



Soil Cleanup Plan Includes Removal of Contaminated Soil

St. Regis Paper Co. Superfund Site
Leech Lake Reservation
Cass County, Minnesota

June 2011

Share your opinions

EPA invites your comments on this proposed cleanup plan. A public comment period runs from **June 22 to July 21, 2011** and statements can be submitted in these ways:

- Fill out and return the enclosed comment sheet.
- Orally or in writing at the public hearing.
- By the Internet at www.epa.gov/region5/cleanup/publiccomment/stregis-pubcomment.htm.
- Fax to Tim Drexler at 312-353-1263.

Public meeting/hearing

Thursday, June 23, 2011, 6:30 p.m.
Cass Lake-Bena Elementary School
15 4th St., N.W.
Cass Lake

After a brief presentation, EPA will hold a public hearing to accept comments on the proposed plan. A court reporter will record all public comments.

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EPA Region 5 toll-free

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8:30 a.m. – 4:30 p.m., weekdays

To clean up soil contamination at the St. Regis Paper Co. site, the U.S. Environmental Protection Agency is proposing the following steps as part of a cleanup plan¹:

- Remove up to two feet of contaminated soil from affected residential areas and replace it with clean soil or apply a clean soil cover.
- Cover contaminated soil on industrial/commercial properties owned by the responsible parties with one foot of clean soil and maintain the cover.
- Pave commercial/industrial work areas where heavy equipment is in use and pave residential and commercial unpaved roads.
- Remove contaminated soil from a former work area because of ecological risks.
- Dispose of all contaminated soil at an off-site facility.
- Monitor surface water in the nearby forested wetland.
- Place institutional controls on property where some hazardous materials remain.

EPA arrived at this recommendation after extensive study of the site, and after considering a number of cleanup alternatives in a document called a Feasibility Study. The steps listed represent Alternative 4A (see Page 4), which is EPA's recommended option. It protects people and the environment, meets the applicable regulations, is cost-effective and will be effective in the long term.

Before making a final decision, EPA is holding a public meeting and comment period (see box, left). After considering public comments and consulting with the Leech Lake Band of Ojibwe and the Minnesota Pollution Control Agency, EPA may alter its proposed plan or even choose a new one. Your opinion is important. The final cleanup plan will be presented in an EPA document called the "record of decision" and announced in local newspaper notices.

You are also encouraged to review supporting documents – as well as a detailed version of the proposed plan – at any of the information repositories listed on the back page. EPA is also announcing that the Final Feasibility Study Report is available for your review.

¹Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, known as the Superfund law) requires the publication of a notice announcing the proposed plan. It also requires a public hearing and public comment period. This fact sheet summarizes the technically written proposed plan and other site-related environmental reports that can be viewed at the information repositories listed in the box on the back page and the EPA Region 5 office in Chicago.



History and background

The St. Regis site is in Cass Lake within the boundaries of the Leech Lake Band's reservation. The former operations area of the site is on about 125 acres south of the BNSF Railway Co. tracks, and east of Highway 371. It was used as a wood treatment facility from about 1958 until 1985. The site includes any areas where contamination from the wood treatment facility has migrated. The St. Regis site was listed on the National Priorities List in 1984, making it eligible for cleanup under EPA's Superfund program.

The site has four primary sections divided into operable units (see figure above):

- OU1 is between South 3rd Street and the BNSF Railway tracks, and consists of a north former operations area currently owned by the responsible parties: International Paper Co., City of Cass Lake, BNSF Railway and Cass Forest Products.
- OU2 is the former operations area southwest of OU1 and the location of an on-site contaminated soil vault.
- OU3 is the portion of the former Cass Lake dump that accepted site waste.
- OU7 is the residential area adjacent to the site.

