



# Former Titan I-A Missile Facility Lincoln, California

NEWSLETTER #1

June 2002

## Field Investigation on Church Property Shows No TCE Soil Contamination

*In support of the ongoing environmental investigation at the former Titan I-A Missile Facility, the U.S. Army Corps of Engineers is conducting a field investigation in and around the property owned by the Roman Catholic Church, Diocese of Sacramento.*

Forsgren Associates/Brown and Caldwell (FA/BC), under contract to the U.S. Army Corps of Engineers (USACE), is performing a field investigation at the future site of a Catholic Church, located adjacent to the former missile facility. The investigation is intended to determine the magnitude, depth, and extent of any groundwater contamination in the investigation area. It will also establish whether any chemicals of concern are present within the proposed church footprint (to depths associated with excavation and building construction) which could be injurious to the health of construction workers or building occupants.



*Drilling contractors collecting soil and groundwater samples during the Church property investigation*

In October 2001, FA/BC began the first phase of the investigation by advancing six borings for collection of groundwater samples and installing two new temporary sampling points in two of these borings.

These new sampling points will be used for continued monitoring of the groundwater in the area of the Church property.

The second phase of the investigation includes advancing a maximum of eight additional borings in the Church property area with four more temporary sampling points installed in four of these borings. This phase of the investigation will also more fully define the northern and northwestern extent of the plume. FA/BC expects this phase to be completed in Spring 2002.

Preliminary results from the first phase of the investigation indicate no TCE present in the soil or soil gas. Low concentrations of TCE were detected in some of the groundwater samples. Groundwater containing low concentrations of TCE on the Church property is located 27 feet below the ground surface. This TCE-impacted groundwater has no access to the surface and causes no immediate threat to humans or the environment.

The objective of the investigation is to determine if volatile organic compounds (VOCs), specifically trichloroethene (TCE), are present in the subsurface. While trace detections of a small number of other VOCs have also been reported, TCE is the principal contaminant of concern (COC) for the Department of Defense (DoD). A plume of TCE in groundwater has been identified to the south of the church property. The church property investigation will determine if the plume has migrated north and onto the Church Property. The parcel of land belonging to the church is located on the northwest portion of the plume.

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Sacramento District



### Reports and More Information

Project documents and fact sheets regarding the Titan I-A Missile Facility are available to the public at the two information repositories located at:

Lincoln Library  
590 5<sup>th</sup> Street  
Lincoln, California  
(916) 645-3607

Sierra College Library  
5000 Rocklin Road  
Rocklin, California  
(916) 781-0567

### Community Relations

The USACE is committed to fully informing the community and soliciting comments, concerns, and ideas. Public meetings, briefings, and personal contacts have and will continue to be a valuable means of involving the community at the former Titan I-A Missile Facility.

### Questions?

For additional information on the former Titan I-A Missile Facility project, or to have your name added to our mailing list, please contact:

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### Website Information

The Titan I-A Website is available for your use.  
Visit us at:

[www.titanI-A.org](http://www.titanI-A.org)

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## A Little Bit of History

### The Titan I Missile

The United States developed the Titan I Missile Program in the 1950s as part of the Intercontinental Ballistic Missile (ICBM) research and development effort. The Titan I missile was a top secret, 98-foot-long, two-stage, liquid-fueled ICBM. The Titan I was the second ICBM to be deployed by the United States. The first US ICBM of the two-stage design, it was the largest of the first generation US ICBMs.

Though the Titan I was superior in design and firepower to the Atlas, it still suffered from its use of non-storable liquid fuels. Besides requiring a great deal more maintenance than the solid fuel Minuteman, the Titans' fuels created a safety hazard due to their volatility. On 24 May 1962, a Liquid Oxygen leak caused an explosion in a silo at Beale AFB. Thus, with the deployment of the Minuteman, and the Titan IIs, it became neither militarily necessary, or economically practical, to continue operating the Titan I. Phaseout of the Titan I was approved on 24 May 1963.

Though its time in service was a short four years, the Titan I was a very important missile, in that it was the first big multi-stage missile. The technology learned in its development was later used in the development of the Titan II ICBM, the Titan III satellite launch vehicle, and the Saturn 5 moon rocket.



