide SAP (Kennedy/Jenks Consultants 2006)], general design study data evaluation and remedial design process, remedial alternative selection and general approach, and remedial action approval and implementation. [Note: The Facility-Wide SAP includes Standard Operating Guidelines (SOGs) and the Facility-Wide Quality Assurance Project Plan (QAPP)].
- Section 4.0 identifies specific deliverables associated with the ACM RAP and presents the schedule for completion.

## **1.3 HEALTH AND SAFETY PLAN**

Prior to the start of field activities the Task-Specific Health and Safety Plan (HASP) will be updated. The Task-Specific HASP is updated at the beginning of each year, and as needed throughout the year. The Task-Specific HASP is designed for use in conjunction with the *2008 Facility-Wide Health and Safety Plan (Revision No. 3)* (Kennedy/Jenks Consultants 2008). A copy of the updated Task-Specific HASP will be forwarded to DEQ prior to start of Task M field activities for inclusion in the Facility-Wide HASP.

The Montana-accredited asbestos abatement contractor performing removal work will be required to submit its own HASP covering its personnel prior to start of field activities.

## **1.4 ERCLS**

ERCLs developed by DEQ for the Facility are included in Appendix A of the ROD. Planned activities identified in this ACM RAP comply with ERCLs. An evaluation of how the activities conducted during implementation of this ACM RAP will comply with ERCLs is included in Appendix A of this ACM RAP.

## **1.5 PERMITS**

Required local permits and inspections, if any, will be identified during the design/construct process. Permit applications will be prepared and submitted to the permitting authority(ies), as needed.

DEQ's Asbestos Control Program (ACP) must be notified 10 working days prior to an asbestos project and demolition activities. MCA 75-2-502(3) defines an "asbestos project" as "the encapsulation, enclosure, removal, repair, renovation, placement in new construction, demolition of asbestos in a building or other structure, or the transportation or disposal of asbestos-containing waste. The term does not include a project that involves less than 3 square feet in surface area or 3 linear feet of pipe". An application for a project permit will be submitted to the ACP that will contain 1) a Montana Asbestos Project Permit Application and National Emission Standards for Hazardous Air Pollutants (NESHAP) Demolition/Renovation Notification form; and 2) the permit fee required under Administrative Rule of Montana (ARM) 17.74.401. The application will be provided to the ACP at least 10 working days prior to the initiation of field activities.

Potential ACM will be transported under Manifest or Asbestos Waste Shipment Record (if applicable) to a DEQ-approved asbestos disposal facility (i.e., High Plains Sanitary Landfill, Great Falls, Montana). The Manifest or Waste Shipment Record (if applicable) will be part of the Task M Remedial Action Report (RA Report) that will be submitted to DEQ for review and approval after completion of the remedial activities.

## **2.0 SUMMARY OF PREVIOUS ACTIVITIES**

This section summarizes previous activities related to the identification and removal of ACM from the ground surface outside of the Cinder Pile at the Livingston railyard.

### **2.1 OCTOBER 2010 TASK J VISUAL RECONNAISSANCE AND SAMPLING ACTIVITIES**

As directed by DEQ, Kennedy/Jenks Consultants field personnel, on behalf of BNSF, made observations to attempt to identify potential ACM in surface soil and track ballast during the Task J surface soil sampling activities conducted in October 2010 at the Livingston railyard. Small pieces (fragments) of potential asbestos-containing debris were observed in the following Task J sampling grids:

- Grid 34C: Near northwestern corner of grid, three pieces of a fibrous cloth material approximately 5 inches by 10 inches.
- Grid 36C: Near surface soil sample location 36C-SS-a, one piece of fibrous cloth material approximately 5 inches by 5 inches.

Task J sampling grids are shown on Figure 3. On 14 October 2010, DEQ accompanied Kennedy/Jenks Consultants personnel to the former API separator ponds to conduct a visual reconnaissance of the area for potential asbestos-containing debris as required by DEQ in its 23 September 2010 letter to BNSF. Based on the visual reconnaissance, two small pieces of apparent “boiler rope” were observed near northern side the former API separator ponds. No other potential asbestos-containing debris was observed in this area. Samples of the apparent “boiler rope” from each location (DB-1 and DB 2) were collected. Prior to sample collection, the apparent “boiler rope” was wetted and the sample placed in a zip-lock bag for transportation under chain-of-custody protocol to Energy Laboratories, Inc. in Billings, Montana for analysis of bulk asbestos using polarized light microscopy (PLM).

During 14 October 2010 visual reconnaissance activities (conducted immediately after completion of Task J sampling activities), Kennedy/Jenks Consultants personnel showed DEQ the potential asbestos-containing debris observed in the Task J sampling grids. Based on DEQ's visual reconnaissance of Grids 34C and 36C (and adjacent Grid 35C) and the debris piles located in Grids 33C, 32D, and 33D, the following four additional samples were collected at the direction of DEQ:

- Two samples (DB-3 and DB-4) were collected from in Grid 34C. Both samples were collected from a fibrous cloth material.
- One sample (DB-5) was collected from of a solid fibrous ceramic material located in Grid 35C. (Note: The sample collected represented the entire piece of material observed.)
- One sample (DB-6) was collected from a fibrous cloth material located in Grid 33D. This sample was collected from a debris pile that appeared to contain building debris. (Note: Field sampling personnel reported that this debris pile was placed relatively recently based upon the absence of vegetation.)

These sampling grids are shown on Figure 3. The samples were collected and analyzed for bulk asbestos as described above. Photographs of the samples and a copy of the laboratory analytical report and chain-of-custody documentation were previously submitted to DEQ in *2<sup>nd</sup> Revised Task M Visual Reconnaissance/Debris Sampling Reports and Proposed Remedial Action Work Plan* (Kennedy/Jenks Consultants 2011).

The results of the October 2010 sampling are summarized below:

Sample ID / Sample Description	Bulk Asbestos Analysis	
	Asbestos, Chrysotile (%)	Non-Asbestos, Fibers (%)
DB-1 / Black fibrous material	80 – 90%	Non-detect
DB-2 / Black fibrous material	90 – 100%	Non-detect
DB-3 / Black fibrous material	Non-detect	90 -100% (non asbestos, fibrous glass)
DB-4 / Black fibrous material	Non-detect	90 -100% (non asbestos, fibrous glass)
DB-5 / White solid	Non-detect	20 - 30% (non asbestos, fibrous glass)
DB-6 / Black fibrous material	90 – 100%	Non-detect

Three of the six samples contained asbestos (chrysotile) at greater than one (1) percent, which is the threshold that defines a material as ACM. Based on these results, the “boiler rope” and the black fibrous material collected from the debris pile are ACM.

## **2.2 OCTOBER 2011 TASK M VISUAL RECONNAISSANCE, SAMPLING AND REMOVAL ACTIVITIES**

During 24 October to 27 October 2011, a visual reconnaissance of the Livingston railyard for ACM on the ground surface was conducted pursuant to the methods described in *2<sup>nd</sup> Revised Task M Visual Reconnaissance/Debris Sampling Report and Proposed Remedial Action Work Plan* (dated 12 September 2011). Visual reconnaissance was performed by Kennedy/Jenks Consultants personnel and BNSF’s asbestos contractor [EMR, Inc. (EMR)]. Visual reconnaissance activities were conducted with DEQ oversight.

The quantity of ACM that might require removal was not known prior to the reconnaissance, so the assumption was made that a quantity of less than 3 square feet in surface area or 3 linear feet of pipe would be removed and if more than that quantity was encountered, then additional removal under an abatement project permit would be performed in the future. A portion of the potential ACM identified by EMR during the October 2011 reconnaissance and removal work was collected (picked up) and bagged. Since more than non-permit removal limit of potential ACM was encountered, not all of the potential ACM was removed. For example, area with transite (cement-asbestos) found were left in place. EMR collected and wetted the potential ACM for placement in an appropriately labeled leak-tight asbestos disposal bag. Kennedy/Jenks Consultants marked locations where potential ACM was removed (picked up) from the ground surface using a Trimble global positioning system (GPS) unit. Figure 3 displays the locations where potential asbestos-containing debris was removed by EMR.

EMR collected seven samples of potential ACM that were submitted to Seattle Asbestos Test, LLC of Lynnwood, Washington for bulk asbestos analysis using PLM by Method EPA 600/R-93/116. The samples were collected and labeled as to Grid Identification

and type of material. Figure 3 displays the locations of the samples of potential asbestos-containing debris collected by EMR for bulk asbestos analysis. Analytical laboratory results for the bulk asbestos analysis are provided in Appendix B of this ACM RAP. All of the submitted samples of potential asbestos-containing debris tested negative for asbestos fibers.

Kennedy/Jenks Consultants conducted the surface soil sampling portion of the visual reconnaissance scope of work. Sixty-nine near-surface soil samples were collected from locations where potential ACM was identified (and picked up) by EMR during the visual reconnaissance. Figure 3 displays the October 2011 soil sample locations. The soil samples were submitted to EMSL Analytical, Inc. in San Leandro, California for bulk asbestos analysis using California Air Resources Board (CARB) Method 435 followed by PLM (Method EPA 600/R-93/116). The Task M surface soil sampling form is provided in Appendix C of this ACM RAP.

Table 1 presents a summary of the laboratory results for the bulk asbestos analysis of soil samples collected in October 2011. A copy of the laboratory analytical report and chain-of-custody documentation are provided in Appendix B. Only five of the 69 soil samples submitted for bulk asbestos analysis contained measurable asbestos fibers. Soil samples labeled SS 12D-1, SS 20G-4, SS 29D-1, SS 29D-2, and SS 52C-1 contained less than 0.25 percent chrysotile asbestos fibers. Based on the results of the bulk asbestos analysis, none of the 69 soil samples were classified as ACM.

### **3.0 REMEDIAL ACTION PLAN**

The remedial action of ACM will include removal and proper disposal of potential ACM already identified in October 2011 as well as design studies and specific removal plan development for areas where ACM removal may involve more invasive techniques and engineering considerations (e.g., excavation).

#### **3.1 REMEDIAL ALTERNATIVES**

DEQ requires that ACM visibly exposed at the ground surface as well as ACM within debris piles and surface soil at the transfer pit and former API separator ponds be removed. Alternatives for disposal of this removed ACM include:

- (1) Disposal at an offsite, properly permitted land disposal facility
- (2) Placement within the Cinder Pile, which would require expansion of the pile's volume, removal of a portion of the pile's cap, and replacement and revegetation of the cap
- (3) Creation of a new onsite ACM repository.

Opening the established cap on the Cinder Pile is undesirable because the vegetation has become well established and the effort associated with cap restoration and revegetation would be substantial and unwarranted unless an extremely large volume of ACM and ACM-containing soil and/or debris required disposal. Based upon currently available information, such large volumes are not anticipated. Similarly, establishment of a repository in another part of the railyard is not desirable because remedial alternative design features and institutional controls similar to those required for the Cinder Pile would need to be implemented. Once again, such an undertaking would only be warranted if an extremely large volume of ACM and ACM-containing soil and/or debris required disposal.

Based upon these considerations and the fact that ACM can be safely contained and transported to an offsite facility and disposed in accordance with applicable laws and regulations, alternative (1) above has been selected. ACM disposal at High Plains Sanitary Landfill in Great Falls, Montana is planned.

Excavation, transportation, and disposal of ACM will occur in compliance with ERCLs and independently applicable laws. BNSF will comply with the permitting requirements of DEQ's Asbestos Control Program.

DEQ requires this ACM RAP provide an anticipated route the asbestos waste transporter will take from the Livingston railyard to High Plains Sanitary Landfill, including the anticipated streets within the City of Livingston. At this time, the anticipated route is as follows:

- Exit Livingston railyard either directly onto East Gallatin Street (or onto East Gallatin Street via North C Street)
- Proceed northeast on East Gallatin Street and bear right onto Bennett Street
- Exit Bennett Street left onto US 89 North
- Proceed on US-89 North/I-90 East
- Proceed on US-89/US-12
- Proceed on US-89 North
- Proceed on US-89/US-78 North to Great Falls.
- Exit Great Falls on US-87 North
- Exit US-87 North onto Powerline Road to High Plains Sanitary Landfill.

### **3.2 MAPPED ACM REMOVAL**

Locations where ACM, including transite and roofing material, were observed during the October 2011 reconnaissance activity and not removed are shown on Figure 3. Areas where small pieces of ACM appeared to be scattered at the ground surface and visible are also shown on Figure 3. The ACM in these locations/ areas will be adequately wetted, picked-up, and placed in an appropriately labeled leak-tight asbestos disposal bag. The removal work will be performed by a Montana-accredited asbestos abatement contractor. Potential ACM that is removed and bagged will be transported under Manifest or Asbestos Waste Shipment Record (if applicable) to a DEQ-approved asbestos disposal facility (i.e., High Plains Sanitary Landfill, Great Falls, Montana).

The results of October 2011 near-surface soil sampling and bulk asbestos analysis indicated that ACM was not present in near-surface soils beneath asbestos-containing debris removed from the ground surface during the visual reconnaissance. Based on these findings, DEQ has determined that the collection of near-surface soils will not be required during this removal activity.

### **3.3 AREA-SPECIFIC DESIGN STUDIES AND REMEDIAL ACTION PROJECT DELIVERY**

The areas of the transfer pit and north of the former API separator ponds as well as the debris piles contain ACM; however, the spatial extent of ACM in soil and the debris pile has not been defined. In order to properly prepare a removal plans for the ACM at these locations it will be necessary to perform design studies that involve sampling.

In the 4 November 2011 letter to BNSF, DEQ stated that the “transfer pit and API separator ponds have been known to contain solvent and petroleum hydrocarbon (including PAHs) contamination; any soil removed from the areas must be characterized to determine if these contaminants are present in addition to the ACM”. DEQ also

specified that any soil removed from the debris “piles must also be characterized to determine if these contaminants are present in addition to the ACM”.

The soil and debris in these areas will be investigated as described below to allow for development of the remedial design specifics.

The remedial design study sampling and analysis plan will be used in conjunction with the Facility-Wide SAP (Kennedy/Jenks Consultants 2006), which addresses general protocols and procedures to be followed during implementation of remedial design/remedial action tasks. The Facility-Wide SAP addresses (1) health and safety considerations; (2) personnel and equipment decontamination; (3) calibration and use of field measuring devices and instrumentation; (4) sample collection, preservation, packaging, and shipping; and (5) handling and disposal of investigation-derived waste (IDW). Field activities will be performed in a manner consistent with the SOGs identified in the Facility-Wide SAP. Field procedures in the Facility-Wide SAP are not repeated in this task-specific SAP unless modifications/additions to a protocol or procedure are proposed.

The following presents the design study methods for characterizing the three primary potential areas of ACM identified by DEQ: 1) transfer pit between the Locomotive and Electric Shops; 2) area near the northern wall of the former API separator ponds; and 3) debris piles in front (north) of the Waste Water Treatment Plants.

### **3.3.1 Transfer Pit**

The transfer pit is a topographic depression located between the Locomotive and Electric Shops, which contains the rails and a rolling transfer table to move locomotive into the individual working bays in the Locomotive Shop (see Figure 3). During the October 2011 field work, asphalt roofing debris, transite debris, and ropey wrap debris were observed in the pit area.

Prior to initiation of field activities at the transfer pit, the presence of subsurface utilities will be cleared in accordance with Facility-Wide SAP and Task-Specific HASP.

