

MAY, 1993

FACT SHEETS FOR
WORK CONDUCTED AT
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

May 6, 1993

City Clerk's Office
City of Sacramento
City Hall
915 I Street, Room 304
Sacramento, CA 95814

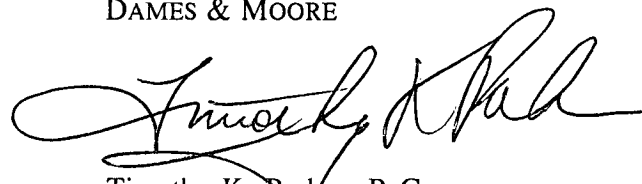
Re: **California Environmental Protection Agency
Department of Toxic Substances Control
Fact Sheets for the
Union Pacific Railroad Yard
Sacramento, California**

To Whom It May Concern:

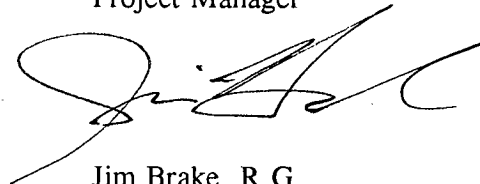
Transmitted herewith is a complete set of all fact sheets issued by the California Environmental Protection Agency Department of Toxic Substances Control for work conducted at the Union Pacific Railroad Yard in Sacramento, California from May 1989 through December 1992.

Sincerely,

DAMES & MOORE



Timothy K. Parker, R.G.
Project Manager



Jim Brake, R.G.
Project Geologist

SAC67.07

LIST OF FACT SHEETS

July 1989	Phase II Remedial Investigation and Feasibility Study Activities and Schedule
January 1990	Additional Groundwater Monitoring Well Installations in Union Pacific Railroad Lots Along the Eastern Border of the Site
April 1990	Additional On- and Off-Site Groundwater Investigations and Draft Soils Feasibility Study
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August 1990	Supplementary Off-Site Groundwater Investigations and Schedule for Submittal of Draft Remedial Investigation/Feasibility Study Report and Public Meeting
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July 1991	Summary of Soil Testing Results, Residential and Vacant Lots Adjacent to Union Pacific Railroad Yard, Sacramento, California, and Actions to Be Taken by Union Pacific Railroad Company
October 1991	Interim Remedial Measures and Soil Excavation Activities, Lots Adjacent to Union Pacific Railroad Yard, Sacramento, California
October 1991	Off-Site Groundwater Monitoring Well Installations, Quarterly Groundwater Sampling and Analysis, and Groundwater Pumping Test
December 1991	Surface and Shallow Soil Investigation of the Active Portion of the Union Pacific Railroad Yard, Sacramento, California
February 1992	Summary of Public Meeting Held on August 13, 1992

March 1992	Historic Water Supply Well Abandonment, 72,000-Gallon Underground Tank Removal, and Non-Hazardous Debris Removal and Disposal, Union Pacific Railroad Yard, Sacramento, California
April 1992	72,000-Gallon Underground Tank Removal, and Non-Hazardous Debris Removal and Disposal, Union Pacific Railroad Yard, Sacramento, California
May 1992	Additional Off-Site Groundwater Investigations
July 1992	Air Monitoring Activities
December 1992	Summary Results of Active Yard Shallow-Soil Investigation, Sources and Mobility of Arsenic and Lead, and Ambient Air Assessment
December 1992	Proposed Slag Removal and Recycling Interim Remedial Measure
December 1992	On-Site Groundwater Interim Remedial Measure



Union Pacific Railroad Sacramento Shops Site

Fact Sheet July 1989

Introduction

The California Department of Health Services (DHS) is overseeing the investigation of soil contamination at the Union Pacific Railroad Sacramento Shops Site located in Sacramento, California. This fact sheet presents information about activities associated with the upcoming Phase 2 Remedial Investigation (RI) and the concurrent Feasibility Study (FS) for the site.

Phase 2 Remedial Investigation

The purpose of the Phase 2 RI is to further evaluate the extent of the contamination identified during previous RI work (now known as Phase 1). Contaminants found at the site include: heavy metals, asbestos, and fuel- and solvent-type hydrocarbons. The Phase 2 RI will consist of the following activities:

- Drilling and sampling of soil borings in on-site and off-site locations. On-site soil borings will be located near the southern, eastern and northern boundaries of the site. Off-site soil borings will be located in the alley-way that parallels 24th

Street, in backyards of properties along 24th Street, and in William Land Park and Curtis Park;

- Installation and sampling of groundwater monitoring wells in locations throughout the site;
- Analysis of soil and groundwater samples; and
- Some excavation and transportation of contaminated soil and water. All materials removed from the site will be transported to appropriate disposal or recycling facilities.

Schedule

Field work for the Phase RI is scheduled to commence in mid July 1989. The field program will last for a period of six to eight weeks. On weekdays, work will take place between the hours of 7:00 a.m. and 7:00 p.m. On weekends, work will take place between the hours of 9:00 a.m. and 7:00 p.m.

Health and Safety

The Phase 2 RI work will be performed by state licensed contractors under the supervision of Union Pacific Railroad's technical consultant, Dames &

Moore. Field work will be conducted according to a Health and Safety Plan prepared for the site. Measures to protect site workers and the community include air monitoring and dust control. Because potentially hazardous material may be handled, workers will wear protective clothing, including: coveralls, gloves, hard hats, and, in some cases, air purifying respirators.

Feasibility Study

An FS will be developed as results of the RI field work become available. The purpose of the FS is to:

- Identify potential technologies for remediating the site;
- Screen the potential remedial technologies based on technical feasibility, public health impact, environmental impact and cost effectiveness; and
- Recommend one or more remedial action alternatives for the site.

Results of the FS will be presented along with results of the RI in a Phase 2 RI/FS report. A later fact sheet will also provide this information.

For More Information

A copy of the Phase 2 RI Work Plan is available at information repositories in the following locations:

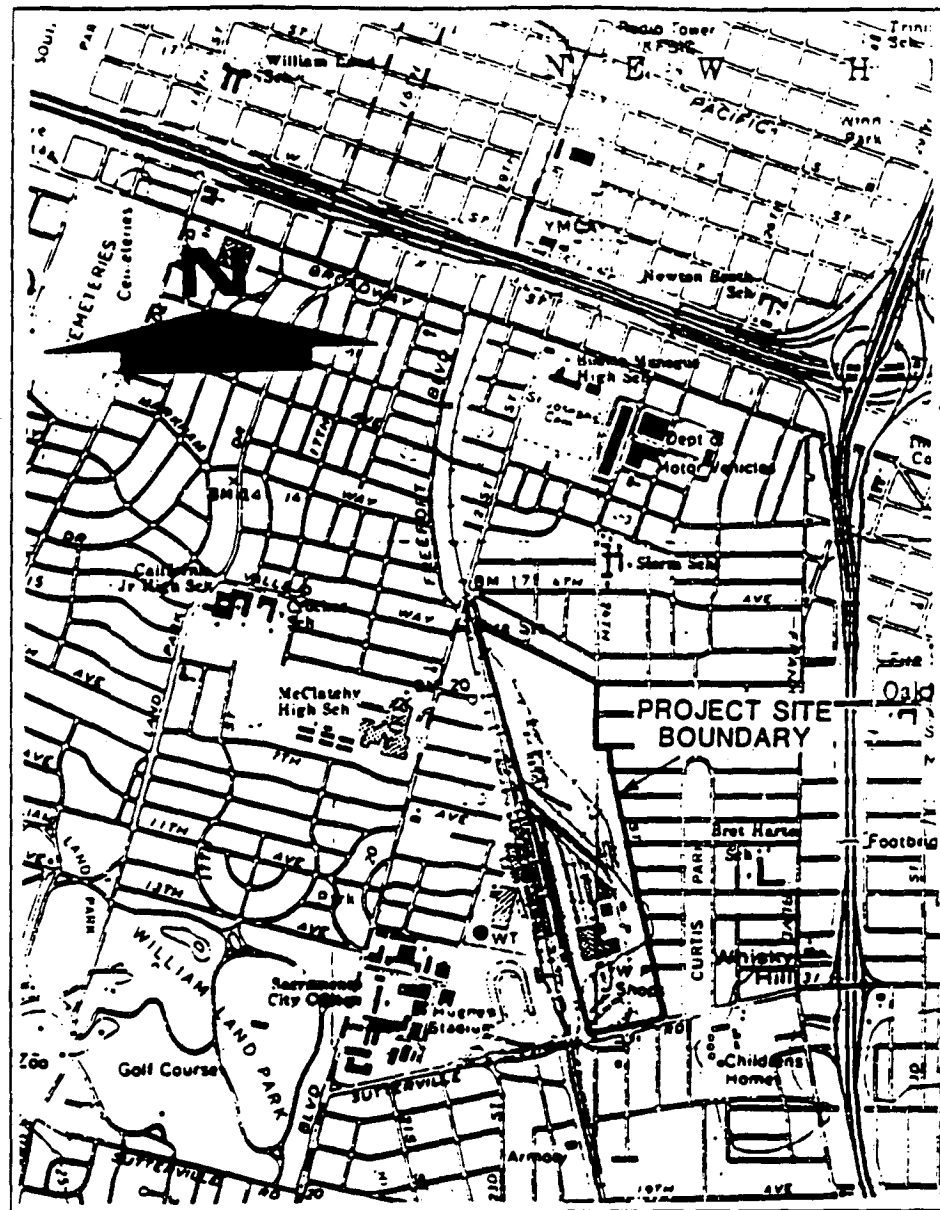
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Mon., Tue., Thur. 10:00 a.m.-6:00 p.m.
Wednesday 10:00 a.m.-9:00 p.m.
Friday 1:00 p.m.-5:00 p.m.

If you have questions or comments about the site or would like to have additional names placed on the site mailing list, please call or write the following individuals:

Jeff Van Slooten, Project Manager or Sue Sher, Community Relations
Department of Health Services
Toxic Substances Control Division
4250 Power Inn Road
Sacramento, California 95826
(916) 924-2517

Carmen Fraser, Community Relations
Dames & Moore
9300 Tech Center Drive, Suite 100
Sacramento, California 95826
(916) 364-8799



Department of Health Services
4250 Power Inn Road
Sacramento, California 95826



California Department of Health Services

Union Pacific Railroad Sacramento Shops Site

Fact Sheet January 1990

Introduction

The California Department of Health Services (DHS) is overseeing the investigation of soils contamination at the Union Pacific Railroad Sacramento Shops Site located in Sacramento, California. This fact sheet presents information about activities associated with additional Phase 2 Remedial Investigation (RI) work.

Additional Phase 2 RI Work

As part of Phase 2 activities, Union Pacific will be conducting offsite groundwater monitoring to determine if there has been any contamination of groundwater in the area near underground storage tanks.

Schedule

Beginning the week of January 22, 1990, drill rigs will be set up in the northwest corner of the old Union Pacific parking lot between 3440 24th Street and 3508 24th Street in Sacramento. The drilling equipment will remain at the site for two to three weeks while drilling is completed. On weekdays,

work will take place between the hours of 7:00 a.m. and 7:00 p.m. On weekends, work will take place between the hours of 9:00 a.m. and 7:00 p.m. Residents and others visiting the area may be subjected to some noise from the drill rigs during these hours.

Health and Safety

The Phase 2 RI work will be performed by state-licensed contractors under the supervision of Union Pacific Railroad's technical consultant, Dames & Moore. Field work will be conducted according to a Health and Safety Plan prepared for the site. Measures to protect site workers and the community include dust control measures and air monitoring at the property border to detect any contaminants in air. Because potentially hazardous material may be handled, workers will wear protective clothing, including: coveralls, gloves, hard hats, and, in some cases, air purifying respirators. The drilling site will be temporarily fenced off during drilling and the subsequent groundwater monitoring phase of the investigation.

For More Information

A copy of the Phase 2 RI Work Plan is available at information repositories in the following locations:

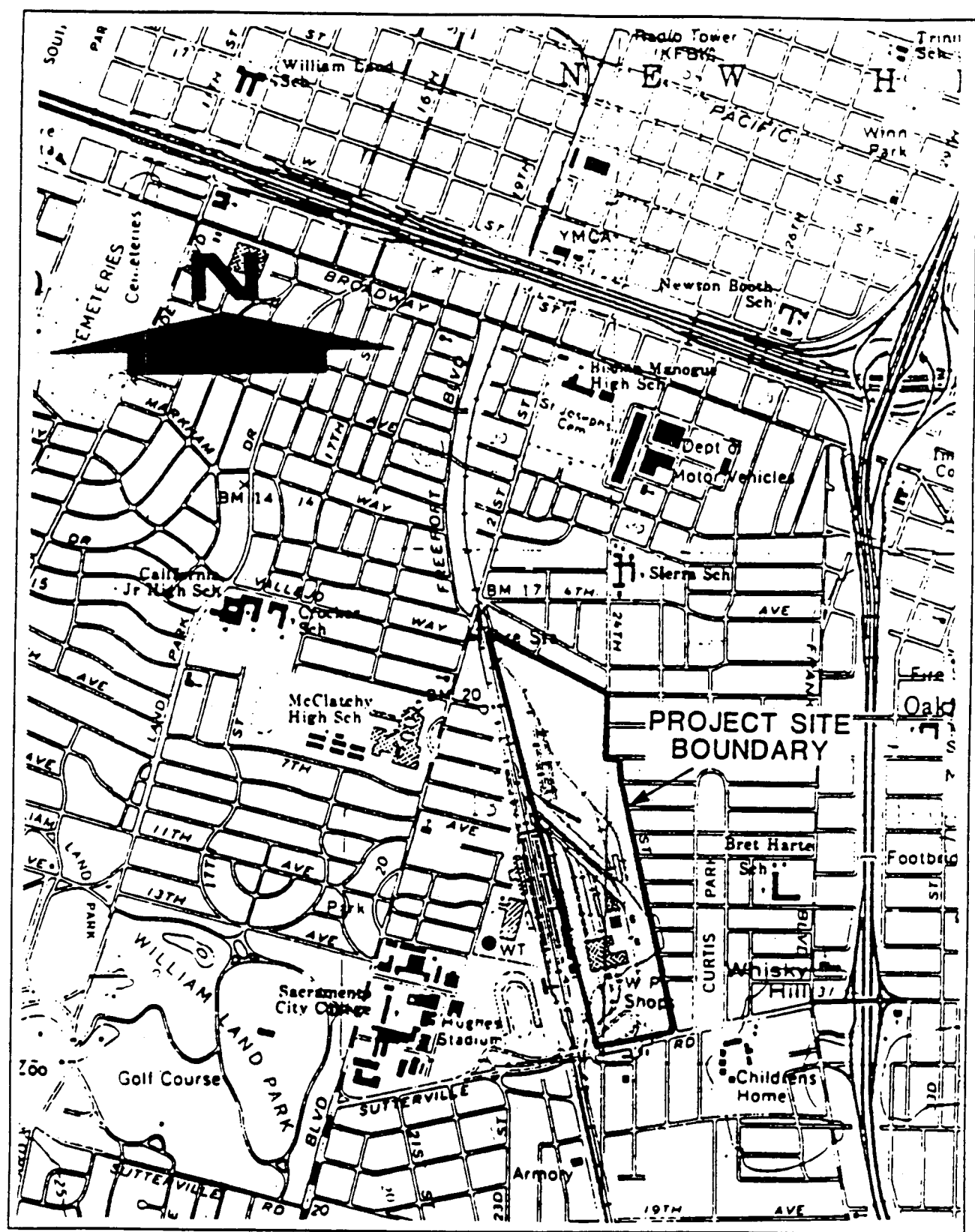
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Jose Salcedo, Project Manager, or
Sue Sher, Community Relations
Department of Health Services
Toxic Substances Control Program
10151 Croydon Way
Sacramento, California 95827
(916) 855-7896/7802

Carmen Fraser, Community Relations
Dames & Moore
9300 Tech Center Drive, Suite 100
Sacramento, California 95826
(916) 364-8799





Union Pacific Railroad Sacramento Shops Site

Fact Sheet April 1990

INTRODUCTION

This fact sheet presents information about planned additional investigation work at the Union Pacific Railroad (UPRR) Sacramento Shops Site located at 3675 Western Pacific Avenue, Sacramento, California (see Figure 1). The purpose of these additional investigations is to provide supplementary information as part of the ongoing investigation of the UPRR Sacramento Shops site. This fact sheet also provides information on when and where field work will be conducted and the measures that will be taken to protect public health and safety. The California Department of Health Services (DHS) is overseeing the investigation of soil and groundwater contamination at the site.

BACKGROUND

UPRR submitted a draft Remedial Investigation (RI) report to DHS. Significant findings of the report are as follows:

- Elevated concentrations of diesel oil, arsenic, and lead are present in soil, primarily in the areas where locomotives and railcars were formerly repaired. This area is fenced and posted to restrict access;
- Solvents were detected in groundwater at concentrations in excess of drinking water standards in some of the on-site monitoring wells in the southeastern portion of the site, near the former location of underground storage tanks. Groundwater in the area is not used for drinking water purposes.

As a result of the groundwater findings, UPRR conducted additional groundwater monitoring work adjacent to the eastern border of the site in

January 1990. This additional work included the installation of three groundwater monitoring wells in a UPRR parking lot between properties located at 3440 24th Street and 3508 24th Street. Solvents were detected in groundwater at concentrations in excess of drinking water standards from two of the three wells in the UPRR parking lot. Consequently, the supplemental investigations described below will be conducted to assess the extent of potential off-site groundwater contamination.

SUPPLEMENTAL GROUNDWATER REMEDIAL INVESTIGATION ACTIVITIES

Supplemental groundwater investigations will be conducted both on-site and off-site. This work will commence during the week of April 23, 1990. Field work will be conducted Monday through Friday from approximately 8:30 A.M. to approximately 4:00 P.M. It is anticipated that this work will take about two weeks to complete.

Three groundwater monitoring wells will be installed with a drilling rig in one on-site and two off-site UPRR-owned locations, as follows:

- the UPRR Sacramento Shops site, 3675 Western Pacific Avenue;
- the UPRR parking lot between 3440 24th Street and 3508 24th Street; and,
- the UPRR parking lot between 3516 24th Street and 3612 24th Street.

Additional off-site groundwater monitoring activities will include the completion of exploratory holes near the curb of city streets adjacent to the site. These holes will be drilled to conduct soil analyses and groundwater sampling. Seven proposed ex-

ploratory hole locations along 24th Street are planned. Thirteen additional exploratory holes located along 24th Street, Coleman Way, and 9th, 10th, and 11th Avenues, will be completed if further investigation is warranted. Figure 1 shows the general locations of the exploratory holes.

Exploratory holes will be completed using a cone penetration test system (CPT). The CPT equipment is completely self-contained in a truck and is relatively noise free. The CPT system, however, may not be capable of penetrating hardpan (hard shallow soil). If hardpan is encountered, a drilling rig will be utilized to drill holes into the first 10-15 feet of soil. Then the CPT will be used to complete the remainder of the soil analyses and groundwater sampling. The drilling equipment, if used, will be similar to that previously used to install groundwater monitoring wells on the UPRR site and parking lot and will result in some noise.

HEALTH AND SAFETY MEASURES

Public safety measures that will be implemented to augment the current Health and Safety Plan and comply with Sacramento City Standard Operating Procedures include the following:

- Air quality at the work zone will be monitored periodically during operation of the CPT.
- The CPT truck will block the sidewalk and the following vehicular and pedestrian traffic control measures will be taken:
 - (1) Yellow "Men Working" signs will be placed approximately 100 to 150 feet from each end of the CPT truck;
 - (2) Traffic cones will be placed at 10-foot intervals along the street center, to a distance of approximately 50 feet from each end of the CPT truck; and
 - (3) Barricades will be placed approximately 50 feet from each end of the CPT truck across the sidewalk to prevent pedestrian traffic from entering the work area.

- If a drilling rig is required to drill into the first 10 to 15 feet of soil, the following additional safety measures will be taken:

- (1) Yellow caution tape will be utilized to mark off a 25-foot work area radius; and,
- (2) Flagmen will be positioned at each end of the work area to direct traffic during drilling operations.

FEASIBILITY STUDY

UPRR is currently preparing a draft Feasibility Study (FS) for soils at the site. The FS will focus on a range of cleanup alternatives that will address contaminated soils on-site. The final draft FS is scheduled to be submitted to DHS around May 1, 1990.

FOR MORE INFORMATION

A copy of all work plans and reports, including the draft RI Report, is available for review at information repositories in the following locations:

Belle Coolidge Library
Reference Librarian
5681 Freeport Boulevard
Monday - Thursday
Friday

7:45 A.M. - 9:00 P.M.
7:45 A.M. - 4:30 P.M.

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If you have questions or comments about the site, would like to have additional names placed on the UPRR Sacramento Shop site mailing list, or would like previous fact sheets, please call or write:

Jose Salcedo, Project Manager, or
Sue Sher, Public Participation Specialist
Department of Health Services
Toxic Substances Control Program
10151 Croydon Way
Sacramento, California 95827
(916) 855-7898; 7802

or
Carmen Fraser, Public Involvement Specialist
Dames & Moore
9300 Tech Center Drive, Suite 100
Sacramento, California 95826
(916) 364-8799



California Department of Health Services

Union Pacific Railroad Sacramento Shops Site

Update

August 1990

INTRODUCTION

This update provides some background information about the Union Pacific Railroad Sacramento Shops Site located off Sutterville Road at 3675 Western Pacific Avenue, Sacramento, California. The California Department of Health Services (DHS) is currently overseeing a remedial investigation of soil and groundwater at the site.

The site has a long and detailed history. In the interest of brevity, only general information will be discussed in this update. For more information, the Belle Coolidge Library and the Sacramento City College Library have files that include all published data, work plans, technical reports, fact sheets, and other information on the site.

