NEW HAMPSHIRE DEPARTMENT OF Environmental Services

EPA Region 1, New England

Beede Waste Oil Site Newsletter

December 1997 Volume 1 ~ No. 4

The US Environmental Protection Agency (EPA) and the New Hampshire Department of Environmental Services (DES) are working together to clean up the Beede Waste Oil Superfund Site located at 7 Kelley Road in Plaistow, New Hampshire.

Time Critical Removal Activities

Time critical removal actions stop or substantially reduce a release or threatened release of hazardous substances.

The successful completion of the Time-Critical Removal Actions in November marks a major milestone in site cleanup. EPA and DES have worked jointly since July, 1996, to remove and dispose of or recycle all of the contents of tanks and drums.

All tanks and drums have been removed from the site and 810 tons of steel have been recycled.

Two underground storage tanks were excavated and removed as well as the underground piping which connected many

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Remedial Investigation

The purpose of the Remedial Investigation is to: gather the data necessary to determine the sources, nature and extent of all contamination; identify how the contamination is migrating; and evaluate potential public health and environmental risks.

The Remedial Investigation has been in full swing since early summer. Much of the field sampling has been completed and the analytical results are being compiled by Sanborn, Head & Associates, the Remedial Investigation contractor.

All monitoring wells have been sampled including sixty new on site wells installed this summer and

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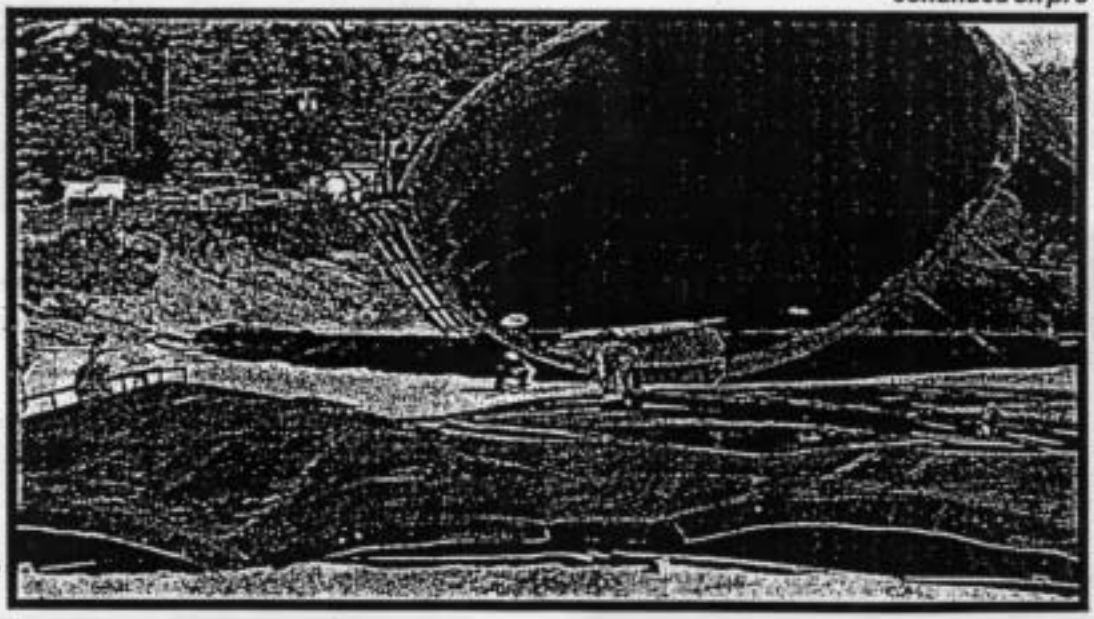

All tanks and drums are gone from the site, including the three standing tanks like the one above. After being emptied and torn down, the steel was removed from the site to be recycled.

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Time-Critical Removal Activities, continued from p. 1

of the above-ground tanks.

Temporary fencing has been placed around areas of stained soils at former tank locations to limit access to these potentially contaminated areas. The highlights below give an idea of the magnitude of the removal operation:

Non-Time Critical Removal Activities

Non-time critical removal actions (NTCRA) stop or substantially reduce a release or threatened release of hazardous substances. Although serious, these releases do not pose an immediate threat to public health or the environment.

EPA's contractor, Brown & Root Environmental, began a Treatability Study at the site during the last week of October. This involved installing and operating a 100 foot recovery trench along Kelley Brook.

The recovery trench is effectively collecting oil and has significantly reduced the seepage of oil to Kelley Brook. To date, approximately 400 gallons of floating oil product has been removed from the water table. Groundwater collected during the study will be shipped to an off-site wastewater treatment facility.

