



## Model Toxics Control Act

1991 Annual Report



**Printed on recycled paper  
made from 100% post-  
consumer material using  
soybean oil-based inks.**

Most recycled paper uses "pre-consumer" recycled material made up of cuttings from the paper mill which have never been used in actual products. "Post-consumer" material is paper that has been used and recycled. There are flecks in this paper because it was not de-inked.

Soy-based inks substitute 20-40% of the usual petrochemical oils in printing ink with non-hazardous, biodegradable soybean oil. These inks reduce, but do not eliminate, toxic materials used in the printing process.

**Editor**

Ron Langley

**Writer/Researcher**

Marianne Deppman

**Design**

Randal Hunting

**Cover Photo**

Landsburg Mine site hazard

assessment, February 1991

Peter Haley, courtesy

*The Morning News Tribune*

**Special Thanks for  
staff photos:**

Page 2: Tom Todd, Brian Sato

Page 5: Lucy Peblés

Page 6: Patti Carter

Page 13: Rick Huey

# Model Toxics Control Act

## 1991 Annual Report

<b>Introduction</b>	<b>1</b>
<b>Executive Summary</b>	<b>2</b>
<b>How Sites Are Cleaned Up</b>	<b>4</b>
<b>Site Hazard Assessments</b> <i>Defining the Challenge</i>	<b>5</b>
<b>Remedial Investigation/Feasibility Study</b> <i>Defining Sites and Solutions</i>	<b>7</b>
<b>Cleanup Actions</b>	<b>8</b>
<b>Federal Facilities/Military Bases</b>	<b>11</b>
<b>Leaking Underground Storage Tanks</b> <i>National Effort, Community Problem</i>	<b>12</b>
<b>Public Involvement</b> <i>Building Trust Through Cooperation</i>	<b>13</b>
<b>Financial Analysis</b>	<b>14</b>
<b>Department of Revenue</b> <i>Collecting the Hazardous Substance Tax</i>	<b>16</b>
<b>Local Government Grants</b> <i>Supporting Local Action</i>	<b>17</b>
<b>Cleanup Standards</b> <i>How Clean is Clean?</i>	<b>18</b>
<b>Department of Health</b> <i>Protecting the Human Environment</i>	<b>19</b>
<b>Waste Reduction, Recycling and Litter Control</b> <i>An Ounce of Prevention...</i>	<b>20</b>
<b>Solid and Hazardous Waste Program</b> <i>Regulating and Managing Today's Wastes</i>	<b>21</b>
<b>Hazardous Waste Emergencies</b> <i>Emergency Spill Response; Local-Response Training</i>	<b>22</b>
<b>Department of Natural Resources</b> <i>Protecting Aquatic Environments</i>	<b>23</b>
<b>Department of Agriculture</b> <i>Waste Pesticide Program</i>	<b>24</b>
<b>Grants Status Reports</b>	<b>25</b>
<b>Hazardous Sites List</b>	<b>27</b>



## Our Mission

# Washington State Department of Ecology

The mission of the Department of Ecology is to protect, preserve and enhance Washington's environment and promote the wise management of our air, land and water for the benefit of current and future generations.

To accomplish this mission, Ecology will:

- Recognize its most valuable asset is its dedicated and committed employees and it will provide necessary support, training and professional development.
- Promote prevention and conservation as the most effective ways to preserve our natural resources and protect the environment.
- Enforce environmental laws and regulations in a fair and firm manner.
- Provide public education programs to promote wise use of our natural resources and encourage environmental protection.
- Offer information, technical and financial assistance to help the public, governments, businesses and industries comply with environmental laws and regulations.
- Promote recognition that compliance with environmental laws and regulations is compatible with a sound economy.
- Promote meaningful public involvement in the development of rules, regulations and new initiatives.
- Provide leadership in addressing emerging problems and strive to bring public agencies and diverse interest groups together to address environmental issues.
- Use an integrated approach to resolve environmental issues.
- Place special emphasis on educating and working with youth to create a strong environmental ethic.
- Help state agencies set an example in environmental protection.
- Work with executive and legislative branches to promote sound environmental policy.

*(Adopted 1988)*

## Introduction

### A Message From the Director

In November of 1988 the voters of Washington state handed the Department of Ecology an unprecedented challenge: Clean up the state's hazardous waste sites.

In a little more than two years Ecology, with the help of both industry and environmental activists, has built a program that is delving into the scientific, legal, political and financial unknown. By the end of fiscal year 1991 we had devised a cleanup process and rules, literally created from scratch the standards that define "How clean is clean" at hazardous waste sites, and launched what will likely be a 50-year cleanup effort.

As we move into fiscal year 1992, the programs mandated by the Model Toxics Control Act at Ecology and five other state agencies have moved out of their infancy and into full operation. Local governments are doing their part as well with the help of more than \$6 million in Ecology grants made possible under the Act.

Our goal is to work ourselves out of the hazardous waste cleanup business. To that end, strong education efforts have helped to eliminate improper hazardous waste handling practices and reduce the amount of waste generated in the first place by encouraging reuse and recycling.

As for cleanup, Ecology has assessed, ranked and listed more than 250 hazardous waste sites statewide and is working with the federal government on 48 more. Studies and cleanup actions are already underway at more than 100 of those sites.

It's important to note that we did it all without a single lawsuit from either side. Negotiation and cooperation have been critical elements of this effort from the beginning. The reason is simple: It's cheaper to move dirt than to move paper, especially legal paper.

In the past year, the federal government has been criticized for the enormous legal and administrative costs of the Superfund program. Ecology's Toxics Cleanup Program, through its design and implementation, has sought to avoid the pitfalls that have sometimes hobbled the federal program.

The key is to be predictable and consistent in enforcement, to be flexible within the confines of the law, and to negotiate rather than litigate. The clear public mandate from Initiative 97, bolstered by the involvement of interested parties in the development of program regulations, has created a base of consensus from which we can tackle the tough issues that inevitably will rise from such a complex and expensive task.

An environmental consultant who handles cleanup sites for several liable parties recently summed up what we often hear from environmentalists and industry alike. "Change is our worst enemy," she said. It slows the work and increases the cost.

Of course, many who are involved in this project have in mind some improvements for the way the Model Toxics Control Act is carried out. So do we. But most believe the best way to clean up Washington's hazardous waste sites is to stay the course.

For that reason, stability is one of the primary goals for Ecology's hazardous waste reduction and cleanup efforts in the coming biennium—to exercise the still young regulations, develop staff expertise, and build confidence in one of the most comprehensive programs of its kind in the nation.



Chris Gregoire

*Chris Gregoire*

Chris Gregoire  
Director

## Executive Summary



Carol Fleskes

In fiscal year 1991, the Toxics Cleanup Program went through a subtle rite of passage; out of initial development and rapid growth, into a state of relative stability. Stable, at least, for a program that stretches the limits of both technology and public policy.

The program is now at maximum stride as we try to define the universe of hazardous waste sites in Washington state while working to clean up those about which we have solid information.

*About 5,000 cubic yards of soil from this site at Pederson Farms near Yakima had to be removed for treatment. The contamination was caused by long-term leakage from an underground storage tank with a capacity of only 200 gallons.*



One of our primary goals during the past year was to assess and rank as many sites as possible. We have now accomplished that goal, placing 256 sites on Ecology's *Hazardous Sites List*. The program's resources are now fully engaged as we move these sites through the cleanup process and work with the federal Environmental Protection Agency on another 48 sites. A total of 116 studies and cleanup actions are currently underway.

We reached another benchmark last May when one of the nation's most comprehensive sets of hazardous waste cleanup standards was adopted. Program staff, aided by the Science Advisory Board, worked feverishly for two years to build that fundamental piece of the Model Toxics Control Act Regulation which defines "How clean is clean" when declaring a hazardous waste site once again suitable for use. Now staff members are writing guidance manuals to help liable persons understand and use it properly.

By far, the single most common type of site in Washington is the leaking underground storage tank. The federal mandate to clean up these sites has generated overwhelming activity. Ecology now has reports of nearly 1,700 sites statewide. In fiscal year 1992, this effort will be combined with the underground storage tank program, which oversees tank replacement and environmental compliance. The merger of these two operations should improve Ecology's effectiveness and service to owners of underground tanks.

While the federal government requires tank cleanups, it also is liable for many sites of its own. Clear progress has been made on this politically difficult task. Cleanup agreements between Ecology, the Environmental Protection Agency and the operators of seven federal facilities make Washington a national leader.

Still, the work pours in from all parts of the state. Our data base has nearly doubled in size during the past year to nearly 930 confirmed or suspected sites. By the end of the fiscal year we had taken a first look, called an Initial Investigation, at 729 of them.



*Safety first. Ecology employees and contractors are required to wear protective clothing and equipment when working at hazardous waste sites.*

Our greatest challenge over the next five years: Assess and rank or otherwise dispatch all known sites. Innovations in environmental policy will be needed to meet this goal.

That leads us to a central element of our work. Liable persons must pay to clean up their toxic messes. Ecology cleanup programs have recovered about \$2 million of their oversight costs and have billed liable persons for another \$2.1 million.

Key goals for the next two years: Enhanced cost recovery and new advance payment plans that encourage liable persons to act quickly and pay up front for state oversight of their cleanups.

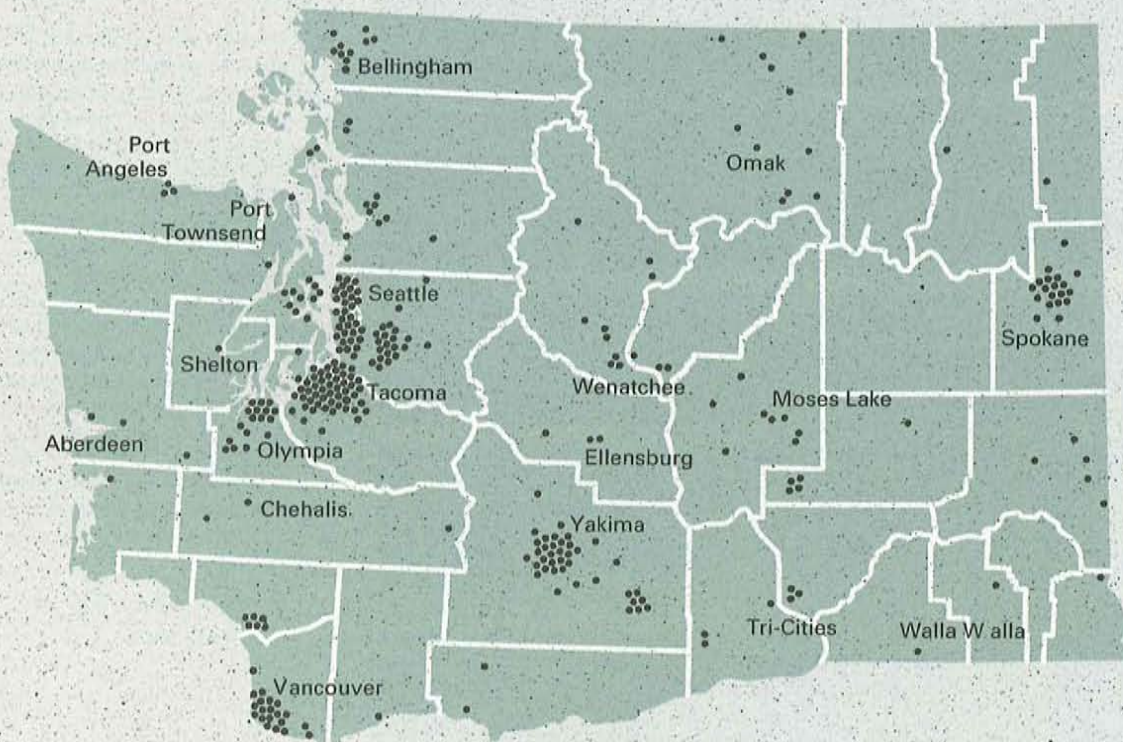
In the midst of all this concentrated effort, I have to step back and remember an observation from one environmentalist who worked on Initiative 97. She warned us not to overlook the less tangible effects of the Model Toxics Control Act. Owners and operators of contaminated sites all over the state are conducting independent cleanups, which are allowed by the Act. Others are adjusting the way they dispose of hazardous waste out of well-founded respect for the Act's power combined with active education by Ecology and local governments.

In the long run, true success for Washington's hazardous waste cleanup effort will depend on cooperation and awareness by governments, companies and individuals. All must take responsibility for cleaning up their hazardous waste sites and for avoiding practices that create new ones. We, as gatekeepers for the process, aim to uphold the letter and spirit of the Act without getting in their way.