BACKGROUND

From approximately 1909 to 1983, the site was used as a railroad maintenance and switching yard. Specific uses included a locomotive repair shop, a coach repair works, a trailer on flat car (TOFC) facility, a freight car repair shop, a lumber sawmill, signal shops, a company store and an office building. The maintenance and operating functions of the yard were gradually moved to other locations. Demolition of the last remaining building, the locomotive repair shop, began in the spring of 1986.

In 1909, Western Pacific Railroad (WPRR) obtained title to the site. In 1982, WPRR became a wholly-owned subsidiary of Pacific Subsidiary, Inc., a subsidiary of Union Pacific Railroad (UPRR). WPRR and UPRR operated as one railroad system until June 1987. WPRR then merged into UPRR, and the site became the property of UPRR.

SITE HISTORY

The following activities have occurred at the site to date:

- November 6, 1980: DHS collected soil samples from the site. DHS subsequently informed WPRR that laboratory analysis reflected trace levels of certain materials and that no further action was necessary.
- February 1983: UPRR conducted a summary site investigation to determine whether problems related to past industrial activities existed at the site. The evaluation was limited in scope. UPRR concluded that a more thorough analysis of the site should be conducted.
- August 25, 1986: DHS conducted a perimeter survey of the site in preparation for a sampling investigation.
- August 27, 1986: DHS conducted a sampling investigation at the site. DHS concluded at that time that elevated levels of arsenic, barium, lead, cadmium, zinc, petroleum products and asbestos were present.
- October 9, 1986: The Sacramento County Air Pollution Control Board personnel conducted an on-site investigation and reported to DHS a possible finding of asbestos in the area of the demolition site.
- November 5, 1986: Samples of demolition debris and underground sumps were collected by UPRR's consultants. With the exception of fluid in the underground sumps which would be addressed as hazardous waste, no significant contamination was found.
- January 21, 1987: Four containers and two bags of material containing asbestos were removed from the site by UPRR's consultants under the direction of DHS. Test samples collected that date indicated that asbestos remained in soil at one of the removal areas.
- February 5, 1987: Construction of fencing and posting of signs at the site commenced.

- February 11, 1987: Soil samples were collected from locations throughout the site to determine if widespread asbestos contamination existed. The test showed no detectable asbestos in the twenty-four sampling locations. Additional samples were taken to confirm the extent of asbestos in the previously identified asbestos location. Some residual levels of asbestos were confirmed in a limited area.
- February 25 and 27, 1987: Air monitoring to determine the existence of asbestos was conducted. Air quality was found to be comparable to a typical urban area.
- March 26, 1987: DHS executed an Enforceable Agreement previously signed by UPRR. The Enforceable Agreement provides for UPRR to conduct a Remedial Investigation/Feasibility Study (RI/FS) to determine the nature and extent of contamination at the site and to identify possible methods for correcting the problem. DHS oversees the investigation of soil and groundwater at the site.

Activities conducted pursuant to the Enforceable Agreement are as follows:

- October 23, 1987: Dames & Moore, UPRR's consultant, prepared an RI work plan. RI activities were conducted during the Winter and Spring of 1988 in accordance with the RI work plan.
- June 10, 1987: Dames & Moore submitted a draft Phase 1 RI Report. The first or Phase 1 RI Report recommended that further investigation be conducted.
- March 28, 1989: Dames & Moore submitted the Phase 2 RI work plan to DHS. Phase 2 RI activities were conducted during the Spring and Summer of 1989.
- February 1990: Dames & Moore submitted a draft Phase 2 RI Report.
- April and May 1990: Supplemental groundwater investigations were conducted both on-site and off-site.
- August 27, 1990: Another supplemental groundwater investigation program is scheduled to begin (see Fact Sheet).
- A workplan to remove remaining on-site asbestos will be submitted to DHS in the Fall of 1990.

FINDINGS TO DATE

Site conditions have been investigated by a total of 53 exploratory borings, of which 31 were completed as groundwater monitoring wells, and over 250 test pits. Soil samples for laboratory analyses were taken from different depths in the test pits and borings, and groundwater samples were obtained from the monitoring wells. During the investigation, over 600 soil samples were analyzed for arsenic, copper, and lead, and more than 500 soil samples were analyzed for petroleum hydrocarbons. Five rounds of groundwater sampling and analyses have been completed on on-site monitoring wells. Findings of the remedial investigation to date are as follows:

- Elevated concentrations of diesel oil, arsenic, and lead are present in soil on-site, primarily in the areas where locomotive and railcars were formerly repaired. The site is fenced and posted to restrict access.
- Solvents (1, 2 - dichloroethane, 1,1 - dichloroethene, and trichloroethylene) were detected in groundwater at concentrations in excess of state maximum contaminant levels (MCLs) for drinking water in some of the on-site monitoring wells in the southeastern portion of the site, near the former location of underground storage tanks. Off-site groundwater was found to contain solvents (1, 2 - dichloroethane, 1,1 - dichloroethene, and trichloroethylene) in excess of MCLs for drinking water. Further off-site groundwater investigations are scheduled. Groundwater contamination does not currently pose a health threat since groundwater in the area is not utilized for drinking water or food crop irrigation purposes.

PUBLIC PARTICIPATION

A community relations program has been developed to provide information to concerned community members and to encourage public involvement in the site decision-making process. Copies of the Community Relations Plan are available at the two project information repositories.



Union Pacific Railroad Sacramento Shops Site

Fact Sheet August 1990

INTRODUCTION

This fact sheet presents information about planned additional investigation work for the Union Pacific Railroad (UPRR) Sacramento Shops Site located at 3675 Western Pacific Avenue, Sacramento, California (see Figure 1). The purpose of these additional investigations is to provide supplementary information on the extent of off-site groundwater contamination as part of the ongoing investigation of the UPRR Sacramento Shops site. This fact sheet also provides information on when and where field work will be conducted and the measures that will be taken to protect public health and safety. The California Department of Health Services (DHS) is overseeing the investigation of soil and groundwater at the site.

RESULTS OF THE PREVIOUS GROUNDWATER INVESTIGATION PROGRAM

During April and May 1990, on- and off-site investigations were conducted to assess the extent of groundwater contamination that has moved off the property. Background information on this program is provided in a fact sheet dated April 1990. During this investigation, 34 exploratory holes were completed to conduct soil analyses and groundwater sampling in the following locations (see Figure 1):

- 10 on 24th Street
- 1 on 10th Avenue
- 2 on 11th Avenue
- 1 on Coleman Way
- 3 on West Curtis Drive
- 1 in a parking lot on Western Pacific Avenue
- 16 on-site

In 12 of the 17 off-site exploratory hole locations, solvents were measured at relatively low levels. However, these levels exceeded the state maximum contaminant levels (MCLs) for drinking water. Initial findings are that solvents are present in groundwater at depths of approximately 45 to 55 feet below ground surface, at a distance of about 350 feet east of the southeast corner of the site (see Figure 1).

FUTURE SUPPLEMENTAL GROUNDWATER INVESTIGATION PROGRAM

The extent of off-site groundwater contamination will be further evaluated through a Supplemental Groundwater Investigation Program. The program will consist of the following two components:

- Off-site groundwater plume extent definition; and,
- On-site groundwater monitoring well sampling and analyses.

These two components of the program are described below.

Off-site Groundwater Plume Delineation

The groundwater plume refers to the geometry of the volume of groundwater containing solvents. To determine the extent of groundwater contamination, the groundwater plume's extent will be defined in a staged approach. In the first stage, exploratory holes will be completed at seven off-site and one on-site locations (see Figure 1). Results from the first seven sample points will provide information on the nature and extent of the solvent plume. The next sample points will be located based on find-

ings from the previous stage of sampling. Proposed exploratory holes will be generally located southeast and down gradient of the previous off-site investigation conducted in April and May 1990. The exact location of the exploratory holes in subsequent stages will be determined as the investigation proceeds. The investigation will be terminated when no solvents are detected, or if solvents are measured at levels below the MCLs for several stages.

Exploratory holes will be completed using a Cone Penetrometer Testing system (CPT) and Hydropunch™ (HP), in place groundwater sampling device. This is the same approach used in the previous off-site groundwater investigation conducted during April and May 1990. The CPT/HP equipment is completely self-contained in a truck and produces minimal noise. The CPT/HP equipment operates by hydraulically pressing instruments into the ground. The system produces a hole less than two-inches in diameter which will be plugged after completion of testing at each location point.

Off-site investigative work is tentatively scheduled to begin September 5, 1990, and is estimated to take two to four weeks to complete. Working hours will be from 8:30 a.m. to 4:30 p.m. Monday through Friday.

On-site Groundwater Monitoring Well Sampling and Analyses

Groundwater samples will be collected from all on-site monitoring wells. Samples will be analyzed to provide more information on affected groundwater on-site and fluctuations in the groundwater level and gradient (direction of groundwater flow). On-site groundwater sampling work is also tentatively scheduled to begin September 5, 1990.

The results of the Supplemental Groundwater Investigation will be incorporated into the Final Remedial Investigation/Feasibility Study Report.

HEALTH AND SAFETY MEASURES

Public safety measures that will be implemented to augment the current Health and Safety Plan and comply with Sacramento City Standard Operating Procedures include the following:

- Air quality at the work zone will be monitored periodically during operation of the CPT.
- Since the CPT truck will normally require blocking the sidewalk, the following vehicular and pedestrian traffic control measures will be taken:
 - (1) "Men Working" signs topped with three red flags will be placed approximately 100 to 150 feet from each end of the CPT truck. Additionally, a "Lane Ends" sign will be posted on Sutterville Road;
 - (2) Traffic cones will be placed at 10-foot intervals along the street center, to a distance of approximately 50 feet from each end of the CPT truck; and
 - (3) Barricades will be placed approximately 50 feet from each end of the CPT truck across the sidewalk to prevent pedestrian traffic from entering the work area.

DRAFT REMEDIAL INVESTIGATION/FEASIBILITY STUDY REPORT

UPRR is currently preparing a comprehensive draft Remedial Investigation/Feasibility Study (RI/FS) Report for soil and groundwater at the site. This report will be submitted to DHS August 31, 1990. The draft RI/FS Report along with other documents will be available for review at local information repositories (see back page for more information). DHS will accept comments on the draft RI/FS Report for 20 days after public notification on August 31, 1990. A public meeting will be held on September 13, 1990 to discuss the findings of the report and to receive input from the community.

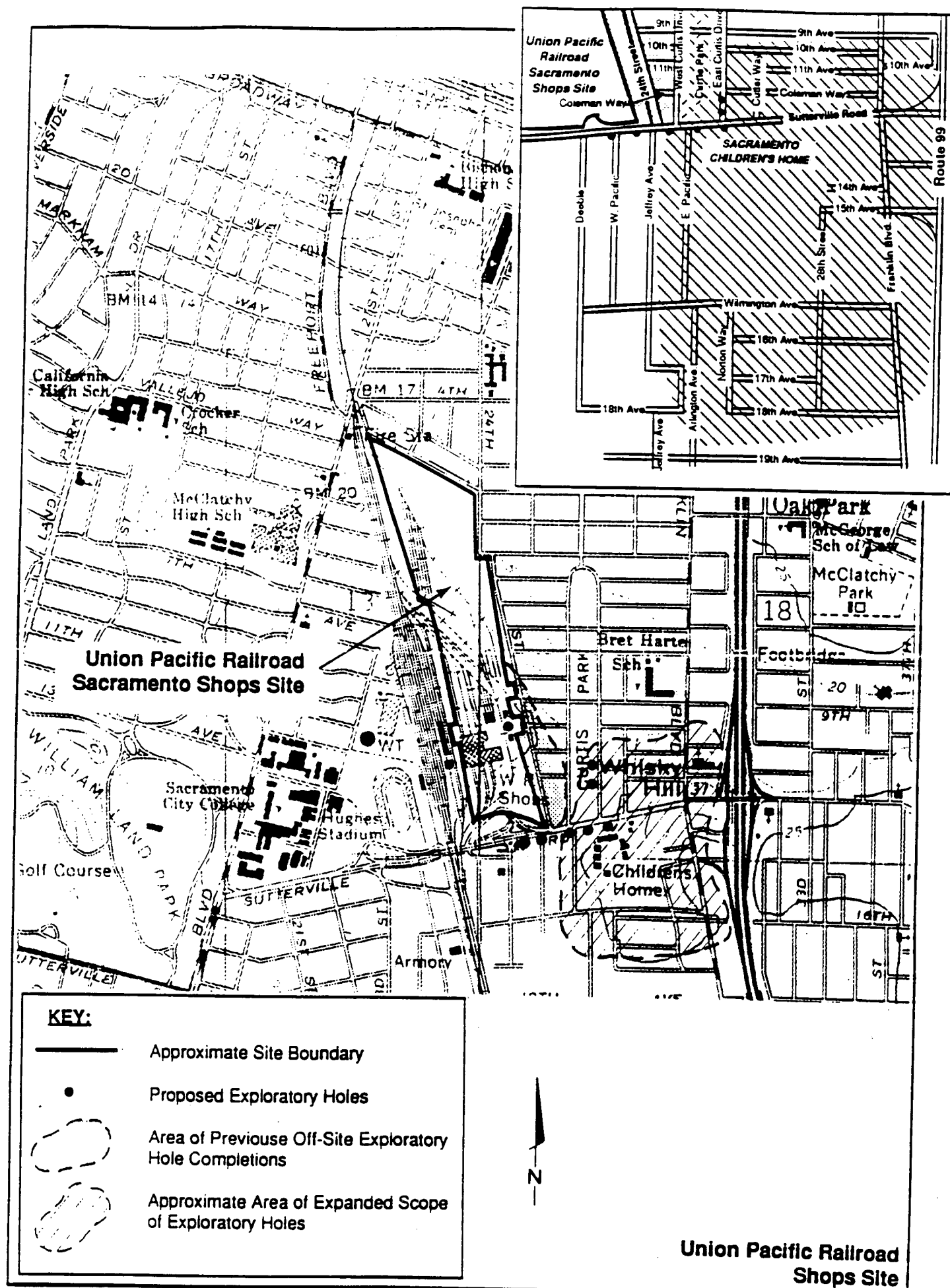


Figure 1

FOR MORE INFORMATION

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Toxic Substances Control Program
10151 Croydon Way
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California Department of Health Services

Union Pacific Railroad Sacramento Shops Site

Fact Sheet September 1990

INTRODUCTION

This fact sheet presents information about planned Asbestos Removal Interim Remedial Measures (IRM) for the Union Pacific Railroad (UPRR) Sacramento Shops Site located at 3675 Western Pacific Avenue, Sacramento, California. The purpose of the IRM is to excavate and remove soil containing asbestos at levels between 1 to 5 percent from the site. This fact sheet also provides information on when and where excavation will be conducted and the measures that will be taken to protect public health and safety. The California Department of Health Services (DHS) is overseeing the IRM at the site.

BACKGROUND

Debris suspected to contain asbestos was identified by DHS in August 1986. This material consisted of wooden building debris and pipe insulation that was located in two large demolition debris piles in the southern portion of the site, located near a building believed to have been utilized by Western Pacific Railroad for asbestos storage.

In a previous IRM, conducted during the Phase 1 investigation, UPRR hired a contractor to remove the debris piles from the site. The asbestos-containing material was disposed of in a hazardous waste landfill. After the IRM, Dames & Moore, an environmental engineering firm hired by UPRR, collected 172 soil samples and analyzed them for asbestos.

Samples were collected in various areas of the site and the only measurable concentrations of asbestos were detected in samples collected in the immediate vicinity of the former asbestos storage building.

In August 1990, Dames & Moore collected 94 samples in the immediate vicinity of the former asbestos storage building (a 2,000 square yard area was sampled). Analyses were done using polarized light microscopy which identifies asbestos in a sample by its physical light properties.

Asbestos analytical results indicate that asbestos at concentrations ranging from less than one percent to five

percent are present in soil in the immediate vicinity of the former asbestos storage building.

ASBESTOS REMOVAL INTERIM REMEDIAL MEASURE

Soil where asbestos was detected at greater than or equal to one percent will be removed. Accordingly, 60 cubic yards of soil has been identified as containing asbestos at these levels and thus will be excavated and removed by rail to a hazardous waste landfill for disposal. All removal activities will be conducted by an asbestos certified contractor, and all disposal activities will be done by a certified hazardous waste hauler.

During all stages of the excavation and removal activities, the area will be maintained wet, using a fine mist water spray to prevent dust and asbestos fibers from becoming airborne. The fine mist water spray will also be applied to the front of the excavation equipment to wet newly exposed soil during excavation.

The IRM is tentatively scheduled to begin the week of October 8, 1990. Work will be conducted between the hours of 8:00 A.M. to 5:00 P.M. Monday through Friday.

DRAFT REMEDIAL INVESTIGATION/FEASIBILITY STUDY REPORT

UPRR has prepared a comprehensive draft Remedial Investigation/Feasibility Study (RI/FS) Report, which describes the nature and extent of contamination and discusses in detail feasible alternatives for managing contaminated soil and groundwater at the site. This report was submitted to DHS on August 31, 1990.

The draft RI/FS Report along with other documents is available for review at local information repositories (see back page for more information). DHS has extended the public comment period and will accept comments on the draft RI/FS Report until October 9, 1990. A public meeting was held on September 13, 1990 to discuss the findings of the report and to receive input from the community.

FOR MORE INFORMATION

A copy of all work plans and reports, including the Draft RI/FS Report, is available for review at information repositories in the following locations:

Belle Coolidge Library
Reference Librarian
5681 Freeport Boulevard
Monday - Thursday
Friday

7:45 A.M. - 9:00 P.M.
7:45 A.M. - 4:30 P.M.

Sacramento City College Library
Reference Desk
3835 Freeport Boulevard
Monday, Tuesday, & Thursday
Wednesday
Friday

10:00 A.M. - 6:00 P.M.
10:00 A.M. - 9:00 P.M.
1:00 P.M. - 5:00 P.M.

If you have questions or comments about the site, would like to have additional names placed on the UPRR Sacramento Shop site mailing list, or would like previous fact sheets, please call or write:

Jose Salcedo, Project Manager, or
Sue Sher, Public Participation Specialist
Department of Health Services
Toxic Substances Control Program
10151 Croydon Way
Sacramento, California 95827
(916) 855-7896; 7802

Carmen Fraser, Public Involvement Specialist
Dames & Moore
9300 Tech Center Drive, Suite 100
Sacramento, California 95826
(916) 364-8799

Department of Health Services
Toxic Substances Control Program
10151 Croydon Way
Sacramento, California 95827



California Department of Health Services

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Final Fact Sheets

Union Pacific Railroad Sacramento Shops Site

Fact Sheet February 1991

INTRODUCTION

This fact sheet presents information about planned additional on-site investigation work for the Union Pacific Railroad (UPRR) Sacramento Shops Site located at 3675 Western Pacific Avenue, Sacramento, California (see Figure 1). The purpose of the additional investigation is to provide supplementary information on the extent of on-site groundwater contamination as part of the ongoing investigation of the UPRR Sacramento Shops site. This fact sheet also provides information on when field work will be conducted. The California Department of Health Services (DHS) is overseeing the investigation of soil and groundwater at the site.

RESULTS OF THE PREVIOUS GROUNDWATER INVESTIGATION PROGRAM

During April, May, September and October of 1990, on- and off-site investigations were conducted to assess the extent of groundwater contamination that has moved off the property. Background information on this program is provided in fact sheets dated April and August 1990. During these investigations, 75 exploratory holes were completed to conduct soil analyses and groundwater sampling in the Curtis Park area (see Figure 1).

In 34 of the 63 off-site exploratory hole locations, solvents were measured at relatively low levels. However, these levels exceeded the state maximum contaminant levels (MCLs) for drinking water. Initial findings are that solvents are present in groundwater at depths of approximately 45 to 55 feet below ground surface, at a distance of about 2,100 feet east of the southeast corner of the site (see Figure 1).

FUTURE SUPPLEMENTAL GROUNDWATER INVESTIGATION PROGRAM

The extent of on-site groundwater contamination will be further evaluated through a Supplemental On-Site Groundwater Investigation Program. The program is tentatively planned to consist of completing 5 to 15 exploratory holes on-site.

Exploratory holes will be completed using a Cone Penetration Test system (CPT) and Hydropunch™ (HP), an in place groundwater sampling device. This is the same approach used in the previous off-site groundwater investigation conducted during 1990. The CPT/HP equipment is completely self-contained in a truck and produces minimal noise. The CPT/HP equipment operates by hydraulically pressing instruments into the ground. The system produces a hole less than two-inches in diameter which will be plugged after completion of testing at each location.

On-site investigative work is tentatively scheduled to begin February 18, 1991, and is estimated to take one to two weeks to complete. Working hours will be from 7:30 a.m. to 5:30 p.m. Monday through Friday.

ADDITIONAL ON-SITE ACTIVITIES

Additional on-site activities tentatively scheduled for the months of February and March, 1991 include:

- Removal of empty drums from the site;
- Cleaning of the Baker tanks (large black tanks on west side of site);
- Destruction of the empty concrete tank (on west side of site); and,
- Collection of samples along railroad right-of-way to the west of the site.

DRAFT AND FINAL REMEDIAL INVESTIGATION/ FEASIBILITY STUDY REPORT

The draft Remedial Investigation/Feasibility Study (RI/FS) Report for soil and groundwater at the site was submitted to DHS August 31, 1990. DHS accepted comments on the draft RI/FS Report during the public comment period in September 1990. A public meeting was held on September 13, 1990 to discuss the findings of the report and to receive input from the community. DHS comments on the draft RI/FS Report are anticipated to be received in February 1991. The Final RI/FS Report will be submitted to DHS in March. The draft RI/FS Report along with other documents are available for review at local information repositories (see back page for more information).

FOR MORE INFORMATION

A copy of all work plans and reports, including the draft RI Report, is available for review at information repositories in the following locations:

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Reference Librarian
5681 Freeport Boulevard
Monday - Thursday
Friday

7:45 A.M. - 9:00 P.M.
7:45 A.M. - 4:30 P.M.

