

SUPERFUND

Fact Sheet

BOOMSNUB/BOC GASES Vancouver, Washington



U.S. ENVIRONMENTAL PROTECTION AGENCY

January 2001

BOC Gases Removal Action

EPA is proposing a cleanup remedy for the BOC Gases property. **We would like to hear your comments.**

The U. S. Environmental Protection Agency (EPA) invites your comments on a proposal to clean up contaminated soil and groundwater at the BOC Gases facility (formerly AIRCO), located at 4715 NE 78th Street in Vancouver, Washington. BOC Gases manufactures compressed gas. The BOC Gases property is one of three operable units (OUs) that form the Boomsnub/AIRCO Superfund Site (Site).

EPA is proposing to treat the groundwater and remove contaminated soil vapors using a process called in-well stripping with soil vapor extraction (SVE). Should this proposal be selected, BOC Gases will design and build a treatment system in 2001.

What are the goals of the cleanup?

- Remove volatile organic compounds (VOCs) from soil near the water table.
- Remove VOCs from the groundwater on the western portion of the BOC property.
- Prevent additional VOCs in the groundwater from moving outside the BOC property.
- Complement the existing groundwater pump-and-treat system so that cleanup is completed more quickly.

EPA's Proposed Alternative

EPA is proposing that the soil and groundwater be treated using **in-well stripping with soil vapor extraction (SVE)**. EPA believes that in-well stripping with SVE is the most protective alternative and is easier to implement than the other alternatives that were considered. This preferred alternative is explained in a document called an

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Public Comment Period

January 15, 2001 - February 15, 2001

Written comments should be sent to:
Deborah Yamamoto, Project Manager
U.S. Environmental Protection Agency
1200 Sixth Avenue, (ECL-112)
Seattle, WA 98101

Engineering Evaluation/Cost Analysis (EE/CA). The EE/CA for the BOC Gases Operable Unit compares three alternatives. The alternatives were evaluated against the following criteria: overall protection of human health and the environment, effectiveness, ease of implementation, and cost. The three alternatives that were considered are described below in more detail. Copies of the EE/CA are available for review at the Fort Vancouver Regional Library and the EPA Regional Office (see the end of this fact sheet for more information).

What alternatives were considered?

Three alternatives were considered: 1) no further action, 2) **in situ air sparging with soil vapor extraction (SVE)** and 3) **in situ air stripping with**

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SVE. The last two alternatives use specialized technology to treat the soil and groundwater at the current location (in situ).

Alternative 1. No Further Action

EPA is required by law to include the no further action alternative. In the BOC Gases EE/CA it is provided only for comparison with other alternatives. If EPA were to take no further action, the VOC contamination would continue to move off the BOC Gases OU and act as a source to the site-wide groundwater contamination.

Alternative 2. In Situ Air Sparging with SVE

In this alternative, contaminated soil and groundwater remain in place (in situ) and **clean air is injected into the ground below the water table.** The bubbles of air rise up through the groundwater and the VOCs evaporate into the bubbles. The air containing VOCs is then extracted using a system of SVE wells located above the water table. SVE is also known as "soil venting" or "vacuum extraction." In this technology a vacuum is applied through wells near the source of contamination in the soil. The contaminants evaporate and the vapors are drawn towards extraction wells. Extracted vapors are then treated with granular activated carbon, and the carbon is sent to a permitted facility for disposal or re-use.

Alternative 3. In Well Stripping With SVE

In this alternative, **air is injected into specially constructed wells.** The air causes the water in the well to rise and draws more groundwater into the well. As the air and water mixture rises, the VOCs in the water evaporate into the air. At the water table the air and water separate. The water flows back into the groundwater. The air is captured by a vacuum applied to the top of the well for treatment above ground using granular activated carbon. The cleaned water is not lifted above ground but is recirculated back into the aquifer. Separate SVE wells are also installed near each

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groundwater well location to extract VOC-contaminated vapor in the soil. The vapor is brought above ground for treatment using granular activated carbon, as discussed above.

Why is the BOC Gases cleanup being handled separately?

The cleanup of the BOC Gases OU is being handled separately from the other OUs for three primary reasons: First, the BOC Gases Property acts as a source of VOCs to off-site contamination. Extensive soil and groundwater data collected during the BOC Gases Site Evaluation and routine site-wide groundwater monitoring confirms that the property is a source of VOCs to other areas.

The second reason for using different cleanup methods for this OU relates to the types of contaminants at the OU. The contaminants in the groundwater at the BOC Gases OU are limited to volatile organic compounds. Chromium is present in the other operable units, but is not present in soil or groundwater beneath the BOC Gases OU. EPA and BOC Gases were concerned that simply expanding the existing extraction/treatment system to include the BOC Gases property could draw chromium towards BOC Gases, contaminating groundwater that currently does not contain chromium.