In order to evaluate ACM removal design, shallow, hand and/or machine dug explorations (e.g., 6 inches deep to a maximum of 2 feet) will be made in the pit soils to ascertain if buried ACM is present and mapping of the lateral distribution of the potential ACM will be performed. Representative samples of materials, that cannot be determined in the field to be ACM with a high degree of certainty, will be collected for analysis to determine their asbestos content. The exploration and sampling density and frequency will be determined in the field in consultation with the DEQ representative providing field oversight.

Sampling of the potential asbestos-containing debris will be performed to determine vertical and lateral extent of ACM in this area to enable an evaluation of appropriate ACM removal alternatives. Samples of potential asbestos-containing debris will be submitted for bulk asbestos analysis using PLM by Method EPA 600/R-93/116. If the sampling confirms the material to be an ACM, one or more near-surface soil samples will be collected from the transfer pit for bulk asbestos analysis using CARB Method 435 followed by PLM (Method EPA 600/R-93/116). The sample density and frequency will be determined in the field in consultation with the DEQ representative providing field oversight.

Information from this design study will be used to develop an ACM removal design. Montana Rail Link (MRL) will be consulted regarding the design and implementation of the removal work to obtain input on transfer table engineering considerations as well as possible impacts to MRL operations.

Following completion of the design study, a brief work scope statement and field design package, containing adequate detail to direct the abatement contractor, will be prepared and submitted to DEQ for review and approval. As appropriate, preparation of the design package may include consideration of excavation geometry, utilities, potential impacts to the transfer table rail structural support integrity, removed material handling

and disposal (if different from those used for other ACM removed), and backfill selection and compaction. The packages are expected to be relatively straightforward and rapid regulatory review and approval are anticipated.

Soil that might need to be removed in conjunction with the ACM removal (i.e., ACM/soil mix) may need to be managed/disposed of differently than ACM that is simply picked up off/at the ground surface and contains no soil. The estimated volume of ACM/soil mix that may need to be removed will be identified in the design study. The estimated volume of material to be removed will determine how the removed ACM/soil mix will be handled and characterized for disposal. Depending on the estimated volume, the ACM/soil mix will be temporarily contained in a secured area at the Facility in either leak-tight (lined, covered) roll-off bins, or stockpiled in a manner that would prevent surface water run on, run off, and be adequately wetted and/or stabilized with a soil tackifier (dust suppressant) and covered to prevent windblown air emissions. The asbestos abatement contractor will be responsible for determining whether the stockpiled material is adequately wetted/stabilized. If deemed necessary by the asbestos abatement contractor, air monitoring will be conducted if the ACM/soil mix is temporarily stored in stockpiles. The secured area(s) used for storage will have warning signs posted. Leak-tight roll-off bins/stockpiles will be labeled with BNSF as the generator and the location at which the waste was generated.

ACM/soil mix contained in roll-off bins will be sampled in accordance with the DEQ-approved roll-off bin sampling protocol. Stockpiled ACM/soil mix will be sampled per U.S. Environmental Protection Agency (EPA) SW-846. Samples will be analyzed for VOCs, EPH Screen<sup>1</sup>, and PAHs. ACM/soil mix will be characterized expeditiously to minimize the length of time the materials have to be stored at the Facility pending offsite disposal.

It is planned to dispose of the ACM and/or ACM/soil mix containing petroleum hydrocarbons (including PAHs) at High Plains Sanitary Landfill in Great Falls, Montana.

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<sup>1</sup> Since landspreading at the Facility is not contemplated due to presence of ACM, analysis for EPH fractions is not required for offsite disposal characterization purposes. Landfill acceptance levels for petroleum are based upon total petroleum hydrocarbons.

The soil/ACM mix will be transported in accordance with the state's asbestos transportation requirements to High Plains (see Section 1.5). If F-listed constituents [i.e., tetrachloroethene (PCE)] are detected in the soil matrix at concentrations greater than the ROD cleanup level, the soil/ACM mix will be managed as a hazardous waste and will be disposed off accordingly at a permitted Subtitle C hazardous waste facility. If PCE is detected in soil at a concentration of less than the ROD cleanup level of 4 mg/kg, BNSF will request a contained-out determination to allow the soil/ACM mix to be managed as non-hazardous at High Plains. (Note: DEQ routinely provides contained-in decisions for soil containing less than 4 mg/kg of PCE that allows soil to be landspread at the Facility; however, the presence of ACM in the soil precludes landspreading at the Facility.)

When the waste is transported by vehicle to a disposal site, the vehicles used to transport asbestos-containing waste material during the loading and unloading of waste will be marked in accordance with 40 CFR Part 61, Subpart M.

### **3.3.2 Former API Separator Ponds**

The former API separator ponds are topographic depressions located north of the mainline near the eastern end of the raiyard (see Figure 3). During the October 2011 field work, ACM and suspected ACM were observed in an area north of the the northern wall of the western former API pond.

Prior to initiation of field activities at the former API separator ponds, the presence of subsurface utilities will be cleared in accordance with Facility-Wide SAP and Task-Specific HASP.

In order to evaluate removal design, shallow, hand and/or machine dug explorations (e.g., 6 inches deep to a maximum of 2 feet) will be made in the surface soils to ascertain if buried ACM is present and mapping of the lateral distribution of the potential ACM will be performed. Representative samples of materials, that cannot be determined in the field to be ACM with a high degree of certainty, will be collected for

analysis to determine their asbestos content. The exploration and sampling density and frequency will be determined in the field in consultation with the DEQ representative providing field oversight. The information from this design study will be used to develop an ACM removal design.

Following completion of the design study, a brief work scope statement and field design package, containing adequate detail to direct the abatement contractor, will be prepared and submitted to DEQ for review and approval. As appropriate, preparation of the design package may include consideration of excavation geometry, utilities, potential impacts to the soil stability in the area, removed material handling and disposal (if different from those used for other ACM removed), and backfill selection and compaction. The packages are expected to be relatively straightforward and rapid regulatory review and approval are anticipated.

ACM/soil mix that might need to be removed in conjunction with the ACM removal will be handled and disposed of as described in Section 3.3.1.

### **3.3.3 Debris Piles**

DEQ identified the debris piles at the front of the Waste Water Treatment Plant as a potential source of asbestos-containing debris and noted that “heavy plastic was placed at the base of the debris piles some time ago”. DEQ also noted concern that some soil and debris in these piles may contain solvents and petroleum hydrocarbons and required that “any soil removed from these piles must also be characterized to determine if these contaminants are present in addition to the ACM”.

Debris piles will be characterized using test pitting with implementation of best management practices (BMPs). BMPs will be implemented to address health and safety requirements for test pitting of debris piles of unknown composition. A water truck will be utilized during test pitting to provide water for wetting the debris piles. Test pitting will be completed using a

backhoe equipped with an enclosed cab and a long-arm. Test pitting locations will be determined in the field to achieve lateral and vertical bisections of the debris piles.

The sampling of potential asbestos-containing debris for bulk asbestos analysis will be conducted at the debris piles as previously described in Section 3.3.1. The sample density and frequency will be determined in the field in consultation with the DEQ representative providing field oversight. Soil samples will be collected from soil (if present) from each debris pile based on the estimated volume of soil in each debris pile. Debris piles will be sampled in accordance with EPA SW-846. Debris pile soil samples will be analyzed for VOCs, EPH Screen only (no fractionation), and PAHs.

Following completion of the design study (including characterization of the material comprising the piles), a brief work scope statement and field design package, containing adequate detail to direct the abatement contractor, will be prepared and submitted to DEQ for review and approval. As appropriate, preparation of the design package will include consideration of removed material handling and disposal (if different from those used for other ACM removed), and area finish grading. The packages are expected to be relatively straightforward and rapid regulatory review and approval are anticipated.

ACM/soil mix that might need to be removed in conjunction with the ACM removal will be handled and disposed of as described in Section 3.3.1.

### **3.4 SAMPLING AND ANALYSIS**

#### **3.4.1 Quality Assurance/Quality Control (QA/QC)**

Field and laboratory QA/QC procedures are discussed further in Section B2.5 of the Facility-Wide QAPP (Appendix B of Facility-Wide SAP). In obtaining QC samples, those procedures will be followed.

### **3.4.2 Sample Labeling**

Samples will be labeled in accordance with Section B2.3.3 of the Facility-Wide QAPP.

### **3.4.3 Chain-of-Custody Procedures**

Chain-of-custody procedures are discussed in Section B2.3.2 of the Facility-Wide QAPP. Those procedures will be followed.

### **3.4.4 Sample Shipping and Handling**

Sample shipping and handling procedures are discussed in Section B2.3.4 of the Facility-Wide QAPP and SOG-3 provided in Appendix A of the Facility-Wide SAP. Those procedures will be followed.

### **3.4.5 IDW**

IDW generated during the ACM RAP will be managed as described in Section 8.4, Addendum No. 1, and Addendum No.2 of the Facility-Wide SAP and SOG-12 provided in Appendix A of the Facility-Wide SAP unless otherwise directed by DEQ. Refer to Section 1.5 of this ACM RAP for permit requirements for removal and disposal of ACM.

### **3.4.6 Sample Analyses**

Appropriate methods, sample containers, preservation methods, holding times, and target method reporting limits for the analysis of petroleum hydrocarbons (including PAHs) and VOCs are provided in Tables B3 and B5 of the Facility-Wide QAPP provided in Appendix B of the Facility-Wide SAP.

The name, address, and contact for the analytical laboratory for bulk asbestos analysis are as follows:

EMSL Analytical, Inc.  
2235 Polvorosa Avenue, Suite 230  
San Leandro, California 94577  
(510) 895-3675

## **4.0 DELIVERABLES**

This ACM RAP requires the preparation and submittal of the following items:

**ACM RAP Work Scope Statements and Field Design Packages.** Upon completion of the design studies described herein, Work Scope Statements and Field Design Packages will be submitted to DEQ for review and approval. These deliverables will contain the exploration, mapping, screening, and sampling and analysis results that support their development. The Work Scope Statements and Field Design Packages will be submitted to DEQ within 14 days of receipt of the data required for their development.

### **Montana Asbestos Project Permit Application and NESHAP**

**Demolition/Renovation Notification Form:** The required permit form will be submitted to the DEQ ACP prior to initiation of an asbestos project under the ACM RAP.

**Task M Remedial Action Report.** A Remedial Action Report will be prepared and submitted to DEQ within 90 days of completion of Task M asbestos-related RA activities, as determined by DEQ. The Remedial Action Report will provide a summary of Task M asbestos-related RA activities, DEQ ACP permit documentation (if applicable), copies of laboratory analytical results and chain-of-custody documentation for confirmation sampling (if applicable), and copies of Manifest or Waste Shipment Record(s) (if applicable).

The start date for implementing the Task M RA depends upon DEQ approval of this ACM RAP and will commence 30 working days after receipt of DEQ approval assuming that field conditions allow for commencing work (e.g., ground is not frozen or covered by snow and ice). The schedule is subject to, weather conditions and other unforeseen field conditions that could affect completion of work in accordance with this preliminary schedule. The DEQ will be notified of potential schedule delays.

## **REFERENCES**

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Kennedy/Jenks Consultants. 2011. Letter: 2<sup>nd</sup> Revised Task M Visual Reconnaissance/Debris Sampling Report and Proposed Remedial Action Work Plan, Burlington Northern Livingston Shop Complex - Livingston, Montana dated 12 September 2011 and submitted to Ms. Aimee Reynolds, Montana Department of Environmental Quality, Helena, Montana.

U.S. Environmental Protection Agency. 2007. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods. U.S. Environmental Protection Agency, Office of Solid Waste.



TABLE 1

**SURFACE SOIL BULK SAMPLE ANALYSIS FOR ASBESTOS  
Burlington Northern Livingston Shop Complex**

Sample	Sample Date	Sample Depth (inches)	Appearance	Non-Asbestos		Asbestos % Type <sup>(a)</sup>
				% Fibrous	% Non-Fibrous	
SS-6C-1	10/24/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-6C-2	10/24/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-5B-1	10/24/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-12D-1	10/24/2011	0-6	Black, non-fibrous, homogeneous	0	100	< 0.25% Chrysotile
SS-22A-1	10/24/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-29A-1	10/24/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-27B-1	10/24/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-33A-1	10/24/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-33A-2	10/24/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-31A-1	10/24/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-28A-1	10/24/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-14A-1	10/24/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-51B-1	10/25/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-54A-1	10/25/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-46A-1	10/25/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-40A-1	10/25/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-44B-1	10/25/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-47B-1	10/25/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-50B-1	10/25/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-50B-2	10/25/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-44B-2	10/25/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-41C-1	10/25/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-35C-1	10/25/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-19C-1	10/25/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-33C-1	10/25/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-52C-1	10/25/2011	0-6	Black, non-fibrous, homogeneous	0	100	< 0.25% Chrysotile
SS-15E-1	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-15E-2	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-16E-1	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected

TABLE 1

**SURFACE SOIL BULK SAMPLE ANALYSIS FOR ASBESTOS**  
**Burlington Northern Livingston Shop Complex**

Sample	Sample Date	Sample Depth (inches)	Appearance	Non-Asbestos		Asbestos % Type <sup>(a)</sup>
				% Fibrous	% Non-Fibrous	
SS-17E-1	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-17E-2	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-19F-1	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-19E-1	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-20F-1	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-19F-2	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-20G-1	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-20G-2	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-20G-3	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-24E-1	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-21G-1	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-20G-4	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	< 0.25% Chrysotile
SS-20G-5	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-21H-1	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-22H-1	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-19H-1	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-49B-1	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-22E-1	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-16E-2	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-16E-3	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-12C-1	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-17D-1	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-18D-1	10/26/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-28G-1	10/27/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-29G-1	10/27/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-28G-2	10/27/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-32G-1	10/27/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-34F-1	10/27/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-35D-1	10/27/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected

**SURFACE SOIL BULK SAMPLE ANALYSIS FOR ASBESTOS  
Burlington Northern Livingston Shop Complex**

Sample	Sample Date	Sample Depth (inches)	Appearance	Non-Asbestos		Asbestos % Type <sup>(a)</sup>
				% Fibrous	% Non-Fibrous	
SS-27F-1	10/27/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-29E-1	10/27/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-30D-1	10/27/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-29D-1	10/27/2011	0-6	Black, non-fibrous, homogeneous	0	100	< 0.25% Chrysotile
SS-29D-2	10/27/2011	0-6	Black, non-fibrous, homogeneous	0	100	< 0.25% Chrysotile
SS-34C-1	10/27/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-42E-1	10/27/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-42E-2	10/27/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-28B-1	10/24/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-18C-1	10/25/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected
SS-29B-1	10/24/2011	0-6	Black, non-fibrous, homogeneous	0	100	None-detected

## Notes:

- (a) Bulk samples analyzed for asbestos using PLM via EPA 600/R-93/116 Method with CARB 435 Preparation (Milling) Level A for 0.25% Target Analytical Sensitivity.