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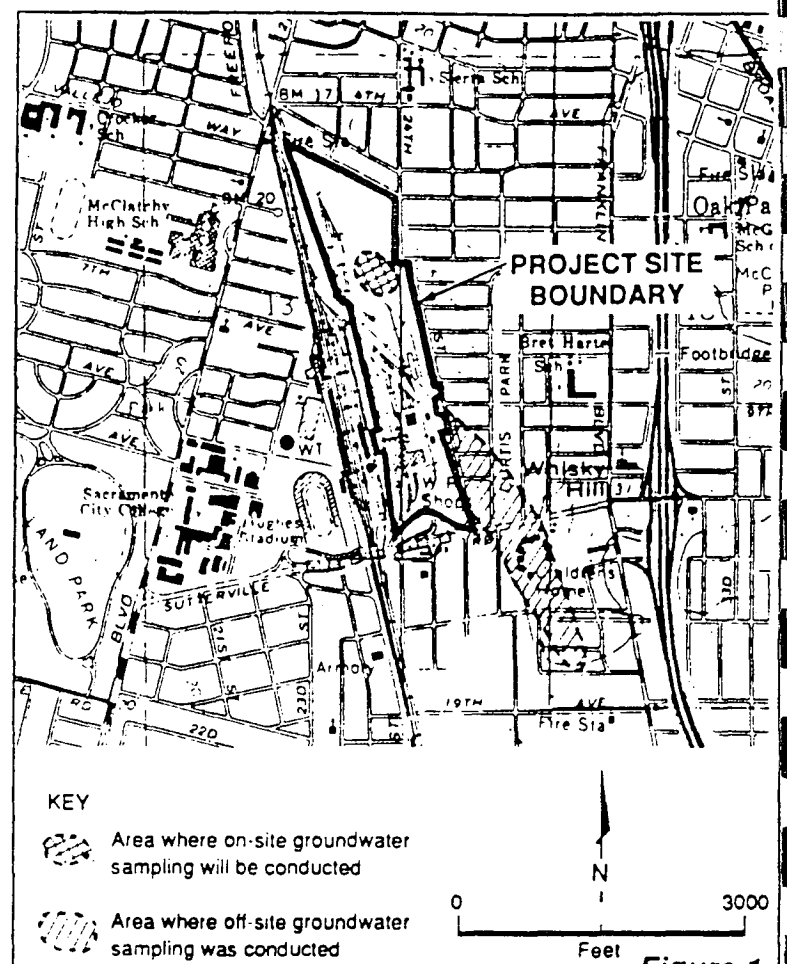
If you have questions or comments about the site, would like to have additional names placed on the UPRR Sacramento Shop site mailing list, or would like previous fact sheets, please call or write:

Jose Salcedo, Project Manager, or
Sue Sher, Public Participation Specialist
Department of Health Services

Toxic Substances Control Program
10151 Croydon Way
Sacramento, California 95827
(916) 855-7896; 7802

or

Carmen Fraser, Public Involvement Specialist
Dames & Moore
9300 Tech Center Drive, Suite 100
Sacramento, California 95826
(916) 364-8799



Department of Health Services
Toxic Substances Control Program
10151 Croydon Way
Sacramento, California 95827

California Department of Health Services



Union Pacific Railroad Sacramento Shops Site

Fact Sheet May 1991

INTRODUCTION

This fact sheet presents information about planned additional investigation work at the Union Pacific Railroad (UPRR) Sacramento Shops Site located at 3675 Western Pacific Avenue, Sacramento, California. The purpose of the additional investigations is to refine the understanding of the soil and ground water contamination at the UPRR Sacramento Shops Site. This fact sheet also provides information on when and where field work will be conducted. The California Department of Health Services (DHS) is overseeing all activities at the site.

ADDITIONAL INVESTIGATION ACTIVITIES

In response to DHS comments on the draft Remedial Investigation/Feasibility Study (RI/FS) Report, UPRR is conducting the following activities:

- Ground water monitoring well installations;
- Soil gas survey; and
- Trenching and soil sampling.

This work will take place from early to mid May 1991. The findings of these investigations will be included in the draft Remedial Action Plan.

Ground Water Monitoring Well Installation

Four monitoring wells will be installed on-site to further evaluate the extent of ground water contamination. One well will be installed in the parking lot located at the southeastern end of the site. Another will be installed in the former Oil House area, and the other two will be installed near the middle of the site.

Soil Gas Survey

A soil gas survey will be conducted to evaluate the presence of aromatic and chlorinated volatile organic compounds in shallow soils on-site in the former Oil House area and the central portion of the site.

Trenching and Soil Sampling

Exploratory trenching will be conducted in several areas of the site, as requested by DHS. A backhoe will be used to dig the trenches. Soil samples will then be collected and analyzed. The trenches will be refilled following sampling activities. Trenching and soil sampling activities will be conducted in several locations as described below:

- The northwestern and northeastern portions of the site where old disposal pits may have been located.
- The area adjacent to an underground storage tank on-site to further evaluate the petroleum hydrocarbons in the soil in the southwestern portion of the site.
- The area on-site where a previously unknown above ground storage tank was located in the central portion of the site, according to old aerial photographs.
- The area of a former underground storage tank on-site to further evaluate the vertical extent of soil contamination in the southern portion of the site in the former Main Shop area.

Soil sampling will also be conducted on-site in the area of a former transformer to further evaluate the potential distribution of polychlorinated biphenyls (PCBs). Very low levels of PCBs were detected in this area during previous investigations, as described in the draft RI/FS Report. DHS has requested additional soil sampling of the area.

ADDITIONAL ON-SITE ACTIVITIES

Additional on-site activities scheduled for May 1991 include the cleaning of the Baker Tanks (large black tanks located on the west side of the site) and removal of drums from the site. Approximately 100 drums containing soil from soil borings and ground water monitoring well installation will be removed from the site and taken to a Class III (non-hazardous) landfill for disposal.

FOR MORE INFORMATION

A copy of all work plans and reports, including the draft RI/FS Report, is available for review at information repositories in the following locations:

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Sue Sher, Public Participation Specialist
Department of Health Services
Toxic Substances Control Program
10151 Croydon Way
Sacramento, California 95827
(916) 855-7896; 7802

or

Carmen Fraser, Public Involvement Specialist
Dames & Moore
9300 Tech Center Drive, Suite 100
Sacramento, California 95826
(916) 364-8799

California Department of Health Services
Toxic Substances Control Program
10151 Croydon Way
Sacramento, California 95827

copy only

Allen Kearns
Dames & Moore
9300 Tech Center Dr. Suite 100
Sacramento, CA 95826

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California Department of Health Services

Union Pacific Railroad Sacramento Shops Site

Fact Sheet May 1991

INTRODUCTION

Presented in this fact sheet is information on future off-site ground water investigations southeast of the Union Pacific Railroad (UPRR) Sacramento Shops site located at 3675 Western Pacific Avenue, Sacramento, California. The off-site ground water investigations will consist of installing six ground water monitoring wells. The purpose of the planned off-site ground water investigations is to refine the understanding of the contamination related to the UPRR Sacramento Shops Site. This fact sheet also provides information on when and where field work will be conducted. The California Department of Health Services (DHS) is overseeing all activities at the site.

PREVIOUS OFF-SITE GROUND WATER INVESTIGATIONS

Off-site ground water contamination has been investigated since January 1990, when chlorinated volatile organic compounds (VOCs) were detected at levels in excess of the state drinking water maximum contaminant levels (MCLs) in the ground water monitoring wells located in a vacant UPRR lot along the eastern UPRR site boundary.

To further assess the off-site extent of chlorinated VOCs in ground water, cone penetration tests (CPT) and hydropunch™ (HP) ground water sampling were conducted in April and May 1990 and again in September and October 1990. CPT and HP exploratory holes were completed at locations on the UPRR site, city streets, and the Sacramento Children's Home. Data generated from these investigations indicated the presence of chlorinated VOCs in shallow ground water at depths of approximately 45 to 55 feet below ground surface. The ground water plume refers to the geometry of the body of ground water containing the chlorinated VOCs. The ground water plume extends approximately 2,000 feet southeast of the UPRR site (see Figure 1). Ground water contamination does not pose a health threat since ground water in the area is not utilized for drinking water or food crop irrigation purposes. Further evaluation of the ground water plume has been recommended.

OFF-SITE GROUND WATER MONITORING WELL INSTALLATION

The purpose of the additional off-site ground water monitoring wells is to provide more information on subsurface geology, hydrology, and the vertical and

lateral extent of the ground water plume. The wells will also be used to provide ground water monitoring data during ground water remedial activities.

A total of six new off-site ground water monitoring wells will be installed at four locations southeast of the site. These locations were chosen based on the current understanding of the extent of the ground water plume. The wells will be located along city streets and/or on private property as depicted in Figure 1.

Truck mounted drill rigs will be used to drill and install the ground water monitoring wells. Soil samples will be taken as the wells are being installed. Public safety measures will be implemented and will comply with the Health and Safety Plan for this investigation and the Sacramento City Standard Operating Procedures including:

- The placement of advanced high level warning devices approximately 100 to 150 feet from each end of the drilling rig. The high level warning device will consist of a yellow "Men Working" sign topped with three red flags and fitted with stabilizing weights and wind spilling devices;
- The placement of traffic cones beginning approximately 50 feet from each end of the rig, and spaced every 10 feet along the drilling rig. The traffic cones will be utilized to route and control traffic;
- The placement of barricades approximately 50 feet from each end of the drilling rig across the sidewalk to caution pedestrian traffic from entering the work area;
- The utilization of caution tape to mark off a 25-foot work area radius; and
- The 24 hour advance notification of the City of Sacramento Traffic Engineering Department if street closure is necessary.

Field work is scheduled to begin the week of May 20, 1991 and is anticipated to take two to four weeks to complete. Work will take place from 8:00 A.M. to 5:00 P.M., Monday through Friday. The installation of ground water monitoring wells will result in some elevated levels of noise during drilling.

FOR MORE INFORMATION

A copy of all work plans and reports, including the draft R/FS Report, is available for review at information repositories in the following locations:

Belle Cooleage Library
Reference Librarian
5681 Freeport Boulevard
Monday - Thursday 7:45 A.M. - 9:00 P.M.
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Sacramento City College Library
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If you have questions or comments about the site, would like to have additional names placed on the UPRR Sacramento Shop site mailing list, or would like previous fact sheets, please call or write:

Jose Salcedo, Project Manager, or
Sue Sher, Public Participation Specialist
Department of Health Services
Toxic Substances Control Program
10151 Croydon Way
Sacramento, California 95827
(916) 855-7896; 7802

or
Carmen Fraser, Public Involvement Specialist
Dames & Moore
9300 Tech Center Drive, Suite 100
Sacramento, California 95826
(916) 364-8799

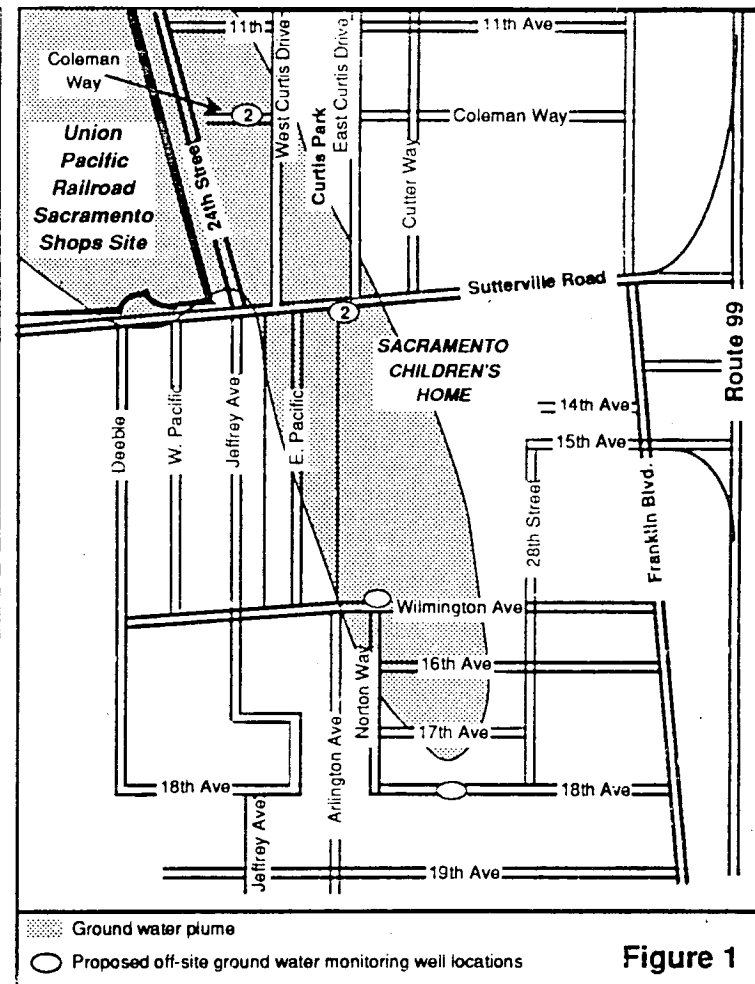


Figure 1

California Department of Health Services
Toxic Substances Control Program
10151 Croydon Way
Sacramento, California 95827

Tim Parker
Dames & Moore
9300 Tech Center Dr. Suite 100
Sacramento, CA 95826



DEPARTMENT OF HEALTH SERVICES TOXIC SUBSTANCES CONTROL PROGRAM

MAY 23, 1991

The Department of Health Services (DHS) and Union Pacific Railroad (UPRR) are investigating the nature and extent of contamination at the UPRR site. As a part of that investigation, soil samples are currently being taken from two of four vacant lots on the west side next to UPRR located at the end of 7th Avenue and Perkins Way. These lots have been owned by UPRR since 1906 and have not been used for industrial purposes. Data from old photographs indicate these lots were used primarily as parking lots.

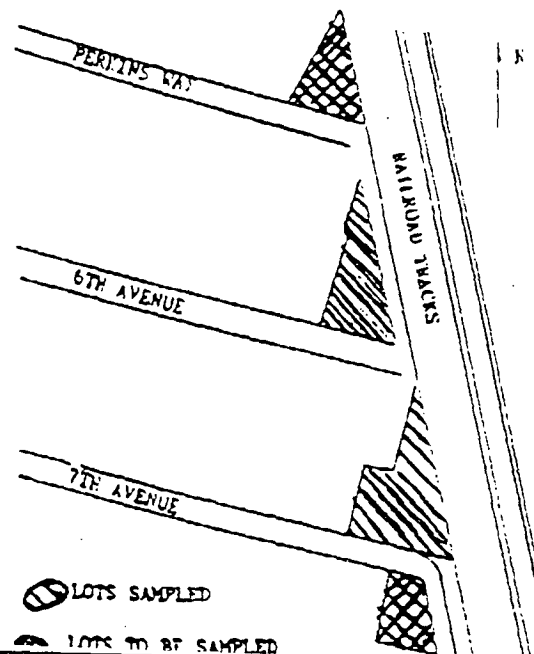
In August 1989, preliminary soil samples were taken from two of these vacant lots. A composite of the samples indicated slightly elevated levels of lead at 400 parts per million (ppm) on one of these lots. On the basis of these results, DHS requested UPRR to fence and resample the property. Analysis of the additional samples confirmed lead contamination on the lot. It is not uncommon to see slightly elevated levels of lead on properties located adjacent to railroad lines and freeways.

On May 20, 1991, in response to concerns expressed by a resident, samples were taken from a yard at the end of 7th Avenue. Analysis indicates the presence of lead from 68 ppm to 223 ppm. DHS and UPRR will be sampling other yards in the same area on May 24, 1991. Results will be released to the public as soon as they are available.

DHS toxicologists indicate that lead at these levels do not pose an immediate health threat. DHS physicians will be available to work with local physicians for consultation on a case by case basis.

For additional information please contact:

Jose Salcedo,
Project Manager or
Sue Sher,
Public Participation Specialist
Department of Health Services
Toxic Substances Control Program
10151 Croydon Way, Suite 3
Sacramento, CA 95827
(916) 855-7896 (Jose) or
855-7802 (Sue)



FOR MORE INFORMATION

A copy of all work plans and reports, including the final RI/FS Report, is available for review at information repositories in the following locations:

Belle Coolege Library, Reference Librarian
5681 Freeport Boulevard
Monday - Thursday 7:45 A.M. - 9:00 P.M.
Friday 7:45 A.M. - 4:30 P.M.

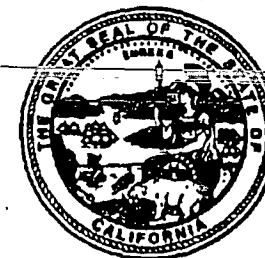
Sacramento City College Library, Reference Desk
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Friday 1:00 P.M. - 5:00 P.M.

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Jose Salcedo, Project Manager, or
Sue Sher, Public Participation Specialist
Department of Health Services
Toxic Substances Control Program
10151 Croydon Way, Suite 3
Sacramento, California 95827
(916) 855-7896 or (916) 855-7802

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California Department of Health Services

Union Pacific Railroad Sacramento Shops Site

Fact Sheet July 1991

BACKGROUND

This fact sheet presents new information regarding testing conducted on two vacant lots and three residential yards on Perkins Way, 6th Avenue and 7th Avenue on the west side of the Union Pacific Railroad (UPRR) right-of-way. Soil samples were collected and analyzed for arsenic and lead. In response to recent concerns expressed by residents, the California Department of Health Services (DHS) requested that UPRR test these properties which are shown on Figure 1.

UPRR owns the vacant lots along Perkins Way and 6th Avenue, and a private party purchased the vacant lots along 7th Avenue from UPRR in 1990. Historical aerial photographs indicate that these lots contained an office building and were used primarily for vehicle parking and unloading containers from rail cars onto trucks.

SOURCES OF LEAD AND ARSENIC

Small amounts of lead, arsenic and other trace metals are naturally occurring in soils, air and water. Additional potential sources of lead contamination include automobile exhaust, interior and exterior paint used on homes built before 1978, older water pipes with lead solder connections and some pesticides. Potential sources of arsenic contamination include rodenticides, pesticides, herbicides and wood preservatives.

The amounts of lead and arsenic that either occur naturally or exist in urban areas are referred to as "background levels." For purposes of the evaluation of the UPRR site, background levels of lead and arsenic were established by collecting soil samples from the nearby Land Park and Curtis Park where the land has been relatively undisturbed by development. The range of background

levels for lead and arsenic is listed below:

	<u>Lead (ppm)</u>	<u>Arsenic (ppm)</u>
Nearby Parks	20 to 40	6 to 8

PREVIOUS RESIDENTIAL AND VACANT LOT SOIL SAMPLING

UPRR obtained soil samples from vacant and residential lots adjacent to the UPRR site on three previous occasions. In August 1989, UPRR collected soil samples from two vacant lots on the west side of the UPRR site, one on the north side of 6th Avenue and one on the north side of 7th Avenue. Analysis of a composite of the samples (a blend of several samples) from the 6th Avenue lot indicated lead at 60 parts per million (ppm) and arsenic at 11 ppm. Analysis of a composite of the samples from the 7th Avenue lot indicated lead at 400 ppm and arsenic at 108 ppm. The location of these lots is shown on Figure 1.

In December 1989, DHS collected soil samples from three residential lots on the east side of the UPRR site. The analytical results of the soil samples are presented below:

<u>Location</u>	<u>Lead (ppm)</u> Range/Average	<u>Arsenic (ppm)</u> Range/Average
3092 24th St.	78 to 180/116	6 to 13/8.5
3130 24th St.	80 to 126/104.3	6 to 7/6.8
3400 24th St.	69 to 340/165.3	7 to 14/9.3

Based on the analytical results and interpretation of the data from the 24th Street residential lots, no correlation could be found between the levels of arsenic and lead in these lots and contamination present at the adjacent UPRR site.



In January 1991, UPRR collected additional soil samples in the vacant lot on the north side of 7th Avenue. Analytical results of composite soil samples from the lot are presented below:

Location	Lead (ppm)	Arsenic (ppm)
	Range/Average	Range/Average
7th Ave. Lot	31 to 582/210	ND to 145/52.5
(ND = not detected)		

ANALYSIS OF RECENT SOIL SAMPLES

In May 1991, DHS requested that UPRR collect soil samples from two additional vacant lots and three residential yards on the west side of the UPRR site. The analytical results of the soil samples are presented below:

Location	Lead (ppm)	Arsenic (ppm)
	Range/Average	Range/Average
2207 7th Ave.	55 to 320/166	5.7 to 30/14.5
2212 7th Ave.	10 to 76/43	2.8 to 11.6/5.6
2206 6th Ave.	17 to 108/54	4.2 to 99/16.6
Lot 1406D	7 to 76.8/42	2.6 to 5/4.0
Lot 1416A	4.3 to 520/148	2.9 to 170/68.4

EVALUATION OF LEAD RESULTS

The primary concern for exposure to lead is the potential for impairment of mental development of children. DHS toxicologists evaluated the public exposure from air, water and food for the neighborhood near the UPRR site and determined that an average concentration exceeding 300 ppm of lead in soils may be a concern for children at locations where there is frequent exposure to soil and dust.

A direct indication of whether there is a potential for an adverse health effect from lead can be obtained from the level of lead in blood. At this time, the Center For Disease Control (CDC) considers blood lead levels exceeding 15 micrograms per deciliter (µg/dl) to be a level of concern. The CDC and other agencies, including DHS, are reevaluating the 15 µg/dl level of concern, and may revise the level to 10 µg/dl. Mathematical models predict a blood lead level less than 10 µg/dl in nearly all children exposed to 300 ppm of lead in soil.

It should be noted that in urbanized areas, blood lead levels above 10 µg/dl are not uncommon.