# Understanding the Remedial Process

## Step 1. Preliminary Assessment/Site Inspection

In the 1990s the U.S. Army Corps of Engineers (USACE), Sacramento District, began a series of environmental studies and investigations at the former Titan I-A Missile Facility. The USACE studies, referred to as the Remedial Process, have been conducted under the Defense Environmental Restoration Program (DERP) to identify and address environmental concerns related directly or indirectly to the Department of Defense's (DOD) previous use of the site.

Investigation activities at the Titan I-A Missile Facility have proceeded in a series of steps which follow the National Contingency Plan, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Resource Conservation and Recovery Act (RCRA). The steps include a preliminary assessment/site investigation, remedial investigation, feasibility study, remedial action, and site closure.

The first step of the Remedial Process is to conduct a preliminary assessment (PA) of the site. The goal of the PA is to assess the threat to human health and the environment, determine if a removal action is necessary, and establish site inspection priorities. Data collection activities performed during the PA emphasize identifying target populations and other targets that may be affected by contamination at the site. Data collected during PA activities include: site-specific data, historical site information, potential contamination sources, types



Aerial view of the Titan I-A Missile Facility



Titan I-A groundwater treatment system

of hazardous waste, target information, and location of drinking water supplies. Sampling activities are not performed during this phase of site assessment.

Information from the PA should be used during the remaining steps of the investigation.

If the PA indicates that further investigation may be necessary, a Site Inspection (SI) is conducted. A SI is a hands-on inspection which supplements the information collected during the PA. The primary purpose of the SI is to gather enough information to determine whether further action is warranted as a result of a significant threat to human health and the environment. Data collection goals for this phase are similar to the PA with the addition of detailed field data (e.g., site samples). During this phase, a field team conducts onsite visits and sampling. The media selected for sampling may include all or some of the following: surface water, groundwater, soil, soil gas, and ambient air.

The site inspection is often performed in two stages. The initial site investigation is known as the focused site inspection. A follow-up inspection, known as the expanded site inspection, may be conducted if additional data are needed. During the focused site inspection samples are collected and analyzed to determine more precisely which contaminants are present at the site; migration potential; and threats to drinking water, soils, and air.

In the event further sampling must be done, the site moves into the second stage of the site inspection process. Specific activities can include monitoring well installation, air sampling, geophysical studies, drum or tank sampling, borehole installation, and/or complex background sampling studies.

Once these activities have been conducted, the information is used to prepare the second step of the remedial process, the remedial investigation. The steps of a remedial investigation will be discussed in the following newsletter.

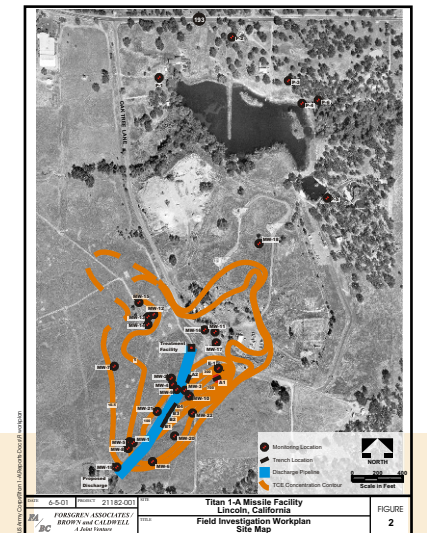
## Did you know?

### What is TCE?

Trichloroethene (TCE) is a volatile organic compound that is often used as an industrial degreasing solvent. It is a colorless liquid with a chloroform-like odor and reacts slowly with water to form hydrochloric acid. It has historically been used as a cleaning solvent for military facilities.

### What is a plume?

The term "plume" refers to a three dimensional volume in which a contaminant of concern is found and concentrated. A plume can move and change shape based on the properties of a chemical and the interaction of that chemical with the environment. At the Titan I-A Missile Facility, TCE has been found in groundwater. The boundary of the TCE plume is shown on the map below. The yellow line outlines the area of TCE contamination in groundwater.



## Timeline: Former Titan I-A Missile Facility Investigation

