



June 19, 1998

Superfund Update

Tulalip Landfill Superfund Site

Marysville, Washington

Landfill Design Complete, Construction to Begin

In May 1998 the U.S. Environmental Protection Agency (EPA), in conjunction with Waste Management Inc., and the Tulalip Tribes finalized the design for the cleanup of the Tulalip Landfill. Mobilization for construction started in June. The design is summarized below. If you have questions, want more information about the design, or would like to request a meeting with EPA to learn more about the design, please contact EPA. Contacts are listed at the end of this fact sheet.

The Problem and Selected Remedy

The dominant contamination problem at the Tulalip Landfill Site is from rainwater that soaks through the waste materials, becomes contaminated and then runs into the Snohomish River Estuary including Ebey Slough, Steamboat Slough, and nearby wetlands. Contaminants include: arsenic, chromium, copper, lead, mercury, nickel, zinc, ammonia, heptachlor, aldrin, DDT and Polychlorinated biphenyls (PCBs). EPA selected a geosynthetic landfill cover as the remedy for the problem in its March 1996 Interim Record of Decision (ROD).

Features of the Design

Major features of the design include:

Construction of a low hill

A low hill will be constructed on the currently flat landfill. The hill will provide a slope for the rainwater to run down, and off, the site. It will reach about 23 feet above the surrounding land at it's highest point. The hill will slope to the edge of the site from the high point at grades of 2.5% (higher on the hill) and 2.2% (lower on the hill). A 2.5% grade rises 7½ feet over the length of a football field (100 yards), a 2.2% grade rises about 6½ feet over the length of a football field.

Construction of the hill will require transport of clean fill material from off of the site that will increase local road traffic from time to time.

Geosynthetic Cover System

The hill will be covered with a geosynthetic cover. The cover will consist of a 12 inch

foundation of gravel material, a layer of thick plastic, a plastic mesh material, a fabric layer and a 12 inch layer of soil. The cover will be planted with appropriate vegetation such as grasses and shrubs. The cover will prevent virtually all rainwater from soaking into the contaminated waste and producing leachate, the name of the resulting contaminated liquid.

Once the cover is constructed, leachate seeps are expected to dry up within about two years. Besides drying the seeps the cover will also help protect human health and the environment by preventing people, animals and plants from directly contacting the contaminated landfill wastes.

Rainwater collection

A system will be constructed to collect and channel the rainwater that runs-off the cover and discharge it into the Snohomish River Estuary and the Sloughs.

Gas Collection

Because waste in the landfill will generate potentially flammable or noxious gases that could damage the cover, a system to safely collect the gases will be constructed. If necessary to comply with air pollution control requirements, the landfill gases will be treated before they are released.

Perimeter Berm

A berm will be constructed around the perimeter of the landfill to protect and anchor the hill and cover.

Road System

A road system will be constructed on the landfill to provide access for construction and operation and maintenance.

The design also includes

- **monitoring** of leachate seeps and release of gas from the landfill to ensure that landfill contaminants are adequately contained;
- **measures to ensure the integrity of the cover**;
- provisions for the **operation and maintenance** of the site; and
- **the creation of an Environmental Buffer Zone** on the edge of the landfill that may only be used for passive recreation activities such as walking, and will be managed to benefit wildlife and protect the cover.

Cost and Duration of the Project

Construction of the remedy is expected to cost about \$20 million and will take about two years.

Construction Plans for this Year

This summer and fall construction will focus on:

- establishing a staging area near the eastern border of the site;
- filling, grading and covering of the northeast part of the site; and
- constructing the perimeter wall around a portion of the site.

BACKGROUND

The 147-acre Tulalip Landfill is located on North Ebey Island on the Tulalip Indian Reservation. The landfill lies between Ebey and Steamboat Sloughs and is surrounded by ecologically sensitive wetlands. The Tulalip Tribal Corporation initially leased the land to the Seattle Disposal Company in 1964. Between 1964 and 1979, an estimated three to four million tons of mixed commercial and industrial waste was deposited in the landfill.

Because of ecological and human health concerns, the Tulalip Landfill was proposed for inclusion on the National Priorities List (NPL) of hazardous waste sites in July 1991. The site was added to the NPL in April 1995.

EPA signed an Administrative Order on Consent with some of the major Potentially Responsible Parties to conduct an investigation of contaminants at the site, called a *Remedial Investigation*, and a study of possible solutions to contain the landfill wastes, called the *Source Area Containment Feasibility Study* in August 1993.

Sampling efforts indicate that leachate (contaminated water) leaving the site exceeds marine water quality standards and criteria for heavy metals and other contaminants including arsenic, chromium, copper, lead, mercury, nickel, zinc, ammonia, heptachlor, aldrin and DDT. Polychlorinated biphenyls (PCBs) have also been found in leachate seeps. Contaminated groundwater and leachate flow directly into sensitive wetlands that surround the site, and into sloughs connected with the Snohomish River and Puget Sound. Sediments and soils near the leachate seeps contain many of the same contaminants at concentrations higher than is considered to be protective of the health of people and the environment.

EPA's Record of Decision (ROD) for the site, which describes the preferred remedy for the site was established in March 1996. This fact sheet describes the final design for that remedy.

ADDITIONAL INFORMATION

If you are interested in learning more about the Tulalip Landfill Superfund Site or the Superfund process, EPA encourages you to review the Tulalip Landfill Superfund Site Administrative Record. The Administrative Record contains copies of the *Remedial Investigation Report*, the *Source Area Containment Feasibility Study*, the *Risk Assessment for Interim Remedial Action*, the *Community Relations Plan*, the *Proposed Plan*, the *Record of Decision* (which includes the *Responsiveness Summary*) and other materials related to the site. Copies of the Administrative Record are available for review at the following locations:

The Marysville Public Library
6120 Grove
Marysville, Washington

EPA Records Center
1200 Sixth Avenue, 7th Floor
Seattle, Washington

Please call and set up an appointment if you would like to review documents at the EPA Records Center. No appointment is needed to review the information at the Marysville Public Library.

To request that documents be mailed to you, for further information, or to request a meeting with to learn more about the design of the Tulalip Landfill Site, please call EPA.

EPA's Toll-Free Number in Alaska, Idaho, Oregon and Washington is:

1- (800) 424-4372

Ask the attendant to transfer your call as appropriate:

Loren McPhillips, Project Manager	(206) 553-4903
Robert Drake, Community Relations Coordinator	(206) 553-4803
EPA Records Center	(206) 553-4494
TDD Device (for the hearing or speech impaired)	(206) 553-1698

Additional services can be made available on request to persons with disabilities.

Copies of this *Fact Sheet* and other information about the Tulalip Site are available from the EPA Region 10 Internet WEB site at:
<http://epainotes1.rtpnc.epa.gov:7777/r10/cleanup.nsf/webpage/Tulalip+Landfill>

For general information about EPA's activities go to our WEB homepage
www.epa.gov