
SEPT, 1992 ✓

REMEDIAL INVESTIGATION SUPPLEMENT
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

 **DAMES & MOORE**

SEPTEMBER 1992
PROJECT NO. 00173-072-044



DAMES & MOORE

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September 25, 1992

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Attention: Mr. James L. Tjosvold, P.E., Chief
Sacramento Responsible Party Unit
Site Mitigation Program

Re: Transmittal
Remedial Investigation Supplement
Union Pacific Railroad Yard
Sacramento, California
Project No. 00173-072-044

Dear Mr. Tjosvold:

Union Pacific Railroad Company (UPRR) has requested that Dames & Moore transmit the above-referenced Report. Presented in the Report is a summary of the shallow soil investigations conducted in the active portion of the site. Also presented in the Report is a summary of the arsenic and lead sources and mobility evaluation, and the ambient air assessment conducted at the site.

If you have any questions or require further clarification, please contact Tim Parker at (916) 387-7527.

Sincerely,

DAMES & MOORE

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Enclosure
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REMEDIAL INVESTIGATION SUPPLEMENT
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1.0 <u>INTRODUCTION</u>	1
2.0 <u>SITE BACKGROUND</u>	2
2.1 <u>SITE LOCATION AND DESCRIPTION — ACTIVE YARD</u>	2
2.2 <u>HISTORICAL INFORMATION — ACTIVE YARD</u>	2
2.3 <u>PREVIOUS REMEDIAL INVESTIGATIONS AND RESULTS</u>	3
2.3.1 <u>Active Yard - Previous Remedial Investigations and Results</u>	3
3.0 <u>SCOPE OF INVESTIGATIONS</u>	5
3.1 <u>SHALLOW-SOIL INVESTIGATION — ACTIVE YARD</u>	5
3.2 <u>SOURCES AND MOBILITY OF ARSENIC AND LEAD</u>	6
3.3 <u>AMBIENT AIR ASSESSMENT</u>	7
4.0 <u>SITE CHARACTERISTICS — ACTIVE YARD</u>	8
4.1 <u>SURFACE FEATURES</u>	8
4.2 <u>STRATIGRAPHY</u>	9
5.0 <u>NATURE AND EXTENT OF CONTAMINANTS IN SOILS — ACTIVE YARD</u>	10
5.1 <u>METALS</u>	10
5.1.1 <u>Arsenic</u>	10
5.1.2 <u>Lead</u>	10
5.1.3 <u>Other Metals</u>	10
5.1.4 <u>Arsenic and Lead Sources and Mobility</u>	11
5.2 <u>ORGANIC COMPOUNDS</u>	12
5.3 <u>ASBESTOS</u>	13
6.0 <u>NATURE AND EXTENT OF CONTAMINANTS IN AIR</u>	14
6.1 <u>METEOROLOGICAL CONDITIONS</u>	14
6.2 <u>TOTAL SUSPENDED PARTICULATE (TSP) MASS</u>	14
6.3 <u>ARSENIC AND LEAD</u>	14
6.4 <u>ASBESTOS</u>	14
7.0 <u>SUMMARY AND CONCLUSIONS</u>	16
7.1 <u>SUMMARY</u>	16
7.1.1 <u>Geology</u>	16
7.1.2 <u>Nature and Extent of Soils Contamination</u>	16
7.1.3 <u>Nature and Extent of Air Contamination</u>	17
7.2 <u>CONCLUSIONS</u>	17
8.0 <u>REFERENCES</u>	18

REMEDIAL INVESTIGATION SUPPLEMENT (Continued)
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
APPENDIX A	
A.1 SURFACE SOIL SAMPLING	A-1
A.1.1 Sampling Procedures	A-1
A.1.2 Grain Size Analysis Procedures	A-1
A.1.3 Laboratory Analyses	A-2
A.2 SOIL BORINGS	A-3
A.2.1 Drilling and Sampling Procedures	A-3
A.3 ANALYTICAL PROCEDURES	A-4

LIST OF TABLES, FIGURES AND APPENDICES

LIST OF TABLES

TABLE 1 -	SURFACE SAMPLE SUMMARY ANALYTICAL RESULTS - SELECT METALS
TABLE 2 -	SURFACE SAMPLE SUMMARY ANALYTICAL RESULTS CONCENTRATION RANGES AND AVERAGES - SELECT METALS
TABLE 3 -	SURFACE SAMPLE SUMMARY ANALYTICAL RESULTS - GRAIN SIZE DISTRIBUTION
TABLE 4 -	SUBSURFACE SOIL SAMPLE SUMMARY ANALYTICAL RESULTS - SELECT METALS
TABLE 5 -	SUBSURFACE SOIL SAMPLE SUMMARY ANALYTICAL RESULTS - ORGANIC COMPOUNDS
TABLE 6 -	AMBIENT AIR MONITORING RESULTS
TABLE 7 -	SUMMARY AMBIENT AIR MONITORING RESULTS

LIST OF FIGURES

FIGURE 1 -	SITE VICINITY MAP
FIGURE 2 -	AERIAL PHOTOGRAPH 1937
FIGURE 3 -	AERIAL PHOTOGRAPH 1953
FIGURE 4 -	AERIAL PHOTOGRAPH 1961
FIGURE 5 -	AERIAL PHOTOGRAPH 1972
FIGURE 6 -	AERIAL PHOTOGRAPH 1976
FIGURE 7 -	COMPOSITE MAP OF FACILITY
FIGURE 8 -	SLAG DISTRIBUTION MAP
FIGURE 9 -	AIR MONITORING STATION LOCATIONS
FIGURE 10 -	SURFACE SAMPLE SUMMARY ANALYTICAL RESULTS - SELECT METALS
FIGURE 11 -	ANALYTICAL RESULTS - PETROLEUM HYDROCARBONS

LIST OF APPENDICES

APPENDIX A -	FIELD METHODS - SHALLOW SOIL INVESTIGATION - ACTIVE SITE PORTION
APPENDIX B -	BORING LOGS
APPENDIX C -	SOIL ANALYTICAL RESULTS - TABLES
APPENDIX D -	LABORATORY ANALYTICAL REPORTS

LIST OF TABLES — APPENDICES

TABLE A-1	SAMPLE ANALYSES SUMMARY SURFACE SOIL SAMPLES
TABLE A-2	SAMPLE ANALYSIS SUMMARY - SHALLOW SOIL BORING SAMPLES
TABLE C-1	SURFACE SAMPLE SOIL ANALYTICAL RESULTS - Metals
TABLE C-2	BELOW GROUND SURFACE SAMPLE SOIL ANALYTICAL RESULTS - Select Metals
TABLE C-3	SOIL ANALYTICAL RESULTS - Purgeable Aromatics
TABLE C-4	SOIL ANALYTICAL RESULTS - Chlorinated Volatile Organic Compounds
TABLE C-5	SOIL ANALYTICAL RESULTS - Diesel Range Total Petroleum Hydrocarbons

TABLE C-6 SOIL ANALYTICAL RESULTS - Asbestos
TABLE D-1 ANALYTICAL LABORATORY REPORT SAMPLE CROSS REFERENCE

REMEDIAL INVESTIGATION SUPPLEMENT
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

1.0 INTRODUCTION

Dames & Moore is pleased to present this Remedial Investigation (RI) Supplement for the Union Pacific Railroad (UPRR) Yard, Sacramento, California (the site). Presented in this report are a summary of sampling activities and results of the shallow soil investigation completed in the Active Site Portion (active yard) of the site in December 1991. Also presented in this report is a summary of the focused arsenic and lead sources and mobility evaluation, and the ambient air monitoring assessment conducted at the site in June 1992. Results of previous investigations of the site are provided in the Remedial Investigation/Feasibility Study (RI/FS) Report (Dames & Moore, 1991b) and the Addendum RI/FS Report (Dames & Moore, 1991d).

The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) directed UPRR to conduct the investigations at the site. The shallow soil investigation was conducted in accordance with the DTSC-approved Shallow Soil Investigation - Active Portion of the UPRR Yard Work Plan (Dames & Moore, 1991c). The arsenic and lead sources and mobility evaluation was outlined to the DTSC in Dames & Moore's letter of May 11, 1992. The air monitoring was conducted in accordance with the DTSC-approved Ambient Air Assessment Quality Assurance Project Plan (AeroVironment, Inc., 1992a).

Presented in Section 2.0 is site background information, including location, site description, historical information on the active yard, and a summary of previous remedial investigations and results. Section 3.0 provides a description of the scope of the active yard shallow-soil investigation, the arsenic and lead sources and mobility evaluation, and the ambient air assessment. Presented in Section 4.0 is a summary of the surface features and stratigraphy of the active yard. Section 5.0 provides a summary of the results of the active yard shallow-soil investigation. Results of the ambient air assessment are presented in Section 6.0. A summary and conclusions of the above-referenced evaluations are provided in Section 7.0.

2.0 SITE BACKGROUND

Presented in this section is information to supplement the background data regarding the site with new data on the active yard. Additionally, a summary of previous active yard remedial investigations and results is provided.

2.1 SITE LOCATION AND DESCRIPTION — ACTIVE YARD

The active yard is located in south Sacramento in Section 13 of Township 8 North, Range 4 East and in Section 18 of Township 8 North, Range 5 East, Mt. Diablo Base Meridian (Figure 1). The active yard encompasses an area of approximately 31 acres.

The active yard is bounded by Sacramento City College, commercial property and residential property to the west, residential property to the north, commercial property to the south and the inactive yard to the east. The closest roads to the site include Freeport Boulevard about one-fourth mile west, Portola Way approximately 30 yards north and Sutterville Road along the southern site boundary.

The active yard is currently used primarily as a switching yard. Nine spur rail lines used for assembling and disassembling trains are located along the eastern side of the active yard. Yard activities are coordinated out of the yard office located in the southern active yard portion. Additionally, UPRR's main north-south rail line and passing rail line are located along the western side of the active yard.

2.2 HISTORICAL INFORMATION — ACTIVE YARD

A review of aerial photographs for the years 1937, 1953, 1961, 1968, 1972, 1976, 1981 and 1986 was conducted to evaluate historical changes to the active yard. Aerial photographs for the years 1937, 1953, 1961, 1972, and 1976 are provided as Figures 2 through 6. A composite map of historical site facilities is presented in Figure 7.

In the 1937 photograph, three buildings are present in the active yard (Figure 2). These buildings appear to be the car repair shed, the planing mill, and an elongate building located where the yard office is currently located. The elongate building is believed to have been a wood storage building, based on historical diagrams and interviews of railroad employees. The rest of the active yard is comprised of the main rail line, railroad siding tracks and an open field in the northeastern section.

The 1953 aerial photograph (Figure 3) contains the same buildings as the 1937 photo. One building has been added in a lot located on the western side of the active yard. Historical maps indicate

this structure served as the yard office. Several additional railroad sidings have been added. Railroad siding tracks have replaced a portion of the open field in the northeastern portion of the site.

The 1961 aerial photograph (Figure 4) shows very little change. Some additional railroad siding tracks have been added in the north eastern area of the active yard.

The 1972 aerial photograph (Figure 5) reveals the absence of the car repair shed building, the planing mill building and the elongate building. The photo also shows patches of darker surface material along the track areas. These patches of darker surface material appear in the extreme southern portion of the site as well as the northwestern portion of the site.

The 1976 aerial photograph (Figure 6) shows much of the ground surface in the active yard has been resurfaced with a darker material. The yard office building located in the lot along the western site boundary has been removed. The current yard office building located at the southern end of the site has been added. The 1981 and 1986 aerial photographs show no significant changes from the 1976 aerial photograph.

2.3 PREVIOUS REMEDIAL INVESTIGATIONS AND RESULTS

Remedial investigations have previously been conducted in the active portion of the site. Presented below is a summary of those investigations.

2.3.1 Active Yard - Previous Remedial Investigations and Results

A limited soil evaluation was performed previously in the active yard. The soil investigation of the active yard included:

- Excavation of 10 test pits; and
- Advancement of four shallow hand auger borings.

Results of previous soil investigations of the active yard are provided in detail in the RI/FS Report (Dames & Moore, 1991b). A brief summary of these results is provided below.

Elevated levels of arsenic and lead relative to background concentrations were detected in near surface soil samples collected at four of eight locations within the active yard. Concentrations of arsenic ranged from 7.8 to 108 mg/kg and concentrations of lead ranged from 7.6 to 696 mg/kg.

Minimal analysis for organic compounds was conducted on samples collected from the active yard. No detectable levels of petroleum hydrocarbons were reported. One chlorinated VOC compound, trichloroethene, was detected in soils from one of the shallow hand auger borings. One semi-volatile compound, bis(2-ethylhexyl)phthalate, was detected in soils from another of the shallow hand auger borings.

3.0 SCOPE OF INVESTIGATIONS

Presented in this section is a summary of investigations conducted at the site to supplement previous remedial investigations. These investigations include a shallow-soil investigation in the active yard (Section 3.1), an evaluation of the source and mobility of arsenic and lead (Section 3.2), and an ambient air assessment (Section 3.3).

3.1 SHALLOW-SOIL INVESTIGATION — ACTIVE YARD

A shallow-soil investigation was conducted to further evaluate the extent of arsenic, copper, lead, zinc and hydrocarbons in soil in the active yard. The shallow-soil investigation was conducted in accordance with the DTSC-approved Work Plan (Dames & Moore, 1991c). Soil Sampling locations are provided in Figure 8.

The scope of the shallow-soil investigation included:

- Collection of forty-three surface soil/gravel samples (plus five replicate samples);
- Completion of soil borings at twenty of the surface sample locations; and
- Because slag track ballast had been identified as a potential source of metals, visual mapping of the distribution of slag track ballast in the active yard.

Surface soil samples were analyzed as follows:

- A bulk surface soil sample containing the full grain size distribution was segregated from each sample for physical description and chemical analysis;
- Surface soil samples were sieved to partition soil grains by size;
- Bulk samples from each surface sample location were analyzed for arsenic, copper, lead and zinc;
- The fine grain size fraction (less than 0.074 mm) from each surface sample location was analyzed for arsenic, copper, lead and zinc. In addition, ten samples (and one replicate sample) were analyzed for the remaining California Code of Regulations (CCR) Title 22 list of metals; and
- The coarser grain size fraction (4.76 to 0.074 mm) from ten surface samples (and one replicate sample) were analyzed for CCR Title 22 metals.

Soil borings were completed a minimum of 5 feet into native soils at twenty of the surface soil sample locations (ATB-1 through ATB-20). Continuous soil sampling was conducted using a combination

of a split barrel coring system and a drive sampler. Drive samples were collected in native soils at each sample location for chemical analysis. Samples were analyzed as follows:

- One drive sample taken in native soils from each location was analyzed for arsenic, copper, lead and zinc;
- One sample from each soil boring was analyzed for chlorinated VOCs;
- Select samples were analyzed for diesel range total petroleum hydrocarbons (TPH-diesel); and
- One sample containing a fibrous appearing material was analyzed for asbestos.

The distribution of slag track ballast was visually mapped in the field using the 1990 aerial photograph (see Figure 8). Slag units were segregated into map units based on percent of slag present. Dominant grain size was also noted for each slag unit.

3.2 SOURCES AND MOBILITY OF ARSENIC AND LEAD

A focused evaluation was conducted to assess potential sources and mobility of arsenic and lead in selected samples collected from the site. This evaluation included an assessment of the species and dissolution kinetics of arsenic and lead. The focused evaluation concentrated on finer fraction (less than 250 microns) slag material collected from the active and inactive portions of the site. A detailed discussion of the evaluation and results is provided in the Sources, Speciation, and Dissolution Kinetics of Arsenic and Lead Report (Walsh & Associates, Inc., 1992).

Microscopic and chemical analytical techniques were utilized to conduct the focused arsenic and lead evaluation. Microanalytical techniques included X-ray diffraction (XRD) to evaluate mineralogy, scanning electron microscopy (SEM) and electron microprobe analysis (EMPA) to evaluate micromorphology, microchemistry, sourcing, weathering, and chemical metal distribution. X-ray photoelectron spectroscopy (XPS) and surface analysis by laser ionization (SALI) were utilized to evaluate metal distribution and form on particle surfaces.

Chemical analysis was completed by X-ray fluorescence (XRF) to assess total metal concentrations. Sequential chemical extractions, using a series of four successively more aggressive reagents to remove species of interest, were completed to assess the major phase associations of arsenic and lead. Additionally, dissolution rates of arsenic and lead were evaluated on selected samples in a series of buffered solutions ranging in pH from 1.0 to 7.6.

3.3 AMBIENT AIR ASSESSMENT

An air monitoring program was conducted to assess ambient levels of arsenic, lead, and asbestos in air at the site. Air samples were collected at six locations at the site (Figure 9) over 14 consecutive days between July 21, 1992, and August 4, 1992. Meteorological data was collected commencing the beginning of July 1992 through the end of the ambient air sampling program.

Air sampling station locations were based on the prevailing wind direction at the site. Three of the stations were located at generally upwind (Stations 1, 2, and 3, Figure 9), and three of the stations were located at generally downwind locations (Stations 4, 5, and 6, Figure 9). Additionally, as a quality assurance/quality control (QA/QC) measure, Station 4 consisted of two collocated air samplers.

Low volume air samplers (lovols) with wind decelerator total suspended particulate (TSP) inlets were used to collect particulate matter. Each lovol had two infiltration channels:

- One used for TSP and metal (arsenic and lead) particulate sample collection; and
- One used for asbestos sample collection.

Air samples were collected over 24-hour periods. The TSP and metal sample stream drew ambient air through a pre-weighed 47-mm ringed Teflon filter at 16.7 liters per minute (lpm). The asbestos sample stream drew air through a 25-mm cellulose ester filter at 1 lpm.

The Teflon filters were analyzed for arsenic and lead by XRF. The cellulose ester filters were analyzed for asbestos by transmission electron microscopy (TEM).

4.0 SITE CHARACTERISTICS — ACTIVE YARD

A discussion of demography, surrounding area land use, climatology, topography and geology is provided in the RI/FS Report (Dames & Moore, 1991b). Surface features and stratigraphy of the active yard are discussed below.

4.1 SURFACE FEATURES

In general, the topography in the active yard is flat lying and slopes gently to the north. The only pronounced topographic feature is a six foot escarpment that borders the western side of the main line track in the northern portion of the site. This escarpment was developed when the track bed was raised above grade.

The southeastern portion of the active yard contains the yard office, which is occupied daily by UPRR Sacramento staff. The surface cover material in the southeastern portion of the active yard consists mainly of asphalt, concrete and soil.

The dominant surface cover material in the active yard consists of railroad track ballast. Three distinct types of ballast are present in the active yard. These are:

- A light grey well-rounded rock;
- A dark grey angular rock; and
- A reddish brown subangular slag material.

Areas in the northeastern portion and along the portions of the eastern boundary of the active yard are generally covered with gray rounded gravel. These gravel are predominantly greater than one inch diameter. The well rounded nature of the gravel suggest there are of river origin.

Areas along most of the switching yard tracks are covered with dark greyish-green angular rock track ballast. This material was recently applied during track maintenance operations. The source of the new track ballast was the Green Rock Quarry in Oroville, California.

The western portion of the active yard is largely covered by varying proportions of slag material, with the exception of the northwest corner of the active yard. Additionally, linear areas along the eastern side of the track spurs in the active yard are covered with slag track ballast. Recent reballasting of track in the switching yard portion of the active yard has covered portions of the slag ballast previously

exposed at the surface. The surface distribution of slag track ballast and areas of reballasting is shown in Figure 8.

Two dominant slag grain sizes are present:

- A coarser fraction consisting of gravel greater than one inch in diameter commonly occurs in locations of previous or current track beds; and
- A finer grain fraction consisting of grains less than three-quarter inches in diameter is commonly found in strips adjacent to both existing and former railroad tracks.

4.2 STRATIGRAPHY

Soil borings were used to evaluate the shallow stratigraphy in the active yard. Boring logs are provided in Appendix B.

In general, shallow soils of the active yard are comprised of track ballast and heterogeneous fill materials underlain by native soils. Track ballast occurs dominantly in the upper 1 to 2 feet of surface materials. Slag containing track ballast appears to occur dominantly in the upper 2 inches to 1 foot of surface materials. Fill materials underlying ballast consist primarily of a mixture of sands, gravels, and disturbed native soils. Fill materials extend to a depth of approximately 2 to 5 feet below ground surface, except in the northern portion of the active yard where fill material deepens to approximately 6 to 11 feet below ground surface (ATB-11, ATB-12 and ATB-13).

Beneath the fill layer, native soils consisting of sandy silts, clayey silts and silty clays were encountered. Groundwater was observed at a depth of 26 feet below ground surface at one boring location completed to groundwater (ATB-11).

5.0 NATURE AND EXTENT OF CONTAMINANTS IN SOILS — ACTIVE YARD

Provided in the following text is a discussion on the nature and extent of metals and organic compounds in soils within the active yard. Summary analytical results are provided in Tables 1 through 5. Comprehensive analytical results are tabulated in Appendix C. Soil sample locations and analytical results are provided in Figures 9 and 10. Copies of analytical laboratory reports are provided in Appendix D.

5.1 METALS

5.1.1 Arsenic

The arsenic concentrations reported in bulk surface soil and gravel samples range from non-detect to 1,240 mg/kg, with an average concentration of 118 mg/kg. The arsenic concentrations reported in the fine grained fraction (less than 0.074 mm) surface samples range from 19.3 to 3,120 mg/kg, with an average concentration of 416 mg/kg. The arsenic concentrations reported in the coarse grain fraction (4.76 to 0.074 mm) range from 13.4 to 1,370 mg/kg, with an average concentration of 219 mg/kg.

The arsenic concentrations reported in the subsurface soil samples generally range from 3.1 to 14.0 mg/kg, with an average of approximately 7 mg/kg. One exception was noted at the location of ATB-17, where arsenic was detected at 545 mg/kg in the soil sample collected from 2 feet below ground surface. This anomalous concentration may be the result of a particle of slag in the soil sample analyzed.

5.1.2 Lead

The lead concentrations reported in bulk surface soil and gravel samples range from 28.8 to 1,370 mg/kg, with an average concentration of 534 mg/kg. The lead concentrations reported in the fine grained fraction (less than 0.074 mm) surface samples range from 121 to 11,100 mg/kg, with an average concentration of 1,624 mg/kg. The lead concentration reported in the coarse grain fraction (4.76 to 0.074 mm) surface samples range from 165 to 1,900 mg/kg, with an average concentration of 1,043 mg/kg.

The lead concentrations reported in the subsurface soil samples range from 6.2 to 40.0 mg/kg, and average approximately 9.5 mg/kg.

5.1.3 Other Metals

Elevated levels of copper, zinc, barium, and molybdenum were also detected in most surface soil and gravel samples analyzed. The reported concentrations of copper range from 30.7 to 26,000 mg/kg,

with an average concentration of 1,141 mg/kg in the bulk samples, and 1,479 mg/kg in the fine fraction samples. The copper concentrations reported in the subsurface soil samples range from 18 to 34.7 mg/kg, and average approximately 28 mg/kg. The concentrations of zinc reported range from 80.8 to 13,700 mg/kg with an average concentration of 1,716 mg/kg in the bulk samples, and an average concentration of 3,035 mg/kg in the fine fraction samples. The zinc concentrations reported in the subsurface soil samples range from 36.7 to 54.5 mg/kg, and average approximately 46 mg/kg. Reported concentrations of barium range from 261 to 8,190 mg/kg, and reported concentrations of molybdenum range from 5.8 to 439 mg/kg in fine fraction surface samples.

5.1.4 Arsenic and Lead Sources and Mobility

A focused arsenic and lead sources and mobility evaluation was conducted on samples collected from the site. A discussion of the evaluation and results is provided in the Sources, Speciation, and Dissolution Kinetics of Arsenic and Lead Report (Walsh & Associates, Inc., 1992). A summary of the results of the focused evaluation is presented below.

Slag track ballast appears to be the primary source of arsenic, copper, lead and zinc in surface soils within the active yard. Slag is a vitreous, silicate byproduct of the smelting of a metallic ore. The slag at the site is believed to have originated from copper-ore smelting.

An additional potential source of arsenic was reported as cinders and clinkers characteristic of the residue from the combustion of coal (Walsh & Associates, 1992). Additional potential sources of arsenic include compounds which may have been used for agricultural practices both prior to construction of the active yard and as part of railroad operations. Additional potential sources of lead include artifacts of lead containing materials associated with railroad equipment, emissions from vehicular traffic, and emissions from locomotives.

The slag consists of a heterogeneous mixture of the minerals pyroxene and olivine with some magnetite and amorphous glass. Arsenic, lead, copper, and zinc commonly occur as sulfide aggregations and oxides in the interstitial glass.

Vesicles (trapped gas bubbles) are a common textural feature of the slag. The vesicles were probably produced by the release of gases from solution in the molten slag during cooling. Well-formed crystals of lead sulfides, copper oxides, and likely arsenic sulfides or oxides, are present on the vesicle walls. Since metals such as arsenic and lead form volatile species at high temperatures, these metals were probably present in the gases which were released from solution during cooling of the slag.

Weathering rinds on particle surfaces and accumulation of metals on particle surfaces were not observed during microscopic analysis of slag particles. This suggests that minimal chemical alteration of the slag is occurring. Direct visual observations suggest some surface oxidation has occurred or is occurring; however, no evidence of chemical alteration was observed.

Results of the sequential chemical extractions suggest that the water solubility of arsenic and lead in the slag is relatively low, on the order of a few percent of the arsenic and lead. Analysis of soil samples underlying the slag as part of this evaluation, and in previous investigations, support the low solubility and mobility of arsenic and lead contained in the slag.

Evaluation of rates of dissolution for arsenic and lead in the slag indicate that the rates of dissolution are pH dependent, and suggest that the metals are bound relatively tightly in the slag matrix. Percent of lead released was 3 to 4.5 percent of the total lead after two hours at pH 1.0, and did not exceed 10 percent of the total lead over a 72-hour period. Percent of total arsenic released was 10 to 26 percent of the total arsenic after two hours at pH 1.0, and reached 60 percent at 72 hours. Solubility of arsenic and lead was less than 5 percent at pH 3.0. Water-soluble lead was not detectable at pH 5.4 and 7.6, and water-soluble arsenic was less than 2 percent for samples at pH 5.4 and 7.6.

5.2 ORGANIC COMPOUNDS

Diesel range petroleum hydrocarbons were reported in soil samples collected from two areas (Table 5). These areas are:

- The southeast portion of the active yard (ATB-1, ATB-2, and ATB-3, Figure 10); and
- The northeast portion of the active yard (ATB-11, Figure 10).

Relatively low levels of diesel range petroleum hydrocarbons were detected in near surface soil samples collected from soil borings ATB-1, ATB-2, and ATB-3. Stained soils were visible at the surface along spur tracks in the area of soil borings ATB-1, ATB-2, and ATB-3 (Figure 10). Petroleum hydrocarbons were not reported in deeper samples at these locations, suggesting impacted soil is limited to the upper two to three feet. This may be a function of the railroad track construction, which included a compacted (generally 95%) clay base layer, likely of low permeability, or low-volume sources.

Diesel range petroleum hydrocarbons were also detected in soil samples collected from soil boring ATB-11, in the northeastern portion of the active yard (Figure 10). Soil staining and a hydrocarbon odor were notable during the advancement of this boring. Analytical results of four soil samples analyzed for diesel range petroleum hydrocarbons are 1,940 mg/kg, 8,300 mg/kg, 2,600 mg, and 68 mg/kg, respectively, for samples collected at depths of 4.5 feet, 9.5 feet, 16 feet, and 28.5 feet below ground.

surface. Groundwater was encountered at approximately 26 feet below ground surface in soil boring ATB-11.

Low levels of the aromatic compounds toluene, ethylbenzene, and xylene were reported in shallow soil samples collected in the active yard:

- Toluene at one location (ATB-2) in the southeast portion; and
- Ethylbenzene and xylene at one location (ATB-11) in the northeast portion.

The presence of toluene, ethylbenzene and xylene appears to be associated with the diesel range petroleum hydrocarbons.

Soil staining in the southern portion of the yard appears to be isolated to spur tracks where the yard switching engine generally parks. It appears that the switching engine is the source of soil staining and diesel range petroleum hydrocarbons in soils. The source of diesel range hydrocarbons in the northern portion of the active yard is unknown.

Low levels of chlorinated VOCs were also reported in subsurface soil samples. Methylene chloride ranged from 0.0038 mg/kg to 0.016 mg/kg, and tetrachloroethene ranged from 0.0005 mg/kg to 0.0064 mg/kg. However, methylene chloride and tetrachloroethene were also detected in the laboratory method blanks (see laboratory analytical reports, Appendix D). Therefore all reported detections of methylene chloride and tetrachloroethene are attributed to laboratory contamination.

5.3 ASBESTOS

Fibrous matted material was visible in one soil sample from ATB-11 collected at a depth of 0.5 feet below ground surface. The material was analyzed for asbestos and was found to contain 50 percent chrysotile. No other fibrous asbestos like materials were observed during the investigation.

6.0 NATURE AND EXTENT OF CONTAMINANTS IN AIR

Air monitoring results are provided in the Ambient Air Assessment Report (AeroVironment, Inc., 1992b). Summary analytical results are provided in Tables 6 and 7. Sampling station locations are provided in Figure 9.

6.1 METEOROLOGICAL CONDITIONS

Winds were predominantly out of the south and southwest during the air monitoring period. Winds were relatively calm, with average daily wind speeds ranging from approximately 1 to 4 meters per second.

6.2 TOTAL SUSPENDED PARTICULATE (TSP) MASS

Total suspended particulate (TSP) mass ranged between 3.1 and 58.1 $\mu\text{g}/\text{m}^3$ and averaged 38.8 $\mu\text{g}/\text{m}^3$ for the upwind stations. TSP mass for the downwind stations ranged between 20.1 and 47.4 $\mu\text{g}/\text{m}^3$ and averaged 31.0 $\mu\text{g}/\text{m}^3$. California Air Resources Board (CARB) air quality data for a station near the site recorded a range of 37 to 93 $\mu\text{g}/\text{m}^3$ for TSP and an average of 64.4 $\mu\text{g}/\text{m}^3$ (CARB, 1990b).

6.3 ARSENIC AND LEAD

Arsenic ranged between not-detected to 1.3 ng/m^3 and averaged 0.4 ng/m^3 for the upwind stations. Arsenic values for the downwind stations ranged between not-detected to 0.8 ng/m^3 , and averaged 0.3 ng/m^3 . CARB data on arsenic air levels is limited. CARB data available from an ambient air toxics station in Citrus Heights ranged from not-detected to 3.2 ng/m^3 (CARB, 1992).

Reported lead values were highest at the upwind site boundary air sampling station (Station No. 2), adjacent to Sutterville Road. Lead ranged between 1.6 to 20.2 ng/m^3 and averaged 10.1 ng/m^3 for the upwind stations. Reported lead levels for the downwind stations ranged between 5.0 and 16.3 ng/m^3 and averaged 7.0 ng/m^3 . CARB 1990 air quality data for a station near the site reported a range of 20 to 70 ng/m^3 for lead and an average of 38 ng/m^3 (CARB, 1990b).

6.4 ASBESTOS

Asbestos structures were reported in a total of eight samples from the predominantly upwind stations:

- Two samples from station 1;

- Four samples from station 2; and
- Two samples from station 3.

Asbestos structures were reported in a total of nine samples from the predominantly downwind stations:

- Three samples from station 4;
- Two samples from station 5; and
- Four samples from station 6.

Reported asbestos concentrations ranged between approximately 0.004 to 0.020 structures per cubic centimeter (cc). Reported values of asbestos for the predominantly upwind stations ranged from 0.0039 to 0.0161 structures per cc. Reported values for the predominantly downwind stations ranged from 0.0039 to 0.0199 structures per cc. Analytical uncertainty was similar in magnitude to the range of reported values. CARB 1988 urban air monitoring results are limited, but indicate values up to 0.0148 structures per cc, and an average of 0.00134 structures per cc (CARB, 1990a).

7.0 SUMMARY AND CONCLUSIONS

7.1 SUMMARY

Shallow soils in the active yard were assessed by evaluating the data generated from the analysis of 43 surface soil samples and 20 shallow exploratory soil borings. The origin and mobility of metal contaminants at the site were assessed through a focused evaluation of sources, species, and dissolution kinetics of arsenic and lead. Potential air quality impacts at the site were evaluated by conducting air monitoring at the site over a 14-day period.

7.1.1 Geology

Surface materials in the active yard are dominated by ballast. The track ballast materials generally consist of light grey well rounded river gravels, dark gray angular quarry gravels, and reddish brown slag. Track ballast appears to be confined the upper 2 feet of fill material. In general, the slag ballast appears to be confined to the upper one foot of soils and fill material.

Fill soils consisting of a heterogeneous mixture of gravels, sands and silts ranging in depth between 2 and 11 feet below ground surface. The thickest fill areas are located in the northern portion of the active yard. Native soils consisting of silts and clays were encountered below fill materials.

7.1.2 Nature and Extent of Soils Contamination

Elevated levels of arsenic, copper, lead and zinc were reported in surface soil samples. Samples collected within underlying native soils are comparable to background concentrations, indicating that elevated metals levels appear to be limited to the upper 1 to 2 feet of track ballast.

The dominant source of arsenic, lead, copper and zinc in the active yard appears to be the slag railroad track ballast. Other potential sources such as cinders and clinkers, may have contributed to elevated metal levels in the active yard. Results of speciation and dissolution kinetics evaluations indicate the metals are tightly bound with the slag, and that minimal chemical alteration has occurred. Results of the focused slag evaluations suggest that environmental impacts from the slag are likely to be minimal.

Organic compounds, primarily diesel range petroleum hydrocarbons, were reported in soil samples in two areas of the active yard. Diesel range hydrocarbons at three of these borings (ATB-1, ATB-2 and ATB-3) located in the southeastern portion of the active yard appear to be limited to the upper 2 to 3 feet of soil. Soils at the fourth location (ATB-11) in the northeastern portion of the active yard

contain diesel range hydrocarbons to a depth of approximately 28 feet. The lateral extent of diesel range hydrocarbons at the location of ATB-11 has not been evaluated.

Diesel range hydrocarbons in soils in the southeastern portion of the active yard appear to be related to the yard switching engine which generally parks in this area. The source of diesel range hydrocarbons in the northeastern portion of the active yard is unknown.

7.1.3 Nature and Extent of Air Contamination

Comparison of the reported results of ambient air monitoring levels of TSP and arsenic indicates generally comparable levels at upwind and downwind air sampling stations. Reported lead values were highest at the upwind site boundary station, adjacent to Sutterville Road. Evaluation of the asbestos ambient air sampling results indicates detections at upwind and downwind locations are comparable and generally near the limit of instrument resolution. Comparison of the results of the site two week ambient air monitoring program with urban air quality data for Sacramento, California suggests no significant measurable impact on air quality from the site.

7.2 CONCLUSIONS

Conclusions of the investigations are as follows:

- Elevated levels of arsenic, copper, lead and zinc are present in the upper one to two feet of surface materials at several locations within the active yard;
- The dominant source of arsenic, copper, lead and zinc in shallow soils in the active yard appears to be slag track ballast;
- Environmental impacts from metals in the slag are likely to be minimal;
- Petroleum hydrocarbons were detected in two locations, the southeast corner (ATB-1, ATB-2, and ATB-3) and the northeast portion (ATB-11) of the active yard; and
- Ambient air monitoring data suggests no measurable impact on air quality from the site.

