



## Kaiser will Explain Proposed Cleanup Remedy at Public Meeting - Ecology Seeks Feedback

In 2005, Kaiser Aluminum & Chemical Corporation entered into an Agreed Order with the WA Department of Ecology. The Order required Kaiser to conduct a Remedial Investigation and Feasibility Study at the Kaiser Trentwood Site. The site is located at 15000 East Euclid Avenue, Spokane Valley, Spokane County, Washington (see Figure 1).

**A public meeting will be held on January 26, 2012 at 7:00 p.m. at Trent Elementary, 3303 North Pines Road, Spokane Valley, WA to discuss the cleanup alternatives and documents that will guide cleanup at the site.** Documents may be reviewed at the locations listed in the box on the right. Comments and questions may be submitted to Teresita Bala **January 5 through March 6, 2012**. Her contact information also is on the right.

The Remedial Investigation Reports review groundwater at the site and soil in nine locations. The Reports also include a Human Health and Ecological Risk Assessment of contaminants in soil.

The Feasibility Study evaluates cleanup options for contamination still found today in soil and groundwater. The study includes review of the Remedial Investigation findings. A Feasibility Study Technical Memorandum is included which evaluates all technologies reviewed prior to completing the draft Feasibility Study Report.

The results of the Remedial Investigation and Feasibility Study are presented by Kaiser in several technical documents. The public is invited to review and comment on the following eight binders of information that are included in the public comment period.

- 1-2 Draft Final Site-Wide Groundwater Remedial Investigation Volumes I and II (II is Appendix F).
- 3-4 Draft Final Site-Wide Soil Remedial Investigation Volumes I and II (II is Appendices).
- 5 Draft Final Human Health and Ecological Risk Assessments focused on soil.
- 6 Feasibility Study Technical Memorandum.
- 7-8 Draft Feasibility Study Report Volumes I and II.

### January 2012

#### Comments Accepted

January 5 through March 6, 2012

For ADA accommodations or documents in an alternate format call Carol Bergin 509/329-3546, 711 (relay service), or 877-833-6341 (TTY).

#### Para asistencia en Español

Richelle Perez 360/407-7528

#### Если вам нужно помощь по русский, звоните

Tatyana Bistresvesky 509/928-7617

#### Technical Questions

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#### Public Involvement Questions

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#### Document Review Locations

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509/329-3415 for appointment

#### Spokane Valley Library

12004 E. Main Spokane Valley, WA 99216  
509/893-8400

Ecology's Toxics Cleanup Website:  
<https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=7093>

**Facility Site ID No.** 53481373

**CSID No.** 7093

### Why These Reports Matter

The Kaiser site lies along the north bank of the Spokane River over the Spokane Valley-Rathdrum Prairie Aquifer.

- Information from the Remedial Investigation and Feasibility Study Reports will be used to determine what cleanup options are implemented at the site.
- The reports evaluate risks to human health and the environment from possible exposure to site-related contaminants.
- Your comments can influence the cleanup options Ecology will select for the site.

### Site Overview

The site covers nearly 512 acres and lies over the Spokane Valley-Rathdrum Prairie Aquifer. The site is north and east of the Spokane River.

The U.S. Government Defense Plant Corporation created the Trentwood facility in 1942 to produce aluminum for World War II aircraft. Kaiser leased the facility in 1946 and later purchased it along with the property.

The Trentwood facility now operates as an aluminum sheet and plate rolling mill. Polychlorinated biphenyl (PCB) oil, petroleum fuels, solvents, and chromium are some of the materials formerly used in connection with mill operations. Some wastes generated during past or present operations include wastewaters, chrome sludge, paint and solvent wastes, and black dross.

