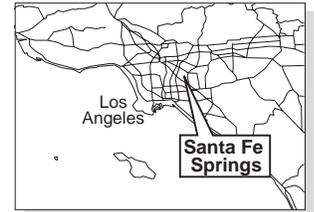




# EPA

## Waste Disposal, Inc. (WDI) Superfund Site



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION 9 • SAN FRANCISCO, CALIFORNIA • AUGUST 1999

# RESULTS OF REMEDIAL DESIGN INVESTIGATION SITE CONDITIONS: EXTENT OF BURIED WASTES AND LIQUIDS

### *Santa Fe Springs, California*

Since the summer of 1997, the U.S. Environmental Protection Agency (EPA) and the Waste Disposal, Inc. Group (WDIG) have been studying the Waste Disposal, Inc. (WDI) Superfund site to learn more about the amount and types of waste buried there. This fact sheet summarizes the historical research and field investigation activities completed by EPA and WDIG regarding both solid and liquid wastes disposed at the site. This information will be used to reevaluate and revise the remedial design for the site.

### *At a Glance*

- An estimated 70% of the site contains buried waste at depths ranging from 5 to 30 feet.
- Buried wastes are present underneath a few buildings located on the site.
- The reservoir contains pockets of liquid waste.
- Some of the buried wastes outside of the reservoir also contain liquids.

## WHAT IS KNOWN ABOUT WASTES DISPOSED AT WDI?

EPA first studied the site during 1988 and 1989 as part of the remedial investigation (RI). At that time, EPA collected waste samples both within and outside the reservoir, located in the center of the site (see Figure 1). The constituents detected in the waste samples included: volatile organic compounds (VOCs) such as benzene, toluene, ethyl benzene, xylene (BTEX), and trichloroethene (TCE) and tetrachloroethene (PCE); semi-

volatile organic compounds (SVOCs); and metals, such as arsenic, chromium, copper and lead. Some of the samples taken outside of the reservoir detected hydrocarbon-stained soils, industrial sludges and other wastes containing hazardous substances.

The 1989 RI Report concluded that the main potential source of contamination was the reservoir; however, it also identified areas outside of the reservoir that were

potential sources of subsurface (i.e., under the surface) contamination at the site. EPA's RI Report concluded that several areas surrounding the reservoir were used as unlined containment ponds for waste disposal, and that other areas may have been contaminated by the migration of subsurface liquid wastes or gases. The 1997-1999 Remedial Design (RD) investigative studies provide considerable additional data about the extent of

### **COMMUNITY MEETING • AUGUST 12, 1999**

- WHAT:** Site Conditions - WDI Superfund Site  
**WHEN:** Thursday, August 12, 1999 • 7:00 p.m.  
**WHERE:** South Whittier Intermediate School • 13243 Los Nietos Road, at Painter Road, Whittier, California

buried wastes, the extent of subsurface liquids, and the extent of subsurface gas in the reservoir and surrounding areas. Figure 1 shows the estimated extent of buried wastes readily visible in the soil borings (referred to as sump materials in the previous documents). These wastes are composed of drilling muds intermixed with other industrial wastes and sludges. In addition, historical photographs and other data indicate that other areas, outside the estimated extent of buried waste, were used for the management or disposal of industrial liquid and solid wastes. In some of these areas, contamination has been detected, most likely caused by these activities (see Figure 2).

## HISTORY OF THE SITE

### THE RESERVOIR & SURROUNDING AREAS

In the center of the WDI Superfund site is a 42-million gallon reservoir that was constructed in the 1920s to store crude petroleum. The bottom of the earthen, concrete-lined reservoir appears to have been built several feet below the original ground surface elevation. When constructed, the reservoir was approximately 600 feet in diameter. By the mid-to-late-1930s, the reservoir was no longer used to store crude oil. Instead, the reservoir was used as a disposal area for both liquid and solid wastes. Because of waste disposal and layers of fill soil that have been added to cover the reservoir, the bottom of the reservoir is an estimated 22 feet below ground surface (bgs). Aerial photographs indicate that the area surrounding the reservoir probably was used for disposal activities as early as the 1920s. Disposal activities in and around the reservoir continued into the