These elevated blood lead levels may be due to a number of potential sources of lead, including old lead-based paints, lead solder in plumbing, automobile exhaust, lead-glazed crockery, and folk remedies.

Some of the lead levels in the recent soil samples exceed the background range of 20 to 40 ppm established for the site vicinity. However, DHS does not consider the lead results obtained from any of the residences to be a health risk given that the soil average lead levels were below 300 ppm.

EVALUATION OF ARSENIC RESULTS

Exposure to arsenic has been shown to result in an increased risk of developing cancer in humans. Both the duration of exposure and the amount to which a human is exposed are important factors in determining the potential cancer risk. Exposure to arsenic may also result in noncancerous adverse health effects. Studies have shown that a short term exposure to an arsenic level in soil in excess of 75 ppm can result in skin abnormalities such as hyperkeratosis and hyperpigmentation. This is based on the health-protective assumption that a child (typically under 6 years of age) would ingest 200 milligrams of soil per day over a 6-month period from exposure to potentially contaminated soil in his/her backyard.

DHS has established the following criteria for minimizing the health risk from arsenic in Sacramento:

Arsenic ppm	Recommended Action
1 - 10	within Sacramento background range; no action necessary
11 - 30	within California background range; above Sacramento background range; at resident's discretion, limited action may be taken such as sodding, covering with soil or asphalt, limiting exposure and reducing dust; DHS does not consider these levels to pose a significant health risk
31 - 75	above Sacramento background range; resident may consider limited action such as sodding, covering with soil or asphalt, limiting exposure and reducing dust

above 75 cause for concern; possible health effects may occur at high soil exposure; action to eliminate potential exposure pathway such as removal of arsenic containing material or installation of a permanent cover material is warranted

ACTIONS TO BE TAKEN BY UPRR

Soil containing elevated levels of lead and arsenic will be removed from the vacant lot on the north side of Perkins Way (Lot 1416A) and from the fenced vacant lot on the north side of Seventh Avenue, adjacent to the railroad right-of-way.

The removal activities will require the use of heavy construction equipment and will result in some elevated noise levels during the work. The soil will be loaded directly into rail cars for subsequent disposal. Measures will be employed to suppress dust during the removal activities. Air monitoring will be conducted during the removal activities to measure any potential dust emissions.

The soil removal activities will be conducted in the next 30 to 60 days and are expected to take between 1 and 2 weeks to complete. Working hours

are anticipated to be from 7 a.m. to 5 p.m., Monday through Friday.

Residents have expressed concern about traffic and dust emissions from the vacant lot north of 6th Avenue. This lot was tested in August 1989, and no elevated levels of metals were detected. However, the lot will be fenced and covered with gravel to control access and traffic and minimize potential dust emissions. Access will be maintained for the rear entrance of 2182 Perkins Way via a narrow gravel-covered passageway from Perkins Way.

UPRR has noted that it is voluntarily conducting the soil sampling and removal activities at the request of DHS. UPRR's cooperation is not meant to imply admission of responsibility for the contamination.

GUIDANCE

If you decide to have your yard privately sampled, you should be sure to have the samples analyzed by a state certified hazardous substances laboratory. The criteria described for lead and arsenic on page 2 of this Fact Sheet should be considered applicable to a yard-wide average soil concentration.

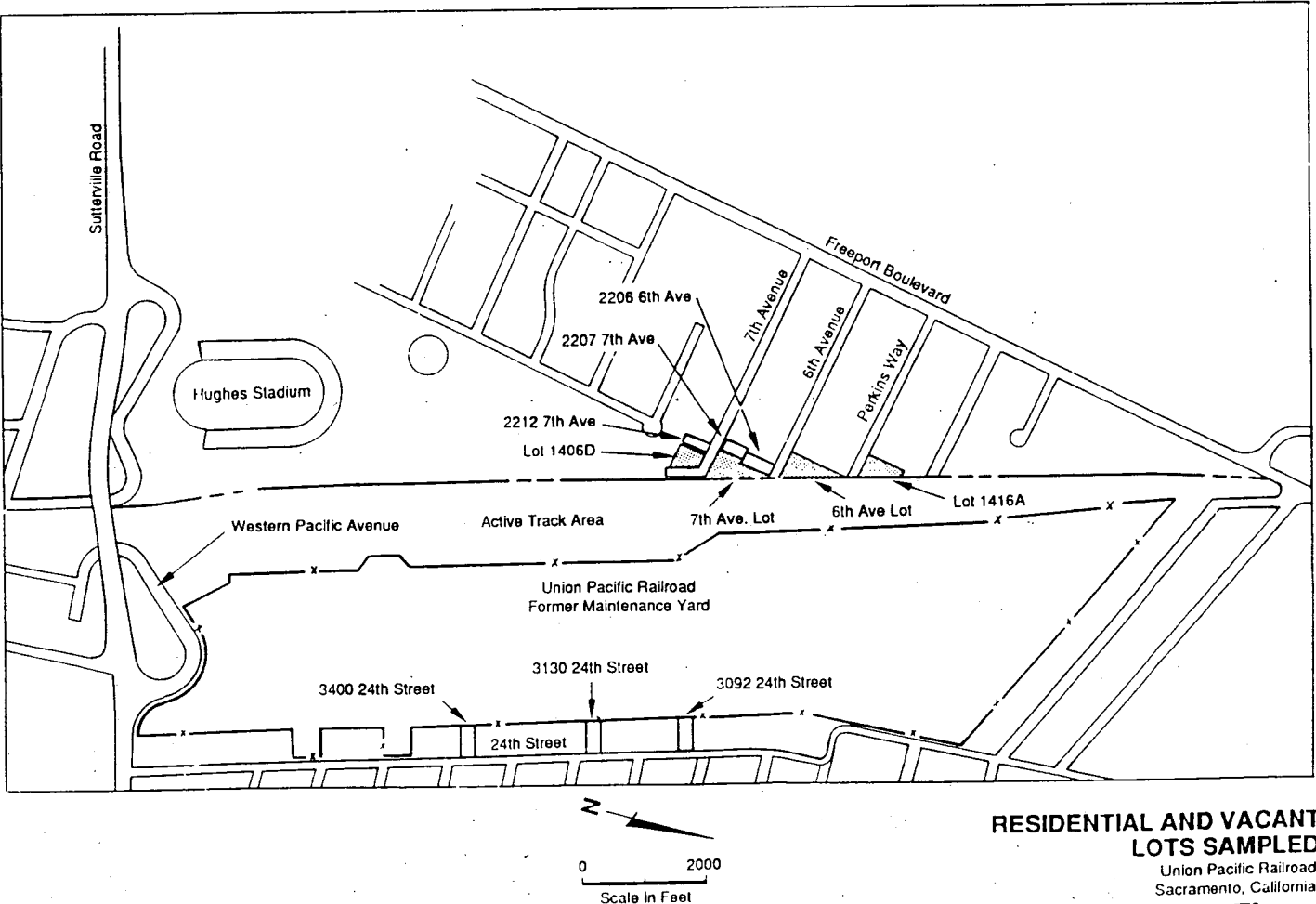


Figure 1

For More Information

Site-related work plans and reports, including the final RI/FS Report, are available for review at information repositories in the following locations:

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Sacramento City College Library, Reference Desk
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Friday 1:00 P.M. - 5:00 P.M.

If you have questions or comments about the site, would like to have additional names placed on the UPRR Sacramento Shop site mailing list, or would like previous fact sheets, please call or write:

Jose Salcedo, Project Manager (916) 855-7896 or Sue Sher, Public Participation Specialist (916) 855-7802	California Environmental Protection Agency Department of Toxic Substances Control 10151 Croydon Way, Suite 3 Sacramento, California 95827
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California Environmental Protection Agency
Department of Toxic Substances Control
10151 Croydon Way, Suite 3
Sacramento, California 95827

Notice:

Union Pacific Railroad will be removing soil from lots adjacent to the west side of the UPRR Yard in Sacramento. Preliminary work will start on Monday, October 7, 1991, and excavation activities will begin on Wednesday, October 9, 1991. Activities related to the removal will take approximately two weeks to complete. Representatives of UPRR or its technical consultant, Dames & Moore, will be present at the work site to answer questions. See inside this Fact Sheet for more details.



Union Pacific Railroad
Sacramento Shops Site

Introduction

The purpose of this Fact Sheet is to present information on the planned off-site soil removal activities west of the Union Pacific Railroad (UPRR) Sacramento Shop site located at 3675 Western Pacific Avenue, Sacramento, California. UPRR plans to remove shallow soil from two vacant lots (Lots 1 and 3) and one residential lot (2206 6th Avenue, Figure 1) adjacent to the railroad right-of-way.

The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) has directed UPRR to conduct the removal activities at the lots and is overseeing all site-related activities. This Fact Sheet provides information on how and when removal activities will be conducted and the confirmatory sampling and health and safety measures to be implemented during removal activities.

Background

Recent, as well as some previous, technical investigations have been conducted in four vacant lots, three residential lots, and one commercial lot along the west side of the UPRR site. Soil samples were analyzed for the metals arsenic and lead. The results of the analyses indicate that elevated levels of arsenic and lead are present in two of the vacant lots (Lots 1 and 3), one of the residential lots

(2206 6th Avenue), and the commercial lot (2171 Perkins Way).

Interim Remedial Measures

Interim remedial measures (IRMs) will be conducted for Lots 1, 2 and 3 and the lot at 2206 6th Avenue (See Figure 1) as follows:

- Lot 1:

Elevated levels of the metals arsenic and lead are present in the surface soil of Lot 1. A minimum of the upper one-foot of soil and gravel (approximately 500 cubic yards) will be removed from the lot. The remaining soil will be visually examined for the presence gravel, and any gravelly soil found will be removed. Bushes on the lot will also be removed, but trees will remain undisturbed. After excavation, soil samples will be collected and analyzed to confirm that the remaining soils do not contain elevated levels of metals. If confirmation sample results indicate that arsenic and lead concentrations exceed the clean up levels, additional excavations will be performed in incremental depths of approximately six inches in the section of the lot from which the confirmation sample was collected. Additional confirmation sampling will be performed following additional excavation. If confirmation samples indicate that remaining soils do not contain elevated levels of arsenic and lead, soil from an off-site source will then be imported to restore the lot to its original grade.

Interim Remedial Measures (continued)

• 2206 6th Avenue:

Elevated levels of arsenic and lead are present in surface soil in the eastern portion of the residential lot at 2206 6th Avenue. In the same manner as Lot 1, one foot of soil will be removed, confirmatory samples will be collected and clean soil will be brought in to replace removed soil. Soil will be removed from the exposed areas of the eastern portion of the yard without disturbing the existing structures.

• Lot 2:

Elevated levels of arsenic and lead were not measured in Lot 2. However, in response to community complaints about dust emissions and traffic, UPRR has agreed to cover the surface of the lot with gravel to minimize dust emissions.

• Lot 3:

Elevated levels of arsenic and lead are present in shallow surface soils along the western side of Lot 3. With the exception of the western portion, Lot 3 has a chip seal (asphalt-like) cover over it. The surface soil along the western side of Lot 3 (approximately 20 cubic yards) will be removed, and a fresh chip seal cover will be placed over the entire lot.

Soil Excavation Activities

Soil excavation will be conducted by an appropriate licensed excavation contractor using front-end mechanical loaders. Excavated soil will be loaded into UPRR gondola cars for transport and disposal. The gondola cars will be placed directly adjacent to the lot(s). Soil removal activities will require the use of heavy construction equipment and will result in some elevated noise levels during work.

Health and Safety Measures

In order to minimize the potential for worker and community exposure to the dust that could potentially be generated by this operation, dust control procedures will be implemented during all soil handling phases of the removal activities. These procedures include using a water spray to moisten the soil during both the soil excavation and the railcar loading operations, and using a tarp or other covers over the portion of the rail car that is not being used for loading.

Air monitoring devices will be used to evaluate the effectiveness of the dust control procedures. If dust emissions are above acceptable levels, operations will be temporarily suspended while the hazard is corrected or controlled. The Site Safety Officer, an industrial hygienist, will be present during all removal activities and will be responsible for the implementation of health and safety measures.

Schedule

Wetting of the site and removal of bushes will commence October 7, 1991. Soil excavation activities are scheduled to begin October 9, 1991, and will take approximately three to five days to complete. The importing of clean soil, grading, and placement of asphalt will be completed in the following five to seven days. In general, work activities will be conducted during the hours of 7:30 a.m. to 5:30 p.m. Some limited activities may take place before 7:30 and after 5:30 provided there is no potential for dust generation or noise.

Fence

A fence will be installed along the western side of the site in late October or early November. The fence will extend from 7th Avenue to Freeport Boulevard and will encompass the vacant lots (Lots 1, 2, 3, and 4, see Figure 1).

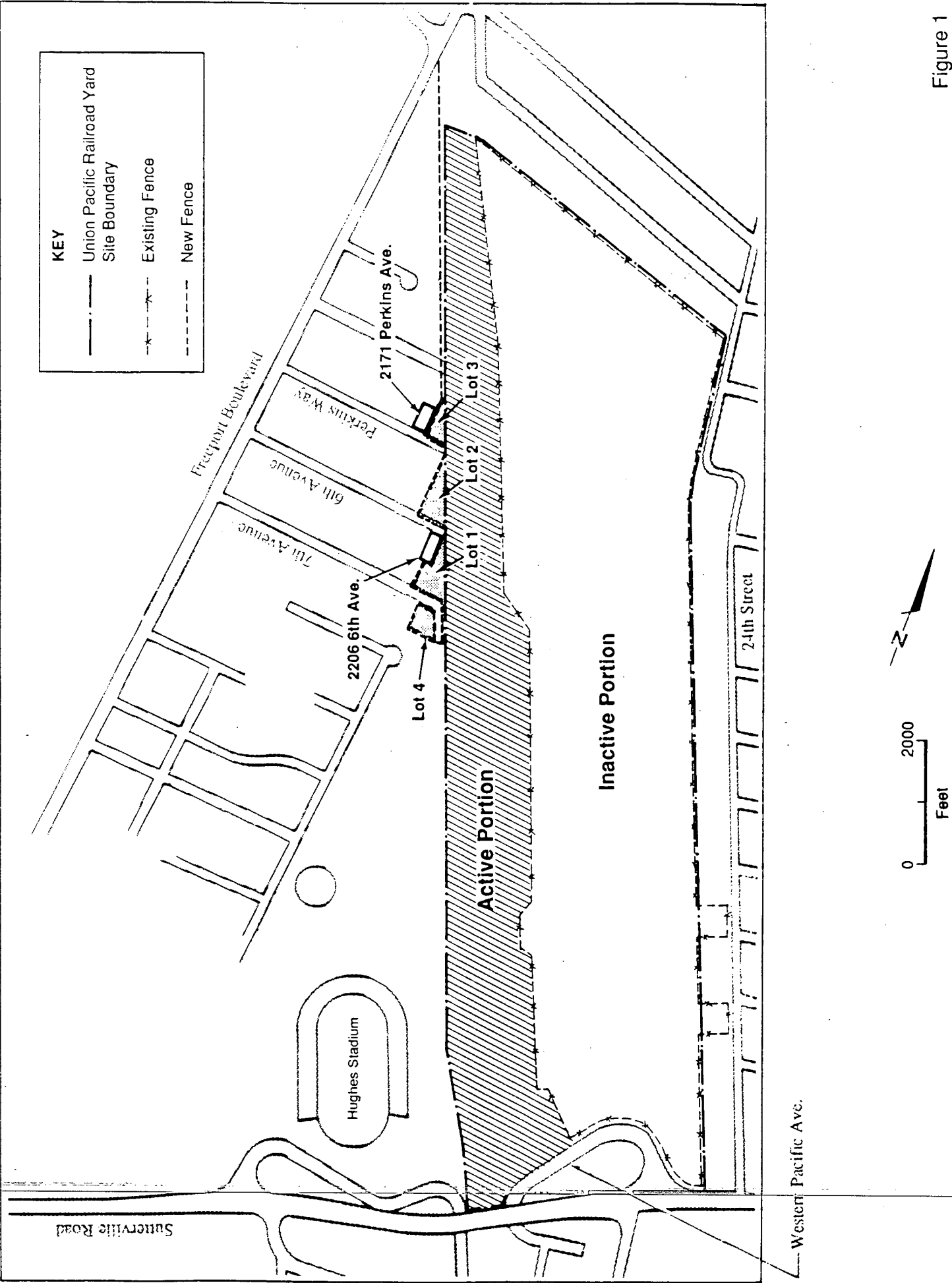
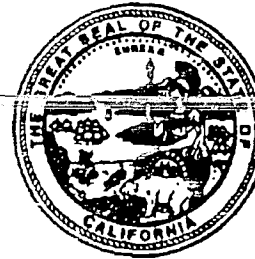


Figure 1



California Environmental Protection Agency

Union Pacific Railroad Sacramento Shops Site

Fact Sheet October 1991

INTRODUCTION

This fact sheet presents information about plans for the installation of three off-site groundwater monitoring wells at the Sacramento Children's Home, quarterly on- and off-site groundwater sampling and analyses, and an on-site groundwater pumping test to be conducted at the Union Pacific Railroad (UPRR) Sacramento Shops Site located at 3675 Western Pacific Avenue, Sacramento, California. The purpose of these additional groundwater investigations is to provide additional information as part of the ongoing investigation of the UPRR Sacramento Shops site. This fact sheet also provides information on when and where field work will be conducted and the measures that will be taken to protect public health and safety. The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) is overseeing the investigation of soil and groundwater contamination at the site.

OFF-SITE GROUNDWATER MONITORING WELL INSTALLATION

The purpose of the additional off-site groundwater monitoring wells is to provide more information on subsurface geology, hydrology, and the vertical and lateral extent of the groundwater plume (the volume of groundwater that contains contaminants). The wells will also be used to provide groundwater data for future groundwater remedial activities.

In May 1991, a total of six off-site groundwater monitoring wells were planned to be installed at

four geographic locations southeast of the site (see May 1991 Fact Sheet). At that time, only three of the six wells were installed. The remaining three wells will be installed on the Sacramento Children's Home property at the two locations depicted in Figure 1.

Truck mounted drill rigs will be used to drill and install the groundwater monitoring wells. Soil samples will be taken as the wells are being installed. Public safety measures that will be implemented will include the utilization of caution tape to mark off a 25-foot work area radius. Additionally, the north end of the alley on the east side of the Children's Home will be closed during working hours.

Field work is scheduled to begin the second or third week of November 1991 and is anticipated to take one to two weeks to complete. Work will take place from 8:00 A.M. to 5:00 P.M., Monday through Friday. The installation of groundwater monitoring wells will result in some increased levels of noise during drilling.

QUARTERLY GROUNDWATER SAMPLING AND ANALYSIS

As part of the quarterly groundwater monitoring program, groundwater samples will be collected from all on- and off-site monitoring wells. There are currently 35 on-site groundwater monitoring wells and three off-site groundwater monitoring wells. Samples will be analyzed to provide more information on affected groundwater and fluctuations in the groundwater level and gradient (direction of groundwater flow). Groundwater

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Department of Toxic Substances Control
10151 Croydon Way, Suite 3
Sacramento, California 95827

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Information On:

Upcoming Groundwater Investigations and
Monitoring Activities in November 1991

monitoring well sampling activities will begin the week of November 4, 1991 and will take between one and two weeks to complete.

GROUNDWATER PUMPING TEST

A groundwater pumping test will be conducted on-site to estimate the characteristics of the groundwater aquifer beneath the site. Results of the test will be used to evaluate the movement of contaminants in groundwater, and in the future, to design a groundwater extraction system for remedial purposes.

The test will be conducted on the east side of the site (see Figure 1). Groundwater will be pumped from one of the existing monitoring wells at a controlled rate. While groundwater is being extracted, 14 adjacent wells will be monitored to measure changes in water level. Water levels will be electronically recorded.

The pumping test will be carried out in two stages. First, tests will be conducted to select the best pumping rate for the pumping test. This test will be completed the first day. Twenty-four hours later stage two will begin. During this stage, the well will be pumped for 48 hours at a constant rate, during which time adjacent wells will be monitored for changes in water levels.

Extracted water will be stored in a large storage tank during the first stage of the pumping test. A sample of the containerized water will be tested for contaminants. Provided concentrations of solvents do not exceed Sacramento County Sanitation discharge levels, the water will be discharged directly to the sewer under the existing Special Sewer Use Permit.

Field work for the groundwater pumping test is scheduled to commence the week of November 11, 1991, and is anticipated to take one week to complete. Work will take place 24 hours per day. No increased levels of noise are expected to result from this testing.