8.0 REFERENCES

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Tables

TABLE 1
SURFACE SAMPLE
SUMMARY ANALYTICAL RESULTS-SELECT METALS (mg/kg)
ACTIVE SITE PORTION
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

Sample Location	Sample Matrix	Grain Size (mm)	Percent of Grain Size Distribution	As	Cu	Pb	Zn
				TTLC			
				500	2,500	1,000	5,000
ATB-1	Gravel	Bulk	100	22	88.1	75.4	408
		<0.420	0.3	29.4	187	166	506
ATB-2	Soil and Slag	Bulk	100	63.4	585	512	1,670
		<0.074	5.1	108	772	573	1,750
ATB-3	Soil and Gravel	Bulk	100	4.3	30.7	36.5	80.8
		<0.074	5.7	33.5	201	281	504
ATB-4	Soil and Slag	Bulk	100	439	557	721	1,940
		<0.074	7.6	57.6	390	421	808
ATB-5	Soil and Slag	Bulk	100	57.1	340	384	874
		<0.074	6.5	99	405	690	964
ATB-6	Soil, Gravel, and Slag	Bulk	100	28	280	270	828
		<0.074	11.7	46.1	351	466	1,830
ATB-7	Soil and Gravel	Bulk	100	ND	33.8	28.8	84.5
		<0.074	5.6	19.3	118	121	303
ATB-8	Slag	Bulk	100	37.1	463	418	1,680
		<0.074	1.1	100	1,520	2,260	4,620
ATB-9	Soil, Gravel and Slag	Bulk	100	6.2	156	302	652
		<0.074	8.8	46.8	657	1,340	1,700
ATB-10	Soil and Slag	Bulk	100	60.8	488	557	796
		<0.074	11.8	96.5	398	642	515
ATB-11	Gravel and Soil	Bulk	100	13	240	327	3,560
		<0.074	3.4	66.1	418	915	6,480
ATB-12	Gravel and Soil	Bulk	100	10	161	111	424
		<0.074	1.5	21	227	262	411
		<4.76, >0.074	8.4	13.4	122	165	331

TABLE 1 (CONTINUED)
SURFACE SAMPLE
SUMMARY ANALYTICAL RESULTS-SELECT METALS (mg/kg)
ACTIVE SITE PORTION
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

Sample Location	Sample Matrix	Grain Size (mm)	Percent of Grain Size Distribution	As	Cu	Pb	Zn
				TTL			
				500	2,500	1,000	5,000
ATB-13	Slag	Bulk	100	135	1,010	865	2,500
		< 0.074	2.0	505	4,370	2,320	4,780
ATB-14	Slag	Bulk	100	125	997	951	3,030
		< 0.074	6.0	454	2,630	2,010	4,770
		< 0.074 ¹	6.0	555	2,670	2,040	5,890
		< 0.074 ²	6.0	550	2,700	2,280	5,010
		< 4.76, > 0.074	48.7	195	3,810	1,670	4,100
ATB-15	Slag	Bulk	100	71.2	504	448	1,330
		< 0.074	0.2	383	3,260	1,850	4,960
ATB-16	Slag	Bulk	100	75.9	625	558	1,650
		< 0.074	0.6	495	2,850	1,150	4,150
		< 4.76, > 0.074	30.7	103	1,070	938	2,820
ATB-17	Slag and Soil	Bulk	100	94.7	677	754	2,180
		< 0.074	4.2	745	1,840	2,260	3,940
ATB-18	Slag	Bulk	100	90.9	685	710	2,110
		< 0.074	2.5	436	2,040	2,070	5,290
ATB-19	Slag and Gravel	Bulk	100	113	796	799	2,390
		< 0.074	1.3	670	2,700	2,210	6,140
		< 4.76, > 0.074	30.6	120	1,090	1,210	3,720
ATB-20	Slag and Soil	Bulk	100	79.6	806	733	1,870
		< 0.074	7.1	1,190	2,240	1,640	3,490
ATS-1	Soil and Slag	Bulk	100	111	222	493	733
		< 0.074	8.9	263	305	792	821
ATS-2	Soil and Slag	Bulk	100	37	430	400	447
		< 0.074	15.5	106	467	733	756

TABLE 1 (CONTINUED)
 SURFACE SAMPLE
 SUMMARY ANALYTICAL RESULTS-SELECT METALS (mg/kg)
 ACTIVE SITE PORTION
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

Sample Location	Sample Matrix	Grain Size (mm)	Percent of Grain Size Distribution	As	Cu	Pb	Zn
				TTLC			
				500	2,500	1,000	5,000
ATS-3	Soil and Slag	Bulk	100	41.5	443	550	682
		<0.074	23.3	116	841	991	1,280
		<4.76, >0.074	47.9	60.3	738	744	1,150
ATS-4	Slag	Bulk	100	461	422	510	1,280
		Bulk ³	100	1,240	440	864	1,210
		<0.074	6.5	3,120	932	1,830	2,000
		<0.074 ¹	6.5	2,430	934	1,980	2,080
		<0.074 ²	6.5	2,430	931	1,880	1,810
		<0.074 ³	8.5	2,390	898	1,920	1,860
		<4.76, >0.074	37	925	512	866	1,490
		<4.76, >0.074 ³	50.8	1,370	794	1,090	475
ATS-5	Soil and Slag	Bulk	100	17	272	202	415
		<0.074	7.5	33.2	309	334	1,010
ATS-6	Soil and Slag	Bulk	100	9.2	669	458	357
		<0.074	5.9	66.3	1,010	1,830	1,180
ATS-7	Slag and Gravel	Bulk	100	29.1	339	349	832
		<0.074	2.8	94	770	1,410	2,330
ATS-8	Slag	Bulk	100	62.5	26,000	344	13,700
		<0.074	0.1	344	2,970	3,080	7,460
ATS-9	Slag	Bulk	100	53.5	598	476	1,430
		<0.074	5.7	224	1,040	976	1,050
		<4.76, >0.074	24.9	174	1,760	1,900	4,790
ATS-10	Soil and Slag	Bulk	100	85	412	680	1,000
		<0.074	14.8	149	706	1,700	1,380

TABLE 1 (CONTINUED)
 SURFACE SAMPLE
 SUMMARY ANALYTICAL RESULTS-SELECT METALS (mg/kg)
 ACTIVE SITE PORTION
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

Sample Location	Sample Matrix	Grain Size (mm)	Percent of Grain Size Distribution	As	Cu	Pb	Zn
				TTLc			
				500	2,500	1,000	5,000
ATS-11	Slag	Bulk	100	149	1,340	953	2,850
		Bulk ³	100	181	1,190	984	3,130
		<0.074	8.0	455	3,620	2,290	5,730
		<0.074 ³	7.1	429	3,590	2,410	5,630
ATS-12	Slag	Bulk	100	189	1,750	1,100	3,230
		<0.074	6.4	765	4,910	2,610	6,650
		<4.76, >0.074	76.8	216	1,800	1,610	4,660
ATS-13	Slag	Bulk	100	120	1,140	1,370	2,700
		<0.074	7.6	282	2,810	10,500	7,420
		<0.074 ¹	7.6	341	2,870	10,800	7,690
		<0.074 ²	7.6	332	2,870	11,100	7,010
ATS-14	Slag	Bulk	100	96.8	923	608	1,660
		<0.074	4.7	418	3,870	2,750	5,450
ATS-15	Soil and Gravel	Bulk	100	32.8	227	237	398
		<0.074	8.5	150	505	802	948
		<4.76, >0.074	46.3	47.1	208	404	423
ATS-16	Gravel, Soil, and Slag	Bulk	100	36.2	285	281	727
		Bulk ³	100	37.5	375	329	948
		<0.074	7.0	149.6	905	898	1,750
		<0.074 ¹	7.0	138	825	914	1,730
		<0.074 ²	7.0	90.8	805	957	1,600
		<0.074 ³	6.6	116	884	949	1,940
ATS-17	Gravel, Slag, and Soil	Bulk	100	22	173	178	394
		<0.074	10.2	89	512	580	763
ATS-18	Slag and Soil	Bulk	100	50.2	880	857	1,670
		<0.074	5.1	131	1,800	1,930	3,140

TABLE 1 (CONTINUED)
 SURFACE SAMPLE
 SUMMARY ANALYTICAL RESULTS-SELECT METALS (mg/kg)
 ACTIVE SITE PORTION
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

Sample Location	Sample Matrix	Grain Size (mm)	Percent of Grain Size Distribution	As	Cu	Pb	Zn
				TTLC			
				500	2,500	1,000	5,000
ATS-19	Slag	Bulk	100	174	799	884	3,100
		<0.074	3.3	569	2,080	3,400	6,450
		<0.074 ¹	3.3	688	2,140	3,590	7,190
		<0.074 ²	3.3	666	2,170	3,670	5,390
ATS-20	Gravel and Slag	Bulk	100	32	282	241	871
		Bulk ³	100	11	145	104	350
		<0.074	1.5	68.9	545	297	900
		<0.074 ¹	1.5	53	532	306	859
		<0.074 ²	1.5	32.5	538	337	898
		<0.074 ³	1.5	32.9	358	188	615
		<4.76, >0.074	14.8	109	807	811	2,580
ATS-21	Slag and Soil	Bulk	100	358	587	366	975
		<0.074	4.6	1,680	1,050	1,700	2,050
ATS-22	Slag	Bulk	100	456	895	1,080	3,330
		<0.074	9.7	1,270	1,670	2,330	5,910
ATS-23	Gravel, Slag, and Soil	Bulk	100	521	547	633	979
		<0.074	8.0	1,770	704	1,710	1,500

TTLC - California Code of Regulations, Total Threshold Limit Concentration.

1 - D&M Laboratory sample extract confirmatory analyses.

2 - Cal Enseco blind duplicate sample analyses.

3 - D&M Laboratory co-located duplicate sample analyses.

Bulk - Analyses performed on sample without grain size fractionation.

TABLE 2
SURFACE SAMPLE SUMMARY ANALYTICAL RESULTS
RANGES AND AVERAGE CONCENTRATIONS - SELECT METALS
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

Grain Size (mm)	Number of Samples	Parameter	Concentration (mg/kg)			
			As	Cu	Pb	Zn
Bulk Sample	43	Average	118	1,141	534	1,716
		Range	ND - 1,240	30.7 - 26,000	28.8 - 1,370	80.8 - 13,700
< 0.074	43	Average	416	1,479	1,624	3,035
		Range	19.3 - 3,120	118 - 4,370	121 - 11,100	303 - 7,690
4.76 - 0.074	10	Average	219	1,206	1,043	2,090
		Range	13.4 - 1,370	122 - 3,810	165 - 1,900	331 - 4,790

ND - Non-detect.

Bulk Sample - Representative sample containing the complete grain size distribution.

TABLE 3
SURFACE SAMPLE
SUMMARY ANALYTICAL RESULTS
GRAIN SIZE DISTRIBUTION
ACTIVE SITE PORTION
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

Sample Location	Cumulative Percent Passing												
	Sieve Size (mm)												
	50.8	38.1	25.4	19.0	12.7	9.51	4.76	2.00	0.841	0.420	0.250	0.149	0.074
ATB-1	—	—	—	—	100	89	19	6	0.3	0	—	—	—
ATB-2	—	100	97	95	90	86	61	41	32	23	14	9	5.1
ATB-3	—	100	86	68	56	48	39	35	30	21	13	9	5.7
ATB-4	—	—	100	93	89	86	69	51	41	32	24	15	7.6
ATB-5	—	—	100	99	96	91	73	51	36	26	19	13	6.5
ATB-6	—	100	82	72	59	55	49	42	35	28	19	13	11.7
ATB-7	—	—	—	100	98	87	70	51	40	30	20	12	5.6
ATB-8	—	100	62	39	16	13	9	6	4	3	2	2.0	1.1
ATB-9	—	—	100	99	81	72	63	51	41	29	20	14	8.8
ATB-10	—	—	100	97	95	91	77	56	39	30	23	18	11.8
ATB-11	—	100	94	82	46	30	19	16	13	10	7	6	3.4
ATB-12	100	96	84	70	44	31	9.9	6	5	4	3	2	1.5
ATB-13	—	100	83	78	71	67	46	18	8	5	4	3	2
ATB-14	—	100	94	90	86	81	55	32	21	15	11	8	6
ATB-15	100	97	81	67	45	29	4.3	0.8	0.5	0.4	0.3	0.3	0.2
ATB-16	100	97	79	74	65	59	31	5	1	1	0.8	0.7	0.6
ATB-17	—	100	99	93	85	76	46	25	17	12	9	6	4.2
ATB-18	—	100	87	78	61	50	31	17	10	6	5	4	2.5
ATB-19	—	100	74	66	56	49	32	13	6	4	3	2	1.3
ATB-20	—	100	92	89	82	79	63	40	26	18	13	10	7.1
ATS-1	—	100	97	88	73	68	55	46	36	27	20	15	8.9

TABLE 3 (CONTINUED)
SURFACE SAMPLE
SUMMARY ANALYTICAL RESULTS
GRAIN SIZE DISTRIBUTION
ACTIVE SITE PORTION
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

Sample Location	Cumulative Percent Passing												
	Sieve Size (mm)												
	50.8	38.1	25.4	19.0	12.7	9.51	4.76	2.00	0.841	0.420	0.250	0.149	0.074
ATS-2	—	—	100	96	92	89	80	68	55	44	33	25	15.5
ATS-3	—	100	95	—	91	84	71	62	56	48	41	32	23.3
ATS-4	—	100	99	—	97	89	44	32	25	20	15	11	6.5
	—	—	—	100 ¹	95	91	59	45	36	29	21	14	8.5
ATS-5	—	100	98	97	91	87	69	50	38	30	22	15	7.5
ATS-6	91	—	83	77	68	63	49	40	31	24	17	12	5.9
ATS-7	—	100	70	51	31	24	17	14	11	9	6	4	2.8
ATS-8	—	100	81	61	23	8	0.4	0.2	0.1	0.1	0.1	0.1	0.1
ATS-9	—	100	94	81	56	42	31	23	17	13	11	9	5.7
ATS-10	—	100	99	99	96	94	81	64	49	37	28	21	14.8
ATS-11	—	—	—	—	100	97	74	44	25	17	13	11	8.0
	—	—	—	—	100 ¹	97	73	40	23	15	12	10	7.1
ATS-12	—	—	—	—	100	99	83	47	24	15	11	9	6.4
ATS-13	—	—	—	100	99	96	68	43	30	20	14	11	7.6
ATS-14	—	—	—	—	100	86	40	21	13	10	8	6	4.7
ATS-15	—	100	90	85	74	68	55	43	33	24	18	13	8.5
ATS-16	—	100	91	78	59	51	39	31	23	18	13	10	7.0
	—	100 ¹	92	80	57	50	38	28	22	16	12	10	6.6
ATS-17	—	100	78	66	55	51	44	38	31	24	17	14	10.2
ATS-18	—	—	100	93	77	69	46	30	21	16	11	8	5.1
ATS-19	—	100	91	88	83	78	52	21	10	7	5	4	3.3

TABLE 3 (CONTINUED)
 SURFACE SAMPLE
 SUMMARY ANALYTICAL RESULTS
 GRAIN SIZE DISTRIBUTION
 ACTIVE SITE PORTION
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

Sample Location	Cumulative Percent Passing												
	Sieve Size (mm)												
	50.8	38.1	25.4	19.0	12.7	9.51	4.76	2.00	0.841	0.420	0.250	0.149	0.074
ATS-20	—	100	91	85	66	45	16	8	5	4	3	2	1.5
	—	100 ¹	88	79	69	49	20	10	6	4	3	2	1.5
ATS-21	100	93	90	86	77	70	38	24	17	12	9.2	7.1	4.6
ATS-22	—	—	100	95	94	90	69	50	38	29	23	17	9.7
ATS-23	—	100	92	83	66	60	43	33	26	20	16	12	8.0

1 Co-located duplicate sample analysis.

TABLE 4
SUBSURFACE SOIL SAMPLE
SUMMARY ANALYTICAL RESULTS — SELECT METALS (mg/kg)
ACTIVE SITE PORTION
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

Sample Location	Depth (ft.)	As	Cu	Pb	Zn
		TTLC			
		500	2,500	1,000	5,000
ATB-1	3.75	11.7	30.1	8.0	50.5
ATB-2	5.5	10.5	29.5	9.0	45.2
ATB-3	2.0	8.6	28.1	8.0	49.1
ATB-4	2.0	6.0	24.0	6.4	41.5
ATB-5	2.0	6.8	29.4	9.0	48.0
ATB-6	2.0	6.5	29.5	13.0	51.2
ATB-7	2.5	6.3	34.7	9.0	45.6
ATB-8	2.5	5.6	33.7	8.0	54.3
ATB-9	2.5	9.3	32.6	8.0	49.9
ATB-10	2.5	4.2	29.2	7.9	47.5
ATB-11	4.0	3.7	24.9	6.6	42.3
ATB-12	2.0	7.5	33.9	7.4	44.5
ATB-13	4.5	8.2	34.7	40.0	54.5
ATB-14	5.5	7.9	18.0	8.1	36.7
ATB-14	10.5	3.2	22.0	6.2	45.7
ATB-15	5.5	7.1	30.3	7.0	53.1
ATB-16	5.5	5.0	26.8	6.0	47.1
ATB-17	2.0	545.0	22.0	5.8	39.3
ATB-18	3.0	3.1	32.3	9.0	46.7
ATB-19	3.5	—	26.1	8.0	38.5
ATB-20	3.0	14.0	21.0	6.0	37.1

— Non-detect

TABLE 5
 SUBSURFACE SOIL SAMPLE
 SUMMARY ANALYTICAL RESULTS
 ORGANIC COMPOUNDS - DETECTIONS ONLY (mg/kg)
 ACTIVE SITE PORTION
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

Sample Location	Sample Depth (feet bgs)	TPH - Diesel	Ethylbenzene	Toluene	Xylene
ATB-1	0.5	300	—	—	—
ATB-2	0.5	100	—	0.0034	—
ATB-3	1.5	190	—	—	—
ATB-11	4.5	1,940	0.04	—	0.05
	9.5	8,300	—	—	—
	16.0	2,600	N/A	N/A	N/A
	28.5	68	—	—	—

— = Not detected.

N/A = Not analyzed.

TABLE 6
 AMBIENT AIR MONITORING RESULTS
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

Date		21-Jul	22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	01-Aug	02-Aug	03-Aug
Prevailing Wind Direction		S	VA	VA	VA	S	VA	SSW	SSW	S	SSW	SSW	SSE	S	SSE
Station	Parameter	Results													
1	Sample Collection Time (Minutes)	1440	1435	1492	1432	1438	1424	1442	1430	1429	1435	1439	1444	1426	1442
1	TSP Mass ($\mu\text{g}/\text{m}^3$)	4.7	36.8	50.2	47.9	32.9	28.0	46.0	39.6	34.9	27.4	44.2	35.6	28.3	40.7
1	As ($\mu\text{g}/\text{m}^3$)	0.0000	0.0008	0.0010	0.0006	0.0002	0.0000	0.0011	0.0012	0.0008	0.0004	0.0009	0.0001	0.0000	0.0005
1	As, Uncertainty ($\mu\text{g}/\text{m}^3$)	0.0001	0.0005	0.0007	0.0006	0.0004	0.0006	0.0008	0.0005	0.0005	0.0004	0.0013	0.0005	0.0006	0.0007
1	Pb ($\mu\text{g}/\text{m}^3$)	0.0092	0.0061	0.0110	0.0085	0.0056	0.0085	0.0139	0.0069	0.0066	0.0061	0.0082	0.0082	0.0102	0.0101
1	Pb, Uncertainty ($\mu\text{g}/\text{m}^3$)	0.0007	0.0007	0.0007	0.0007	0.0006	0.0007	0.0009	0.0006	0.0007	0.0006	0.0007	0.0007	0.0007	0.0007
1	Asbestos, Structures/cc	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0161	0.0040	ND
	Asbestos, Uncertainty, Structures/cc	0.02 0.0004	0.02 0	0.02 0	0.02 0	0.02 0	0.02 0	0.02 0	0.02 0	0.02 0	0.02 0	0.02 0	0.04 0.004	0.02 0.0004	0.01 0
2	Sample Collection Time (Minutes)	1405	1432	1443	1432	1442	1436	1454	1427	1438	1425	1447	1443	1423	1439
2	TSP Mass ($\mu\text{g}/\text{m}^3$)	45.6	39.6	58.1	48.5	36.0	40.1	53.0	45.8	41.3	30.9	3.1	43.2	35.7	52.8
2	As ($\mu\text{g}/\text{m}^3$)	0.0003	0.0002	0.0002	0.0003	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0003	0.0003	0.0006	0.0000
2	As, Uncertainty ($\mu\text{g}/\text{m}^3$)	0.0008	0.0007	0.0009	0.0008	0.0006	0.0009	0.0011	0.0009	0.0009	0.0009	0.0003	0.0008	0.0007	0.0010
2	Pb ($\mu\text{g}/\text{m}^3$)	0.0128	0.0102	0.0159	0.0139	0.0093	0.0152	0.0202	0.0157	0.0150	0.0157	0.0016	0.0122	0.0111	0.0177
2	Pb, Uncertainty ($\mu\text{g}/\text{m}^3$)	0.0009	0.0007	0.0010	0.0009	0.0007	0.0010	0.0011	0.0009	0.0009	0.0009	0.0005	0.0008	0.0008	0.0010
2	Asbestos, Structures/cc	0.0041	0.0040	ND	ND	ND	ND	0.0039	ND	ND	ND	ND	ND	0.0040	ND
	Asbestos, Uncertainty, Structures/cc	0.02 0.0004	0.02 0.0004	0.02 0	0.02 0	0.02 0	0.02 0	0.02 0.0004	0.02 0	0.02 0	0.02 0	0.02 0	0.01 0	0.02 0.0004	0.01 0

Date = Samples were collected over a 24-hour period, commencing the morning of the calendar day listed.

Prevailing Wind Direction - Based on meteorological station placed on-site, over same approximate period as sampling.

TSP = Total Suspended Particulate

As = Arsenic

Pb = Lead

Asbestos Uncertainty - The upper value is the upper limit, the lower value is the lower limit.

QA/QC - Quality assurance/Quality control station, collocated with station 4.

NA = Sample not analyzed.

SSE = south-southeast

ND = Not detected at analysis lower limit.

SSW = south-southwest

IM = Instrument malfunction.

S = south

QC = Quality control field blank.

VA = variable

TABLE 6 (Continued)
 AMBIENT AIR MONITORING RESULTS
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

Date		21-Jul	22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	01-Aug	02-Aug	03-Aug
Prevailing Wind Direction		S	VA	VA	VA	S	VA	SSW	SSW	S	SSW	SSW	SSE	S	SSE
Station	Parameter	Results													
3	Sample Collection Time (Minutes)	1405	1429	1424	1431	1435	1430	1409	1427	1433	1424	1466	1431	1418	1443
3	TSP Mass ($\mu\text{g}/\text{m}^3$)	54.6	37.8	32.5	43.3	52.3	29.8	41.5	39.6	41.6	40.3	44.2	39.8	31.6	28.0
3	As ($\mu\text{g}/\text{m}^3$)	0.0011	0.0003	0.0000	0.0004	0.0000	0.0013	0.0004	0.0013	0.0000	0.0007	0.0004	0.0004	0.0003	0.0003
3	As, Uncertainty ($\mu\text{g}/\text{m}^3$)	0.0006	0.0004	0.0006	0.0005	0.0005	0.0008	0.0007	0.0005	0.0006	0.0008	0.0005	0.0006	0.0006	0.0004
3	Pb ($\mu\text{g}/\text{m}^3$)	0.0088	0.0065	0.0090	0.0072	0.0060	0.0122	0.0120	0.0066	0.0096	0.0134	0.0071	0.0087	0.0075	0.0063
3	Pb, Uncertainty ($\mu\text{g}/\text{m}^3$)	0.0007	0.0006	0.0007	0.0007	0.0007	0.0009	0.0008	0.0006	0.0007	0.0009	0.0007	0.0007	0.0007	0.0005
3	Asbestos, Structures/cc	ND	ND	ND	ND	ND	0.0040	ND	ND	ND	ND	ND	0.0040	ND	ND
	Asbestos, Uncertainty, Structures/cc	0.02 0	0.02 0	0.02 0	0.02 0	0.02 0	0.02 0	0.02 0	0.02 0	0.02 0	0.02 0	0.03 0.0008	0.02 0.0004	0.02 0	0.01 0
4	Sample Collection Time (Minutes)	1405	1419	1422	1429	1401	1419	1446	1423	0	1418	1463	1428	1403	1419
4	TSP Mass ($\mu\text{g}/\text{m}^3$)	29.9	28.0	36.4	32.7	26.5	29.7	36.1	32.9	QC	20.1	36.1	29.4	23.7	33.0
4	As ($\mu\text{g}/\text{m}^3$)	0.0000	0.0006	0.0000	NA	0.0000	0.0004	NA	NA	NA	0.0000	0.0002	0.0003	0.0007	0.0002
4	As, Uncertainty ($\mu\text{g}/\text{m}^3$)	0.0005	0.0004	0.0006	NA	0.0004	0.0006	NA	NA	NA	0.0004	0.0005	0.0005	0.0004	0.0007
4	Pb ($\mu\text{g}/\text{m}^3$)	0.0069	0.0053	0.0092	NA	0.0050	0.0099	NA	NA	NA	0.0058	0.0067	0.0066	0.0054	0.0121
4	Pb, Uncertainty ($\mu\text{g}/\text{m}^3$)	0.0006	0.0006	0.0007	NA	0.0006	0.0007	NA	NA	NA	0.0006	0.0006	0.0006	0.0006	0.0008
4	Asbestos, Structures/cc	ND	0.0199	0.0040	NA	ND	0.0040	NA	NA	NA	ND	ND	ND	ND	ND
	Asbestos, Uncertainty, Structures/cc	0.003 0	0.05 0.007	0.02 0.0004	NA	0.003 0	0.02 0.0004	NA	NA	NA	0.02 0	0.02 0	0.02 0	0.01 0	0.02 0

Date = Samples were collected over a 24-hour period, commencing the morning of the calendar day listed.

Prevailing Wind Direction - Based on meteorological station placed on-site, over same approximate period as sampling.

TSP = Total Suspended Particulate

As = Arsenic

Pb = Lead

Asbestos Uncertainty - The upper value is the upper limit, the lower value is the lower limit.

QA/QC - Quality assurance/Quality control station, collocated with station 4.

NA = Sample not analyzed.

SSE = south-southeast

ND = Not detected at analysis lower limit.

SSW = south-southwest

IM = Instrument malfunction.

S = south

QC = Quality control field blank.

VA = variable

TABLE 6 (Continued)
 AMBIENT AIR MONITORING RESULTS
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

Date		21-Jul	22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	01-Aug	02-Aug	03-Aug
Prevailing Wind Direction		S	VA	VA	VA	S	VA	SSW	SSW	S	SSW	SSW	SSE	S	SSE
Station	Parameter	Results													
5	Sample Collection Time (Minutes)	1405	1441	1426	1452	1411	1402	1454	1428	1429	1418	1466	1431	1404	1421
5	TSP Mass ($\mu\text{g}/\text{m}^3$)	32.5	32.1	40.9	39.3	26.1	25.0	40.6	32.1	32.8	23.6	35.9	29.2	25.8	31.4
5	As ($\mu\text{g}/\text{m}^3$)	0.0007	0.0000	0.0003	0.0004	0.0000	0.0005	0.0000	0.0000	0.0005	0.0004	0.0005	0.0006	0.0001	0.0006
5	As, Uncertainty ($\mu\text{g}/\text{m}^3$)	0.0006	0.0006	0.0006	0.0005	0.0004	0.0006	0.0008	0.0006	0.0005	0.0053	0.0004	0.0005	0.0005	0.0006
5	Pb ($\mu\text{g}/\text{m}^3$)	0.0095	0.0076	0.0096	0.0070	0.0061	0.0089	0.0133	0.0096	0.0074	0.0053	0.0059	0.0061	0.0065	0.0082
5	Pb, Uncertainty ($\mu\text{g}/\text{m}^3$)	0.0007	0.0007	0.0007	0.0007	0.0006	0.0007	0.0009	0.0007	0.0006	0.0006	0.0005	0.0006	0.0006	0.0007
5	Asbestos, Structures/cc	0.0041	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0119	ND	ND
	Asbestos, Uncertainty, Structures/cc	0.02 0.0004	0.02 0	0.02 0	0.02 0	0.02 0	0.02 0	0.02 0	0.02 0	0.02 0	0.02 0	0.02 0	0.04 0.002	0.02 0	0.02 0
6	Sample Collection Time (Minutes)	1405	1442	1424	1452	946	1405	1453	1431	1429	1420	1456	1429	1405	1426
6	TSP Mass ($\mu\text{g}/\text{m}^3$)	30.0	31.4	43.1	41.0	43.4	IM	42.9	35.1	30.4	24.9	37.7	33.5	28.7	35.9
6	As ($\mu\text{g}/\text{m}^3$)	0.0005	0.0006	0.0000	0.0004	0.0007	NA	0.0007	0.0000	0.0000	0.0003	0.0003	0.0001	0.0003	0.0006
6	As, Uncertainty ($\mu\text{g}/\text{m}^3$)	0.0005	0.0005	0.0007	0.0005	0.0007	NA	0.0010	0.0005	0.0004	0.0004	0.0005	0.0006	0.0005	0.0006
6	Pb ($\mu\text{g}/\text{m}^3$)	0.0062	0.0069	0.0119	0.0081	0.0079	NA	0.0163	0.0088	0.0069	0.0071	0.0069	0.0086	0.0065	0.0079
6	Pb, Uncertainty ($\mu\text{g}/\text{m}^3$)	0.0007	0.0007	0.0008	0.0007	0.0009	NA	0.0010	0.0006	0.0006	0.0006	0.0006	0.0007	0.0006	0.0007
6	Asbestos, Structures/cc	ND	0.0040	ND	ND	ND	ND	0.0039	ND	0.0161	ND	ND	ND	ND	0.0040
	Asbestos, Uncertainty, Structures/cc	0.02 0	0.02 0.0004	0.02 0	0.01 0	0.02 0	0.02 0	0.02 0.0004	0.02 0	0.04 0.004	0.02 0	0.02 0	0.02 0.004	0.02 0	0.02 0.0004

Date = Samples were collected over a 24-hour period, commencing the morning of the calendar day listed.

Prevailing Wind Direction - Based on meteorological station placed on-site, over same approximate period as sampling.

TSP = Total Suspended Particulate

As = Arsenic

Pb = Lead

Asbestos Uncertainty - The upper value is the upper limit, the lower value is the lower limit.

QA/QC - Quality assurance/Quality control station, collocated with station 4.

NA = Sample not analyzed.

SSE = south-southeast

ND = Not detected at analysis lower limit.

SSW = south-southwest

IM = Instrument malfunction.

S = south

QC = Quality control field blank.

VA = variable

TABLE 6 (Continued)
 AMBIENT AIR MONITORING RESULTS
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

Date		21-Jul	22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	01-Aug	02-Aug	03-Aug
Prevailing Wind Direction		S	VA	VA	VA	S	VA	SSW	SSW	S	SSW	SSW	SSE	S	SSE
Station	Parameter	Results													
QA/QC	Sample Collection Time (Minutes)	1405	1419	1422	1429	1401	1419	1446	1423	0	1418	1463	1428	0	1419
QA/QC	TSP Mass ($\mu\text{g}/\text{m}^3$)	31.2	30.9	40.8	39.9	29.0	30.3	43.6	47.4	QC	23.9	39.0	33.8	QC	34.7
QA/QC	As ($\mu\text{g}/\text{m}^3$)	NA	NA	NA	0.0005	0.0000	0.0007	0.0004	0.0008	0.0000	NA	NA	NA	NA	NA
QA/QC	As, Uncertainty ($\mu\text{g}/\text{m}^3$)	NA	NA	NA	0.0004	0.0005	0.0006	0.0008	0.0007	0.0000	NA	NA	NA	NA	NA
QA/QC	Pb ($\mu\text{g}/\text{m}^3$)	NA	NA	NA	0.0063	0.0059	0.0095	0.0134	0.0107	0.0000	NA	NA	NA	NA	NA
QA/QC	Pb, Uncertainty ($\mu\text{g}/\text{m}^3$)	NA	NA	NA	0.0006	0.0006	0.0007	0.0009	0.0008	0.0000	NA	NA	NA	NA	NA
QA/QC	Asbestos, Structures/cc	NA	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
QA/QC	Asbestos, Uncertainty, Structures/cc	NA	NA	NA	0.02 0	0.02 0	0.02 0	0.02 0	0.02 0	0.02 0	NA	NA	NA	NA	NA

Date = Samples were collected over a 24-hour period, commencing the morning of the calendar day listed.

Prevailing Wind Direction - Based on meteorological station placed on-site, over same approximate period as sampling.

TSP = Total Suspended Particulate

As = Arsenic

Pb = Lead

Asbestos Uncertainty - The upper value is the upper limit, the lower value is the lower limit.

QA/QC - Quality assurance/Quality control station, collocated with station 4.

NA = Sample not analyzed.

SSE = south-southeast

ND = Not detected at analysis lower limit.

SSW = south-southwest

IM = Instrument malfunction.

S = south

QC = Quality control field blank.

VA = variable

TABLE 7
SUMMARY
AMBIENT AIR MONITORING RESULTS
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

STATION NO.		ARSENIC (ng/m ³)			LEAD (ng/m ³)			TOTAL SUSPENDED PARTICULATE MASS (μg/m ³)			ASBESTOS (Structures/cc)			ASBESTOS NO. OF DETECTIONS
		MIN	MAX	AVE	MIN	MAX	AVE	MIN	MAX	AVE	MIN	MAX	AVE	
1	Results	ND	1.2	0.5	5.6	13.9	8.5	4.7	50.2	35.5	ND	0.0161	0.0014	2
	Uncertainty	0.1	1.3	0.6	0.6	0.9	0.7	—	—	—	0	0.04	NA	—
2	Results	ND	0.6	0.2	1.6	20.2	13.3	3.1	58.1	41.0	ND	0.0041	0.0011	4
	Uncertainty	0.3	1.1	0.8	0.5	1.1	0.9	—	—	—	0	0.02	NA	—
3	Results	ND	1.3	0.5	6.0	13.4	8.6	28.0	54.6	39.8	ND	0.0040	0.0006	2
	Uncertainty	0.4	0.8	0.6	0.5	0.9	0.7	—	—	—	0	0.03	NA	—
4*	Results	ND	0.8	0.3	ND	13.4	7.9	ND	47.4	30.3	ND	0.0199	0.0021	3
	Uncertainty	0	0.8	0.5	0	0.9	0.6	—	—	—	0	0.05	NA	—
5	Results	ND	0.7	0.3	5.3	13.3	7.9	23.6	40.9	32.0	ND	0.0119	0.0011	2
	Uncertainty	0.4	5.3	0.9	0.5	0.9	0.7	—	—	—	0	0.04	NA	—
6	Results	ND	0.7	0.3	6.2	16.3	7.9	24.9	43.4	32.7	ND	0.0161	0.0020	4
	Uncertainty	0.4	1.0	0.5	0.6	1.0	0.6	—	—	—	0	0.04	NA	—
Average for Upwind Stations 1, 2, and 3	Results	ND	1.0	0.4	4.4	15.8	10.1	11.9	54.3	38.8	ND	0.0161	0.0011	2.7
	Uncertainty	0.3	1.0	0.7	0.5	1.0	0.8	—	—	—	0	0.02	NA	—
Average* for Downwind Stations 4, 5, and 6	Results	ND	0.7	0.3	5.6	13.9	7.9	22.9	40.2	31.0	ND	0.0199	0.0017	3
	Uncertainty	0.4	2.4	0.5	0.6	0.9	0.6	—	—	—	0	0.02	NA	—
CARB Data for Sacramento	Results	<0.4	3.2	NA	20	70	38	37	93	64.4	ND	0.0025	0.00134	NA

— No uncertainty recorded
MIN - Minimum value recorded.

NA - Not Available/Not Applicable
MAX - Maximum value recorded.

ND - Not detected above analytical sensitivity.
AVE - Average of the values recorded.

CARB Data - California Air Resources Board Data:

Arsenic - Ambient air toxics data as of April 10, 1992 - Citrus Heights Station

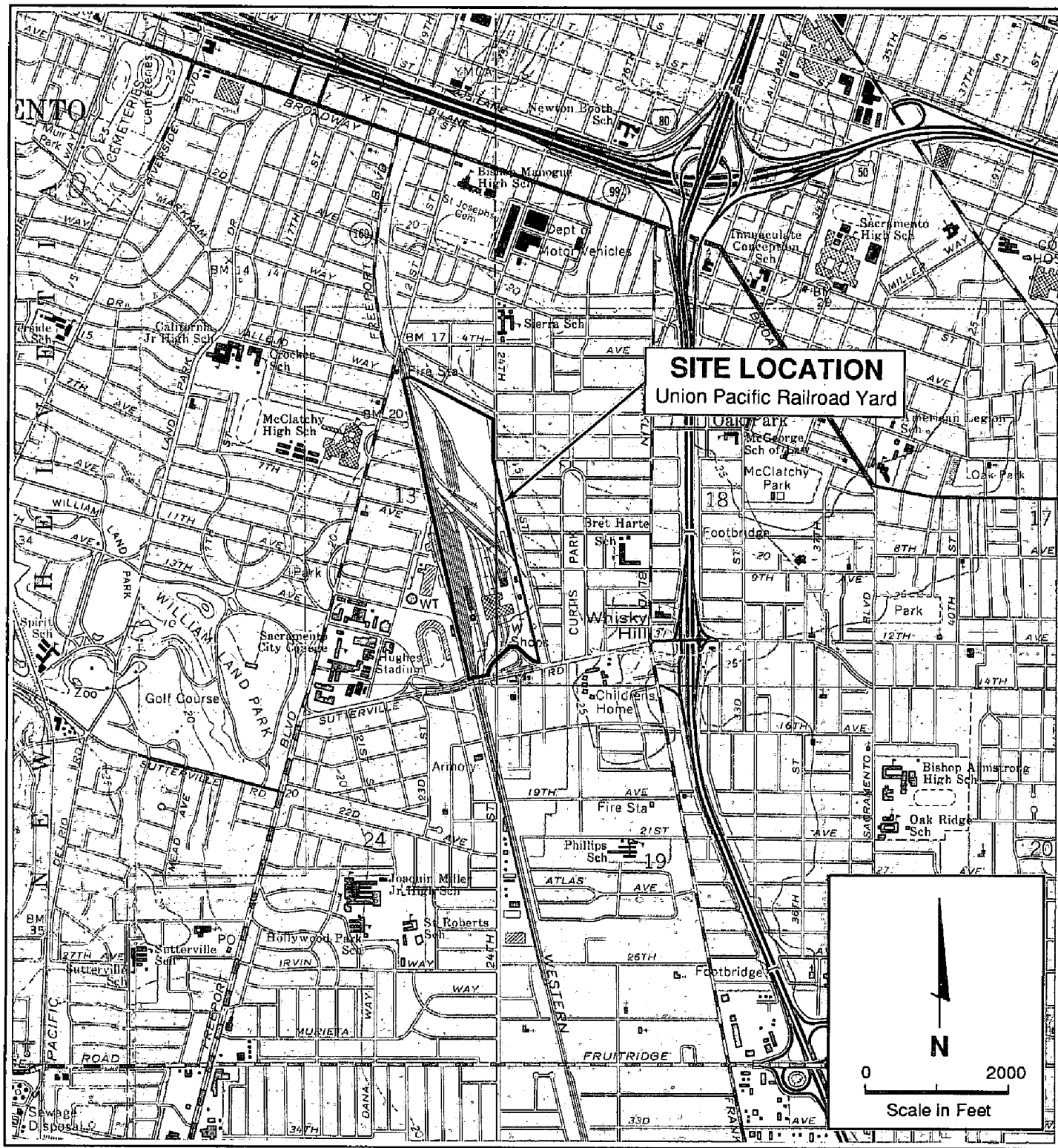
Lead and Particulates - 1990 air quality data - H.D. Stockton Station

Asbestos - Proposed Control Measure for Asbestos Containing Serpentine Rock in Surfacing Applications.