*Carol L. Fleskes*

Carol Fleskes,  
Manager,  
Toxics Cleanup Program

Locations of Sites on the Hazardous Sites List



# How Sites Are Cleaned Up

## Site Cleanup Process

The rules which guide the cleanup process at a hazardous waste site were adopted in May 1990. They lay out in detail each step in the process to ensure that cleanups are thorough and protective of human health and the environment.

The administrative tools used to implement the process include two types of agreements that are negotiated with potentially liable persons plus a unilateral order which can be imposed with or without the agreement of a potentially liable person.

### 1 Site Discovery

Sites where contamination has resulted from a history of improper hazardous waste handling or disposal practices must be reported to Ecology's Toxics Cleanup Program. Potentially liable persons may choose to conduct independent cleanup without assistance from the department, but cleanup results must be reported to Ecology. Special reporting requirements apply to leaking underground storage tanks.

### 2 Initial Investigation

Required within 90 days of the site discovery report. Within 30 days after the initial investigation, Ecology must determine whether more investigation or emergency cleanup is required. If further action is required under the Model Toxics Control Act, Ecology sends early notice letters to owners, operators and other potentially liable persons inviting them to work cooperatively with the department.

### 3 Site Hazard Assessment

Confirms the presence of hazardous substances and provides information for hazard ranking. Limited testing and/or file and historical reviews are used to obtain information.

### 4 Hazard Ranking

Sites that have undergone a site hazard assessment are ranked relative to each other according to the estimated health and environmental risk each site poses. Ecology uses these rankings to help prioritize its workload. All ranked sites are placed on the Hazardous Sites List.

### 5 Remedial Investigation/Feasibility Study

Defines the extent and magnitude of contamination at a site. All potential impacts on the environment and alternative cleanup technologies are evaluated. Public review is sought.

### 6 Selection of Cleanup Action

Using information gathered during the feasibility study, a cleanup action plan is developed. The plan identifies preferred cleanup methods and specifies cleanup standards and other requirements at the site. Public review is sought before the cleanup action plan is implemented.

### 7 Site Cleanup

Final cleanup of a site begins when the cleanup action plan is implemented. This includes design, construction, operation and long-term monitoring of cleanup actions. A site may be taken off the Hazardous Sites List after cleanup is completed and Ecology determines cleanup standards have been met.

## Administrative Tools

### Consent Decrees

Used primarily for final cleanups, these agreements are signed by a judge and enforced by a state superior court.

### Agreed Orders

Used only for Remedial Investigation/Feasibility Studies and routine cleanups, these are legally binding, formal administrative orders issued by Ecology and enforced by a state superior court.

### Enforcement Order

Can be used at any phase of investigation or cleanup. These orders are issued when there is no time for negotiation or when it becomes apparent that agreement cannot be reached expeditiously. A potentially liable person must carry out the actions required by the order or face payment of three times the state's cost conducting for the actions.

### Interim and Emergency Actions

Occasionally, when contamination at a site presents an immediate threat to human health or the environment, emergency or interim cleanup actions are taken to reduce this risk before the final cleanup plan can be developed. These actions can be partial cleanup of the whole site or complete cleanup of part of the site. These actions may be conducted under an order or a consent decree.



# Site Hazard Assessments

## Defining the Challenge

Getting a handle on the "universe" of potential hazardous waste sites in Washington was one of the Toxics Cleanup Program's top goals for the past year. There was a critical need to get reliable information about as many sites as possible and determine what needed attention first.

During fiscal year 1991, nearly 200 *Site Hazard Assessments* were completed—more than twice the number completed in FY 1990. More than 275 sites have been characterized already, and at least 100 more sites will be assessed during the current biennium.

A Site Hazard Assessment is Ecology's first opportunity to characterize a hazardous waste site. Ecology gathers information to:

- Confirm or rule out contamination
- Identify hazardous substances
- Identify the site's environmental characteristics
- Evaluate potential threats to human health and the environment.

When the Site Hazard Assessment is complete, the site's estimated impact on human health and the environment is ranked relative to other sites that have undergone the same scrutiny. The site is then placed on the *Hazardous Sites List* and prioritized for further action.

The Hazardous Sites List is published twice yearly. The most recent edition can be found on page 27 of this report.

### What Does Site Ranking Mean?

The *Washington Ranking Method (WARM)* is used to help prioritize Ecology's use of cleanup funds and staff resources. Sites are ranked on a scale of one to five, with one representing the highest level of concern and five the lowest.

Site ranking is *not* the same as a health risk assessment. Health risk assessments, which quantify the degree of threat to humans posed by a site, are produced by the state Department of Health or by a county health department. Ecology's ranking is an estimation of both human health and environmental concerns relative to all other sites in the state.

### Site Profiles: Site Hazard Assessments

#### Everett Slag

A report from the Weyerhaeuser Company concerning slag deposits on its property in north Everett alerted Ecology to the need for a Site Hazard Assessment. Heavy metals in concentrations above Model Toxics Control Act cleanup levels were discovered on the site which was once occupied by a lead smelter. The smelter was torn down more than 75 years ago and eventually replaced by a residential area.

The state Department of Health and the Snohomish County Health District immediately advised neighborhood residents to take safety precautions while Ecology performed a second round of sampling. The site has been given high priority for a Remedial Investigation/Feasibility Study, which combines an intensive study with development of cleanup alternatives.

#### BN Skykomish Railyard

Once a bustling portal for trains travelling over the Cascades, the Burlington Northern Railyard in Skykomish is now the source of petroleum contaminated soil and ground water.

A June 1991 Site Hazard Assessment detected diesel and bunker oil contamination not only at the railyard itself, but also under parts of the town. In some places, 6-10 inches of pure diesel fuel was found floating on top of the ground water.

To avoid contamination of drinking water, the Skykomish municipal water well was moved further up the side of the neighboring canyon. Burlington Northern has begun preliminary cleanup work at the site.

Site hazard assessment at Boulevard Park in Bellingham. The park is one of several sites in western Washington built on property once occupied by coal gasification plants.



### **Landsburg Mine**

In the late 1960s and early 1970s, disposal companies dumped more than 4,000 barrels of hazardous waste into the abandoned Landsburg coal mine shaft for a fee as low as two cents a gallon. Today, cleanup costs for the south King County site are estimated at between \$400 and \$6,000 for each barrel found on the site.

Ecology's Site Hazard Assessment in February 1991 indicated the presence of a variety of poisonous and cancer-causing substances in and around the mine trench.

So far, the contamination has not spread to local drinking water supplies. The potentially liable parties are conducting an interim cleanup action to reduce the risk to humans and area wildlife and to clear enough access for the extensive investigation required before final cleanup actions are taken.

### **GATX Terminals**

A Site Hazard Assessment in April 1991 at GATX terminals in Vancouver revealed high levels of solvents in soil and ground water samples. One ground water sample at the chemical storage facility measured the solvent tetrachloroethylene at 9,100 parts per billion, far above Model Toxics Control Act cleanup levels.

Because the site is located at the Port of Vancouver on the Columbia River, the site poses primarily a threat to the environment.

### **Yakima Railroad Area**

This site extends through the main industrial area of Yakima, covering several square miles. The hazardous waste found in the area is perchloroethylene (PCE), an industrial solvent and dry cleaning agent.

So far, PCE has been found in the soil on the premises of six businesses and in ten water wells scattered throughout the area. A large number of potentially liable persons are expected to be brought into the process as the investigation develops.

Approximately 7,000 people live in the area, most of whom use the city water system and therefore are unaffected by the contamination. But Ecology knows of at least 150 private wells in the area and has initiated a testing program. Individual wells found to be contaminated with PCE will be provided with bottled water until a permanent source of clean water can be obtained.

### **Oakesdale Well #4**

In January 1991, one of two water supply wells serving the town of Oakesdale in Whitman County was found to be contaminated by leaded gasoline coming from an unknown source.

Ecology responded. A video scan of the well revealed that shallow contaminated ground water had entered the well casing and was cascading into the drinking water at the bottom of well. A floating layer of pure gasoline was also detected.

After the well casing was repaired and the contaminated water pumped out, the state Department of Health certified the drinking water safe once again.

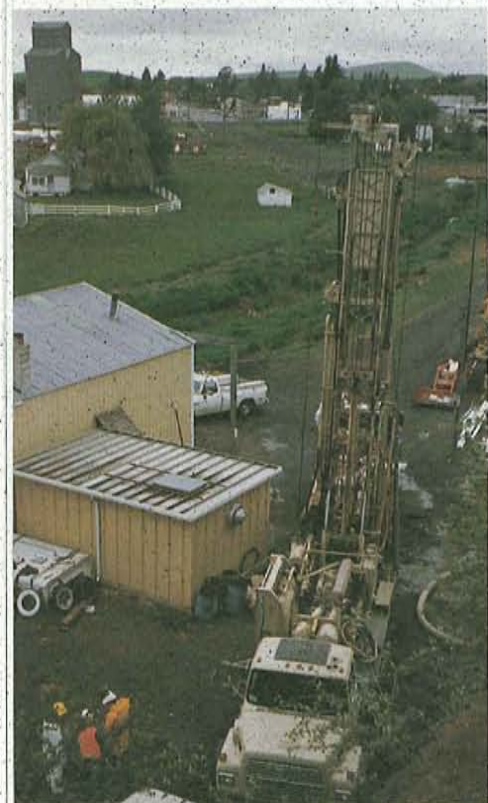
Three monitoring wells were installed as part of a Site Hazard Assessment. Ecology's leaking underground storage tank experts will observe the site for one year in an effort to pinpoint the contamination source.

### **Endicott School**

An emergency interim cleanup action was necessary after a Site Hazard Assessment revealed extensive contamination by gasoline products in the soil and ground water near Endicott Elementary School in Whitman County.

The site is the former location of a 1,000-gallon underground storage tank used to dispense gasoline to district school buses. In 1989, when the tank was removed, soil near the tank was found to be contaminated by gasoline.

A system to extract gasoline vapors from the soil will be installed and "pumping and treating" of the ground water will be necessary at this site. Ecology is assisting the school district in this case because it is critical the contamination is managed quickly.



*A test well is drilled in the eastern Washington town of Oakesdale. One of the town's drinking water wells was contaminated with gasoline.*

# Remedial Investigation/Feasibility Study

## Defining Sites and Solutions

Eliminating human health and environmental impacts at a hazardous waste site is a sizeable engineering project. Careful study and planning are needed to ensure that all hazardous substances on a site have been found and identified. Only then can the most effective cleanup actions be explored.

Sites placed on the Hazardous Sites List undergo a Remedial Investigation/Feasibility Study. This process is designed to provide specific and detailed information about the extent of contamination at a site and also to evaluate options for cleanup. The job takes from two to five years for most sites.

Most Remedial Investigation/Feasibility Studies are conducted by consulting firms and are paid for by the party or parties deemed potentially liable for cleanup of the site. Costs can run into the millions of dollars on a major site.

An RI/FS must be completed before a final cleanup action is selected, though emergency and interim cleanup actions may be taken before the study phase is completed.

In 1991, 11 Remedial Investigation/Feasibility Studies were completed and 57 are currently underway.

### Site Profiles: Remedial Investigation/ Feasibility Study

#### Soil and Crop

In July 1991, a state funded Remedial Investigation/Feasibility Study began at this former fertilizer and pesticide facility in Othello.

Preliminary studies at the site revealed widespread soil and ground water contamination by ammonia, pesticides, herbicides and heavy metals. Just 100 feet from the four-acre site, ground water discharges into an irrigation canal. One goal of cleanup at this site is to prevent contamination from migrating into that canal. Water supply wells within one mile of the site will also be evaluated. The results of the RI/FS are expected by the summer of 1992.

About one mile away from Soil and Crop, the 13-acre Burlington Northern Railyard is also undergoing a Remedial Investigation/Feasibility Study paid for by Burlington Northern.

#### Cascade Pole

One of the most heavily polluted waterfront industrial sites in south Puget Sound lies on the shores of Budd Inlet in Olympia. Fifty years of telephone pole manufacture left the soil, ground water, shellfish and bay sediments contaminated by such hazardous substances as pentachlorophenol (PCP), polyaromatic hydrocarbons and dioxins.

Two separate RI/FSs are underway at Cascade Pole. One, on land, will supplement several previous studies and includes soil and ground water sampling to determine the extent of contamination and examine cleanup options.

