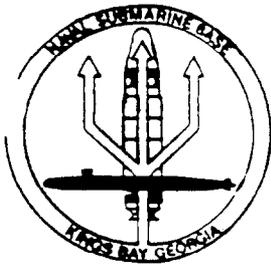


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KINGS BAY, GEORGIA

Installation Restoration Program Newsletter

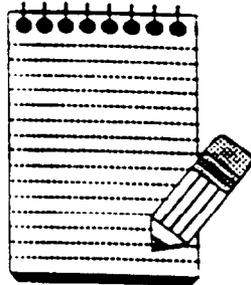
March 1995

Volume 1, Number 4

This newsletter is provided to the community on a quarterly basis or when significant developments occur in the environmental program. Copies of previous editions of EnviroUpdate can be obtained through the Public Affairs Office. For more information, contact Robert Steller, Public Affairs Office, (912) 673-4714.

Notes from the Cleanup Field

All efforts now at the Old County Landfill are focused on ground-water cleanup. Presently, SUBASE is conducting three interrelated activities in order to design the most effective groundwater cleanup plan: completing the RCRA Facility Investigation, continuing the interim cleanup measure, and assessing long-term treatment options.



RCRA Facility Investigation (RFI) field program was completed in November 1994. Results will be summarized in a technical memorandum, which is expected to be completed in late Spring, 1995. SUBASE collected additional data from the landfill, Porcupine Lake, and the Crooked River subdivision to use in preparing the Final RFI report, the Health and Environmental Assessment (HEA), and the Corrective Measures Study (CMS)/Corrective Action Plan. (For more information on the HEA and CMS, see *EnviroUpdate*, December 1994).

These three reports, scheduled to be completed in late 1995, will provide a comprehensive summary of site conditions, potential risks to human health and the environment, and possible cleanup measures. The Final RFI Report will provide information about the nature and extent of contamination. The HEA will evaluate the potential risks to human health and the environment while the CMS will evaluate and recommend cleanup measures.

The Interim Measure (IM) is a system designed and tested to limit the continued movement of chemicals in the groundwater from the landfill towards the subdivision. Also, it is designed to clean up groundwater near the landfill that is known to have high levels of certain chemicals. The interim measure was initiated in the Fall 1993 and operation continues today.

The IM, a fast-track cleanup action, is being conducted in two phases. Phase I tested two cleanup technologies that will reduce the level of chemicals found in the groundwater -- air stripping and biological treatment. Evaluation of the Phase I data confirms that the wells pumping the groundwater to the treatment pad are operating effectively; the pumping has limited the movement of the affected groundwater; and air stripping is an effective means for removing the chemicals from the groundwater. Results are detailed in the *Final Interim Measure, Phase I Activities: Evaluation and Recommendations Report* (expected to be available in May 1995).

Interim measure activities (known as Phase I Continuance) are ongoing at SUBASE. The Navy is committed to continuing this cleanup measure while it explores options for bringing the interim measure up to a full-scale system. Pumping of the affected groundwater and air stripping will continue in this phase of the cleanup. Phase II will focus on design activities in an effort to implement a full-scale treatment system capable of stabilizing and cleaning up the affected groundwater. See page 3 for a schedule of cleanup activities at SUBASE.

Long-term Treatment Options are being evaluated by SUBASE to continue its focus on enhancing the present interim measure and identifying additional technologies that will accelerate cleanup. At this time, we are planning to test a technology, known as *in-situ* bioremediation, that could be used in addition to the existing interim measure system (see *highlight box below*).

Bioremediation is a process that uses natural, harmless microorganisms to digest chemicals and break them down into non-hazardous components. *In situ* means that the treatment of the affected groundwater will take place in the ground or "in place." Based on our current understanding of site conditions, this "in place" treatment may have the potential to speed up the overall cleanup time. This technology would be used in addition to the existing air stripping technology.

Before beginning any tests of *in situ* bioremediation, specific data will be collected in the field. This data will be collected in late summer or early fall and take place in the Old County Landfill area where cleanup efforts are ongoing. After the data is collected and analyzed, a pilot-scale bioremediation system may be developed and constructed in the field. If the results of a pilot-scale test are successful, a full scale system may be designed to enhance other treatment options and accelerate the overall cleanup effort.

Highlight Box: **BIOREMEDIATION**

Bioremediation uses naturally occurring microorganisms (bacteria, yeast, and/or fungi) to convert harmful substances into nontoxic compounds. Microorganisms, just like humans, use organic substances (such as nitrogen, phosphate, and carbon) for nutrients and energy. *In situ* bioremediation uses this natural process, without removing the affected water from the ground, by promoting the growth of *harmless* microorganisms that can break down the contaminants and convert them into nontoxic compounds consisting mainly of carbon dioxide and water.

The proposed pilot-scale test will involve injecting carbon and mineral nutrients into the groundwater, providing the harmless microorganisms with the energy to naturally convert the unwanted harmful chemicals to nontoxic chemicals.