FOR MORE INFORMATION

A copy of all work plans and reports is available for review at information repositories in the following locations:

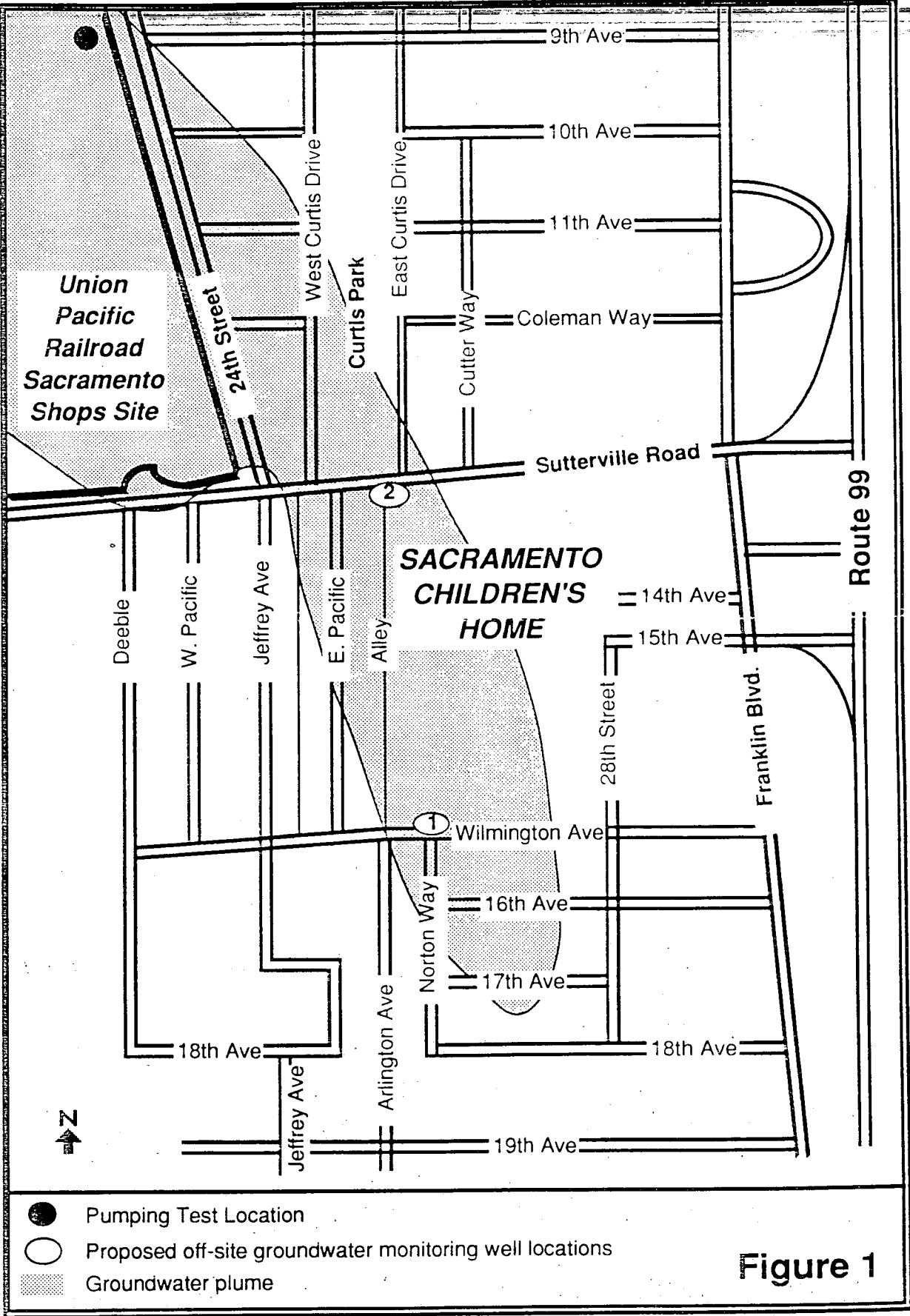
Belle Cooledge Library
Reference Librarian
5681 Freeport Boulevard
Monday - Thursday 7:45 A.M. - 9:00 P.M.
Friday 7:45 A.M. - 4:30 P.M.

Sacramento City College Library
Reference Desk
3835 Freeport Boulevard
Monday, Tuesday, & Thurs. 10:00 A.M. - 6:00 P.M.
Wednesday 10:00 A.M. - 9:00 P.M.
Friday 1:00 P.M. - 5:00 P.M.

If you have questions or comments about the site, would like to have additional names placed on the UPRR Sacramento Shop site mailing list, or would like previous fact sheets, please call or write:

Jose Salcedo, Project Manager, or
Sue Sher, Public Participation Specialist
California Environmental Protection Agency
Department of Toxic Substances Control
10151 Croydon Way, Suite 3
Sacramento, California 95827
(916) 855-7896; 7802

or
Carmen Fraser, Public Involvement Specialist
Dames & Moore
8801 Folsom Blvd., Suite 200
Sacramento, California 95826
(916) 364-8799





California Environmental Protection Agency

Union Pacific Railroad Sacramento Shops Site

Fact Sheet December 1991

INTRODUCTION

This fact sheet presents information about plans to conduct a surface and shallow soil investigation within the active or western portion of the Union Pacific Railroad (UPRR) Sacramento Shops Site located at 3675 Western Pacific Avenue, Sacramento, California (see Figure 1). The purpose of this surface and shallow soil investigation is to provide additional information as part of the ongoing investigation of the UPRR Sacramento Shops site. This fact sheet also provides information on when and where field work will be conducted. The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) is overseeing the investigation of soil and groundwater contamination at the site.

BACKGROUND

The inactive portion of the site has been the focus of a phased Remedial Investigation since 1987. During the Phase 1 investigations, a limited number of shallow soil samples were collected from the active portion of the site. The analytical results of these samples indicated that metals are present in shallow soils in the active portion of the UPRR yard. DTSC has directed UPRR to conduct a more comprehensive investigation of the active portion of the UPRR yard.

SURFACE AND SHALLOW SOIL INVESTIGATION OF THE ACTIVE PORTION OF THE UPRR SITE

The purpose of the additional on-site soil investigation is to provide more information on the vertical and lateral extent of potential soil contamination in the active portion of the site. Surface soil samples will be collected and shallow soil borings will be completed to evaluate the presence of metals and hydrocarbons in soils in the active portion of the site. Figure 1 depicts the active portion of the site where the investigation will take place.

A total of 40 surface samples will be collected in the active portion of the site and analyzed for metals. At twenty of these surface sample locations, shallow soil borings will be completed to a minimum depth of

5 feet below ground surface. Drilling will be conducted using a truck mounted drill rig equipped with hollow stem augers for collecting soil samples.

UPRR will prepare a report presenting the results and conclusions of the investigation, including: a summary of the field investigative results; a Health Risk Assessment; and, a Feasibility Study.

Field work is tentatively scheduled to begin the week of December 16, 1991 and is anticipated to take one to two weeks to complete. Work will take place from 8:00 A.M. to 5:00 P.M., Monday through Friday. The completion of soil borings will result in some increased levels of noise during drilling.

FOR MORE INFORMATION

A copy of all work plans and reports is available for review at information repositories in the following locations:

Belle Coolidge Library, Reference Librarian

5681 Freeport Boulevard

Monday - Thursday

7:45 A.M. - 9:00 P.M.

Friday

7:45 A.M. - 4:30 P.M.

Sacramento City College Library, Reference Desk

3835 Freeport Boulevard

Monday, Tuesday, & Thurs.

10:00 A.M. - 6:00 P.M.

Wednesday

10:00 A.M. - 9:00 P.M.

Friday

1:00 P.M. - 5:00 P.M.

If you have questions or comments about the site, would like to have additional names placed on the UPRR Sacramento Shop site mailing list; or would like previous fact sheets, please call or write:

Jose Salcedo, Project Manager, or
Sue Sher, Public Participation Specialist
California Environmental Protection Agency
Department of Toxic Substances Control
10151 Croydon Way, Suite 3
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or

Carmen Fraser, Public Involvement Specialist
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8801 Folsom Blvd., Suite 200
Sacramento, California 95826
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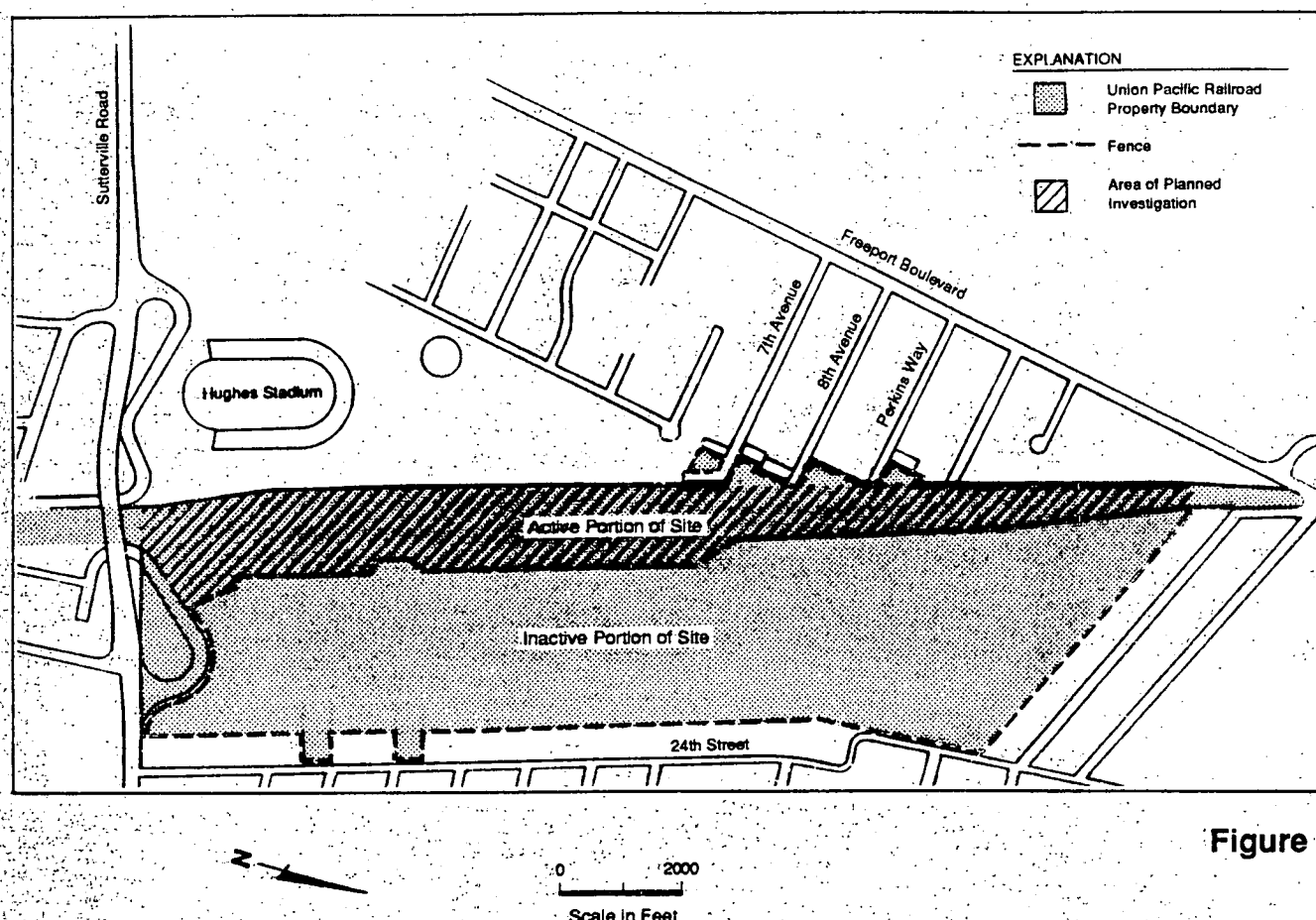


Figure 1

California Environmental Protection Agency
 Department of Toxic Substances Control
 10151 Croydon Way, Suite 3
 Sacramento, California 95827



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FOR MORE INFORMATION

Site-related work plans and reports, including the final RI/FS Report, are available for review at information repositories in the following locations:

Belle Cooledge Library, Reference Librarian
5681 Freeport Boulevard
Monday - Thursday 7:45 A.M. - 9:00 P.M.
Friday 7:45 A.M. - 4:30 P.M.

Sacramento City College Library, Reference Desk
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Summary of
August 13, 1991
Community Meeting



California Environmental Protection Agency

Union Pacific Railroad
Sacramento Shops Site

Meeting Summary

February 1992

INTRODUCTION

On August 13, 1991, the Sierra-Curtis Neighborhood Association held a community meeting to discuss issues concerning the presence of elevated levels of arsenic and lead in soil in properties along the western boundary of the Union Pacific Railroad (UPRR) Yard, Sacramento, California. Representatives of the California Environmental Protection Agency - Department of Toxic Substances Control (DTSC), UPRR, and Dames & Moore (UPRR's technical consultant on the project) were present to update community members on the status of the recent investigations and to answer questions. DTSC gave a brief presentation on the results of soil testing conducted on the vacant and residential lots west of the site. UPRR gave a presentation on proposed additional testing and some remedial actions planned for these lots.

Information on topics discussed at the meeting is summarized in sections of this fact sheet where appropriate, and is followed by questions asked and answers given at the meeting.

THE SITE UNDER INVESTIGATION

Q: What area is being studied? Are the active railroad tracks included in the study area?

A: The former maintenance yard and the active switching area or "active railroad tracks" of the site is the area under investigation. This area consists of approximately 90 acres of land and is bounded by the Sacramento City College, the Cold Storage facility, and residences to the west, Sutterville Road to the south, and residences of Curtis Park to the north and east (see Figure 1).

Q: Was switching done in Lot 2?

A: Switching was done on the site, however, it was not done on Lot 2 (see Figure 1). Lot 2 was the former location of the operations office. Lot 2 apparently was also utilized as an automobile parking lot.

SOURCES OF ARSENIC AND LEAD

Arsenic, lead and many other metals occur naturally in the environment in soil, water, air and, in low concentrations, in many foods. Arsenic and lead also are found in many man-made materials. These sources include paints, products of metals manufacturing, emissions from fossil fuel combustion, leaded gasoline, pesticides, herbicides, rodenticides, fungicides, wood preservatives and cigarette smoke. To gain a better understanding of the potential origins of arsenic and lead contamination present at the UPRR site and immediate vicinity, information on the historic land uses of this area has been compiled.

Historically, arsenic and lead were primary constituents of agricultural pesticides. From the mid 1800s to the early 1900s, the area including Curtis Park, the former railroad maintenance yard, and the neighboring residences to the west of the railroad was used for various agricultural activities including pioneer ranches, farms and dairies.

Lead was a primary constituent of household paint until the mid 1950s. Various subdivisions were built in the area over the period between 1915 and 1950. The majority of residential buildings in the area west of the site were constructed during the 1920s, 1930s and 1940s.

In 1908, Western Pacific Railroad (WPRR) accepted a citizen-donated land offer to locate a railroad maintenance yard in Sacramento. Construction of the yard commenced in 1910, and railroad maintenance activities took place until 1984. Potential sources of arsenic and lead at the former railroad maintenance yard include paints, metals, fuel and waste oils, wood preservatives, railroad slag ballast, and sodium arsenite which may have been used to control weeds.

POTENTIAL HEALTH RISKS RELATED TO ARSENIC AND LEAD

The levels of arsenic and lead detected in the residential and vacant lots on the west side of the site are below the DTSC level considered cause for concern (as established in the July 1991 Fact Sheet). This means that the levels of arsenic and lead do not present a significant risk to human health, according to DTSC.

- Q:

Is it safe for infants or children to live adjacent to Lot 2?
- A:

Lot 2 has not been shown to contain elevated levels of metals in soils. Therefore, there is no reason to be concerned about health effects from metals detected in Lot 2.
- Q:

Are people who played in Lot 1 as children several years ago at risk?
- A:

Although lead absorbed into the body is stored in the bones and can stay there for a long time, the lead level would steadily decline if exposure has ceased or declined. If exposure has been at high

levels for long periods of time, the bones can act as a continuing but declining source of lead in the blood. Since lead is very stable in the environment, it is unlikely that lead levels in the past were much higher than they are now. Therefore, it is unlikely that people would have built up high levels of lead in their bones. Also, children become less sensitive to the effects of lead as they get older. Therefore, current risk from past exposures to lead is minimal.

- Q:

Can adults work in their yards when dust is blowing?
- A:

Yes. Arsenic and lead levels are below levels of concern in soil. However, for general health reasons, it is advisable to minimize inhalation of dust.
- Q:

Is living in the west side safe for pregnant women?
- A:

A developing fetus is very sensitive to the effects of lead in the mother's blood. Pregnant women should avoid excessive exposure to lead, and if they are concerned about possible lead exposures, they should have their blood lead levels checked during pregnancy. The levels of lead found on the west side lots would not be expected to result in levels in excess of 10 micrograms of lead per deciliter of blood, the level that DTSC considers to be the minimum level of concern.

OFF-SITE SOIL INVESTIGATION

Recent as well as some previous soil sampling has been conducted along the east and west sides of the UPRR site (see July 1991 Fact Sheet). Soil samples were analyzed for arsenic and lead. The results of these tests indicate that elevated levels of arsenic and lead are present in soils in two vacant lots (Lots 1 and 3), one residential lot (2206 6th Avenue), and one

ever used in the west side of the site, but that solvent use was restricted to the former maintenance yard area in the fenced eastern portion of the site.

- Q:

How deep are solvents and petroleum contaminants?
- A:

Solvents and petroleum hydrocarbons have been detected in the groundwater from a depth of approximately 30 feet below ground surface to about 90 feet below ground surface southeast of the site.
- Q:

Can arsenic and lead soak into groundwater?
- A:

Arsenic and lead can potentially migrate into groundwater. The mobility of metals is much less than that of solvents or other petroleum hydrocarbons, because metals typically adhere onto clay particles in soil. However, there is no indication that arsenic or lead have impacted groundwater at the site.
- Q:

Can contaminated groundwater go through pipes in homes?
- A:

Because groundwater is at a minimum of 25 feet below ground surface, and typically, house water pipes are located just below the ground surface, it is not possible for the groundwater to affect piped water in a home.
- Q:

Is aeration a method to be used for groundwater remediation?
- A:

Aeration of groundwater, or air stripping, is a remedial alternative under consideration for cleaning up groundwater.
- Q:

On the east side of the site, is the primary issue the groundwater plume?
- A:

Yes, on the east side of the site, the

primary concern is the groundwater plume. There is no data to suggest that off-site soils to the east have been affected from the site. Groundwater investigations have revealed a plume of solvents extending from the center of the fenced portion of the site to 18th Avenue to the southeast. The plume refers to the location of the volume of groundwater containing solvents.

PUBLIC INFORMATION AND PARTICIPATION

- Q:

Will UPRR staff be available for questions in the future, or should we go through the Department?
- A:

UPRR staff will be available to answer community member's questions when they are in Sacramento. Appointments with UPRR staff should be scheduled through Carmen Fraser with Dames & Moore who can be reached at (916) 364-7899.

Because of the level of concern voiced by several members of the community at the August 13, 1991 community meeting, UPRR is offering to schedule informal meetings in the community to discuss the health issues. If you would like to have a meeting at your house with up to ten members of the community, please contact Carmen Fraser at the telephone number listed above.



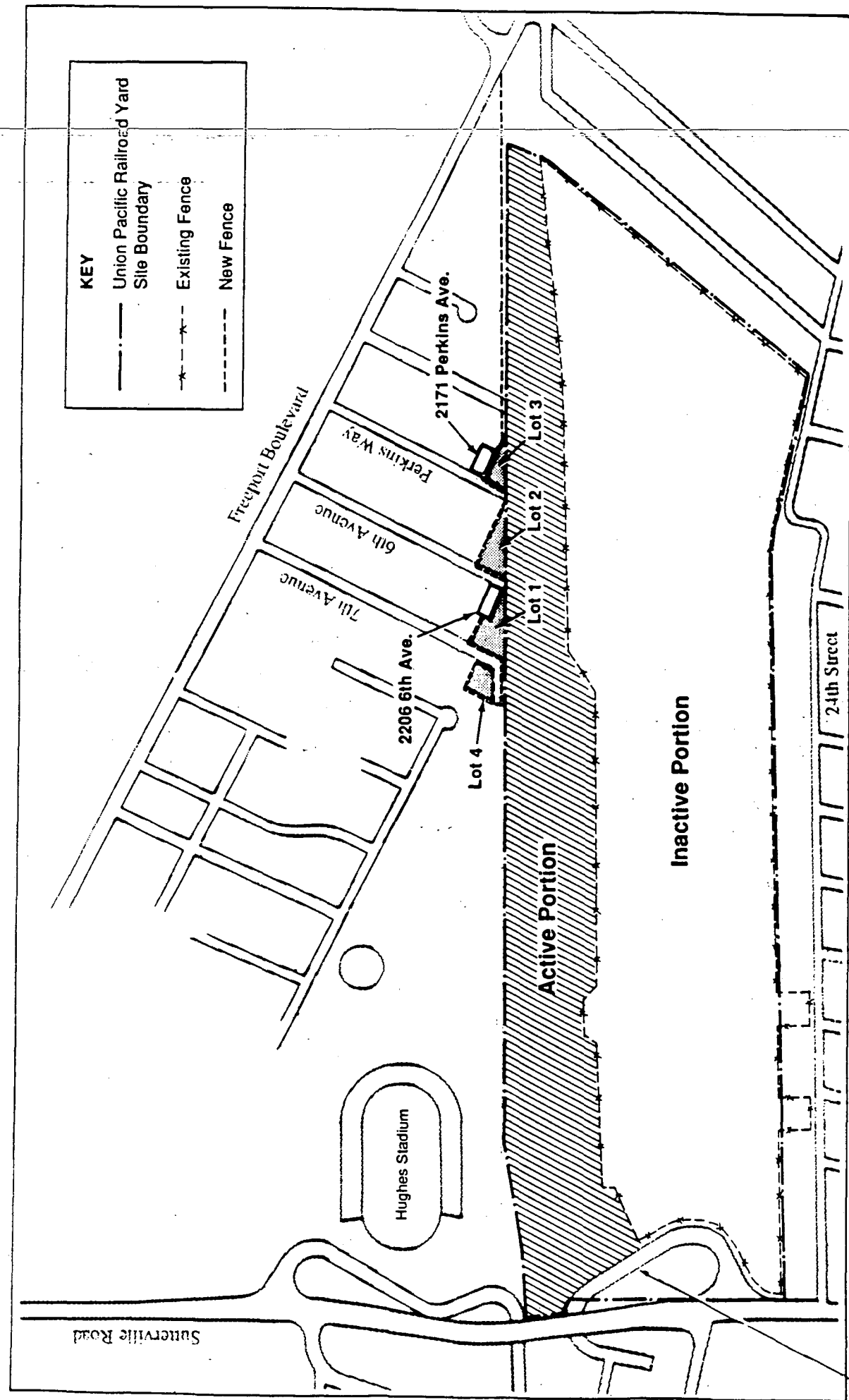


Figure 1



2000
Feet
0

Storage Facility north to approximately 300 feet south of Freepoint Boulevard. The four vacant lots owned by UPRR are included in the fenced area. The permanent fence has slats to provide more privacy for west side residents, and to restrict pedestrian or vehicular access to the lots and active railroad yard (see Figure 1).