Sampling work has started on the second RI/FS, which will determine the extent of sediment contamination in the intertidal area adjacent to the site.

In late 1990 Ecology awarded the Port of Olympia an \$847,000 grant to help cover its portion of investigation costs.

#### Champion International

An RI/FS was also completed at a 14-acre plywood manufacturing facility on Lake Washington's Montlake Cut in Seattle. In the mid-1980's, five problem areas were identified at this site including a solvent tank area, a boiler ash fill area and contaminated off-shore sediments. Prior to completion of the RI/FS, all but two of these areas were cleaned up. The RI/FS wrapped up several ongoing studies and provided for development of cleanup options for the remaining contaminated areas. The final cleanup action plan is expected by early 1992.

*A barge-mounted drilling rig extracts sediment samples in Puget Sound's Budd Inlet near the Cascade Pole site.*



## Cleanup Actions

The final cleanup of a site doesn't officially begin until the Remedial Investigation/Feasibility Study is complete and a Cleanup Action Plan has been drafted. In some cases, in order to protect human health and the environment, interim or emergency cleanups are necessary. These may include partial cleanup of the whole site or complete cleanup of part of a site.

During 1991, 17 cleanup actions were completed and 59 are currently underway.

Under newly developed cleanup standards, Ecology requires the use of permanent cleanup methods wherever practical. Preferred techniques are listed in this order:

- 1—Reuse or recycling
- 2—Destruction or detoxification
- 3—Reduction of the amount of waste
- 4—Containment of waste on-site
- 5—On-site or off-site disposal

On-site cleanup is preferred and is often more practical than off-site treatment of contaminants. At a landfill, for example, removal of the source of contamination would cause more environmental damage than would be repaired.

Actual cleanup begins once the Cleanup Action Plan is finalized. Cleanup includes plan design, construction, and the operation and monitoring of cleanup actions. After the final cleanup, the site is monitored every five years to make certain the site continues to be safe for human health and the environment.

### Site Profiles: Cleanup Actions

#### PACCAR

A variety of cleanup methods have been proposed to clean up the 80-acre PACCAR Inc site in south King County.

- Bioremediation—PACCAR is using naturally occurring bacteria to digest petroleum products in the soil.
- Stabilization—Contaminated soil is mixed with cement to chemically bind the contaminants.
- Containment—A layer of clean dirt is placed over the contaminated soil to prevent direct contact and blowing dust.

Only the most highly contaminated soils will have to be removed and disposed of off-site.

As the affected soil is treated, low levels of ground water contamination are expected to decrease. Long term monitoring of the ground water will be conducted to ensure environmental protection.

PACCAR is using bioremediation to clean up parts of its hazardous waste site in Renton. Bioremediation is a cleanup technology which manages factors such as oxygen, nutrients and temperature to speed up the natural degradation process.



## General Metals

Early this year, Washington's largest recycler of scrap metal, General Metals of Tacoma, began a \$10 million plan to clean up tainted soil and stop contaminated surface water from running into the Hylebos Waterway on Tacoma's Commencement Bay.

Under the five-year plan, the company has agreed to remove and dispose of 1,000 cubic yards of soil laced with heavy metals and PCBs. The plan also calls for a concrete cap over the site to keep water from percolating through the soil on the 26-acre site.

A drainage and collection system is being built to prevent contaminated storm water from running off the property and into the waterway. General Metals will later participate in a federally sponsored cleanup of contaminated sediment in Commencement Bay.

## Boomsnub

Nearly 4,500 pounds of dissolved chromium have been removed from ground water during an expedited response at a metal plating site in Vancouver. The chromium is being removed as part of a "pump and treat" operation begun in 1990 when, during monitoring, the level of chrome in the ground water increased dramatically. Because the contamination threatened the Vancouver and Clark County water supplies, and because chrome is difficult and expensive to treat, the site needed immediate attention. Work at this site is costing Ecology about \$1 million per year.

## Innovative Solutions to Complex Problems

### Lower Columbia River Water Quality Study

After 17 months of careful planning, scientists have begun systematic sampling of water quality in the lower Columbia River. The four-year project is a joint effort by the states of Washington and Oregon, in cooperation with public ports in both states and the Northwest Pulp & Paper Association. The agencies intend to study and characterize water quality in a 146-mile stretch of the Columbia from Bonneville Dam to the Pacific Ocean.

The project was initiated in 1990 in response to concerns raised by citizens on both sides of the river. Scattered testing has been done, but a comprehensive assessment of water quality in the lower Columbia is needed. Washington is using Hazardous Substance Tax funds to pay for its portion of the project.

Tests in the current phase of studies will cover a broad spectrum of pollutants and provide the states with a general overview of water quality. Initial assessment of the new samples, scheduled for April 1992, will provide a base for design of more detailed studies. The project is scheduled for completion by mid-1994.

### Urban Bay Action Teams

As more and more people move to the Puget Sound area, protecting the waterways there becomes increasingly important.

Members of seven specialized **Urban Bay Action Teams** are overseen by the Toxics Cleanup Program, but use authorities and functions of other Ecology programs to maximize their ability to solve problems in these environmentally sensitive areas. The teams also work closely with local governments and the Environmental Protection Agency.

Currently, the urban bay teams are focusing their efforts on the following harbors: **Bellingham Bay, Everett Harbor, Sinclair and Dyes Inlets, Elliott Bay, Lake Union, Commencement Bay, Budd Inlet.**

*A crew from Ecology's Environmental Investigations and Laboratory Services Program retrieves sediment traps from the bottom of Sitcum Waterway in Tacoma's Commencement Bay. The traps provide data on hazardous contaminants in the waterway.*



## Site Profiles: Landfills

### Midway

Interim cleanup actions at the Midway Landfill moved full-speed ahead during 1990 and 1991. This past year, the 55-acre site received a new state-of-the-art cover, a gas collection system and a surface water management system.

The cover—a multi-million dollar project—is a synthetic, multi-layered liner over the entire site designed to keep water from seeping into the landfill and later into ground water.

The new surface water management system will also aid in keeping rain and runoff from entering the landfill.

Methane gas migrating off-site has been a primary concern at Midway in past years. The problem should be solved by a new system that will collect the gas and burn it on-site.

A Remedial Investigation/Feasibility Study was completed at Midway during 1991. The next step will be the development of a draft Cleanup Action Plan for final cleanup activities.

### Tacoma

Much progress was also made in 1991 toward cleaning up the massive Tacoma Landfill.

Construction of a cover for the 130-acre site is underway and is expected to be complete by the beginning of 1992. A methane collection system is in place and a new source of water has been channeled to those residents whose wells were affected. Also, currently under design is a pump and treat system for contaminated ground water at the site. Total cleanup costs are expected to reach more than \$30 million.

### Centralia

With the help of a \$650,000 grant from the Local Toxics Control Account, an interim action was begun at the Centralia Landfill during 1991.

Opened in 1958, the landfill is primarily used for residential and commercial dumping. Some industrial wastes have been detected, however, and because the landfill is not lined there is concern that rain water seeping through the site may contaminate ground water.

The \$1 million interim action includes an upgraded surface water collection system, a temporary cover over part of the site, a fence around the site perimeter and other provisions.

An integral part of the cleanup and closure of this site has been the Centralia Landfill Closure Group. The group was founded in 1990 and is made up of Lewis County and local community representatives.

### Greenacres

A Feasibility Study outlining cleanup options for the 45-acre Greenacres landfill near Spokane was completed during 1991 and a draft Cleanup Action Plan is now being developed.

Of primary concern at this site is the treatment of ground water. Alternatives under consideration include ground water monitoring, and extracting and treating the contaminated ground water on-site or discharging it to a waste water treatment plant. The options may also include controls on future property use, construction of barriers to halt the migration of contaminants, and a landfill cap.



*A worker seals a seam on the synthetic liner covering the Midway Landfill in Kent. The liner is one of several technologies used to solve pollution problems at the site.*

# Federal Facilities/Military Bases

## Tri-Party Sites

According to the most recent *Defense Environmental Restoration Program Annual Report to Congress*, Washington is the only state to have signed federal facility cleanup agreements on all of its military Superfund sites. Washington ranks second only to California in the total number of agreements, even though that state has three times as many sites.

Increasing environmental awareness at the U.S. Department of Defense and an active regulatory presence by Ecology has brought a solution to the cleanup of military sites closer than ever before.

Ecology has entered into seven "tri-party" agreements to begin cleanup work at military bases and other federal facilities in Washington. The agreements, signed by Ecology, the Environmental Protection Agency and the federal agency involved, include:

- McChord Air Force Base
- Fort Lewis
- Fairechild Air Force Base
- SUBASE Bangor
- Naval Air Station Whidbey Island
- Naval Undersea Warfare Engineering Station Keyport
- Bonneville Power Administration
- Ross Complex (Vancouver)

Under these agreements, the federal facility is responsible for the cleanup while Ecology and EPA oversee the process. Two more of these agreements are expected in the next year.

## Cleanups Under State Authority

In addition to tri-party sites, Ecology has worked directly with the federal government on cleanup sites not ranked under the federal Superfund program. As profiled below, Washington is a national leader in requiring cleanups under state authority.

### Site Profiles Military Bases

#### McChord Air Force Base

This year, Ecology signed the first ever state/federal consent decree with the Department of Defense. The agreement sets the stage for work at 29 hazardous waste sites at McChord Air Force base near Tacoma. While other sites at McChord are under the federal Superfund process, these 29 sites will be cleaned up directly under state authority.

The sites include several landfills, buried drum sites, leaking underground storage tanks and fuel and solvent spills. All are in the Site Hazard Assessment phase of cleanup.

#### Indian Island

Work also began this year at Indian Island Naval Undersea Warfare Engineering Station near Port Townsend.

In July 1991, Ecology issued an enforcement order requiring the Navy to begin cleanup at nine hazardous waste locations at Indian Island. The Navy requested the order to allow investigation to proceed more quickly and to ensure that cleanup actions meet state requirements.

Early studies identified nine areas of concern for possible contamination by such substances as heavy metals, petroleum, solvents and pesticides. The sites are now in the Initial Investigation phase.

#### Mica Peak Radar Facility

An enforcement order was issued to the Federal Aviation Administration to begin investigation and cleanup at the Mica Peak Radar Facility near Spokane.

Samples taken by the Department of Defense indicated polychlorinated biphenyls (PCBs) in one area and chlorinated solvents in another. The site has been fenced to reduce possible human or wildlife exposure until further work is completed.

An Initial Investigation has been completed at the site. The enforcement order outlines procedures for the next three phases of cleanup at the site.

*McChord Air Force Base near Tacoma has 29 sites that will be cleaned up under state authority. Washington is the only state which has cleanup agreements for all of its military Superfund sites.*



# Leaking Underground Storage Tanks

## National Effort, Community Problem

Leaking underground storage tanks present a unique set of problems and must be managed differently than other hazardous waste sites. They occur in large numbers around the state, usually near residential areas where contaminated ground and surface water can easily migrate into water supply wells. And, unlike other sites, cleanup of underground tanks is mandated by federal law.

To date, 1,687 leaking underground storage tanks are being monitored by the Toxics Cleanup Program. Nearly half—815—were discovered during 1991.

Most leaking underground storage tank sites are cleaned up independently by their owners. They are required to notify Ecology about the site, then submit a report when cleanup work is finished.

For cleanup purposes, state assistance is available for owners who can demonstrate financial hardship. At the end of the fiscal year, the owners of nine sites around the state were receiving financial assistance for cleanup work, and applications by another seven owners had been approved.

### Site Profiles

#### Leaking Underground Storage Tanks

#### Issaquah

A permit for increased water flow from wells operated by the Sammamish Plateau Water and Sewer District was rescinded in mid-1991 when gasoline was found to be spreading toward the wells. Ecology had evidence that increased pumping from the wells could draw the contaminants from shallow ground water into the deeper aquifer used for drinking water. Three Issaquah service stations are liable for cleanup, which has included removal of 84,000 gallons of tainted water, excavation of 1,540 cubic yards of soil and the removal of six underground storage tanks.

#### Whitten Oil (Colville)

In the mid-1980's, a Colville service station owner repaired a leaking underground storage tank system determined to be the cause of contamination in a nearby creek. But in 1990, residents again complained of odors coming from the stream.

To reduce the immediate danger, Ecology dug trenches to trap the contaminated ground water and installed a vapor extraction system. An enforcement order has been issued requiring the owner of the service station where the leak originated to identify the extent of contamination and prepare cleanup alternatives.