CARB = California Air Resources Board

EPA = United States Environmental Protection Agency

PLM = Polarized light microscopy

**EVALUATION OF REMEDIAL ALTERNATIVES (TASK M)  
Burlington Northern Livingston Shop Complex**

Criterion <sup>i</sup>	Remedial Alternatives			
	Alternative 1 – No Action	Alternative 2 – Off-Facility Disposal	Alternative 3 – Containment in Cinder Pile	Alternative 4 – Containment in New Repository at the Facility
<p><b>Protection of Public Health, Safety and Welfare, and the Environment.</b> Overall protection of human health and the environment addresses whether an alternative provides adequate protection in both the short-term and the long-term from unacceptable risks posed by hazardous or deleterious substances present at the Facility by eliminating, reducing, or controlling exposure to protective levels.</p>	<ul style="list-style-type: none"> <li>No action alternative provides a baseline for comparing other alternatives.</li> <li>Asbestos-containing materials (ACM) have been identified on the ground surface as well as within debris piles and surface soil at the Transfer Pit and former API separator ponds.</li> <li>Not protective since potential pathway(s) for human exposure (via inhalation, ingestion, or dermal contact) would remain.</li> <li>Does not comply with the Record of Decision (ROD).</li> </ul>	<ul style="list-style-type: none"> <li>Protectiveness achieved by removal of ACM from ground surface and near-surface soil.</li> <li>Requires measures to protect workers during ACM removal, handling, and disposal.</li> <li>Off-Facility disposal would eliminate potential pathway(s) for human exposure.</li> <li>ACM would require transportation to a permitted landfill for disposal. Measures to prevent fugitive emissions would be implemented.</li> <li>No additional monitoring/maintenance would be required once the ACM has been removed from the railyard.</li> </ul>	<ul style="list-style-type: none"> <li>Protectiveness achieved by removal of ACM from ground surface and near-surface soil and placing ACM and/or ACM/soil mix in an existing engineered on-Facility repository (referred to as the cinder pile).</li> <li>Institutional controls are already in-place for the cinder pile, reducing the potential of future human exposure.</li> <li>Placement of ACM and/or ACM/soil mix in the cinder pile does not remove ACM from the railyard but acts as a containment to mitigate pathway(s) for human exposure (via inhalation, ingestion, or dermal contact).</li> <li>Requires measures to protect workers during removal and handling of ACM.</li> <li>Requires measures to protect workers from potential exposure to materials already contained in the cinder pile.</li> <li>Potential for exposure to ACM exists in the future if the cinder pile cap is not monitored/maintained or is disturbed.</li> </ul>	<ul style="list-style-type: none"> <li>Protectiveness achieved by removal of ACM from ground surface and near-surface soil and placing ACM and/or ACM/soil mix in a new on-Facility repository with engineering controls analogous to those already in place at the cinder pile.</li> <li>New repository would require another institutional control to be filed to reduce the potential for human exposure.</li> <li>Placement of ACM and/or ACM/soil mix in a new repository does not remove ACM from railyard but acts as a containment to mitigate the pathway(s) for human exposure (via inhalation, ingestion, or dermal contact).</li> <li>Requires measures to protect workers during removal and handling of ACM and construction of a new repository.</li> <li>Potential for exposure to ACM exists in the future if the new repository is not monitored/maintained or is disturbed.</li> </ul>

**EVALUATION OF REMEDIAL ALTERNATIVES (TASK M)  
Burlington Northern Livingston Shop Complex**

Criterion <sup>i</sup>	Remedial Alternatives			
	Alternative 1 – No Action	Alternative 2 – Off-Facility Disposal	Alternative 3 – Containment in Cinder Pile	Alternative 4 – Containment in New Repository at the Facility
<p><b>Compliance with Environmental Requirements, Criteria, and Limitations (ERCLs).</b> This criterion evaluates whether each alternative will meet applicable or relevant state and federal ERCLs.</p>	<ul style="list-style-type: none"> <li>Would not meet ACM-related (disposal, methods for covering the asbestos, etc.) ERCLs because uncontrolled ACM is present on the Facility.</li> </ul>	<ul style="list-style-type: none"> <li>The alternative, as provided in the final <i>Task M Remedial Action Work Plan for Asbestos-Containing Materials (Revision No. 2)</i>, complies with ERCLs.</li> <li>Requires compliance with ERCLs for solid waste handling, storage, transportation, and disposal.</li> <li>Requires compliance with ERCLs for hazardous waste handling, storage, transportation, and disposal, if soil containing F-listed hazardous waste constituents is removed with the ACM (i.e., ACM/soil mix).</li> <li>Off-Facility disposal of ACM and/or ACM/soil mix would require the materials to be manifested in accordance with waste management/transportation and landfill regulations.</li> <li>Removal/off-Facility disposal of ACM and/or ACM/soil mix would require compliance with ambient air quality ERCLs for particulates (i.e., ARM 17.8.220, 40 CFR 50.6 and ARM 17.8.223).</li> <li>Removal/off-Facility disposal of ACM and/or ACM/soil mix would require compliance with National Emission Standards for Hazardous Air Pollutants (NESHAPs) (i.e., ARM 17.8.341 and 40 CFR 61.145).</li> <li>Removal of ACM and/or ACM/soil mix would require compliance with asbestos regulations in building construction and demolition, as applicable (i.e., § 50-64-104 MCA).</li> <li>Removal/off-Facility disposal of ACM or ACM/soil mix would require compliance with Montana Asbestos Control Act.</li> </ul> <p><b>SEE APPENDIX B FOR FURTHER ANALYSIS OF ERCLs FOR THIS ALTERNATIVE.</b></p>	<ul style="list-style-type: none"> <li>The alternative would comply with ERCLs.</li> <li>Requires compliance with the solid waste ERCLs identified in the 2001 ROD for the cinder pile.</li> <li>Removal and placement of ACM and/or ACM/soil mix in the cinder pile would require compliance with ambient air quality ERCLs for particulates (i.e., ARM 17.8.220, 40 CFR 50.6 and ARM 17.8.223).</li> <li>Removal and placement of ACM and/or ACM/soil mix in the cinder pile would require compliance with National Emission Standards for Hazardous Air Pollutants (NESHAPs) (i.e., ARM 17.8.341 and 40 CFR 61.145).</li> <li>Removal of ACM and/or ACM/soil mix would require compliance with asbestos regulations in building construction and demolition, as applicable (i.e., § 50-64-104 MCA).</li> <li>Removal and placement of ACM and/or ACM/soil mix in cinder pile would require compliance with Montana Asbestos Control Act.</li> <li>ACM/soil mix containing F-listed hazardous waste constituents would require off-Facility disposal unless a no longer contained-in determination is obtained from DEQ.</li> <li>Off-Facility disposal would require compliance with ERCLs for hazardous waste handling, storage, transportation, and disposal, if soil containing F-listed constituents is removed with the ACM (i.e., ACM/soil mix) for which a no longer contained-in decision is not applicable.</li> <li>Cinder pile requires compliance with reclamation and noxious weed ERCLs through long-term cinder pile cap monitoring/maintenance.</li> <li>After placement of ACM and or ACM/soil mix in cinder pile, cinder pile cap would require restoration/reclamation to its original condition.</li> </ul>	<ul style="list-style-type: none"> <li>New repository would require a construction design to comply with ERCLs relating to solid waste management, including but not limited to location, final cover design, and long-term monitoring and maintenance.</li> <li>Construction of a new repository, and removal and placement of ACM and/or ACM/soil mix in a new repository would require compliance with ambient air quality ERCLs for particulates (i.e., ARM 17.8.220, 40 CFR 50.6 and ARM 17.8.223).</li> <li>Removal and placement of ACM and/or ACM/soil mix in a new repository would require compliance with National Emission Standards for Hazardous Air Pollutants (NESHAPs) (i.e., ARM 17.8.341 and 40 CFR 61.145).</li> <li>Removal of ACM and/or ACM/soil mix would require compliance with asbestos regulations in building construction and demolition, as applicable (i.e., § 50-64-104 MCA).</li> <li>Removal and placement of ACM or ACM/soil mix in a new repository would require compliance with Montana Asbestos Control Act.</li> <li>ACM/soil mix containing F-listed hazardous waste constituents would require off-Facility disposal unless a no longer contained-in determination is obtained.</li> <li>Off-Facility disposal would require compliance with ERCLs for hazardous waste handling, storage, transportation, and disposal, if soil containing F-listed hazardous waste constituents is removed with the ACM (i.e., ACM/soil mix) for which a no longer contained-in decision is not applicable.</li> <li>Final cover for the new repository would require revegetation in compliance with reclamation and noxious weed ERCLs. Imported material for final cover would be required to be relatively organic-free and not expected to contain any noxious weed plant material (ARM 4.5.201 through 204). Final cover would be seeded with appropriate grass seed (§ 82-4-233, MCA).</li> <li>New repository would require compliance with reclamation and noxious weed ERCLs through long-term monitoring/maintenance of the new repository final cover.</li> </ul>
<p><b>Mitigation of Risk.</b> This criterion evaluates mitigation of exposure to risks to public health, safety, and welfare and the environment to acceptable levels.</p>	<ul style="list-style-type: none"> <li>No reduction in risk.</li> <li>Potential pathway(s) for human exposure (via inhalation, ingestion, or dermal contact) would remain.</li> <li>Does not comply with the ROD.</li> </ul>	<ul style="list-style-type: none"> <li>ACM removal and off-Facility disposal would eliminate risks associated with potential human exposure (via inhalation, ingestion, or dermal contact).</li> <li>Complies with the requirements of the ROD.</li> </ul>	<ul style="list-style-type: none"> <li>Potential pathway(s) for human exposure (via inhalation, ingestion, or dermal contact) would be mitigated provided cinder pile cover is monitored/maintained.</li> <li>Complies with the requirements of the ROD.</li> </ul>	<ul style="list-style-type: none"> <li>Potential pathway(s) for human exposure (via inhalation, ingestion, or dermal contact) would be mitigated provided new repository cover is monitored/maintained.</li> <li>Complies with the requirements of the ROD.</li> </ul>
<p><b>Permanent Solutions.</b> This criterion looks at whether the remedy permanently and significantly reduces the threat posed by the hazardous and deleterious substances at the Facility.</p>	<ul style="list-style-type: none"> <li>Not a permanent solution.</li> </ul>	<ul style="list-style-type: none"> <li>This alternative permanently reduces the threat posed by the ACM at the Facility by permanently removing the ACM from the Facility and encapsulating the ACM in a properly engineered landfill. The monitoring/maintenance requirements of the landfill would ensure the permanence of the encapsulation.</li> </ul>	<ul style="list-style-type: none"> <li>This alternative would reduce the threat posed by the ACM at the Facility; however, the alternative does not permanently remove ACM from the Facility. The cinder pile would require ongoing monitoring and maintenance (both as already required at the cinder pile and to ensure that the placement of additional ACM in the cinder pile did not affect the structural integrity of the cap, and thus the permanence of the solution).</li> </ul>	<ul style="list-style-type: none"> <li>This alternative would reduce the threat posed by the ACM at the Facility; however, the alternative does not permanently remove ACM from the Facility. The repository would require ongoing monitoring and maintenance.</li> </ul>

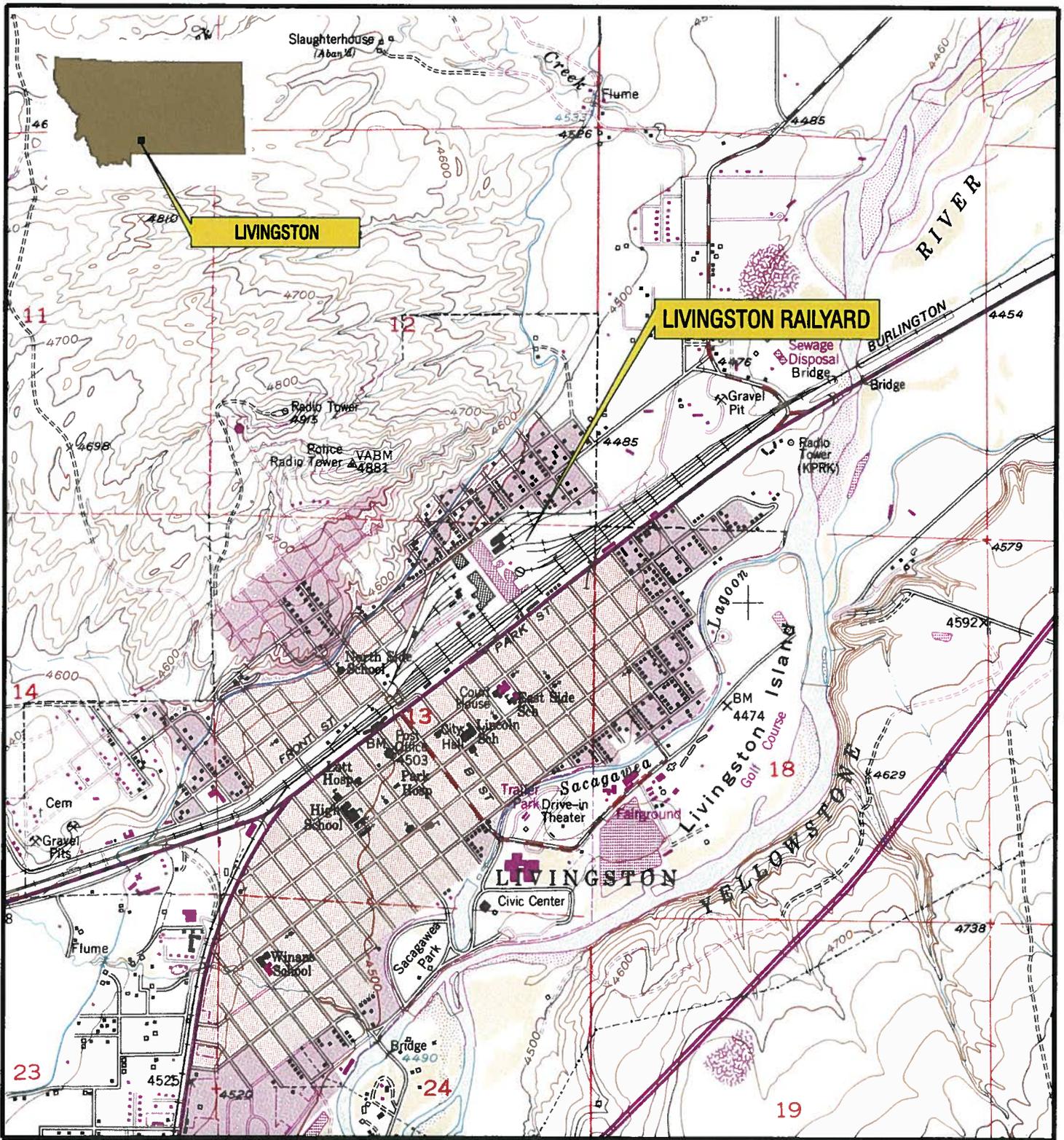
**EVALUATION OF REMEDIAL ALTERNATIVES (TASK M)  
Burlington Northern Livingston Shop Complex**

Criterion <sup>i</sup>	Remedial Alternatives			
	Alternative 1 – No Action	Alternative 2 – Off-Facility Disposal	Alternative 3 – Containment in Cinder Pile	Alternative 4 – Containment in New Repository at the Facility
<b>Treatment or Resource Recovery Technologies.</b> This criterion addresses use of alternative treatment technologies or resource recovery technologies, if practicable. These technologies are generally preferred to simple disposal options.	<ul style="list-style-type: none"> <li>Not a treatment alternative.</li> </ul>	<ul style="list-style-type: none"> <li>This alternative does not involve treatment or recovery. Asbestos is not destroyed by treatment, but can be stabilized/solidified using methods that result in the immobilization and fixation of free asbestos fibers. This alternative achieves the same immobilization except through encapsulation in a properly engineered off-Facility landfill.</li> </ul>	<ul style="list-style-type: none"> <li>This alternative does not involve treatment or recovery. Asbestos is not destroyed by treatment, but can be stabilized/solidified using methods that result in the immobilization and fixation of free asbestos fibers. This alternative achieves the same immobilization except through encapsulation in a properly engineered on-Facility repository.</li> </ul>	<ul style="list-style-type: none"> <li>This alternative does not involve treatment or recovery. Asbestos is not destroyed by treatment, but can be stabilized/solidified using methods that result in the immobilization and fixation of free asbestos fibers. This alternative achieves the same immobilization except through encapsulation in a properly engineered on-Facility repository.</li> </ul>
<b>Cost-Effectiveness.</b> This criterion takes into account the total short- and long-term costs of the actions, including operations and maintenance activities for the entire period during which the activities will be required.	<ul style="list-style-type: none"> <li>Typically the lowest cost alternative.</li> </ul>	<ul style="list-style-type: none"> <li>Usually relatively cost-effective for small to medium volumes of ACM and/or ACM/soil mix.</li> <li>ACM/soil mix containing F-listed hazardous waste constituents would require disposal as hazardous which would increase cost. Available data has not indicated that surface soil at the Facility is likely to contain F-listed constituents.</li> <li>No long-term monitoring/maintenance costs.</li> </ul>	<ul style="list-style-type: none"> <li>Not cost-effective to open cinder pile unless an extremely large volume of ACM and/or ACM/soil mix and/or debris requires disposal.</li> <li>Requires long-term monitoring/maintenance.</li> </ul>	<ul style="list-style-type: none"> <li>Not cost-effective to construct a new on-Facility repository unless an extremely large volume of ACM and/or ACM/soil mix and/or debris requires disposal.</li> <li>Requires long-term monitoring/maintenance.</li> </ul>

<sup>i</sup> Note that this analysis is conducted using the 1993 version of Section 75-10-721 of CECRA, as provided in a 1995 legislative savings clause.