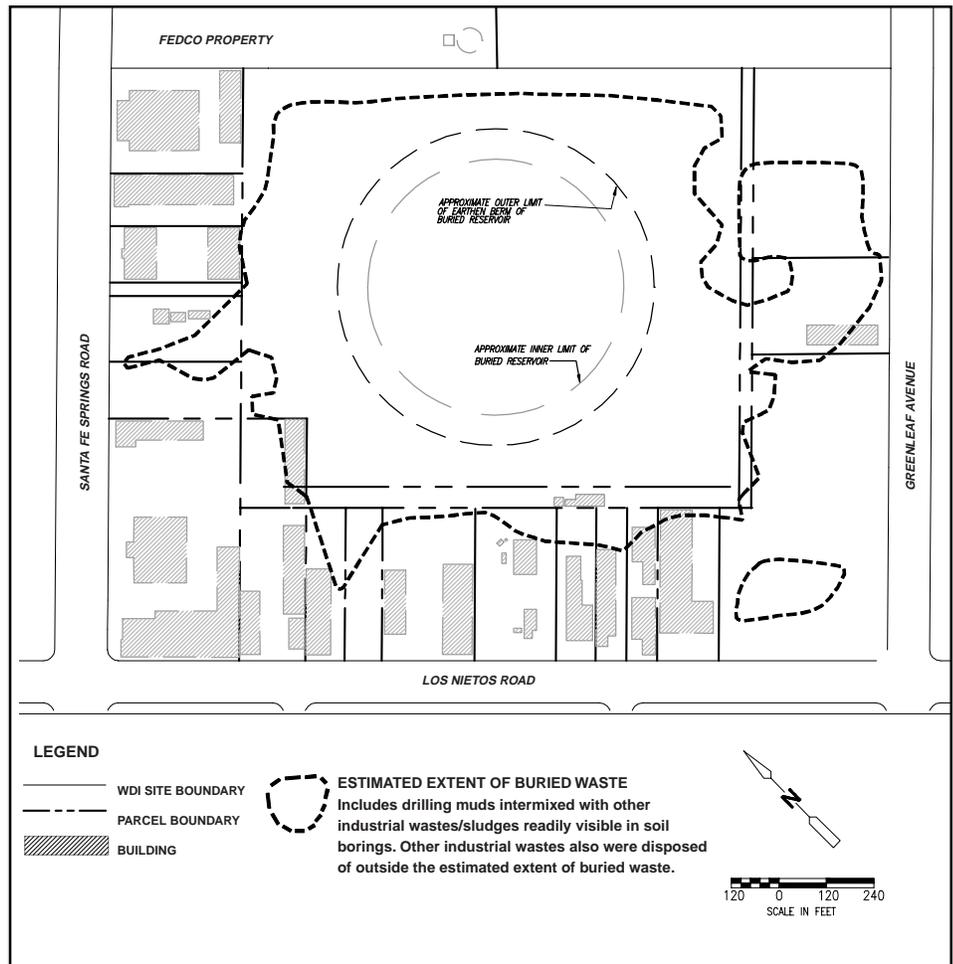


Figure 1. Estimated Extent of Buried Waste at Site

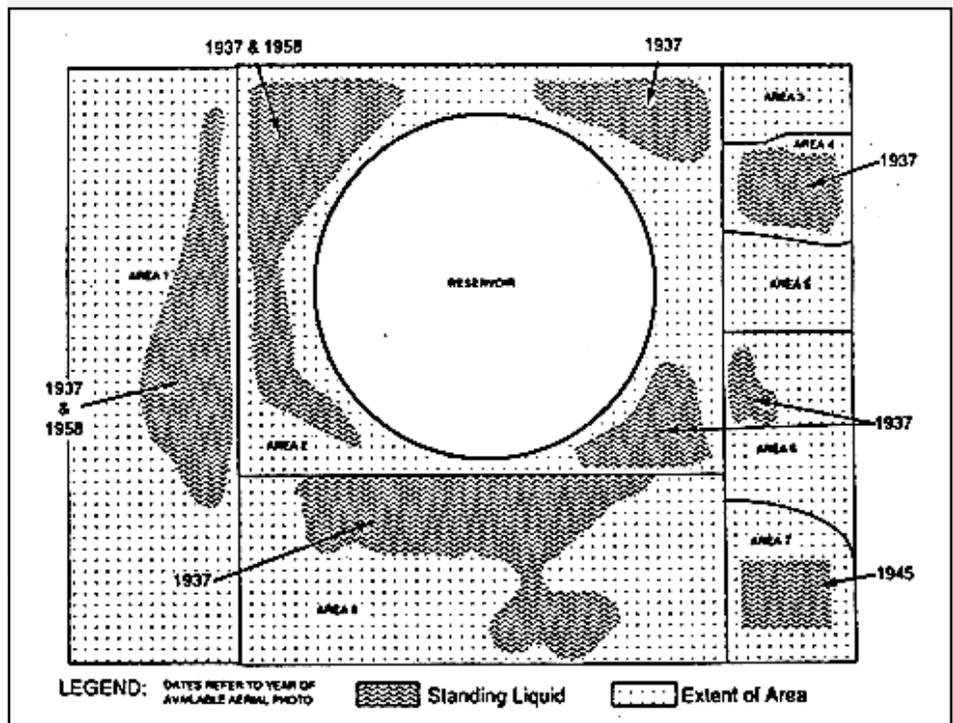


Figure 2. Other Areas of Site Where Liquid Wastes May Have Been Managed or Disposed

mid-1960s. The operators of the WDI disposal site subdivided areas around the reservoir into “cells” or areas for disposal of liquid and solid wastes, much of which contained hazardous substances. The operators used a “dike and fill method” in which wet drilling muds from the oil field operations and other waste materials were deposited in “lagoons” outside of the reservoir to dry out. Figures 3a and 3b are photographs showing the berms and waste liquids disposal. Once the drilling muds or waste liquids had dried, the operators added a new layer of wet drilling muds or other waste materials on top of the previous layer. This method of construction was designed to contain the wastes, although at various times during the operation it appears these dikes or berms may have been breached and released liquids

