

Burlington Northern Livingston Shop Complex

Site Response Section



Update

October 2010

Rail Yard News

DEQ is issuing this update to keep you informed about the investigation and cleanup of contamination associated with the Burlington Northern Livingston Shop Complex. The Montana Department of Environmental Quality (DEQ) has continued to require the BNSF Railway Company (BNSF) to investigate volatile organic compounds (VOCs) in soil vapors and indoor air in buildings on and around the railyard and to develop plans for systems to prevent VOC vapors from entering some impacted buildings. As part of the process, BNSF used a method for analyzing samples that could detect vinyl chloride at very low levels. Based on the results of the analysis, DEQ has found that vinyl chloride from the subsurface is not affecting indoor air outside the railyard. DEQ had to remove vinyl chloride and revise the cleanup levels for tetrachloroethene (PCE) and trichloroethene (TCE). DEQ is soliciting public comment on these revised proposed cleanup levels (www.deq.mt.gov/pubcom.asp) and the comment period ends **November 23, 2010**. Once the cleanup levels are finalized, DEQ

will decide which properties will require mitigation and which will require additional sampling this winter.

In addition, BNSF has continued to clean up petroleum products from the groundwater and has made the system more energy efficient by re-injecting extracted vapors. BNSF is also testing how to remove petroleum product from the area south of Park Street from the railyard and how to treat VOCs in the groundwater at the railyard. DEQ recently required BNSF to sample for contaminants in the surface soils on the railyard and that sampling will continue this fall. Finally, DEQ has approved BNSF's plan to investigate potential contamination in the bedrock aquifer (groundwater that exists in fractures in the solid rock underlying the soil and gravel), and that activity is ongoing. DEQ provided oversight during all these activities. **DEQ will hold a public meeting to provide information about these activities on November 3, 2010.**

Livingston Indoor Air Investigation

DEQ has required BNSF to sample indoor air and soil vapor in over 200 homes and businesses between 2005 and 2010 to determine where vapors from contaminated soil and groundwater might be entering buildings in and around the railyard. More general information about vapor intrusion is available on DEQ's website at <http://www.deq.mt.gov/StateSuperfund/FrequentlyAskedQuestions.mcp#2a>.

Data from this investigation indicates that vapors are moving from the contaminated soil and groundwater at the Facility into

some buildings within the railyard and nearby.

Therefore, DEQ directed BNSF to take steps to prevent vapors from entering some buildings at the railyard as well as some nearby homes and businesses. One way BNSF can reduce vapors is to install an in-home VOC-gas protection system. This

**Public Meeting
November 3, 2010
7:00 pm
Livingston Community Room**

works much the same way as a radon-protection system. BNSF could also seal concrete cracks, put down barriers, and use ventilation systems.

BNSF is required to install and maintain any necessary protection systems at **no cost** to the home or business owner.

However, in January 2009, BNSF challenged DEQ's decisions regarding vapor intrusion and appealed DEQ's decisions in federal court. The court upheld DEQ's basic decision-making process. DEQ required BNSF to resample properties and then revised the indoor air cleanup levels based upon the 2010 data. The data from the 2010 investigation showed that there are no vinyl chloride exceedances in indoor air that are attributable to subsurface contamination. DEQ revised the PCE and TCE levels to account for one less compound contributing to the overall risk from indoor air. DEQ is currently soliciting public comment on the Draft Final Task I Risk Assessment Amendment Number 2, which contains the

new cleanup levels, located at <http://deq.mt.gov/StateSuperfund/BNLivingston.mcp> and the comment period will end at midnight on **November 23, 2010**.

Official comments need to be submitted to DEQ in writing and may be delivered to a DEQ representative during the meeting or comments may be submitted to **Project Manager Aimee Reynolds, at areynolds@mt.gov or PO Box 200901, Helena, MT 59620-0901**.

Once the cleanup levels are finalized, DEQ will determine which buildings require further action, including the installation of protection systems. DEQ will also determine whether additional buildings will be sampled this winter. DEQ will provide additional information regarding the cleanup levels and the vapor intrusion investigation during the **November 3, 2010** public meeting.

Petroleum Product Recovery

In 2007 and 2008, DEQ required BNSF to construct a petroleum product recovery system. The system consists of 40 wells located in the middle of the railroad tracks and south of the main line where most of the petroleum contamination is found. It also includes a treatment plant located on the railyard that separates the petroleum from the groundwater and then treats the remaining water before it is discharged to the local sewer system. The petroleum is being reused as industrial fuel.