#### Manhole 34 (Sunnyside)

Orders are pending this year at a site in Sunnyside requiring cleanup of gasoline contamination. Ecology determined that a major leak had occurred. The City of Sunnyside started to remove the gasoline from a city storm sewer line and ventilate explosive levels of vapors caused by the contamination. Ecology is concerned that the vapors are a potential threat to this commercial area and that the gasoline may flow into two of Sunnyside's water supply wells.

Efforts are underway to remove floating gasoline from ground water in the area. The next step is a Remedial Investigation/Feasibility Study to determine the full extent of contamination.

### Independent Cleanups

#### Hundreds Take the Initiative

Nearly all leaking underground storage tank sites are cleaned up as independent sites. At these sites the owner has chosen to take responsibility for cleanup. Ecology plays only an indirect role by reviewing the final cleanup report submitted by the owner. Ecology's acceptance of the cleanup is granted only after this report has been approved.

Though independent sites are outside the state process, they represent a significant portion of the cleanup activity going on statewide. Besides leaking tank sites, up to 60 other hazardous waste sites are reported to be undergoing independent cleanups.

Nearly 1,700 leaking underground storage tanks have been reported state-wide. This tank was removed from a service station in Tumwater.





# Public Involvement

## Building Trust Through Cooperation

Including the public in the cleanup process is one of the primary tenets of the Model Toxics Control Act. Since that Act's inception in 1988 as the citizen mandated Initiative 97, Ecology has continually emphasized the need for active participation by citizens in cleaning up hazardous waste sites.

Through public participation plans, regional citizen advisory committees and public comment periods, the Toxics Cleanup Program actively seeks citizen input. The program's approach is one of gaining the trust and confidence of communities by involving them in the process from the beginning.

This open approach proved very effective this year when hazardous wastes from a former lead smelter were found in an Everett neighborhood. Recognizing that the community would be very concerned, staff went beyond minimum requirements and held three public meetings to notify the area residents about the activities and findings at the site.

At the Everett site as with others, Ecology decided it was prudent to immediately tell the public what was known even though available information was incomplete.

The Everett case was an unusual one, but even at "average" sites, the public is asked to comment on:

- All formal cleanup agreements between the state and the potentially liable parties
- Any enforcement actions Ecology takes to initiate cleanup
- All Ecology-conducted actions

### Citizen Advisory Committees

Citizen Advisory Committees meet at least twice a year, acting as liaisons between the public and Ecology, and as a sounding board for citizen and community concerns.

After their appointments last year, the four Regional Committees began this year by studying the Model Toxics Control Act and outlining plans to help keep their local communities informed about hazardous waste sites in their areas.

### Public Participation Grants

Public participation grants are offered to private citizens and non-profit organizations to further aid public education about hazardous waste sites and about waste reduction, disposal and recycling. This is the program's second year. The 15 grant projects funded in 1991 will provide, among other things:

- Model programs for waste reduction and recycling at community colleges
- A series of articles and advertisements in automotive repair trade magazines stressing waste reduction and proper waste stream management
- Handbooks explaining in simple, easy to understand terms how to replace hazardous household substances with safer alternatives
- Technical assistance to help affected groups understand hazardous site cleanups
- Independent review of work done on various sites statewide

These are 100-percent grants; half of the grant comes from the Local Toxics Control Account, half from the State Toxics Control Account.

### Citizen Advisory Committee Members:

#### Central Regional Office

Wallace Budke  
Harold Jones  
Kurt Layman  
Hermann G. Thoennissen  
Don Wiens

#### Eastern Regional Office

Chan Bailey  
Lloyd R. Bourne  
Richard E. Ellis  
Sally A. Simmons  
John C. Sims, Jr.  
Barbara A. Skyles  
Micki L. Tuttle  
Larry West

#### Southwest Regional Office

Virginia Clark  
Timothy Craven  
Karen Harding  
Jacqueline Kettman  
Bruce Lachney  
Jack Micheau  
Mark Miller  
Jack Roberts  
Darius Rogers

#### Northwest Regional Office

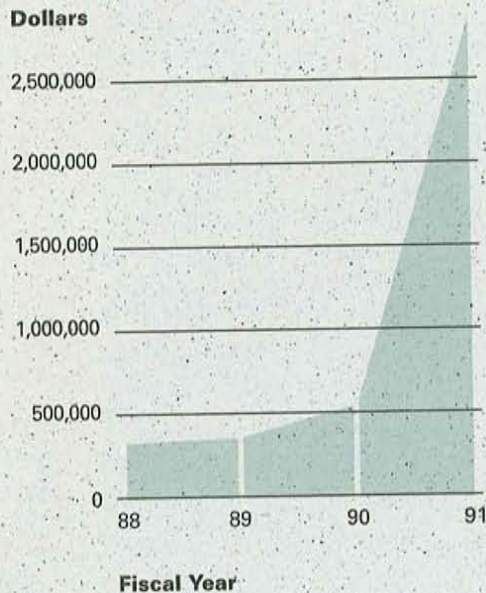
Michael Booth  
Beth Elpern  
Burrows  
Jeff Daub  
Bill DeHon  
Jean Edelhertz  
Shirl Golden  
Dennis Kole  
Yvonne Kuperberg  
Mike Miller  
Anne Robison  
Dave Salzer  
Terry Slatten

*A soil sample is pulled from the yard of a resident in the Everett Slag site study area. Ecology has held a series of meetings with neighborhood residents to inform them about the site and address their concerns.*



# Model Toxics Control Act Financial Analysis

**Cost Recovery Revenue**  
By year costs were accrued



The Hazardous Substance Tax established by the Model Toxics Control Act was the principal funding source for activities under the Act during FY 1991. As shown in the Statement of Revenue and Expenditures, Local Toxics Control Account revenues exceeded grants issued during the year. State Toxics Control Account revenues were about \$2.4 million below expenditures, but the Account's balance from the previous year supported the higher spending level.

Under the Act, the costs of cleanup are recovered from the persons liable for the contamination, whenever feasible. This revenue source is becoming increasingly valuable (see graph). As more sites enter the remedial investigation and cleanup phases and enter into consent decrees and orders, more costs can be billed to liable persons. This growth is a function of the Toxics Cleanup Program's maturation and is expected to continue.

Program staff worked this year to develop innovative cost recovery techniques. Procedures were adopted that allow prepayment of Ecology's oversight costs for contaminated site cleanups. This allows the addition of Ecology staff to oversee work at sites which would not otherwise merit immediate attention. Research was also begun into recovery of program overhead costs.

As described throughout this report, the State Toxics Control Account funds a variety of activities involved with solid and hazardous waste planning, management and reduction, and toxic waste cleanup. Two areas that the Toxics Cleanup Program expenditures were focused on this year were the development and adoption of cleanup standard regulations and site hazard assessments. Each activity required both staff resources and technical contractor support, with resulting expenditure increases.

The Local Toxics Control Account grants to local governments fund remedial actions at hazardous waste sites, development of solid and hazardous waste plans and programs, and implementation of those plans. These efforts are explained on page 17 of this report.

Legislative appropriations of State and Local Toxics Control Account funds are based on expected balances in the accounts as well as revenue estimates. The legislative process determines which agencies and programs have priority for appropriations, and thus the focus of Model Toxics Control Act implementation.

*In fiscal year 1991, the Toxics Cleanup Program billed liable persons \$2.9 million for state oversight and investigation costs. Program staff are researching a way to add program overhead costs to those currently eligible for recovery.*

## Statement of Revenue and Expenditures

<b>Toxics Control Account Revenue:</b>	<b>LOCAL</b>	<b>STATE</b>
Tax Collection	\$24,546,150	\$20,827,518
Cost Recovery		2,904,522
Penalties		236,975
Hanford Consent Decree		2,144,750
Miscellaneous		187,591
<b>Total Revenue:</b>	<b>\$24,546,150</b>	<b>\$26,301,356</b>

<b>Toxics Control Account Expenses:</b>		
Air Program		\$43,662
Agency Administration	\$306,107	4,769,843
Central Program/Spill Response		1,521,020
Environmental Investigations & Lab Services		1,011,567
Water Quality		76,610
Nuclear & Mixed Waste		1,251,609
Solid & Hazardous Waste Management	1,727,361	3,347,573
Toxics Cleanup Program	4,096,949	13,270,371
Waste Reduction, Recycling & Litter Control	221,067	1,388,319
Waste Management Grants Administration	922,436	

**Total Department of Ecology:** **\$7,273,920** **\$26,680,574**

<b>Other Agencies:</b>		
Dept of Agriculture		\$171,091
Dept of Community Development		109,995
Dept of Health		1,274,086
Dept of Revenue		56,401
Dept of Natural Resources		378,545

**Total Expenditures:** **\$28,670,692**

## Details of Toxics Cleanup Program Expenditures FY 1991

<b>Oversight of Potentially Liable Person Conducted Cleanups:</b>	<b>LOCAL</b>	<b>STATE</b>
Interim Action	\$650,000	\$155,897
Pre-Remedial/Site Hazard Assessments	75,000	91,996
Remedial Investigation/Feasibility Studies	956,867	1,408,148
Cleanup Actions	2,415,082	954,070

**Total Potentially Liable Person Cleanups:** **\$4,096,949** **\$2,610,111**

<b>Ecology Conducted Activities:</b>		
Technical Assistance		\$2,653,959
Pre-Remedial/Site Hazard Assessments		2,443,573
Remedial Investigation/Feasibility Studies		213,823
Urban Bay Action Team Activities		215,438
Ecology Match for Federal Grants		172,265
State Leaking Underground Storage Tank Activities		1,171,566

**Total Ecology Conducted Cleanups:** **\$6,870,624**

<b>General Support and Management:</b>		
Administrative Support		\$447,761
Public Information		170,108
Program Development		1,403,337
Program Support		588,449
Management		753,692
Regional Directors		43,456
Training		382,833

**Total General Support and Management:** **\$3,789,636**

**Total Toxics Cleanup Program Expenditures:** **\$4,096,949** **\$13,270,371**

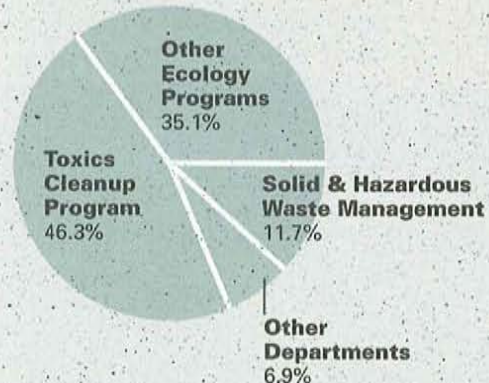
## Toxics Control Revenue



## Local Toxics Control Account Grants Awarded



## State Toxics Control Account Expenditures



## Department of Revenue

### Collecting the Hazardous Substance Tax

The Washington State Department of Revenue collects the hazardous substance tax mandated by the Model Toxics Control Act. The tax is imposed on the first in-state possessor of hazardous substances at the rate of .7 percent, or \$7 per \$1,000 of wholesale value. Monies collected from the tax are used to fund a number of programs involved in cleanup under the Act.

**Tax collections available for expenditure under the Model Toxics Control Act in fiscal year 1991 totalled \$45,373,668.**

There are three broad categories of products or substances defined as taxable hazardous substances:

1. Petroleum products, including crude oil and crankcase motor oil
2. A group of about 700 chemicals listed by the Environmental Protection Agency in the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
3. Pesticides required to be registered under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)

In addition, the Ecology director may designate other substances, based on specific criteria, following public review.

#### **Where does the tax go?**

Once collected, the hazardous substance tax goes into two accounts established by the Model Toxics Control Act. Forty-seven percent goes into the State Toxics Control Account. Fifty-three percent goes into the Local Toxics Control Account.

The tax was first implemented in late 1988 and was revised in 1989. Revenues from the tax were low in FY 88 and 89 because a number of businesses did not realize their products were subject to the new tax. Since then, the Department of Revenue has conducted programs to educate industries and consumers and to increase voluntary compliance with the tax. Audits conducted during the 1990 fiscal year to ensure taxpayers were paying the correct amount of tax also proved helpful. Revenue collections from the tax are expected to level out over the next several years with any increases resulting mainly from a rising rate of consumption of hazardous substances.

