Edwards Air Force Base
Installation Restoration Program

# IRP Update

March 2000

## Site 426: Fieldwork Goes On To Ensure Safety Near New Dorms

*"Our plans for investigation of the site have been thoroughly reviewed by the US Army Center for Health Promotion and Preventative Medicine and the Non-stockpile Chemical Munitions group," said Rebecca Hobbs, Installation Restoration Program (IRP) project manager. "They believe we are being extraordinarily cautious, but we would rather err on the side of caution than be caught unprepared."*

Environmental Management is investigating the former location of a World War II-era chemical warfare materiel (CWM) storage yard.

The location designated Installation Restoration Program (IRP) Site 426, lies east of the new dormitories between Rosamond Boulevard and Popson Avenue, west of South Muroc Drive.

Previous investigations in the area found four buried trenches that base officials suspect may contain demolition debris and possibly World War II-era CWM. Earlier soil sampling near the trenches has indicated that no harmful materials have leaked out of the trenches.

However, soil gas sampling (sampling of the air between soil grains) has found chemicals at levels just barely detectable, but not hazardous, above the trenches. The chemicals could be related to diesel fuel usage in the area or could be the nonhazardous remains of CWM that was once in the storage yard.

The Air Force uses three types of sampling methods to determine the contents of an IRP site: passive soil gas sampling, soil sampling, and groundwater sampling. At Site 426, these methods are in progress.

In passive soil gas sampling, soil vapors are collected on an absorbent material at ground level. A metal cup is placed over the absorbent material and embedded in the ground. The vapors that naturally come up through the soil

**The arrow indicates the four trenches superimposed near the new dorms.**

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are collected on the absorbent material over a period of several days.

"Passive soil gas sampling was first performed in 1998 and helped us define the site," said Rebecca Hobbs, IRP project manager. "The current round of soil gas sampling will be used to verify our previous results."

**An engineer demonstrates a full-body, level B protective suit. Personnel in close proximity to the drill rig will wear this gear.**

The absorbent material was placed above the trenches on February 14, 2000 and collected on February 28, 2000. It has been sent to a lab for analysis.

Beginning March 20, Environmental Management will have personnel and a drill rig taking borehole soil samples and installing groundwater monitoring wells at the site.

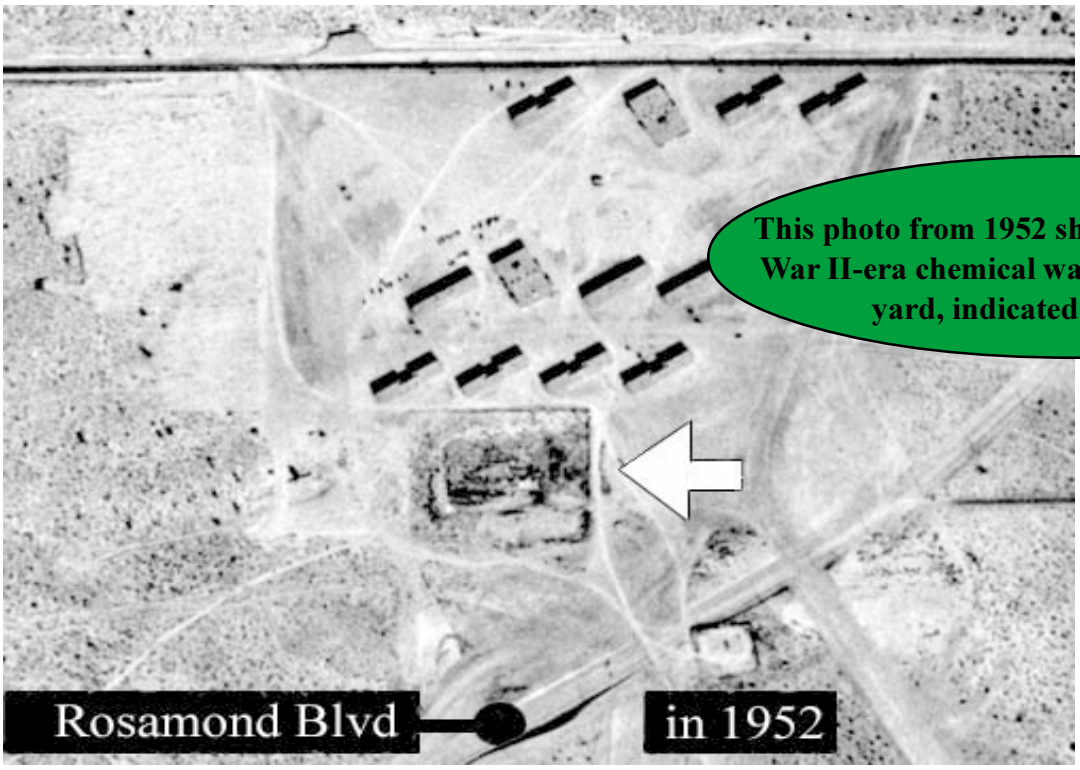
The week of March 6, 2000 the trenches were surveyed using a new ground radar technology. The geophysical equipment will locate any metal, glass, or plastic materials in the trenches. The operators will use the collected data to provide three-dimensional renderings of the buried materials.