### Former West Discharge Ravine

In 2007 as part of this on-going investigation, Kaiser found PCB and petroleum contaminated soil in the Former West Discharge Ravine, a former wastewater discharge point. The contamination in ravine soils exceeded state standards. Kaiser completed accelerated cleanup

actions to remove contaminated soil from the ravine. Removal protected surface and groundwater and eliminated a potential exposure pathway of concern to the Spokane River.

### The Remedial Investigation Reports

The RI Reports provide analysis of soil in nine locations and analysis of groundwater at the site. They also include evaluation of potential risks to human health and the environment from site-related contaminants.

The reports cover a large geographic area. The Kaiser property includes northern and southern areas. These two areas are separated by a piece of land owned by the Inland Empire Land Company.

The southern area houses Kaiser's industrial operations, and the northern area is currently undeveloped. The RI Report focuses on the southern area and covers the following nine areas:

1. Oil House
2. Industrial Wastewater Treatment Area
3. Oil Reclamation Building and surrounding area
4. Cold Mill/Finishing Area
5. Remelt/Hot Line Area
6. Oil Reclamation to Wastewater Transfer Lines Area
7. Truck Shop Area
8. Discharge Ravines Area
9. Buffer Area

### Results of the Investigation

Results of the investigation cover a wide range of historical information, breakdown of geographic locations of investigations, previous cleanup actions taken, detailed analyses and summaries, contaminants of concern, potential exposure issues, and other details. A summary of groundwater and soil results is provided in the following paragraphs.

### Groundwater Results

There are some small areas where free phase petroleum product is present on the water table during late summer and fall when the groundwater levels are at their lowest. Kaiser recovered over

4,000 gallons of petroleum product as a result of actions taken since 1994.

Three areas of groundwater contamination called plumes are found at the site. The larger plume contains PCBs and originates in the Remelt area.

The other two plumes are being contained with the current cleanup measures. These plumes contain total petroleum hydrocarbons (TPH), which are mostly diesel and heavy oil, along with PCBs. Carcinogenic polycyclic aromatic hydrocarbons (cPAHs) and metals are also found with the petroleum plumes.

Currently, actions are being taken to contain the TPH plumes, some of which contain PCBs, and recover petroleum product.

### Soil Results

Several contaminants in soil still exceed state standards. Some contaminants exceed these standards throughout the site, others only in certain locations. Contaminants include:

- PCBs
- Diesel and heavy oil
- Gasoline
- cPAHs
- Metals (arsenic, chromium, lead, iron and manganese)

### Human Health and Ecological Risk Assessments

As part of the Remedial Investigation, a human health and ecological risk assessment was conducted at the site. Twenty-five areas within the site were examined. The purpose of this assessment was to determine potential exposure to contaminants in soil. Potential exposure to groundwater contaminants are considered separately in the Remedial Investigation Report.

Results confirmed additional cleanup actions are needed to reduce potential human exposure to contaminants in soil and groundwater. Results also indicate there are no exposure risks to wildlife in the 25 areas studied within the site.

### Feasibility Study Proposed Alternatives for Cleanup

The Feasibility Study Report is complex because there are multiple contaminants in different locations at various depths in soil as well as in groundwater. Additionally, different technologies were chosen to clean up different contaminants in each of the five main cleanup areas.

Kaiser evaluated many technologies and cleanup alternatives for this site. This fact sheet focuses only on Kaiser's proposed alternatives. For detailed review of all alternatives evaluated by Kaiser, please see the FS Report and FS Technical Memorandum.

### Specific Geographic Cleanup Areas

The following are the five areas for proposed cleanup. (see Figure 2)

- Oil House Area
- Wastewater Treatment Area
- Oil Reclamation Building Area
- Remelt/Hot Line Area.
- Other Areas of Concern (Cold Mill/Finishing Area, Truck Shop Area, Former Rail Car Unloading Area and Former South and Former West Discharge Ravine Areas)

### Contaminants

Each of the five areas listed above contain different combinations of contaminants that are to be addressed. The comprehensive list of contaminants being addressed includes VOCs, SVOCs, PCBs and metals. Metals include lead, arsenic and chromium. See the chart in Figure 3 for explanation of chemical acronyms.