## HISTORICAL AERIAL PHOTOGRAPHS

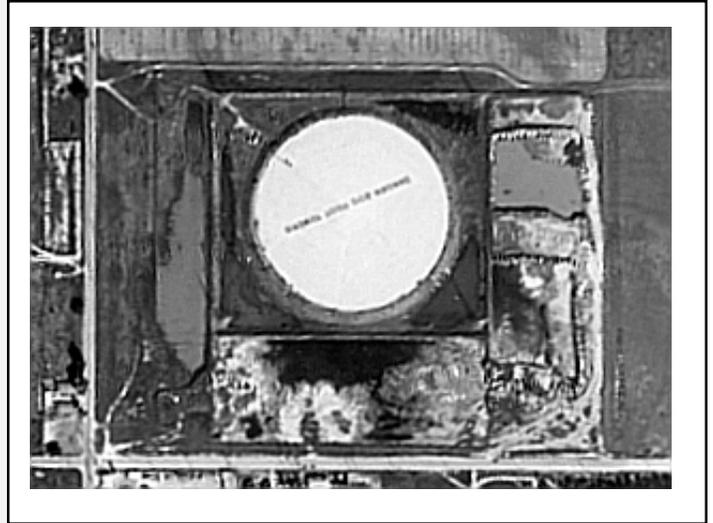


Figure 4a: Aerial Photograph - 1937

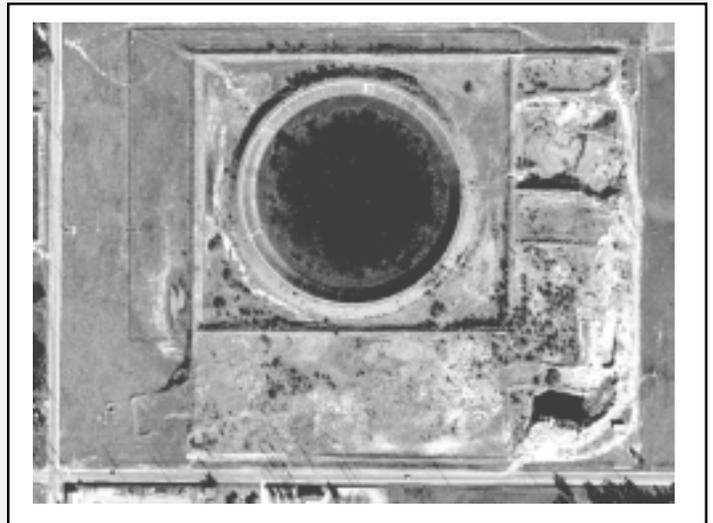


Figure 4b: Aerial Photograph - 1945

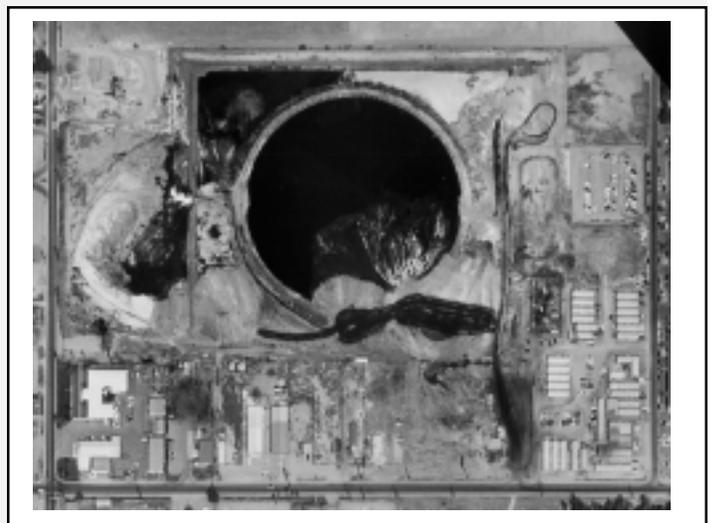


Figure 4c: Aerial Photograph - 1958



Figure 3a: View from Los Nietos Road of Liquid Disposal Practices Outside of Reservoir (1951)



Figure 3b: View from Santa Fe Springs Road of Vacuum Truck Disposing Liquids (1951)

beyond the containment structure. Aerial photos show that each waste disposal cell or lagoon was covered with soil when it ceased being used for disposal (see Figures 4a, 4b and 4c). Once the disposal operations were discontinued in the mid-1960s, these surrounding disposal areas as well as the reservoir were covered with 5 to 8 feet of soil. Some of these fill soils contain low amounts of metals, pesticides and PCBs.

## SCHEMATIC CROSS-SECTION OF RESERVOIR AREA FEATURES

Figure 5 shows a generalized view of the present features of the covered reservoir and surrounding disposal areas.

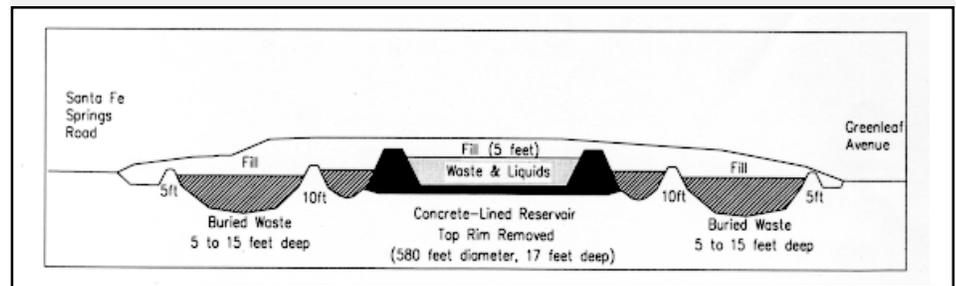


Figure 5: Mid-1960s - Present: Reservoir and Disposal Areas Covered with 5-8 Feet of Fill Soil

## RECENT INVESTIGATION RESULTS

### What is In the Reservoir?

#### • BURIED WASTES

The 1989 RI Report concluded that a variety of waste materials had been disposed in the reservoir. The recent 1997-1999 investigative studies more fully characterized the type and extent of these buried wastes. The wastes are primarily a mixture of construction debris, drilling muds, industrial sludges and wastes, solvents, oily wastes, and fill soil. These materials are unevenly distributed throughout the reservoir. In general, from 0 to 8 feet below ground surface (bgs) the reservoir typically contains fill material and a small volume of construction debris, such as concrete, bricks, wood, and asphalt. Below the fill material to approximately 20-24 feet, there is a mixture of drilling muds, waste sludges, and some construction debris (e.g., concrete).

#### • LIQUIDS

During July 1998, EPA conducted an investigation to determine more clearly the location and types of liquids within the reservoir. EPA installed 60 temporary piezometers, or probes, using a grid pattern at 50-foot intervals. Liquids were detected during this investigation in the buried waste materials and soils at many locations, as well as in soil borings installed during earlier investigative studies (see Figure 6).