The system also includes seven additional bioventing wells located north of the rail lines. Pumping air from the ground promotes biologic activity that breaks down the petroleum in the soils. This year, BNSF modified the system to re-inject extracted vapors to enhance the bioventing system to improve energy efficiency and cost-effectiveness. BNSF is also testing wells located south of Park Street to evaluate how to remove the product in them. To date, DEQ estimates that the system has removed almost **27,000 gallons** of petroleum product from the ground.

Want more information about remedial activities at the Burlington Northern Livingston Shop Complex? Come to a public meeting at 7 p.m., Wednesday, November 3, 2010, in the Community Room of the City/County Building, 414 East Callender St., Livingston.

Groundwater VOC Treatment Pilot Test

In 2008, BNSF tested the use of sodium permanganate to treat the VOC contamination in groundwater. The first tests, conducted in a laboratory, showed how much permanganate BNSF needs to inject to safely treat the groundwater. Then BNSF injected permanganate into the groundwater near the area of highest VOC concentrations. The tests showed that the permanganate can reduce the VOC concentrations without creating other contamination problems. In 2009, BNSF tried recirculating the permanganate in the groundwater, which broke down even more VOCs. BNSF also discovered additional VOC contaminant source areas on the railyard that will require treatment. This year BNSF will inject greater volumes of higher concentrations of permanganate and recirculate it to determine how long it might take to breakdown the VOCs to the cleanup levels. If the treatment is successful, this could significantly speed up the remediation

of the VOC contamination in the groundwater.

In 2009, BNSF also installed a soil vapor extraction system in the locomotive shop which helped pump out the air from just above the groundwater. This additional step removes VOCs from the soil.



Permanganate mixing

Surface Soil Sampling

The DEQ 2001 Record of Decision for the Facility requires that BNSF collect samples from the surface soil on the railyard to determine the nature and extent of petroleum, polynuclear aromatic

hydrocarbons, and lead contamination. BNSF initiated the sampling DEQ required in August 2010 and completed it this month. This data will be used to determine whether this soil will require cleanup.

Bedrock Aquifer Investigation

DEQ recently approved a work plan to investigate whether VOCs are present in the bedrock aquifer(s) located beneath the alluvial aquifer at the Facility. BNSF has begun drilling the wells that will be used to

investigate this deeper groundwater. This data will be used to determine if bedrock aquifer contamination related to the Facility exists and whether this contamination will require cleanup.

What's Next?

DEQ will finalize the new cleanup levels for VOCs in indoor air and then decide whether any buildings will require further action or installation of protection systems.

DEQ intends to continue to focus on the ongoing cleanup at the same time as the investigations so that the cleanup moves forward as quickly as possible.

Background

The BN Livingston Facility is located in and adjacent to Livingston. It includes the Livingston railyard, shop complex, C&P Packing, the cinder pile area, and some of the surrounding area off of the railyard. Soil and groundwater have been impacted by solvents, petroleum, heavy metals, and asbestos. Indoor air has been impacted by VOCs.

Questions? Concerns?

Contact Aimee Reynolds, DEQ Project
Manager:

Phone (406) 841-5065 (direct)
(800) 246-8198 (Superfund hotline)
Fax (406) 841-5050
Email: areynolds@mt.gov

Or come to a public meeting:

7 p.m., Wednesday, November 23, 2010
Community Room of the City/County
Building, 414 East Callender St., Livingston

Information Located At

Livingston-Park County Library

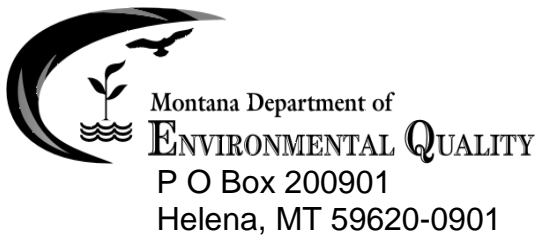
228 West Callender
Livingston, MT 59047
Telephone (406) 222-0862

Montana Department of Environmental Quality

Remediation Division -
1100 North Last Chance Gulch
Helena, MT 59620-0901
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[http://www.deq.mt.gov/StateSuperfund/
BNLivingston.mcp](http://www.deq.mt.gov/StateSuperfund/BNLivingston.mcp)

Persons with disabilities who need an alternative accessible format of this information, or who require some other reasonable accommodation in order to participate in the public meeting should contact DEQ at least 3 days before the meeting.



Information on the cost of this publication can be obtained by writing the Department of Administration, Helena, Montana.