# Figures

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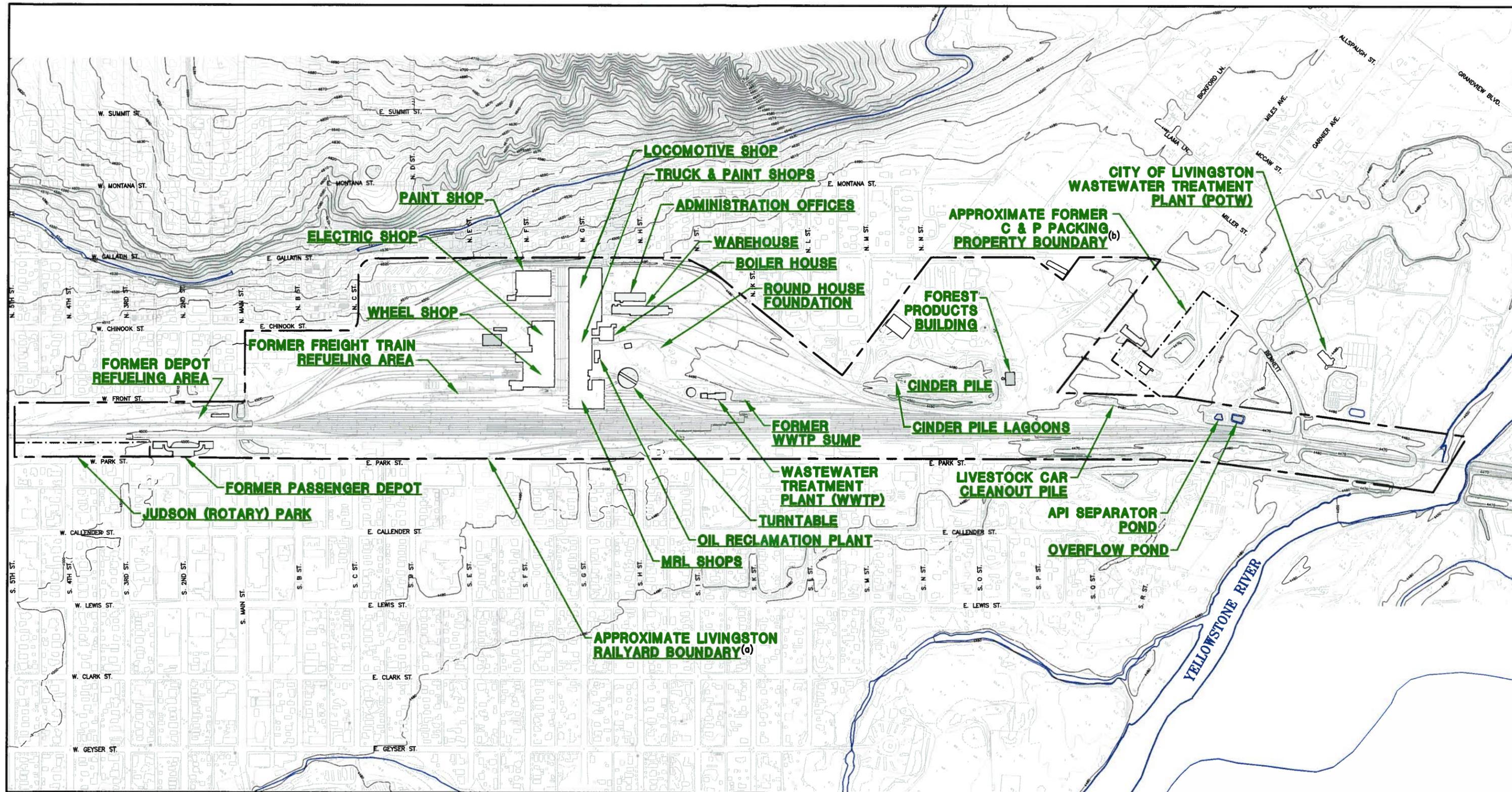
REFERENCE: USGS 7.5' TOPOGRAPHIC  
 QUADRANGLE LIVINGSTON, MONTANA 1951  
 PHOTO REVISED 1981

**Kennedy/Jenks Consultants**

BURLINGTON NORTHERN LIVINGSTON SHOP  
 COMPLEX – LIVINGSTON, MT

**FACILITY LOCATION MAP**

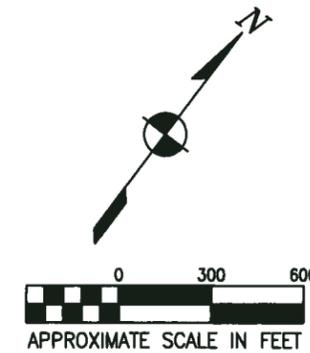
© 2012 Kennedy/Jenks Consultants  
 2012\!LIVINGSTON\TASK M\RAP2\P12SK001  
 4/12 (Revision No. 2) **FIGURE 1**



**NOTES:**

- (a) DENOTES BOUNDARY OF LIVINGSTON RAILYARD AND DOES NOT REPRESENT THE FACILITY BOUNDARY AS DEFINED UNDER MONTANA'S COMPREHENSIVE ENVIRONMENTAL CLEANUP AND RESPONSIBILITY ACT (CECRA).
- (b) APPROXIMATE BOUNDARY TAKEN FROM 2ND DRAFT C & P PACKING INVESTIGATION WORK PLAN, LIVINGSTON, MT. PREPARED BY ENVIROCON, INC., MISSOULA, MT, DATED 14 JUNE 2001

**BASEMAP SOURCE:**  
HORIZONS, INC. RAPID CITY, SD (1989)

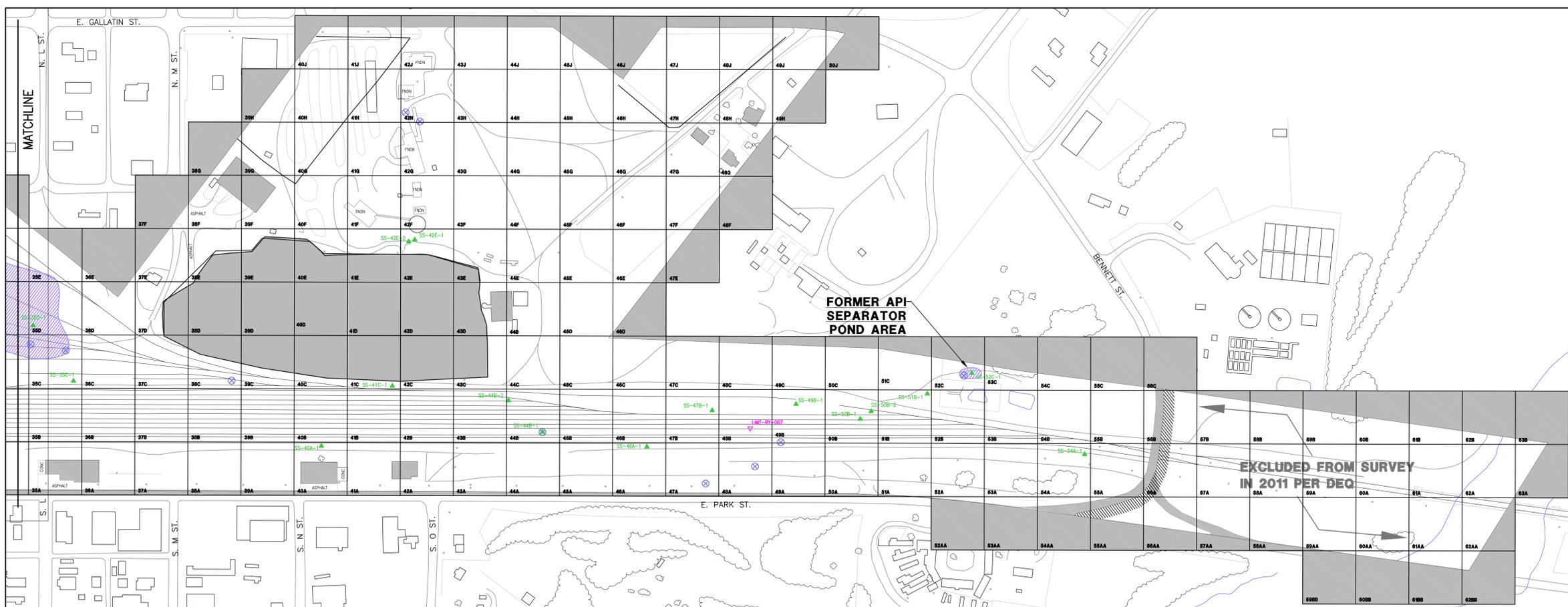
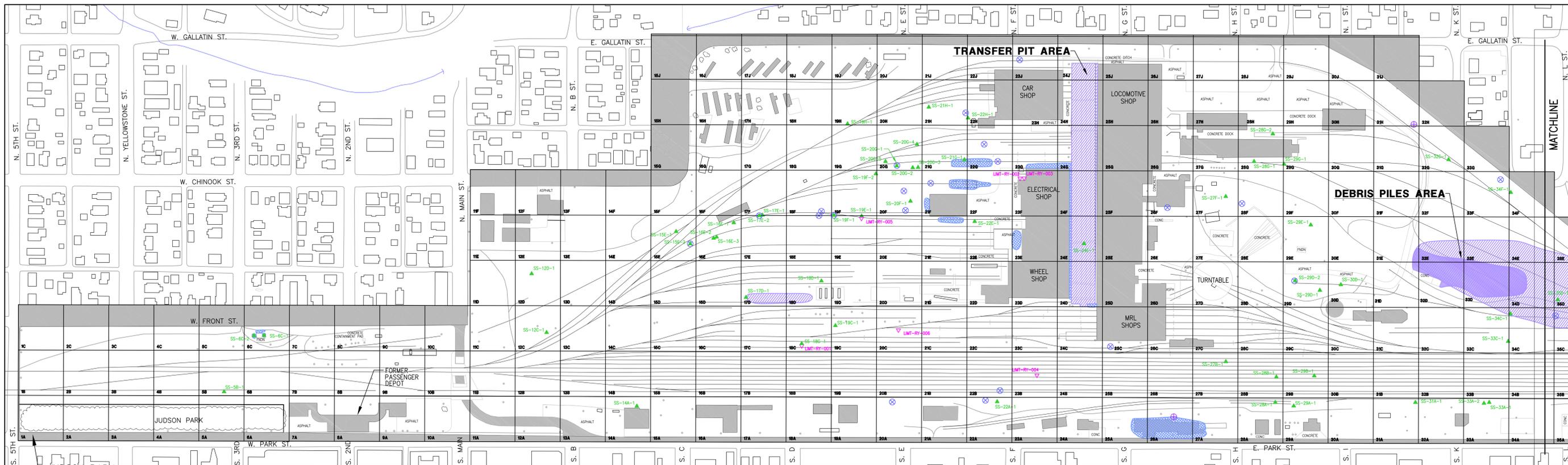


**Kennedy/Jenks Consultants**

BURLINGTON NORTHERN LIVINGSTON SHOP  
COMPLEX – LIVINGSTON, MT

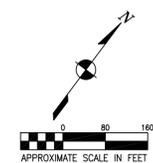
**FACILITY FEATURES**

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2012\!LIVINGSTON\TASK M\RAP2\P12SK002  
4/12 (Revision No. 2) **FIGURE 2**



**LEGEND**

- ▲ OCTOBER 2011 SURFACE SOIL SAMPLE LOCATION
- ▼ OCTOBER 2011 EMR BULK SAMPLE ANALYSIS LOCATION
- DEBRIS PILE
- ▨ POTENTIAL ACM REMOVAL AREA
- ⊕ POTENTIAL ACM TO REMOVE
- ⊖ TRANSITE/ROOFING MATERIAL AREA
- ⊗ TRANSITE/ROOFING MATERIAL TO REMOVE
- ⊠ VISUAL RECONNAISSANCE GRID WITH ALPHANUMERIC DESIGNATION



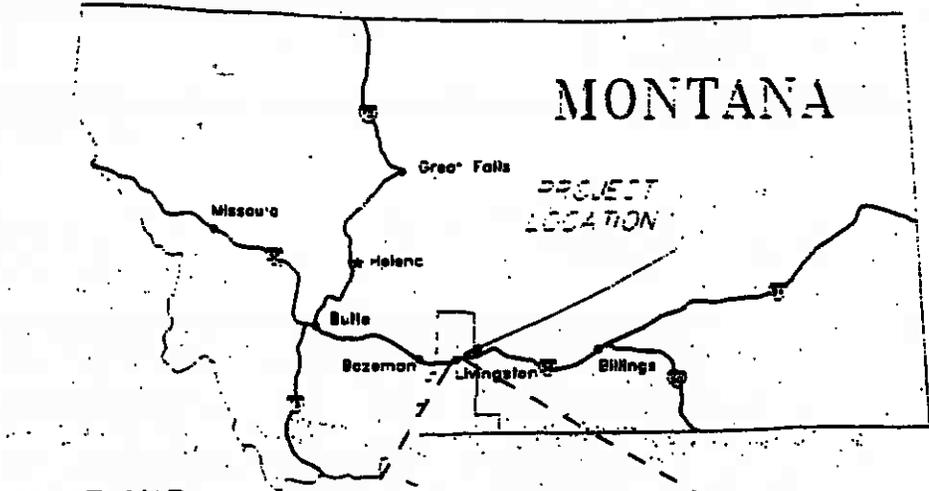
**Kennedy/Jenks Consultants**  
 BURLINGTON NORTHERN LIVINGSTON SHOP  
 COMPLEX - LIVINGSTON, MT