"The traditional geophysical techniques we have used in the past have only shown us that there are metal materials in the trenches, " Hobbs said. "This will be the first time we will be able to determine the shapes of the metal materials and if there are glass containers in the trenches."

The boreholes and monitoring wells will be installed near the trenches, not actually in the trenches. The reason is to avoid disturbing anything that might possibly be buried there. The soil and groundwater samples will allow the Air Force to ensure that nothing has migrated outside the trench boundaries. Boreholes will be drilled at least 10 feet from the trench boundaries. Soil samples will be collected and analyzed. Monitoring wells will be installed and the groundwater will be sampled to make sure no contaminants have reached groundwater. The groundwater in the area of Site 426 is in a separate aquifer than the drinking water source.

Safety considerations for both dorm residents and base workers are paramount during the new investigation phase, which will take about six weeks. Engineers are taking many precautions so that health risks are minimized in case of exposure to contamination discovered during the work. "What you will see are drillers

**An example of an engineer testing the air after a soil borehole is drilled.**




**This photo from 1952 shows the former World War II-era chemical warfare materiel storage yard, indicated by the arrow.**

in Level B protective gear taking samples of the soil and groundwater in Site 426 and in Level D protective gear while filling in the holes where the soil samples were collected," Hobbs said.

"There's a chance the precautions we're taking to investigate the site further may be misperceived," said Hobbs. "But the level of protection provided to the drillers working in close proximity to the potential source of contamination does not indicate the level of danger present to those who live and work in the vicinity."

Level D safety gear is the lowest safety level consisting of gloves and protective coveralls and is only used as a precaution.

Level B is a higher safety level and requires safety gear that includes self-contained breathing apparatus, like scuba gear, coveralls, and eye protection to prevent direct contact or exposure to a chemical material when collecting samples.

"There is also a safe zone that extends to South Muroc Drive," said Hobbs. "The safe zone is a well-defined barrier consisting of wooden sawhorses with caution tape to let base personnel know what areas are off limits."

The perimeter extends well beyond the range where any base employee, including dorm residents, could experience danger. "In fact, the only potentially hazardous zone is in the proximity of the drill rig," said Hobbs.

In planning for the sampling effort, even the wind was considered. Throughout the operation,

**An example of an engineer undergoing decontamination procedures as a precaution.**

**An example of a drill rig taking soil borehole samples.**

the base weather service will be on alert for strong winds that could potentially effect the safety zones, and immediately notify the site if any conditions change. "We also have an on-site weather station," said Hobbs. "Proper shutdown procedures will be used if strong winds are detected."

Several unique precautions save costs as well as make the drilling activities safer. A litmus paper will be given to the drillers to help detect traces of CWM in the soil. It is extremely cost-effective, but it is limited, said Hobbs. "It can only tell us if CWM is detected, not the amount detected."

The more telling safeguard, however, is the on-site lab. The on-site laboratory will provide near-real-time monitoring to ensure that no hazardous vapors are present. Part of the lab's function is to provide a warning system that will alarm immediately if CWM is detected. The workers will be notified and decontamination will begin. Level B gear would protect the workers during the decontamination process, which would amount to neutralization of the chemical, in this case, using bleach as a neutralizer, and disposal of the coveralls as hazardous waste.

The soil and groundwater samples will be sent to an Environmental Protection Agency (EPA) certified lab for analysis.

After the samples have been analyzed, Edwards officials will have a clearer idea of how to proceed at Site 426. An engineering evaluation/cost analysis (EE/CA) will evaluate cleanup alternatives and propose an interim removal action to be taken at the site. Base organizations, regulatory agencies such as U.S. EPA and California EPA, and the public will review the EE/CA.

*The public will have a chance to review the Engineering Evaluation/Cost Analysis (EE/CA) before it is finalized. The EE/CA should be available for public review and comment in late 2000. Current plans are to hold three public availability sessions, one at an on-base location and two at off-base locations. The locations will be published in local newspapers.*

*For more information, contact Gary Hatch at 661-277-1454.*