MPCA was the lead cleanup agency at the site until 1994. During the late 1980s, MPCA required then-owner Champion International Corporation to conduct the following cleanup actions:

- Connect nearby residents to city water.
- Remove visibly contaminated soil and sludge.
- Create a vault for the contaminated soil and sludge removed from the site.
- Create a ground water extraction system with monitoring wells to contain and treat contaminated underground water plumes in the former operations and former city dump areas.

In 1994, EPA became the lead agency for the cleanup at the request of the Leech Lake Band. Soil sampling was conducted under EPA oversight in 2001 and 2003 and found dioxin concentrations in shallow soil that were higher than EPA's 1998 dioxin policy of 1,000 parts per trillion in residential areas. Based on those samples, a total of about 3,995 tons of contaminated soil was removed from the site on city-owned and BNSF Railway property in 2004, 2005 and 2006. Other areas were covered or fenced to reduce contact with the contaminants.

Also in 2004, EPA ordered International Paper Company (IP), a successor to Champion International, to conduct a human health and ecological risk assessment. IP sampled for contaminated dust in residences as a part of the risk assessment. The results showed an increased risk to residents near the site. In response, IP cleaned up contaminated dust in nearby residences in 2006 and placed a 3-inch cover on the yards at these homes. IP will continue to periodically clean dust from residences until

a final soil remedy is implemented.

In August 2008, the human health risk assessment concluded that there were still unacceptable risks to residents, workers, and the environment at the site. Based on these results, IP and BNSF Railway agreed in September 2008 to perform a feasibility study to evaluate cleanup options for addressing the remaining site risks. EPA approved the feasibility study in June 2011. It is now available to the public.

Summary of site risks

The main way people in and around the St. Regis site are exposed to potentially harmful pollutants is by direct contact with contaminated soil. Utility workers could also be exposed to contaminated ground water when digging in either a portion of the former operations area or in the pit area near the former city dump.

The contaminants of concern include dioxin; pentachlorophenol, or PCP; and polycyclic aromatic hydrocarbons, or PAHs. PCP was used as a part of the wood treatment process at the site. PCP is a manufactured chemical used for wood preservation and as an insecticide. PCP can cause liver effects, damage to the immune system, reproductive effects and developmental effects.

Dioxin was an impurity in the PCP that was used at the site. Dioxin causes effects on the skin, has been shown to be very toxic in animal studies and probably causes cancer.

PAHs are a group of chemicals formed during the incomplete burning of coal, oil, gasoline, wood, garbage, or any plant or animal material and are also found in cigarette smoke, soot and creosote. Breathing or long periods of skin contact to mixtures that contain PAHs can cause cancer. Animal studies have shown some PAHs caused birth defects and decreased body weight. EPA's evaluations further identified high molecular weight PAHs, or HPAHs and benzo(a)pyrene equivalent B(a)PE, which are groups of PAHs. HPAHs are a useful combination of PAHs for determining ecological risk. B(a)PE is a useful group of PAHs to determine human health risk.

Based on the results of the risk assessment, EPA considers 63 parts per trillion for dioxin and the background level of 1.6 parts per million for B(a)PE in soil to be protective of human health in OU7. For OU1, OU2 and OU3, the cleanup levels considered to be protective of workers are 380 ppt for dioxin and 4.1 ppm for B(a)PE. These values represent the middle of EPA's

acceptable range of protectiveness against excess cancer risk. The higher level of protection is based on a consideration of Leech Lake Band tribal life ways and uncertainties identified in the risk assessment, including dioxin cancer risks.

In 2000, the Leech Lake Band enacted the Hazardous Substances Control Act (HSCA) which establishes contamination cleanup levels within the reservation. The HSCA establishes a 10 ppt cleanup level for dioxin in soil, which represents the high end (most protective) of EPA's acceptable risk range. The estimated background concentration of dioxin in the area is about 7 ppt. EPA proposes that those residential and industrial/commercial areas with surface contamination above the HSCA cleanup value be covered with one-foot of clean soil to protect workers and residents from the residual contamination levels.