1988 urban areas air monitoring results - Sacramento Stations

* Station No. 4 results supplemented with QA/QC station results for July 24, 27, and 28.

FIGURES

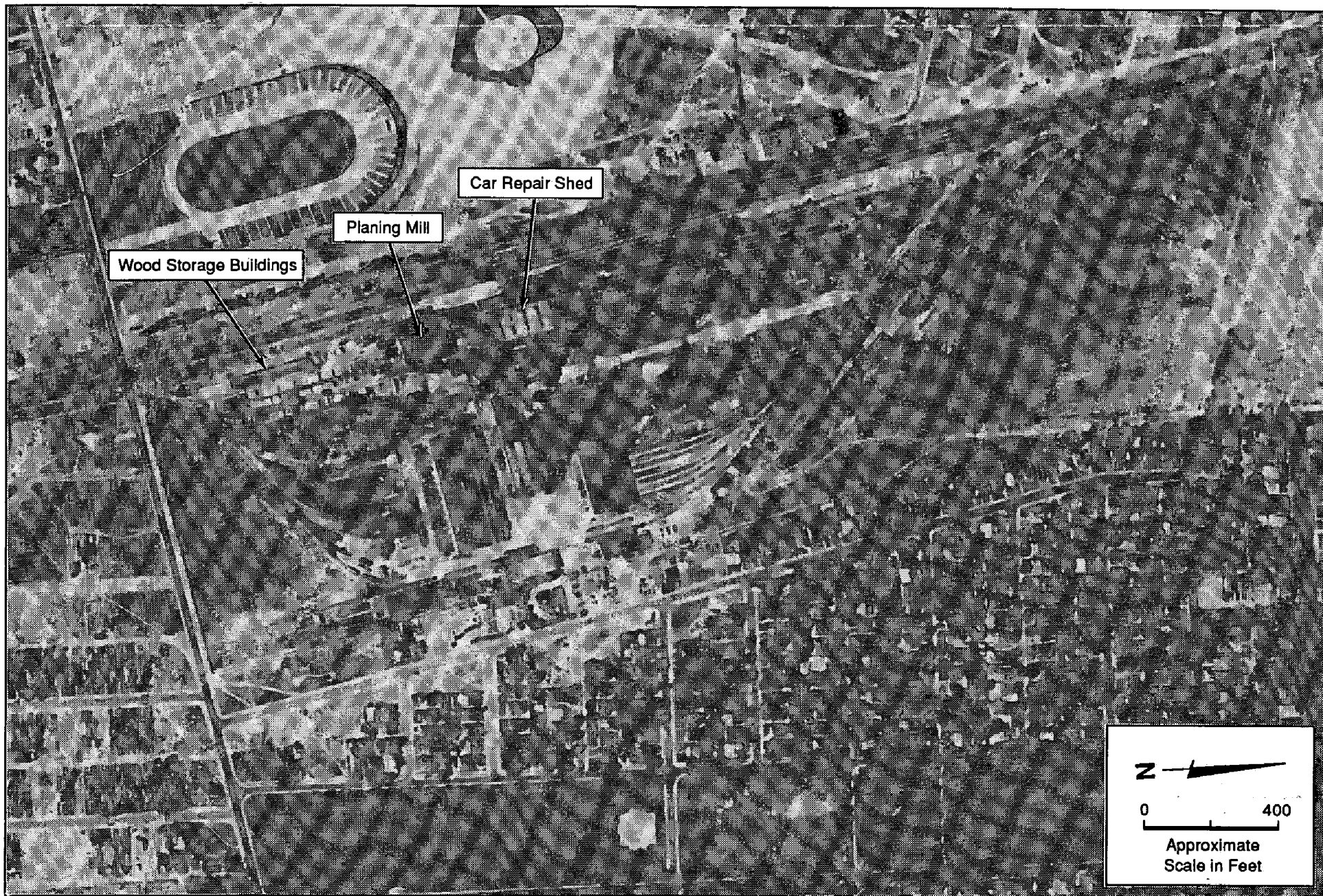


REFERENCE: USGS 7.5 Minute Quadrangle; Sacramento East and
Sacramento West, California, 1967, Photorevised 1980



SITE VICINITY MAP

Union Pacific Railroad Yard
Sacramento, California
SEPTEMBER 1992



AERIAL PHOTOGRAPH 1937

Union Pacific Railroad Yard
Sacramento, California
SEPTEMBER 1992



AERIAL PHOTOGRAPH 1953

Union Pacific Railroad Yard
Sacramento, California
SEPTEMBER 1992



N
0 500
Approximate
Scale in Feet

AERIAL PHOTOGRAPH 1961

Union Pacific Railroad Yard
Sacramento, California
SEPTEMBER 1992



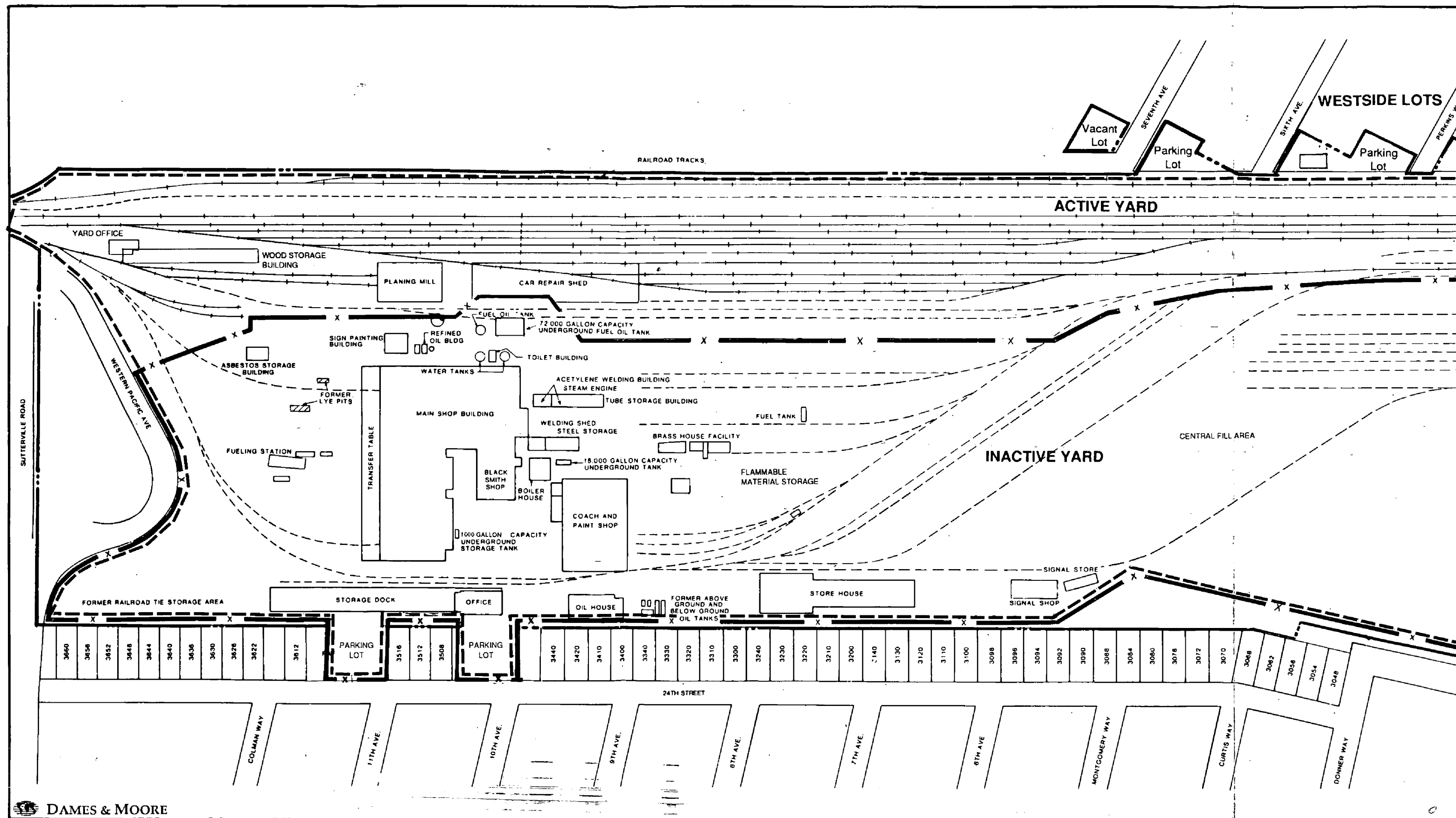
AERIAL PHOTOGRAPH 1972

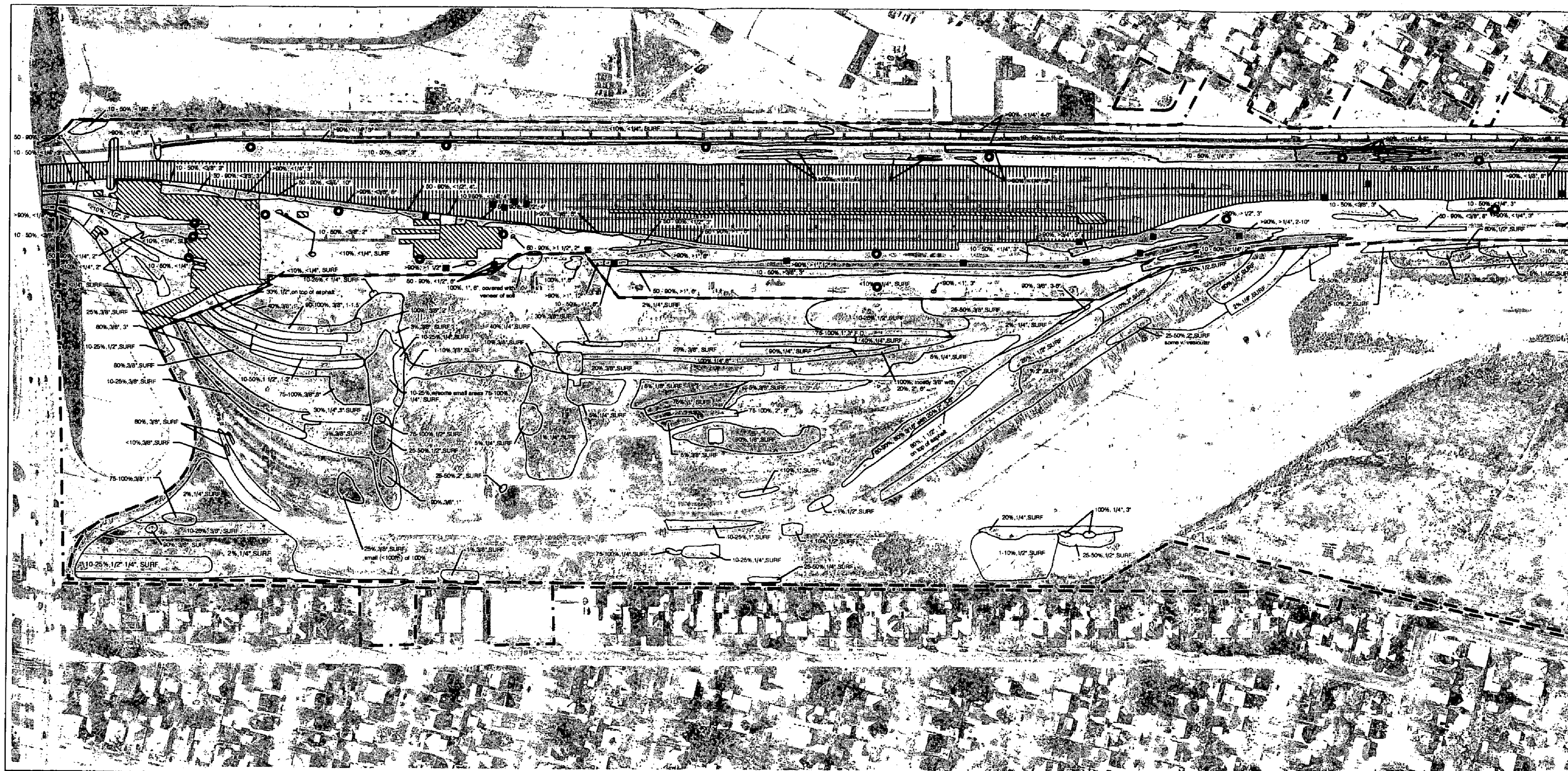
Union Pacific Railroad Yard
Sacramento, California
SEPTEMBER 1992



AERIAL PHOTOGRAPH 1976

Union Pacific Railroad Yard
Sacramento, California
SEPTEMBER 1992



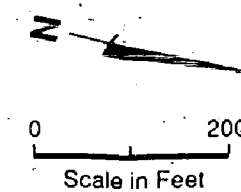


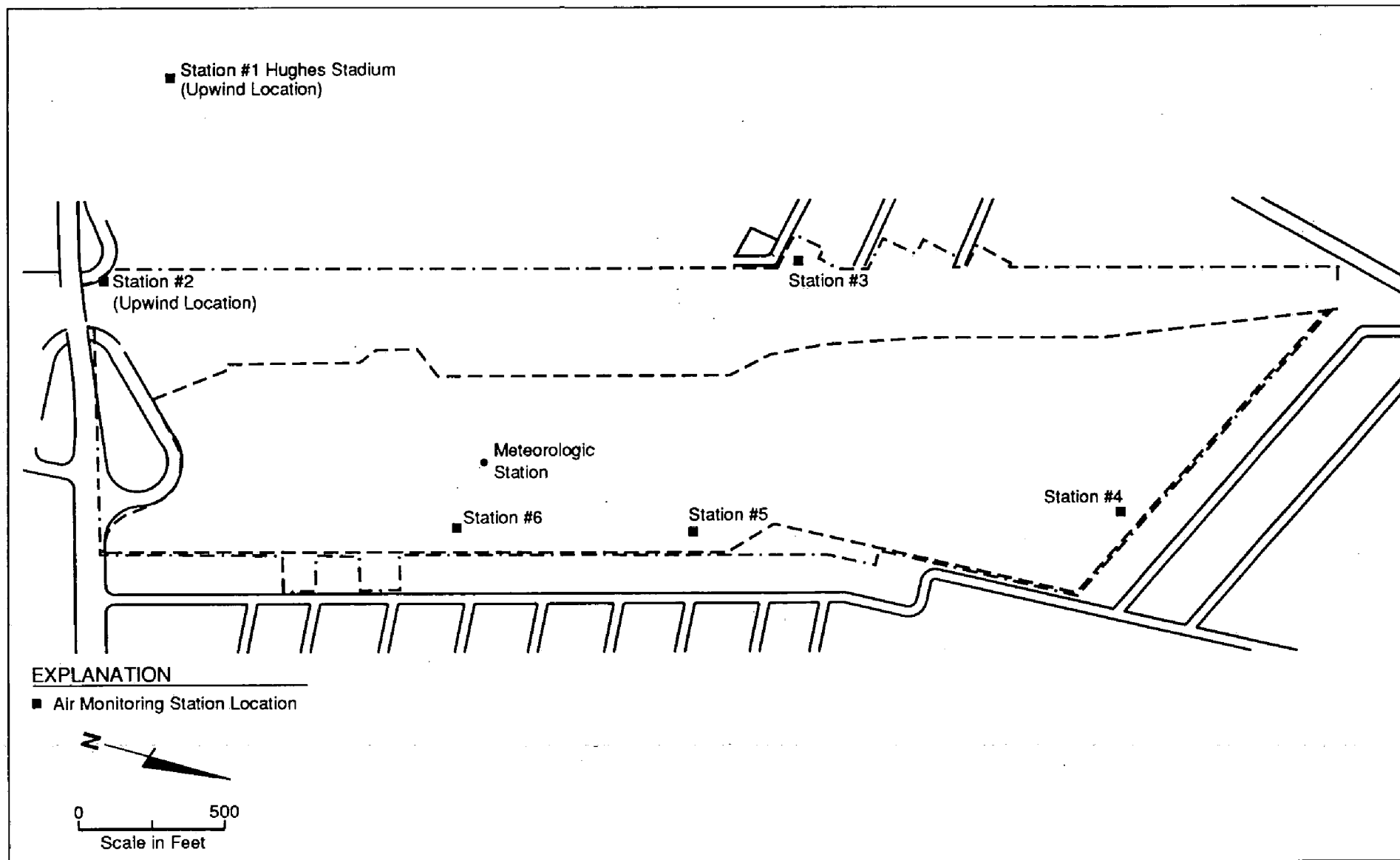
EXPLANATION

- 80% Approximate Percent Slag: Visually Mapped
- 1/4" Predominate Slag Particle Size
- SURF Estimated Depth of Slag Mapping Unit (SURF - Surface Veneer)
- F.D. Where Shown Indicates that Slag Particles Fine Downward to Fine Sand to Silt Sized Particles

- — — — — Fence
- - - - - Property Boundary
- Slag Mapping Unit Boundary
- Surface Sample Location Completed as a Soil Boring
- Surface Sample Location

- Areas Covered with Concrete or Asphalt
- Areas Covered with New Track Ballast. Some Areas Between Tracks have Narrow Strips Containing Slag at Surface.

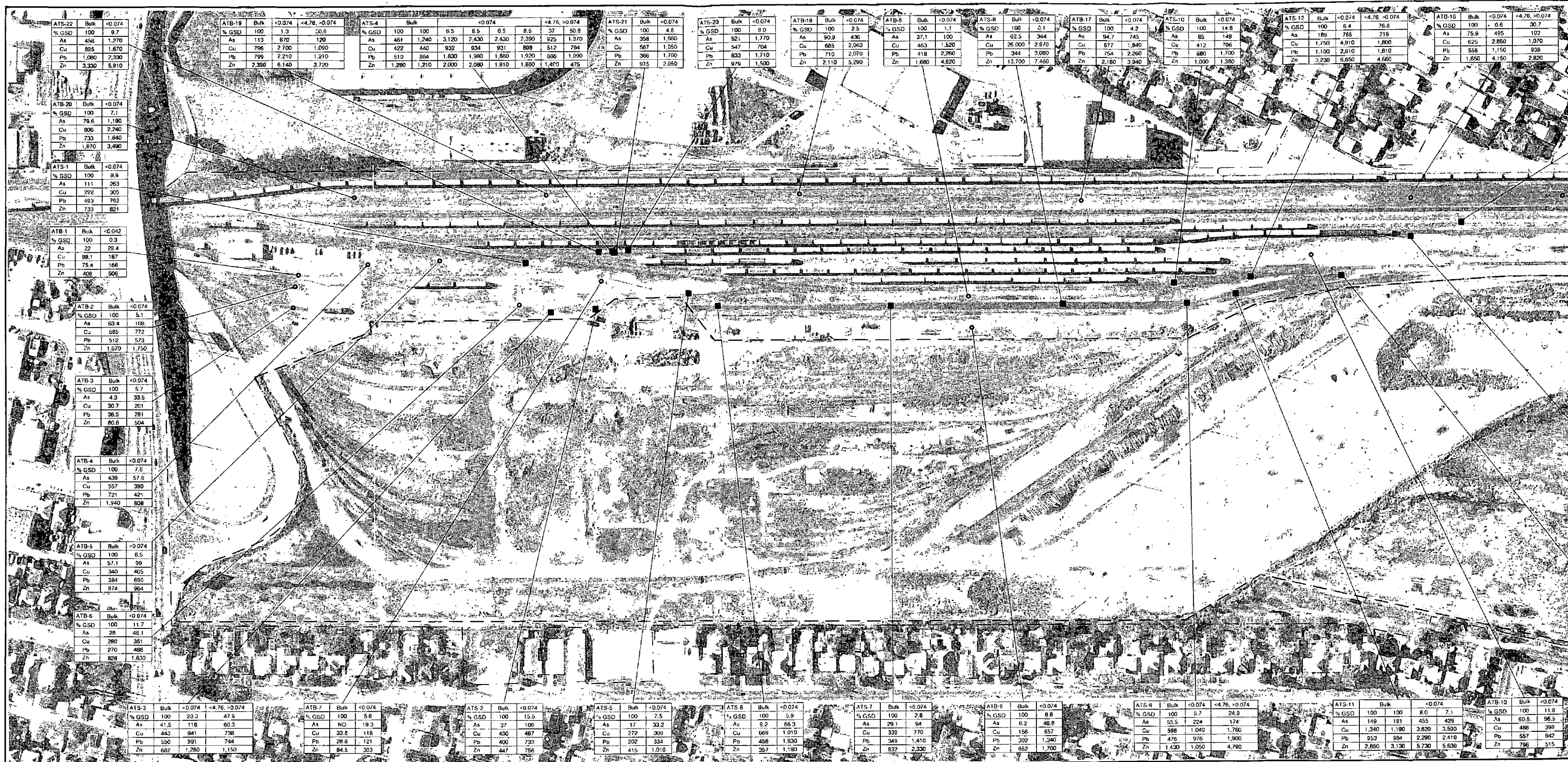




AIR MONITORING STATION LOCATIONS

Union Pacific Railroad Yard
Sacramento, California
SEPTEMBER 1992

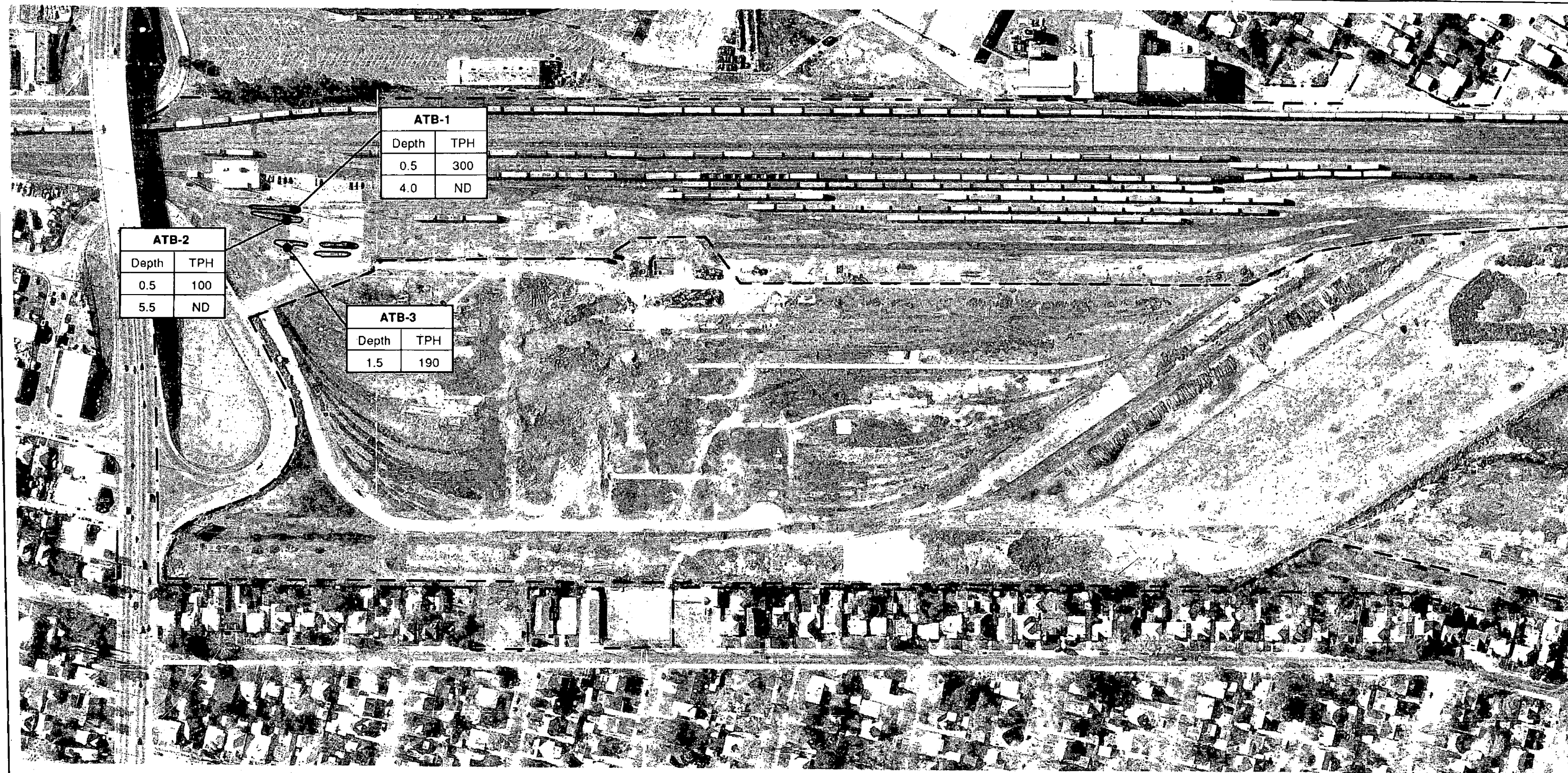
FIGURE 9



EXPLANATION

- Surface Sample Location Completed as a Soil Boring
- Surface Sample Location

	Sample Number	Bulk Sample	Grain Size (mm)
Percent of Total Grain Size Distribution	ATB-7	Bulk	<0.042
	% GSD	100	0.3
Arsenic	As	22	29.4
Copper	Cu	88.1	187
Lead	Pb	512	166
Zinc	Zn	408	506
			Percent of Total Grain Size Distribution
			Analytical Results in mg/kg



EXPLANATION

Stained Soils

ND Non - Detect

Boring Number
Feet Below Ground Surface

ATB-1	
Depth	TPH
0.5	300
4.0	ND

Diesel Range
Total Petroleum Hydrocarbons

Analytical Result in mg/kg



0 200
Scale in Feet

Appendix

A

**APPENDIX A
FIELD METHODS
SHALLOW SOIL INVESTIGATION
ACTIVE YARD**

**UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA**

APPENDIX A
FIELD METHODS - SHALLOW SOIL INVESTIGATION - ACTIVE YARD

A.1 SURFACE SOIL SAMPLING

Surface soil sampling consisted of collecting forty-three surface soil and gravel samples in the active yard at locations shown on Figure 10. Surface sample locations were chosen based on the type of material present at the surface (i.e., railroad ballast, railroad ballast and soil, or silty clay soil). Several samples from each general type of material present at the surface were sampled. Surface sample locations were chosen to give an approximate equal sampling distribution across the Active Portion of the site. A total of eleven surface samples were collected in the former Car Repair Shed Area, the Planing Mill Area, and an area of visible hydrocarbon contamination in the southeast corner of the Active Portion of the site. The remaining 29 surface samples were collected adjacent to railroad tracks comprising the Active Portion of the site.

A.1.1 Sampling Procedures

Surface samples were collected from locations using hand sampling methods. The purpose of the sampling was to evaluate fine-grained surface materials subject to potential migration by air. The method of sampling is described below.

- A representative sample of the upper two inches of soil and material was collected using a clean flat blade shovel;
- Samples were placed in 1-gallon plastic bags;
- Samples were labeled with a sample identification number, project number, date sampled and name of sampler;
- The sampling shovel was decontaminated between each sampling location;
- Four co-located duplicate samples were collected, representing 10 percent of the surface sampling population; and
- Samples were recorded on an appropriate chain-of-custody form, and placed in a cooled ice chest for transport to the analytical laboratory.

A.1.2 Grain Size Analysis Procedures

Grain size analysis was performed on all surface samples. Sample handling procedures are described below.

- Samples were logged into the Dames & Moore physical testing laboratory following appropriate chain of custody procedures;
- Prior to sieve analysis, a representative portion of each sample was split for later comparison to laboratory analytical results;
- Samples were dry sieved to a 0.074 mm sieve opening size following ASTM D2487 standard test methodology;
- Between each grain size analysis each sieve was decontaminated and dried;
- A portion of ten samples and one co-located duplicate sample were separated into the grain size fraction between 0.470 and 0.074 mm for coarse fraction metals analyses; and
- The portion of each sample which was not submitted to the analytical laboratory was stored under chain-of-custody in a locking freezer.

A summary of the results from the grain size analysis is provided in Table 3.

A.1.3 Laboratory Analyses

The finer fraction of the sieved sample (less than 0.074mm) was submitted to a DTSC-approved analytical laboratory and analyzed for arsenic, copper, lead and zinc to evaluate the metal concentration of the fraction which has the potential to become airborne. Additionally, ten of the finer fraction surface samples were analyzed for Title 22, California Code of Regulations (CCR) metals. Ten other randomly selected coarser grain size fractions of the sieved samples (<0.047mm, >0.074mm) were also analyzed for CCR metals. Collocated duplicate sample analyses was performed for 10 per cent of the samples. Analytical methods utilized are summarized in Table A.1. Samples were transported and handled under standard chain-of-custody procedures at all times.

Additional QA/QC analyses were performed on six of the 40 fine grain fraction samples. Initially the matrix spike analyses were conducted with spike levels below 10 percent of the detected metals concentrations. The extracts from six samples were reanalyzed by D&M Laboratories for arsenic, lead, copper and zinc. To evaluate analytical accuracy, these six samples were then spiked with levels equivalent to approximately 50 percent of the detected concentration. For an additional evaluation of laboratory precision and accuracy a portion of the six samples were submitted to Cal Enseco laboratory for blind duplicate analyses. Percent recoveries and relative percent difference were evaluated to assure data quality.

Summary analytical results for arsenic, copper, lead and zinc are provided in Table 1 and 2. Comprehensive results for CCR metals are provided in Appendix C. Laboratory analytical reports are provided in Appendix D.

A.2 SOIL BORINGS

Twenty shallow soil borings were completed at the surface sample locations shown in Figure 10 (ATB samples). Shallow soil borings were completed to evaluate the presence of metals and hydrocarbons in shallow subsurface soils across the Active Portion of the site. Three of the soil borings were located in the southeast corner of the Active Portion of the site where surface soil is visibly stained with hydrocarbons.

Soil borings were completed to a minimum depth of 5 feet below the native soil surface using hollow stem auger drilling methods. Soils were logged according to the Unified Soil Classification System.

A.2.1 Drilling and Sampling Procedures

Drilling was conducted using a truck mounted drill rig equipped with 8-inch diameter hollow stem augers. This drilling method was performed without the introduction of drilling fluids (which may mobilize chemicals) and allowed for the collection of relatively undisturbed soil samples through the hollow stem of the auger.

Continuous soil sampling was conducted utilizing a 2 1/2-inch diameter CME five-foot long split-barrel sampler and an 18-inch driven California Modified (CM) sampler. Soil cores were logged according to the Unified Soil Classification System (USCS) and stored in core trays or boxes for future evaluation or testing as necessary.

The five-foot sample barrel fits within the lead auger, extending a few inches in front of the auger head. Upon advancing the sampler five feet, the sample system was lifted from within the auger and removed from the leading end of the rod assembly. The sampler assembly was then removed, allowing the split tube to be separated and the sample removed.

A CM-sampler was used to collect and retain soil samples at selected intervals for potential chemical analyses. The CM-sampler was also used for any interval where core recovery and retention became difficult.

The CM-sampler was fitted with 2 1/2-inch diameter six-inch long stainless steel rings. During use, the CM-sampler was driven 18 inches or until refusal into undisturbed soil. The sampler was driven using a 140-pound hammer dropping 30 inches. Hammer blows required to drive the sampler each 6-inch increment of the 18-inch interval were recorded on the boring log. The sampler was then removed from

the auger, and the shoe and adapter were removed, allowing the sampler to be separated and the stainless steel sample rings to be removed.

Sample rings were separated with a clean knife. The exposed ends of the rings were covered with 2-mil Teflon sheets and secured with tight-fitting plastic end caps. Sample labels were affixed to the end caps and contained the following information: boring number; sample location; sample number; sample depth; date of sampling; time of sampling; sample collector's name; soil type (USCS); and project name.

Two rings from the 18-inch CM-sampler were retained from each sample interval. These samples have the same sample identification numbers except for postscripts "A or B". The lowest ring, Sample "A", was retained for potential chemical testing, "B" samples were retained for possible future chemical analyses or possible physical testing. Sample rings were screened with a photoionization detector (PID) to evaluate whether chemical analyses were warranted.

If the boring did not appear to have a potential for caving, the augers were removed from the borehole, and a 3% bentonite/cement grout mixture was poured down the borehole until the grout was flush with the ground surface. If it was anticipated the boring did have the potential for caving, or if groundwater was encountered, then the cement grout was tremmied through the augers until flush with the surface.

After each use, samplers were washed thoroughly with a steam cleaner. After completion of each soil boring, the augers, drill bit, drill rod, and sampling equipment were transported to the designated cleaning area where they were steam cleaned. A self-contained steam cleaning trailer was utilized for steam cleaning.

A.3 ANALYTICAL PROCEDURES

A summary of sampling criteria, analytical parameters, and methods is provided in Table A-2. In areas of visible hydrocarbon staining, a minimum of two soil samples per boring were submitted to the laboratory for chemical analyses: 1) from the area with the highest visible staining; and 2) from soil that was visibly "clean" directly below the visibly stained soil. These samples were analyzed for total petroleum hydrocarbons (TPH) as diesel (EPA Method 8015 modified).

A minimum of one soil sample was submitted for chemical analysis from each of the twenty soil boring. These samples were selected from areas suspected to have potential contamination, based on the following criteria:

- Elevated readings (greater than 10 parts per million (ppm) above background) from a photoionization detector (PID) which may indicate the presence of volatile organic compounds. These readings were measured by placing a portion of each soil unit into a clean plastic bag, agitating the soil, and monitoring the headspace for vapors or gases with the PID. Select samples with elevated readings were submitted for analysis for halogenated and aromatic volatile organic compounds using EPA Methods 8010 and 8020;
- Discoloration or staining. Depending on the type of staining, select samples were submitted for halogenated and aromatic volatile organic compounds (EPA Methods 8010/8020), and/or semivolatile organic compounds (EPA Method 8270);
- Odors. Select samples were submitted for aromatic and halogenated volatile organic compounds (EPA Methods 8010/8020) and/or semivolatile organic compounds (EPA Method 8270);
- Presence of refuse-like material. These samples were submitted for arsenic (EPA Method 7060), copper (EPA Method 6010), lead (EPA Method 7421), and zinc (EPA Method 6010);
- Presence of fibrous-like material. These samples were submitted for asbestos analysis using polarized electron microscopy; and
- Other indications of materials not identified as natural soil. Analyses of these samples were selected in the field.

If none of the criteria described above were noted, a minimum of one sample from the finest grained material observed in the soil boring cores from each boring location was submitted for analysis of arsenic (EPA Method 7060), copper (EPA Method 6010), lead (EPA Method 7421), zinc (EPA Method 6010), and aromatic and halogenated volatile organic compounds (EPA Methods 8010/8020).