Q: Why excavate only 12 inches?

A: One-foot of soil was removed because the available chemical testing information indicated that elevated levels of arsenic and lead are limited to this upper layer of soil. After excavation, soil samples were collected and analyzed to confirm that elevated levels of arsenic and lead were not present in remaining soils.

Q: Will the soil be kept wet during excavation?

A: Water was applied to suppress dust emissions during the removal activities. Air monitoring was conducted to measure any dust generated by the removal activities.

Q: Who put the fence up on Lot 1?

A: UPRR installed a fence around Lot 1 in October 1990 in response to the request of the community during the September 1990 public meeting. However, the temporary fence was replaced with a permanent fence in November 1991, after the soil was removed from Lots 1 and 3.

Q: Will anything be done about Lot 2? Why wasn't Lot 2 fenced as UPRR said it would be?

A: There was never a plan to fence Lot 2. The testing on Lot 2 did not indicate any elevated levels of metals, and no health-protective measures are required on Lot 2. However, in response to community complaints about dust and traffic, Lot 2 was fenced and the entire lot covered with gravel in November 1991.

Q: Why wasn't a sign put up on Lot 1 until now?

A: In May 1991, a sign was placed on Lot 1 at the request of the community. The DTSC provided the sign and directed the posting of the sign in response to the request of the community.

Q: Is a fence going to address contamination problems?

A: The permanent fence will restrict access of pedestrian or vehicular traffic to the lots and active railroad yard. While a fence will not address contamination problems, it does minimize the potential for human contact with contaminants, thereby protecting public health. Other measures are planned to clean up contamination and will be detailed in the Draft Remedial Action Plan.

SOIL INVESTIGATION

Q: How are average concentrations determined? Why are average concentrations used?

A: Average concentrations are obtained by dividing the total additive concentration by the number of samples analyzed (arithmetic mean). Average concentrations are used in evaluating concentration distribution. Under U.S. and California Environmental Protection Agency guidelines average concentrations are used along with health conservative assumptions in preparing health risk assessments to evaluate what levels are protective of human health and the environment.

Q: Is there any surface contamination on the east side of the site?

A: On the east side of the site, metals found in soils were not measured above the

Meeting Summary

DTSC level considered cause for concern for lead (300 parts per million) and arsenic (30 parts per million).

Q: Is UPRR still using solvents at the site?

A: No industrial activities are currently conducted on-site, and no solvents are used on-site.

Q: Has there been any testing for solvents on the west side of the site?

A: Previously, off-site soil testing on the west side was limited to metals. No testing had been conducted for solvents, because no railroad maintenance activities were conducted on the west side of the site. Therefore, there was no reason to suspect solvent contamination on the west side of the site. However, at the direction of the DTSC, Lots 1, 2, and 4 were recently sampled for solvents. Analytical results are not yet available.

Q: Will UPRR do more testing under the railroad tracks (in the active track area)?

A: Additional sampling in the active track area was conducted the week of December 16, 1991. Data evaluation should be completed in March or April 1992.

Q: Will testing of soil gases be conducted? How long will it take?

A: There is no information to suggest that a potential soil gas hazard exists. Therefore, there are currently no plans for soil gas testing. However, at the request of several residents, DTSC visited 2207 7th Avenue and 2182 Perkins Way because of complaints of odors in their residences. No odors were detected or measured at 2207 7th Avenue. However, a leaking natural gas pipe was noted at 2182 Perkins Way.

GROUNDWATER INVESTIGATION

Q: Can groundwater flow across the site down onto the adjacent streets and into the gutters when it rains?

A: No. Groundwater is water that is below the ground surface and is not visible. Groundwater beneath the site is found at a depth of approximately 25 feet below the ground surface on the northeast end of the site, and 32 feet below the ground surface on the southeast end of the site. Groundwater flows beneath the site in a southeast direction at a rate of between 6 and 180 feet per year.

Water seen in streets, gutters, sewers, streams, and lakes is called surface water. The flow of surface water depends on factors such as grading, the path of least resistance, and slope, and is unrelated to the direction of groundwater flow.

Q: Can contaminants leach in a direction opposite to groundwater flow?

A: If contaminant leaching (movement) occurs, it is generally vertical. However, a small amount of horizontal leaching may occur, which could be opposite to groundwater flow.

Q: Has groundwater been tested on the west side of the site? How have you determined that contaminants have not leached into groundwater on the west side?

A: A groundwater investigation of the west area of the site has not been conducted. It has not been conducted because there have been no significant detections of solvents in wells located downgradient of the west side. Therefore, the data indicates that the west side area is not source of solvents. Furthermore, there is no evidence to suggest that solvents were

Meeting Summary

Commercial lot (2171 Perkins Way).

Q: Will UPRR test the soil in other lots located to the west of already-tested lots?

A: No. The results of the off-site investigations indicate that the off-site contamination is restricted to an area close to the west side of the site. The data do not indicate that contamination extends further into the west side area, and there are no plans for any testing west of those lots already tested.

Q: How long will speciation tests take and what will determine UPRR's responsibility? If these speciation tests show that UPRR is responsible, could the owners request that UPRR clean it up?

A: Speciation tests were initially planned by UPRR to evaluate whether elevated levels detected in soils in residential and vacant lots adjacent to the UPRR Sacramento site originated from the railroad yard. UPRR removed the soils that contained elevated levels of metal from the adjacent vacant and residential lots. As a result, UPRR no longer plans to conduct speciation tests.

Q: Have other samples been taken on Lot 2 since 1989?

A: Yes. Additional soil samples were recently collected from Lot 2. The analytical results indicate the levels of metals in Lot 2 do not pose a health risk.

Q: The railroad still owns half of my backyard (2182 Perkins Way). Why hasn't it been tested?

A: UPRR has reclaimed the property in question by extending permanent fencing around it (see Interim Remedial Actions Taken). The results of the soil

investigations (including the adjacent Lot 2) indicate that the off-site contamination is restricted to an area close to the west side of the site, and there are no plans for additional testing west of those lots already tested.

Q: Would DTSC look at results from privately conducted sampling?

A: The DTSC will consider looking at results from privately collected sampling. The DTSC recommends utilizing a DTSC-certified hazardous materials laboratory for testing.

INTERIM REMEDIAL ACTIONS TAKEN

DTSC directed UPRR to remove soil containing elevated levels of arsenic and lead from Lot 1, Lot 3 and 2206 6th Avenue. Interim remedial actions were conducted during November 1991. In Lot 1, approximately one-foot of soil was removed from the entire lot. At 2206 6th Avenue, approximately one-foot of soil was removed from the eastern portion of the lot. After excavation, soil samples were collected and analyzed to confirm that elevated levels of arsenic and lead are not present in remaining soils. Lot 1 and 2206 6th Avenue were subsequently backfilled with clean soil. In Lot 3, surface soil was removed from the west side of the lot. The holes were filled in, and the entire lot was covered with a fresh chip seal (type of asphalt). No soil was removed from Lot 2; however, the entire lot was covered with gravel in response to community complaints about dust and traffic.

Water was applied to suppress dust emissions, and air monitoring was conducted to measure any dust generated by the removal activities. Please refer to the October 1991 Fact Sheet for more information on the interim remedial actions taken.

A permanent fence was installed along the west side of the active portion of the site. The fence extends from the north end of the U.S. Cold



Union Pacific Railroad Sacramento Shops Site

Fact Sheet March 1992

INTRODUCTION

This fact sheet presents information about additional activities to be conducted at the Union Pacific Railroad (UPRR) Sacramento Shops Site located at 3675 Western Pacific Avenue, Sacramento, California (see Figure 1). This fact sheet also provides information on when field work will be conducted.

The UPRR Sacramento Shops Site is a former railroad maintenance yard, and a State Superfund Site. The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) is overseeing the investigation of soil and groundwater contamination at the site. A Remedial Investigation/Feasibility Study (RI/FS) to assess the nature and extent of contamination and the appropriate corrective action for the site, has been completed. The Draft Remedial Action Plan (RAP), the proposed conceptual clean-up plan for the site has been prepared and is under review by the DTSC.

The additional activities to be conducted consist of: abandoning an historical water supply well; removing an underground concrete tank; and removing and disposing of non-hazardous debris. The purpose of the well abandonment is to properly destroy the well, eliminating the well as a potential migration pathway for water or chemicals of concern. The purpose of the tank removal is to properly remove the tank, eliminating a potential on-site safety hazard. The purpose of the debris removal is for aesthetics.

WELL ABANDONMENT

An existing well was discovered on-site during the Phase 1 Remedial Investigation (RI). The well appears to have been a maintenance yard water supply well, which has been out-of-service for a number of years.

A drilling rig will be used to abandon the well. The well casing, a metal tube used as a lining for the well, will be perforated or "ripped". Cement will then be pumped into the well casing. The concrete slab surrounding the well casing will be removed. The soil surrounding the upper casing will be excavated by backhoe to approximately five to six feet below ground surface, and the upper five feet of casing will then be cut off and removed. The casing will then be completely filled with cement and capped off at approximately five feet below ground surface. Finally, the remainder of the excavated area will be backfilled with the original soil and compacted. During non-working hours, the well and any associated

excavated soil will be covered to protect public health and safety.

TANK AND DEBRIS REMOVAL & DISPOSAL

An existing 72,000 gallon underground concrete tank was discovered in the fenced inactive portion of the site during the Phase 1 RI. When the railroad yard was active, the tank was utilized for fuel storage. During the Phase 2 RI, the contents of the tank were removed, and the interior of the tank was scraped, wiped down with solvent, and cleaned. Investigations indicated that no hydrocarbons or solvents were present in soils beneath the tank or in groundwater downgradient of the tank.

The tank currently contains storm water from the recent storms. Prior to the tank removal, a sample of the water will be analyzed for hydrocarbons. If no hydrocarbons are detected, the water will be discharged into the sewer system.

Although previous testing has indicated that the tank does not contain hazardous material, the tank walls will be sampled and analyzed for metals, volatile organic compounds, and hydrocarbons prior to its destruction and removal. The tank will then be cut into manageable size blocks which will be stockpiled adjacent to the area and covered. It is anticipated that the concrete will be handled as non-hazardous and will be disposed of, along with other non-hazardous debris on-site, in a non-hazardous landfill.

Approximately 2,500 yards of asphalt, concrete and other non-hazardous debris will also be removed from the site. Dust generation will be minimized and water will be applied as necessary during removal activities. The asphalt and concrete will be sampled and analyzed for metals and volatile organic compounds. It is anticipated that the asphalt and concrete will be handled as non-hazardous and will be disposed in a non-hazardous landfill.

SCHEDULE

Field work is tentatively scheduled to begin the week of March 16, 1992 and is anticipated to take one week to complete the well abandonment and two weeks for the tank removal and debris disposal. Work will take place from 8:00 A.M. to 5:00 P.M., Monday through Friday. The use of a drilling rig for well abandonment, and heavy equipment for tank and debris removal will result in some increased levels of noise during drilling.

FOR MORE INFORMATION

A copy of all work plans and reports is available for review at information repositories in the following locations:

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If you have questions or comments about the site, would like to have additional names placed on the UPRR Sacramento Shops site mailing list, or would like previous fact sheets, please call or write:

Jose Salcedo, Project Manager, or

Sue Sher, Public Participation Specialist

California Environmental Protection Agency

Department of Toxic Substances Control

10151 Croydon Way, Suite 3

Sacramento, California 95827 (916) 855-7896; 7802

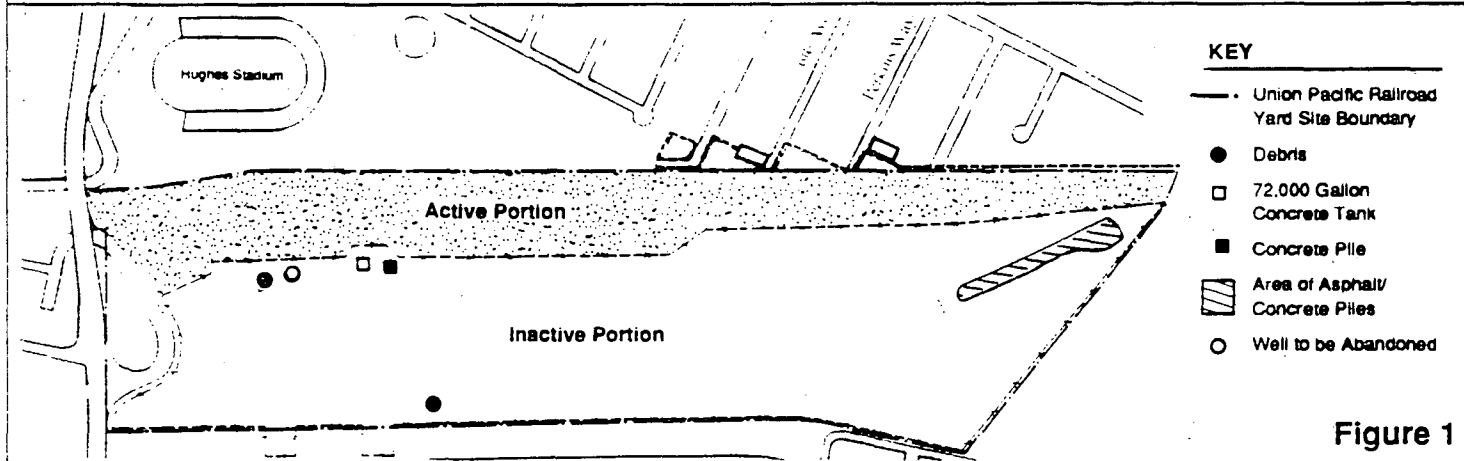
or

Tracy Saucier, Public Involvement Specialist

Dames & Moore

8801 Folsom Blvd., Suite 200

Sacramento, California 95826 (916) 364-8799



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Union Pacific Railroad Sacramento Shops Site

Fact Sheet April 1992

Introduction

This fact sheet presents information about additional activities to be conducted at the Union Pacific Railroad (UPRR) Sacramento Shops Site located at 3675 Western Pacific Avenue, Sacramento, California (see Figure 1). This fact sheet also provides information on when field work will be conducted.

The UPRR Sacramento Shops Site is a former railroad maintenance yard, and a State Superfund Site. The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) is overseeing the investigation of soil and groundwater contamination at the site. A Remedial Investigation/Feasibility Study (RI/FS) to assess the nature and extent of contamination and the appropriate corrective action for the site, has been completed. The Draft Remedial Action Plan (RAP), the proposed clean-up plan for the site, was submitted to the DTSC in November 1991. DTSC comments on the Draft RAP were issued in March 1992. The revised Draft RAP is scheduled to be submitted to the DTSC in May 1992. However, UPRR has indicated to the DTSC that additional evaluations are warranted, and a request for extension will be forthcoming.

Additional activities to be conducted consist of removing an underground tank and removing and disposing of on-site debris. The purpose of the tank removal is to properly remove the tank, eliminating a potential on-site safety hazard. The purpose of the debris removal is for aesthetics.

Tank and Debris Removal and Disposal

The tank and debris removal and disposal activities were originally scheduled for March 1992, and were described in the March 1992 Fact Sheet. The activities were delayed because of the March rains which resulted in the filling of the tank with storm runoff. The activities, planned now for May 1992, consist of:

- Removal of a 72,000 gallon underground concrete tank from the southwest part of the inactive portion of the site; and

- Removal and disposal of approximately 2,500 yards of asphalt, concrete, and other non-hazardous debris from the inactive portion of the site.

Although previous testing indicated that the tank does not contain hazardous material, the tank walls were sampled and analyzed for metals, volatile organic compounds, and hydrocarbons in April 1992. Results of the analyses indicate the tank walls contain low levels (500-800 parts per million) of motor oil range petroleum hydrocarbons. The concrete from the tanks and some stockpiled soils near the tank containing low levels of petroleum hydrocarbons will be loaded into railcars and transported to USPCI's Grassy Mountain Facility (landfill) in Utah.

Approximately 2,500 yards of asphalt, concrete and other non-hazardous debris will also be removed from the site. The asphalt and concrete were sampled and analyzed for metals and volatile organic compounds. The results of the analyses indicate that the asphalt and concrete can be handled as non-hazardous, and will be disposed off-site in a non-hazardous landfill. The asphalt and concrete will be loaded into trucks and transported off-site through the north gate on to Portola Way. Dust generation will be minimized and water will be applied as necessary during removal activities.

Schedule

Field work is tentatively scheduled to begin the week of May 4, 1992, and is anticipated to take two to three weeks to complete. Work will take place between 7:30 A.M. and 5:30 P.M., Monday through Friday. The use of heavy equipment for the tank and debris removal will result in some increased levels of noise during field activities.

FOR MORE INFORMATION

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Jose Salcedo, Project Manager, or

Sue Sher, Public Participation Specialist

California Environmental Protection Agency

Department of Toxic Substances Control

10151 Croydon Way, Suite 3

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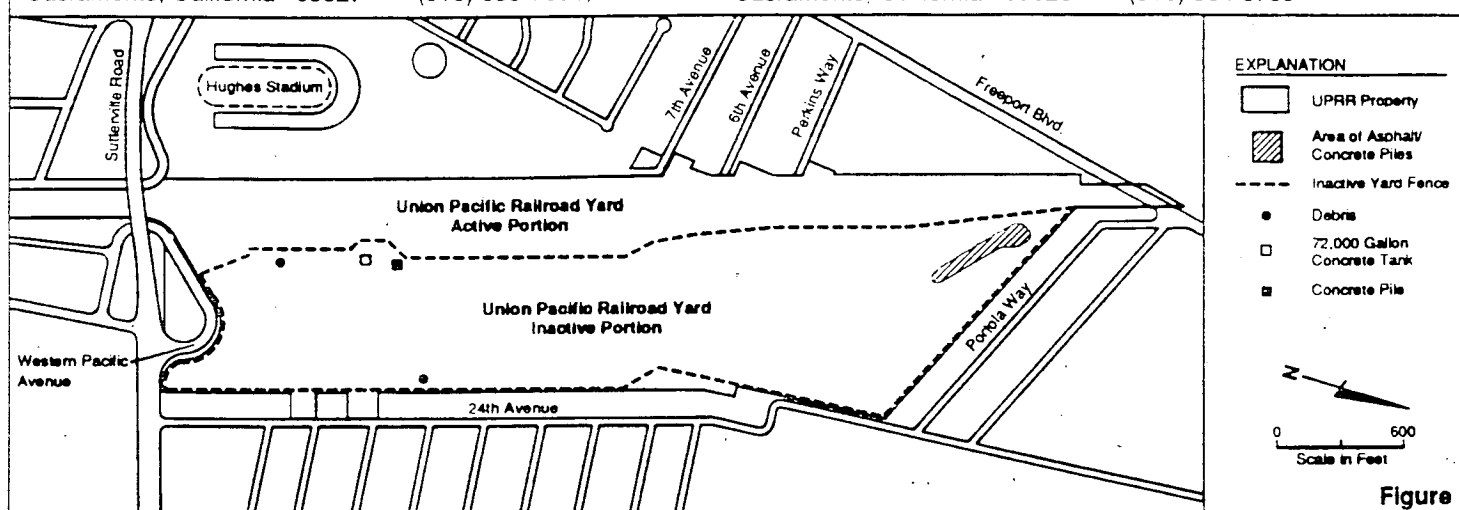
or

Karen Williams, Public Involvement Specialist

Dames & Moore

8801 Folsom Blvd., Suite 200

Sacramento, California 95826 (916) 364-8799



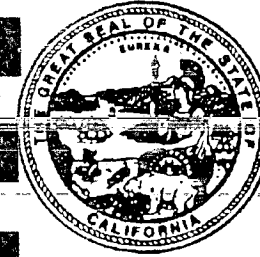
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Union Pacific Railroad Sacramento Shops Site

Fact Sheet May 1992

INTRODUCTION

This fact sheet presents information about additional off-site groundwater investigations for the Union Pacific Railroad (UPRR) Sacramento Shops Site located at 3675 Western Pacific Avenue, Sacramento, California (see Figure 1). The purpose of the studies is to further investigate the extent of off-site groundwater impacts from the UPRR Sacramento Yard. This fact sheet also provides information on when field work is anticipated. The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) is overseeing the investigation of soil and groundwater at the site.

The UPRR Sacramento Shops site is a former railroad maintenance yard, and a State Superfund site. A Remedial Investigation/Feasibility Study (RI/FS) to assess the nature and extent of contamination and the appropriate corrective action for the site has been completed.

A Draft Remedial Action Plan (RAP), a proposed cleanup plan for the site, was submitted to DTSC in November 1991. DTSC comments on the Draft RAP were issued in March 1992. The revised Draft RAP was scheduled to be submitted to the DTSC in May 1992. However, preparation of the Draft RAP has been delayed in order to complete some additional evaluations. A new schedule is currently being developed by UPRR for consideration by the DTSC.

PREVIOUS OFF-SITE GROUNDWATER STUDIES

Off-site groundwater investigations southeast of the site have been conducted in phases since 1990. In 1990 over 60 exploratory holes were completed off-site to assess the extent of shallow groundwater contami-

nation that had moved off the UPRR property. Analytical results from the exploratory holes indicated that groundwater had been impacted by chlorinated solvents. Impacts to the groundwater have been detected up to 3,000 feet southeast of the site.

Results from the exploratory holes were used to choose locations for five additional off-site groundwater monitoring wells. The five monitoring wells were completed in the first water-bearing zone to depths of approximately 50 feet below ground surface. Two other off-site groundwater monitoring wells were completed in the second water-bearing zone to depths of approximately 85 feet below ground surface. Analytical results from the two deeper groundwater monitoring wells indicate the second water bearing zone has also been impacted by chlorinated solvents 600 feet southeast of the site.