As discussed in EPA's May 1999 Fact Sheet, the location of liquids within the reservoir varies. Parts of the reservoir contain little or no liquid, while other locations contain watery or oily waste. For the most part, pockets of liquids do not appear to be connected. These liquids appear to be dispersed at random elevations throughout the reservoir.

Liquids collected from the reservoir were sent to a laboratory for analysis. The liquids contained hazardous substances, including benzene, trichloroethene (TCE), tetrachloroethene (PCE), and PCBs.

While the investigation confirmed that liquids are present in the reservoir, the volume of liquids could not be determined. To attempt to better estimate the volume and the feasibility of removing liquids, the WDIG currently is conducting a liquids removal treatability study (see EPA's May 1999 Fact Sheet entitled "Liquids Removal Field Study to Begin in May").

# What is Outside the Reservoir?

## • BURIED WASTES

During the 1988 RI, EPA installed 108 soil borings to a depth of at least 35 feet to characterize the contamination at the site. EPA then collected waste samples both within and outside the reservoir. In 1995, the WDIG drilled an additional 28 borings to further characterize the buried waste in areas adjacent to Greenleaf Avenue. In 1997, the EPA and WDIG undertook additional studies of the entire 40-acre site as part of the Remedial Design (RD) investigation. More than 350 soil borings were drilled to determine how deep and how wide an area contained buried waste (see Figure 7). These investigations confirmed that the buried wastes outside of the reservoir contained petroleum-related chemicals, solvents, sludges, drilling muds, and construction debris. That is, the disposal areas surrounding the reservoir contain waste materials with chemical and

physical characteristics similar to the buried wastes in the reservoir.

The latest round of sampling conducted by WDIG and EPA determined that most of the interior, central portion of the site outside of the reservoir also contains buried waste and hydrocarbon-stained soils ranging in thickness from an average of 5 to 10 feet to a maximum of 18 to 20 feet.

Figure 1 delineates the area where subsurface investigative soil borings have identified buried waste. In addition, recent research and studies indicate that the buried waste extends up to or underneath portions of three on-site buildings on Los Nietos Road and Greenleaf Avenue (see Figure 1). Aerial photographs from the 1930s, 1940s, and 1950s more clearly identify historical disposal pits or lagoons in areas outside of the reservoir (see Figures 4a, 4b, and 4c). The wastes in these areas are covered with fill material, thereby preventing any immediate waste contact threat.

## • LIQUIDS

Liquids also were detected in some areas outside of the reservoir (see Figure 6). The liquids appear to be located on top of the buried waste material. The WDIG is preparing an RD Investigative Activities Summary Report to summarize the findings of the recent investigative activities. That report will evaluate all findings of liquids in areas outside of the reservoir.

During the winter of 1998, the WDIG installed subsurface drains near several on-site buildings to control drainage during storm conditions. Also, interim measures were undertaken in 1997 and again in 1998 to manage comprehensively surface water runoff from the site.