TABLE A-1

**SAMPLE ANALYSES SUMMARY
SURFACE SOIL SAMPLES
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA**

SAMPLE	NO. OF SAMPLES	PARAMETER	METHOD
All surface samples	44	Grain Size Analyses	ASTM D2487
Fine Grain Fraction (Passing #200 Sieve)	33	Arsenic	EPA 7060
		Copper	EPA 6010
		Lead	EPA 7421
		Zinc	EPA 6010
	11	CCR Metals	ICP
Coarse Grain Fraction (Held on #200 Sieve)	11	CCR Metals	ICP

TABLE A-2

**SAMPLE ANALYSES SUMMARY
SHALLOW SOIL BORING SAMPLES
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA**

ANALYSIS CRITERIA (1)	PARAMETER	ANALYSIS METHOD
Visible Hydrocarbon Staining	Total Petroleum Hydrocarbons as Diesel	EPA 8015 (Modified)
Elevated PID Readings/ Discoloration or Staining/ Odors	Halogenated Volatile Organic Compounds (2)	EPA 8010
Elevated PID Readings/ Discoloration or Staining/ Odors	Aromatic Volatile Organic Compounds (2)	EPA 8020
Discoloration or Staining	Semivolatile Organic Compounds	EPA 8270
Significantly High (> 9.0) or Low (< 5.0) pH values/ Presence of Refuse-Like Material such as Bricks or Slag.	Arsenic (2)	EPA 7060
	Copper (2)	EPA 6010
	Lead (2)	EPA 7421
	Zinc (2)	EPA 6010

Footnotes:

(1) See additional discussion in Section A.3.

(2) If none of the criteria described in Section A.3 were noted, a sample of the finest grained material observed in that soil boring was submitted for these analyses.

Appendix B

**APPENDIX B
BORING LOGS**

MAJOR DIVISIONS			GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOILS	CLEAN SAND (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND-SILT MIXTURES
				SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT <u>LESS</u> THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT <u>GREATER</u> THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: • DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS
• (0,30,35,25) INDICATES APPROXIMATE PERCENTAGE OF GRAVEL, SAND, SILT AND CLAY, RESPECTIVELY.

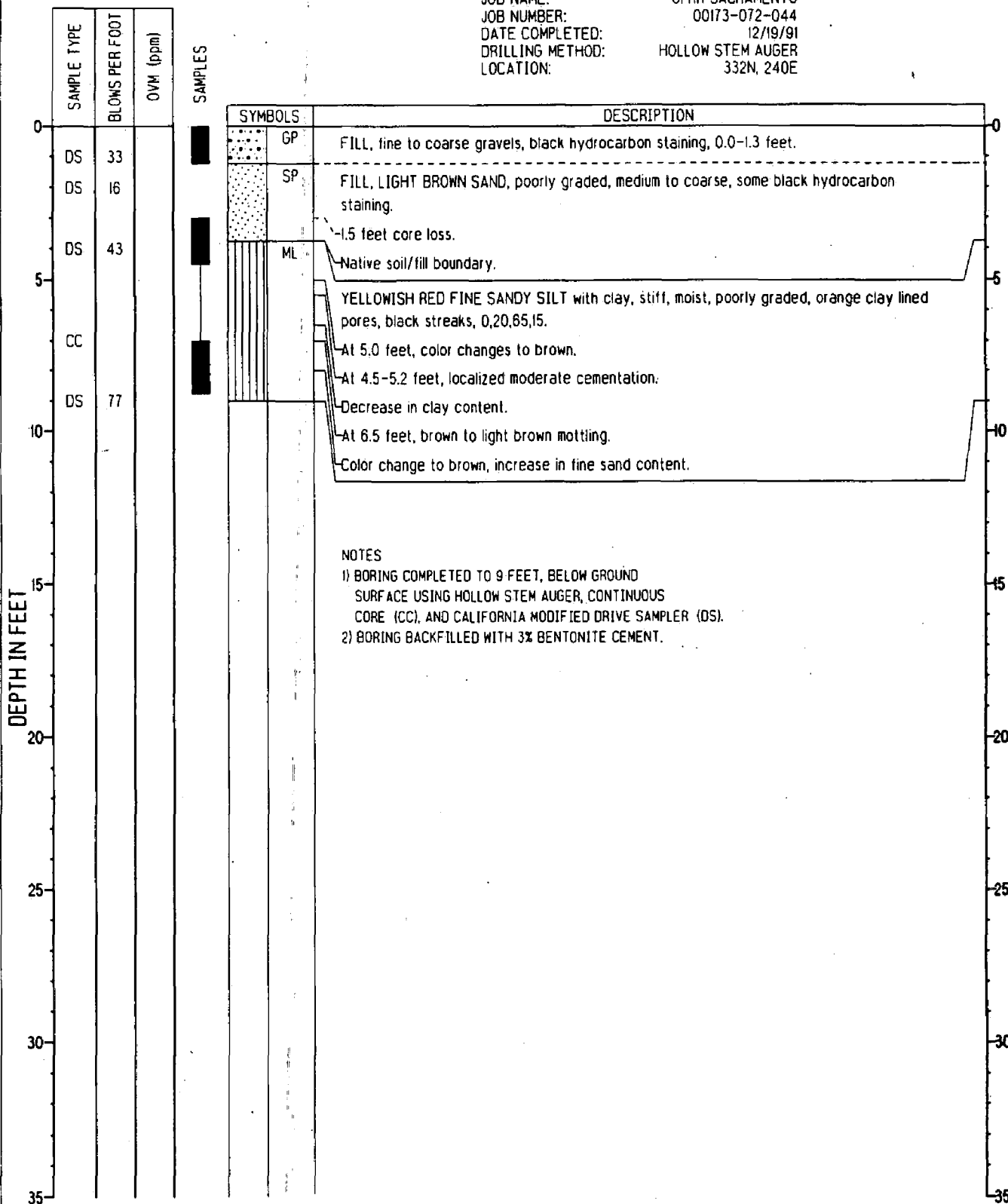
UNIFIED SOIL CLASSIFICATION SYSTEM

Union Pacific Railroad Yard
Sacramento, California
SEPTEMBER 1992

SOIL BORING

ATB-1

JOB NAME: UPRR SACRAMENTO
 JOB NUMBER: 00173-072-044
 DATE COMPLETED: 12/19/91
 DRILLING METHOD: HOLLOW STEM AUGER
 LOCATION: 332N, 240E



BORING LOG
 DAMES & MOORE

SOIL BORING

ATB-2

JOB NAME:

UPRR SACRAMENTO

JOB NUMBER:

00173-072-044

DATE COMPLETED:

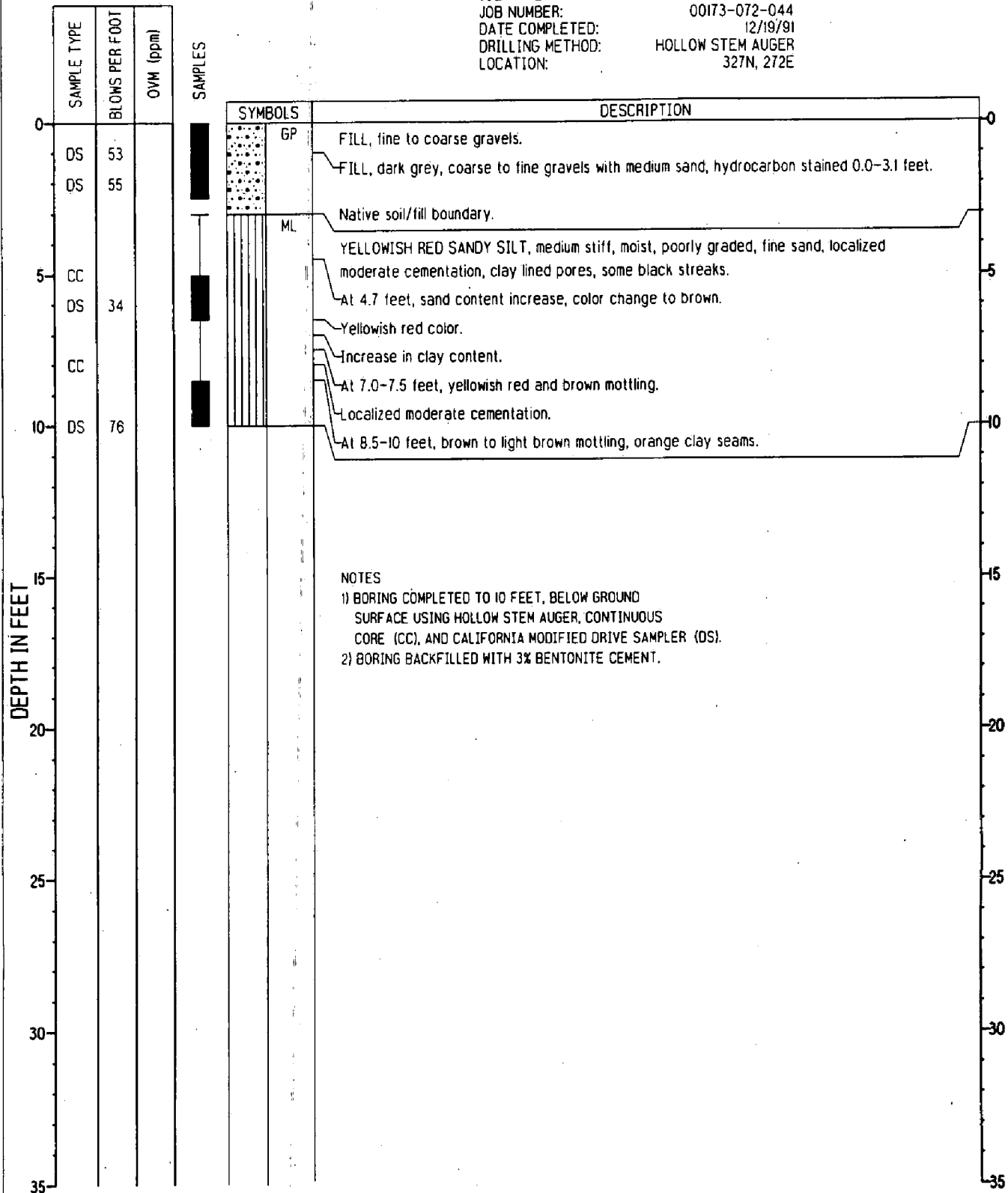
12/19/91

DRILLING METHOD:

HOLLOW STEM AUGER

LOCATION:

327N, 272E

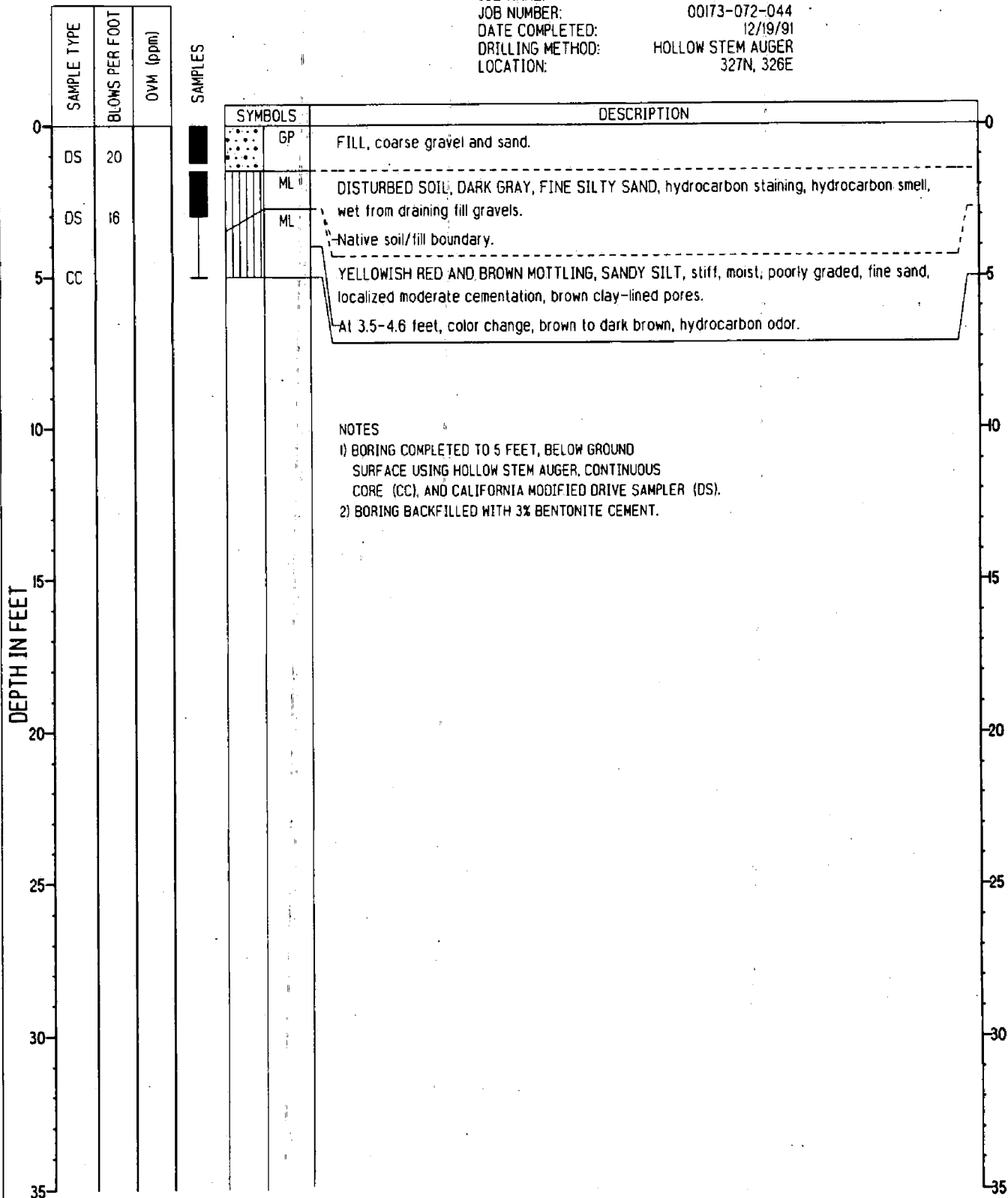


BORING LOG
DAMES & MOORE

SOIL BORING

ATB-3

JOB NAME: UPRR SACRAMENTO
 JOB NUMBER: 00173-072-044
 DATE COMPLETED: 12/19/91
 DRILLING METHOD: HOLLOW STEM AUGER
 LOCATION: 327N, 326E

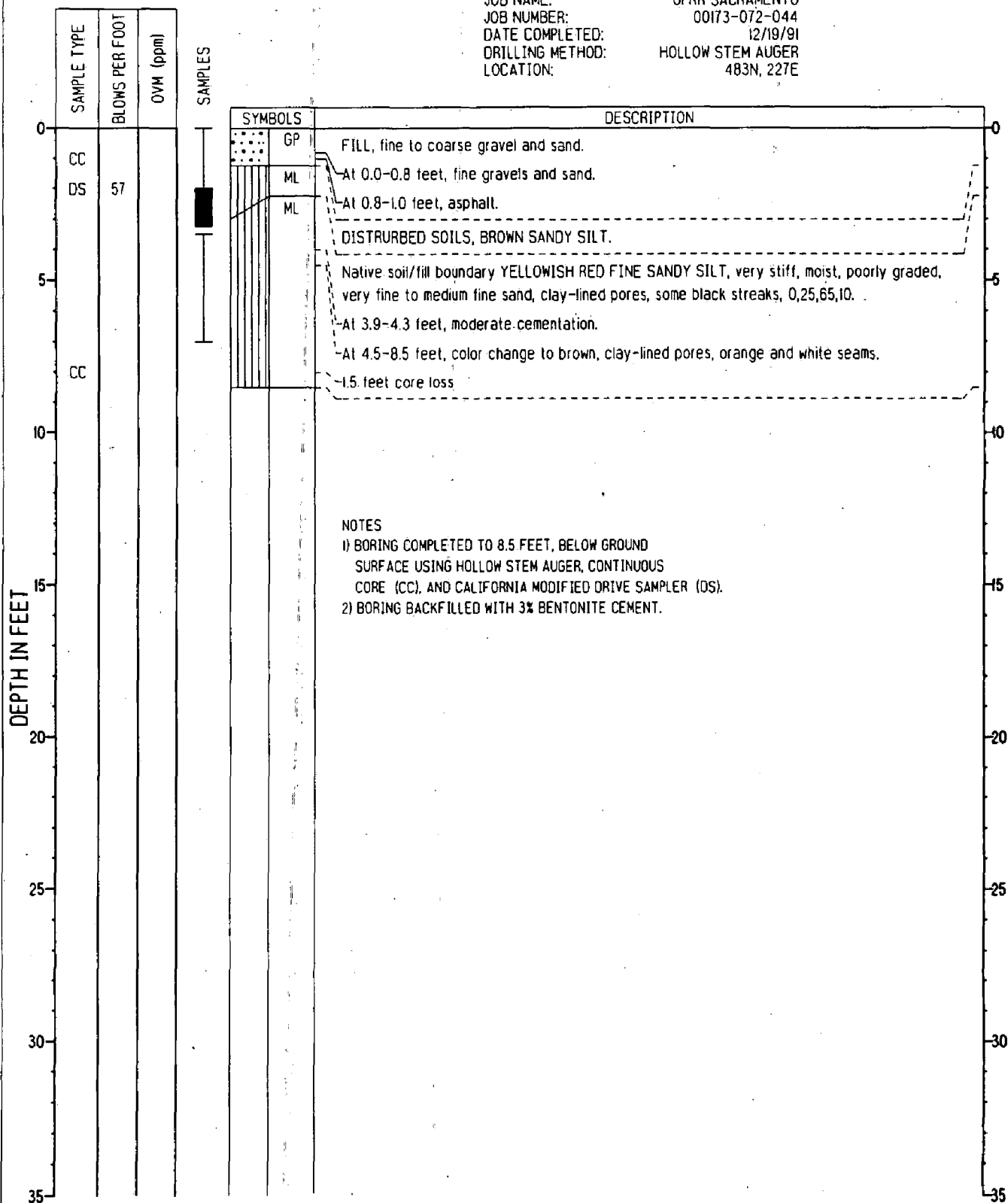


BORING LOG
 DAMES & MOORE

SOIL BORING

ATB-4

JOB NAME: UPRR SACRAMENTO
 JOB NUMBER: 00173-072-044
 DATE COMPLETED: 12/19/91
 DRILLING METHOD: HOLLOW STEM AUGER
 LOCATION: 483N, 227E

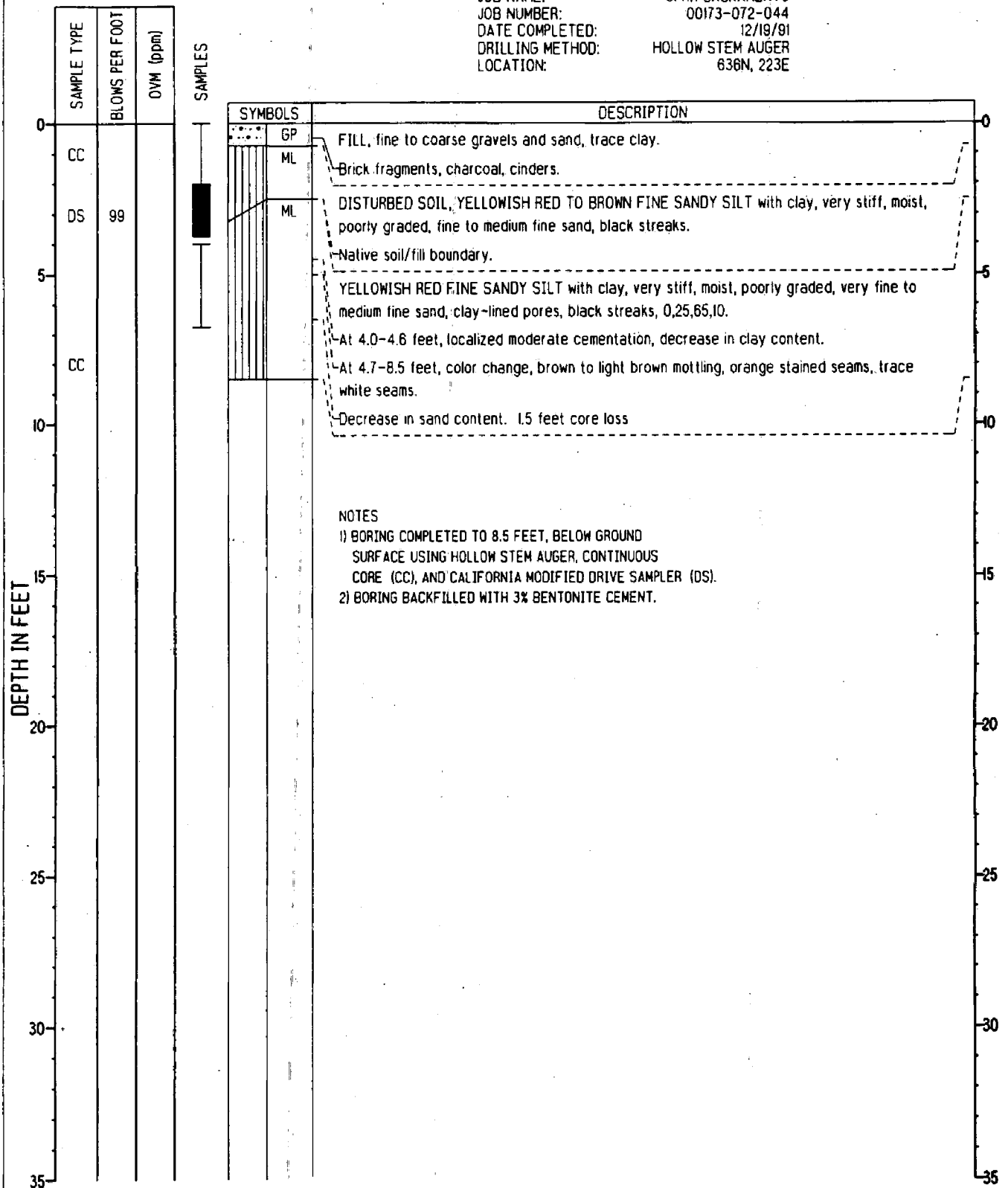


BORING LOG
 DAMES & MOORE

SOIL BORING

ATB-5

JOB NAME: UPRR SACRAMENTO
 JOB NUMBER: 00173-072-044
 DATE COMPLETED: 12/19/91
 DRILLING METHOD: HOLLOW STEM AUGER
 LOCATION: 636N, 223E

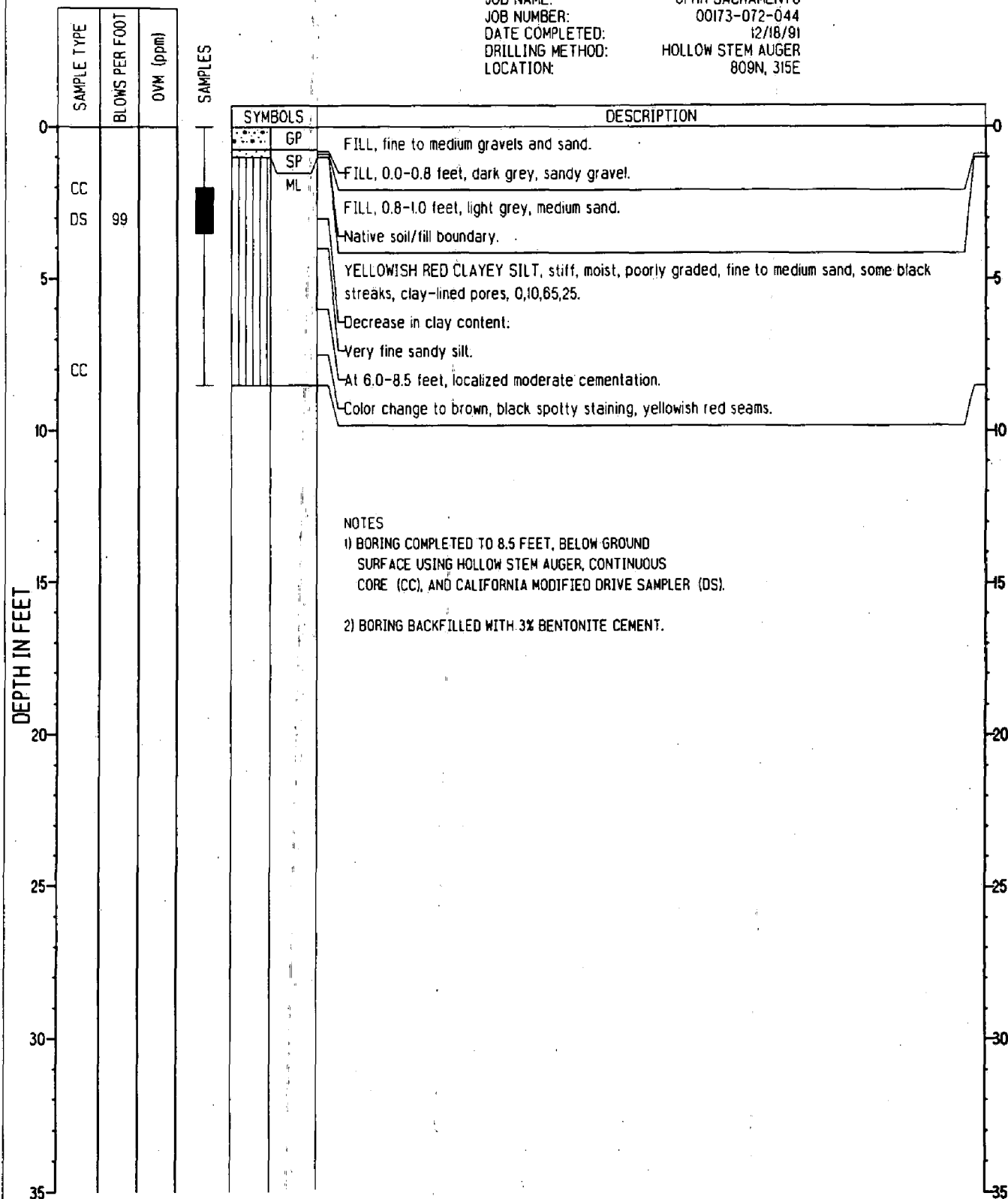


BORING LOG
 DAMES & MOORE

SOIL BORING

ATB-6

JOB NAME: UPRR SACRAMENTO
 JOB NUMBER: 00173-072-044
 DATE COMPLETED: 12/18/91
 DRILLING METHOD: HOLLOW STEM AUGER
 LOCATION: 809N, 315E

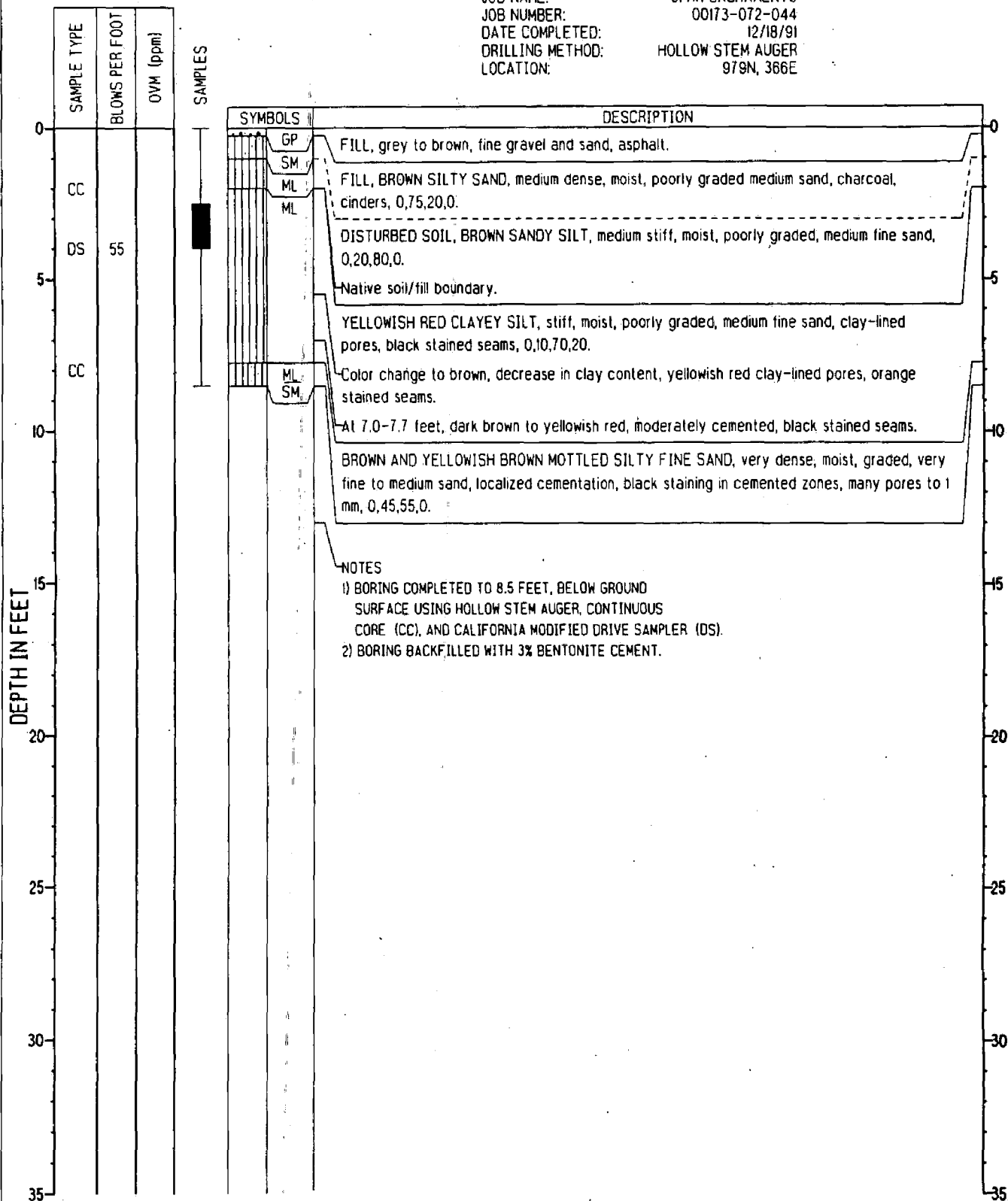


BORING LOG
 DAMES & MOORE

SOIL BORING

ATB-7

JOB NAME: UPRR SACRAMENTO
 JOB NUMBER: 00173-072-044
 DATE COMPLETED: 12/18/91
 DRILLING METHOD: HOLLOW STEM AUGER
 LOCATION: 979N, 366E



BORING LOG
 DAMES & MOORE

SOIL BORING

ATB-8

JOB NAME:

UPRR SACRAMENTO

JOB NUMBER:

00173-072-044

DATE COMPLETED:

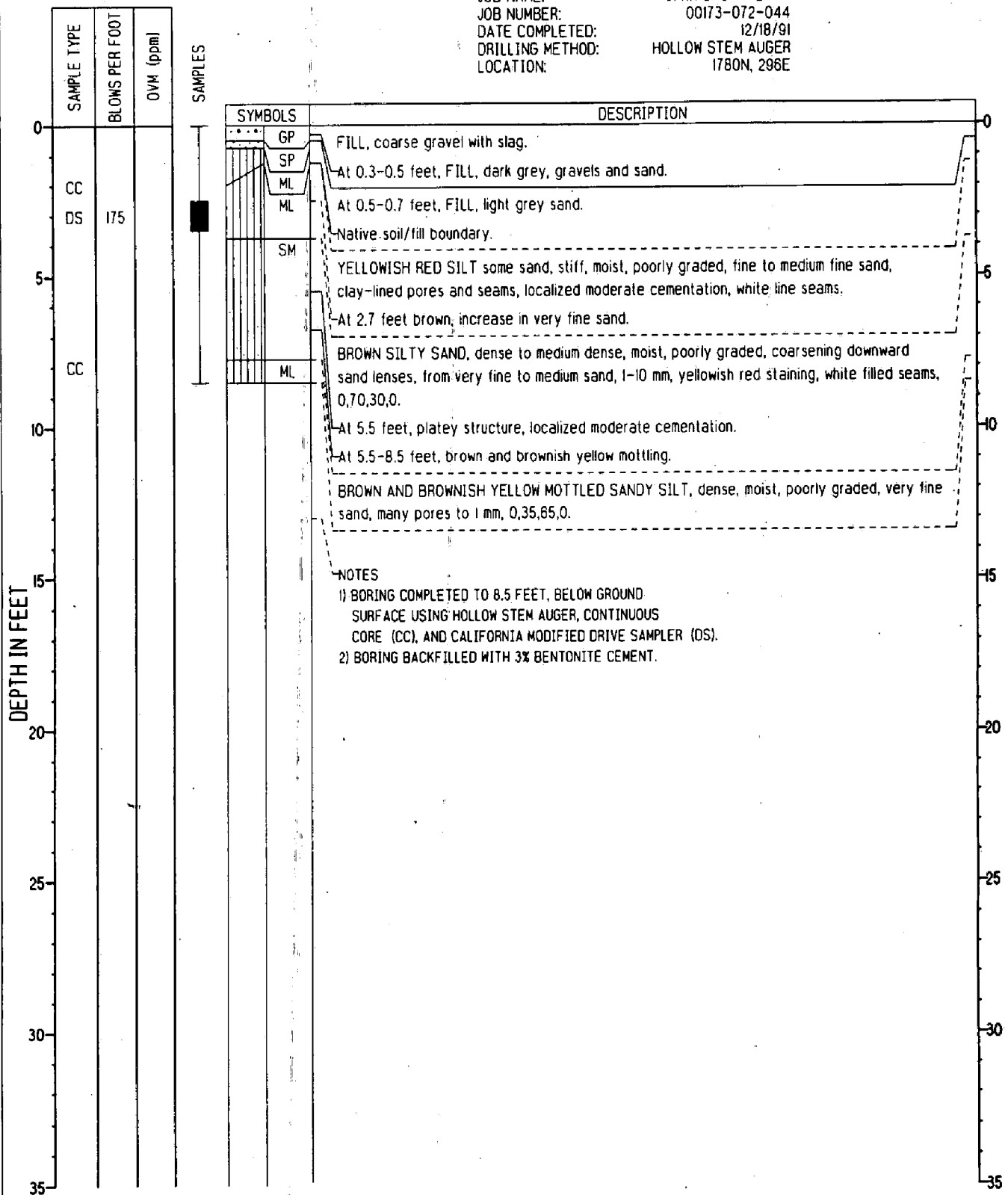
12/18/91

DRILLING METHOD:

HOLLOW STEM AUGER

LOCATION:

1780N, 296E

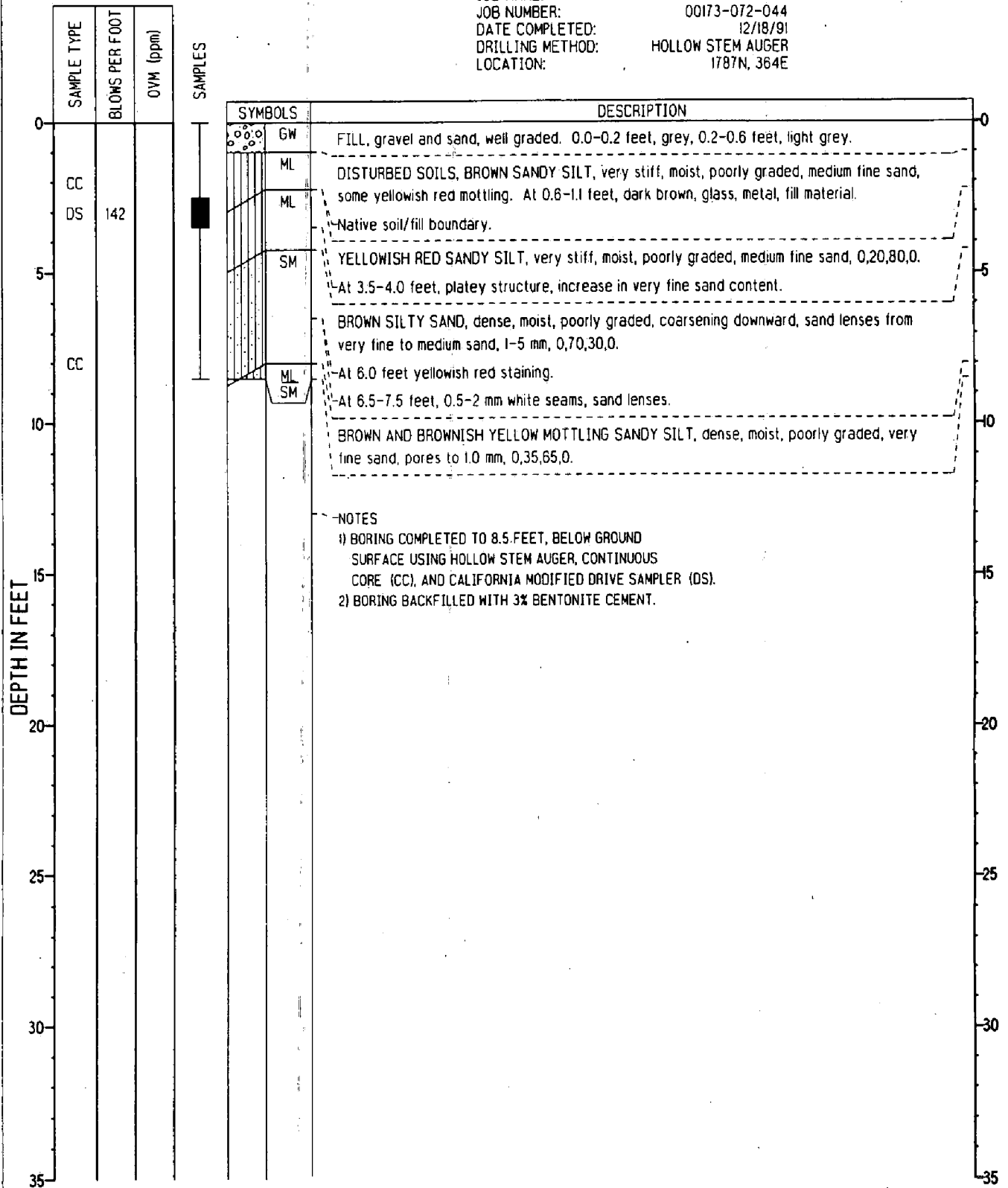


BORING LOG
DAMES & MOORE

SOIL BORING

ATB-9

JOB NAME: UPRR SACRAMENTO
 JOB NUMBER: 00173-072-044
 DATE COMPLETED: 12/18/91
 DRILLING METHOD: HOLLOW STEM AUGER
 LOCATION: 1787N, 364E