# Local Government Grants

## Supporting Local Action

The Local Toxics Control Account provides a variety of grants that help local governments clean up contaminated sites and prevent future problems from the disposal of solid and hazardous waste. FY 1991 proved to be a year of transition for these grants. A new coordinated program developed this year will radically change how local governments look at their waste management needs and how Ecology administers grants.

Action grants increased and planning grants decreased as counties emerged from the planning process and began to explore ways to put their plans to work.

During 1991 Ecology awarded more than \$6 million in grants from the Local Toxics Control Account. Local governments matched grant funds to pay for more than \$10.4 million in waste management projects. A report detailing the status of specific grants is available on page 25.

### Innovation: Coordinated Prevention Grants

Six competitive grant programs have been replaced by a consolidated program that encourages local governments to take a comprehensive, area-wide approach to their waste management needs. The new program:

- Encompasses a variety of projects that prevent future contamination from the disposal of solid and hazardous waste
- Relies on projects identified in local solid and hazardous waste management plans
- Provides financial incentives for local governments that work together and agree on priorities for grant funding in their area

- Uses formula-based funding that considers both a base amount and a per capita amount for all jurisdictions
- Requires only one application every two years
- Assigns one grant project officer the administrative responsibility for all projects in a jurisdiction's coordinated grant

Ecology staff developed the new program with the assistance of an advisory committee representing local governments, environmental groups, and the Washington Department of Community Development. Staff members worked hard to write clear and easy-to-read guidelines to help local governments understand and administer the program.

### Out of Study, Into Action

In 1991 Ecology awarded the last grant for the development of a local hazardous waste plan and the first grant to put such a plan into action. Many local governments have written their plans and are in the final review and adoption phase.

Thirty-eight counties applied in 1991 for hazardous waste implementation grants to fund:

- Educational programs that teach children and adults about the hazardous nature of many common household substances, proper disposal, and safer alternatives
- Technical assistance programs to help businesses find production methods that reduce the amount of hazardous materials used and hazardous waste left over
- Household hazardous waste collection events and facilities to make it even more convenient for people to properly dispose of the cleansers, solvents, paints, and pesticides that once wound up in the solid waste landfill

### Remedial Action Grants

In 1991 Ecology awarded the first remedial action grants for sites other than landfills—two ports, a septage lagoon, and a rural site where large amounts of unidentified substances had been dumped. Since hazardous substance contamination is suspected but not yet confirmed at the last two sites, the local governments received site hazard assessment grants to help pay for preliminary investigation. At the end of the year, an \$8 million grant to Tacoma was waiting to be signed pending resolution of a lawsuit by a third party.

### Public Participation Grants

The Local Toxics Control Account also funds half of the public participation grants which are awarded to groups of private citizens or not-for-profit public organizations to increase awareness of waste reduction, recycling and proper disposal and to improve the public's ability to participate in the cleanup process. Additional information about public participation grants is on page 13 of this report.

*Drums, some containing hazardous waste, were found on the Rosch Property in eastern Pierce County. The Tacoma-Pierce County Health Department is conducting a site hazard assessment at the site, partially funded by a grant from the Local Toxics Control Account.*



## Cleanup Standards How Clean is Clean?

**D**uring 1991 the second phase of the Model Toxics Control Act Cleanup Regulation—establishing cleanup standards—was finalized, making Washington one of the first states in the nation to have a comprehensive hazardous waste cleanup regulation.

Ecology developed the regulations with the help of the business community, local governments, environmental groups and the Ecology Science Advisory Board. The new standards went into effect February 28, 1991 and now provide statewide a uniform answer to the question: "How clean is clean?"

The standards contain two main components: cleanup levels and points of compliance. Cleanup levels determine at what level a particular hazardous substance does not threaten human health or the environment. Points of compliance designate where on a site cleanup levels must be met. To ensure flexibility, these two components are established on a site-specific basis.

Besides these essential parts, the standards also include rules for:

- Selecting cleanup actions
- Providing protection after cleanups
- Performing leaking underground storage tank corrective actions

The new standards, combined with the cleanup process developed last year, have dramatically changed the way hazardous wastes are cleaned up in Washington and now serve as a model for other states.

### Future Cleanup Policy Challenges

Ecology is currently working on the next step in the development of the regulations—more detailed standards for the cleanup of sites contaminated with radioactive wastes. During fiscal year 1992, a work group composed of citizen activists, liable parties and government agencies will be formed to assist Ecology in developing these standards. In addition, over the next year, Ecology will be developing uniform procedures for establishing site specific cleanup levels designed to protect plant and animal life.



*Ecology toxicologist Dave Bradley (center) wrote Washington's cleanup standards with guidance from Policy Section Manager Pete Kmet. Elena Guilfoil coordinated input from the Science Advisory Board.*

# Department of Health

## Protecting the Human Environment

The Department of Health (DOH) and Department of Ecology share common concerns and collaborate in controlling or minimizing environmental pathways which may lead or contribute to disease. A Memorandum of Understanding between the two agencies specifies their roles on sites governed under the Model Toxics Control Act and facilitates coordination and interaction between them in addressing the health concerns associated with hazardous waste sites.

The DOH program consists of two major components:

- Investigate, review and analyze environmental and health data from around hazardous waste sites to assess health impacts and implications of releases
- Monitor public and private drinking water supplies potentially affected by releases from hazardous waste sites and other areas of concern

### Health Implications

The Health Assessment Unit of the Office of Toxic Substances provided the following health services around state hazardous waste sites:

- Nine preliminary health assessments to identify what potential or actual health threats may exist at the specific sites of high public health concern
- Four detailed health assessments at sites where preliminary health assessments indicated a more in-depth analysis was necessary
- Review and comment on various remedial investigation documents forwarded by Ecology during site hazard assessment and remedial investigation phases of cleanup

### Drinking Water Monitoring

During the 1990-1991 fiscal year, Drinking Water Hazardous Waste Program staff collected 550 samples at 39 sites throughout the state. Contaminants were detected at 26 of these sites, and were observed at sufficient level to warrant DOH action to eliminate or reduce human exposure at 15 of the sites. The total population potentially affected at the contaminated sites was estimated at 12,500 people.

### 1991 Highlights

When compounds indicative of gasoline were detected in a municipal water well in the Whitman County town of Oakesdale, the Department of Health (DOH) and Department of Ecology staff worked together to solve the problem (see page 6). The well is currently supplying water to the community and is being monitored quarterly.

DOH staff conducted a Preliminary Health Assessment at the Jackson Park Housing Complex near Bremerton, which is owned by the U.S. Navy. A portion of the site is a public beach used by the residents and others who gather shellfish. The beach had metal and other physical hazards which posed a danger for children and others using the beach. The assessment was sent to the Navy, and the hazards were removed. Investigation is continuing at this site.

*A shellfish harvest advisory at the Cascade Pole site in Olympia. The state Department of Health works with local health agencies to address human health concerns at hazardous waste sites.*



# Waste Reduction, Recycling and Litter Control

## An Ounce of Prevention...

Fiscal year 1991 saw the Waste Reduction, Recycling and Litter Control (WRRLC) program make new strides in toxics reduction.

During that year, WRRLC received \$221,067 from the Local Toxics Control Account and \$1,388,319 from the State Toxics Control Account to provide programs promoting the safe reduction and recycling of hazardous substances by businesses and households.

The toxics reduction staff's responsibility has grown dramatically during the past two years and special projects focusing on hazardous waste reduction and recycling are:

- Continued implementation of the Hazardous Waste Reduction Act, requiring large users and generators of hazardous substances and waste to prepare pollution prevention plans. Planning fees and rules for the planning requirements were adopted April 1, 1991.

- Developed a comprehensive guidance manual for use by facilities required to complete pollution prevention plans

- "Tested" the guidance manual and Hazardous Waste Reduction Act planning rule with the help of 15 businesses and government agencies who agreed to participate in a pilot project. The project resulted in an amendment to the rule, which provided useful simplification and clarification of the planning process.

- Held 10 workshops statewide for business and industry explaining Hazardous Waste Reduction Act planning requirements

- Conducted a statewide, in-depth survey under contract to Washington State University to assess the toxics reduction technical assistance needs of Washington business and industry

- Worked with local interests to establish the "Southwest Washington Pollution Prevention Network", a coalition of local government, industry and private citizens. The network's goals are to increase communication and understanding of pollution prevention and toxics reduction regulatory issues.


- Completed second edition of the popular "Success Through Waste Reduction", a compendium of waste reduction success stories featuring Washington state businesses

- Conducted over 30 on-site assessments at hazardous waste generating businesses to help identify tangible waste reduction opportunities

- Conducted a jointly-coordinated WRRLC/Solid & Hazardous Waste/Toxics Cleanup Program training series for Department of Transportation employees

- Published (jointly with Solid & Hazardous Waste) "Regulation of Recycling Activities Involving Hazardous Secondary Materials" a guide for the regulated community

- Held "Waste Reduction: Strategies for a Sustainable Economy", the third annual waste reduction symposium. Attended by over 200 representatives of local government, business executives, environmentalists, and researchers, the symposium highlighted the latest in waste reduction trends, strategies and techniques.



*Snohomish County PUD's oil filter crusher squeezes motor oil out of the filters, allowing them to be recycled as scrap metal.*



# Solid and Hazardous Waste Program

## Regulating and Managing Today's Wastes

In 1991, \$3.3 million from the State Toxics Control Account was spent on regulating and managing hazardous wastes and administering a federally authorized program under the Resource Conservation Recovery Act (RCRA). The funds were also used to provide educational and technical assistance to the regulated community and the public.

Sixty-one full-time employees in the Solid and Hazardous Waste Program were funded by the account in the following work groups:

- Hazardous waste regulation development and support
- Hazardous waste information and planning
- Hazardous waste program support
- Hazardous waste permits
- Regional Offices
- Solid waste support

Major activities and accomplishments in the regulatory program for fiscal year 1991 included:

### Technical Assistance

- Provided technical assistance, guidance, and education to the regulated community and other interested persons through workshops, inspections, the quarterly newsletter "Shoptalk" and other materials

### Inspection and Enforcement Moderate Risk Wastes

- Inspected a total of 195 hazardous waste generating facilities and hazardous waste treatment, storage and disposal facilities
- Issued 21 enforcement orders and 22 administrative penalties

### Permitting

- Reviewed five hazardous waste facility permits
- Issued one permit to an existing operating facility

### Planning

- Completed phase II and III of the Hazardous Waste Plan
- Responded to over 5,000 hazardous waste information requests on the Hazardous Waste Hotline

### Information Management

- Washington became one of the first states to implement the new RCRIS system for tracking compliance, enforcement and permitting data on a national level

- Assisted local governments in establishing 12 permanent or mobile collection systems
- Assisted 33 local jurisdictions in developing hazardous waste plans that service 100 percent of the state
- Provided 170 local governments with guidelines and support for zoning standards development for treatment/storage facilities
- Assisted local governments hosting 43 household hazardous waste collection events

### Solid Waste

- Began implementing a certification program for landfill and incinerator operators
- Completed and now updating State Solid Waste Plan
- Assisted local governments in interpreting minimum functional standards and developing local solid waste management plans

# Hazardous Waste Emergencies

## Emergency Spill Response Department of Ecology

When a hazardous materials emergency demands fast action, the Emergency Spill Response program receives the call. These four regional teams are called on around the clock to handle a variety of problems including oil spills, fuel and hazardous materials spills on busy highways and illegal drug labs.

*Ecology's Spill Response Team and local firefighters spend Thanksgiving weekend cleaning up a "midnight dump" of hazardous waste in Mason County. This illegal disposal of paint waste threatened a nearby lake.*

In 1991, the services of the spill response crews were needed more often than ever before. Nearly 3,400 spill incidents were reported during the year, 1,340 of which required an actual field response. This is an increase of nearly 50 percent over 1990 when 954 spills required a response.

Approximately one-third of the spill response program's funding comes from the State Toxics Control Account. During 1991, the program received \$850,000 from this source.

The spill response program's cleanup monies are divided in half—50 percent goes toward spill sites and the remaining 50 percent is allocated to drug lab sites. Much of the cleanup work is done by contractors and is overseen by Ecology personnel. During the fiscal year 1991, \$585,000 from the State Toxics Control Account was used for these contractor costs and, so far, \$100,000 of these costs have been recovered from responsible parties.

## Local Response Training Department of Community Development

Through its Division of Fire Protection Services, the Department of Community Development (DCD) uses Model Toxics Control Act dollars to train firefighters to safely handle hazardous wastes.

**In fiscal year 1991, DCD spent \$240,850 to train more than 10,800 firefighters.**

The Model Toxics Control Act monies covered expenditures for curriculum development, course delivery and administration costs.