ADDITIONAL GROUNDWATER INVESTIGATIONS TO BE CONDUCTED

A limited off-site Cone Penetration Testing (CPT) and Hydropunch™ (HP) groundwater sampling will be conducted in May to further assess the lateral extent of chlorinated solvents in the second water-bearing zone southeast of the site. Groundwater samples will be obtained from a depth of approximately 80 feet below ground surface.

The CPT/HP approach was successfully used in previous groundwater investigations of the site. The CPT/HP equipment is self-contained in a truck and produces minimal noise. The equipment operates by hydraulically pressing instruments into the ground. The system produces holes less than 2 inches in diameter, which will be plugged after completion of testing at each location.

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Exploratory holes will be located at approximately 250 to 400-foot intervals on City of Sacramento and Sacramento Children's Home property, adjacent to the UPRR site. Proposed CPT/HP locations are illustrated in Figure 1.

Groundwater monitoring well sampling and analysis is tentatively scheduled to begin the week of May 25, 1992. Groundwater samples will be collected from 27 monitoring wells and analyzed to provide more information on affected on-site and off-site groundwater. Fluctuations in the groundwater level and direction of groundwater flow will also be investigated. The results of this additional groundwater investigation program will be utilized to evaluate the need for additional second water bearing zone groundwater monitoring wells, and if required, to select locations.

HEALTH AND SAFETY MEASURES

On-site field work is tentatively scheduled to begin the week of May 25, and is anticipated to take 1-2 weeks. Field work will be conducted from 8:30 am to 4:30 pm Monday through Friday. Public safety measures that will be implemented to augment the current Health and Safety Plan and to comply with Sacramento City Standard Operating Procedures.

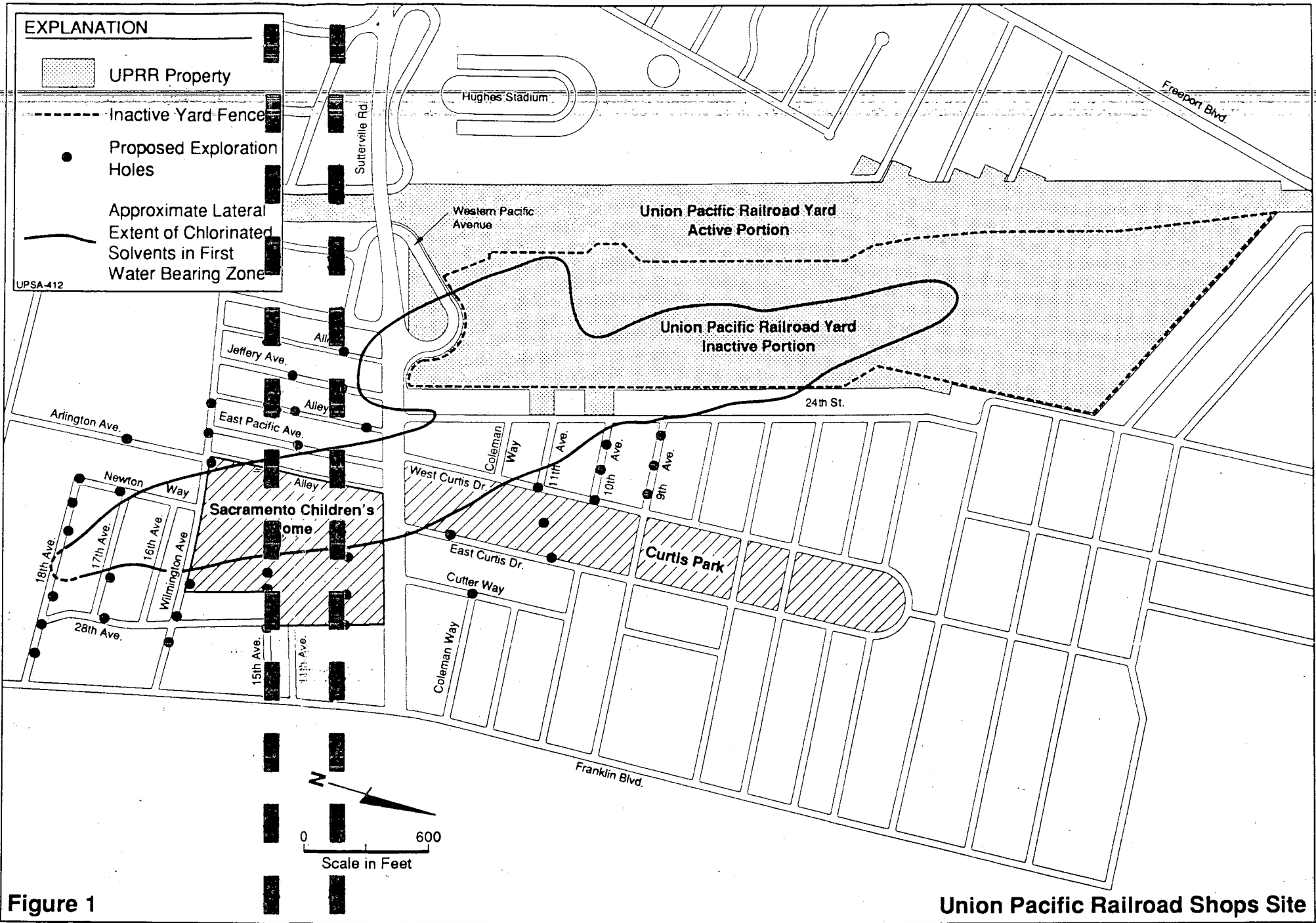
Since the CPT truck will normally require blocking the sidewalk, the following vehicular and pedestrian traffic control measures will be taken:

"Men Working" signs topped with three red flags will be placed approximately 100 to 150 from each end of the CPT truck.

Traffic cones will be placed at 10-foot intervals along the street center to a distance of approximately 50 feet from each end of the CPT truck.

Barricades will be placed approximately 50 feet from each end of the CPT truck across the sidewalk to prevent pedestrian traffic from entering the work area.

Air quality at the work zone will be monitored periodically during operation of the CPT.



FOR MORE INFORMATION

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Sue Sher, Public Participation Specialist
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Karen Williams, Public Involvement Specialist
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Sacramento, California 95826

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California Environmental Protection Agency

Union Pacific Railroad Sacramento Shops Site

Fact Sheet July 1992

INTRODUCTION

This fact sheet presents information about air monitoring activities to be conducted at the Union Pacific Railroad (UPRR) Sacramento Shops Site located at 3675 Western Pacific Avenue, Sacramento, California (see Figure 1). This fact sheet also provides information on when the air monitoring will be conducted.

The UPRR Sacramento Shops site is a former railroad maintenance yard, and a State Superfund site. The California Environmental Protection Agency, Department of Toxic Substance Control (DTSC) is overseeing remedial actions at the site.

A Remedial Investigation/Feasibility Study (RI/FS) to assess the nature and extent of contamination and the appropriate corrective action for the site has been completed. A Draft Remedial Action Plan (RAP), a proposed cleanup plan for the site, was submitted to the DTSC in November 1991. DTSC comments on the Draft RAP were issued in March 1992. The revised Draft RAP was scheduled to be submitted to the DTSC in May 1992. However, preparation of the revised Draft RAP has been delayed in order to complete some additional evaluations. A new proposed schedule has been developed by UPRR and is under consideration by the DTSC.

AIR MONITORING PROGRAM

UPRR is planning to conduct an air monitoring program at the UPRR Sacramento Yard. The purpose of the air monitoring program is to evaluate the contents of the wind-blown dust from the active and inactive portions of the site which has the potential to migrate off-site. Overall, the air monitoring program will:

- Evaluate concentrations of metals (arsenic and lead) and asbestos in the air at the site boundary;
- Evaluate potential impacts from the site to regional air quality; and
- Evaluate general air quality conditions in the area

Results of the air monitoring program will also be used to provide additional input to the health risk assessment

that is undergoing revision. Dames & Moore, an independent environmental consulting firm, will conduct the air monitoring program. Dames & Moore will be assisted by AeroVironment, a local firm with extensive experience in designing and conducting air monitoring programs.

LOCATION OF MONITORING STATIONS

Seven air samplers will be set up at six sampling locations (see Figure 1). Stations 1 and 2 will be utilized to provide data on upgradient off-site air quality. Station 3 will be utilized to provide data on west-side air quality. Stations 4, 5, and 6 will be located downgradient of the prevailing wind direction. Additionally, Station 4 will have two low-volume air samplers, one of which will be utilized to provide quality control data. A meteorological tower has been set up in the center of the inactive site area, to measure wind speed, wind direction, and temperature.

DATA COLLECTION AND LABORATORY ANALYSIS

The air monitoring approach has been discussed with and approved by the DTSC. Air samples will be collected during a 14-day period, with one sample per day collected from each of the seven air samplers. Air samples will be analyzed for arsenic, lead, total suspended particulates, and asbestos. Meteorological data is currently being collected to confirm the proposed downwind sampling locations. Meteorological data will continue to be collected through the 14-day air sampling period. Quality assurance and quality control (QA/QC) for the air monitoring program will follow procedures discussed in the Quality Assurance Project Plan. A final report on the results of the air monitoring program will be submitted to the DTSC.

SCHEDULE

Air sampling is tentatively scheduled to begin the week of July 20, 1992. Site preparation will consist of installing a temporary power pole at each air sampling station location and placement of the air sampling equipment. Temporary fencing will also be installed to enclose the on-site monitoring stations for security reasons.

FOR MORE INFORMATION

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3835 Freeport Boulevard

Monday - Thursday

(Summer Session Hours)

8:00 A.M. - 8:00 P.M.

City of Sacramento, City Clerk's Office

City Hall / Room 203

915 I Street

Monday - Friday

8:00 A.M. - 5:00 P.M.

If you have questions or comments about the site, would like to have additional names placed on the UPRR Sacramento Shops site mailing list, or would like previous fact sheets, please call or write:

Jose Salcedo, Project Manager, or

Sue Sher, Public Participation Specialist

California Environmental Protection Agency

Department of Toxic Substances Control

10151 Croydon Way, Suite 3

Sacramento, California 95827

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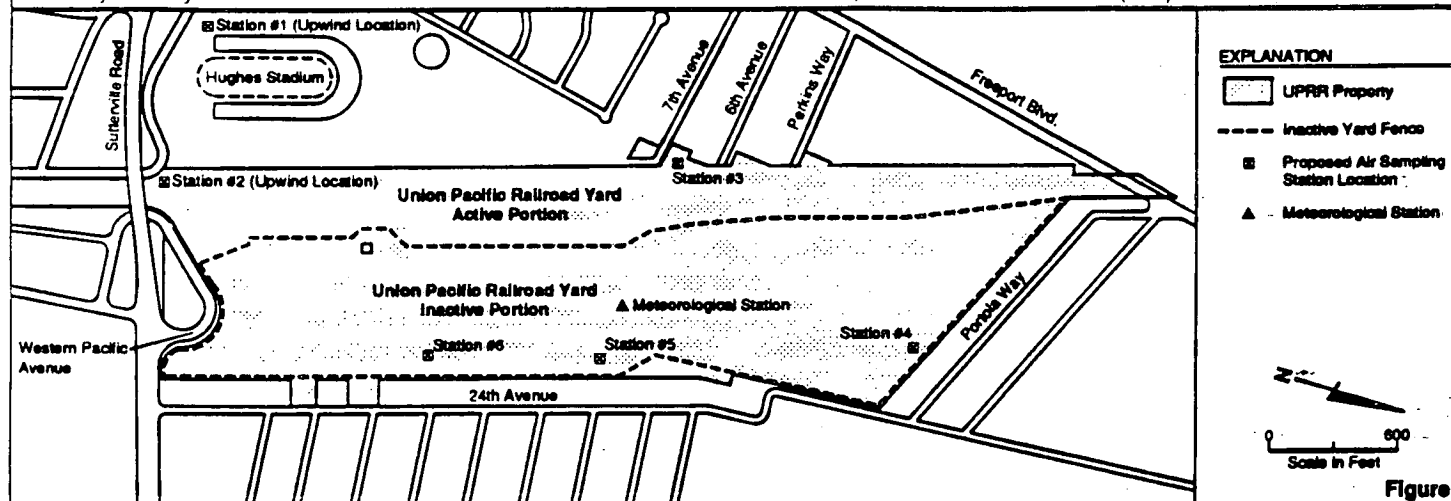
Karen Williams, Public Involvement Specialist

Dames & Moore

8801 Folsom Blvd., Suite 200

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Union Pacific Railroad Sacramento Shops Site

Summary of Active Yard Soil, Sources and Mobility of Arsenic and Lead, and Air Monitoring Results

INTRODUCTION

This fact sheet presents a summary of recent active yard shallow soil investigations, arsenic and lead sources and mobility evaluations, and air monitoring conducted at the UPRR Sacramento Yard site. The evaluations have been directed and approved by the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC). The UPRR site is located at 3675 Western Pacific Avenue, Sacramento, California. The evaluations are part of the ongoing investigations and remedial actions being conducted at the site, which has been designated as a state Superfund site. All activities being conducted by UPRR and its consultants, Dames & Moore, are being overseen by the DTSC.

BACKGROUND

The active yard portion of the UPRR site is primarily used as a switching yard, and UPRR's main north-south rail line and passing rail line are located along the western side of the active yard. Results of previous soil investigations conducted in the active yard indicate elevated (as compared to background concentrations) levels of arsenic and lead in near-surface soils.

To supplement previous investigations, a shallow-soil investigation in the active yard, an evaluation of the source and mobility of arsenic and lead, and an ambient air assessment were conducted. The following paragraphs present an overview and results of the studies. Detailed information on the studies and analytical results can be found in the Remedial Investigation Supplement, the Sources and Dissolution Kinetics of Arsenic and Lead Report, and the Ambient Air Assessment Report, available from the DTSC and located in the UPRR public information repositories.

ACTIVE YARD SHALLOW-SOIL INVESTIGATION

Forty-three surface soil and gravel samples were collected, and soil borings were completed and subsurface samples collected from twenty of the surface sample locations. In addition, because slag track ballast previously had been identified as a potential source of metals, visual mapping of the distribution of slag track ballast in the active yard was conducted. Surface soils were analyzed for arsenic, copper, lead, and zinc. Ten of the surface samples were also analyzed for additional metals as listed in the California Code of Regulations Title 22 list of 17 metals.

Results of the evaluations indicate elevated levels of arsenic,

copper, lead, and zinc in surface samples, with elevated levels limited to the upper 1 to 2 feet of surface materials. Organic compounds, primarily diesel fuel, were reported in soil samples from two general areas of the active yard. Analytical results for arsenic and lead are presented below. (See figure for sample locations and approximate surface slag distribution.)

SOURCES AND MOBILITY OF ARSENIC AND LEAD

A focused evaluation was conducted to assess potential sources and mobility of arsenic and lead. The evaluation concentrated on finer fraction slag material collected from the active and inactive portions of the site. Results of the chemical evaluations suggest that the solubility of arsenic and lead in the slag is relatively low, because the metals are bound tightly to the slag material. Analyses of soil samples underlying the slag support the findings of chemical evaluations that the metals in the slag are of low solubility and not very mobile (not very likely to leach out of the slag).

AMBIENT AIR ASSESSMENT

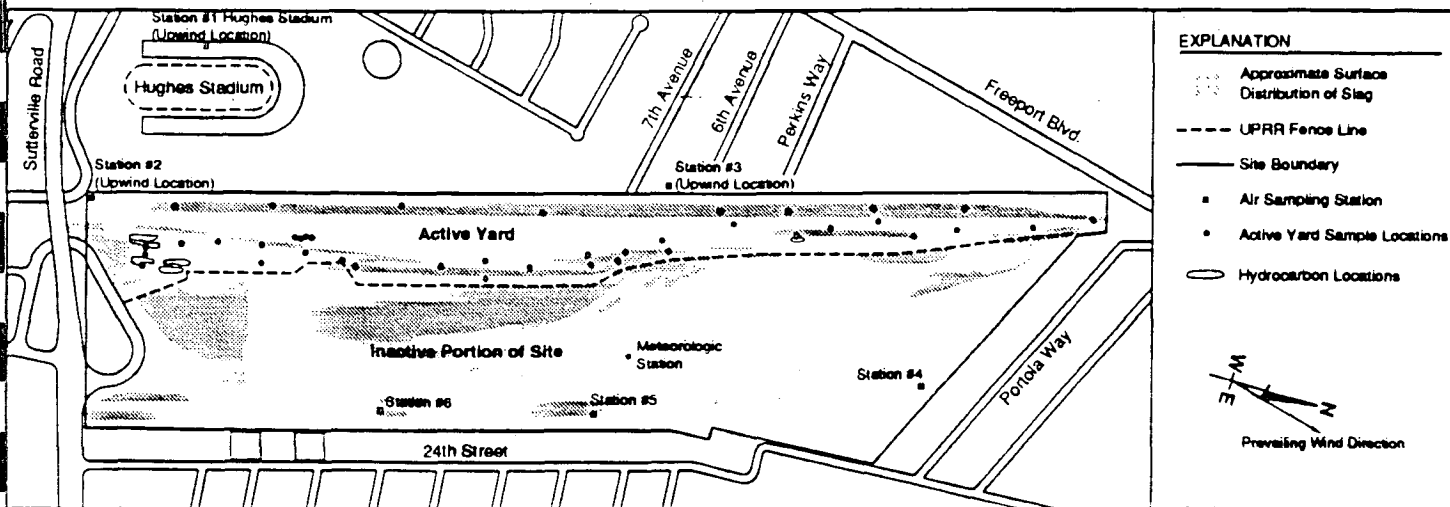
An air monitoring program was conducted to assess the levels of arsenic, lead, and asbestos in air at the site. Air samples were collected at six locations at the site (see figure) over a two week period between July and August 1992. Air samples were collected over 24-hour periods. Results of air monitoring for arsenic and lead are shown in the table below.

Comparison of the monitoring results with urban air quality data for Sacramento suggests no significant measurable impact on air quality from the site.

CONCLUSIONS

In summary, conclusions of the investigations are:

- The dominant source of arsenic, copper, lead, and zinc in shallow soils in the active yard appears to be slag track ballast;
- Elevated levels of arsenic, copper, lead, and zinc are present mainly in the upper 1-2 feet of surface materials at several locations within the active yard;
- Some petroleum hydrocarbons have been detected in two portions of the active yard;
- Environmental impacts from metals in the slag are likely to be minimal because the metals are bound tightly in the slag material;
- Air monitoring data suggests no measurable impact on air quality from the UPRR site.



ANALYTICAL RESULTS FOR ARSENIC AND LEAD					
ARSENIC	RANGE	AVERAGE	LEAD	RANGE	AVERAGE
Bulk surface soil and gravel samples	non-detectable to 1,240 mg/kg	118 mg/kg	Bulk surface soil and gravel samples	28.8 to 1,370 mg/kg	534 mg/kg
Fine-grained samples	19.3 to 3,120 mg/kg	416 mg/kg	Fine-grained samples	121 to 11,000 mg/kg	1,624 mg/kg
Coarse-grained samples	13.4 to 1,370 mg/kg	219 mg/kg	Coarse-grained samples	165 to 1,900 mg/kg	1,043 mg/kg
Subsurface soil concentrations	3.1 to 14.0 mg/kg	7 mg/kg	Subsurface soil concentrations	6.2 to 40.0 mg/kg	9.5 mg/kg

AIR MONITORING RESULTS FOR ARSENIC, LEAD, AND ASBESTOS					
UPWIND	RANGE	AVERAGE	DOWNWIND	RANGE	AVERAGE
Arsenic	ND to 1.3 ng/m ³	0.4 ng/m ³	Arsenic	ND to 0.8 ng/m ³	0.3 ng/m ³
Lead	1.6 to 20.2 ng/m ³	10.1 ng/m ³	Lead	5.0 to 16.3 ng/m ³	7.0 ng/m ³
UPWIND	RANGE	AVERAGE	DOWNWIND	RANGE	AVERAGE
Asbestos	ND to 0.0161 structures/cm ³	0.0011 structures/cm ³	Asbestos	ND to 0.0199 structures/cm ³	0.0017 structures/cm ³
CARB DATA					
	RANGE	AVERAGE		RANGE	AVERAGE
Arsenic	<0.4 to 3.2 ng/m ³	NA	Asbestos	ND to 0.0025 structures/cm ³	0.00134 structures/cm ³
Lead	20 to 70 ng/m ³	38			

FOR MORE INFORMATION

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Union Pacific Railroad Sacramento Shops Site

Summary of Active Yard Soil, Sources and Mobility of Arsenic and Lead, and Air Monitoring Results

INTRODUCTION

This fact sheet presents a summary of recent active yard shallow soil investigations, arsenic and lead sources and mobility evaluations, and air monitoring conducted at the UPRR Sacramento Yard site. The evaluations have been directed and approved by the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC). The UPRR site is located at 3675 Western Pacific Avenue, Sacramento, California. The evaluations are part of the ongoing investigations and remedial actions being conducted at the site, which has been designated as a state Superfund site. All activities being conducted by UPRR and its consultants, Dames & Moore, are being overseen by the DTSC.

BACKGROUND

The active yard portion of the UPRR site is primarily used as a switching yard, and UPRR's main north-south rail line and passing rail line are located along the western side of the active yard. Results of previous soil investigations conducted in the active yard indicate elevated (as compared to background concentrations) levels of arsenic and lead in near-surface soils.

To supplement previous investigations, a shallow-soil investigation in the active yard, an evaluation of the source and mobility of arsenic and lead, and an ambient air assessment were conducted. The following paragraphs present an overview and results of the studies. Detailed information on the studies and analytical results can be found in the Remedial Investigation Supplement, the Sources and Dissolution Kinetics of Arsenic and Lead Report, and the Ambient Air Assessment Report, available from the DTSC and located in the UPRR public information repositories.