### Categories for Proposed Cleanup

Cleanup in each of these five areas focuses on one or more of the following categories:

- ❖ Near Surface Soil
- ❖ Deep Vadose Zone Soil
- ❖ Petroleum Hydrocarbon Groundwater Plumes and Associated Smear Zone Soil
- ❖ Remelt/Hot Line PCB Groundwater Plume and Associated Smear Zone Soil

## Technologies for Proposed Cleanup

Kaiser's proposed technologies for cleanup vary for each area at the site depending on the category that applies. The chart in Figure 3 provides a general overview of the proposed cleanup alternatives.

The following are brief explanations of terms used in the Feasibility Study Report.

Containment for soil refers to capping soils with materials to keep contamination in place and keep the public from being exposed.

Containment for PCB contaminated groundwater refers to pumping groundwater from the Remelt Hot Line Plume and introducing that groundwater into the Oil House Plume. It would be kept from migrating through use of the IRM.

IRM stands for Interim Remedial Measures which include pumping clean groundwater from deep in the aquifer in combination with the recovery of free phase petroleum product from the surface of the aquifer. The pumping process along with natural attenuation and biodegradation prevents the groundwater contamination from migrating to another area.

Institutional controls – methods used to limit or prohibit activities that might interfere with the cleanup actions such as fencing, signs, restrictions on land use, etc.

Monitoring includes collecting and analyzing samples of soil and groundwater to ensure human health and the environment are protected during cleanup and construction and that the cleanup action is effective long-term.

Monitored Natural Attenuation (biodegradation) refers to monitoring the natural breakdown of contaminants over time without formal treatment or intervention.

## Future Cleanup Action Plan

The Feasibility Study Report and cleanup alternatives proposed by Kaiser are not the final

cleanup that Ecology may require at the site. Ecology may agree with some of Kaiser's proposed alternatives, but may not agree with all of them.

Ecology will write a Draft Cleanup Action Plan in the future and select the most appropriate cleanup alternative(s) for the site based on current proven scientific technologies, protection of human health and the environment, and public input.

Before the final cleanup action is selected, Ecology will require Kaiser to conduct pilot studies to show that Kaiser's chosen technologies will be effective in cleaning up PCBs in groundwater. For example, Kaiser will need to demonstrate that natural biodegradation of PCBs is occurring and taking place at a feasible rate. Kaiser also will be required to conduct a pilot study to determine whether PCBs can be effectively removed from extracted groundwater.

## What Happens Next?

Ecology will respond to all comments **received by March 6, 2012**, and a Responsiveness Summary will be sent to all commenters. Ecology will modify the reports based on public comment if appropriate. If no changes are made, the reports will become final.

Additional investigations in the Former West Discharge Ravine are in progress and will be completed by March 2012.

Interim actions also will be conducted including the pilot studies for PCBs in groundwater. Cleanup remedies that don't require pilot studies will be implemented as part of the interim actions. Public comment will be invited on results of the additional Former West Discharge Ravine investigations and interim action documents.