**TASK M**  
**ASBESTOS RECONNAISSANCE/  
 SOIL SAMPLING**

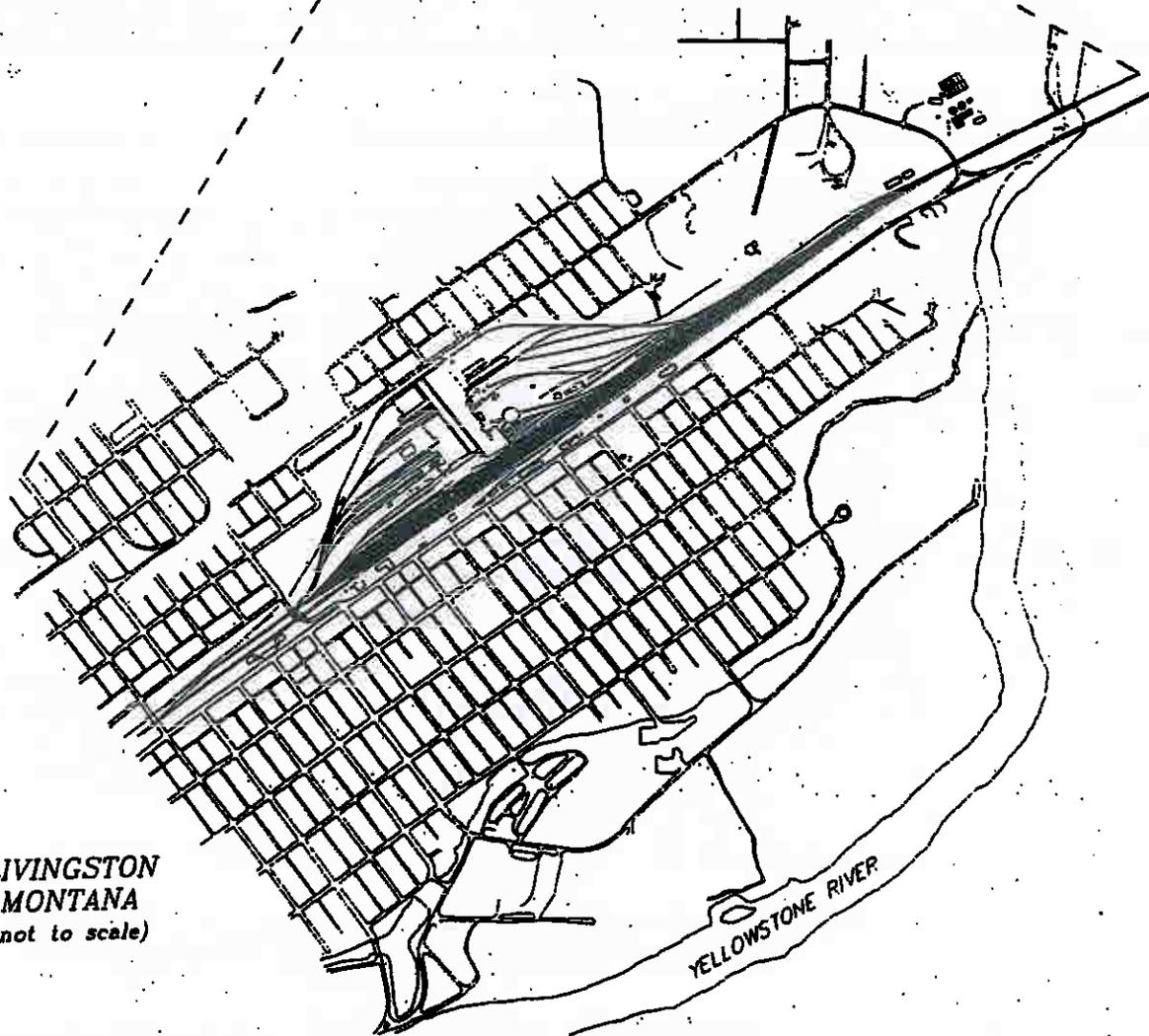
© 2012 Kennedy/Jenks Consultants  
 2012\LIVINGSTON\TASK M\RAP2\P125K003  
 4/12 (Revision No. 2) **FIGURE 3**

## ROD Figure





STATE MAP  
(not to scale)



LIVINGSTON  
MONTANA  
(not to scale)

BURLINGTON NORTHERN  
NTA FE RAILROAD COMPANY

FINAL PRIMARY HYDROCARBON  
FEASIBILITY STUDY REPORT  
LIVINGSTON RAIL YARD  
LIVINGSTON, MONTANA

LIVINGSTON RAILYARD  
SITE LOCATION MAP

**ENVIROCON, INC.**

JOB # 140101.R02

12/30/97

FIGURE 1.

# **Appendix A**

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## **Environmental Requirements, Criteria, and Limitations**

## **APPENDIX A**

### **ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS**

Remedial actions undertaken pursuant to the Comprehensive Environmental Cleanup and Responsibility Act (CECRA), Section 75-10-701, et seq., Montana Code Annotated (MCA), must "attain a degree of cleanup of the hazardous or deleterious substance and control of a threatened release or further release of that substance that assures protection of public health, safety, and welfare and of the environment" [Section 75-10-721(1), MCA]. Additionally, the Montana Department of Environmental Quality (DEQ) "shall require cleanup consistent with applicable state or federal environmental requirements, criteria, or limitations" (ERCLs) and "shall consider and may require cleanup consistent with substantive state or federal ERCLS that are well-suited to the site conditions" [Section 75-10-721(2)(a) and (b), MCA.]

"Applicable" requirements are those that by their terms meet the jurisdictional prerequisites and apply to a given action, item, or characteristic at the site. "Well-suited" requirements are those requirements that are not applicable, but address situations or problems sufficiently similar to those at the site that they are well-suited for use at the site.

ERCLs are generally of three types: contaminant-specific, location-specific, and action-specific. Contaminant-specific requirements are those that establish an allowable level or concentration of a hazardous or deleterious substance in the environment or that prescribe a level or method of treatment for a hazardous or deleterious substance. Action-specific requirements are those that are triggered by the performance of a certain activity as part of a particular remedy. Location-specific requirements are those that serve as restrictions on the concentration of a hazardous or deleterious substance or the conduct of activities solely they are in specific locations or affect specified types of areas.

ERCLs for the remedial action at the Burlington Northern Livingston Shop Complex were prepared by DEQ and were included in Appendix A of the *Record of Decision* (DEQ 2001). The following table presents the ERCLs from the ROD along with the regulatory citation(s), and an analysis of how the activities that will be performed during implementation of the remedial action work plan for Task M will comply with these ERCLs. Activities to be performed during implementation of the remedial action work plan for Task M comply with ERCLs.



**ANALYSIS OF ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS (ERCLS)<sup>(a)</sup> FOR TASK M  
Burlington Northern Livingston Shop Complex**

Federal or State ERCL Citation	Description	Compliance
<b>Surface Water Quality Standards (Applicable)</b>		
<p>Montana Water Quality Act, Section 75-5-101, et seq., MCA</p> <p>Federal Clean Water Act, 33 U.S.C. §§ 1251, et seq.</p> <p>ARM 17.30.611</p> <p>ARM 17.30.623</p> <p>WQB-7 standards</p> <p>ARM 17.30.623</p> <p>ARM 17.30.637</p> <p>ARM 17.30.705</p>	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>	<p>To ensure state waters are not degraded/polluted, IDW generated during field activities associated with Task M will be managed as outlined in the Facility-Wide SAP.</p>
<p>Water Quality Act, Title 17, Chapter 30, Sub-Chapters 6 and 13 and ARM 17.30.1332</p>	<p><u>Stormwater Runoff (Applicable)</u></p> <p>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).</p> <p>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.</p>	<p>Activities proposed in the Task M RAP will not impact surface water runoff at the Facility.</p>
<b>Ambient Air Quality Standards (Applicable)</b>		
<p>40 CFR 50.12 and ARM 17.8.222</p> <p>40 CFR 50.9 and ARM 17.8.213 40 CFR 50.10</p> <p>ARM 17.8.220</p>	<p>The following standards are applicable at the site<sup>4</sup>:</p> <p>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.</p> <p>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).</p> <p>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.</p>	<p>Although particulates may be generated during activities proposed in the Task M are not expected to result in exceedances of ambient air quality standards. Best management practices will include wetting of soil or potential asbestos containing debris as needed.</p>

**ANALYSIS OF ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS (ERCLS)<sup>(a)</sup> FOR TASK M  
Burlington Northern Livingston Shop Complex**

Federal or State ERCL Citation	Description	Compliance
40 CFR 50.6 and ARM 17.8.223  40 CFR 50.8 and ARM 17.8.212	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.  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).	Although particulates may be generated activities proposed in the Task M are not expected to result in exceedances of ambient air quality standards. Best management practices will include wetting of soil or potential asbestos containing debris as needed.
<b>Emission Standards (Applicable)</b>		
Sections 75-2-101, et seq., MCA,  ARM 17.8.304  ARM 17.8.308	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.  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. 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.	Although particulates may be generated during equipment operation, activities proposed in the Task M are not expected to result in exceedances of ambient air quality standards. Best management practices will include wetting of soil or potential asbestos containing debris as needed.
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 Task M RAP will not generate odors. No open burning will be conducted during implementation of Task M.
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 Task M RAP 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.	
<b>FEDERAL LOCATION SPECIFIC ERCLS</b>		
<b>Criteria Classification of Solid Waste Disposal Facilities and Practices (Applicable and Well-Suited)</b>		
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 Task M. Depending on the constituents and concentrations present and upon approval from the Montana Department of Environmental Quality (DEQ), this soil or water 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 Section 8.4, Addendum No.1, and Addendum No.2 of the Facility-Wide SAP for additional information on how non-hazardous IDW will be managed to comply with these ERCLS. IDW or solid waste generated during implementation of Task M will be disposed off of the Facility at an appropriate permitted disposal facility.
<b>The Endangered Species Act (Well-Suited)</b>		
16 U.S.C. §§ 1531 – 1544, 50 CFR Part 402, 40 CFR 6.302(h), 40 CFR 257.3-2  Sections 87-5-106, -107, -111, and -201, MCA  ARM 12.5.201	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.  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 (Applicable). Certain activities are prohibited with respect to specified endangered species.	Activities proposed in the Task M RAP 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.

**ANALYSIS OF ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS (ERCLS)<sup>(a)</sup> FOR TASK M  
Burlington Northern Livingston Shop Complex**

Federal or State ERCL Citation	Description	Compliance
<b>Migratory Bird Treaty Act (Well-Suited)</b>		
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 Task M RAP 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.
<b>Bald Eagle Protection Act (Well-Suited)</b>		
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 Task M RAP 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.
<b>Historic Sites, Buildings, Objects, and Antiquities Act (Well-Suited)</b>		
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 Task M RAP will not impact historic sites. According to the ROD, no historic sites were identified at the Livingston railyard.
<b>Fish and Wildlife Coordination Act (Well-Suited)</b>		
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 Task M RAP do not involve the modification of any stream or other water body.
<b>Floodplain Management Order (Well-Suited)</b>		
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 the Task M RAP do not involve the modification of the floodplain.
<b>Protection of Wetlands Order (Well-Suited)</b>		
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 Task M RAP will not impact wetlands.
<b>STATE LOCATION SPECIFIC ERCLS</b>		
<b>Solid Waste Management Regulations (Applicable and Well-Suited)</b>		
Solid Waste Management Act, Sections 75-10-201 et seq., MCA  ARM 17.50.505(1)	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).  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.	Non-hazardous IDW (i.e., soil, water) generated during implementation of Task M 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 Task M RAP 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, Addendum No.1, and Addendum No. 2 of the Facility-Wide SAP for additional information regarding the management of IDW.  IDW (i.e., soil, water) generated during implementation of Task M 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 100-year floodplain. 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, Addendum No.1, and Addendum No.2 of the Facility-Wide SAP for additional information regarding the management of IDW.

**ANALYSIS OF ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS (ERCLS)<sup>(a)</sup> FOR TASK M  
Burlington Northern Livingston Shop Complex**

Federal or State ERCL Citation	Description	Compliance
<b>Floodplain and Floodway Management Act and Regulations (Applicable)</b>		
<p>Section 76-5-401, MCA and ARM 36.15.601</p> <p>Section 76-5-402, MCA and ARM 36.15.701</p> <p>ARM 36.15.602(6)</p> <p>ARM 36.15.602(5), 36.15.605, and 36.15.703</p> <p>Section 76-5-402, MCA</p> <p>Section 76-5-406, MCA and ARM 36.15.216</p> <p>ARM 36.15.604, ARM 36.15.602(1), and ARM 36.15.603</p> <p>ARM 36.15.701(3)(c)</p> <p>ARM 36.15.701(3)(d)</p> <p>ARM 36.15.702(2)</p> <p>ARM 36.15.606</p> <p>ARM 36.15.901</p>	<p>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.</p> <p>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.</p> <p>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.</p> <p>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).</p> <p>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.</p> <p>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.</p> <p>Section 76-5-406, MCA and ARM 36.15.216 contain substantive factors which address obstruction or use within the floodway or floodplain.</p> <p>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).</p> <p>ARM 36.15.701(3)(c) requires that roads, streets, highways and rail lines must be designed to minimize increases in flood heights.</p> <p>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).</p> <p>Standards applied to residential, commercial or industrial structures are found at ARM 36.15.702(2).</p> <p>Flood control works are subject to ARM 36.15.606, which requires compliance with safety standards for levees, floodwalls, and riprap.</p> <p>ARM 36.15.901 requires electrical systems to be flood-proofed.</p>	<p>Activities proposed in the Task M RAP will not impact the floodplain.</p>
<b>FEDERAL AND STATE ACTION SPECIFIC ERCLS</b>		
<b>Federal Hazardous Waste Management Regulations (Applicable)</b>		
<p>42 U.S.C. §§ 6901 et seq., and Montana Hazardous Waste Act, Sections 75-10-401 et seq., MCA</p>	<p>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.</p> <p>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).</p>	<p>Any hazardous IDW (i.e., soil, water) generated during implementation of Task M will be managed as outlined in Section 8.4, Addendum No.1, and Addendum No.2 of the Facility-Wide SAP, in accordance with the applicable requirements of these ERCLs. 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 Task M will be contained in 55-gallon drums or tank(s) and stored inside/near the Forest Products Building and/or the Former C&amp;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 Task M will be disposed of in accordance with these ERCLs.</p> <p>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.</p>

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Burlington Northern Livingston Shop Complex**