ACTIVE YARD SHALLOW-SOIL INVESTIGATION

Forty-three surface soil and gravel samples were collected, and soil borings were completed and subsurface samples collected from twenty of the surface sample locations. In addition, because slag track ballast previously had been identified as a potential source of metals, visual mapping of the distribution of slag track ballast in the active yard was conducted. Surface soils were analyzed for arsenic, copper, lead, and zinc. Ten of the surface samples were also analyzed for additional metals as listed in the California Code of Regulations Title 22 list of 17 metals.

Results of the evaluations indicate elevated levels of arsenic,

copper, lead, and zinc in surface samples, with elevated levels limited to the upper 1 to 2 feet of surface materials. Organic compounds, primarily diesel fuel, were reported in soil samples from two general areas of the active yard. Analytical results for arsenic and lead are presented below. (See figure for sample locations and approximate surface slag distribution.)

SOURCES AND MOBILITY OF ARSENIC AND LEAD

A focused evaluation was conducted to assess potential sources and mobility of arsenic and lead. The evaluation concentrated on finer fraction slag material collected from the active and inactive portions of the site. Results of the chemical evaluations suggest that the solubility of arsenic and lead in the slag is relatively low, because the metals are bound tightly to the slag material. Analyses of soil samples underlying the slag support the findings of chemical evaluations that the metals in the slag are of low solubility and not very mobile (not very likely to leach out of the slag).

AMBIENT AIR ASSESSMENT

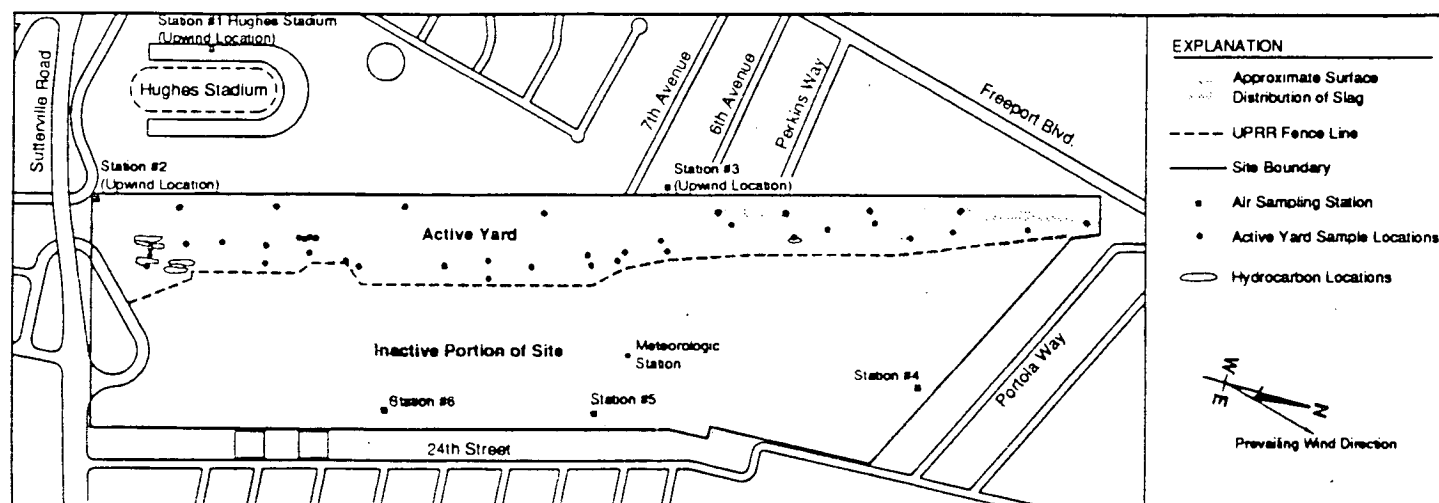
An air monitoring program was conducted to assess the levels of arsenic, lead, and asbestos in air at the site. Air samples were collected at six locations at the site (see figure) over a two week period between July and August 1992. Air samples were collected over 24-hour periods. Results of air monitoring for arsenic and lead are shown in the table below.

Comparison of the monitoring results with urban air quality data for Sacramento suggests no significant measurable impact on air quality from the site.

CONCLUSIONS

In summary, conclusions of the investigations are:

- The dominant source of arsenic, copper, lead, and zinc in shallow soils in the active yard appears to be slag track ballast;
- Elevated levels of arsenic, copper, lead, and zinc are present mainly in the upper 1-2 feet of surface materials at several locations within the active yard;
- Some petroleum hydrocarbons have been detected in two portions of the active yard;
- Environmental impacts from metals in the slag are likely to be minimal because the metals are bound tightly in the slag material;
- Air monitoring data suggests no measurable impact on air quality from the UPRR site.



ANALYTICAL RESULTS FOR ARSENIC AND LEAD					
ARSENIC	RANGE	AVERAGE	LEAD	RANGE	AVERAGE
Bulk surface soil and gravel samples	non-detectable to 1,240 mg/kg	118 mg/kg	Bulk surface soil and gravel samples	28.8 to 1,370 mg/kg	534 mg/kg
Fine-grained samples	19.3 to 3,120 mg/kg	416 mg/kg	Fine-grained samples	121 to 11,000 mg/kg	1,624 mg/kg
Coarse-grained samples	13.4 to 1,370 mg/kg	219 mg/kg	Coarse-grained samples	165 to 1,900 mg/kg	1,043 mg/kg
Subsurface soil concentrations	3.1 to 14.0 mg/kg	7 mg/kg	Subsurface soil concentrations	6.2 to 40.0 mg/kg	9.5 mg/kg
AIR MONITORING RESULTS FOR ARSENIC, LEAD, AND ASBESTOS					
UPWIND	RANGE	AVERAGE	DOWNWIND	RANGE	AVERAGE
Arsenic	ND to 1.3 ng/m ³	0.4 ng/m ³	Arsenic	ND to 0.8 ng/m ³	0.3 ng/m ³
Lead	1.6 to 20.2 ng/m ³	10.1 ng/m ³	Lead	5.0 to 16.3 ng/m ³	7.0 ng/m ³
UPWIND	RANGE	AVERAGE	DOWNWIND	RANGE	AVERAGE
Asbestos	ND to 0.0161 structures/cm ³	0.0011 structures/cm ³	Asbestos	ND to 0.0199 structures/cm ³	0.0017 structures/cm ³
CARB DATA					
	RANGE	AVERAGE		RANGE	AVERAGE
Arsenic	<0.4 to 3.2 ng/m ³	NA	Asbestos	ND to 0.0025 structures/cm ³	0.00134 structures/cm ³
Lead	20 to 70 ng/m ³	38			

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Union Pacific Railroad Sacramento Shops Site

Slag Removal Interim Remedial Measure

INTRODUCTION

The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) recommended Union Pacific Railroad (UPRR) to remove slag from the inactive portion of the UPRR Sacramento Shops site, and that removal of slag should be addressed in the Remedial Action Plan (RAP). The directive was provided to UPRR by the DTSC in their comments on the Draft Remedial Action Plan in March 1992. UPRR and the DTSC met on September 1, 1992, to discuss UPRR's proposal to remove slag from the inactive portion of the site as an interim remedial measure (IRM) in November 1992. The Work Plan for the slag removal was transmitted to the DTSC by UPRR on October 13, 1992. Although the slag removal initially scheduled for November 1992 has been postponed, this fact sheet presents a brief overview of the slag removal and disposal plans submitted to the DTSC. The community will be notified as the plans and fieldwork schedule are finalized.

The UPRR Sacramento Shops site, located at 3675 Western Pacific Avenue, is a former railroad maintenance yard and a State Superfund site. A Remedial Investigation/Feasibility Study (RI/FS) to assess the nature and extent of contamination and the appropriate corrective action for the site has been completed. A draft Remedial Action Plan (RAP), a proposed cleanup plan for the site, was submitted to the DTSC in November 1991. A revised draft RAP was expected to be submitted to the DTSC in November 1992; however, an extension of the schedule has been requested.

BACKGROUND

"Slag" is the leftover material separated from metals during the smelting process. The presence of slag in the inactive portion of the site is from use of slag for rail yard cover material and railroad track ballast or filling, beneath the tracks. Areas of slag are shown in the figure below.

Investigations conducted at the site have confirmed that the material is the dominant source of metals at the site. The slag contains arsenic, lead, copper, and zinc. Although the physical and chemical characteristics of the slag indicate that the potential for environmental impacts from the slag is low, UPRR, at the recommendation of the DTSC and in response to community concerns, agreed to remove the slag from the inactive portion of the site as an interim measure, provided the slag could be recycled.

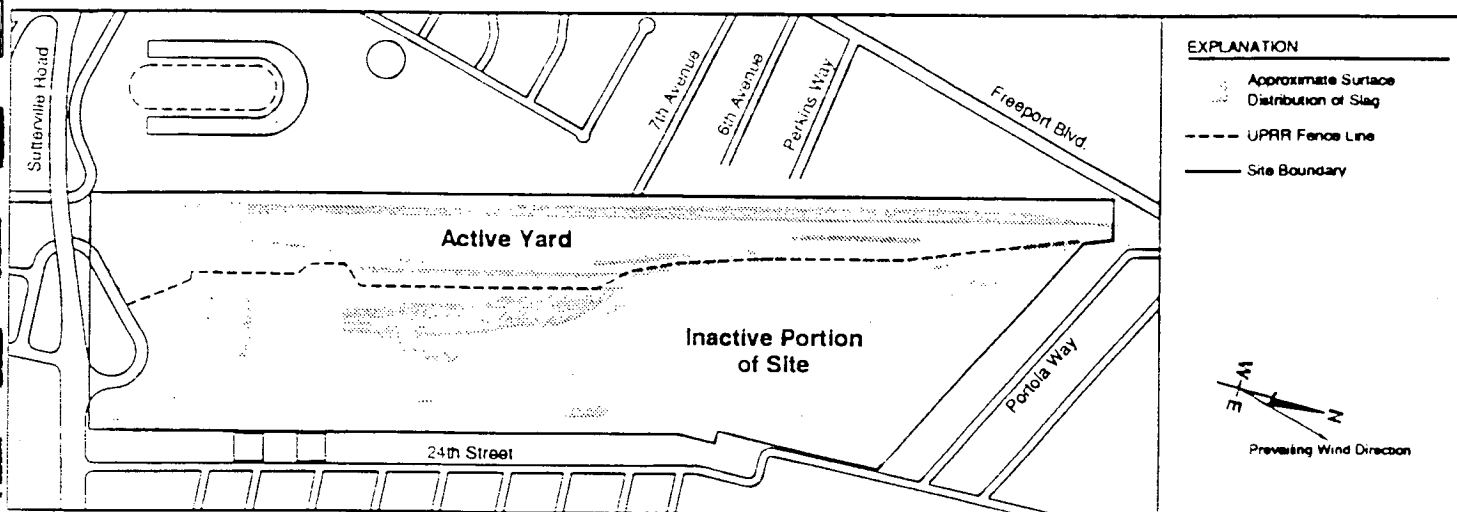
SLAG REMOVAL AND RECYCLING

Plans for slag removal include recycling and reuse. Excavated material from the site will be stockpiled and loaded into railcars by front-end loaders. The slag will be shipped off site to Utah via railcar where it will be recycled and utilized as a landfill liner protective layer at a private landfill facility. In this innovative manner, the slag will provide a useful service rather than be disposed of as a waste. Air monitoring will be conducted at the site during slag removal activities, and in order to minimize dust emissions during removal activities, dust control procedures will be implemented.

Sampling will be conducted subsequent to slag removal activities. New data will be used in combination with existing data to evaluate residual concentrations of lead and arsenic. Pending the results of the evaluation, additional excavation and removal may be necessary.

FIELDWORK SCHEDULE

The fieldwork schedule for the slag removal has not yet been set; however, work is anticipated to require approximately 30 days to complete. A fact sheet on detailed plans for the slag removal will be distributed to the community as plans are finalized.



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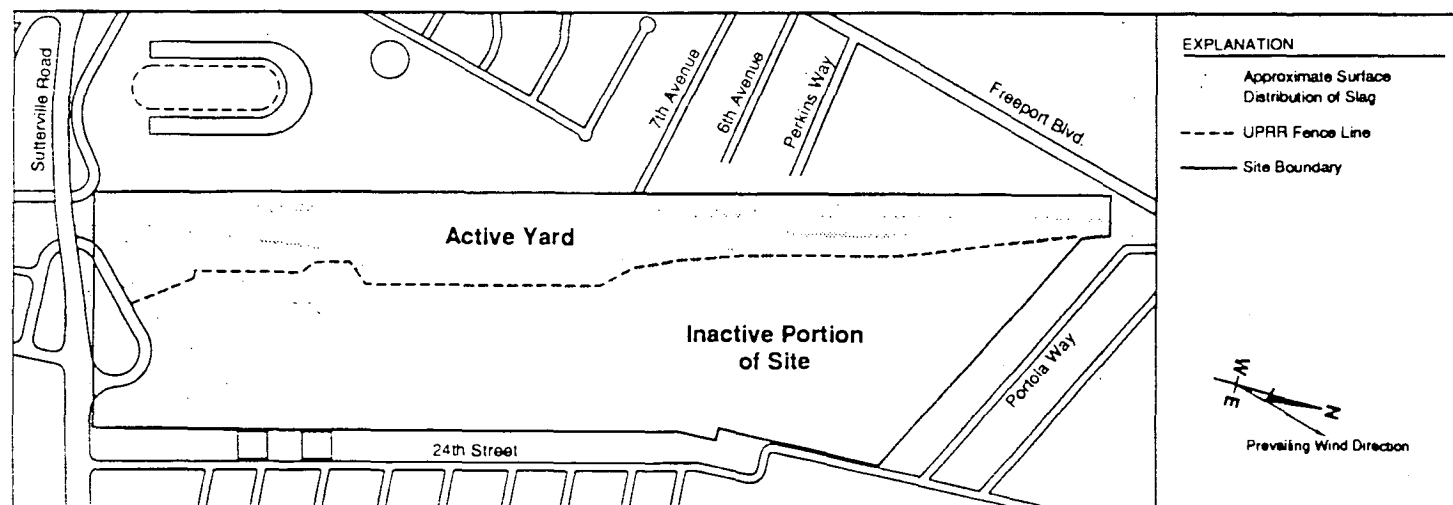
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Union Pacific Railroad Sacramento Shops Site

On-Site Groundwater Interim Remedial Measure

INTRODUCTION

This fact sheet presents information about Union Pacific Railroad Company's (UPRR) plans to implement an on-site groundwater interim remedial measure (IRM) at the UPRR Sacramento Yard site. The groundwater IRM is in response to a directive to UPRR by the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) to address impacts to groundwater until a full-scale remedial system is designed and installed. The UPRR site is located at 3675 Western Pacific Avenue, Sacramento, California. The groundwater IRM is part of the ongoing investigations and remedial actions being conducted at the site, which has been designated as a state Superfund site. All activities being conducted by UPRR and its consultant, Dames & Moore, are being overseen by the DTSC.

BACKGROUND

Extensive groundwater investigations conducted at or near the site since 1988 have determined that groundwater has been impacted by activities conducted during the years the site was in use as a railroad maintenance yard. The extent of groundwater impacts have been evaluated by the installation of 42 groundwater monitoring wells, 100 cone penetration test/Hydropunch™ sampling locations, and quarterly sampling of groundwater monitoring wells. Analytical results have indicated that groundwater has been impacted by volatile organic compounds, and impacts to the groundwater have been detected approximately 3,000 feet off-site.

ON-SITE GROUNDWATER INTERIM REMEDIAL MEASURE

The proposed groundwater IRM addresses the collection and treatment of impacted shallow on-site groundwater, until a full-scale groundwater remedial system is designed and installed. The purpose of the groundwater IRM is to limit off-site migration of impacted groundwater in the shallow aquifer, decrease impacts in the overall plume, and provide

data on the effects of long-term pumping of the shallow aquifer. Data collected during the groundwater IRM will be used to develop the final groundwater cleanup action.

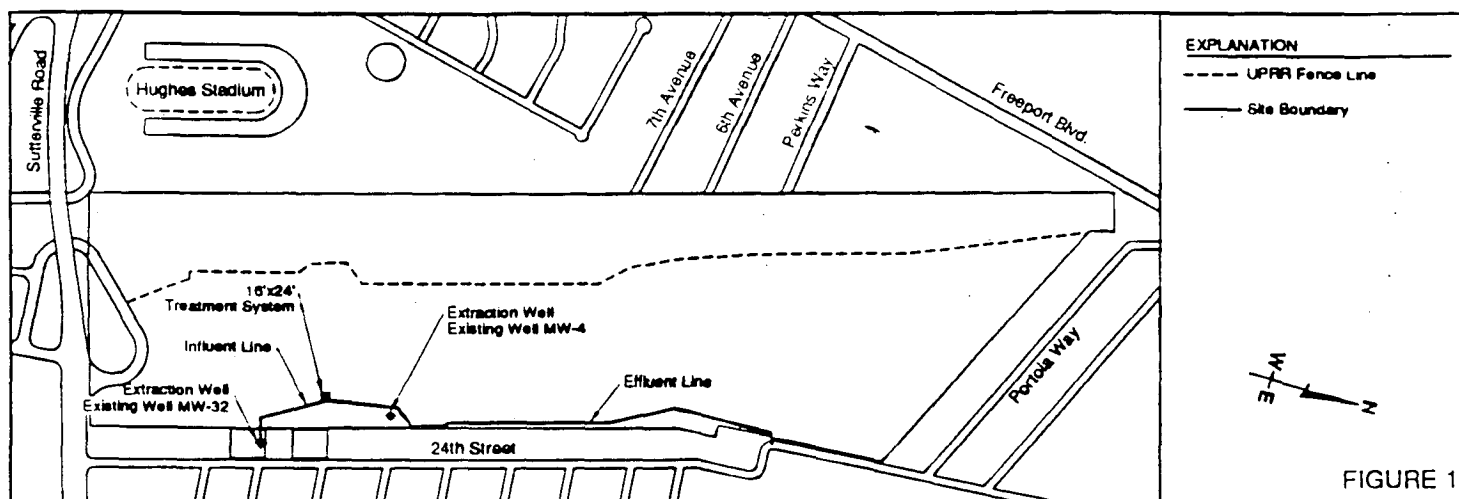
The groundwater remedial system will consist of extracting groundwater from two existing groundwater monitoring wells, treating the water by air stripping, and discharging the treated water to the sewer (see Figure 1). During the air stripping process, volatile organic compounds are removed or "stripped" from the extracted groundwater by pumping air through the water in a closed system. Volatile organic compounds removed from the water during the air stripping process are then removed from the air by vapor phase carbon filters before the air is discharged to the atmosphere.

A risk assessment on the air discharge from the treatment system will be performed by the local air district (Sacramento Metropolitan Air Quality Management District) before the system is allowed to operate to assure there is no increased risk of exposure to surrounding residences. The risk assessment will be performed as part of the treatment system air permit application process.

The treated effluent water (water discharged to the sewer) will be monitored on a regular basis, and water quality will be evaluated against discharge criteria required by the Sacramento County Regional Sanitation District and the City of Sacramento. Monitoring results will be reported to the DTSC one month after system start-up.

FIELDWORK SCHEDULE

Fieldwork for the installation of the groundwater pump-and-treat system is tentatively scheduled to begin the second week in January, and is anticipated to take two weeks. Field activities will include setting up the groundwater treatment system, installation of pumps and associated piping and wiring in the two extraction wells, and trenching and subsurface piping installation for the influent and effluent water lines along the eastern border of the site.



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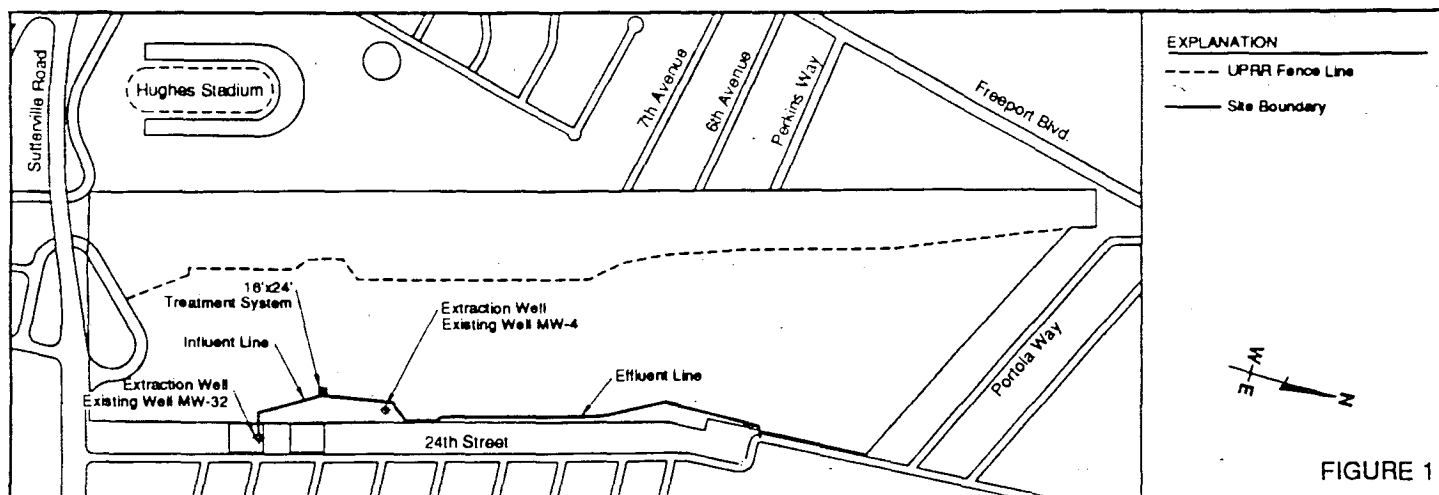
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