Kaiser Trentwood Site Map

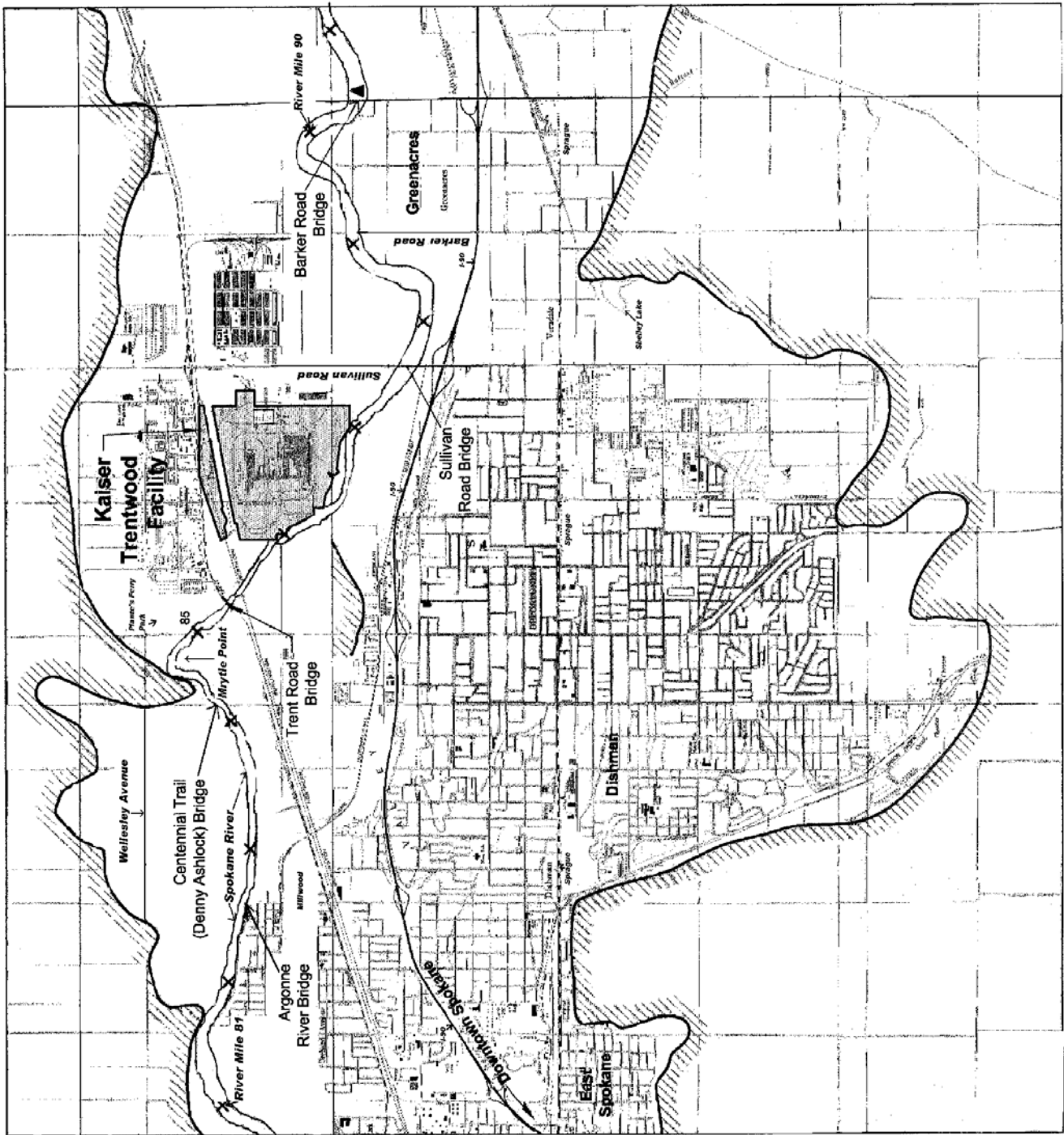