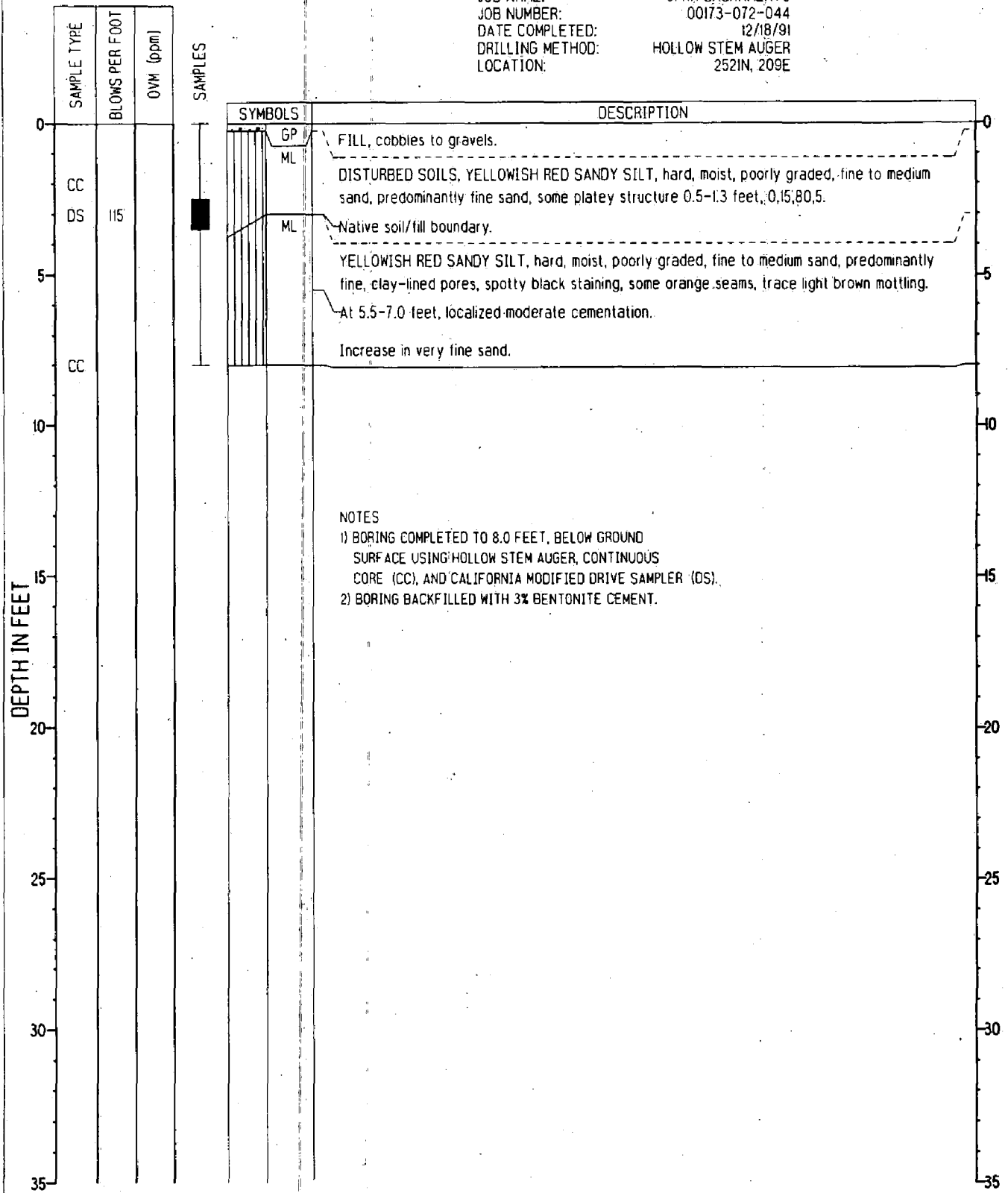


BORING LOG
 DAMES & MOORE

SOIL BORING

ATB-10

JOB NAME: UPRR SACRAMENTO
 JOB NUMBER: 00173-072-044
 DATE COMPLETED: 12/18/91
 DRILLING METHOD: HOLLOW STEM AUGER
 LOCATION: 252IN, 209E



BORING LOG
 DAMES & MOORE

SOIL BORING

ATB-II

JOB NAME:

UPRR SACRAMENTO

JOB NUMBER:

00173-072-044

DATE COMPLETED:

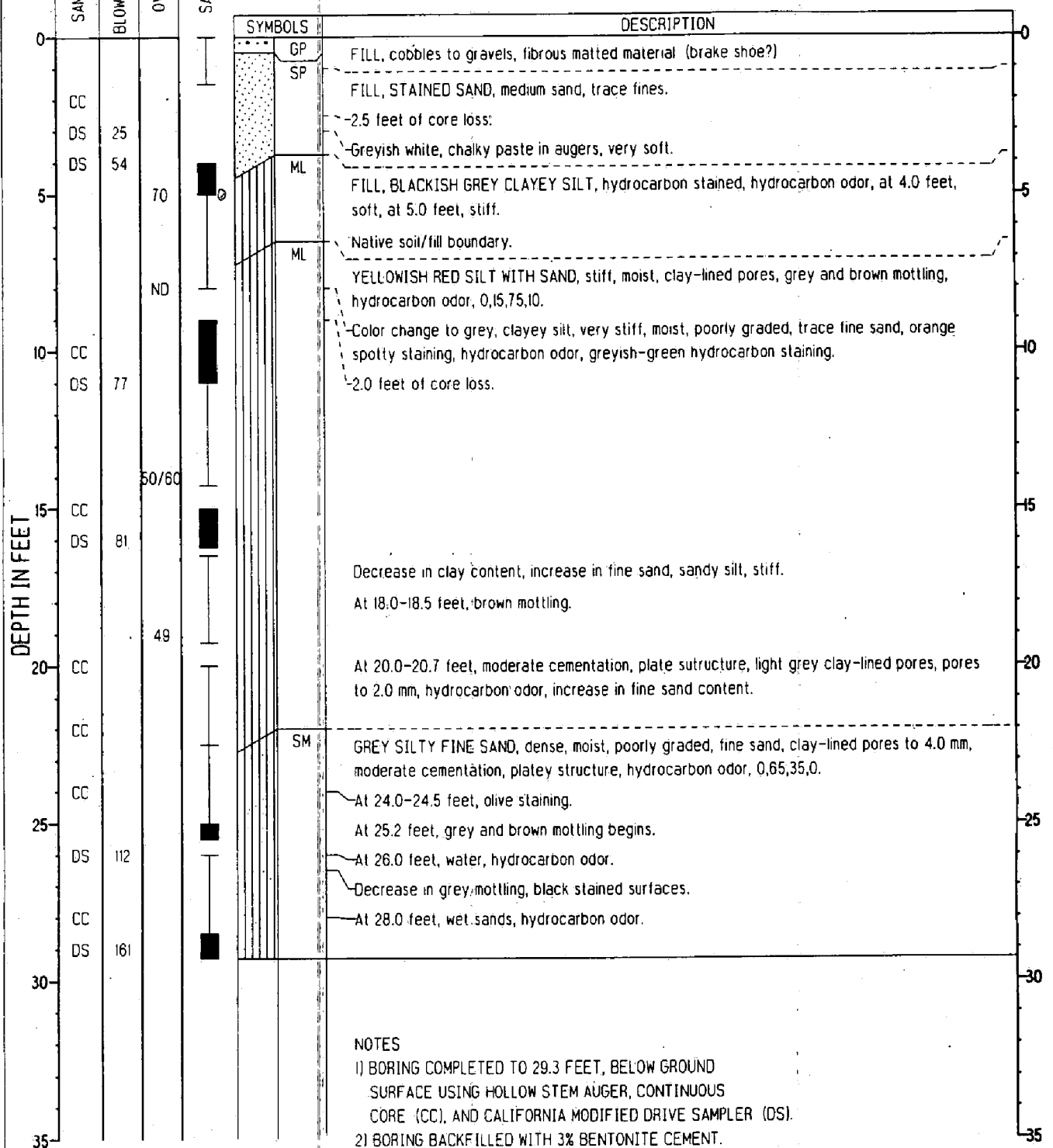
12/18/91

DRILLING METHOD:

HOLLOW STEM AUGER

LOCATION:

3090N, 204E

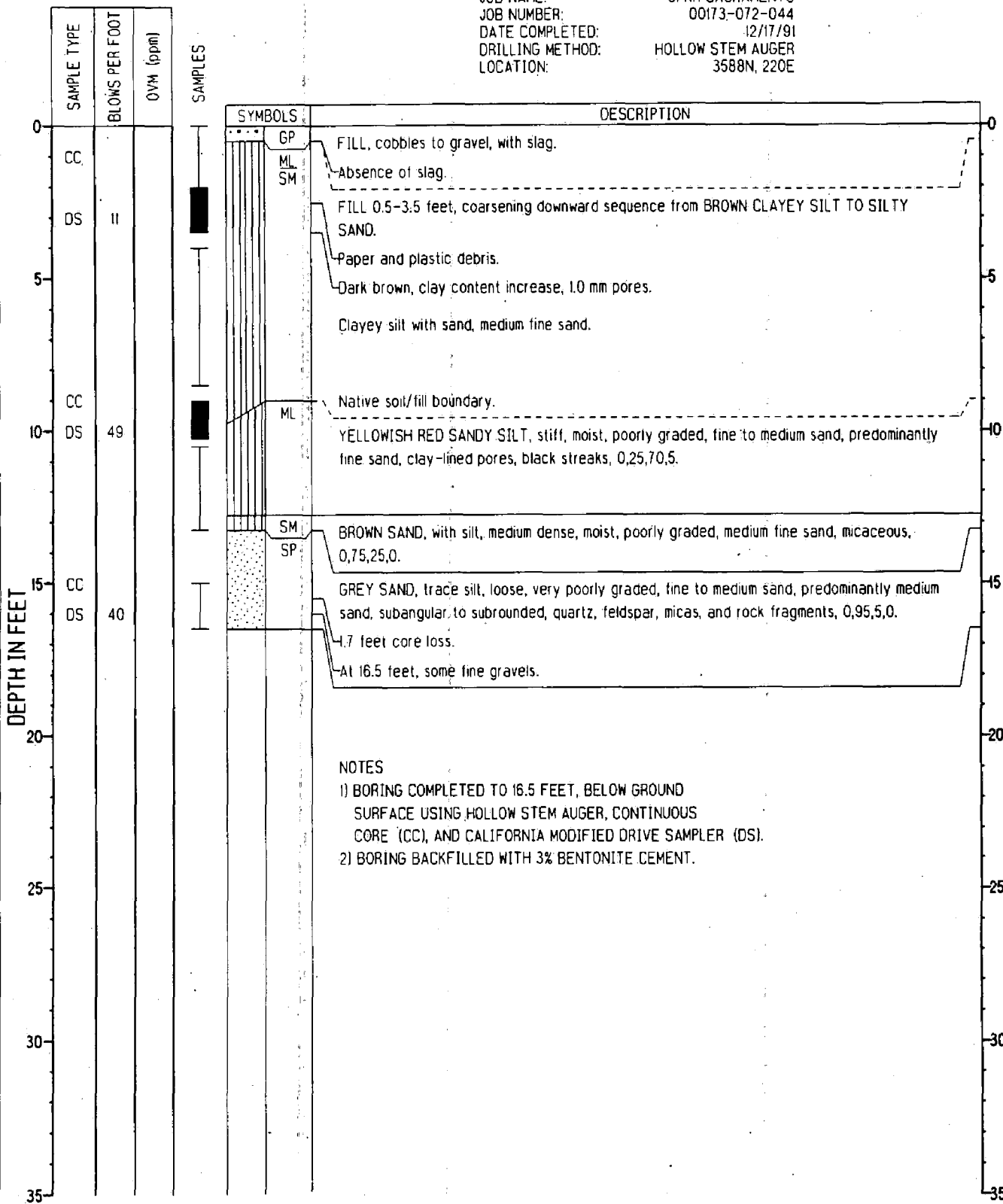


BORING LOG
DAMES & MOORE

SOIL BORING

ATB-12

JOB NAME: UPRR SACRAMENTO
 JOB NUMBER: 00173-072-044
 DATE COMPLETED: 12/17/91
 DRILLING METHOD: HOLLOW STEM AUGER
 LOCATION: 3588N, 220E

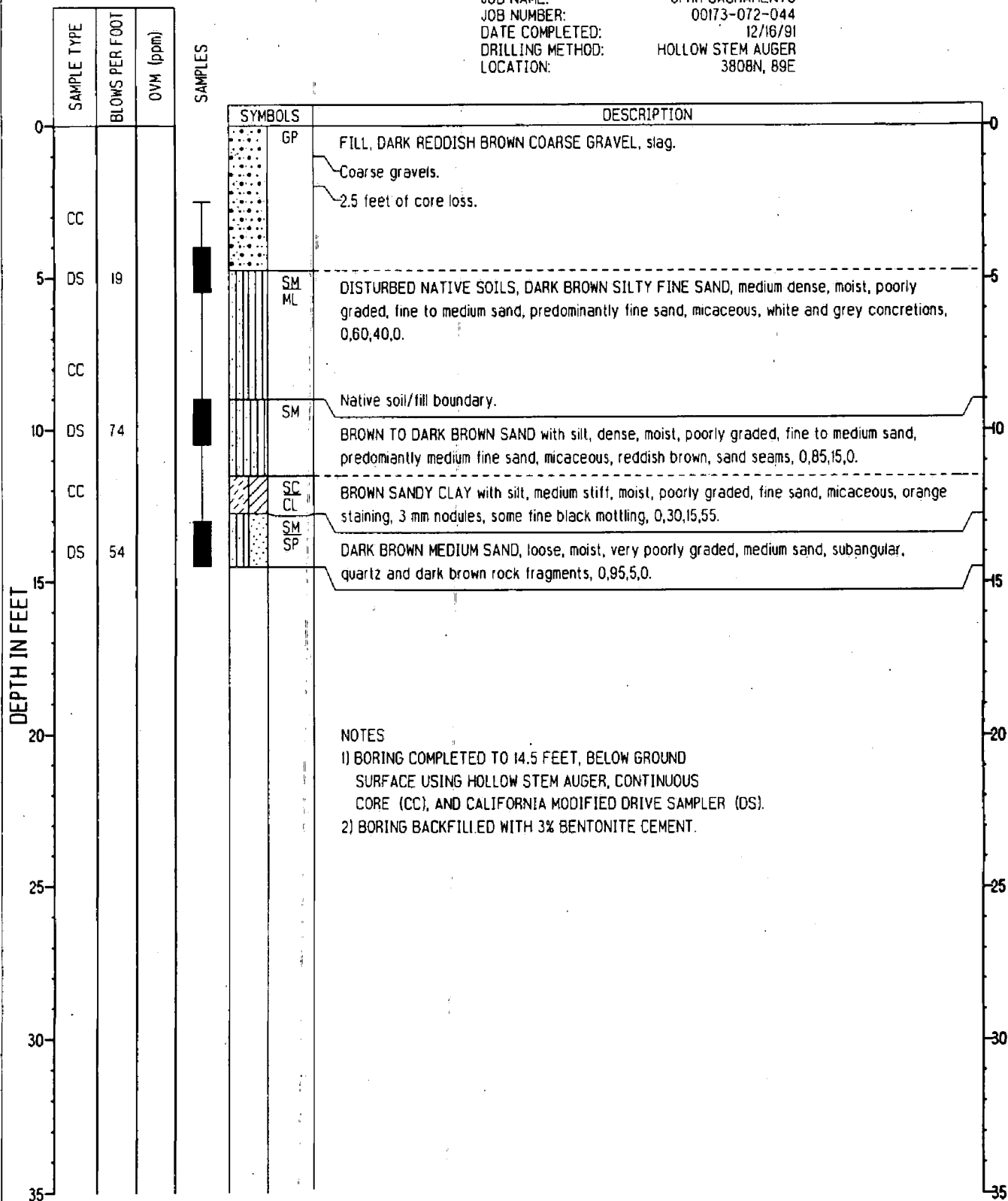


BORING LOG
 DAMES & MOORE

SOIL BORING

ATB-13

JOB NAME: UPRR SACRAMENTO
 JOB NUMBER: 00173-072-044
 DATE COMPLETED: 12/16/91
 DRILLING METHOD: HOLLOW STEM AUGER
 LOCATION: 3808N, 89E

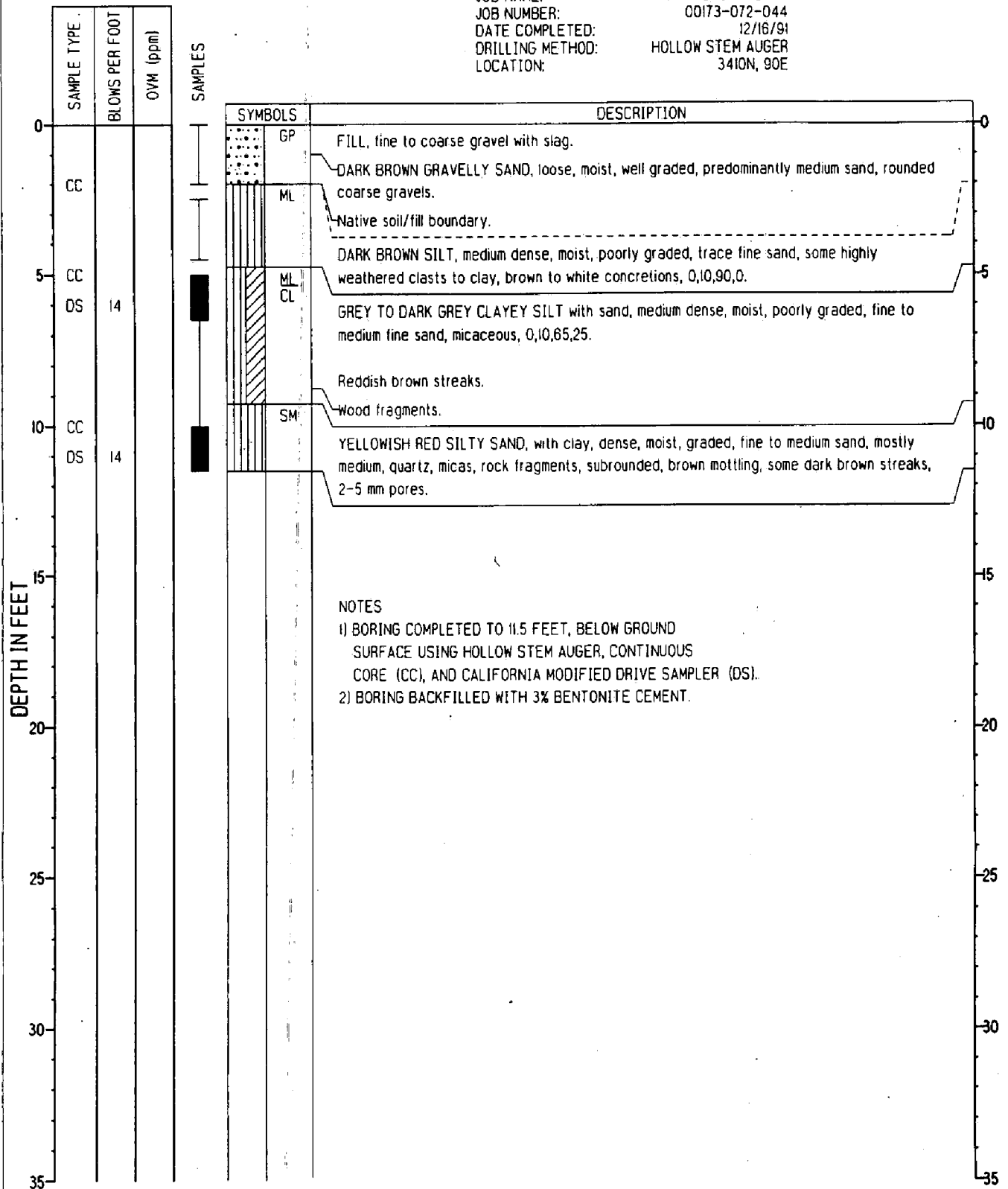


BORING LOG
 DAMES & MOORE

SOIL BORING

ATB-14

JOB NAME: UPRR SACRAMENTO
 JOB NUMBER: 00173-072-044
 DATE COMPLETED: 12/16/91
 DRILLING METHOD: HOLLOW STEM AUGER
 LOCATION: 3410N, 90E



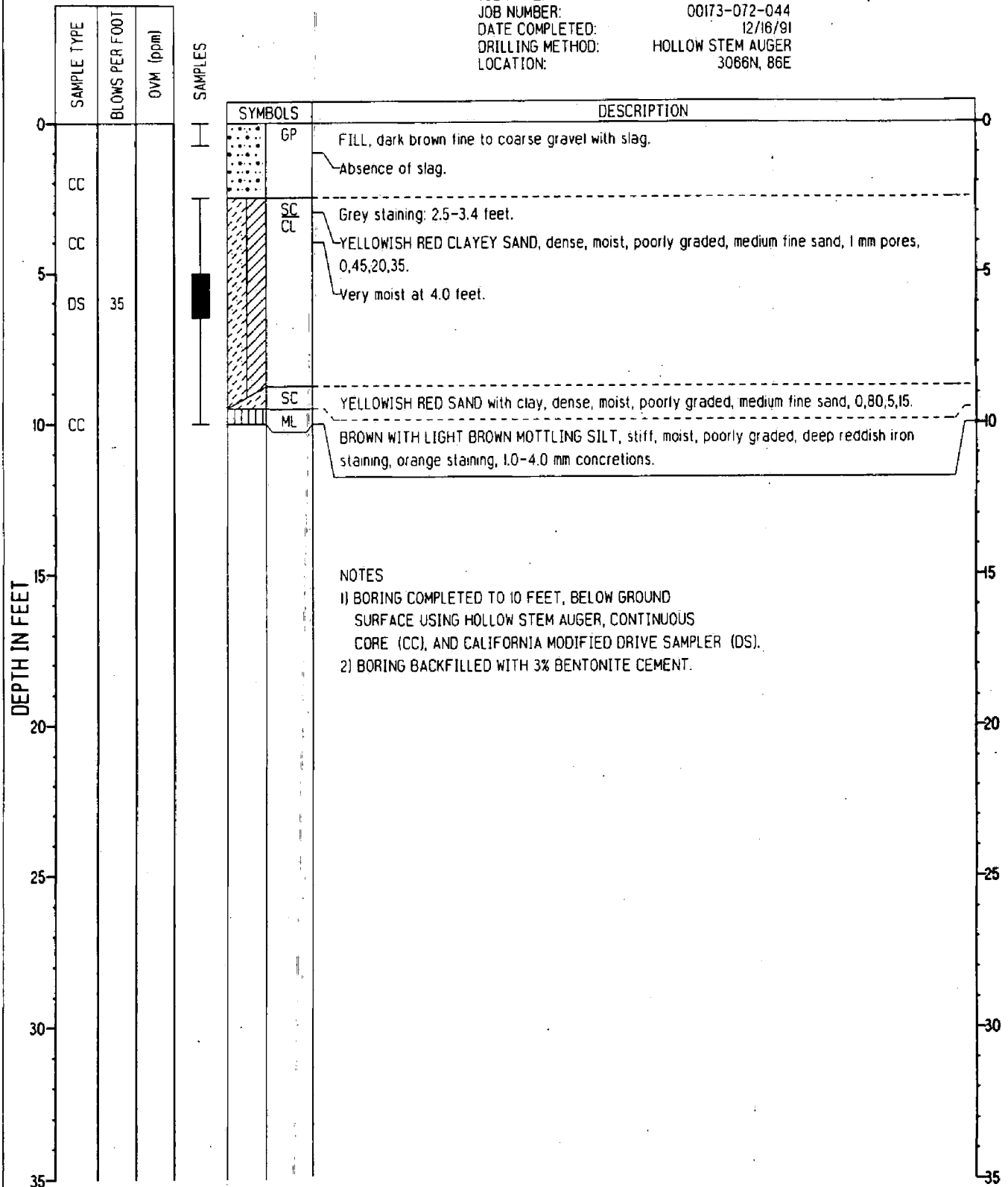
BORING LOG
 DAMES & MOORE

SOIL BORING

ATB-15

JOB NAME:
JOB NUMBER:
DATE COMPLETED:
DRILLING METHOD:
LOCATION:

UPRR SACRAMENTO
00173-072-044
12/16/91
HOLLOW STEM AUGER
3086N, 86E

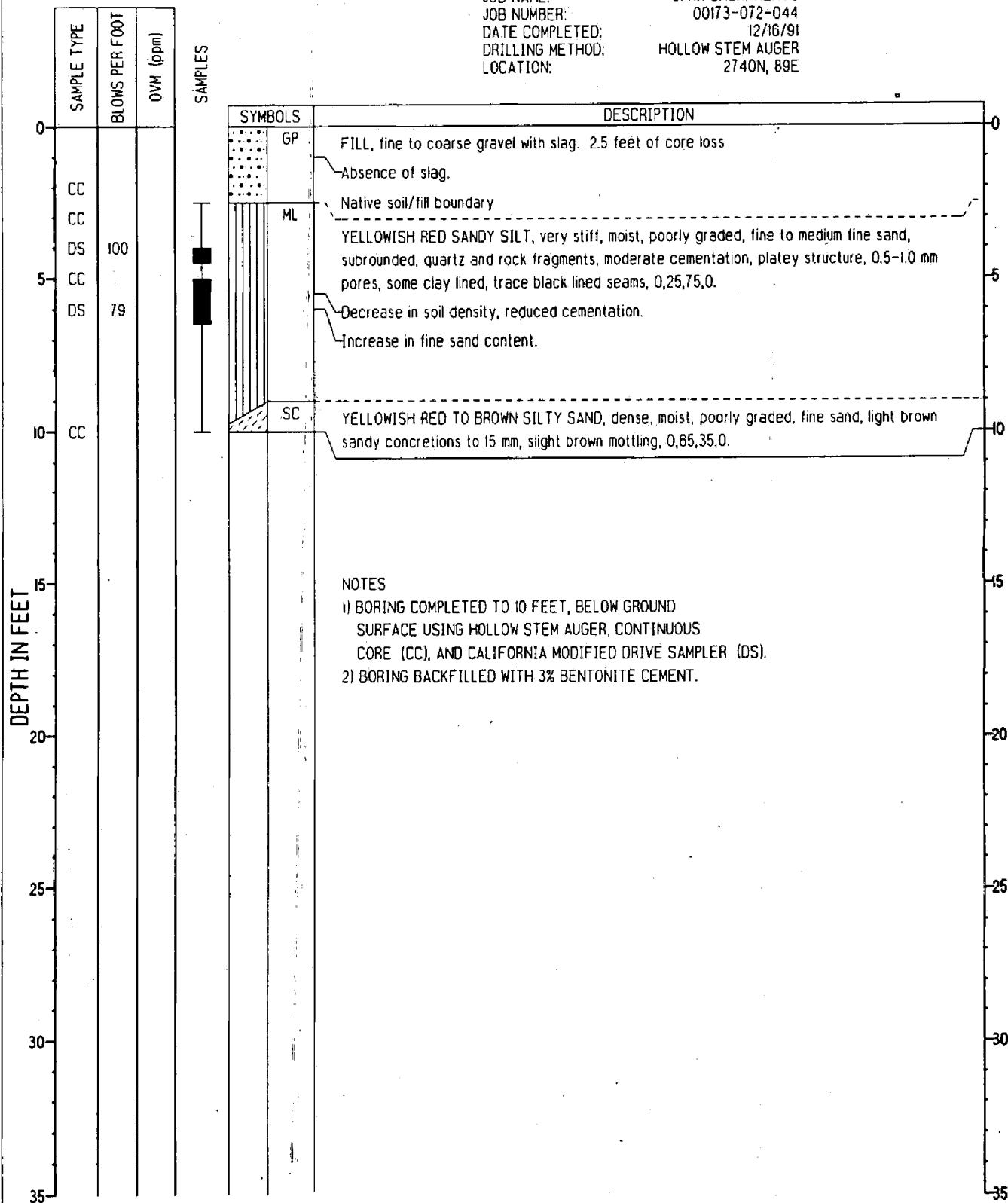


BORING LOG
DAMES & MOORE

SOIL BORING

ATB-16

JOB NAME: UPRR SACRAMENTO
 JOB NUMBER: 00173-072-044
 DATE COMPLETED: 12/16/91
 DRILLING METHOD: HOLLOW STEM AUGER
 LOCATION: 2740N, 89E

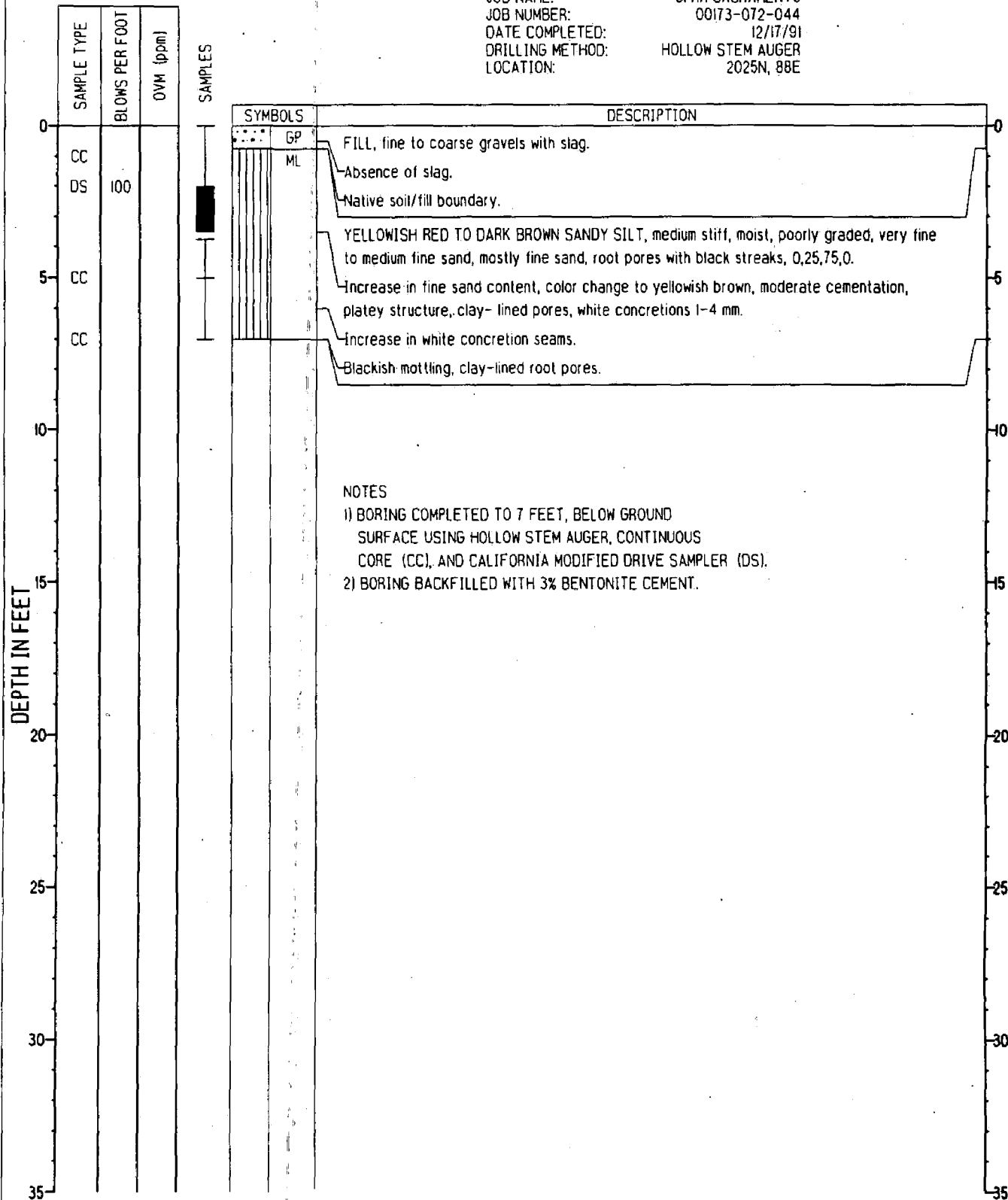


BORING LOG
 DAMES & MOORE

SOIL BORING

JOB NAME:
JOB NUMBER:
DATE COMPLETED:
DRILLING METHOD:
LOCATION:

ATB-17
UPRR SACRAMENTO
00173-072-044
12/17/91
HOLLOW STEM AUGER
2025N, 88E



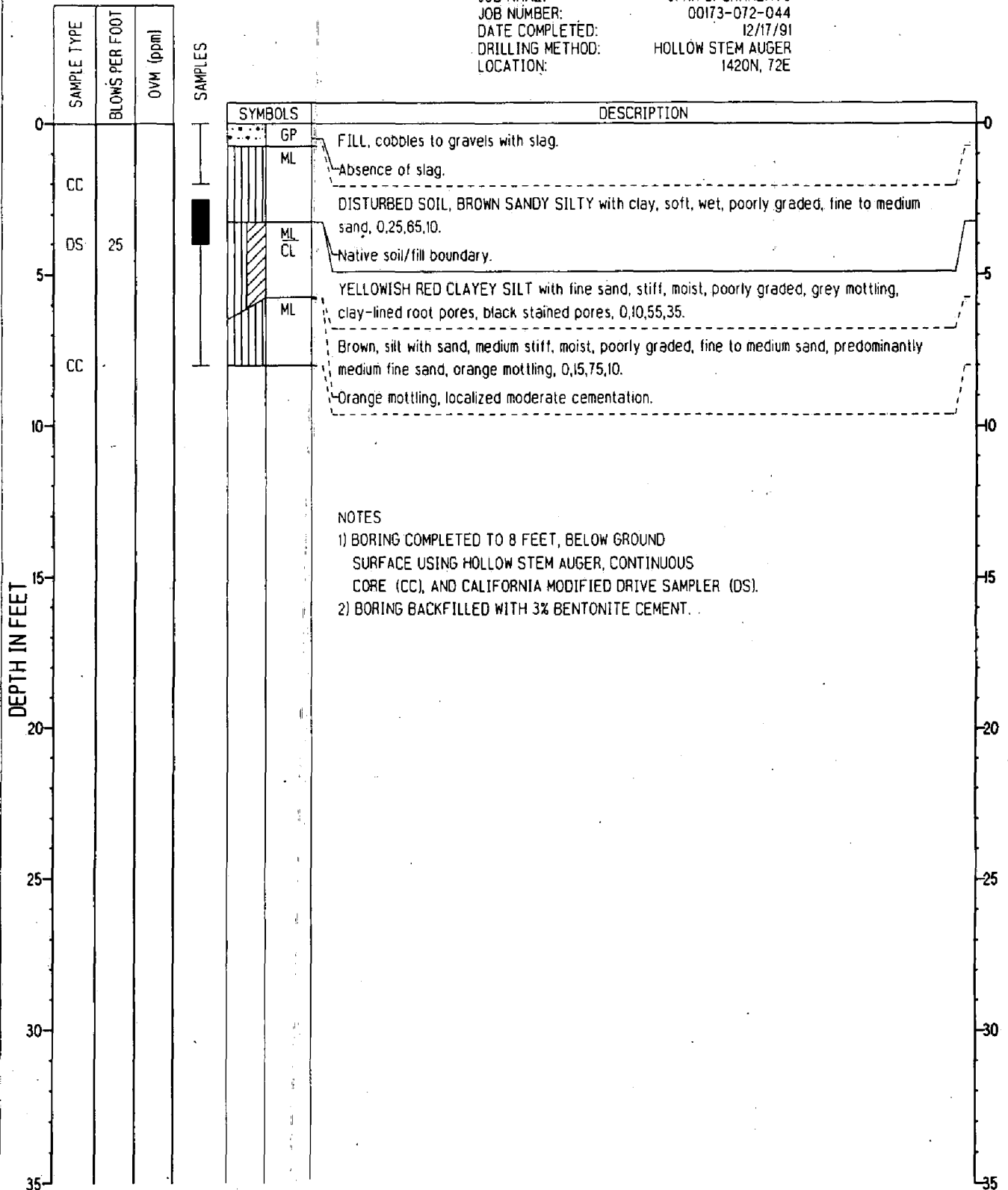
BORING LOG
DAMES & MOORE

SOIL BORING

ATB-18

JOB NAME:
JOB NUMBER:
DATE COMPLETED:
DRILLING METHOD:
LOCATION:

UPRR SACRAMENTO
00173-072-044
12/17/91
HOLLOW STEM AUGER
1420N, 72E

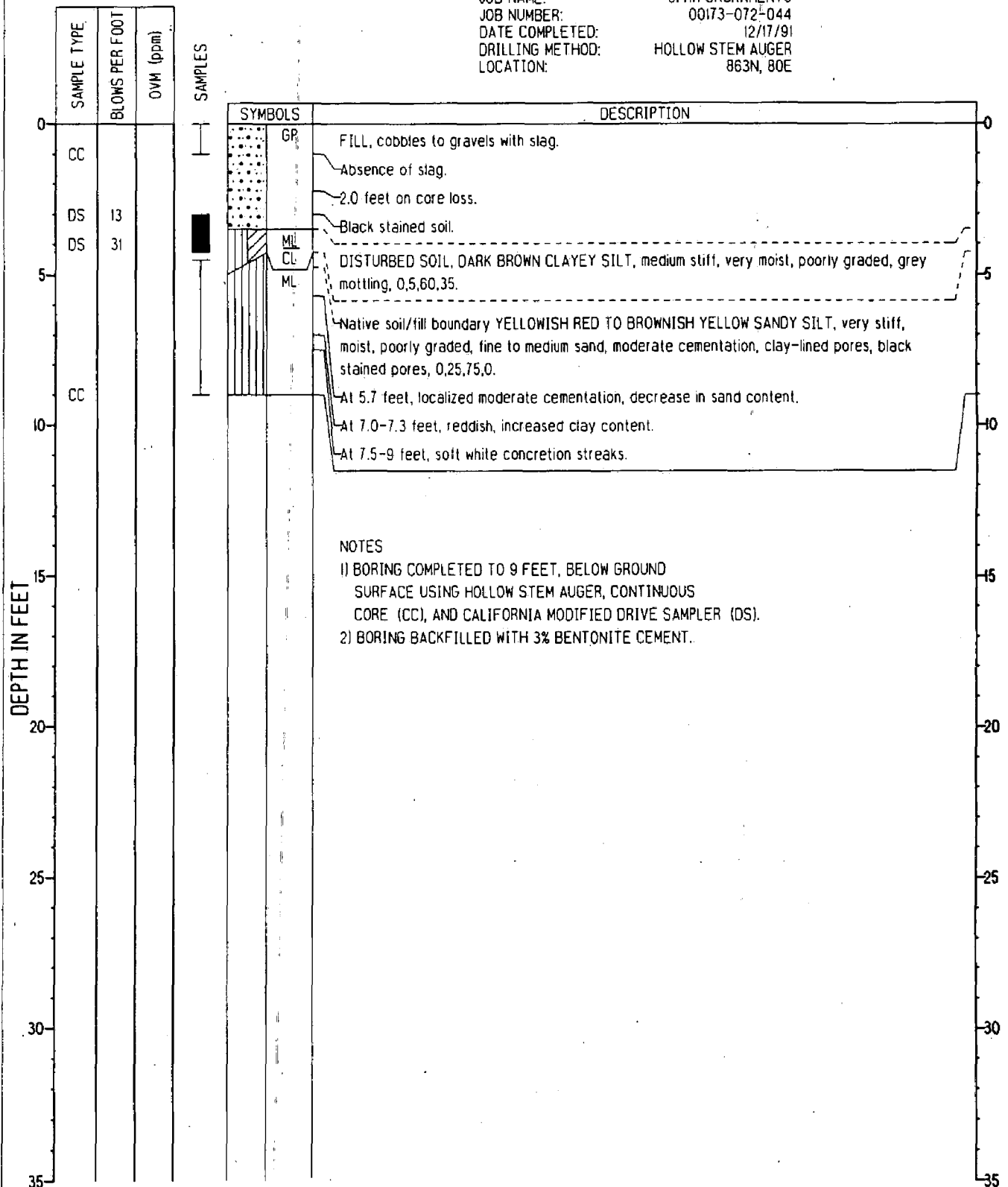


BORING LOG
DAMES & MOORE

SOIL BORING

ATB-19

JOB NAME: UPRR SACRAMENTO
 JOB NUMBER: 00173-072-044
 DATE COMPLETED: 12/17/91
 DRILLING METHOD: HOLLOW STEM AUGER
 LOCATION: 863N, 80E

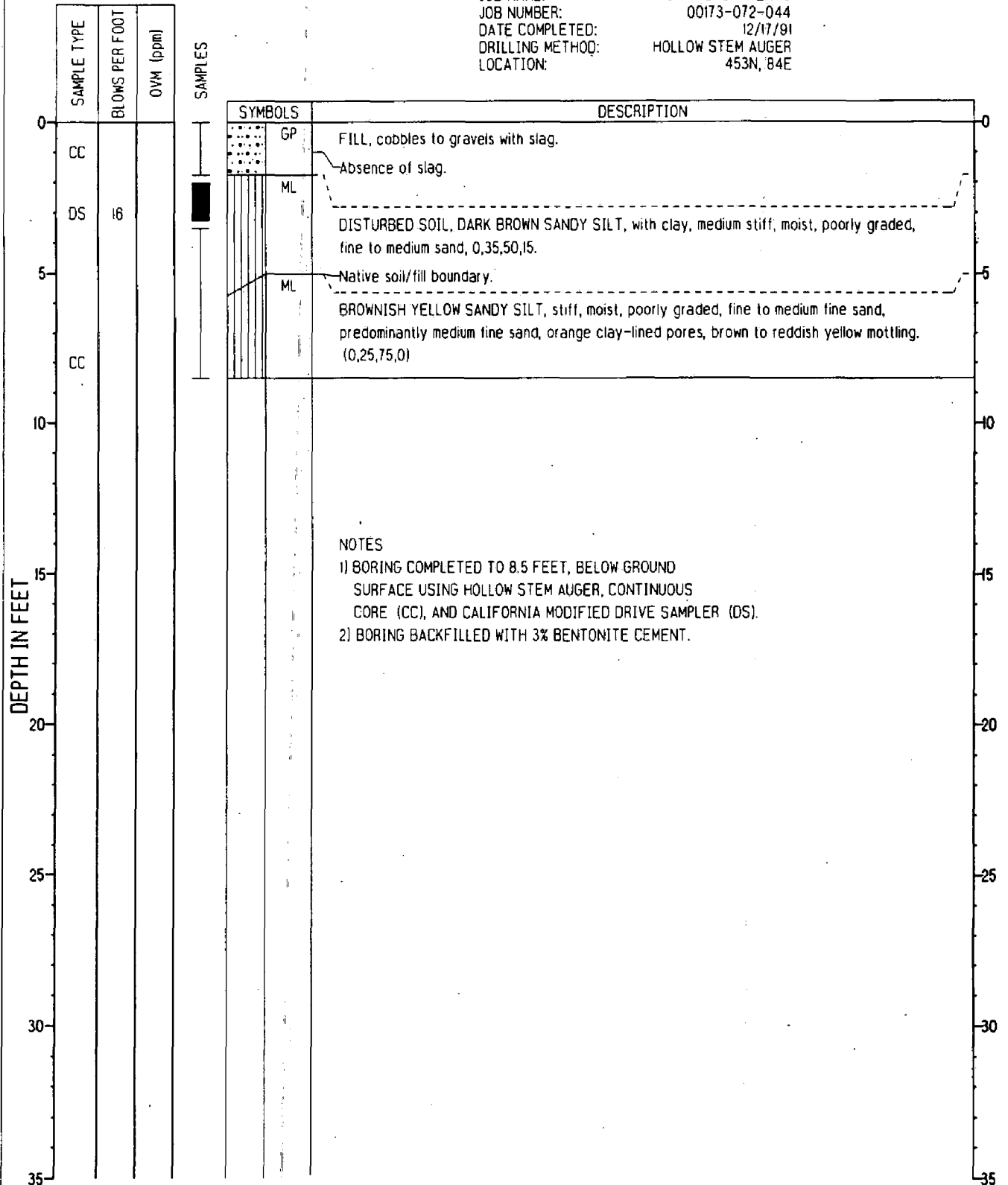


BORING LOG
 DAMES & MOORE

SOIL BORING

ATB-20

JOB NAME: UPRR SACRAMENTO
 JOB NUMBER: 00173-072-044
 DATE COMPLETED: 12/17/91
 DRILLING METHOD: HOLLOW STEM AUGER
 LOCATION: 453N, 84E



BORING LOG
 DAMES & MOORE

Appendix C

APPENDIX C
SOIL ANALYTICAL RESULTS - TABLES

TABLE C-1
SURFACE SAMPLE SOIL ANALYTICAL RESULTS - METALS
ACTIVE SITE PORTION
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

SAMPLE	ATB-01	ATB-02	ATB-03	ATB-04	ATB-05	ATB-06	ATB-07
GRAIN_SIZE	<0.420	<0.074	<0.074	<0.074	<0.074	<0.074	<0.074
DATE	12/13/91	12/13/91	12/13/91	12/13/91	12/13/91	12/13/91	12/13/91
QA							
ANTIMONY	-	-	< 5.00	-	-	-	-
ARSENIC	29.40	108.00	33.50	57.60	99.00	46.10	19.30
BARIUM	-	-	1780.00	-	-	-	-
BERYLLIUM	-	-	< 0.25	-	-	-	-
CADMIUM	-	-	4.30	-	-	-	-
CHROMIUM	-	-	74.00	-	-	-	-
COBALT	-	-	21.00	-	-	-	-
COPPER	187.00	772.00	201.00	390.00	405.00	351.00	118.00
LEAD	166.00	573.00	281.00	421.00	690.00	466.00	121.00
MERCURY	-	-	0.20	-	-	-	-
MOLYBDENUM	-	-	12.00	-	-	-	-
NICKEL	-	-	81.40	-	-	-	-
SELENIUM	-	-	< 2.50	-	-	-	-
SILVER	-	-	< 2.50	-	-	-	-
THALLIUM	-	-	< 8.00	-	-	-	-
VANADIUM	-	-	67.10	-	-	-	-
ZINC	506.00	1750.00	504.00	808.00	964.00	1830.00	303.00

All units reported as mg/kg (ppm)

GRAIN SIZE reported in mm. - = Parameter not analyzed.

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

REPLICATE ANALYSIS = D&M Laboratory sample extract confirmation analyses.

DUPLICATE SAMPLE = Cal Enseco Lab blind duplicate sample analyses.

CO-LOCATED DUP.SAMP. = D&M Laboratory co-located duplicate sample analyses.

TABLE C-1 (cont.)
SURFACE SAMPLE SOIL ANALYTICAL RESULTS - METALS
ACTIVE SITE PORTION
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

SAMPLE	ATB-08	ATB-09	ATB-10	ATB-11	ATB-12	ATB-12	ATB-13
GRAIN_SIZE	<0.074	<0.074	<0.074	<0.074	<0.074	<4.76,>0.074	<0.074
DATE	12/13/91	12/13/91	12/13/91	12/13/91	12/13/91	01/08/92	12/13/91
QA							
ANTIMONY	-	10.00	-	-	-	< 5.00	-
ARSENIC	100.00	46.80	96.50	66.10	21.00	13.40	505.00
BARIUM	-	1470.00	-	-	-	398.00	-
BERYLLIUM	-	< 0.25	-	-	-	< 0.25	-
CADMIUM	-	7.60	-	-	-	2.70	-
CHROMIUM	-	70.00	-	-	-	126.00	-
COBALT	-	21.00	-	-	-	22.00	-
COPPER	1520.00	657.00	398.00	418.00	227.00	122.00	4370.00
LEAD	2260.00	1340.00	642.00	915.00	262.00	165.00	2320.00
MERCURY	-	< 0.20	-	-	-	< 0.20	-
MOLYBDENUM	-	5.80	-	-	-	9.10	-
NICKEL	-	81.40	-	-	-	176.00	-
SELENIUM	-	< 2.50	-	-	-	< 2.50	-
SILVER	-	< 2.50	-	-	-	< 2.50	-
THALLIUM	-	8.00	-	-	-	10.00	-
VANADIUM	-	69.70	-	-	-	57.80	-
ZINC	4620.00	1700.00	515.00	6480.00	411.00	331.00	4780.00

All units reported as mg/kg (ppm)

GRAIN SIZE reported in mm. - = Parameter not analyzed.

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

REPLICATE ANALYSIS = D&M Laboratory sample extract confirmation analyses.

DUPLICATE SAMPLE = Cal Enseco Lab blind duplicate sample analyses.

CO-LOCATED DUP.SAMP. = D&M Laboratory co-located duplicate sample analyses.

TABLE C-1 (cont.)
SURFACE SAMPLE SOIL ANALYTICAL RESULTS - METALS
ACTIVE SITE PORTION
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

SAMPLE	ATB-14	ATB-14	ATB-14	ATB-14	ATB-15	ATB-16	ATB-16
GRAIN_SIZE	<0.074	<0.074	<0.074	<4.76,>0.074	<0.074	<0.074	<4.76,>0.074
DATE	12/13/91	12/13/91	12/13/91	01/08/92	12/13/91	12/13/91	01/08/92
QA		DUPLICATE SAMPLE	REPLICATE ANALYSIS				
ANTIMONY	-	-	-	36.00	36.00	-	20.00
ARSENIC	454.00	550.00	555.00	195.00	383.00	495.00	103.00
BARIUM	-	-	-	351.00	655.00	-	261.00
BERYLLIUM	-	-	-	< 0.25	< 0.25	-	< 0.25
CADMIUM	-	-	-	9.20	16.00	-	7.30
CHROMIUM	-	-	-	18.00	67.40	-	12.00
COBALT	-	-	-	47.00	70.70	-	38.00
COPPER	2630.00	2700.00	2670.00	3810.00	3260.00	2850.00	1070.00
LEAD	2010.00	2280.00	2040.00	1670.00	1850.00	1150.00	938.00
MERCURY	-	-	-	< 0.20	< 0.20	-	< 0.20
MOLYBDENUM	-	-	-	385.00	386.00	-	198.00
NICKEL	-	-	-	26.00	56.50	-	15.00
SELENIUM	-	-	-	< 2.50	< 2.50	-	< 2.50
SILVER	-	-	-	2.80	3.90	-	< 2.50
THALLIUM	-	-	-	< 8.00	12.00	-	< 8.00
VANADIUM	-	-	-	44.60	78.90	-	33.20
ZINC	4770.00	5010.00	5890.00	4100.00	4960.00	4150.00	2820.00

All units reported as mg/kg (ppm)

GRAIN SIZE reported in mm. - = Parameter not analyzed.

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

REPLICATE ANALYSIS = D&M Laboratory sample extract confirmation analyses.

DUPLICATE SAMPLE = Cal Enseco Lab blind duplicate sample analyses.

CO-LOCATED DUP.SAMP. = D&M Laboratory co-located duplicate sample analyses.

TABLE C-1 (cont.)
SURFACE SAMPLE SOIL ANALYTICAL RESULTS - METALS
ACTIVE SITE PORTION
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

SAMPLE	ATB-17	ATB-18	ATB-19	ATB-19	ATB-20	ATS-01	ATS-02
GRAIN SIZE	<0.074	<0.074	<0.074	<4.76, >0.074	<0.074	<0.074	<0.074
DATE	12/13/91	12/13/91	12/13/91	01/08/92	12/13/92	12/13/91	12/13/91
QA							
ANTIMONY	-	-	19.00	27.00	-	-	-
ARSENIC	745.00	436.00	670.00	120.00	1190.00	263.00	106.00
BARIUM	-	-	1890.00	386.00	-	-	-
BERYLLIUM	-	-	< 0.25	< 0.25	-	-	-
CADMIUM	-	-	15.00	8.70	-	-	-
CHROMIUM	-	-	52.50	12.00	-	-	-
COBALT	-	-	54.00	42.00	-	-	-
COPPER	1840.00	2040.00	2700.00	1090.00	2240.00	305.00	467.00
LEAD	2260.00	2070.00	2210.00	1210.00	1640.00	792.00	733.00
MERCURY	-	-	0.30	< 0.20	-	-	-
MOLYBDENUM	-	-	439.00	279.00	-	-	-
NICKEL	-	-	49.00	9.80	-	-	-
SELENIUM	-	-	< 2.50	< 2.50	-	-	-
SILVER	-	-	3.60	< 2.50	-	-	-
THALLIUM	-	-	13.00	8.00	-	-	-
VANADIUM	-	-	67.80	44.90	-	-	-
ZINC	3940.00	5290.00	6140.00	3720.00	3490.00	821.00	756.00

All units reported as mg/kg (ppm)

GRAIN SIZE reported in mm. - = Parameter not analyzed.

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

REPLICATE ANALYSIS = D&M Laboratory sample extract confirmation analyses.

DUPLICATE SAMPLE = Cal Enseco Lab blind duplicate sample analyses.

CO-LOCATED DUP.SAMP. = D&M Laboratory co-located duplicate sample analyses.

TABLE C-1 (cont.)
SURFACE SAMPLE SOIL ANALYTICAL RESULTS - METALS
ACTIVE SITE PORTION
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

SAMPLE	ATS-03	ATS-03	ATS-04	ATS-04	ATS-04	ATS-04	ATS-04
GRAIN_SIZE	<0.074	<4.76,>0.074	<0.074	<0.074	<0.074	<0.074	<4.76,>0.074
DATE	12/13/91	01/08/92	12/13/91	12/13/91	12/13/91	12/13/91	01/08/92
QA				DUPLICATE SAMPLE	CO-LOCATED DUP. SAMP.	REPLICATE ANALYSIS	
ANTIMONY	< 5.00	< 5.00	36.00	-	-	-	20.00
ARSENIC	116.00	60.30	3120.00	2430.00	2390.00	2430.00	925.00
BARIUM	8190.00	4650.00	8000.00	-	-	-	2080.00
BERYLLIUM	< 0.25	< 0.25	< 0.25	-	-	-	< 0.25
CADMIUM	7.50	5.10	37.00	-	-	-	15.00
CHROMIUM	68.70	52.90	81.80	-	-	-	47.60
COBALT	19.00	17.00	25.00	-	-	-	24.00
COPPER	841.00	738.00	932.00	931.00	898.00	934.00	512.00
LEAD	991.00	744.00	1830.00	1880.00	1920.00	1980.00	866.00
MERCURY	0.30	< 0.20	15.00	-	-	-	5.00
MOLYBDENUM	11.00	7.70	70.10	-	-	-	77.60
NICKEL	96.40	70.00	61.90	-	-	-	39.00
SELENIUM	< 2.50	< 2.50	10.60	-	-	-	< 2.50
SILVER	< 2.50	< 2.50	2.90	-	-	-	< 2.50
THALLIUM	< 8.00	9.00	103.00	-	-	-	55.00
VANADIUM	54.50	41.70	52.30	-	-	-	38.80
ZINC	1280.00	1150.00	2000.00	1810.00	1860.00	2080.00	1490.00

All units reported as mg/kg (ppm)

GRAIN SIZE reported in mm. - = Parameter not analyzed.

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

REPLICATE ANALYSIS = D&M Laboratory sample extract confirmation analyses.

DUPLICATE SAMPLE = Cal Enseco Lab blind duplicate sample analyses.

CO-LOCATED DUP.SAMP. = D&M Laboratory co-located duplicate sample analyses.

TABLE C-1 (cont.)
SURFACE SAMPLE SOIL ANALYTICAL RESULTS - METALS
ACTIVE SITE PORTION
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

SAMPLE	ATS-04	ATS-05	ATS-06	ATS-07	ATS-08	ATS-09	ATS-09
GRAIN_SIZE	<4.76,>0.074	<0.074	<0.074	<0.074	<0.074	<0.074	<4.76,>0.074
DATE	01/08/92	12/13/91	12/13/91	12/13/91	12/13/91	12/13/91	01/08/92
QA	CO-LOCATED DUP. SAMP.						
ANTIMONY	36.00	-	-	-	-	-	41.00
ARSENIC	1370.00	33.20	66.30	94.00	344.00	224.00	174.00
BARIUM	2240.00	-	-	-	-	-	527.00
BERYLLIUM	< 0.25	-	-	-	-	-	< 0.25
CADMIUM	20.00	-	-	-	-	-	13.00
CHROMIUM	48.50	-	-	-	-	-	29.20
COBALT	22.00	-	-	-	-	-	48.00
COPPER	794.00	309.00	1010.00	770.00	2970.00	1040.00	1760.00
LEAD	1090.00	334.00	1830.00	1410.00	3080.00	976.00	1900.00
MERCURY	6.00	-	-	-	-	-	< 0.20
MOLYBDENUM	80.10	-	-	-	-	-	370.00
NICKEL	41.00	-	-	-	-	-	24.00
SELENIUM	3.00	-	-	-	-	-	< 2.50
SILVER	< 2.50	-	-	-	-	-	2.50
THALLIUM	69.00	-	-	-	-	-	9.00
VANADIUM	34.10	-	-	-	-	-	59.10
ZINC	1330.00	475.00	1180.00	2330.00	7460.00	1050.00	4790.00

All units reported as mg/kg (ppm)

GRAIN SIZE reported in mm. - = Parameter not analyzed.

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

REPLICATE ANALYSIS = D&M Laboratory sample extract confirmation analyses.

DUPLICATE SAMPLE = Cal Enseco Lab blind duplicate sample analyses.

CO-LOCATED DUP.SAMP. = D&M Laboratory co-located duplicate sample analyses.

TABLE C-1 (cont.)
SURFACE SAMPLE SOIL ANALYTICAL RESULTS - METALS
ACTIVE SITE PORTION
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

SAMPLE	ATS-10	ATS-11	ATS-11	ATS-12	ATS-12	ATS-13	ATS-13
GRAIN SIZE	<0.074	<0.074	<0.074	<0.074	<4.76, >0.074	<0.074	<0.074
DATE	12/13/91	12/13/91	12/13/91	12/13/91	01/08/92	12/13/91	12/13/91
QA			CO-LOCATED DUP. SAMP.				DUPLICATE SAMPLE
ANTIMONY	-	33.00	41.00	26.00	28.00	-	-
ARSENIC	149.00	455.00	429.00	765.00	216.00	282.00	332.00
BARIUM	-	6420.00	6640.00	3010.00	457.00	-	-
BERYLLIUM	-	< 0.25	< 0.25	< 0.25	< 0.25	-	-
CADMIUM	-	15.00	16.00	18.00	12.00	-	-
CHROMIUM	-	52.10	50.40	53.80	16.00	-	-
COBALT	-	64.40	66.00	63.70	53.80	-	-
COPPER	706.00	3620.00	3590.00	4910.00	1800.00	2810.00	2870.00
LEAD	1700.00	2290.00	2410.00	2610.00	1610.00	10500.00	11100.00
MERCURY	-	0.50	0.60	0.60	< 0.20	-	-
MOLYBDENUM	-	380.00	379.00	398.00	320.00	-	-
NICKEL	-	46.00	47.00	50.70	12.00	-	-
SELENIUM	-	< 2.50	< 2.50	3.80	< 2.50	-	-
SILVER	-	3.80	3.90	5.70	< 2.50	-	-
THALLIUM	-	13.00	11.00	13.00	9.00	-	-
VANADIUM	-	66.90	70.80	73.40	56.20	-	-
ZINC	1380.00	5730.00	5630.00	6650.00	4660.00	7420.00	7010.00

All units reported as mg/kg (ppm)

GRAIN SIZE reported in mm. - = Parameter not analyzed.

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

REPLICATE ANALYSIS = D&M Laboratory sample extract confirmation analyses.

DUPLICATE SAMPLE = Cal Enseco Lab blind duplicate sample analyses.

CO-LOCATED DUP.SAMP. = D&M Laboratory co-located duplicate sample analyses.

TABLE C-1 (cont.)
SURFACE SAMPLE SOIL ANALYTICAL RESULTS - METALS
ACTIVE SITE PORTION
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

SAMPLE	ATS-13	ATS-14	ATS-15	ATS-15	ATS-16	ATS-16	ATS-16
GRAIN_SIZE	<0.074	<0.074	<0.074	<4.76,>0.074	<0.074	<0.074	<0.074
DATE	12/13/91	12/13/91	12/13/91	01/08/92	12/13/91	12/13/91	12/13/91
QA	REPLICATE ANALYSIS					DUPLICATE SAMPLE	CO-LOCATED DUP. SAMP.
ANTIMONY	-	-	-	< 5.00	6.40	-	-
ARSENIC	341.00	418.00	150.00	47.10	149.60	90.80	116.00
BARIUM	-	-	-	340.00	1530.00	-	-
BERYLLIUM	-	-	-	< 0.25	< 0.25	-	-
CADMIUM	-	-	-	3.70	9.20	-	-
CHROMIUM	-	-	-	40.80	84.80	-	-
COBALT	-	-	-	15.00	29.00	-	-
COPPER	2870.00	3870.00	505.00	208.00	905.00	805.00	884.00
LEAD	10800.00	2750.00	802.00	404.00	898.00	957.00	949.00
MERCURY	-	-	-	< 0.20	0.40	-	-
MOLYBDENUM	-	-	-	15.00	103.00	-	-
NICKEL	-	-	-	49.00	104.00	-	-
SELENIUM	-	-	-	< 2.50	< 2.50	-	-
SILVER	-	-	-	< 2.50	< 2.50	-	-
THALLIUM	-	-	-	< 8.00	8.00	-	-
VANADIUM	-	-	-	36.90	58.00	-	-
ZINC	7690.00	5450.00	948.00	423.00	1750.00	1600.00	1940.00

All units reported as mg/kg (ppm)

GRAIN SIZE reported in mm. - = Parameter not analyzed.

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

REPLICATE ANALYSIS = D&M Laboratory sample extract confirmation analyses.

DUPLICATE SAMPLE = Cal Enseco Lab blind duplicate sample analyses.

CO-LOCATED DUP.SAMP. = D&M Laboratory co-located duplicate sample analyses.

TABLE C-1 (cont.)
SURFACE SAMPLE SOIL ANALYTICAL RESULTS - METALS
ACTIVE SITE PORTION
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

SAMPLE	ATS-16	ATS-17	ATS-18	ATS-19	ATS-19	ATS-19	ATS-20
GRAIN_SIZE	<0.074	<0.074	<0.074	<0.074	<0.074	<0.074	<0.074
DATE	12/13/91	12/13/91	12/13/91	12/13/91	12/13/91	12/13/91	12/13/91
QA	REPLICATE ANALYSIS				DUPLICATE SAMPLE	REPLICATE ANALYSIS	
ANTIMONY	-	-	-	-	-	-	12.00
ARSENIC	138.00	89.00	131.00	569.00	666.00	688.00	68.90
BARIUM	-	-	-	-	-	-	1470.00
BERYLLIUM	-	-	-	-	-	-	< 0.25
CADMIUM	-	-	-	-	-	-	8.60
CHROMIUM	-	-	-	-	-	-	34.90
COBALT	-	-	-	-	-	-	50.30
COPPER	825.00	512.00	1800.00	2080.00	2170.00	2140.00	545.00
LEAD	914.00	580.00	1930.00	3400.00	3670.00	3590.00	297.00
MERCURY	-	-	-	-	-	-	< 0.20
MOLYBDENUM	-	-	-	-	-	-	54.70
NICKEL	-	-	-	-	-	-	38.00
SELENIUM	-	-	-	-	-	-	< 2.50
SILVER	-	-	-	-	-	-	< 2.50
THALLIUM	-	-	-	-	-	-	13.00
VANADIUM	-	-	-	-	-	-	221.00
ZINC	1730.00	763.00	3140.00	6450.00	5390.00	7190.00	900.00

All units reported as mg/kg (ppm)

GRAIN SIZE reported in mm. - = Parameter not analyzed.

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

REPLICATE ANALYSIS = D&M Laboratory sample extract confirmation analyses.

DUPLICATE SAMPLE = Cal Enseco Lab blind duplicate sample analyses.

CO-LOCATED DUP.SAMP. = D&M Laboratory co-located duplicate sample analyses.

TABLE C-1 (cont.)
SURFACE SAMPLE SOIL ANALYTICAL RESULTS - METALS
ACTIVE SITE PORTION
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

SAMPLE	ATS-20	ATS-20	ATS-20	ATS-20	ATS-21	ATS-21	ATS-22
GRAIN_SIZE	<0.074	<0.074	<0.074	<4.76, >0.074	<0.074	BULK SAMPLE	<0.074
DATE	12/13/91	12/13/91	12/13/91	01/08/92	05/03/92	05/03/92	05/03/92
QA	DUPLICATE	CO-LOCATED	REPLICATE				
	SAMPLE	DUP. SAMP.	ANALYSIS				
ANTIMONY	-	-	-	17.00	-	-	-
ARSENIC	32.50	32.90	53.00	109.00	1680.00	358.00	1270.00
BARIUM	-	-	-	583.00	-	-	-
BERYLLIUM	-	-	-	< 0.25	-	-	-
CADMIUM	-	-	-	7.10	-	-	-
CHROMIUM	-	-	-	22.00	-	-	-
COBALT	-	-	-	35.00	-	-	-
COPPER	538.00	358.00	532.00	807.00	1050.00	587.00	1670.00
LEAD	337.00	188.00	306.00	811.00	1700.00	366.00	2330.00
MERCURY	-	-	-	< 0.20	-	-	-
MOLYBDENUM	-	-	-	215.00	-	-	-
NICKEL	-	-	-	18.00	-	-	-
SELENIUM	-	-	-	< 2.50	-	-	-
SILVER	-	-	-	< 2.50	-	-	-
THALLIUM	-	-	-	8.00	-	-	-
VANADIUM	-	-	-	62.90	-	-	-
ZINC	898.00	615.00	859.00	2580.00	2050.00	975.00	5910.00

All units reported as mg/kg (ppm)

GRAIN SIZE reported in mm. - = Parameter not analyzed.

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

REPLICATE ANALYSIS = D&M Laboratory sample extract confirmation analyses.

DUPLICATE SAMPLE = Cal Enseco Lab blind duplicate sample analyses.

CO-LOCATED DUP.SAMP. = D&M Laboratory co-located duplicate sample analyses.

TABLE C-1 (cont.)
 SURFACE SAMPLE SOIL ANALYTICAL RESULTS - METALS
 ACTIVE SITE PORTION
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

SAMPLE	ATS-22	ATS-23	ATS-23
GRAIN_SIZE	BULK SAMPLE	<0.074	BULK SAMPLE
DATE	05/03/92	05/03/92	05/03/92
QA			
ANTIMONY	-	-	-
ARSENIC	456.00	1770.00	521.00
BARIUM	-	-	-
BERYLLIUM	-	-	-
CADMIUM	-	-	-
CHROMIUM	-	-	-
COBALT	-	-	-
COPPER	895.00	704.00	547.00
LEAD	1080.00	1710.00	633.00
MERCURY	-	-	-
MOLYBDENUM	-	-	-
NICKEL	-	-	-
SELENIUM	-	-	-
SILVER	-	-	-
THALLIUM	-	-	-
VANADIUM	-	-	-
ZINC	3330.00	1500.00	979.00

All units reported as mg/kg (ppm)

GRAIN SIZE reported in mm. - = Parameter not analyzed.

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

REPLICATE ANALYSIS = D&M Laboratory sample extract confirmation analyses.

DUPLICATE SAMPLE = Cal Enseco Lab blind duplicate sample analyses.

CO-LOCATED DUP.SAMP. = D&M Laboratory co-located duplicate sample analyses.

TABLE C-2
SOIL ANALYTICAL RESULTS - SELECT METALS
ACTIVE SITE PORTION - BELOW GROUND SURFACE SAMPLES
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

SAMPLE	ATB-01	ATB-02	ATB-03	ATB-04	ATB-05	ATB-06	ATB-07
DATE	12/19/91	12/19/91	12/19/91	12/19/91	12/19/91	12/19/90	12/19/91
DEPTH	3.75	5.50	2.00	2.00	2.00	2.00	2.50
ARSENIC	11.7	10.5	8.6	6.0	6.8	6.5	6.3
COPPER	30.1	29.5	28.1	24.0	29.4	29.5	34.7
LEAD	8.0	9.0	8.0	6.4	9.0	13.0	9.0
ZINC	50.5	45.2	49.1	41.5	48.0	51.2	45.6

All units reported as mg/kg (ppm)

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

TABLE C-2 (cont.)
 SOIL ANALYTICAL RESULTS - SELECT METALS
 ACTIVE SITE PORTION - BELOW GROUND SURFACE SAMPLES
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

SAMPLE	ATB-08	ATB-09	ATB-10	ATB-11	ATB-12	ATB-13	ATB-14
DATE	12/19/91	12/19/91	12/16/91	12/16/91	12/16/91	12/16/91	12/16/91
DEPTH	2.50	2.50	2.50	4.00	2.00	4.50	5.50
ARSENIC	5.6	9.3	4.2	3.7	7.5	8.2	7.9
COPPER	33.7	32.6	29.2	24.9	33.9	34.7	18.0
LEAD	8.0	8.0	7.9	6.6	7.4	40.0	8.1
ZINC	54.3	49.9	47.5	42.3	44.5	54.5	36.7

All units reported as mg/kg (ppm)

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

TABLE C-2 (cont.)
 SOIL ANALYTICAL RESULTS - SELECT METALS
 ACTIVE SITE PORTION - BELOW GROUND SURFACE SAMPLES
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

SAMPLE	ATB-14	ATB-15	ATB-16	ATB-17	ATB-18	ATB-19	ATB-20
DATE	12/16/91	12/16/91	12/16/91	12/16/91	12/16/91	12/16/91	12/16/91
DEPTH	10.50	5.50	5.50	2.00	3.00	3.50	3.00
ARSENIC	3.2	7.1	5.0	545.0	3.1	< 2.5	14.0
COPPER	22.0	30.3	26.8	22.0	32.3	26.1	21.0
LEAD	6.2	7.0	6.0	5.8	9.0	8.0	6.0
ZINC	45.7	53.1	47.1	39.3	46.7	38.5	37.1

All units reported as mg/kg (ppm)

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

TABLE C-3
SOIL ANALYTICAL RESULTS - PURGEABLE AROMATICS (METHOD 8020)
ACTIVE SITE PORTION
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

SAMPLE	ATB-01	ATB-02	ATB-03	ATB-04	ATB-05	ATB-06	ATB-07
DATE	12/19/91	12/19/91	12/19/91	12/19/91	12/19/91	12/19/91	12/19/91
DEPTH	0.50	0.50	1.50	3.00	3.00	3.00	3.00
1,2-DICHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,3-DICHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,4-DICHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
BENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
CHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
ETHYLBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
TOLUENE	<0.0005	0.0034	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
XYLENES	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

All units reported as mg/kg (ppm)

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

TABLE C-3 (cont.)
 SOIL ANALYTICAL RESULTS - PURGEABLE AROMATICS (METHOD 8020)
 ACTIVE SITE PORTION
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

SAMPLE	ATB-08	ATB-09	ATB-10	ATB-11	ATB-11	ATB-11	ATB-11
DATE	12/19/91	12/19/91	12/16/91	12/16/91	12/16/91	12/16/91	12/16/91
DEPTH	3.00	3.00	3.00	4.50	9.50	16.00	28.50
1,2-DICHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,3-DICHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,4-DICHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
BENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
CHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
ETHYLBENZENE	<0.0005	<0.0005	<0.0005	0.0400	<0.0005	<0.0005	<0.0005
TOLUENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
XYLENES	<0.0005	<0.0005	<0.0005	0.0500	<0.0005	<0.0005	<0.0005

All units reported as mg/kg (ppm)

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

TABLE C-3 (cont.)
 SOIL ANALYTICAL RESULTS - PURGEABLE AROMATICS (METHOD 8020)
 ACTIVE SITE PORTION
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

SAMPLE	ATB-12	ATB-13	ATB-14	ATB-14	ATB-15	ATB-16	ATB-17
DATE	12/16/91	12/16/91	12/16/91	12/16/91	12/16/91	12/16/91	12/16/91
DEPTH	3.50	5.00	6.00	11.00	6.00	6.00	3.00
1,2-DICHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,3-DICHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,4-DICHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
BENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
CHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
ETHYLBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
TOLUENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
XYLENES	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

All units reported as mg/kg (ppm)

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

TABLE C-3 (cont.)
 SOIL ANALYTICAL RESULTS - PURGEABLE AROMATICS (METHOD 8020)
 ACTIVE SITE PORTION
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

SAMPLE	ATB-18	ATB-19	ATB-20
DATE	12/16/91	12/16/91	12/16/91
DEPTH	3.50	4.00	2.50
1,2-DICHLOROBENZENE	<0.0005	<0.0005	<0.0005
1,3-DICHLOROBENZENE	<0.0005	<0.0005	<0.0005
1,4-DICHLOROBENZENE	<0.0005	<0.0005	<0.0005
BENZENE	<0.0005	<0.0005	<0.0005
CHLOROBENZENE	<0.0005	<0.0005	<0.0005
ETHYLBENZENE	<0.0005	<0.0005	<0.0005
TOLUENE	<0.0005	<0.0005	<0.0005
XYLENES	<0.0005	<0.0005	<0.0005

All units reported as mg/kg (ppm)

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

TABLE C-4
SOIL ANALYTICAL RESULTS - CHLORINATED VOLATILE ORGANIC COMPOUNDS (METHOD 8010)
ACTIVE SITE PORTION
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

SAMPLE	ATB-01	ATB-02	ATB-03	ATB-04	ATB-05	ATB-06	ATB-07
DATE	03/31/92	03/31/92	03/31/92	03/31/92	03/31/92	03/31/92	03/31/92
DEPTH	1.00	3.00	2.00	3.00	3.00	3.00	3.00
1,1,1-TRICHLOROETHANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,1,2,2-TETRACHLOROETHANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,1,2-TRICHLOROETHANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,1-DICHLOROETHANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,1-DICHLOROETHENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,2-DICHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,2-DICHLOROETHANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,2-DICHLOROPROPANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,3-DICHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,4-DICHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
BROMODICHLOROMETHANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
BROMOFORM	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
BROMOMETHANE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
CARBON TETRACHLORIDE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
CHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
CHLOROETHANE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
CHLOROFORM	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
CHLOROMETHANE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
CIS-1,2-DICHLOROETHENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
CIS-1,3-DICHLOROPROPENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
DIBROMOCHLOROMETHANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
METHYLENE CHLORIDE	0.0056	0.0053	0.0038	0.0050	0.0082	0.0048	0.0046

All units reported as mg/kg (ppm)

Presence of methylene chloride and tetrachloroethene is due to laboratory contamination.