The third reason that different alternatives were considered relates to an operational limit at the site. The site is currently discharging the maximum permitted amount of treated water to the City of Vancouver sanitary sewer system. EPA was interested in identifying methods for the cleanup on the BOC property that would not increase discharge requirements.

Why does EPA prefer in-well stripping with SVE?

Although both remedies would be protective of human health and the environment, Alternative 3, **in-well stripping with soil vapor extraction**, ranked highest overall. No pilot testing is required for this alternative, so it can be installed sooner, and there is less uncertainty about the control of the injected air and the long-term treatment capability of this system. In addition,

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groundwater cleanup standards are predicted to be met in four years (instead of ten, which is the estimated time for the air sparging system). The preferred alternative, in-well stripping with SVE, is estimated to cost \$1,667,369, which is significantly less than the \$3,237,664 cost of using air sparging with SVE.

Next Steps

The Public Comment Period is open from January 15, 2001 through February 15, 2001. After the close of the public comment period, EPA will review and consider all comments. EPA will then prepare an Action Memorandum in which the final cleanup action will be selected. All the comments received and EPA's response to each comment will be recorded in a Responsiveness Summary. The Responsiveness Summary will be an attachment to the Action Memorandum. Both documents will be available for public review.

EPA will require BOC Gases to implement the selected alternative and to cover all expenses. Design of the selected cleanup remedy could begin late spring 2001. Construction is scheduled for the summer and fall of 2001.

Future Updates and Community Involvement

EPA will continue to send fact sheets about the BOC Removal Action as the cleanup process moves forward. Once a cleanup alternative is officially selected, a copy of the design documents will be available for review. Interested parties may contact EPA at any time for additional information.

For More Information:

To review documents concerning activities at the BOC Removal Action site, you may visit information repositories located in Vancouver and Seattle. (Continued on page 4)

Background

The Boomsnub/Airco Superfund Site is located in Hazel Dell, Washington. Groundwater and soil at the site are contaminated with chromium from the former Boomsnub property and VOCs from the BOC Gases facility. EPA placed the site on the National Priorities List (NPL) for cleanup under Superfund on April 25, 1995. Both EPA and the Washington Department of Ecology have taken actions at the site to clean up soil and groundwater. These actions include excavation of chromium-contaminated soil at the Boomsnub property and installation and operation of the groundwater extraction treatment system and monitoring network. BOC Gases has conducted numerous investigations and actions at the site, including a two-phase Site Evaluation that served as the basis for the EE/CA. BOC Gases has reimbursed the state and federal government for its expenses associated with cleanup activities on the BOC property.

To facilitate the investigations and cleanup, the site was divided into three separate operable units (OUs) in 1997: the Boomsnub Soil OU, the BOC Gases OU and the Site-Wide Groundwater OU. Although the contamination problems, and the purpose of the investigations are specific for each OU, the cleanup actions for all OUs are designed to complement each other.

In February 2000, EPA published a Record of Decision (ROD) for two of the three OUs: the Boomsnub Soil OU and the Site-Wide Groundwater OU. EPA will be removing approximately 900 cubic yards of chromium-contaminated soil from the Boomsnub property for off-site disposal. For the site-wide groundwater, the existing groundwater extraction/treatment system will be expanded and upgraded to treat 200 gallons per minute. The goal is to cleanup the groundwater to federal and state drinking water standards (80 parts per billion (ppb) for chromium, five ppb for Trichloroethene (TCE) and Tetrachloroethene (PCE).

In Vancouver:
Fort Vancouver Regional Library
1007 East Mill Plain Boulevard
Vancouver, WA 98663
(360) 695-1566

In Seattle:
EPA Region 10 Records Center-7th Floor
1200 6th Ave.
Seattle, WA 98101
(206) 553-4494

If you have any questions or would like more information about the Boomsnub/BOC Gases Removal action, please contact the following people:

or call EPA's toll-free 1- 800-424-4372
and ask to be transferred to:

Deb Yamamoto, EPA Site Manager 206-553-7216
E-Mail Address: Yamamoto.Deb@epa.gov

Lilibeth Serrano, Community Involvement Coordinator 206-553-1388
E-Mail Address: Serrano-Velez.Lilibeth@epa.gov

Web Surfing for EPA Region 10
Check out our homepage at:
<http://www.epa.gov/r10earth>
Click on "Index" then "B" then "Boomsnub/Airco".

To ensure effective communication with everyone, additional services can be made available to persons with disabilities by contacting one of the numbers listed above.



Region 10 (ECO-081)
1200 Sixth Avenue
Seattle WA 98101

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