Combining the Hazardous Materials Recognition course, the Identification course and Hazardous Materials Response Operations Level course allows firefighters to meet the hazardous materials first responder level as required by WAC 296-62-3112, General Occupation Safety and Health Standards.

The classes educate firefighters in various aspects of planning and executing hazardous waste incident responses. They focus on "hands-on" procedures, featuring courses in such things as emergency medical services in a hazardous materials environment and working with hazardous substances in a confined space.

Course developments and student load will continue to grow as fire departments, local governments and emergency response groups become more aware of the need for this type of training. DCD strives to make the classes accessible by teaching them at regional training centers whenever possible.



# Department of Natural Resources Protecting Aquatic Environments

In fiscal year 1991, the Department of Natural Resources (DNR) established the Sediments Management Section to foster protection and cleanup of contaminated state-owned aquatic lands.

DNR manages approximately two million acres of intertidal and submerged state-owned land. Some of these lands have been contaminated by industrial discharges, sewage treatment plants, combined sewer overflows, storm drains, and non-point sources including surface runoff from land, atmospheric fallout, maritime activities and spills.

The DNR Sediments Management Section received \$275,000 from the State Toxics Control Account in fiscal year 1991 for work on contaminated state-owned aquatic lands. This funding supported two full-time professional staff and contractors to conduct an inventory of potentially contaminated aquatic sites, conduct sediment reconnaissance surveys at 31 sites in eight Puget Sound bays, and for work with potentially liable parties on site investigations and cleanups.

## Aquatic Lands Inventory

More than 2,000 aquatic land lease files were reviewed to determine if activities associated with contaminated state-owned aquatic lands had taken place on the lease area. Approximately 500 of these leases were found to have had operations that could cause potential contamination problems. It is important to note that not all 500 sites are contaminated, but that activity at these sites warrants further investigation. DNR will use this inventory to encourage lease holders to conduct site hazard assessments and cleanups if necessary.

## Survey of Puget Sound Bays

At each site in Puget Sound, one sediment sample was collected and analyzed for the chemicals of concern listed in Department of Ecology standards. Sites on state-owned land requiring further investigations will be identified. DNR will use its legal authority as the state land manager to require potentially liable parties to conduct further site investigations and cleanup, if necessary.

## Environmental Audits

At DNR's request, environmental audits or site hazard assessments have been conducted or are planned by potentially liable persons on at least six sites. These assessments will be provided to Ecology for use in the initial investigation and ranking of sites under the Model Toxics Control Act.

In addition to these accomplishments, DNR and Ecology are finalizing a memorandum of understanding that will outline the state's approach of utilizing both regulatory and land owner authority to achieve the goals of the Model Toxics Control Act.

*Environmental contractors working for the Department of Natural Resources take a sediment sample in Port Angeles. The sample is part of a contamination survey of state-owned aquatic lands.*



# Department of Agriculture Waste Pesticide Program

## Waste Pesticide Collection

The Department of Agriculture's Waste Pesticide Program is working to eliminate a 40-year backlog of waste pesticides stored on farms throughout Washington, while advising farmers on how to reduce and better manage pesticide wastes.

The program screens waste pesticides and pays the full cost of packaging, transport and disposal. Farmers, Christmas tree growers, private foresters, nurseries and small scale or "hobby" farmers benefit from the program, which is funded through the Model Toxics Control Act.

*In fiscal year 1991, the Waste Pesticide Collection Program gathered and properly disposed of 43 tons of unusable pesticides from farms in both eastern and western Washington.*

During the fiscal year, 223 people participated in the program, properly disposing of more than 86,000 pounds (43 tons) of unusable pesticides.

Contractor costs for packaging, transport and disposal totalled \$335,349.44.

Waste pesticide collections were held in Franklin, Spokane, Grant/Adams and Clark counties in FY 1991. In addition, the department made 14 on-farm collections of unknown materials which had been sampled and identified by WSDA as pesticides.

Collections have been held in 10 counties to date with over 90 tons of pesticides collected since the program began in 1988. More than 20 additional counties have requested the program.

## Waste Pesticide Education

Equally important is education aimed at eliminating this waste stream in Washington.

The department not only informs pesticide users of the state and federal laws pertaining to hazardous wastes, but also provides information on waste reduction through proper management of pesticides.

As part of this educational effort, Agriculture and the Department of Ecology mailed copies of a booklet titled *Hazardous Waste Pesticides* to approximately 27,000 licensed pesticide applicators in Washington during 1991. The cost of this project, which included 15,000 additional copies, was \$13,371.09.

Also in 1991, Agriculture personnel gave numerous talks and slide show presentations at Washington State University and sponsored pesticide license recertification meetings. These events addressed proper pesticide management as related to waste reduction.

Agriculture's expertise in handling waste pesticides under the Model Toxics Control Act has also attracted interest from several other states and EPA Region 8.

The Waste Pesticide Program is a cooperative effort and includes the active assistance of county governments and the Washington State University Cooperative Extension Service. Many local agricultural businesses and groups have also assisted the department in this effort.



# Grants Status Reports

## Grants Awarded in Fiscal Year 1991

Project Category Description	Recipient Name	Project Cost	Ecology Share (LTCA)	Grant Award Date	Grant Status
<b>Citizen Proponent Negotiation</b>	Grant Co. Board of Commissioners	\$ 5,500	\$ 5,500	10/31/90	Signed
	TOTAL	\$ 5,500	\$ 5,500		
<b>Ground Water Monitoring Wells</b>	Grant County	\$ 101,168	\$ 50,000	07/02/90	S
	Grant County	36,226	18,113	03/18/91	S
	Chelan County	65,000	32,500	06/07/91	S
	Stevens County	68,000	34,000	05/01/91	S
	TOTAL	\$ 270,394	\$ 134,613		
<b>HW Plan Implementation</b>	Thurston County	\$ 143,349	\$ 90,489	06/25/91	S
	TOTAL	\$ 143,349	\$ 90,489		
<b>Household Hazardous Waste Collection Events</b>	Kirkland, City of	\$ 30,000	\$ 15,000	04/03/91	S
	Cowlitz County	60,000	30,000	04/03/91	S
	Benton-Franklin Govern. Conference	137,894	68,947	04/20/91	S
	Klickitat County	49,700	24,850	03/18/91	S
	Lewis County	33,500	16,750	03/12/91	S
	Snohomish County	240,000	120,000	05/30/91	S
	Pierce County	60,000	30,000	04/20/91	S
	Thurston County	50,000	25,000	05/11/91	S
	Tacoma, City of	42,350	15,000	03/18/91	S
	Normandy Park, City of	22,000	11,000	06/07/91	S
	Spokane, City of	120,000	60,000	04/03/91	S
	Douglas County	55,000	27,500	05/11/91	S
	Pend Oreille County	60,000	30,000	05/27/91	S
	Island County Solid Waste Dept.	21,446	10,723	04/10/91	S
	Skagit County	75,840	37,920	05/30/91	S
	TOTAL	\$1,057,730	\$ 522,690		
<b>Local Hazardous Waste Planning</b>	Benton-Franklin Govern. Conference	\$ 113,908	\$ 85,431	01/02/91	S
	TOTAL	\$ 113,908	\$ 85,431		
<b>Local Solid Waste Planning</b>	Pend Oreille County	\$ 40,000	\$ 20,000	09/18/90	S
	Tacoma, City of	78,972	39,486	05/11/91	S
	Columbia County	24,000	12,000	09/25/90	S
	Cowlitz County	150,000	75,000	08/30/90	S
	Pierce County Solid Waste Div.	273,158	136,579	04/20/90	S
	Lincoln County	50,000	25,000	08/27/90	S
	Ferry County	33,620	16,810	09/18/90	S
	Adams County	48,993	21,996	02/08/91	S
	TOTAL	\$ 698,743	\$ 346,871		
<b>Public Participation</b>	Black Hills Audubon Society	\$ 43,820	\$ 21,910	05/01/91	S
	Hanford Education Action League	25,000	12,500	02/25/91	S
	Automotive Service Assoc. of WA	47,309	23,655	02/25/91	S
	Intergovernmental Resource Center	11,000	5,500	08/20/90	S
	Washington Environmental Council	50,000	25,000	07/09/90	S
	Metrocenter YMCA	16,170	8,085	07/30/90	S
	Pacific Energy Institute	39,000	19,500	10/05/90	S
	Citizens For A Healthy Bay	49,820	24,910	04/12/91	S
	Metrocenter YMCA/WA Toxics Coalition	48,050	24,025	02/12/91	S
	Metrocenter YMCA	50,000	25,000	03/06/91	S
	Tolt Community Club	2,110	1,055	03/12/91	S
	Budd Inlet CAC, et al	43,098	21,549	02/20/91	S
	Heart of America Northwest	25,000	12,500	03/06/91	S
	A Round Home	30,000	15,000	03/12/91	S
	WA Toxics Coal./Seattle Audubon Soc.	50,000	25,000	02/25/91	S
	TOTAL	\$ 530,377	\$ 265,189		

Project Category Description	Recipient Name	Project Cost	Ecology Share (LTCA)	Grant Award Date	Grant Status
<b>Hazardous Waste Pilot Projects</b>	Seattle, City of	\$ 413,500	\$ 50,000	09/18/90	S
	TOTAL	\$ 413,500	\$ 50,000		
<b>Recycling Facilities</b>	Tacoma, City of	\$ 762,300	\$ 221,067	01/02/91	S
	TOTAL	\$ 762,300	\$ 221,067		
<b>Remedial Action</b>	Everett, City of	\$ 219,734	\$ 109,867	10/04/90	S
	Hoquiam, City of	3,123,640	2,342,730	07/26/90	S
	Olympia, Port of	1,694,000	847,000	11/30/90	S
	Centralia, City of	866,667	650,000	02/25/91	S
	Vancouver, Port of	144,704	72,352	11/06/90	S
	Thurston County	25,000	25,000	05/27/91	S
	Tacoma-Pierce County Health Dept.	77,400	50,000	05/27/91	S
	TOTAL	\$6,151,145	\$4,096,949		
<b>Solid Waste Enforcement (amendments to existing grants)</b>	Adams County Health District	\$ 16,000	\$ 12,000	01/03/91	S
	Asotin County Health District	33,333	25,000	01/03/91	S
	Benton-Franklin Health District	33,333	25,000	01/03/91	S
	Grant County Health District	11,667	8,750	01/03/91	S
	Northeast Tri-County Health District	22,418	16,813	01/04/91	S
	Okanogan County Health Department	33,333	25,000	02/04/91	S
	Mason County Dept. of General Services	11,036	8,277	01/25/91	S
	Spokane County Health District	33,250	24,938	01/03/91	S
	Whitman County Health District	33,333	25,000	02/25/91	S
	Seattle-King Co. Dept. of Public Health	33,333	25,000	02/04/91	S
	Landfill Operator Certification	30,800	30,800		
	(\$1,100 added to all existing agreements)				
	TOTAL	\$ 291,836	\$ 226,578		
GRAND TOTAL	\$10,438,782	\$6,045,377			

### Grants Closed in Fiscal Year 1991

Project Category Description	Recipient Name	Ecology Share Project Cost	Grant (LTCA)	Award Date
<b>Household Hazardous Waste Collection Days</b>	Cowlitz County	48,800	24,400	
	Snohomish County	180,000	90,000	07/20/90
	Spokane, City of	75,000	37,500	
	Pacific County	33,984	16,992	
	Franklin County	60,002	30,001	
	Skagit County	60,000	30,000	
	Centralia, City of	37,234	18,617	
<b>Ground Water Monitoring Wells</b>	Skagit County	95,896	46,948	12/01/88
	Douglas County	100,000	50,000	03/13/89
	Chelan County	95,000	45,000	12/14/88
	Lincoln County	43,080	21,540	01/12/89
	Adams County	158,797	50,000	01/05/89
	Stevens County	127,000	50,000	04/24/89
<b>Recycling Facilities</b>	Olympia, City of	40,000	30,000	02/23/89
	Hoquiam, City of	27,500	20,625	04/17/89
	Clark County	25,350	19,012	05/10/89
	Seattle, City of	483,000	362,250	07/18/89
	Grandview, City of	35,000	26,250	06/27/89
<b>Local Solid Waste Planning</b>	Stevens County	112,676	56,338	
	Kittitas County	56,004	28,002	

# Hazardous Sites List

## Hazardous Sites List and Notice of Hazard Rankings by Responsible Section

This is an updated HAZARDOUS SITES LIST as required by WAC 173-340-330. It includes all sites which have been assessed and ranked using the Washington Ranking Method (WARM). Also listed are National Priority List sites. Future additions to the List, changes in remedial status of sites on the List and removal from the List will be published twice a year. Placement of a site on the Hazardous Sites List does

not, by itself, imply that persons associated with the site are liable under Chapter 70.105D RCW. For additional information about a site on this List, please contact the appropriate indicated person. Direct questions regarding HAZARDOUS SITES LIST or SITE REGISTER circulation to Pat Holm at (206) 438-3081 or 1-800-458-0920.