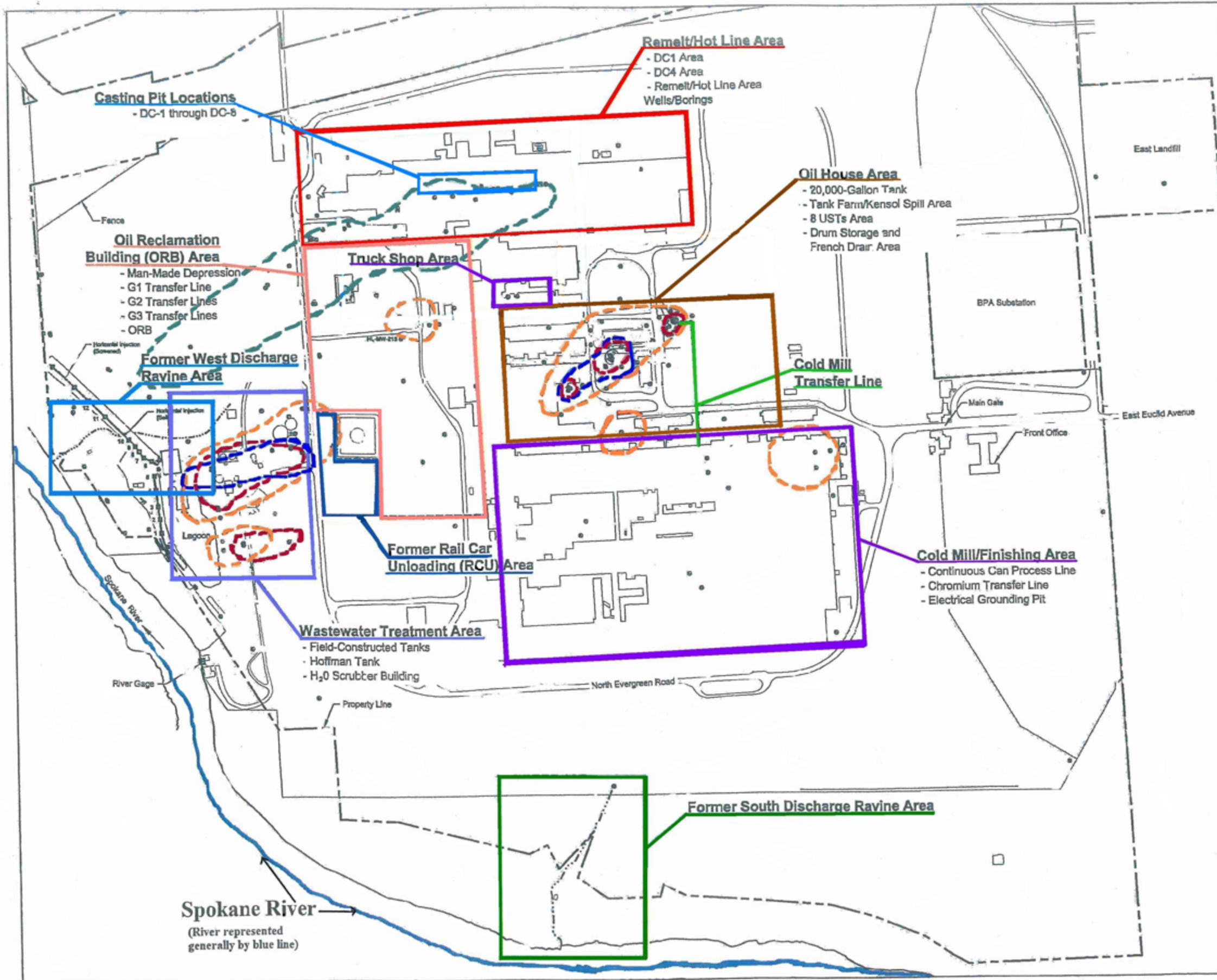