The Treatability Study will be completed by the end of November and results will be evaluated in order to determine the depth and breadth of the floating oil product and the extent to which the groundwater will need to be treated. EPA and Brown & Root will use this information to design a full-scale oil recovery system which will likely include additional trenches, extraction wells and a groundwater treatment system.

The proposed recovery and treatment system will be presented to the public at a formal hearing in the spring, 1998.

The existing recovery trench will continue to collect oil product until a full-scale system is installed.♦

Community Involvement Corner

The Remedial Investigation Workplan is in the Plaistow Library.

Site History

The Beede Waste Oil Site is comprised of two parcels of land totaling 39 acres. Parcel 1 totals 22 acres and is the site of former commercial waste oil recycling and fuel oil storage and distribution operations. Parcel 2, a former gravel pit, is 17 acres of primarily undeveloped land.

1926 - 94

■ Commercial operations, including recycling of used oil, storage and distribution of virgin fuel oil and cold patch manufacturing.

1991

■ DES verifies that on site soil and floating oil (LNAPL) is a source of contamination to abutting residential wells.

■ Site owner conducts some investigations and removes a leaking underground storage tank believed to have been the primary source of LNAPL from the site to Kelley Brook.

1992

■ DES files suit and obtains preliminary injunction order for site owner to control the LNAPL, investigate site and control hazardous waste.

■ DES places sorbent pads in Kelley Brook to contain the floating oil.

1995

■ DES conducts investigation of site conditions and nature of waste.

1996

■ Current owner sentenced in Federal Court.

■ NH Fish and Game, DES and EPA conduct fish tissue survey to measure potential impacts of contaminants in Kelley Brook.

■ EPA initiates time critical removal actions to address contaminated material left in the tanks and drums.

■ EPA adds site to the Superfund list, making additional federal funds available for investigation and cleanup. EPA and DES initiate remedial investigation.

1997

■ EPA and DES complete time critical removal actions.

■ EPA installs oil recovery trench as part of non-time critical removal.

Remedial Investigation, continued from p. 1

the 40 existing wells from previous investigations.

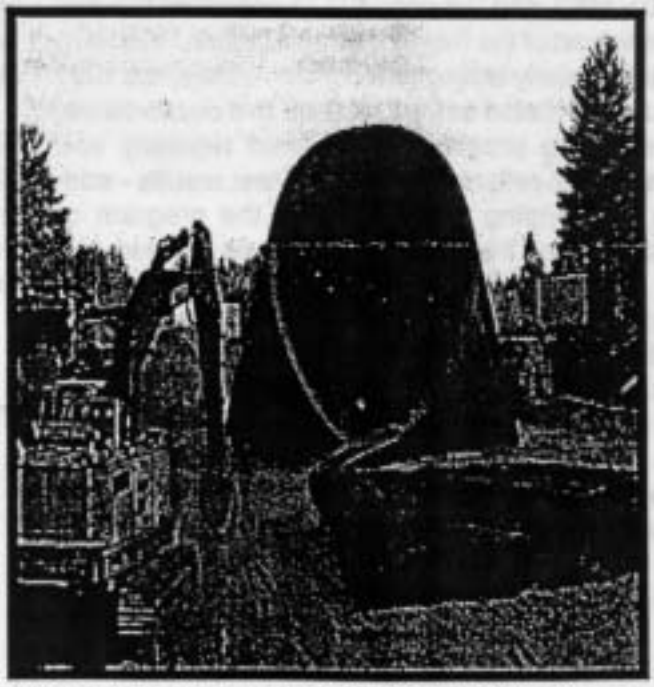
A comprehensive round of samples have been taken from drinking water wells adjacent to the site (72 wells). For more information on drinking water sampling, see the article on page 4.

Surface water and sediment samples have been collected from 20 critical locations of Kelley Brook.

The first phase of soil sampling has been completed. Weather permitting, additional soil sampling of both surface soils (samples between 0 - 12") and deep soils (samples below 12") will be conducted during December.

The old, vandalized building on the site will be removed during the winter or early spring to make way for sampling of buried solid waste and to prepare for spring soil sampling. The final phase of surface and subsurface sampling, including the area beneath and behind the old building and the various soil piles on site, is scheduled for spring, 1998.

The Work Plan which describes the details of the remedial investigation activities is available at the Plaistow town library. ♦



With all the tanks and drums removed from the site, activity at Beede will quiet down for the winter.

Drinking Water Testing

Many people in Plaistow have received letters from DES and DHHS describing the results of tests on their drinking water. These letters can be confusing - they were written by the government after all! If the letter says that some kind of contaminant was found in your water, many questions and concerns come up. We hope to answer some of the questions in the article below: how we decide where to sample; how often we test; how the sampling and testing is done; how we evaluate the results and what actions are taken if test results show problems.