\***Rank:** Highest Assessed Risk = 1 and Lowest Assessed Risk = 5.

\*\***National Priorities List sites,** ranked under the Federal Hazard Ranking system.

\*\*\***STATUS:** Remedial Action (RA), Independent RA (IRA), Confirmational Monitoring (CM)

◇ Only one pathway scored, contaminant source unidentified.

# New site added to the ranked list August, 1991.

@ New site added to the National Priorities List.

## CENTRAL REGION

Contact Person: Bob Swackhamer (509) 454-7837

COUNTY	SITE NAME	NEAREST CITY	RANK*	STATUS***	
Benton	#Ben Franklin Transit	Richland	50	Independent RA	
	#Oggie's Mini-Mart	Prosser	50	Independent RA	
Chelan	Simplot	Prosser	4	Independent RA	
	Cascade Helicopter	Cashmere	2	RA in Progress	
	#Cashmere Landfill	Cashmere	1	Awaiting RA	
	#Dryden Landfill	Dryden	4	Awaiting RA	
	Holden Mine Tailings	Holden	1	RA in Progress	
	#Manson Landfill	Manson	2	Awaiting RA	
	#Unocal Bulk Plant #0082	Chelan	1	Awaiting RA	
	#Unocal Bulk Plant #0853	Wenatchee	1	Awaiting RA	
	#Unocal Service Station No. 4942	Wenatchee	40	Awaiting RA	
	#WSU Tree-Fruit Research Unit (Wenatchee Pesticide Lab)	Wenatchee	2	Awaiting RA	
Douglas	Beebe Orchard Dump	Chelan Falls	5	Awaiting RA	
	#Inland Air Service (Fancher Field)	East Wenatchee	4	Awaiting RA	
	#Silicon Metaltech Inc. Lab. Site	Rock Island	4	Independent RA	
Kittitas	#Silicon Metaltech Inc. Lagoon Site	Rock Island	4	Independent RA	
	#Big B Mini-mart (Exxon)	Ellensburg	3	Awaiting RA	
	#Bingo Fuel Stop	Thorp	2	Independent RA	
Klickitat	Mid-State Aviation	Ellensburg	3	Awaiting RA	
	#Town Pump Station	White Salmon	1	Awaiting RA	
Okanogan	#Arden's Country Store	Malott	3	RA in Progress	
	Brett Pit	Grand Coulee Dam	2	Awaiting RA	
	#Eisen Chevron Station	Oroville	2	Awaiting RA	
	#Gebbers Farm Dump	Brewster	1	Independent RA	
	Minnie Mine	Twisp	2	Awaiting RA	
	Molson Dump	Molson	5	Awaiting RA	
	Oroville Dump	Oroville	5	RA in Progress	
	#Pariseau Farm Dump	Brewster	2	Independent RA	
	Tonasket Post & Rail	Tonasket	5	Awaiting RA	
	#USDOI-BLM Kaaba Texas Mine	Nighthawk	1	Awaiting RA	
	Yakima	#Bay Zinc Company (former E. Washington Ave. site)	Yakima	1	Awaiting RA
		#Boise Cascade	Naches	1	Independent RA
#Briar Development Company		Yakima	2	Independent RA	
#Cameron-Yakima, Inc.		Yakima	1	Awaiting RA	
#Cascade Natural Gas		Sunnyside	1	Independent RA	
#CMX Corporation		Yakima	3	Awaiting RA	
Consolidated Freightways		Yakima	4	Independent RA	
Evergreen Products		Parker	3	Awaiting RA	
#Frank Wear Cleaners		Yakima	1	Awaiting RA	
Hahn Motor Company		Yakima	5	Independent RA	
#Irwin Research and Development, Inc.		Yakima	2	Awaiting RA	
#Jackpot Station		Union Gap	40	Awaiting RA	
Johnny's Texaco		Sunnyside	3	RA in Progress	
#Kellogg's Korner		Sunnyside	1	RA in Progress	
#La Rosita		Sunnyside	40	Awaiting RA	
Manhole 34		Sunnyside	1	Awaiting RA	
#Northwest Truck Repair		Union Gap	40	Awaiting RA	
#Nu-Way Cleaners		Yakima	1	Awaiting RA	

#Old Selah Dump Site	Selah	50	Awaiting RA
#Outlook School	Outlook	50	IRA Conducted
#Paxton Sales Corporation	Yakima	1	Awaiting RA
#Pederson Fryer Farms	Moxee	3	Independent RA
#Rainier Plastics Co.	Yakima	3	Awaiting RA
Richardson Airways	Yakima	2	RA in Progress
Section 18 Dump	Wapato	3	Awaiting RA
#Shields Bag and Paper Co.	Yakima	50	Awaiting RA
#Snipes Mountain Landfill	Sunnyside	4	Awaiting RA
#Southgate Laundry	Yakima	3	Awaiting RA
Sunnyside Municipal Well	Sunnyside	50	Awaiting RA
#Tiger Oil Corporation (24th and Nob Hill)	Yakima	1	Awaiting RA
#Tiger Oil Corporation (North 1st Street)	Yakima	3	Awaiting RA
#Toppenish School District (#202 Bus Garage)	Toppenish	40	Awaiting RA
#Van Cleave Body Shop	Yakima	1	Awaiting RA
Yakima Valley Spray	Yakima	1	RA in Progress
#Zwight Logging	Yakima	3	Awaiting RA

**EASTERN REGION** Contact Person: Patti Carter, (509) 456-6167

COUNTY	SITE NAME	NEAREST CITY	RANK*	STATUS***	
Adams	Burlington Northern-Othello	Othello	1	RA in Progress	
	CMC Real Estate	Othello	4	Awaiting RA	
	#Puregro	Othello	5	Awaiting RA	
	#Puregro	Ritzville	5	Awaiting RA	
	Soil & Crop	Othello	2	RA in Progress	
Asotin	WWT Batum Facility	Batum	5	Awaiting RA	
	#Asotin County Landfill	Clarkston	50	Awaiting RA	
Ferry	#Hecla Knob Hill Mine	Republic	4	Awaiting RA	
Franklin	Pasco Landfill	Pasco	**	RA in Progress	
	Port of Pasco	Pasco	1	RA in Progress	
Grant	#Puregro	Pasco	1	Awaiting RA	
	Ephrata Landfill	Ephrata	5	Awaiting RA	
	#Grant Co. Dangerous Waste Site	Royal City	50	Awaiting RA	
	#International Titanium	Moses Lake	4	Awaiting RA	
	#Puregro	Moses Lake	5	Awaiting RA	
	#Puregro	Quincy	5	Awaiting RA	
	#Puregro	Warden	4	Awaiting RA	
	#Puregro	Wilbur	5	Awaiting RA	
	Pend Oreille	#Cusick School District	Cusick	50	Awaiting RA
	Spokane	Alaska Steel and Supply	Spokane	4	Awaiting RA
#Aluminum Recycling Corp. (Wellesley)		Spokane	2	Awaiting RA	
Argonne Road		Spokane	3	RA in Progress	
#B.J. Carney & Company		Spokane	40	Awaiting RA	
#Burlington Northern-Hillyard		Spokane	4	Awaiting RA	
#Four Lakes Tire Fire		Four Lakes	50	Awaiting RA	
General Electric (Spokane Shop)		Spokane	**	RA in Progress	
Greenacres Landfill		Greenacres	**	RA in Progress	
#Inland Empire Plating		Spokane	1	Awaiting RA	
Inland Metals, Inc		Spokane	2	Awaiting RA	
Inland Pit		Spokane	**	Awaiting RA	
Marshall Landfill		Marshall	4	Awaiting RA	
Mica Landfill		Mica	**	RA in Progress	
North Market Street		Spokane	**	RA in Progress	
Spokane Junkyard		Spokane	3	Awaiting RA	
#Spokane Transit Authority (Bus Barn)		Spokane	50	Awaiting RA	
#Washington State Dept. of Transportation-Mayfair		Spokane	50	Awaiting RA	
Walla Walla		Walla Walla Farmers Coop	Walla Walla	1	RA in Progress
Whitman		#Endicott School District	Endicott	4	RA in Progress
		#Garfield School District	Garfield	50	Awaiting RA
	#Oakesdale City Well #4	Oakesdale	4	Awaiting RA	
	#Palouse Producers	Palouse	1	Awaiting RA	
WSU Landfill	Pullman	4	Awaiting RA		



**INDUSTRIAL SECTION** Contact Person: Paul Skyllingstad (206) 586-0583

COUNTY	SITE NAME	NEAREST CITY	RANK*	STATUS***
Clallam	Daishowa America Co.	Port Angeles	5	Independent RA
Clark	ALCOA (Vancouver Smelter)	Vancouver	**	RA in Progress
	Columbia Marine Lines	Vancouver	4	CM Underway
Cowlitz	Longview Fibre	Longview	5	Awaiting RA
	Reynolds Metals	Longview	5	Awaiting RA
	Weyerhaeuser - Longview	Longview	1	Awaiting RA
Klickitat	Columbia Aluminum Corp	Cliffs	3	Awaiting RA
Pierce	Kaiser Aluminum Chemical Corp.	Tacoma	4	RA in Progress
Spokane	Kaiser Aluminum Mead Works	Mead	**	RA in Progress
Whatcom	Georgia Pacific Biotreatment Lagoon	Bellingham	2	Awaiting RA
	Georgia Pacific Corporation	Bellingham	5	Awaiting RA

**NORTHWEST REGION** Contact Person: Judy Aitken (206) 649-7135

COUNTY	SITE NAME	NEAREST CITY	RANK*	STATUS***
King	#Ace Galvanizing Inc.	Seattle	4	Awaiting RA
	#Advance Electroplating	Seattle	4	Awaiting RA
	Alaska Pacific Fisheries	Seattle	1	Awaiting RA
	ARCO Tank Farm	Seattle	2	RA in Progress
	Auburn Fire Department	Auburn	1	Awaiting RA
	#BNR - Balmer Yard	Seattle	5	Independent RA
	#BNR - Interbay	Seattle	1	Independent RA
	#BNR - Roundhouse (Skykomish Train Yard)	Skykomish	1	RA in Progress
	Central Painting	Seattle	2	Awaiting RA
	Champion International-Ballard	Seattle	1	RA in Progress
	Chemcentral Solvents	Kent	1	RA in Progress
	Eastern Supply	Seattle	2	Awaiting RA
	Gas Works Park	Seattle	1	Independent RA
	Harbor Island	Seattle	**	RA in Progress
	J.H. Baxter Company, Inc.	Renton	1	RA in Progress
	Kent Highlands	Kent	**	RA in Progress
	#Kent Sewage Lagoons	Kent	4	Awaiting RA
	Laidlaw	Seattle	4	RA in Progress
	Lake Union Dry Dock	Seattle	1	Awaiting RA
	Lake Washington School District	Kirkland	5	CM Underway
	#Landsburg Mine - Rogers Seam	Black Diamond	1	RA in Progress
	LIDCO Liquid Waste Disposal Co.	Kent	1	RA in Progress
	Lindal Property	Kent	4	Awaiting RA
	#Lockheed Ship Building	Seattle	1	Awaiting RA
	Longview Fibre-King Co.	Seattle	5	RA in Progress
	#Malarkey Asphalt	Seattle	1	Awaiting RA
	Maralco Aluminum	Kent	2	RA in Progress
	Marine Vacuum Service	Seattle	3	Awaiting RA
	#Metro Lake Union Tank Farm	Seattle	1	Awaiting RA
	Metro South Base	Seattle	1	Awaiting RA
	Midway Landfill	Kent	**	RA in Progress
	Mobil Bulk Facility	Renton	5	RA in Progress
	#Monterey Apartments	Seattle	3	RA in Progress
	#Northwest Cooperaage	Seattle	4	Awaiting RA
	#Northwest Powder Coats	Kent	5*	Awaiting RA
	#Old Lawson Road (Accurate Enterprises/Bowen Prop.)	Black Diamond	2	Awaiting RA
	Pacific Car & Foundry Co. (PACCAR)	Renton	**	RA in Progress
	#Pacific Way South 252nd	Kent	3	Awaiting RA
	Pioneer Porcelain Enamel Co.	Seattle	4	Awaiting RA
	Precision Engineering	Seattle	1	Independent RA
	Quendall Terminals	Renton	1	RA in Progress
	#Reichhold Chemical/ Lonestar Cement	Seattle	1	Awaiting RA
	Shell Oil - Old Terminal 18	Seattle	5	RA in Progress
	Shell Tank Farm	Seattle	3	RA in Progress
	Slag Disposal/Beckworth Property	Kent	3	Awaiting RA
#Sternoff Metals	Seattle	5	Independent RA	
#Union Station	Seattle	5*	Awaiting RA	
Unocal Seattle Market Terminal	Seattle	4	RA in Progress	
Western Batteries	Seattle	3	RA in Progress	
Zandt Brass Foundry	Seattle	3	RA in Progress	
Kitsap	Bethel Wells	Bethel	50	RA in Progress
	#Chevron Tank Farm	Bremerton	1	Awaiting RA
	Country Junction Store	Port Orchard	4	RA in Progress
	Day Road Industrial Park	Bainbridge Island	5	Awaiting RA
	#Hansville Landfill	Little Boston	3	Awaiting RA
	Stone Property	Bainbridge Island	4	Awaiting RA
	Strandley Manning Site	Purdy	2	RA in Progress