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

TABLE C-4 (cont.)
 SOIL ANALYTICAL RESULTS - CHLORINATED VOLATILE ORGANIC COMPOUNDS (METHOD 8010)
 ACTIVE SITE PORTION
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

SAMPLE	ATB-01	ATB-02	ATB-03	ATB-04	ATB-05	ATB-06	ATB-07
DATE	03/31/92	03/31/92	03/31/92	03/31/92	03/31/92	03/31/92	03/31/92
DEPTH	1.00	3.00	2.00	3.00	3.00	3.00	3.00
TETRACHLOROETHENE	0.0034	<0.0005	0.0030	0.0030	<0.0005	0.0007	<0.0005
TRANS-1,2-DICHLOROETHENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
TRANS-1,3-DICHLOROPROPENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
TRICHLOROETHENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
TRICHLOROFLUOROMETHANE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
VINYL CHLORIDE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

All units reported as mg/kg (ppm)

Presence of methylene chloride and tetrachloroethene is due to laboratory contamination.

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

TABLE C-4 (cont.)
 SOIL ANALYTICAL RESULTS - CHLORINATED VOLATILE ORGANIC COMPOUNDS (METHOD 8010)
 ACTIVE SITE PORTION
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

SAMPLE	ATB-08	ATB-09	ATB-10	ATB-11	ATB-11	ATB-11	ATB-11
DATE	03/31/92	03/31/92	03/31/92	03/31/92	03/31/92	03/31/92	03/31/92
DEPTH	3.00	3.00	3.00	4.50	9.00	16.00	28.50
1,1,1-TRICHLOROETHANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,1,2,2-TETRACHLOROETHANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,1,2-TRICHLOROETHANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,1-DICHLOROETHANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,1-DICHLOROETHENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,2-DICHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,2-DICHLOROETHANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,2-DICHLOROPROPANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,3-DICHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,4-DICHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
BROMODICHLOROMETHANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
BROMOFORM	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
BROMOMETHANE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
CARBON TETRACHLORIDE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
CHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
CHLOROETHANE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
CHLOROFORM	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
CHLOROMETHANE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
CIS-1,2-DICHLOROETHENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
CIS-1,3-DICHLOROPROPENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
DIBROMOCHLOROMETHANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
METHYLENE CHLORIDE	0.0092	0.0051	0.0042	0.0160	0.0067	0.0059	0.0160

All units reported as mg/kg (ppm)

Presence of methylene chloride and tetrachloroethene is due to laboratory contamination.

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

TABLE C-4 (cont.)
 SOIL ANALYTICAL RESULTS - CHLORINATED VOLATILE ORGANIC COMPOUNDS (METHOD 8010)
 ACTIVE SITE PORTION
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

SAMPLE	ATB-08	ATB-09	ATB-10	ATB-11	ATB-11	ATB-11	ATB-11
DATE	03/31/92	03/31/92	03/31/92	03/31/92	03/31/92	03/31/92	03/31/92
DEPTH	3.00	3.00	3.00	4.50	9.00	16.00	28.50
TETRACHLOROETHENE	<0.0005	<0.0005	0.0026	0.0028	0.0064	0.0036	<0.0005
TRANS-1,2-DICHLOROETHENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
TRANS-1,3-DICHLOROPROPENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
TRICHLOROETHENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
TRICHLOROFLUOROMETHANE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
VINYL CHLORIDE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

All units reported as mg/kg (ppm)

Presence of methylene chloride and tetrachloroethene is due to laboratory contamination.

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

TABLE C-4 (cont.)
 SOIL ANALYTICAL RESULTS - CHLORINATED VOLATILE ORGANIC COMPOUNDS (METHOD 8010)
 ACTIVE SITE PORTION
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

SAMPLE	ATB-12	ATB-13	ATB-14	ATB-15	ATB-16	ATB-17	ATB-18
DATE	03/31/92	03/31/92	03/31/92	03/31/92	03/31/92	03/31/92	03/31/92
DEPTH	3.50	5.00	3.50	5.00	3.00	2.00	2.00
1,1,1-TRICHLOROETHANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,1,2,2-TETRACHLOROETHANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,1,2-TRICHLOROETHANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,1-DICHLOROETHANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,1-DICHLOROETHENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,2-DICHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,2-DICHLOROETHANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,2-DICHLOROPROPANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,3-DICHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
1,4-DICHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
BROMODICHLOROMETHANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
BROMOFORM	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
BROMOMETHANE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
CARBON TETRACHLORIDE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
CHLOROBENZENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
CHLOROETHANE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
CHLOROFORM	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
CHLOROMETHANE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
CIS-1,2-DICHLOROETHENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
CIS-1,3-DICHLOROPROPENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
DIBROMOCHLOROMETHANE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
METHYLENE CHLORIDE	0.0054	0.0042	0.0072	0.0056	0.0060	0.0034	0.0048

All units reported as mg/kg (ppm)

Presence of methylene chloride and tetrachloroethene is due to laboratory contamination.

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

TABLE C-4 (cont.)
 SOIL ANALYTICAL RESULTS - CHLORINATED VOLATILE ORGANIC COMPOUNDS (METHOD 8010)
 ACTIVE SITE PORTION
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

SAMPLE	ATB-12	ATB-13	ATB-14	ATB-15	ATB-16	ATB-17	ATB-18
DATE	03/31/92	03/31/92	03/31/92	03/31/92	03/31/92	03/31/92	03/31/92
DEPTH	3.50	5.00	3.50	5.00	3.00	2.00	2.00
TETRACHLOROETHENE	0.0025	<0.0005	<0.0005	<0.0005	0.0042	0.0034	0.0028
TRANS-1,2-DICHLOROETHENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
TRANS-1,3-DICHLOROPROPENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
TRICHLOROETHENE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
TRICHLOROFLUOROMETHANE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
VINYL CHLORIDE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

All units reported as mg/kg (ppm)

Presence of methylene chloride and tetrachloroethene is due to laboratory contamination.

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

TABLE C-4 (cont.)
 SOIL ANALYTICAL RESULTS - CHLORINATED VOLATILE ORGANIC COMPOUNDS (METHOD 8010)
 ACTIVE SITE PORTION
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

SAMPLE	ATB-19	ATB-20
DATE	03/31/92	03/31/92
DEPTH	3.00	3.50
1,1,1-TRICHLOROETHANE	<0.0005	<0.0005
1,1,2,2-TETRACHLOROETHANE	<0.0005	<0.0005
1,1,2-TRICHLOROETHANE	<0.0005	<0.0005
1,1-DICHLOROETHANE	<0.0005	<0.0005
1,1-DICHLOROETHENE	<0.0005	<0.0005
1,2-DICHLOROBENZENE	<0.0005	<0.0005
1,2-DICHLOROETHANE	<0.0005	<0.0005
1,2-DICHLOROPROPANE	<0.0005	<0.0005
1,3-DICHLOROBENZENE	<0.0005	<0.0005
1,4-DICHLOROBENZENE	<0.0005	<0.0005
BROMODICHLOROMETHANE	<0.0005	<0.0005
BROMOFORM	<0.0005	<0.0005
BROMOMETHANE	<0.0010	<0.0010
CARBON TETRACHLORIDE	<0.0005	<0.0005
CHLOROBENZENE	<0.0005	<0.0005
CHLOROETHANE	<0.0010	<0.0010
CHLOROFORM	<0.0005	<0.0005
CHLOROMETHANE	<0.0010	<0.0010
CIS-1,2-DICHLOROETHENE	<0.0005	<0.0005
CIS-1,3-DICHLOROPROPENE	<0.0005	<0.0005
DIBROMOCHLOROMETHANE	<0.0005	<0.0005
METHYLENE CHLORIDE	0.0040	0.0084

All units reported as mg/kg (ppm)

Presence of methylene chloride and tetrachloroethene is due to laboratory contamination.

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

TABLE C-4 (cont.)
SOIL ANALYTICAL RESULTS - CHLORINATED VOLATILE ORGANIC COMPOUNDS (METHOD 8010)
ACTIVE SITE PORTION
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

SAMPLE	ATB-19	ATB-20
DATE	03/31/92	03/31/92
DEPTH	3.00	3.50
TETRACHLOROETHENE	0.0032	<0.0005
TRANS-1,2-DICHLOROETHENE	<0.0005	<0.0005
TRANS-1,3-DICHLOROPROPENE	<0.0005	<0.0005
TRICHLOROETHENE	<0.0005	<0.0005
TRICHLOROFLUOROMETHANE	<0.0010	<0.0010
VINYL CHLORIDE	<0.0010	<0.0010

All units reported as mg/kg (ppm)

Presence of methylene chloride and tetrachloroethene is due to laboratory contamination.

< = Constituent below detection limits. Detection limits may vary depending on interference by other sample constituents.

TABLE C-5
 SOIL ANALYTICAL RESULTS - DIESEL RANGE TOTAL PETROLEUM HYDROCARBONS (METHOD 8015 modified)
 ACTIVE SITE PORTION
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

SAMPLE	ATB-01	ATB-01	ATB-02	ATB-02	ATB-03	ATB-11	ATB-11
DATE	12/19/91	12/19/91	12/19/91	12/19/91	12/19/91	12/16/91	12/16/91
DEPTH	0.50	4.00	0.50	5.50	1.50	4.50	9.50
DIESEL	300	< 5	100	< 5	190	1940	8300

All units reported as mg/kg (ppm)

TABLE C-5 (cont.)
SOIL ANALYTICAL RESULTS - DIESEL RANGE TOTAL PETROLEUM HYDROCARBONS (METHOD 8015 modified)
ACTIVE SITE PORTION
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

SAMPLE	ATB-11	ATB-11
DATE	12/16/91	12/16/91
DEPTH	16.00	28.50
DIESEL	2600	68

All units reported as mg/kg (ppm)

TABLE C-6
SOIL ANALYTICAL RESULTS - ASBESTOS (METHOD PLM)
ACTIVE SITE PORTION
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

SAMPLE	ATB-11
DATE	12/16/91
DEPTH	0.50
CELLULOSE FIBERS	10
CHRYSTILE	50
OPAQUES	40

All units reported as %

Appendix D

APPENDIX D
LABORATORY ANALYTICAL REPORTS

TABLE D-1

ANALYTICAL LABORATORY REPORT
SAMPLE CROSS REFERENCE

Sample Location (Tables 1 & 3, Figure 10)	Sample ID (COC and Laboratory Report)	Analytical Laboratory Report Number
ATS-4	ATS-21*	92-0841 92-0063
ATS-11	ATS-22*	92-0841
ATS-16	ATS-23*	92-0841
ATS-20	ATS-24*	92-0841
ATS-21**	ATS-25	92-1461
ATS-22**	ATS-26	92-1461
ATS-23**	ATS-27	92-1461

* Blind duplicate samples ATS-21, ATS-22, ATS-23, and ATS-24 (dummy sample IDs) collected at sample locations ATS-4, ATS-11, ATS-16, and ATS-20, respectively.

** Samples ATS-25, ATS-26, and ATS-27 were collected at locations ATS-21, ATS-22, and ATS-23, respectively.



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92-0841

RECEIVED
LABORATORIES



SAMPLE CHAIN OF CUSTODY / WORK ORDER

Client's Name DAMES & MOORE 92 MAR 20 1010-916-387-7532
Address 8801 FOLSOM BLVD SUITE 200
City, State, Zip SACRAMENTO, CA 95826

Client's or Representative's Signature [Signature]
(signature authorizes the work and terms listed below)

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fail to pick up samples.

PROJ. NO.		PROJECT NAME		NO. OF CONTAINERS		REMARKS		LAB USE ONLY LAB NO.	
00173-064 044-		U.P. SAC.							
SAMPLERS (Signature)									
STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION				
	3/19			X	ATS-1	3	X		
					ATS-2				
"				X	ATS-3	3	X		
"				X	ATS-4	3	X		
"				X	ATS-5	3	X		
"				X	ATS-6	3	X		
"				X	ATS-7	3	X		
"				X	ATS-8	3	X		
"				X	ATS-9	3	X		
"				X	ATS-10	3	X		
"				X	ATS-11	3	X		
"				X	ATS-12	3	X		
"				X	ATS-13	3	X		
"				X	ATS-14	3	X		
"				X	ATS-15	3	X		
"				X	ATS-16	3	X		
"				X	ATS-17	3	X		
"				X	ATS-18	3	X		
"				X	ATS-19	3	X		
"				X	ATS-20	3	X		
"				X	ATS-21	3	X		

Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	General Remarks:
<u>[Signature]</u>	3/19/92	1500	<u>[Signature]</u>	
Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	
Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	Use graphite furnace for lead and arsenic if ICP concentrations are near or below detection limits

**SAMPLES RECEIVED IN GOOD CONDITION
NO BROKEN OR LEAKING CONTAINERS**



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Mark Eisen
Dames & Moore
8801 Folsom Blvd., Suite 200
Sacramento, CA 95826

Client Code: DAMM14
Survey # U.P.SACTO
Project/Release # 00173-064-044

Page 1

LABORATORY RESULTS

Date Collected: 03/19/92
Date Analyzed: 04/08/92

Laboratory Job No.: 920841
Date Received: 03/20/92
Date Reported: 04/09/92

ASSAY:METAL SCAN BY ICP(EPA 6010)

LABNO	SMPLNO-ID	RESULTS	DET.	LIM.
-----	-----	-----	----	----
7128	ATS-1 SOIL		CA TTLC LEVEL	
	AS	111 mg/kg	500	3.6 mg/kg
	CU	222 mg/kg	2,500	2.3 mg/kg
	PB	493 mg/kg	1,000	6.8 mg/kg
	ZN	733 mg/kg	5,000	2.3 mg/kg
7129	ATS-2 SOIL		CA TTLC LEVEL	
	AS	37 mg/kg	500	5.7 mg/kg
	CU	430 mg/kg	2,500	3.6 mg/kg
	PB	400 mg/kg	1,000	11 mg/kg
	ZN	447 mg/kg	5,000	3.6 mg/kg
7130	ATS-3 SOIL		CA TTLC LEVEL	
	AS	41.5 mg/kg	500	3.4 mg/kg
	CU	443 mg/kg	2,500	2.1 mg/kg
	PB	550 mg/kg	1,000	6.4 mg/kg
	ZN	682 mg/kg	5,000	2.1 mg/kg
7131	ATS-4 SOIL		CA TTLC LEVEL	
	AS	461 mg/kg	500	27 mg/kg
	CU	422 mg/kg	2,500	1.7 mg/kg
	PB	510 mg/kg	1,000	5.0 mg/kg
	ZN	1,280 mg/kg	5,000	17 mg/kg

THIS REPORT HAS BEEN REVIEWED
AND APPROVED FOR RELEASE.

DLF



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LABORATORY RESULTS

Laboratory Job No.: 920841

LABNO	SMPLNO-ID	RESULTS	DET.	LIM.
-----	-----	-----	-----	-----
7132	ATS-5 SOIL		CA TTLC LEVEL	
	AS	17 mg/kg	500	2.0 mg/kg
	CU	272 mg/kg	2,500	1.2 mg/kg
	PB	202 mg/kg	1,000	3.7 mg/kg
	ZN	415 mg/kg	5,000	1.2 mg/kg
7133	ATS-6 SOIL		CA TTLC LEVEL	
	AS	9.2 mg/kg	500	2.1 mg/kg
	CU	669 mg/kg	2,500	13 mg/kg
	PB	458 mg/kg	1,000	3.9 mg/kg
	ZN	357 mg/kg	5,000	1.3 mg/kg
7134	ATS-7 SOIL		CA TTLC LEVEL	
	AS	29.1 mg/kg	500	2.4 mg/kg
	CU	339 mg/kg	2,500	1.5 mg/kg
	PB	349 mg/kg	1,000	4.5 mg/kg
	ZN	832 mg/kg	5,000	15 mg/kg
7135	ATS-8 SOIL		CA TTLC LEVEL	
	AS	62.5 mg/kg	500	1.1 mg/kg
	CU	26,000 mg/kg	2,500 *	68 mg/kg
	PB	344 mg/kg	1,000	20 mg/kg
	ZN	13,700 mg/kg	5,000 *	68 mg/kg
7136	ATS-9 SOIL		CA TTLC LEVEL	
	AS	53.5 mg/kg	500	2.0 mg/kg
	CU	598 mg/kg	2,500	1.3 mg/kg
	PB	476 mg/kg	1,000	3.8 mg/kg
	ZN	1,430 mg/kg	5,000	13 mg/kg
7137	ATS-10 SOIL		CA TTLC LEVEL	
	AS	85 mg/kg	500	9.2 mg/kg
	CU	412 mg/kg	2,500	5.8 mg/kg
	PB	680 mg/kg	1,000	17 mg/kg
	ZN	1,000 mg/kg	5,000	5.8 mg/kg



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Page 3

LABORATORY RESULTS

Laboratory Job No.: 920841

LABNO	SMPLNO-ID	RESULTS		DET. LIM.	
-----	-----	-----	-----	-----	-----
7138	ATS-11 SOIL			CA TTLC LEVEL	
	AS	149	mg/kg	500	4.1 mg/kg
	CU	1,340	mg/kg	2,500	25 mg/kg
	PB	953	mg/kg	1,000	7.6 mg/kg
	ZN	2,850	mg/kg	5,000	25 mg/kg
7139	ATS-12 SOIL			CA TTLC LEVEL	
	AS	189	mg/kg	500	5.2 mg/kg
	CU	1,750	mg/kg	2,500	32 mg/kg
	PB	1,100	mg/kg	1,000 *	9.7 mg/kg
	ZN	3,230	mg/kg	5,000	32 mg/kg
7140	ATS-13 SOIL			CA TTLC LEVEL	
	AS	120	mg/kg	500	2.9 mg/kg
	CU	1,140	mg/kg	2,500	18 mg/kg
	PB	1,370	mg/kg	1,000 *	54 mg/kg
	ZN	2,700	mg/kg	5,000	18 mg/kg
7141	ATS-14 SOIL			CA TTLC LEVEL	
	AS	96.8	mg/kg	500	2.8 mg/kg
	CU	923	mg/kg	2,500	18 mg/kg
	PB	608	mg/kg	1,000	5.3 mg/kg
	ZN	1,660	mg/kg	5,000	18 mg/kg
7142	ATS-15 SOIL			CA TTLC LEVEL	
	AS	32.8	mg/kg	500	2.1 mg/kg
	CU	227	mg/kg	2,500	1.3 mg/kg
	PB	237	mg/kg	1,000	3.9 mg/kg
	ZN	398	mg/kg	5,000	1.3 mg/kg
7143	ATS-16 SOIL			CA TTLC LEVEL	
	AS	36.2	mg/kg	500	3.3 mg/kg
	CU	285	mg/kg	2,500	2.0 mg/kg
	PB	281	mg/kg	1,000	6.1 mg/kg
	ZN	727	mg/kg	5,000	2.0 mg/kg



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Page 4

LABORATORY RESULTS

Laboratory Job No.: 920841

LABNO	SMPLNO-ID	RESULTS	DET.	LIM.
7144	ATS-17 SOIL			
	AS	22 mg/kg	CA TTLC LEVEL	500
	CU	173 mg/kg		3.4 mg/kg
	PB	178 mg/kg		2.1 mg/kg
	ZN	394 mg/kg		6.4 mg/kg
				2.1 mg/kg
7145	ATS-18 SOIL			
	AS	50.2 mg/kg	CA TTLC LEVEL	500
	CU	880 mg/kg		1.8 mg/kg
	PB	857 mg/kg		11 mg/kg
	ZN	1,670 mg/kg		34 mg/kg
				11 mg/kg
7146	ATS-19 SOIL			
	AS	174 mg/kg	CA TTLC LEVEL	500
	CU	799 mg/kg		4.3 mg/kg
	PB	884 mg/kg		2.7 mg/kg
	ZN	3,100 mg/kg		8.0 mg/kg
				27 mg/kg
7147	ATS-20 SOIL			
	AS	32 mg/kg	CA TTLC LEVEL	500
	CU	282 mg/kg		4.7 mg/kg
	PB	241 mg/kg		2.9 mg/kg
	ZN	871 mg/kg		8.7 mg/kg
				2.9 mg/kg
7148	ATS-21 SOIL			
	AS	1,240 mg/kg	CA TTLC LEVEL	500 *
	CU	440 mg/kg		22 mg/kg
	PB	864 mg/kg		1.4 mg/kg
	ZN	1,210 mg/kg		41 mg/kg
				14 mg/kg
7149	ATS-22 SOIL			
	AS	181 mg/kg	CA TTLC LEVEL	500
	CU	1,190 mg/kg		7.7 mg/kg
	PB	984 mg/kg		4.8 mg/kg
	ZN	3,130 mg/kg		14 mg/kg
				48 mg/kg



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Page 5

LABORATORY RESULTS

Laboratory Job No.: 920841

LABNO	SMPLNO-ID	RESULTS	DET.	LIM.
-----	-----	-----	----	----
7150	ATS-23 SOIL			
	AS	37.5 mg/kg		
	CU	375 mg/kg		
	PB	329 mg/kg		
	ZN	948 mg/kg		
			CA TTLC LEVEL	
			500	1.6 mg/kg
			2,500	1.0 mg/kg
			1,000	3.1 mg/kg
			5,000	10 mg/kg
7151	ATS-24 SOIL			
	AS	11 mg/kg		
	CU	145 mg/kg		
	PB	104 mg/kg		
	ZN	350 mg/kg		
			CA TTLC LEVEL	
			500	2.3 mg/kg
			2,500	1.4 mg/kg
			1,000	4.3 mg/kg
			5,000	1.4 mg/kg
	MB SOIL			
	AS	ND	40	mg/kg
	CU	ND	2.5	mg/kg
	PB	ND	7.5	mg/kg
	ZN	ND	2.5	mg/kg
	MBS SOIL			
	AS	497 mg/kg		
	CU	26.1 mg/kg		
	PB	49 mg/kg		
	ZN	26.2 mg/kg		
			SPIKE LEVELS	
			500 mg/kg	40 mg/kg
			25 mg/kg	2.5 mg/kg
			50 mg/kg	7.5 mg/kg
			25 mg/kg	2.5 mg/kg
	MB-2 SOIL			
	AS	ND	40	mg/kg
	CU	ND	2.5	mg/kg
	PB	ND	7.5	mg/kg
	ZN	ND	2.5	mg/kg
	MBS-2 SOIL			
	AS	501 mg/kg		
	CU	26.5 mg/kg		
	PB	51 mg/kg		
	ZN	26.4 mg/kg		
			SPIKE LEVELS	
			500 mg/kg	40 mg/kg
			25 mg/kg	2.5 mg/kg
			50 mg/kg	7.5 mg/kg
			25 mg/kg	2.5 mg/kg



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Page 6

LABORATORY RESULTS

Laboratory Job No.: 920841

LABNO	SMPLNO-ID	RESULTS		DET.	LIM.
-----	-----	-----	-----	-----	-----
MX-1 SOIL					
	AS	111	mg/kg	3.6	mg/kg
	CU	222	mg/kg	2.3	mg/kg
	PB	493	mg/kg	6.8	mg/kg
	ZN	733	mg/kg	2.3	mg/kg
MS-1 SOIL					
	AS	398	mg/kg	271	mg/kg
	CU	521	mg/kg	768	mg/kg
	PB	1,090	mg/kg	316	mg/kg
	ZN	1,430	mg/kg	813	mg/kg
MSD-1 SOIL					
	AS	402	mg/kg	270	mg/kg
	CU	473	mg/kg	765	mg/kg
	PB	1,080	mg/kg	315	mg/kg
	ZN	1,230	mg/kg	810	mg/kg
MX-2 SOIL					
	AS	37	mg/kg	5.7	mg/kg
	CU	430	mg/kg	3.6	mg/kg
	PB	400	mg/kg	11	mg/kg
	ZN	447	mg/kg	3.6	mg/kg
MS-2 SOIL					
	AS	124	mg/kg	102	mg/kg
	CU	774	mg/kg	680	mg/kg
	PB	1,110	mg/kg	476	mg/kg
	ZN	1,340	mg/kg	748	mg/kg
MSD-2 SOIL					
	AS	119	mg/kg	107	mg/kg
	CU	829	mg/kg	711	mg/kg
	PB	1,080	mg/kg	498	mg/kg
	ZN	1,200	mg/kg	782	mg/kg

ND=Not Detected

JOB NO. 920841 QA/QC SUMMARY

	SAMPLE RESULTS	AMOUNT IN SAMPLE	AMOUNT RECOVERED	SPIKED AMOUNT	% REC	% RPD
As	497	0	497	500	99.4%	
Cu	26	0	26	25	104.0%	
Pb	49	0	49	50	98.0%	
Zn	26	0	26	25	104.0%	
MBS 2						
As	501	0	501	500	100.2%	
Cu	27	0	27	25	108.0%	
Pb	51	0	51	50	102.0%	
Zn	26	0	26	25	104.0%	
MX 1 (AT -1)						
As	111					
Cu	222					
Pb	493					
Zn	733					
MS 1 (AT -1)						
As	398	111	287	271	105.9%	1.8%
Cu	521	222	299	768	38.9%	17.1%
Pb	1090	493	597	316	188.9%	1.4%
Zn	1430	733	697	813	85.7%	33.1%
MSD 1 (A S-1)						
As	402	111	291	270	107.8%	
Cu	473	222	251	765	32.8%	
Pb	1080	493	587	315	186.3%	
Zn	1230	733	497	810	61.4%	
MX 2 (AT -2)						
As	37					
Cu	430					
Pb	400					
Zn	447					
MS 2 (AT -2)						
As	124	37	87	102	85.3%	10.7%
Cu	774	430	344	680	50.6%	10.4%
Pb	1110	400	710	476	149.2%	8.8%
Zn	1340	447	893	748	119.4%	21.4%
MSD 2 (A S-2)						
As	119	37	82	107	76.6%	
Cu	829	430	399	711	56.1%	
Pb	1080	400	680	498	136.5%	
Zn	1200	447	753	782	96.3%	



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Telephone: (707) 763-8245 FAX: (707) 763-4065

MAR 2 1992

92-0842

SAMPLE CHAIN OF CUSTODY / WORK ORDER RECEIVED

284 LABORATORIES

Client's Name DAMES & MOORE Phone 916-387-7532
Address 8801 FOLSOM BLVD. SUITE 200
City, State, Zip SACRAMENTO, CA 95826

Client's or Representative's Signature [Signature]
(signature authorizes the work and terms listed below)

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pick up samples.

PROJ. NO.		PROJECT NAME		NO. OF CONTAINERS		REMARKS	
00173-044-044		U.P. SAC.					
SAMPLERS (Signature) <u>[Signature]</u>							
STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION		
	3/20			X	ATB-1-0	3	X
						3	X
"				X	ATB-3-0	3	X
"				X	ATB-4-0	3	X
"				X	ATB-5-0	3	X
"				X	ATB-6-0	3	X
"				X	ATB-7-0	3	X
"				X	ATB-8-0	3	X
"				X	ATB-9-0	3	X
"				X	ATB-10-0	3	X
"				X	ATB-11-0	3	X
"				X	ATB-12-0	3	X
"				X	ATB-13-0	3	X
"				X	ATB-14-0	3	X
"				X	ATB-15-0	3	X
"				X	ATB-16-0	3	X
"				X	ATB-17-0	3	X
"				X	ATB-18-0	3	X
"				X	ATB-19-0	3	X
"				X	ATB-20-0	3	X

Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	General Remarks:
<u>[Signature]</u>	3/20/92	1700	<u>[Signature]</u>	
Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	
Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	Use graphite Furnace for lead and arsenic if ICP concentrations are near or below detection limits.

**SAMPLES RECEIVED IN GOOD CONDITION
NO BROKEN OR LEAKING CONTAINERS**

CLIENT COPY



3700 Lakeville Highway, Petaluma, CA 94954
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FAX (707) 763-4065

Mark Eisen
Dames & Moore
8801 Folsom Blvd., Suite 200
Sacramento, CA 95826

Client Code: DAMM14
Survey # U.P.SACTO
Project/Release # 00173-064-044

Page 1

LABORATORY RESULTS

Date Collected: 03/20/92
Date Analyzed: 04/07/92

Laboratory Job No.: 920842
Date Received: 03/23/92
Date Reported: 04/08/92

ASSAY:METAL SCAN BY ICP(EPA 6010)

LABNO	SMPLNO-ID	RESULTS	DET.	LIM.
-----	-----	-----	-----	-----
7167	ATB-1-0 SOIL		CA TTLC LEVEL	
	AS	22 mg/kg	500	3.0 mg/kg
	CU	88.1 mg/kg	2,500	0.18 mg/kg
	PB	75.4 mg/kg	1,000	0.55 mg/kg
	ZN	408 mg/kg	5,000	1.8 mg/kg
7168	ATB-2-0 SOIL		CA TTLC LEVEL	
	AS	63.4 mg/kg	500	2.5 mg/kg
	CU	585 mg/kg	2,500	1.6 mg/kg
	PB	512 mg/kg	1,000	4.8 mg/kg
	ZN	1,670 mg/kg	5,000	16 mg/kg
7169	ATB-3-0 SOIL		CA TTLC LEVEL	
	AS	4.3 mg/kg	500	3.5 mg/kg
	CU	30.7 mg/kg	2,500	0.22 mg/kg
	PB	36.5 mg/kg	1,000	0.65 mg/kg
	ZN	80.8 mg/kg	5,000	0.22 mg/kg
7170	ATB-4-0 SOIL		CA TTLC LEVEL	
	AS	439 mg/kg	500	43 mg/kg
	CU	557 mg/kg	2,500	2.7 mg/kg
	PB	721 mg/kg	1,000	8.0 mg/kg
	ZN	1,940 mg/kg	5,000	27 mg/kg

THIS REPORT HAS BEEN REVIEWED
AND APPROVED FOR RELEASE

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Page 2

LABORATORY RESULTS

Laboratory Job No.: 920842

LABNO	SMPLNO-ID	RESULTS	CA TTLC LEVEL	DET.	LIM.
-----	-----	-----	-----	-----	-----
7171	ATB-5-0 SOIL				
	AS	57.1 mg/kg	500	3.2	mg/kg
	CU	340 mg/kg	2,500	2.0	mg/kg
	PB	384 mg/kg	1,000	6.0	mg/kg
	ZN	874 mg/kg	5,000	2.0	mg/kg
7172	ATB-6-0 SOIL				
	AS	28 mg/kg	500	5.3	mg/kg
	CU	280 mg/kg	2,500	3.3	mg/kg
	PB	270 mg/kg	1,000	9.9	mg/kg
	ZN	828 mg/kg	5,000	3.3	mg/kg
7173	ATB-7-0 SOIL				
	AS	ND	500	5.9	mg/kg
	CU	33.8 mg/kg	2,500	0.37	mg/kg
	PB	28.8 mg/kg	1,000	1.1	mg/kg
	ZN	84.5 mg/kg	5,000	0.37	mg/kg
7174	ATB-8-0 SOIL				
	AS	37.1 mg/kg	500	1.7	mg/kg
	CU	463 mg/kg	2,500	1.1	mg/kg
	PB	418 mg/kg	1,000	3.2	mg/kg
	ZN	1,680 mg/kg	5,000	11	mg/kg
7175	ATB-9-0 SOIL				
	AS	6.2 mg/kg	500	2.8	mg/kg
	CU	156 mg/kg	2,500	1.8	mg/kg
	PB	302 mg/kg	1,000	5.3	mg/kg
	ZN	652 mg/kg	5,000	1.8	mg/kg
7176	ATB-10-0 SOIL				
	AS	60.8 mg/kg	500	3.9	mg/kg
	CU	488 mg/kg	2,500	2.4	mg/kg
	PB	557 mg/kg	1,000	7.3	mg/kg
	ZN	796 mg/kg	5,000	2.4	mg/kg



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Page 3

LABORATORY RESULTS

Laboratory Job No.: 920842

LABNO	SMPLNO-ID	RESULTS		DET. LIM.	
-----	-----	-----	-----	-----	-----
7177	ATB-11-0 SOIL			CA TTLC LEVEL	
	AS	13	mg/kg	500	2.6 mg/kg
	CU	240	mg/kg	2,500	1.6 mg/kg
	PB	327	mg/kg	1,000	5.0 mg/kg
	ZN	3,560	mg/kg	5,000	16 mg/kg
7178	ATB-12-0 SOIL			CA TTLC LEVEL	
	AS	10	mg/kg	500	2.2 mg/kg
	CU	161	mg/kg	2,500	1.4 mg/kg
	PB	111	mg/kg	1,000	4.2 mg/kg
	ZN	424	mg/kg	5,000	1.4 mg/kg
7179	ATB-13-0 SOIL			CA TTLC LEVEL	
	AS	135	mg/kg	500	2.4 mg/kg
	CU	1,010	mg/kg	2,500	15 mg/kg
	PB	865	mg/kg	1,000	45 mg/kg
	ZN	2,500	mg/kg	5,000	15 mg/kg
7180	ATB-14-0 SOIL			CA TTLC LEVEL	
	AS	125	mg/kg	500	2.9 mg/kg
	CU	997	mg/kg	2,500	18 mg/kg
	PB	951	mg/kg	1,000	55 mg/kg
	ZN	3,030	mg/kg	5,000	18 mg/kg
7181	ATB-15-0 SOIL			CA TTLC LEVEL	
	AS	71.2	mg/kg	500	1.2 mg/kg
	CU	504	mg/kg	2,500	7.5 mg/kg
	PB	448	mg/kg	1,000	22 mg/kg
	ZN	1,330	mg/kg	5,000	7.5 mg/kg
7182	ATB-16-0 SOIL			CA TTLC LEVEL	
	AS	75.9	mg/kg	500	2.4 mg/kg
	CU	625	mg/kg	2,500	1.5 mg/kg
	PB	558	mg/kg	1,000	4.5 mg/kg
	ZN	1,650	mg/kg	5,000	15 mg/kg



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Page 4

LABORATORY RESULTS

Laboratory Job No.: 920842

LABNO	SMPLNO-ID	RESULTS	DET.	LIM.
-----	-----	-----	-----	-----
7183	ATB-17-0 SOIL		CA TTLC LEVEL	
	AS	94.7 mg/kg	500	2.2 mg/kg
	CU	677 mg/kg	2,500	14 mg/kg
	PB	754 mg/kg	1,000	41 mg/kg
	ZN	2,180 mg/kg	5,000	14 mg/kg
7184	ATB-18-0 SOIL		CA TTLC LEVEL	
	AS	90.9 mg/kg	500	2.7 mg/kg
	CU	685 mg/kg	2,500	1.7 mg/kg
	PB	710 mg/kg	1,000	5.1 mg/kg
	ZN	2,110 mg/kg	5,000	17 mg/kg
7185	ATB-19-0 SOIL		CA TTLC LEVEL	
	AS	113 mg/kg	500	3.5 mg/kg
	CU	796 mg/kg	2,500	2.2 mg/kg
	PB	799 mg/kg	1,000	6.6 mg/kg
	ZN	2,390 mg/kg	5,000	22 mg/kg
7186	ATB-20-0 SOIL		CA TTLC LEVEL	
	AS	79.6 mg/kg	500	2.5 mg/kg
	CU	806 mg/kg	2,500	16 mg/kg
	PB	733 mg/kg	1,000	4.8 mg/kg
	ZN	1,870 mg/kg	5,000	16 mg/kg
	MB SOIL			
	AS	ND		40 mg/kg
	CU	ND		2.5 mg/kg
	PB	ND		7.5 mg/kg
	ZN	ND		2.5 mg/kg
	MBS SOIL		SPIKE LEVELS	
	AS	460 mg/kg	500 mg/kg	40 mg/kg
	CU	24 mg/kg	25 mg/kg	2.5 mg/kg
	PB	50 mg/kg	50 mg/kg	7.5 mg/kg
	ZN	25.2 mg/kg	25 mg/kg	2.5 mg/kg



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Page 5

LABORATORY RESULTS

Laboratory Job No.: 920842

LABNO	SMPLNO-ID	RESULTS	DET.	LIM.
-----	-----	-----	-----	-----
7171	MX-1 SOIL			
	AS	57.1 mg/kg	3.2	mg/kg
	CU	340 mg/kg	2.0	mg/kg
	PB	384 mg/kg	6.0	mg/kg
	ZN	874 mg/kg	2.0	mg/kg
7171S	MS-1 SOIL			
	AS	122 mg/kg	120	mg/kg
	CU	683 mg/kg	400	mg/kg
	PB	940 mg/kg	680	mg/kg
	ZN	1,550 mg/kg	961	mg/kg
			20	mg/kg
7171D	MSD-1 SOIL			
	AS	120 mg/kg	118	mg/kg
	CU	782 mg/kg	395	mg/kg
	PB	1,130 mg/kg	671	mg/kg
	ZN	1,880 mg/kg	948	mg/kg
			59	mg/kg
			20	mg/kg
7172	MX-2 SOIL			
	AS	28 mg/kg	5.3	mg/kg
	CU	280 mg/kg	3.3	mg/kg
	PB	270 mg/kg	9.9	mg/kg
	ZN	828 mg/kg	3.3	mg/kg
7172S	MS-2 SOIL			
	AS	74.1 mg/kg	64.9	mg/kg
	CU	742 mg/kg	325	mg/kg
	PB	794 mg/kg	454	mg/kg
	ZN	2,780 mg/kg	1880	mg/kg
			32	mg/kg
7172D	MSD-2 SOIL			
	AS	59.9 mg/kg	61.4	mg/kg
	CU	558 mg/kg	307	mg/kg
	PB	608 mg/kg	430	mg/kg
	ZN	2,460 mg/kg	1780	mg/kg
			31	mg/kg

ND=Not Detected

JOB NO. 920842 QA/QC SUMMARY

MBS

460	500	92.0%
24	25	96
50	50	100
25.2	25	100

gets attached to reports

MX

57.1
340
384
874

MS

122	64.9	57.1	120	47.6%
683	343	340	400	85.0%
940	556	384	680	56.5%
1550	676	874	961	90.9%

RPD

11.3%
27.3%
65.3%
15.4%

MSD

120	57.1	62.9	118	53.3%
782	340	442	395	111.9%
1130	384	746	671	111.2%
1880	874	1006	948	106.1%

MX

28
280
270
828

MS

74.1	28	46.1	64.9	71.0%
742	280	462	325	142.2%
794	270	524	454	115.4%
2780	828	1952	1880	103.8%

RPD

31.0%
44.3%
37.9%
12.4%

MSD

59.9	28	31.9	61.4	52.0%
558	280	278	307	90.6%
608	270	338	430	78.6%
2460	828	1632	1780	91.7%

JOB NO. 920842 QA/QC SUMMARY

MBS

460	500	92.0%
24	25	96.0%
50	50	100.0%
25.2	25	100.8%

MX

57.1
340
384
874

MS

As
Cu
Pb
Zn

122	64.9	57.1
683	343	340
940	556	384
1550	676	874

*slope
levels*

ACCURACY

120	47.6%
400	85.0%
680	56.5%
961	90.9%

RPD from % recoveries
variable spike
levels, count
do on values
only

11.3%
27.3%
65.3%
15.4%

MSD

120	57.1	62.9	118	53.3%
782	340	442	395	111.9%
1130	384	746	671	111.2%
1880	874	1006	948	106.1%

MX

28
280
270
828

MS

74.1	28	46.1	64.9	71.0%
742	280	462	325	142.2%
794	270	524	454	115.4%
2780	828	1952	1880	103.8%

RPD

31.0%
44.3%
37.9%
12.4%

MSD

59.9	28	31.9	61.4	52.0%
558	280	278	307	90.6%
608	270	338	430	78.6%
2460	828	1632	1780	91.7%



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QUALITY CONTROL REPORT

In order to provide you with the means of assessing the quality of the data in our report, **D&M Laboratories** reports the results of Quality Control samples analyzed with your samples.