For protection of the ecological risk area, EPA proposes a cleanup level of 31 ppm for PCP and 18 ppm for PAHs in soil. The HSCA requires a cleanup level of 2 parts per billion for PCP in soil. For that reason, EPA proposes a one-foot soil cover over those portions of the ecological risk area that remain above the HSCA cleanup level.

Cleanup alternatives Considered

EPA considered eight alternatives for cleaning up the St. Regis site, each of which was evaluated against seven of the nine criteria required by the Superfund law (see box, Page 5).

Alternative 1 – No action: EPA always includes a no-action alternative as a comparison point for other options. Under this option, EPA would do nothing to clean up the contaminated property, which means there would be no effect on potential health risks. **Cost: \$0**

Alternative 2A – Under this alternative:

- Contaminated soil on OU7 above 63 ppt dioxin and the site background concentration of 1.6 ppm for B(a)PE will be removed to a maximum depth of 2 feet. EPA anticipates that they will only have to dig down about 1 foot to get to the clean soil. If soil remains contaminated above cleanup levels at the two-foot depth, marker material would be placed in the dug up area before clean soil is placed on the yard to return the yard to its original surface. If in the future the yard had to be dug up again past two-feet deep, the marker material would indicate that contaminated soil still existed and additional precautions or steps would need to be taken.
- Institutional controls such as deed notices or a registry of contamination at depth will be sought for residential properties that have remaining

contamination below the two-foot depth.

- At OU1, OU2 and OU3 a one-foot layer of clean fill and top soil followed by vegetation would be placed in all areas with surface contamination above 380 ppt for dioxin and 4.1 ppm for B(a)PE.
- Institutional controls, which consist of non-engineered requirements relating to property use, would then be implemented for these areas to monitor and protect the cover and prevent exposures to contaminated soil and ground water.
- Additionally, the heavy machinery areas owned by Cass Forest Products and all unpaved commercial and residential streets in the site area would be paved.
- Contaminated soil would also be removed from the ecological risk area in OU2 to a PCP concentration of 31 ppm and a HPAH concentration of 18 ppm.
- Institutional controls and warning signs would be placed in OU1 and OU3 by the responsible parties to prevent potential worker exposure to contaminated groundwater if they were digging in the area.
- Finally, the forested wetland area east of the former operations area would be monitored for any surface water contamination above acceptable levels. **Cost: \$22.5 million**

Alternative 2B is identical to Alternative 2A, except that excavated soil under this alternative will be placed in an on-site cell and covered. **Cost: \$20.3 million**

Alternatives 3A – This alternative includes all of the elements of Alternative 2A except that the one-foot clean soil cover in OU1, OU2 and OU3 would be extended to include all areas with surface contamination of dioxin above 63 ppt and B(a)PE concentrations above 1.6 ppm. **Cost: \$29.8 million**

Alternative 3B is identical to Alternative 3A, except that excavated soil under this alternative will be placed in an on-site cell and covered. **Cost: \$27.7 million**

Alternative 4A (EPA's Recommended Alternative) – This alternative includes all of the elements of Alternative 2A except that the one-foot clean soil cover and marker material on OU1, OU2 and OU3 would be extended to include any areas within these operable units and OU7 with surface dioxin soil contamination above 10 ppt. In addition, a one-foot soil cover would be placed over surface contamination above the HSCA clean up value of 2 ppb for PCP in the ecological risk area of OU2 that is not already addressed by excavation. **Cost: \$45.8 million**

Alternative 4B is identical to Alternative 4A, except that excavated soil under this alternative will be placed in an on-site cell and covered. **Cost: \$44 million**

Alternative 5A – This alternative includes all of the elements of Alternative 3A, but instead of cover on OU1, OU2 and OU3, all site areas with soil contamination above 63 ppt for dioxin and background concentrations for B(a)PE would be removed, regardless of depth. The removed soil would be transported to an off-site landfill and replaced with clean fill and topsoil. **Cost: \$103 million**