Federal or State ERCL Citation	Description	Compliance
<b>Identification and Listing of Hazardous Waste</b>		
<p>40 CFR 261 ARM 17.54.501-502</p> <p>ARM 17.53.111 and 112, MCA</p>	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>	<p>IDW (i.e., soil, water) generated during implementation of Task M will be designated hazardous or non-hazardous based on analytical testing and will be managed accordingly as outlined in Section 8.4, Addendum No.1, and Addendum No.2 of 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.</p> <p>BNSF has obtained a hazardous waste identification number for the Livingston railyard (EPA ID No. MTT310010087).</p>
<b>Standards for Transporters of Hazardous Waste</b>		
<p>40 CFR Part 263</p>	<p>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.</p>	<p>Any hazardous IDW (i.e., soil, water) generated during implementation of Task M will be managed/transported in accordance Section 8.4, Addendum No.1, and Addendum No.2 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.</p>
<b>Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities</b>		
<p>40 CFR 264, Subpart B</p>	<p><u>General Facility Standards</u> The regulations at 40 CFR 264, Subpart B, establish general facility requirements. These standards include requirements for general waste analysis, security and location standards.</p>	<p>Any hazardous IDW (i.e., soil, water) generated during implementation of Task M will be managed in accordance with Section 8.4, Addendum No.1, and Addendum No.2 of the Facility-Wide SAP.</p>

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Burlington Northern Livingston Shop Complex**

Federal or State ERCL Citation	Description	Compliance
40 CFR 264, Subpart F	<p><u>Releases from Solid Waste Management Units</u> 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).</p> <p>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.</p>	IDW (i.e., soil, water) generated during implementation of Task M will be appropriately containerized and stored, as described in Section 8.4.4 of the Facility-Wide SAP.
40 CFR Part 264, Subpart G	<p><u>Closure and Post-Closure Monitoring and Maintenance of Waste Management or Disposal Facilities</u> 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.</p> <p>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.</p>	IDW (i.e., soil, water) generated during implementation of Task M 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 Task M RAP will not be stored in soil waste management or disposal facilities.
40 CFR Part 264, Subparts I and J 40 CFR 261.7	<p><u>Waste Containers and Tanks</u> 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.</p>	Any hazardous IDW (i.e., soil, water) generated during implementation of Task M 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	<p><u>Waste Piles</u> 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.</p>	Any hazardous IDW (i.e., soil, water) generated during implementation of Task M will be stored in 55-gallon 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	<p><u>Staging Piles</u> 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.</p>	
40 CFR Part 268	<p><u>RCRA Land Disposal Restrictions</u> 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.</p>	Any hazardous IDW (i.e., soil, water) generated during implementation of Task M will be managed in accordance with Section 8.4, Addendum No.1, and Addendum No.2 of the Facility-Wide SAP. Figures 4, 5, and 6 in the Facility-Wide SAP depict how IDW generated during implementation of Task M 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 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	<p><u>Hazardous debris</u> 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.</p>	If any hazardous debris is generated during implementation of Task M, it will be managed as outlined in Section 8.4, Addendum No.1, and Addendum No.2 of the Facility-Wide SAP.

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Federal or State ERCL Citation	Description	Compliance
40 CFR Part 270	<u>Substantive Permit Requirements</u> 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, Addendum No.1, and Addendum No.2 of the Facility-Wide SAP, including generation, storage, and disposal.
40 CFR Part 279	<u>Used Oil</u> 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 Task M RAP will not result in the generation of used oil.
<b>State Hazardous Waste Management Regulations (Applicable)</b>		
Sections 75-10-401 et seq., MCA  ARM 17.53.501-502  ARM 17.53.601-604  ARM 17.53.701-708  ARM 17.53.801-803  ARM 17.53.1101-1102  Section 75-10-422 MCA  ARM 17.53.1101-1102  ARM 17.53.1401	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.  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, 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, 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, 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, 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 prohibits the unlawful disposal of hazardous wastes.  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, adopts the equivalent of RCRA regulations at 40 CFR Part 279 which set forth the standards for the management of used oil.	Any hazardous IDW (i.e., soil, water) generated during implementation of Task M will be managed as outlined in Section 8.4, Addendum No.1, and Addendum No.2 of the Facility-Wide SAP, in accordance with the applicable requirements of these ERCLs. 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 Task M 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 Task M will be disposed of in accordance with these ERCLs.  Activities proposed in the Task M RAP will not result in the generation of used oil.
<b>National Emission Standards for Hazardous Air Pollutants (NESHAPs)</b>		
ARM 17.8.341 (Incorporates by reference 40 CFR Part 61)  40 CFR 61.145	<u>Asbestos (Well-Suited)</u> 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.  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.	To avoid generation of visible emissions of airborne dust (particulates), the following best management practices will be utilized, as needed. - Investigation areas and/or removal areas will be adequately wetted to contain visible emissions. - Materials that may contain asbestos will be carefully lowered from an excavator (or other mechanical device) to minimize the generation of air emissions. - Removed asbestos or asbestos/soil mix that is pending characterization and/or offsite disposal will be placed in leak-tight (covered, lined) roll-off bins or temporarily stockpiled in a manner to prevent surface water run off/run on, and adequately wetted and/or stabilized with a soil tackifier (dust suppressant) and covered to prevent wind blown emissions. ACM will be stored adequately wet and properly packaged in leak-tight containers or wrappings to prevent airborne emissions. The secured area used for storage will have warning signs posted. Leak-tight containers/stockpiles will be labeled with BNSF as the generator and the location at which the waste was generated.
40 CFR Part 61, Subpart F	<u>Vinyl Chloride (Applicable)</u> 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.	Activities proposed in Task M RAP will not result in air emissions of vinyl chloride.

**ANALYSIS OF ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS (ERCLS)<sup>(a)</sup> FOR TASK M  
Burlington Northern Livingston Shop Complex**

Federal or State ERCL Citation	Description	Compliance
<b>National Pollutant Discharge Elimination System (NPDES) and the Montana Pollutant Discharge Elimination System (MPDES) (Applicable)</b>		
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.	Activities proposed in the Task M RAP do not involve discharges to the Yellowstone River.
<b>Technology-Based Treatment (Applicable)</b>		
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).	Activities proposed in the Task M RAP do not involve discharges to the Yellowstone River.
<b>Underground Injection Control Program (Well-Suited)</b>		
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 Task M RAP do not involve the construction/operation of underground injection control wells.
<b>Solid Waste Management Regulation (Applicable and Well-Suited)</b>		
ARM 17.50.505  ARM 17.50.511  ARM 17.50.530  ARM 17.50.531	<p>ARM 17.50.505(2) specifies standards for solid waste management facilities, including the requirements that:</p> <ol style="list-style-type: none"> <li>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;</li> <li>2. adequate separation of group II wastes from underlying or adjacent water must be provided; and</li> <li>3. no new disposal units or lateral expansions may be located in wetlands.</li> </ol> <p>ARM 17.50.505 also specifies general soil and hydrogeological requirements pertaining to the location of any solid waste management facility.</p> <p>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.</p> <p>ARM 17.50.530 sets forth the closure requirements for landfills. Class II landfills must meet the following criteria:</p> <ol style="list-style-type: none"> <li>1. install a final cover that is designed to minimize infiltration and erosion.</li> <li>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<sup>-5</sup> cm/sec, whichever is less;</li> <li>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;</li> <li>4. revegetate the final cover with native plant growth within one year of placement of the final cover.<sup>5</sup></li> </ol> <p>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.</p>	Activities proposed in the Task M RAP do not involve siting, construction, operation/maintenance, and closure of a solid waste management facility. IDW generated during implementation of Task M will be managed as outlined in Section 8.4, Addendum No.1, and Addendum No.2 of the Facility-Wide SAP.
<b>Transportation of Solid Waste (Applicable)</b>		
Section 75-10-212  ARM 17.50.523	<p>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.</p> <p>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.</p>	Solid waste (i.e., plastic wrapping, cardboard, non-indigenous waste, etc.) generated during implementation of Task M 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 M will be managed as outlined in Section 8.4, Addendum No.1, and Addendum No.2 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.

**ANALYSIS OF ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS (ERCLS)<sup>(a)</sup> FOR TASK M  
Burlington Northern Livingston Shop Complex**

Federal or State ERCL Citation	Description	Compliance
<b>Underground Storage Tank (USTs) Regulations (Applicable)</b>		
40 CFR Part 280, Subpart F  40 CFR 280.64  40 CFR Part 280, Subpart D 40 CFR 280.43  Title 17, Chapter 56, Sub-Chapter 4  ARM 17.56.407  Title 17, Chapter 56, Sub-Chapter 6  ARM 17.56.602 - 605	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.  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 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 sets forth requirements for release detection.  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.  The Montana regulations regarding underground storage tanks include similar requirements.  Title 17, Chapter 56, Sub-Chapter 4 specifies release detection.  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 specifies release response and corrective action for tanks containing petroleum or hazardous substances.  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.	Activities proposed in the Task M RAP do not involve USTs.
<b>Asbestos Regulation in Building Construction and Demolition (Well-Suited)</b>		
Sections 50-64-101, et seq., MCA 50-64-104, MCA	Sections 50-64-101 et seq., MCA, regulate construction and demolition of structures that contain asbestos.  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.	Activities proposed in the Task M RAP do not involve construction or demolition of any asbestos-containing structures; however, the following are considered well-suited to Task M and will be implemented during the asbestos project: - Local fire department will be notified of the asbestos project. - Warning signs will be posted (as previously described in these ERCLs and in Section 3.3.1). - Surfaces/work areas and stored asbestos and/or asbestos/soil mix will be adequately wetted onsite and during storage and transportation (as previously described in these ERCLs and in Section 3.3.1). - Asbestos materials will be stored adequately wet and properly packaged in leak-tight containers or covered (wrapped) stockpiles to prevent airborne emissions (as previously described in these ERCLs and in Section 3.3.1). - Asbestos materials will be disposed at a DEQ-approved asbestos disposal facility (High Plains Sanitary Landfill, Great Falls, Montana) (see Section 3.2).
<b>Well Drilling (Applicable)</b>		
Section 85-2-505, MCA  Section 85-2-516, MCA  ARM 17.30.641 ARM 17.30.646 ARM 36.21.670-678 and 810	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.  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 provides standards for sampling and analysis of water to determine quality.  ARM 17.30.646 requires that bioassay tolerance concentrations be determined in a specified manner.  ARM 36.21.670-678 and 810 specifies certain requirements that must be fulfilled when abandoning monitoring wells.	No monitoring wells will be constructed during implementation of Task M.     Bioassays will not be performed during implementation of Task M.  No monitoring wells will be abandoned during implementation of Task M.

**ANALYSIS OF ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS (ERCLS)<sup>(a)</sup> FOR TASK M  
Burlington Northern Livingston Shop Complex**

Federal or State ERCL Citation	Description	Compliance
<b>Reclamation Requirements (Well-Suited)</b>		
Section 82-4-231, MCA  Section 82-4-233, MCA  Section 82-4-336, MCA  ARM 17.24.501 ARM 17.24.519 ARM 17.24.631  ARM 17.24.633  ARM 17.24.634  ARM 17.24.638  ARM 17.24.639  ARM 17.24.640  ARM 17.24.643 - 646  ARM 17.24.701 and 702  ARM 17.24.711  ARM 17.24.713  ARM 17.24.714  ARM 17.24.716  ARM 17.24.718  ARM 17.24.723  ARM 17.24.724  ARM 17.24.726  ARM 17.24.728  ARM 17.24.761	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. Section 82-4-231, MCA: Requires operators to reclaim and revegetate affected lands using most modern technology available. 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: Disturbed areas must be reclaimed to utility and stability comparable to areas adjacent. ARM 17.24.501: Provides general backfilling and grading requirements. ARM 17.24.519: Pertinent areas where excavation will occur will be regraded to minimize settlement. 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: 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: Disturbed drainages will be restored to the approximate pre-disturbance configuration, to the extent consistent with the selected response alternatives. ARM 17.24.638: Sediment control measures must be implemented during operations. ARM 17.24.639: Sets forth requirements for construction and maintenance of sedimentation ponds. 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 through 17.24.646: Provisions for groundwater protection, groundwater recharge protection, and groundwater and surface water monitoring. 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: 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: Seeding and planting of disturbed areas must be conducted during the first appropriate period for favorable planting after final seedbed. ARM 17.24.714: Mulch or cover crop or both must be used until adequate permanent cover can be established. ARM 17.24.716: Establishes method of revegetation. 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: States that operators shall conduct approved periodic measurements of vegetation, soils, and water. 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: Sets the required methods for measuring productivity. ARM 17.24.728: Sets requirements for measurements of the composition of vegetation on reclaimed areas. 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.	Activities proposed in the Task M RAP do not involve any land disturbances that would trigger these requirements.

**ANALYSIS OF ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS (ERCLS)<sup>(a)</sup> FOR TASK M  
Burlington Northern Livingston Shop Complex**

Federal or State ERCL Citation	Description	Compliance
<b>Noxious Weeds (Applicable)</b>		
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 Task M RAP do not involve the introduction or planting of plants, nor will land disturbance occur which would trigger these requirements.
<b>OTHER LAWS</b>		
These laws are laws which are independently applicable rather than ERCLs for the site.		
Section 85-2-101, MCA	<u>Surface Water and Groundwater Act</u> 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 Task M RAP will not require any surface water or groundwater to be appropriated.
Parts 3 and 4 of Title 85, Chapter 2, MCA	<u>Groundwater and Surface Water Appropriation</u> 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 Task M RAP will not require any water rights to be obtained.
Section 85-2-507, MCA  Section 85-2-506, MCA	<u>Controlled Ground Water Area</u> 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. <sup>6</sup> 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 Task M RAP will not require a controlled groundwater area.
29 CFR <input type="checkbox"/> Part <input type="checkbox"/> 1910	<u>Occupational Safety and Health Act</u> 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 Task M will be conducted in accordance with the <i>Facility-Wide Health and Safety Plan (HASP)</i> and the task-specific HASP addendum.
ARM 17.74.101	<u>Montana Occupational Health Act</u> ARM Section 17.74.101, along with the similar federal standard in 29 CFR 1910.95, addresses occupational noise.	
ARM 17.74.102	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	<u>Montana Safety Act</u> 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.	Kennedy/Jenks Consultants 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, Kennedy/Jenks Consultants has a Corporate Health and Safety Program and Hazardous Communication Program.
Section 50-78-201, 202, and 204, MCA	<u>Employee and Community Hazardous Chemical Information Act</u> 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	<u>Standards for Generators of Hazardous Waste</u> 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 Task M will be managed as outlined in Section 8.4, Addendum No.1, and Addendum No.2 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)<sup>(a)</sup> FOR TASK M  
Burlington Northern Livingston Shop Complex**

Federal or State ERCL Citation	Description	Compliance
40 CFR Part 263 and ARM 17.53.701-708	<u>Standards for Transporters of Hazardous Waste</u> 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 Task M will be managed in accordance with Section 8.4, Addendum No.1, and Addendum No.2 of the Facility-Wide SAP and comply with these requirements.
40 CFR 268 and ARM 17.53.1101-1102	<u>RCRA Land Disposal Restrictions</u> 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 Task M will be managed in accordance with Section 8.4, Addendum No.1, and Addendum No.2 of the Facility-Wide SAP and comply with these requirements.
49 CFR Chapter I, Subchapters B and C and ARM 23.5.101	<u>Oil Transportation</u> 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 Task M RAP do not involve the use of oil and will not generate used oil.
Sections 75-2-501 et seq., MCA  Sections 75-2-502(4) and -511, MCA, and ARM 17.74.302(3)  ARM 17.74.314  ARM 17.74.335 29 CFR 1926.58 40 CFR 763.120-121 40 CFR Part 61, Subpart M  ARM 17.74.338  ARM 17.74.341	<u>Montana Asbestos Control Act</u> 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. 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 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 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 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 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.	Activities proposed in the Task M RAP involve asbestos work and will comply with these requirements.  As described in Section 1.5, a permit will be obtained for Task M asbestos removal activities under DEQ's Asbestos Control Program. The asbestos abatement contractor will comply with the requirements of the permit.  Personnel used for the permitted asbestos abatement project will be accredited by the state of Montana to perform such work.  Asbestos and/or asbestos/soil mix will be disposed of at High Plains Sanitary Landfill (a Montana Class II Landfill that accepts friable asbestos), unless F-listed constituents are detected in the soil matrix at concentrations greater than ROD cleanup levels (see Section 3.3.1). If F-listed constituents are detected in the asbestos/soil mix at concentrations greater than ROD cleanup levels, the asbestos/soil mix will be managed as a hazardous waste and disposed off at a permitted Subtitle C disposal facility.  An accredited asbestos abatement supervisor will be physically present on site when the permitted asbestos abatement project is being performed and will be accessible to personnel working on the abatement project. If the asbestos abatement contractor determines on site air monitoring is required, it will be conducted by an accredited asbestos contractor/supervisor, an engineer or industrial hygienist.  Records will be retained by BNSF for a minimum of 30 years.
40 CFR Part 92	<u>Locomotive Emissions</u> 40 CFR Part 92 establishes control of air pollution from locomotives and locomotive engines.	Activities proposed in the Task M RAP 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). ERCLs pertinent to Task M asbestos related activities are shaded in yellow.