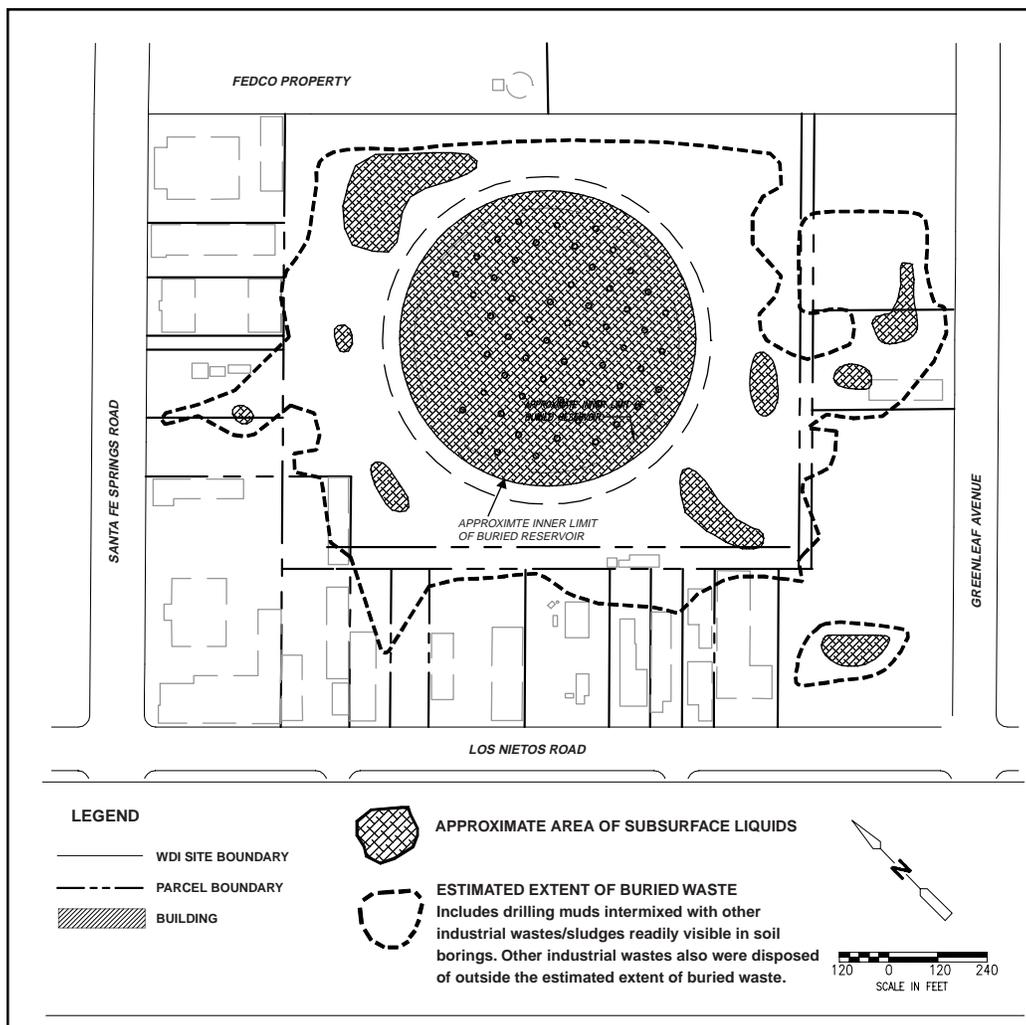


Figure 6: Locations Where Liquids Were Detected in Subsurface Waste Materials and Soils