Alternative 5B is identical to Alternative 5A, except that excavated soil under this alternative will be placed in an on-site cell and covered. **Cost: \$45 million**

Alternative 6A – This alternative is similar to Alternative 5A except that the removal of contaminated soil in all site areas would be performed on soil that is above 10 ppt for dioxin and excavation in the area of ecological risk would be to the HSCA value of 2 ppb for PCP. **Cost: \$201 million**

Alternative 6B is identical to Alternative 6A, except that excavated soil under this alternative will be placed in an on-site cell and covered. **Cost: \$82 million**

Alternative 7A – This alternative is similar to Alternative 2A except it would remove soil in OU7 that is above 190 ppt for dioxin in surface soil and 8.1 ppm for B(a)PE in surface soil. A cover would be applied in the OU1, OU2 and OU3 to surface soil that is above 2,000 ppt for dioxin and 41 ppm for B(a)PE. This level of protection is within EPA's risk ranges, but is less protective than those achieved in Alternatives 2-6. **Cost: \$12.4 million**

Alternative 7B is identical to Alternative 7A, except that excavated soil under this alternative will be placed in an on-site cell and covered. **Cost: \$10.5 million**

Alternative 8A – This alternative is like Alternative 7A except that a cover in OU1, OU2 and OU3 would be applied to all areas with surface contamination above 190 ppt for dioxin. **Cost: \$22 million**

Alternative 8B is identical to Alternative 8A, except that excavated soil under this alternative will be placed in an on-site cell and covered. **Cost: \$19.9 million**

Evaluation criteria

EPA uses nine criteria to compare cleanup options:

1. **Overall protection of human health and the environment** addresses whether an alternative adequately protects both human health and the environment. The cleanup plan can meet this criterion by reducing or eliminating contaminants or by reducing exposures to them.
2. **Compliance with applicable or relevant and appropriate requirements** assures that each project complies with federal, tribal, state and local laws and regulations.
3. **Long-term effectiveness and permanence** evaluates how well an option will work in the long term, including how safely remaining contaminants can be managed.
4. **Reduction of toxicity, mobility or volume through treatment** addresses how well the option reduces the toxicity (the chemical makeup of a contaminant that makes it dangerous), movement and amount of contaminants.
5. **Short-term effectiveness** is how quickly the project achieves protection, as well as its potential to be harmful to human health and the environment while it's being constructed
6. **Implementability** evaluates the technical feasibility of the cleanup plan, and whether materials and services are available to carry out the project.
7. **Cost** includes estimated capital or startup costs, such as the cost of buildings, treatment systems and monitoring wells. The criterion also considers costs to implement the plan, and operate and maintain it over time. Examples include laboratory analysis and personnel to operate equipment.
8. **State and tribal acceptance** is whether the state environmental agency, in this case the Minnesota Pollution Control Agency, and the tribal government, the Leech Lake Band of Ojibwe, agree or disagree with EPA's recommended alternative.
9. **Community acceptance** evaluates how well the community near the site accepts the option. EPA evaluates community acceptance after it receives and evaluates public comments on its recommended alternative.

EPA's recommended alternative

EPA recommends Alternative 4A because the Agency believes this option is the best balance of the evaluation criteria.

Alternative 4A protects people and the environment, and it meets applicable rules and regulations by removing contaminated soil and putting in clean dirt in portions of OU7 and covering those portions of OU7 with residual soil contamination above the HSCA level of 10 ppt. In addition, marker material and a cover would be placed in areas of OU1, OU2 and OU3 that exceed the HSCA-based cleanup levels. Soil above ecological health-based limits in OU2 would be removed. Residual soil contamination above HSCA cleanup levels in OU2 that is not removed would be covered. Institutional controls will monitor and maintain the soil cover and will ensure that any future planned disturbance of these covered areas at depth requires adequate sampling and proper disposal of contaminated soil and that the cover is then restored. Institutional and engineering controls will also prevent future ground water exposures to workers or others digging in the ground water plume areas of OU1 and OU3.