Where do we Sample and Why

We decide what to test for based on the problem we are investigating at the site. At Beede, this means we test for various metals such as lead, volatile organic chemicals (VOCs) such as vinyl chloride, polychlorinated biphenyls (PCBs) and other contaminants.

Where we test is based on what we know about how the groundwater flows at the site, hydrology, and the results of past testing. We have been determining the groundwater flow patterns at the site since 1991 and we continue to complete the picture as part of the Remedial Investigation. We have been regularly testing wells near the site since 1991 and have tested some locations two dozen times. The testing program is reviewed regularly and changed to reflect the history of test results - adding or dropping locations from the program or changing the frequency of testing as needed.

Groundwater flows in consistent patterns and within this, groundwater contamination moves as a plume. We use the understanding that we've gained about the groundwater flow patterns around the Beede site to guide our testing program. There are three general testing areas: upgradient wells, down-gradient wells and "up the sides."

Up-gradient wells are sampled to confirm the quality of water moving onto the site and to confirm that there are no other sources of contamination. Down-gradient wells are the most at-risk because plumes of contamination move in this direction. As a result, these wells are tested semi-annually or more often. When we define the down-gradient testing area, we extend the testing "up the sides" to confirm the width of the plume. In general, if a well has no past history of contamination, we sample it semi-annually if the hydrology indicates it is an at-risk well and we sample annually or less often if the hydrology indicates less risk.

How We Sample

Sampling itself is fairly simple. We prefer to sample water as it comes from the ground. The first step is to learn whether there is a treatment unit of some kind. In Plaistow, many people have softeners or some other device to remove iron from their water, especially on bedrock wells which could affect test results. After we determine where to sample, we run the water for ten minutes so that we are sample water that has just entering the plumbing system. We fill a couple of bottles for each test so that any sample that shows contamination can be reanalyzed to confirm the hit.

In the laboratory, the sample is prepared so that all of the contaminants are moved out of the water and into a carrier gas. The carrier gas is then injected into a gas chromatograph which takes the jumbled mixture of contaminants and separates them out. Next, a mass spectrometer takes the separated gas stream, identifies the individual contaminants, and reads how much of each contaminant is present.

These standard test methods were developed by EPA and the academic community, and are continually checked and modified to ensure the best possible results. The methods we're using now are able to detect most VOC's to less than one

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Newsletter Feedback:

If you have suggestions for topics to be covered and questions to be answered in future newsletters. Contact:

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Drinking Water Testing, continued from p. 4

part per billion (ppb). One ppb is one ten millionth of one percent, or to look at it another way, it's one second in thirty-two years.

Whenever contamination is detected, the test results are evaluated by the New Hampshire Department of Health & Human Services Bureau of Health Risk Assessment (BHRA) against national standards.

What do the Results Mean

The main source of these standards are the Maximum Contaminant Levels (MCL's) as well as drinking water equivelant levels (DWEL's) and lifetime health advisories. These standards are derived from animal and human studies, where they exist, with safety factors that take into consideration the differences between animals and humans. The result is that MCL's, DWEL's and lifetime health advisories are set very conservatively so that action is taken well below a level at which any adverse health effects are expected to occur.

If a contaminant is detected at a concentration below the MCL standard, we continue to observe the well. If test results detect an individual contaminant or a combination of contaminants that are above the standards, an alternative water supply is provided. Additionally, if there are many contaminants present below standards, but combined exhibit a risk, then action may also be taken.

Actions that are taken include bottled water, water treatment units, new wells, or hook-ups to near by public water supplies. Which action we take is based on the level of contamination, the extent of the problem, the proximity to other supplies of water and the prospects for fixing the contamination problem.

Near Beede, DES has supplied treatment units for a condominium, a multi-family home, a single-family home and a business office. We test the performance of these units at the same time that we test wells and a contractor is on call at all times for maintenance and repair.

In the future, DES will continue to test drinking water near Beede. DES and EPA are working on the site to remove sources of contamination. EPA has already begun to address one source of contamination with the construction of a recovery trench to remove the waste oil floating on the water table at the site. ♦

810 tons of steel scrap were removed from the site and recycled.

Mailing List Additions, Deletions & Changes

If you would like to:

☐ Be added to the mailing list

☐ Note a change of address

☐ Be deleted from the list

Name:

Address: _____

_____

_____

Please fill in the above information and send to:

A. Bonarrigo, US EPA, Region 1, JFK Federal Building (RAA), Boston MA 02203