Bats at SUBASE

The Natural Resources Program at SUBASE is designed to maintain a pleasant living and working environment while protecting the full range of natural resources. Land management, wetlands protection, fish & wildlife conservation, urban forestry, outdoor recreation, and commercial forestry are all addressed under SUBASE's Natural Resource Management Division.

Many programs have been implemented by the Natural Resource Department in an effort to protect the natural resources. SUBASE is minimizing its use of pesticides and insecticides and actively using alternative methods to control insects. Insect-eating bats are moving in and finding SUBASE a nice place to live!

Contrary to popular belief, not all bats live in caves. Bats make homes out of shelters such as trees, old barns, rock crevices, and even "Bat Boxes." In an attempt to persuade more bats that eat insects to make SUBASE their home, the Natural Resources Department has installed about 50 bat boxes around the base. The bat boxes are placed 12 to 15 feet above the ground in trees or attached to the side of a building.

Most bats either eat insects, fruit, or nectar. These bats play an important and often critical role in keeping the environment healthy -- not only do they rid crops of harmful insects, but they also aid in the pollination and dispersal of fruit and plant seeds.

Bats, the only true flying mammals in the world, usually arrive in the area in April and are well equipped with an internal guiding system, similar to sonar, consisting of pulses of very high frequency sound. As the sound waves travel outward, they hit objects and bounce back in the direction they came from to inform the bat of the object's size, shape, and location. This internal guiding system allows bats to navigate and capture insects even in the dark.

As insect-busters, bats are very important to our environment. On an average night, one bat will eat thousands of insects! By providing housing, the Natural Resources Department hopes to have them as permanent residents of SUBASE. For more information, contact the Public Affairs Office.

Community Q&A

The Question and Answer column is a regular feature in this Newsletter. We request the community to direct any questions regarding the environmental investigations and the Installation Restoration Program to Robert Steller at the Kings Bay Public Affairs Office, (912) 673-4714. Responses to these questions will be shared with the community in a future mailing of this Newsletter.

What is the Installation Restoration Program?

Before federal environmental cleanup laws were passed by Congress, the Department of Defense developed a proactive program to address the environmental conditions created by releases of chemicals and petroleum products, from past spills and disposal practices. The Installation Restoration Program is designed to investigate and clean up environmental releases at military installations nationwide. More information regarding the program and the steps followed during cleanup at SUBASE can be found in previous editions of *EnviroUpdate* and in fact sheets, available from the Public Affairs Office.

What's happening at sites 2, 5, and 16?

Under the Installation Restoration Program, all sites with potential contamination are investigated. In addition to the landfill site, three other disposal sites will be further investigated and cleaned up, if necessary. They are the Former Fire-Fighting Training Pit (Site 2), the Army Reserve Disposal Area, Towhee Trail (Site 5) and the Army Reserve Disposal Area (Site 16). Planning documents for the investigations have been prepared and submitted to the state regulatory agency, Georgia Department of Natural Resources. SUBASE is awaiting comments from the state with field investigations tentatively planned for Summer 1995.

Will cleanup activities in the landfill be delayed until the results of the treatability study for insitu bioremediation are available?

No. In fact, we have started groundwater cleanup activities in the landfill already. The interim measure (described on page 1) is working well and addressing part of the groundwater problem while we assess a combination of treatment options for long-term cleanup. Large scale cleanup will begin in 1996 and may take several years or decades to restore groundwater. We are looking at insitu bioremediation (see page 2) as a technology that will enhance other treatment options and accelerate the overall cleanup schedule. Key milestones in our cleanup schedule include:

Activity	Schedule
Supplemental RCRA Facility Investigation Field Work Technical Memorandum	Spring 1995
RCRA Facility Investigation Report, Health and Environmental Assessment, Corrective Measures Study	Late Winter 1995
Interim Measure Phase I	Operating NOW and through cleanup
Collect Data for Pilot-Scale Treatability Study (insitu bioremediation)	Summer 1995
Corrective Measures Study/ Corrective Action Plan	Spring 1996
Full-Scale Cleanup	Late 1996

Installation Restoration Program News

RESTORATION ADVISORY BOARD (RAB)

An important component of SUBASE's cleanup program is the community's involvement through the RAB. The board consists of community volunteer members and representatives from the Navy, state environmental agencies, and EPA. Its function is to ensure that all interested parties have an opportunity to actively participate in the review of cleanup documents and plans, and to provide input to be considered in the decision-making process. All RAB meetings are open to the public and will be announced through the local newspapers. SUBASE's RAB is planning to meet in early Spring.

INFORMATION REPOSITORY AND ADMINISTRATIVE RECORD FILE

The Information Repository and the Administrative Record are placed in a location to encourage public access to Installation Restoration Program documents and plans. The Administrative Record is being updated through the end of 1994 and will be available in Spring 1995. The Information Repository for SUBASE's environmental program is available at:



St. Marys Public Library
100 Herb Bauer Drive
St. Marys, Georgia 31558
Telephone: (912) 882-4800

If you would like to be added to our mailing list or have any comments or suggestions about our environmental program, please contact:

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