Skagit Snohomish	Butler Hill Lagoon	Burlington	4	RA In Progress
	#East Waterway	Everett	2	Awaiting RA
	#Everett Slag	Everett	1	Awaiting RA
	Everett Tire Fire	Everett	1	RA in Progress
	#Nord Door	Everett	5	Independent RA
	#Unocal Tank Farm	Edmonds	1	Independent RA
	U.S. Defense Fuel Supply Point	Mukilteo	1	RA in Progress
	Wallace River Park Well	Startup	4	RA in Progress
	Weyerhaeuser - Lumber Mill E	Everett	4	RA in Progress
	Whatcom	#Boulevard Park	Bellingham	1
#Georgia Pacific Airport Landfill		Bellingham	4	Awaiting RA
#Oeser Cedar (Little Squalicum Creek)		Bellingham	1	Awaiting RA
#Whatcom Waterway		Bellingham	1	Awaiting RA
Wilder Landfill (Thermal Reduction)		Ferndale	1	RA in Progress
			14	

**NUCLEAR AND MIXED WASTE PROGRAM - HANFORD PROJECT** Contact Person: Tim Nord (206) 438-7021

COUNTY	SITE NAME	NEAREST CITY	RANK*	STATUS***
Benton	Hanford 100-Area (USDOE)	Richland	**	RA in Progress
	Hanford 1100-Area (USDOE)	Richland	**	RA in Progress
	Hanford 200-Area (USDOE)	Richland	**	RA in Progress
	Hanford 300-Area (USDOE)	Richland	**	RA in Progress

**SITE CLEANUP SECTION** Contact Person: Dave Jansen (206) 438-3039

COUNTY	SITE NAME	NEAREST CITY	RANK*	STATUS***	
Clark	Frontier Hard Chrome, Inc.	Vancouver	**	RA in Progress	
	Bonneville Power Adm Ross (USDOE)	Vancouver	**	RA in Progress	
Grant	@Larson Air Force Base	Moses Lake	**	Awaiting RA	
	Naval Air Sta. Whid Is (Ault)	Whidbey Island	**	RA in Progress	
Island	Naval Air Sta. Whid Is (Seaplane)	Whidbey Island	**	RA in Progress	
	Bangor Naval Submarine Base	Silverdale	**	RA in Progress	
Kitsap	Bangor Ordnance Disposal	Bremerton	**	RA in Progress	
	Eagle Harbor/Wyckoff Co.	Bainbridge Island	**	RA in Progress	
	Naval Undersea Warf Sta (4 areas)	Keyport	**	RA in Progress	
	Queen City Farms	Maple Valley	**	RA in Progress	
King	Western Processing Co., Inc.	Kent	**	RA in Progress	
	American Crossarm & Conduit Co.	Chehalis	**	RA in Progress	
Lewis	Silver Mountain Mine	Loomis	**	RA in Progress	
	American Lake Gardens	Tacoma	**	RA in Progress	
Okanogan Pierce	Commencement Bay, Ruston/Vashon	Tacoma	**	RA in Progress	
	Comm Bay - S. Tacoma Channel				
	Tacoma Landfill	Tacoma	**	RA in Progress	
	Tacoma Swamp	Tacoma	**	RA in Progress	
	Tacoma Tarpits	Tacoma	**	RA in Progress	
	Well-12A	Tacoma	**	RA in Progress	
	Fort Lewis (Landfill No. 5)	Tacoma	**	RA in Progress	
	Fort Lewis Logistics Center	Tillicum	**	RA in Progress	
	McChord AFB (Wash Rack/Treatment)	Tacoma	**	RA in Progress	
	Ponders Corner (Lakewood Site)	Lakewood	**	RA in Progress	
	Skagit	EDB-2-Birdsview	Mount Vernon	2	RA in Progress
		@USA-COE-Hamilton Island Landfill	North Bonneville	**	Awaiting RA
	Snohomish	@Tulalip Landfill	Marysville	**	Awaiting RA
		Colbert Landfill	Colbert	**	RA in Progress
	Spokane	Fairchild Air Force Base (4 Areas)	Spokane	**	RA in Progress
		Northside Landfill	Spokane	**	RA in Progress
EDB-1-Spooner Strawberry Farm		Olympia	2	RA in Progress	
Thurston	Restover Truck Stop	Tumwater	1	RA in Progress	
	EDB-3-Meadowdale	Lynden	3	RA in Progress	
	Northwest Transformer (Mission/Pole)	Everson	**	RA in Progress	
Whatcom	Northwest Transformer (So. Harkness)	Everson	**	RA in Progress	
	FMC Corp. (Yakima Pit)	Yakima	**	RA in Progress	
	Pesticide Lab (Yakima)	Yakima	**	RA in Progress	
Yakima	Yakima Plating Co.	Yakima	**	RA in Progress	
			37		

**SOUTHWEST REGION** Contact Person: Dick Heggen (206) 586-8618

COUNTY	SITE NAME	NEAREST CITY	RANK*	STATUS***
Clallam	PenPly (ITT Rayonier)	Port Angeles	5	RA in Progress
	#Truck Town	Port Angeles	2	Awaiting RA
Clark	#Allied Chemical	Vancouver	4	Awaiting RA
	(General Chemical Corp.)	Vancouver	1	RA in Progress
	Boomsnub Corp.	Vancouver	1	Awaiting RA
	Burlington Northern - Vanc.	Vancouver	1	Awaiting RA

	#Carborundum Co. (Now SOHIO Vancouver Electrominerals Co.)	Vancouver	1	Awaiting RA
	Circle "C" Landfill	Ridgefield	1	CM Underway
	#GATX Terminals	Vancouver	1	Awaiting RA
	Griffie Cleaners	Vancouver	5	Awaiting RA
	Larch Mountain (DNR)	Washougal	2	Independent RA
	Leichner Bros. Landfill	Vancouver	3	RA in Progress
	#Orbit Industries	Washougal	4	Awaiting RA
	Port of Vancouver	Vancouver	1	RA Conducted
	Robertson's Paint Shop	Vancouver	5	Awaiting RA
	Tidewater Barge Lines	Vancouver	1	Awaiting RA
	Vancouver Wells 1,3	Vancouver	4	RA in Progress
	@Vancouver Well 4	Vancouver	** 17	RA in Progress
Cowlitz	#Gardner Forest Products	Longview	4	Awaiting RA
	Ostrander Rock Disposal	Longview	4	Awaiting RA
	Radakovich Landfill	Longview	1	Awaiting RA
Grays Harb.	#Most Western Laundry	Hoquiam	1	Awaiting RA
	Roderick Timber Company	Junction City	1	Awaiting RA
	#Snook Residence	Oakville	1	Awaiting RA
Jefferson	#Chevron Bulk Plant	Port Townsend	1	Awaiting RA
	Olympic Testing Labs	Quilcene	2	Awaiting RA
Lewis	Centralia Landfill	Centralia	**	RA in Progress
	#Packwood Lumber Co.	Packwood	4	Awaiting RA
	Utility Transformer Service Co.	Pe Ell	4	Awaiting RA
	Certified Aerospace, Inc.	Shelton	4	Awaiting RA
Mason	Weyerhaeuser - Truck Shop	Raymond	1	RA in Progress
Pacific	Atochem (2901 Taylor Way)	Tacoma	1	RA in Progress
Pierce	Atochem (3009 Taylor Way)	Tacoma	2	RA in Progress
	B & L Woodwaste Fill	Milton	1	RA in Progress
	Brazier Forest Industries	Tacoma	1	Independent RA
	#Buffalo Don Murphy-Waller Rd.	Tacoma	1	Awaiting RA
	Camp Murray	Tillicum	1	Independent RA
	Cascade Pole-Tacoma	Tacoma	1	RA in Progress
	Cascade Timber #1	Tacoma	1	RA in Progress
	Chevron Bulk Plant	Tacoma	3	Independent RA
	Comm Bay-Near Shore/Tide Flats	Tacoma	**	RA in Progress
	#Coski Industrial Dump	Tacoma	4	Awaiting RA
	"D" Street Petroleum	Tacoma	4	RA in Progress
	Dorman Tire Fire	Roy	1	Awaiting RA
	Dupont-Weyerhaeuser	Dupont	2	RA in Progress
	General Metals	Tacoma	1	RA in Progress
	Hidden Valley Landfill(Thun Field)	Puyallup	**	RA in Progress
	Lincoln Ave. Drainage Ditch	Tacoma	2	Awaiting RA
	Louisiana Pacific	Tacoma	1	RA in Progress
	#Manke Lumber	Sumner	5	Awaiting RA
	McFarland Sicum Site	Tacoma	4	RA in Progress
	McNeil Island	Steilacoom	1	RA in Progress
	Murray Pacific No. 1	Tacoma	1	RA in Progress
	#National Oil Dump	Tacoma	4	Awaiting RA
	Occidental Chem. - Marine View	Tacoma	2	Awaiting RA
	Parkland Cleaners	Tacoma	1	Independent RA
	Petroleum Reclaiming Services	Tacoma	2 3A	Awaiting RA
	#Puget Sound Power & Light - Electron Camp	Orting	1	Independent RA
	#Rhone-Poulenc/Basic Chemical Co.	Tacoma	3	Awaiting RA
	Tacoma Storm Drains	Tacoma	1	RA in Progress
	#Tam Engineering	Tacoma	1	Awaiting RA
	#Union Pacific RR - Tunnel	Tacoma	3	Awaiting RA
	Vallèy Refinishing	Bonney Lake	1	Awaiting RA
	Wasser Winters	Tacoma	1	RA in Progress
	West Coast Saws	Tacoma	4	Awaiting RA
	#Xytec, Inc. (NW Monitor Molded Products)	Tacoma	1	Awaiting RA
Thurston	American Fiberglass	Tumwater	2	Awaiting RA
	Cascade Pole-Olympia	Olympia	1	RA in Progress
	Cedar Creek Corrections Center	Littlerock	2	Independent RA
	Hytec - Littlerock	Littlerock	3	Awaiting RA
	Lacey DNR Compound	Lacey	4	Independent RA
	Monarch Bullet	Rochester	1	Awaiting RA
	Pattison Lake EDB	Lacey	4	RA in Progress
	#Puget Sound Power & Light	Olympia	5	Independent RA
	#Rhodes Chemical Co. Dump	Rochester	3	Awaiting RA
	#Rhodes Chemical Co. - Barn	Rochester	3	Awaiting RA
	Unocal - Hulco Site	Olympia	4	Awaiting RA
	Weyerhaeuser Box Plant	Olympia	3	Awaiting RA
	#Wolph's Second Hand Store	Olympia	2	Awaiting RA
	#Wood Fabricators	Yelm	4 23	Awaiting RA



Washington State  
Department of Ecology  
PV-11  
Olympia, WA 98504  
Phone (206) 438-3000

Publication # 91-59

**Bulk Rate  
U.S. Postage  
PAID**

Washington State  
Department of Printing