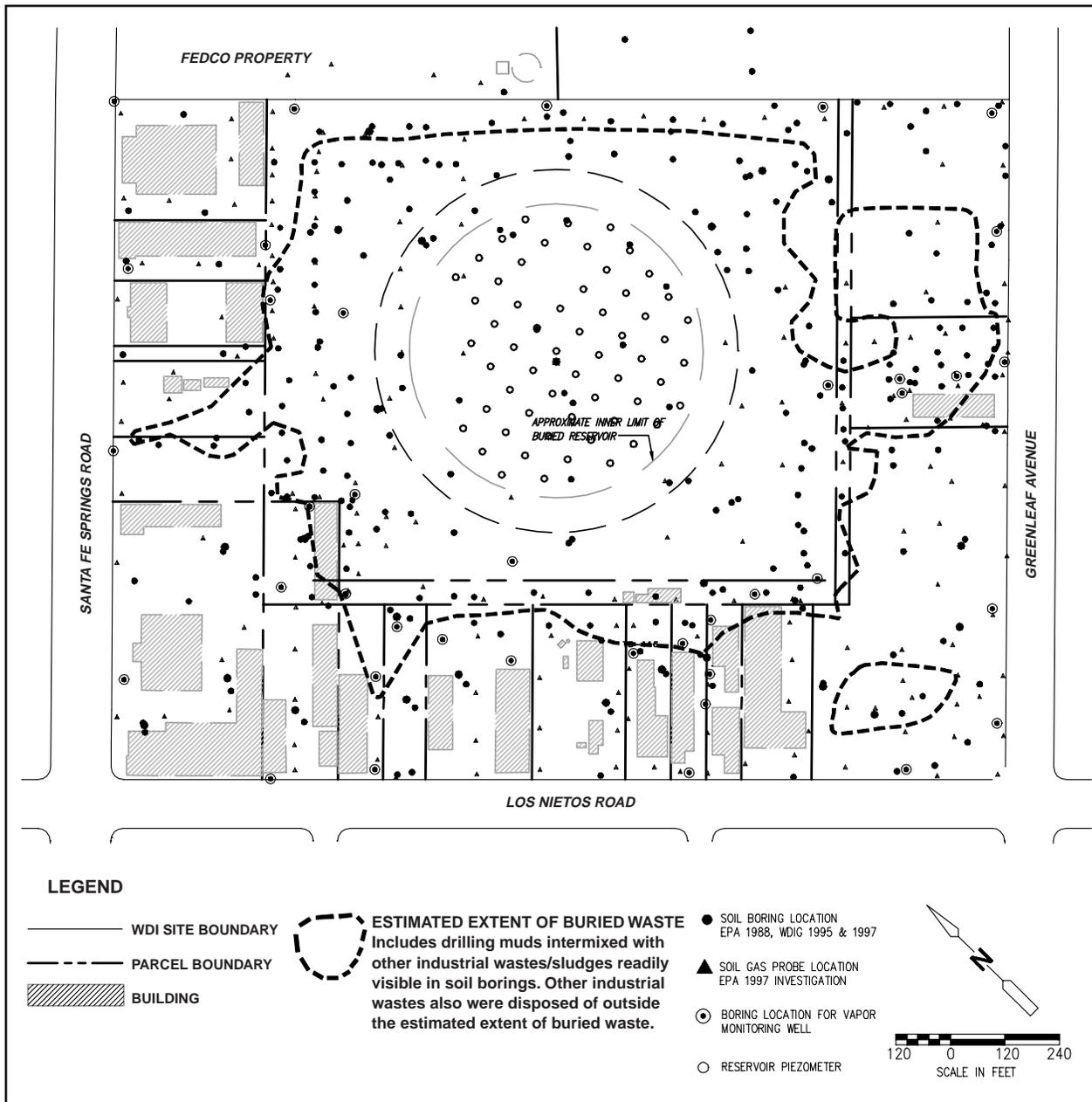


Figure 7. Soil Borings Installed at Site During 1988-89, 1995, and 1997-98.

## WHAT IS PLANNED FOR THE FUTURE?

As mentioned above, the WDIG is drafting a Remedial Design Investigative Activities Summary Report (Report) for EPA review and approval. The Report will highlight the key findings of both recent and past studies at the site. Once the Report is approved, it will be available to the public at the Information Repositories for the WDI site, discussed below. All

recent reports used to compile the Report will be available for public review at the information repositories later this year.

Once EPA has approved the Report, the WDIG will evaluate cleanup alternatives for the site. The cleanup alternatives will consider the 1993 remedy as well as other alternatives for all of the site, in a Supplemental Feasibility Study (FS) to be submitted for EPA review and approval. The Supplemental FS will

discuss various cleanup alternatives for all media (i.e., groundwater, soils, liquids, soil gas, and air). EPA plans to involve various stakeholders (i.e., representatives of the community and local and state government) in the remedy design process. After the Supplemental FS has been approved by EPA, EPA will issue its revised Proposed Plan, describing the preferred site remedy, for community and public comment. ■

# INFORMATION REPOSITORIES

The Administrative Record for the 1993 Record of Decision (ROD), including EPA's 1988-1989 Remedial Investigation Report and the 1993 Feasibility Study, is available at the information repositories. The WDIG's RD Investigative Activities Summary

Report and the reports discussing the individual studies conducted by EPA and the WDIG should be in the repositories later in 1999. The local information repositories are at the following two locations:

**City of Santa Fe Springs Library**  
**11700 Telegraph Road**  
**City of Santa Fe Springs, CA 90670**

**St. Paul's High School Library**  
**9635 Greenleaf Avenue**  
**City of Santa Fe Springs, CA 90670**



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Community Involvement Coordinator  
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San Francisco, CA 94105-3901

You may also provide the above information via email to: [McCracken.Catherine@epamail.epa.gov](mailto:McCracken.Catherine@epamail.epa.gov)

# For more detailed information...

For more detailed information regarding the site groundwater investigation and analysis, please see the EPA's *Groundwater Data Evaluation Report*, dated January 1999. Copies are available for public review at the WDI Repositories at St. Paul's High School and at the City of Santa Fe Springs Library. If you have any questions or concerns, please contact:

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