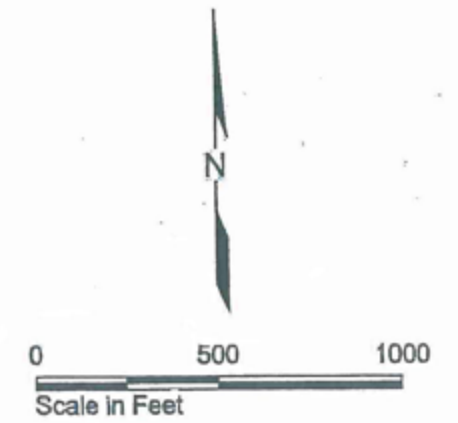
Figure 1 Kaiser Trentwood Facility Map (adapted from Hart Crowser figure)

**Figure 2**



- - - - - **Approximate Extent of PCBs in Groundwater Only**
- - - - - **Approximate Extent of Diesel & Heavy Oil in Groundwater**
- - - - - **Approximate Extent of Free-Phase Petroleum in Groundwater**
- - - - - **Approximate Extent of PCBs Associated with Petroleum (PCBs not Dissolved in Groundwater)**
- Area Boundary**

Note: Area boundaries shown on this figure are approximate.



Adapted by Ecology from Hart Crowser Map

## Kaiser's Proposed Cleanup Alternatives Figure 3

Kaiser's Proposed Cleanup Alternatives Figure 3				
<p><b>NOTE:</b> An X indicates the category, contaminants, and cleanup technologies for the specific geographic area at the site.</p> <p>For example, in the Oil House Area three categories exist and all technologies for each category will be used.</p>	Cleanup Categories and Associated Contaminants			
	Near Surface Soil	Deep Vadose Zone Soil	Petroleum Hydrocarbon Groundwater Plumes and Associated Smear Zone Soil	Remelt/Hot Line PCB Groundwater Plume and Associated Smear Zone Soil
	Top 20 feet of soil [VOCs, SVOCs, PCBs, and metals e.g., lead, arsenic]  ↓	Begins at a depth of 20 feet and goes down to the smear zone - near the water table (which varies from 33 to 68 feet deep). [Contaminants: VOCs, SVOCs, PCBs comingled w SVOCs, and metals e.g., chromium and arsenic]	Located at a depth varying from 33 to 68 feet below the ground. [Contaminants: free phase petroleum product in contact with groundwater; PCBs comingled with SVOCs]	Located at depths varying from 33 to 68 feet below the ground. [Contaminants: PCBs]
Technologies to treat contaminants within each category →	**Institutional Controls, Monitoring, Monitored Natural Attenuation and Containment; excavation and off-site disposal for SVOCs, PCBs and Metals	**Institutional Controls, Monitoring, Monitored Natural Attenuation and Containment; Containment on non-comingled PCBs	**Institutional Controls, Monitoring, Monitored Natural Attenuation, Operation of Existing Interim Remedial Measures System and Enhanced removal of free phase petroleum product	**Institutional Controls, Monitoring, Monitored Natural Attenuation, Groundwater Containment
Specific Geographic Cleanup Areas				
Oil House Area	X	X	X	
Wastewater Treatment Area	X	X	X	
Oil Reclamation Building Area	X	X	X	
Remelt/Hotline Area	X	X		X
Cold Mill/Finishing Area	X	X	X	
Truck Stop Area	X	X		
Former Rail Car Unloading Area	X	X		
Former Discharge Ravines	X			

\*\*For details about each proposed technology, please see page 4 of the fact sheet.

**PCBs (Polychlorinated Biphenyls)**  
A group of manufactured chemicals historically used as insulating fluids or coolants and lubricants in transformers, capacitors or other electrical equipment. They also have been used in hydraulic oils, fluorescent lights, inks, carbonless paper and other uses. The U.S. stopped manufacturing PCBs in 1977 because of evidence they accumulate or build up in the environment and may have harmful health effects. Humans may be exposed to PCBs from the Spokane River by eating fish caught from certain locations of the river.

**Plume**  
A mass of contamination underground mixed with groundwater.

**VOCs (Volatile Organic Compounds)**  
A group of chemicals containing organic carbon that readily evaporate, changing from liquids to gases when exposed to air. VOCs at Kaiser are mainly gasoline range hydrocarbons.

**SVOCs (Semi-Volatile Organic Compounds)**  
Less volatile hydrocarbons. SVOCs at Kaiser are mainly diesel, Kensol and heavy oil.