Alternative 4A provides long-term and permanent protection against exposure to site-related contaminants by the combination of soil excavation and cover, coupled with appropriate institutional controls. Off-site disposal of excavated soil allows for less long-term maintenance and better addresses preliminary concerns expressed by

the Leech Lake Band and the city of Cass Lake that excavated contaminated soil not be stored on-site.

Alternative 4A does not reduce toxicity, mobility or volume of the contamination because effective alternative treatment technologies or resource recovery technologies are not practical for large quantities of soil containing low levels of contamination.

Alternative 4A also provides short-term effectiveness when proper health and safety measures are taken. Alternative 4A is implementable. Finally, Alternative 4A meets the evaluation criteria at a much lower cost than Alternative 6 (the only other alternative that meets the HSCA cleanup level), and is therefore cost-effective.

Continuing ground water study

This proposed plan addresses only the risks from contaminants in soils. Ground water contamination continues to be addressed by the ground water pump-and-treatment system previously installed and currently operated by IP.

Next steps

Before it makes its decision final, EPA, in consultation with both the Leech Lake Band and MPCA, will review comments received during the public comment period and at the public meeting. Based on new information presented in the comments, EPA may modify its recommended alternative or choose another.

EPA encourages you to review and comment on the proposed cleanup plan. Much more detail on the cleanup options is available in the Proposed Plan and other official documents on file at the information repositories (see back page) or EPA’s website at www.epa.gov/region5/cleanup/stregis.

EPA will respond to the comments in a document called a “Responsiveness Summary.” This will be part of another document called the “Record of Decision” that describes the final cleanup plan. The Agency will announce the selected cleanup plan in a local newspaper and will place a copy in the information repositories and post it on EPA’s website.

Chart comparing cleanup options with the nine Superfund remedy selection criteria

	Alt 1	Alt 2A/B	Alt 3A/B	Alt 4A/B	Alt 5A/B	Alt 6A/B	Alt 7A/B	Alt 8A/B
Evaluation Criterion								
Overall Protection of Human Health and the Environment	○	●	●	●	●	●	●	●
Compliance with ARARs	○	○	○	●	○	●	○	○
Long-term Effectiveness and Permanence	○	●	●	●	●	●	●	●
Reduction of Toxicity, Mobility, or Volume through Treatment	○	○	○	○	○	○	○	○
Short-term Effectiveness	N/A	●	●	●	●	●	●	●
Implementability	N/A	●	●	●	●	●	●	●
Alternative A Cost (\$ millions)	\$0	\$25.5	\$29.8	\$45.8	\$103	\$201	\$12.4	\$22
Alternative B Cost (\$ millions)	\$0	\$20.3	\$27.7	\$44	\$45	\$82	\$10.5	\$19.9
Tribal and State Acceptance	LLBO currently prefers Alternative 6A. State of Minnesota has not endorsed any Alternative at this time.							
Community Acceptance	Will be evaluated after the public comment period							

● Fully meets criterion ○ Does not meet criterion

Information repositories

To find more detailed information about the site and to view technical documents, visit one of the information repositories below.

Leech Lake Band of Ojibwe
Division of Resource Management
6530 Highway 2 N.W.
Cass Lake

Cass Lake Library
223 Cedar Ave.
Cass Lake


Bemidji State University Library
1501 Birchmont Drive, N.E.
Bemidji

Cass Lake City Clerk
332 Second St. N.W.
Cass Lake

Leech Lake Tribal College
6945 Little Wolf Road
Cass Lake

Attend a public meeting to find out more about the selected cleanup plan.

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15 4th St., N.W.
Cass Lake

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ST. REGIS PAPER CO. SITE: EPA Proposes Soil Cleanup Plan

United States
Environmental Protection
Agency
Region 5
Superfund Division (SI-7J)
77 W. Jackson Blvd.
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