<sup>1</sup> 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.

<sup>2</sup> Montana Department of Environmental Quality, Planning, Prevention and Assistance Division, Circular WQB-7, Montana Numeric Water Quality Standards (September, 1999).

<sup>3</sup> For vinyl chloride, the WQB-7 standard is 0.15 µg/L.

<sup>4</sup> 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.

<sup>5</sup> 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.

<sup>6</sup> 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.

# **Appendix B**

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## **Analytical Laboratory Reports**

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## **Bulk Asbestos Analysis**

**SEATTLE ASBESTOS TEST, LLC**

Lynnwood Laboratory: 19711 Scriber Lake Rd, Suite D, Lynnwood, WA 98036; Tel: 425.673.9850, Fax:425.673.9810

Bellevue Laboratory: 12727 Northup Way, Suite 1, Bellevue, WA 98005; Tel: 425.861.1111, Fax: 425.861.1118

Website: <http://www.seattleasbestostest.com>, E-mail: [admin@seattleasbestostest.com](mailto:admin@seattleasbestostest.com)

NVLAP Accredited - Bellevue:200876; Lynnwood:200768

**ANALYTICAL LABORATORY REPORT**

PLM by Method EPA/600/R-93/116

Attn.: Mr. Paul Fowler

Client: EMR, Inc.

Address: 3200 Haskell Avenue, Suite 140

Lawrence, KS 66046

Client Job #: 9723-001

Laboratory Batch #: 201114384

Date Received: 10/31/2011

Samples Received: 7

Date Analyzed: 11/2/2011

Samples Analyzed: 7

Project: Livingston, MT Railyard Visual Recon

Lab ID	Client Sample ID	Layer	Description	%	Asbestos Fibers	Non-Fibrous Components	%	Non-asbestos Fibers
1	LIMT-RY-001	1	Gray fibrous material		None detected	Binder/filler	87	Cellulose
2	LIMT-RY-002	1	Off-white tile		None detected	Vinyl/binder, Mineral grains	3	Cellulose
		2	White paint		None detected	Paint/binder	2	Cellulose
3	LIMT-RY-003	1	Brown fibrous material		None detected	Paint, Filler	74	Cellulose
4	LIMT-RY-004	1	Yellow sandy/brittle material		None detected	Sands, Filler, Binder	3	Cellulose
5	LIMT-RY-005	1	Gray woven fibrous material		None detected	Filler, Binder	91	Glass fibers
6	LIMT-RY-006	1	White brittle material		None detected	Filler, Binder	11	Cellulose
7	LIMT-RY-007	1	Salmon brittle material		None detected	Filler, Binder	9	Cellulose

Analyzed by: MacKenzie Kieft/Heather Mummev

Report reviewed by: Steve (Eunice) Zheng, President

20114384

**SEATTLE ASBESTOS TEST, LLC**

19711 Scriber Lake Road, Suite D, Lynnwood, WA 98036  
 Tel: (425) 673-9850 Fax: (425) 673-9810  
 www.seattleasbestostest.com

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Accredited, Experienced, Insured, and Well Managed!

**CHAIN OF CUSTODY**

ANALYSIS: BULK ASBESTOS TEST  POINT COUNT (400)  POINT COUNT (1000)  POINT COUNT (Gravimetric)  Other

Client Name EMR

Address \_\_\_\_\_ City LAWRENCE ST KS ZIP \_\_\_\_\_

Phone: 425-512-5510 Fax: \_\_\_\_\_ Email: DWELCH@EMR-INC.COM

Project Location: LIVINGSTON, MT RAILYARD Proj. Manager: DAVE WELCH

VISUAL RECON Turn Around Time 20 Number of Samples 7 Client Job # 9723-001

Sample Condition: Good  Damaged  Severe Damage (Spillage)

SEQ#	CLIENT SAMPLE #	SAMPLE DESCRIPTION	LAB ID	A/R
1	LIMT-RY-001	GRID 19C NET-LIKE	GRID 18C JMK 12/16/11	
2	LIMT-RY-002	GRID 23F 12" FLOOR TILE		
3	LIMT-RY-003	GRID 23F SOFT BOARD		
4	LIMT-RY-004	GRID 23B YELLOW FIBER BOARD		
5	LIMT-RY-005	GRID 19E FABRIC		
6	LIMT-RY-006	GRID 20C		
7	LIMT-RY-007	SALMON-COLORED WALL BOARD		
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

	Print Name	Signature	Company Name	Date	Time
Sampled	DAVID WELCH	<i>[Signature]</i>	EMR, Inc.		
Relinquished					
Delivered					
Received	H. Mummey	<i>[Signature]</i>	SAT	10/31/11	1635
Analyzed	H. Mummey	<i>[Signature]</i>	SAT	11/2/11	0825
Reported					

Result reporting method: Phone  Fax  Email  Pick-up report

Seattle Asbestos Test warrants the test results to be of a precision normal for the type and methodology employed for each sample submitted and disclaims any other warrants, expressed or implied, including warranty of fitness for a particular purpose and warranty of merchantability. Seattle Asbestos Test accepts no legal responsibility for the purpose for which the client uses the test results. By signing on this form the clients agree to relieve Seattle Asbestos Test of any liability that may arise from the test results. Invoices paid late may be charged of interest, and invoices go to collection may be charged 17% to 25% of collection fee. Checks with NSF will be charged \$50.

PLEASE INVOICE DAVID WELCH @ DWELCH@EMR-INC.COM

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**Bulk Asbestos Analysis  
Near Surface Soil**



# EMSL Analytical, Inc

2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577

Phone: (510) 895-3675 Fax: (510) 895-3680 Email: [sanleandrolab@emsl.com](mailto:sanleandrolab@emsl.com)

Attn: **Amanda Aldersley**  
**Kennedy Jenks Engineers, Inc.**  
**32001 32nd Ave S**  
**Suite 100**  
**Federal Way, WA 98001**

Customer ID: KJEN34  
Customer PO: 12201158984  
Received: 11/02/11 9:00 AM  
EMSL Order: 091112395

Fax: (253) 952-3435 Phone: (253) 874-0555  
Project: **Livingston - Task M**

EMSL Proj:  
Analysis Date: 11/15/2011

## Test Report: PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling) Level A for 0.25% Target Analytical Sensitivity

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
SS 6C-1 091112395-0001	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
SS 6C-2 091112395-0002	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
SS 5B-1 091112395-0003	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
SS 12D-1 091112395-0004	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<0.25% Chrysotile
SS 22A-1 091112395-0005	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
SS 29A-1 091112395-0006	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
SS 27B-1 091112395-0007	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
SS 33A-1 091112395-0008	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
SS 33A-2 091112395-0009	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected

Report Amended: 12/15/2011 10:07:24 Replaces the Initial Report 11/16/2011 16:19:01. Reason Code: Client-Change to Sample ID

Analyst(s)  
Adam C. Fink (24) Rui Cindy Geng (22)  
Jorge Leon (23)

  
Baojia Ke, Laboratory Manager  
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc San Leandro, CA



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EMSL Proj:  
Analysis Date: 11/15/2011

## Test Report: PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling) Level A for 0.25% Target Analytical Sensitivity

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
SS 31A-1 <i>091112395-0010</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 28A-1 <i>091112395-0011</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 14A-1 <i>091112395-0012</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 51B-1 <i>091112395-0013</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 54A-1 <i>091112395-0014</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 46A-1 <i>091112395-0015</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 40A-1 <i>091112395-0016</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 44B-1 <i>091112395-0017</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 47B-1 <i>091112395-0018</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>

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Analyst(s)  
Adam C. Fink (24)  
Jorge Leon (23)

Rui Cindy Geng (22)

  
Baojia Ke, Laboratory Manager  
or other approved signatory

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Project: **Livingston - Task M**

EMSL Proj:  
Analysis Date: 11/15/2011

## Test Report: PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling) Level A for 0.25% Target Analytical Sensitivity

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
SS 50B-1 <i>091112395-0019</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 50B-2 <i>091112395-0020</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 44B-2 <i>091112395-0021</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 41C-1 <i>091112395-0022</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 35C-1 <i>091112395-0023</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 19C-1 <i>091112395-0024</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 33C-1 <i>091112395-0025</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 52C-1 <i>091112395-0026</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>&lt;0.25% Chrysotile</b>
SS 15E-1 <i>091112395-0027</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>

Report Amended: 12/15/2011 10:07:24 Replaces the Initial Report 11/16/2011 16:19:01. Reason Code: Client-Change to Sample ID

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Jorge Leon (23)

Rui Cindy Geng (22)

Baojia Ke, Laboratory Manager  
or other approved signatory

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Project: **Livingston - Task M**

EMSL Proj:  
Analysis Date: 11/15/2011

## Test Report: PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling) Level A for 0.25% Target Analytical Sensitivity

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
SS 15E-2 <small>091112395-0028</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 16E-1 <small>091112395-0029</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 17E-1 <small>091112395-0030</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 17E-2 <small>091112395-0031</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 19F-1 <small>091112395-0032</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 19E-1 <small>091112395-0033</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 20F-1 <small>091112395-0034</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 19F-2 <small>091112395-0035</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 20G-1 <small>091112395-0036</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>

Report Amended: 12/15/2011 10:07:24 Replaces the Initial Report 11/16/2011 16:19:01. Reason Code: Client-Change to Sample ID

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Baojia Ke, Laboratory Manager  
or other approved signatory

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Fax: (253) 952-3435 Phone: (253) 874-0555  
Project: **Livingston - Task M**

EMSL Proj:  
Analysis Date: 11/15/2011

## Test Report: PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling) Level A for 0.25% Target Analytical Sensitivity

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
SS 20G-2 <i>091112395-0037</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 20G-3 <i>091112395-0038</i>	Surface soil sample	Gray Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 24E-1 <i>091112395-0039</i>	Surface soil sample	Gray Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 21G-1 <i>091112395-0040</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 20G-4 <i>091112395-0041</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>&lt;0.25% Chrysotile</b>
SS 20G-5 <i>091112395-0042</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 21H-1 <i>091112395-0043</i>	Surface soil sample	Gray Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 22H-1 <i>091112395-0044</i>	Surface soil sample	Gray Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 19H-1 <i>091112395-0045</i>	Surface soil sample	Gray Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>

Report Amended: 12/15/2011 10:07:24 Replaces the Initial Report 11/16/2011 16:19:01. Reason Code: Client-Change to Sample ID

Analyst(s)

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Baojia Ke, Laboratory Manager  
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Project: **Livingston - Task M**

EMSL Proj:  
Analysis Date: 11/15/2011

## Test Report: PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling) Level A for 0.25% Target Analytical Sensitivity

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
SS 49B-1 <small>091112395-0046</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 22E-1 <small>091112395-0047</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 16E-2 <small>091112395-0048</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 16E-3 <small>091112395-0049</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 12C-1 <small>091112395-0050</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 17D-1 <small>091112395-0051</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
<small>Sample received as SS 17C-1 was found to be incorrectly labeled, after follow up with client, the sample was logged in as SS 17D-1.</small>					
SS 18D-1 <small>091112395-0052</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 28G-1 <small>091112395-0053</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>

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Baojia Ke, Laboratory Manager  
or other approved signatory

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Project: **Livingston - Task M**

EMSL Proj:  
Analysis Date: 11/15/2011

**Test Report: PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling) Level A for 0.25% Target Analytical Sensitivity**

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
SS 29G-1 <i>091112395-0054</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 28G-2 <i>091112395-0055</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 32G-1 <i>091112395-0056</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 34F-1 <i>091112395-0057</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 35D-1 <i>091112395-0058</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 27F-1 <i>091112395-0059</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 29E-1 <i>091112395-0060</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 30D-1 <i>091112395-0061</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>None Detected</b>
SS 29D-1 <i>091112395-0062</i>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<b>&lt;0.25% Chrysotile</b>

Report Amended: 12/15/2011 10:07:24 Replaces the Inital Report 11/16/2011 16:19:01. Reason Code: Client-Change to Sample ID

Analyst(s)

Adam C. Fink (24)  
Jorge Leon (23)

Rui Cindy Geng (22)

Baojia Ke, Laboratory Manager  
or other approved signatory

This report relates only to the samples listed above and may not be reproduced except in full, without EMSL's written approval. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. EMSL is not responsible for sample collection activities or method limitations. Some samples may contain asbestos fibers below the resolution limit of PLM. EMSL recommends that samples reported as none detected or less than the limit of detection undergo additional analysis via TEM. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA



**EMSL Analytical, Inc**

2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577

Phone: (510) 895-3675 Fax: (510) 895-3680 Email: [sanleandrolab@emsl.com](mailto:sanleandrolab@emsl.com)

Attn: **Amanda Aldersley**  
**Kennedy Jenks Engineers, Inc.**  
**32001 32nd Ave S**  
**Suite 100**  
**Federal Way, WA 98001**

Customer ID: KJEN34  
Customer PO: 12201158984  
Received: 11/02/11 9:00 AM  
EMSL Order: 091112395

Fax: (253) 952-3435 Phone: (253) 874-0555  
Project: **Livingston - Task M**

EMSL Proj:  
Analysis Date: 11/15/2011

**Test Report: PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling) Level A for 0.25% Target Analytical Sensitivity**

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
SS 29D-2 <small>091112395-0063</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<0.25% Chrysotile
SS 34C-1 <small>091112395-0064</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
SS 42E-1 <small>091112395-0065</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
SS 42E-2 <small>091112395-0066</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
SS 28B-1 <small>091112395-0067</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
SS 18C-1 <small>091112395-0068</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
SS 29B-1 <small>091112395-0069</small>	Surface soil sample	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected

Report Amended: 12/15/2011 10:07:24 Replaces the Inital Report 11/16/2011 16:19:01. Reason Code: Client-Change to Sample ID

Analyst(s)  
Adam C. Fink (24) Rui Cindy Geng (22)  
Jorge Leon (23)

  
Baojia Ke, Laboratory Manager  
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc San Leandro, CA



EMSL ANALYTICAL, INC.  
LABORATORY PRODUCTS TRAINING

# Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):

09112395

EMSL ANALYTICAL, INC.  
2235 POLVEROSA AVE  
SUITE 230  
SAN LEANDRO, CA, 94577  
PHONE: (888)455-3675  
FAX: (510)895-3680

Company: <u>KENNEDY JENKS CONSULTANTS</u>		EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different If Bill to is Different note instructions in Comments**	
Street: <u>32001 32nd AVE SOUTH, SUITE 100</u>		Third Party Billing requires written authorization from third party	
City: <u>FEDERAL WAY</u>	State/Province: <u>WA</u>	Zip/Postal Code: <u>98001</u>	Country: <u>USA</u>
Report To (Name): <u>AMANDA ALDERSLEY</u>		Fax #: <u>253 952 3435</u>	
Telephone #: <u>253 835 6400</u>		Email Address: <u>Amanda.Aldersley@KennedyJenks.com</u>	
Project Name/Number: <u>LIVINGSTON - TASK M</u>			
Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email Purchase Order: <u>12201158984</u> U.S. State Samples Taken: <u>MONTANA</u>			
Turnaround Time (TAT) Options* - Please Check			
<input type="checkbox"/> 3 Hours	<input type="checkbox"/> 6 Hours	<input type="checkbox"/> 24 Hrs	<input type="checkbox"/> 48 Hrs
<input type="checkbox"/> 3 Days	<input type="checkbox"/> 4 Days	<input type="checkbox"/> 5 Days	<input checked="" type="checkbox"/> 10 Days
*For TEM Air 3 hours/6 hours, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.			
<b>PCM - Air</b> <input type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA <b>PLM - Bulk (reporting limit)</b> <input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NYS 198.1 (friable in NY) <input type="checkbox"/> NYS 198.6 NOB (non-friable-NY) <input type="checkbox"/> NIOSH 9002 (<1%)		<b>TEM - Air</b> <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> EPA Level II <input type="checkbox"/> ISO 10312 <b>TEM - Bulk</b> <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> NYS NOB 198.4 (non-friable-NY) <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM Mass Analysis-EPA 600 sec. 2.5 <b>TEM - Water: EPA 100.2</b> Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking	
		<b>TEM - Dust</b> <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167) <b>Soil/Rock/Vermiculite</b> <input checked="" type="checkbox"/> PLM CARB 435 - A (0.25% sensitivity) <input type="checkbox"/> PLM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - C (0.01% sensitivity) <input type="checkbox"/> EPA Protocol (Semi-Quantitative) <input type="checkbox"/> EPA Protocol (Quantitative) <b>Other:</b> <input type="checkbox"/>	
<input type="checkbox"/> Check For Positive Stop - Clearly Identify Homogenous Group			
Samplers Name:		Samplers Signature:	
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
1 SS-6L-1	Surface soil sample	780g	10/24
2 SS-6L-2	↓	↓	10/24
3 SS-SB-1			10/24
4 SS-12D-1			10/24
5 SS-22A-1			10/24
6 SS-29A-1			10/24
7 SS-27B-1			10/24
8 SS-32A-1			10/24
Client Sample # (s):			Total # of Samples:
Relinquished (Client): <u>Joseph Sunday</u>		Date: <u>10/28/2011</u>	Time: <u>1700</u>
Received (Lab): <u>[Signature]</u>		Date: <u>RECEIVED NOV 02 2011</u>	Time: <u>0900R</u>
Comments/Special Instructions:			



EMSL ANALYTICAL, INC.  
LABORATORY PRODUCTS TRAINING

### Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):

09112395

EMSL ANALYTICAL, INC.  
2235 POLVEROSA AVE  
SUITE 230  
SAN LEANDRO, CA, 94577  
PHONE: (888)455-3675  
FAX: (510)895-3680

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

9  
10  
11  
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24

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
SS 33A-2	Surface soil sample	> 80E	10/24
SS 31A-1			
SS 28A-1			
SS 14A-1			10/24
SS 51B-1			10/25
SS 54A-1			
SS 46A-1			
SS 47A-1			
SS 44B-1			
SS 47B-1			
SS 50B-1			
SS 50B-2			
SS 44B-2			
SS 41C-1			
SS 35L-1			
SS-19L-1			

\*Comments/Special Instructions:



EMSL ANALYTICAL, INC.  
LABORATORY PRODUCTS TRAINING

# Asbestos Chain of Custody

## EMSL Order Number (Lab Use Only):

09112395

EMSL ANALYTICAL, INC.  
2235 POLVEROSA AVE  
SUITE 230  
SAN LEANDRO, CA, 94577  
PHONE: (888)455-3675  
FAX: (510)895-3680

Company: <u>KENNEDY JENKS CONSULTANTS</u>		EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different If Bill to is Different note instructions in Comments**	
Street: <u>32001 32nd AVE SOUTH, SUITE 100</u>		Third Party Billing requires written authorization from third party	
City: <u>FEDERAL WAY</u>	State/Province: <u>WA</u>	Zip/Postal Code: <u>98001</u>	Country: <u>USA</u>
Report To (Name): <u>AMANDA ALDERSLEY</u>		Fax #: <u>253 952 3435</u>	
Telephone #: <u>253 835 6400</u>		Email Address: <u>Amanda.Aldersley@KennedyJenks.com</u>	
Project Name/Number: <u>LIVINGSTON - TASK M</u>			
Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email Purchase Order: <u>11201158984</u> U.S. State Samples Taken: <u>MONTANA</u>			
Turnaround Time (TAT) Options* - Please Check			
<input type="checkbox"/> 3 Hours	<input type="checkbox"/> 6 Hours	<input type="checkbox"/> 24 Hrs	<input type="checkbox"/> 48 Hrs
<input type="checkbox"/> 3 Days	<input type="checkbox"/> 4 Days	<input type="checkbox"/> 5 Days	<input checked="" type="checkbox"/> 10 Days
*For TEM Air 3 hours/6 hours, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.			
<b>PCM - Air</b> <input type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA <b>PLM - Bulk (reporting limit)</b> <input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NYS 198.1 (friable in NY) <input type="checkbox"/> NYS 198.6 NOB (non-friable-NY) <input type="checkbox"/> NIOSH 9002 (<1%)		<b>TEM - Air</b> <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> EPA Level II <input type="checkbox"/> ISO 10312 <b>TEM - Bulk</b> <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> NYS NOB 198.4 (non-friable-NY) <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM Mass Analysis-EPA 600 sec. 2.5 <b>TEM - Water: EPA 100.2</b> Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking	
		<b>TEM - Dust</b> <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167) <b>Soil/Rock/Vermiculite</b> <input checked="" type="checkbox"/> PLM CARB 435 - A (0.25% sensitivity) <input type="checkbox"/> PLM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - C (0.01% sensitivity) <input type="checkbox"/> EPA Protocol (Semi-Quantitative) <input type="checkbox"/> EPA Protocol (Quantitative) <b>Other:</b> <input type="checkbox"/>	
<input type="checkbox"/> Check For Positive Stop - Clearly Identify Homogenous Group			
Samplers Name:		Samplers Signature:	
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
25 26 27 28 29 30 31 32 SS 33L-1	↓	↓	10/25
SS 52L-1			10/25
SS 15E-1			10/26
SS 15E-2			
SS 16E-1			
SS 17E-1			
SS 17E-2			
SS 19F-1			
Client Sample # (s):		Total # of Samples:	
Relinquished (Client): <u>Joseph Sunday</u>		Date: <u>10/20/2011</u>	Time: <u>1700</u>
Received (Lab): <u>[Signature]</u>		Date: <u>RECEIVED NOV 02 2011</u>	Time: <u>0900 Pa</u>
Comments/Special Instructions:			



**Asbestos Chain of Custody**  
**EMSL Order Number (Lab Use Only):**

09112395

EMSL ANALYTICAL, INC.  
 2235 POLVEROSA AVE  
 SUITE 230  
 SAN LEANDRO, CA, 94577  
 PHONE: (888)455-3675  
 FAX: (510)895-3680

*Additional Pages of the Chain of Custody are only necessary if needed for additional sample information*

33  
34  
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Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
SS 192-1	Surface Soil Sample	> 802	10/26
SS 20F-1			
SS 19F-2			
SS 20G-1			
SS 20G-2			
SS 20G-3			
SS 242-1			
SS 21G-1			
SS 20G-4			
SS 20G-5			
SS 21H-1			
SS 22H-1			
SS 19H-1			
SS 49B-1			
SS 222-1			
SS 16E-1			

**\*Comments/Special Instructions:**



EMSL ANALYTICAL, INC.  
LABORATORY PRODUCTS TRAINING

# Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):

091112395

EMSL ANALYTICAL, INC.  
2235 POLVEROSA AVE  
SUITE 230  
SAN LEANDRO, CA, 94577  
PHONE: (888)455-3675  
FAX: (510)895-3680

Company: <u>KENNEDY JENKS CONSULTANTS</u>		EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different if Bill to is Different note instructions in Comments**	
Street: <u>32001 32nd AVE SOUTH, SUITE 100</u>		Third Party Billing requires written authorization from third party	
City: <u>FEDERAL WAY</u>	State/Province: <u>WA</u>	Zip/Postal Code: <u>98001</u>	Country: <u>USA</u>
Report To (Name): <u>AMANDA ALDERSLEY</u>		Fax #: <u>253 952 3435</u>	
Telephone #: <u>253 835 6400</u>		Email Address: <u>AmandaAldersley@KennedyJenks.com</u>	
Project Name/Number: <u>LIVINGSTON - TASK M</u>			
Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email Purchase Order: <u>1201158984</u> U.S. State Samples Taken: <u>MONTANA</u>			

Turnaround Time (TAT) Options\* - Please Check

3 Hours  6 Hours  24 Hrs  48 Hrs  3 Days  4 Days  5 Days  10 Days

\*For TEM Air 3 hours/6 hours, please call ahead to schedule. \*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

<b>PCM - Air</b> <input type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA <b>PLM - Bulk (reporting limit)</b> <input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NYS 198.1 (friable in NY) <input type="checkbox"/> NYS 198.6 NOB (non-friable-NY) <input type="checkbox"/> NIOSH 9002 (<1%)	<b>TEM - Air</b> <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> EPA Level II <input type="checkbox"/> ISO 10312 <b>TEM - Bulk</b> <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> NYS NOB 198.4 (non-friable-NY) <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM Mass Analysis-EPA 600 sec. 2.5 <b>TEM - Water: EPA 100.2</b> Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking	<b>TEM- Dust</b> <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167) <b>Soil/Rock/Vermiculite</b> <input checked="" type="checkbox"/> PLM CARB 435 - A (0.25% sensitivity) <input type="checkbox"/> PLM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - C (0.01% sensitivity) <input type="checkbox"/> EPA Protocol (Semi-Quantitative) <input type="checkbox"/> EPA Protocol (Quantitative) <b>Other:</b> <input type="checkbox"/>
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Check For Positive Stop - Clearly Identify Homogenous Group

Samplers Name: \_\_\_\_\_ Samplers Signature: \_\_\_\_\_

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
SS 162-2	Surface soil sample	> 802	10/26
SS 126-1	↓	↓	↓
SS 170-1			
SS 180-1			
SS 286-1			
SS 296-1			
SS 286-2			
SS 326-1			

Client Sample # (s): \_\_\_\_\_ Total # of Samples: \_\_\_\_\_

Relinquished (Client): Joseph Smiley Date: 10/28/2011 Time: 1700

Received (Lab): Wiley Date: RECEIVED NOV 02 2011 Time: 0900 PA

Comments/Special Instructions: \_\_\_\_\_



EMSL ANALYTICAL, INC.  
LABORATORY PRODUCTS TRAINING

# Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):

09112395

EMSL ANALYTICAL, INC.  
2235 POLVEROSA AVE  
SUITE 230  
SAN LEANDRO, CA, 94577  
PHONE: (888)455-3675  
FAX: (510)895-3680

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
SS 34F-1	Surface Soil Sample	> 8oz	10/27
SS 35D-1	↓	↓	↓
SS 27F-1			
SS 29E-1			
SS 30D-1			
SS 29D-1			
SS 29D-2			
SS 34C-1			
SS 42E-1			
SS 42E-2			
SS-18C-1			
SS-28B-1			10/24
SS-29B-1			10/24

JML  
12/15/11

\*Comments/Special Instructions:

# **Appendix C**

---

**October 2011 Field Documentation**

**TASK M**  
**SURFACE SOIL SAMPLING FORM**  
 Burlington Northern Livingston Shop Complex

Project No.:

1196021.16

Weather:

Overcast, 50° F Calm

Sampled By:

RGH / JRS

Sample ID	Date Sampled	Notes
SS-6C-1	10/24	located on E. side of foundation
SS-6L-2	10/24	located adjacent to west side of foundation
SS-5B-1	10/24	located adjacent to track
SS-12D-1	10/24	Near athletic bldg.
SS-22A-1	10/24	off mainline near Kenyon Noble Yard
SS-29A-1	10/24	adjacent country motor inn
SS-27B-1	10/24	Near new MRL building
SS-33A-1	10/24	N of Chappel's Body Shop
SS-33A-2	10/24	W of sample 33A-1 (~15')
SS-31A-1	10/24	adjacent to S side mainline
SS-28A-1	10/24	" " " "
SS-14A-1	10/24	taken beneath grn b sample 14A-2
SS-570-1	10/25	taken by K/S office driveway
SS-544-1	10/25	By Bennett Street
SS-46A-1	10/25	Adjacent (~15') - off mainline
SS-40A-1	10/25	off mainline by Gum's Glass
SS-44B-1	10/25	Adjacent to track
SS-47B-1	10/25	Adjacent to track
SS-50B-1	10/25	On track
SS-50B-2	10/25	30' NE of SS-50B-1
SS-44B-2	10/25	Adjacent to track in ballast
SS-41C-1	10/25	" " " "
SS-35C-1	10/25	SE of debris pile
<del>SS-27B-1</del>	<del>10/25</del>	<del>correlates w/ 27B-2</del>
SS-18C-1	10/25	
SS-19C-1	10/25	near debris pile (East end)

not taken

**TASK M**  
**SURFACE SOIL SAMPLING FORM**  
 Burlington Northern Livingston Shop Complex

Project No.:

1196021.16

Weather:

partly sunny / snow

Sampled By:

JRS / RGH

Sample ID	Date Sampled	Notes
SS 33C-1	10/25	Next to debris pile
SS 52C-1	10/25	N edge of API pond
SS 15E-1	10/26	Rope adjacent to track
SS 15E-2	10/26	Trans. tile
SS 16E-1	10/26	Rope
SS 17E-1	10/26	
SS 17E-2	10/26	Transide tile
<del>SS 17E-3</del>		
SS-19F-1	10/26	Transide on track
SS-19E-1	10/26	Large material; small sample cut off for analysis
SS-20F-1	10/26	Rope material
SS-19F-2	10/26	Rope material
SS 20G-1	10/26	Multiple transide pieces
SS 20G-2	10/26	Rope material in transfer pit
SS 20G-3	10/26	" " " "
SS-24E-1	10/26	" " " "
SS-21G-1	10/26	adjacent to track
SS-20G-4	10/26	on track
SS 20G-5	10/26	1/
SS 21H-1	10/26	Roping material
SS 22H-1	10/26	
SS 19H-1	10/26	
SS 49B-1	10/26	
SS 22E-1	10/26	" " " "
16E-2	10/26	
16E-2	10/26	

not taken



analysis