The Quality Control samples provide the following QC information:

The Method Blank (MB) monitors the level of contamination introduced by reagents or glassware. A minimum of one MB is run per batch of 20 samples or less.

The Method Blank Spike (MBS) measures the accuracy of analytical techniques and is not subject to matrix effects. A minimum of one MBS is run per batch of 20 samples or less.

The Matrix Spike (MS) measures the accuracy of the method for a matrix type. Due to the high variability within matrix types and the necessity of batching samples from varied sources, matrix spike information from one sample is not necessarily relevant to other samples on the batch. A minimum of two matrix spikes, MS and MSD, are run per batch of 20 samples or less. The sample selected for the matrix spike is designated MX, and may or may not have been submitted by the recipient of this report.

The Matrix Spike Duplicate (MSD), along with the MS, is used to monitor the precision (RPD) of the method and to indicate possible non homogeneity of the sample matrix.

Equations used for determining percent recovery and relative percent difference (RPD) are as follows:

$$\text{MBS \% Recovery} = \text{MBS result} / \text{MBS spike level} \times 100$$

$$\text{MS \% Recovery} = (\text{MS} - \text{sample}) / \text{MS spike level} \times 100$$

$$\text{RPD} = | \text{MS} - \text{MSD} | / ((\text{MS} + \text{MSD}) / 2) \times 100$$

We continue to strive to improve the quality of service to our clients. We welcome any questions or comments you may have about this information, or about **D&M Laboratories** in general. Please contact a Project Manager for further information.



91-6194

3700 Lakeville Highway, Petaluma, CA 94952

P.O. Box 808024, Petaluma, CA, 94975-8024

Telephone: (707) 763-8245 FAX: (707) 763-4085

RECEIVED
DAN LABORATORIES

SAMPLE CHAIN OF CUSTODY WORK ORDER

51 DEC 20 AM 10:55

Phone (916) 387-7532

Client's Name Dames & MooreAddress 8801 Folsom Blvd Suite 200City, State, Zip Sacramento, CA 95826

Client's or Representative's Signature

Mark Eizen

(signature authorizes the work and terms listed below)

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pick up samples.

PROJ. NO. 00173-064 0414		PROJECT NAME UPRR Sacramento				NO. OF CON- TAINERS	REMARKS				LAB USE ONLY LAB NO.
SAMPLERS (Signature) <i>Mark Eizen</i>											
STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION						
	12/19			X	ATB-1-0.5-1	1		X	X		
	12/19			X	ATB-1-375-4	1	X	X			
	12/19			X	ATB-1-4-4.5	1			X		
	~~12/19~~			~~X~~							
	12/19			X	ATB-2-0.5-1	1		X	X		
	12/19			X	ATB-2-5.5-6	1	X	X	X		
	12/18			X	ATB-9-2.5		X	X			
	12/18			X	ATB-9-3-3.5				X		
	12/19			X	ATB-3-0.5-2	1		X	X		
	12/19			X	ATB-3-2-2.5	1	X	X			
	12/19			X	ATB-4-2	1	X	X			
	12/19			X	ATB-4-3-3.5	1			X		
	12/19			X	ATB-5-2	1	X	X			
	12/19			X	ATB-5-3-3.5	1			X		
	12/18			X	ATB-6-2	1	X	X			
	12/18			X	ATB-6-3-3.5	1			X		
	12/18			X	ATB-7-2.5-3	1	X	X			
	12/18			X	ATB-7-3-3.5	1			X		
	12/18			X	ATB-8-2.5-3		X	X			
	12/18			X	ATB-8-3-3.5				X		

Relinquished by: (Signature)

DATE

TIME

Received by: (Signature)

S. Suardi

General Remarks:

Send results Attn: Mark Eizen

Refer to quote 1498

Relinquished by: (Signature)

DATE

TIME

Received by: (Signature)

Relinquished by: (Signature)

DATE

TIME

Received by: (Signature)



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Mark Eisen
Dames & Moore
8801 Folsom Blvd., Suite 200
Sacramento, CA 95826

Client Code: DAMM14
Survey # UPRR-SACTO.
Project/Release # 00173-064-044

Page 1

LABORATORY RESULTS

Date Collected: 12/19/91
Date Analyzed: 01/06/92

Laboratory Job No.: 916194
Date Received: 12/20/91
Date Reported: 01/09/92

ASSAY:

ARSENIC (EPA 7060), 3050 ACID DIGEST
LEAD (EPA 7421), 3050 ACID DIGEST

MATRIX: SOIL, ACID DIGEST

LABNO SMPLNO	COMPOUND	FOUND mg/kg	CA TTLC LEV	DET.LIM. mg/kg
44752 ATB1-3.75-4	AS	11.7	500	2.5
	PB	8	1,000	1
44755 ATB2-5.5-6	AS	10.5	500	2.5
	PB	9	1,000	1
44756 ATB9-2.5	AS	9.3	500	2.5
	PB	8	1,000	1
44759 ATB3-2-2.5	AS	8.6	500	2.5
	PB	8	1,000	1
44760 ATB4-2	AS	6.0	500	2.5
	PB	6.4	1,000	0.5
44762 ATB5-2	AS	6.8	500	2.5
	PB	9	1,000	1
44764 ATB6-2	AS	6.5	500	2.5
	PB	13	1,000	1

THIS REPORT HAS BEEN REVIEWED
AND APPROVED FOR RELEASE.

DUF



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Page 2

LABORATORY RESULTS

Laboratory Job No.: 916194

LABNO SMPLNO	COMPOUND	FOUND mg/kg	CA TTLC LEV	DET.LIM. mg/kg
44766 ATB7-2.5-3	AS	6.3	500	2.5
	PB	9	1,000	1
44768 ATB8-2.5-3	AS	5.6	500	2.5
	PB	8	1,000	1
44770 MB	AS	ND		2.5
	PB	ND		0.5
44771 MBS	AS	11.9	SPIKE LEVELS 12.5 mg/kg	2.5
	PB	4.4	5.0 mg/kg	0.5
44772 MX	AS	4.0		2.5
	PB	6.6		0.5
44773 MS	AS	12.2	SPIKE LEVELS 12.5 mg/kg	2.5
	PB	10.9	5.0 mg/kg	0.5
44774 MSD	AS	13.7	12.5 mg/kg	2.5
	PB	10.8	5.0 mg/kg	0.5



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Page 3

LABORATORY RESULTS

Date Collected: 12/19/91
Date Analyzed: 01/06/92

Laboratory Job No.: 916194
Date Received: 12/20/91
Date Reported: 01/09/92

ASSAY:METAL SCAN BY ICP(EPA 6010)

LABNO	SMPLNO-ID	RESULTS	DET. LIM.
-----	-----	-----	-----
44752	ATB1-3.75-4 SOIL		CA TTLC LEVEL
	CU	30.1 mg/kg	2,500
	ZN	50.5 mg/kg	5,000
			2.5 mg/kg
			2.5 mg/kg
44755	ATB2-5.5-6 SOIL		CA TTLC LEVEL
	CU	29.5 mg/kg	2,500
	ZN	45.2 mg/kg	5,000
			2.5 mg/kg
			2.5 mg/kg
44756	ATB9-2.5 SOIL		CA TTLC LEVEL
	CU	32.6 mg/kg	2,500
	ZN	49.9 mg/kg	5,000
			2.5 mg/kg
			2.5 mg/kg
44759	ATB3-2-2.5 SOIL		CA TTLC LEVEL
	CU	28.1 mg/kg	2,500
	ZN	49.1 mg/kg	5,000
			2.5 mg/kg
			2.5 mg/kg
44760	ATB4-2 SOIL		CA TTLC LEVEL
	CU	24 mg/kg	2,500
	ZN	41.5 mg/kg	5,000
			2.5 mg/kg
			2.5 mg/kg
44762	ATB5-2 SOIL		CA TTLC LEVEL
	CU	29.4 mg/kg	2,500
	ZN	48.0 mg/kg	5,000
			2.5 mg/kg
			2.5 mg/kg
44764	ATB6-2 SOIL		CA TTLC LEVEL
	CU	29.5 mg/kg	2,500
	ZN	51.2 mg/kg	5,000
			2.5 mg/kg
			2.5 mg/kg



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Page 4

LABORATORY RESULTS

Laboratory Job No.: 916194

LABNO	SMPLNO-ID	RESULTS	DET. LIM.
-----	-----	-----	-----
44766	ATB7-2.5-3 SOIL		
	CU	34.7 mg/kg	2.5 mg/kg
	ZN	45.6 mg/kg	2.5 mg/kg
44768	ATB8-2.5-3 SOIL		
	CU	33.7 mg/kg	2.5 mg/kg
	ZN	54.3 mg/kg	2.5 mg/kg
44770	MB SOIL		
	CU	ND	2.5 mg/kg
	ZN	ND	2.5 mg/kg
44771	MBS SOIL		
	CU	25.2 mg/kg	2.5 mg/kg
	ZN	25.4 mg/kg	2.5 mg/kg
44772	MX SOIL		
	CU	24 mg/kg	2.5 mg/kg
	ZN	41.7 mg/kg	2.5 mg/kg
44773	MS SOIL		
	CU	49.7 mg/kg	2.5 mg/kg
	ZN	67.4 mg/kg	2.5 mg/kg
44774	MSD SOIL		
	CU	50.2 mg/kg	2.5 mg/kg
	ZN	68.3 mg/kg	2.5 mg/kg

ND=Not Detected

NOTE: MBS, MS AND MSD WERE SPIKED AT 25 mg/kg.



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Page 5

LABORATORY RESULTS

Date Collected: 12/19/91
Date Extracted: 12/23/91
Date Analyzed: 12/30/91

Laboratory Job No.: 916194
Date Received: 12/20/91
Date Reported: 01/09/92

ASSAY: TPH/DIESEL (EPA 3550/8015)
MATRIX: SOIL

LAB NUMBER	SAMPLE NUMBER	RESULTS mg/kg	DET.LIM mg/kg
44751	ATB1-0.5-1 DIESEL	300	5.0
44753	ATB1-4-4.5 DIESEL	ND	5.0
44754	ATB2-0.5-1 DIESEL	100	50.0
44755	ATB2-5.5-6 DIESEL	ND	5.0
44758	ATB3-1.5-2 DIESEL	190	5.0
44770	MB DIESEL	ND	5.0
44771	MBS DIESEL	60	5.0
44772	MX DIESEL	ND	5.0
44773	MS DIESEL	63	5.0



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Page 6

LABORATORY RESULTS

Laboratory Job No.: 916194

LAB NUMBER	SAMPLE NUMBER	RESULTS mg/kg	DET.LIM mg/kg
-----	-----	-----	-----
44774	MSD		
	DIESEL	63	5.0

NOTE: MBS, MS AND MSD WERE SPIKED AT 55 mg/kg.



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Page 7

LABORATORY RESULTS

Date Collected: 12/19/91
Date Extracted: 12/28/91
Date Analyzed: 12/28/91

Laboratory Job No.: 916194
Date Received: 12/20/91
Date Reported: 01/09/92

ASSAY:
PURGEABLE AROMATICS IN SOIL (EPA 8020)

COMPOUNDS:	LAB#	44751	DET.	44754	DET.	44757	DET.
	SMP#	ATB1-0.5-1	LIM.	ATB2-0.5-1	LIM.	ATB9-3-3.5	LIM.
	dil.	1		1		1	
PURGEABLES		ug/kg		ug/kg		ug/kg	
BENZENE		ND	0.50	ND	0.50	ND	0.50
CHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,3-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,4-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
ETHYL BENZENE		ND	0.50	ND	0.50	ND	0.50
TOLUENE		ND	0.50	3.4	0.50	ND	0.50
XYLENE		ND	0.50	ND	0.50	ND	0.50
SURROGATE RECOVERY		95%		120%		100%	

COMPOUNDS:	LAB#	44758	DET.	44761	DET.	44763	DET.
	SMP#	ATB3-1.5-2	LIM.	ATB4-3-3.5	LIM.	ATB5-3-3.5	LIM.
	dil.	1		1		1	
PURGEABLES		ug/kg		ug/kg		ug/kg	
BENZENE		ND	0.50	ND	0.50	ND	0.50
CHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,3-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,4-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
ETHYL BENZENE		ND	0.50	ND	0.50	ND	0.50
TOLUENE		ND	0.50	ND	0.50	ND	0.50
XYLENE		ND	0.50	ND	0.50	ND	0.50
SURROGATE RECOVERY		100%		100%		110%	



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Page 8

LABORATORY RESULTS

Laboratory Job No.: 916194

COMPOUNDS:	LAB#	44765	DET.	44767	DET.	44769	DET.
	SMP#	ATB6-3-3.5	LIM.	ATB7-3-3.5	LIM.	ATB8-3-3.5	LIM.
	dil.	1		1		1	
PURGEABLES		ug/kg	**	ug/kg	**	ug/kg	
BENZENE		ND	0.50	ND	0.50	ND	0.50
CHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,3-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,4-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
ETHYL BENZENE		ND	0.50	ND	0.50	ND	0.50
TOLUENE		ND	0.50	ND	0.50	ND	0.50
XYLENE		ND	0.50	ND	0.50	ND	0.50

SURROGATE RECOVERY 110%

COMPOUNDS:	LAB#	44770	DET.	44771	DET.	44772	DET.	44773	DET.
	SMP#	MB	LIM.	MBS	LIM.	MX	LIM.	MS	LIM.
	dil.	1		1		1		1	
PURGEABLES		ug/L		ug/L		ug/kg		ug/kg	
BENZENE		ND	0.50	9.4	0.50	ND	0.50	48	0.50
CHLOROBENZENE		ND	0.50	9.5	0.50	ND	0.50	45	0.50
1,2-DICHLOROBENZENE		ND	0.50	9.8	0.50	ND	0.50	48	0.50
1,3-DICHLOROBENZENE		ND	0.50	9.2	0.50	ND	0.50	47	0.50
1,4-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50	ND	0.50
ETHYL BENZENE		ND	0.50	ND	0.50	ND	0.50	ND	0.50
TOLUENE		ND	0.50	0.5	0.50	ND	0.50	2.6	0.50
XYLENE		ND	0.50	ND	0.50	ND	0.50	ND	0.50

SURROGATE RECOVERY 100% 100% 110% 120%



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Page 9

LABORATORY RESULTS

Laboratory Job No.: 916194

COMPOUNDS:	LAB#	44774	DET.
	SMP#	MSD	LIM.
	dil.	1	
PURGEABLES		ug/kg	
BENZENE		49	0.50
CHLOROBENZENE		45	0.50
1,2-DICHLOROBENZENE		49	0.50
1,3-DICHLOROBENZENE		46	0.50
1,4-DICHLOROBENZENE		ND	0.50
ETHYL BENZENE		ND	0.50
TOLUENE		2.6	0.50
XYLENE		2.9	0.50
SURROGATE RECOVERY		120%	

NOTES: MBS SPIKED AT 10 ug/L. MS AND MSD SPIKED AT 50 ug/kg

SPIKING COMPOUNDS ARE: CHLOROBENZENE, 1,2- and 1,3-DICHLOROBENZENE, BENZENE.

EPA 8010 ANALYSES ARE NOT REPORTED BECAUSE HOLDING TIMES WERE EXCEEDED.

THE PRESENCE OF TOLUENE IN THE MBS, MS AND MSD MAY BE DUE TO THE DECOMPOSITION OF TRAP MATERIAL FROM THE INSTRUMENT. THE PRESENCE OF XYLENE IN THE MSD MAY BE DUE TO THE NONHOMOGENEITY OF THE SAMPLE.



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QUALITY CONTROL REPORT

In order to provide you with the means of assessing the quality of the data in our report, D&M Laboratories reports the results of Quality Control samples analyzed with your samples.

The Quality Control samples provide the following QC information:

The Method Blank (**MB**) monitors the level of contamination introduced by reagents or glassware. A minimum of one MB is run per batch of 20 samples or less.

The Method Blank Spike (**MBS**) measures the accuracy of analytical techniques and is not subject to matrix effects. A minimum of one MBS is run per batch of 20 samples or less.

The Matrix Spike (**MS**) measures the accuracy of the method for a matrix type. Due to the high variability within matrix types and the necessity of batching samples from varied sources, matrix spike information from one sample is not necessarily relevant to other samples on the batch. A minimum of two matrix spikes, MS and MSD, are run per batch of 20 samples or less. The sample selected for the matrix spike is designated **MX**.

The Matrix Spike Duplicate (**MSD**), along with the MS, is used to monitor the precision (**RPD**) of the method and to indicate possible non homogeneity of the sample matrix.

Equations used for determining percent recovery and relative percent difference (**RPD**) are as follows:

$$\text{MBS \% Recovery} = \text{MBS result} / \text{MBS spike level} \times 100$$

$$\text{MS \% Recovery} = (\text{MS} - \text{sample}) / \text{MS spike level} \times 100$$

$$\text{RPD} = | \text{MS} - \text{MSD} | / ((\text{MS} + \text{MSD}) / 2) \times 100$$

We continue to strive to improve the quality of service to our clients. We welcome any questions or comments you may have about this information, or about D&M Laboratories in general. Please contact a Project Manager for further information.



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91-6178

RECEIVED
 PETALUMA LABORATORIES

SAMPLE CHAIN OF CUSTODY / WORK ORDER

DEC 19 AM 11:05

Client's Name Danesh E Moore

Phone (916)-387-7532

Address 8801 Folsom Blvd Suite 200

City, State, Zip Sacramento, CA 95826

Client's or Representative's Signature Mal Egan

(signature authorizes the work and terms listed below)

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pick up samples.

PROJ. NO. 00173-064 0414		PROJECT NAME UPRR Sacramento		NO. OF CON-TAINERS		REMARKS		LAB USE ONLY LAB NO.	
SAMPLERS (Signature) <u>Mal Egan</u>									
STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION				
	12/17			X	ATB-18-3-3.5	1		X	X
	12/17			X	ATB-18-3.5-4	1		X	
	12/17			X	ATB-19-3.5-4	1		X	X
	12/17			X	ATB-19-4-4.5	1		X	
	12/17			X	ATB-20-3-3.5	1		X	X
	12/17			X	ATB-20-2.5-3	1		X	
	12/17				ATB-11-9.5-10	1		X	X
	12/17				ATB-11-16.5-16.5	1		X	X
	12/17				ATB-11-27	1			
	12/17				ATB-11-28.5-29	1		X	X
Relinquished by: (Signature) DATE TIME Received by: (Signature) <u>D. Sclafani</u> General Remarks:									
Relinquished by: (Signature) DATE TIME Received by: (Signature)									
Relinquished by: (Signature) DATE TIME Received by: (Signature)									



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Mark Eisen
Dames & Moore
8801 Folsom Blvd., Suite 200
Sacramento, CA 95826

Client Code: DAMM14
Survey # UPRR-SACTO.
Project/Release # 00173-064-044

Page 1

LABORATORY RESULTS

Date Collected: 12/16/91
Date Analyzed: 01/06/92

Laboratory Job No.: 916178
Date Received: 12/19/91
Date Reported: 01/09/92

ASSAY:
ARSENIC (EPA 7060), 3050 ACID DIGEST
LEAD (EPA 7421), 3050 ACID DIGEST

MATRIX: SOIL, ACID DIGEST

LABNO SMPLNO	COMPOUND	FOUND mg/kg	CA TTLC LEV	DET.LIM. mg/kg
44597 10-2.5-3	AS	4.2	500	2.5
	PB	7.9	1,000	0.5
44600 11-4.0-4.5	AS	3.7	500	2.5
	PB	6.6	1,000	0.5
44601 12-2	AS	7.5	500	2.5
	PB	7.4	1,000	0.5
44603 13-4.5-5	AS	8.2	500	2.5
	PB	40	1,000	1
44605 14-5.5-6	AS	7.9	500	2.5
	PB	8.1	1,000	0.5
44607 14-10.5-11	AS	3.2	500	2.5
	PB	6.2	1,000	0.5
44609 15-5.5-6	AS	7.1	500	2.5
	PB	7	1,000	1

THIS REPORT HAS BEEN REVIEWED
AND APPROVED FOR RELEASE.

DL



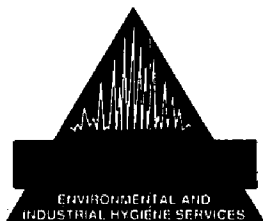
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Page 2

LABORATORY RESULTS

Laboratory Job No.: 916178

LABNO SMPLNO	COMPOUND	FOUND mg/kg	CA TTLC LEV	DET.LIM. mg/kg
44611 16-5.5-6	AS PB	5.0 6	500 1,000	2.5 1
44614 17-2	AS PB	545 5.8	500 1,000	250 0.5
44615 18-3-3.5	AS PB	3.1 9	500 1,000	2.5 1
44617 19-3.5-4	AS PB	ND 8	500 1,000	2.5 1
44619 20-3-3.5	AS PB	14.0 6.0	500 1,000	2.5 0.5
44625 MB	AS PB	ND ND		2.5 0.5
44626 MBS	AS PB	11.9 4.4	SPIKE LEVELS 12.5 mg/kg 5.0 mg/kg	2.5 0.5
44627 MX	AS PB	4.0 6.6		2.5 0.5
44628 MS	AS PB	13.7 10.9	SPIKE LEVELS 12.5 mg/kg 5.0 mg/kg	2.5 0.5
44629 MSD	AS PB	12.2 10.8	12.5 mg/kg 5.0 mg/kg	2.5 0.5



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Page 3

LABORATORY RESULTS

Date Collected: 12/16/91
Date Analyzed: 12/27/91

Laboratory Job No.: 916178
Date Received: 12/19/91
Date Reported: 01/09/92

ASSAY:METAL SCAN BY ICP(EPA 6010)

LABNO	SMPLNO-ID	RESULTS		DET. LIM.
-----	-----	-----		-----
44597	10-2.5-3 SOIL		CA TTLC LEVEL	
	CU	29.2 mg/kg	2,500	2.5 mg/kg
	ZN	47.5 mg/kg	5,000	2.5 mg/kg
44600	11-4.0-4.5 SOIL		CA TTLC LEVEL	
	CU	24.9 mg/kg	2,500	2.5 mg/kg
	ZN	42.3 mg/kg	5,000	2.5 mg/kg
44601	12-2 SOIL		CA TTLC LEVEL	
	CU	33.9 mg/kg	2,500	2.5 mg/kg
	ZN	44.5 mg/kg	5,000	2.5 mg/kg
44603	13-4.5-5 SOIL		CA TTLC LEVEL	
	CU	34.7 mg/kg	2,500	2.5 mg/kg
	ZN	54.5 mg/kg	5,000	2.5 mg/kg
44605	14-5.5-6 SOIL		CA TTLC LEVEL	
	CU	18 mg/kg	2,500	2.5 mg/kg
	ZN	36.7 mg/kg	5,000	2.5 mg/kg
44607	14-10.5-11 SOIL		CA TTLC LEVEL	
	CU	22 mg/kg	2,500	2.5 mg/kg
	ZN	45.7 mg/kg	5,000	2.5 mg/kg
44609	15-5.5-6 SOIL		CA TTLC LEVEL	
	CU	30.3 mg/kg	2,500	2.5 mg/kg
	ZN	53.1 mg/kg	5,000	2.5 mg/kg



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Page 4

LABORATORY RESULTS

Laboratory Job No.: 916178

LABNO	SMPLNO-ID	RESULTS	DET. LIM.
-----	-----	-----	-----
44611	16-5.5-6 SOIL		CA TTLC LEVEL
	CU	26.8 mg/kg	2,500
	ZN	47.1 mg/kg	5,000
			2.5 mg/kg
			2.5 mg/kg
44614	17-2 SOIL		CA TTLC LEVEL
	CU	22 mg/kg	2,500
	ZN	39.3 mg/kg	5,000
			2.5 mg/kg
			2.5 mg/kg
44615	18-3-3.5 SOIL		CA TTLC LEVEL
	CU	32.3 mg/kg	2,500
	ZN	46.7 mg/kg	5,000
			2.5 mg/kg
			2.5 mg/kg
44617	19-3.5-4 SOIL		CA TTLC LEVEL
	CU	26.1 mg/kg	2,500
	ZN	38.5 mg/kg	5,000
			2.5 mg/kg
			2.5 mg/kg
44619	20-3-3.5 SOIL		CA TTLC LEVEL
	CU	21 mg/kg	2,500
	ZN	37.1 mg/kg	5,000
			2.5 mg/kg
			2.5 mg/kg
44625	MB SOIL		
	CU	ND	2.5 mg/kg
	ZN	ND	2.5 mg/kg
44626	MBS SOIL		SPIKE LEVELS
	CU	25.4 mg/kg	25.0 mg/kg
	ZN	25 mg/kg	25.0 mg/kg
			2.5 mg/kg
			2.5 mg/kg
44627	MX SOIL		
	CU	33.9 mg/kg	2.5 mg/kg
	ZN	44.5 mg/kg	2.5 mg/kg
44628	MS SOIL		SPIKE LEVELS
	CU	57.0 mg/kg	25.0 mg/kg
	ZN	67.0 mg/kg	25.0 mg/kg
			2.5 mg/kg
			2.5 mg/kg



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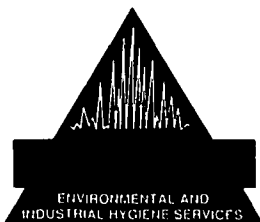
Page 5

LABORATORY RESULTS

Laboratory Job No.: 916178

LABNO	SMPLNO-ID	RESULTS		DET. LIM.
-----	-----	-----		-----
44629	MSD SOIL		SPIKE LEVELS	
	CU	58.2 mg/kg	25.0 mg/kg	2.5 mg/kg
	ZN	66.5 mg/kg	25.0 mg/kg	2.5 mg/kg

NOTE: MBS, MS AND MSD WERE SPIKED AT 25.0 mg/kg.



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Page 6

LABORATORY RESULTS

Date Collected: 12/16/91
Date Extracted: 12/24/91
Date Analyzed: 12/24/91

Laboratory Job No.: 916178
Date Received: 12/19/91
Date Reported: 01/09/92

ASSAY:

BULK ASBESTOS VISUAL ESTIMATION (PLM, EPA-600/M4-82-020)

LABNO	SAMPLE NUMBER/ SAMPLE DESCRIPTION	ASBESTOS % TYPE	OTHER COMPONENTS % TYPE
44599	11-0.5 BROWN FIBROUS MATERIAL	50 CHRYSOTILE	40 OPAQUE PARTICLES 10 CELLULOSE FIBERS

NOTE: Test report relates only to the items tested.

ANALYST: GLENN SMITH

NVLAP Accredited Laboratory #1396 NVLAP Accredited Laboratory #1396 NVLAP



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Page 7

LABORATORY RESULTS

Date Collected: 12/16/91

Date Extracted: 12/23/91

Date Analyzed: 12/30/91

Laboratory Job No.: 916178

Date Received: 12/19/91

Date Reported: 01/09/92

ASSAY: TPH/DIESEL (EPA 3550/8015)

MATRIX: SOIL

LAB NUMBER	SAMPLE NUMBER	RESULTS mg/kg	DET.LIM. mg/kg
44598	11-4.5-5.0 DIESEL	1940	200
44621	11-9.5-10 DIESEL	8300	200
44622	11-16.0-16.5 DIESEL	2600	200
44624	11-28.5-29 DIESEL	68	10
44625	MB DIESEL	ND	5.0
44626	MBS DIESEL	60	5.0
44627	MX DIESEL	ND	5.0
44628	MS DIESEL	63	5.0
44629	MSD DIESEL	63	5.0

NOTE: MBS, MS AND MSD WERE SPIKED AT 55 mg/kg.



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Page 8

LABORATORY RESULTS

Date Collected: 12/16/91
Date Extracted: 12/24/91
Date Analyzed: 12/24/91

Laboratory Job No.: 916178
Date Received: 12/19/91
Date Reported: 01/09/92

ASSAY:
PURGEABLE AROMATICS IN SOIL (EPA 8020)

COMPOUNDS:	LAB#	44596	DET.	44598	DET.	44602	DET.
	SMP#	10-3-3.5	LIM.	11-4.5-5.0	LIM.	12-3.5-4	LIM.
	dil.	1		1		1	
PURGEABLES		ug/kg		ug/kg		ug/kg	
BENZENE		ND	0.50	ND	0.50	ND	0.50
CHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,3-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,4-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
ETHYL BENZENE		ND	0.50	40	0.50	ND	0.50
TOLUENE		ND	0.50	ND	0.50	ND	0.50
XYLENE		ND	0.50	50	0.50	ND	0.50
SURROGATE RECOVERY		100%		82%		110%	

COMPOUNDS:	LAB#	44604	DET.	44606	DET.	44608	DET.
	SMP#	13-5-5.5	LIM.	14-6-6.5	LIM.	14-11-11.5	LIM.
	dil.	1		1		1	
PURGEABLES		ug/kg		ug/kg		ug/kg	
BENZENE		ND	0.50	ND	0.50	ND	0.50
CHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,3-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,4-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
ETHYL BENZENE		ND	0.50	ND	0.50	ND	0.50
TOLUENE		ND	0.50	ND	0.50	ND	0.50
XYLENE		ND	0.50	ND	0.50	ND	0.50
SURROGATE RECOVERY		110%		110%		110%	



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Page 9

LABORATORY RESULTS

Laboratory Job No.: 916178

COMPOUNDS:	LAB#	44610	DET.	44612	DET.	44613	DET.
	SMP#	15-6-6.5	LIM.	16-6-6.5	LIM.	17-3-3.5	LIM.
	dil.	1		1		1	
PURGEABLES		ug/kg		ug/kg		ug/kg	
BENZENE		ND	0.50	ND	0.50	ND	0.50
CHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,3-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,4-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
ETHYL BENZENE		ND	0.50	ND	0.50	ND	0.50
TOLUENE		ND	0.50	ND	0.50	ND	0.50
XYLENE		ND	0.50	ND	0.50	ND	0.50
SURROGATE RECOVERY		110%		110%		113%	

COMPOUNDS:	LAB#	44616	DET.	44618	DET.	44620	DET.
	SMP#	18-3.5-4	LIM.	19-4-4.5	LIM.	20-2.5-3	LIM.
	dil.	1		1		1	
PURGEABLES		ug/kg		ug/kg		ug/kg	
BENZENE		ND	0.50	ND	0.50	ND	0.50
CHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,3-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,4-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
ETHYL BENZENE		ND	0.50	ND	0.50	ND	0.50
TOLUENE		ND	0.50	ND	0.50	ND	0.50
XYLENE		ND	0.50	ND	0.50	ND	0.50
SURROGATE RECOVERY		110%		110%		110%	



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Page 10

LABORATORY RESULTS

Laboratory Job No.: 916178

COMPOUNDS:	LAB#	44621	DET.	44622	DET.	44624	DET.
	SMP#	11-9.5-10	LIM.	11-16.0-16.5	LIM.	11-28.5-29	LIM.
	dil.	1		1		1	
PURGEABLES		ug/kg		ug/kg		ug/kg	
BENZENE		ND	0.50	ND	0.50	ND	0.50
CHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,3-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,4-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
ETHYL BENZENE		ND	0.50	ND	0.50	ND	0.50
TOLUENE		ND	0.50	ND	0.50	ND	0.50
XYLENE		ND	0.50	ND	0.50	ND	0.50
SURROGATE RECOVERY		130%		210%		100%	

COMPOUNDS:	LAB#	44625	DET.	44626	DET.	44627	DET.	44628	DET.
	SMP#	MB	LIM.	MBS	LIM.	MX	LIM.	MS	LIM.
	dil.	1		1		1		1	
PURGEABLES		ug/L		ug/L		ug/kg		ug/kg	
BENZENE		ND	0.50	8.2	0.50	ND	0.50	50	0.50
CHLOROBENZENE		ND	0.50	8.3	0.50	ND	0.50	48	0.50
1,2-DICHLOROBENZENE		ND	0.50	9.2	0.50	ND	0.50	44	0.50
1,3-DICHLOROBENZENE		ND	0.50	8.9	0.50	ND	0.50	43	0.50
1,4-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50	ND	0.50
ETHYL BENZENE		ND	0.50	ND	0.50	ND	0.50	ND	0.50
TOLUENE		ND	0.50	ND	0.50	ND	0.50	ND	0.50
XYLENE		ND	0.50	ND	0.50	ND	0.50	ND	0.50



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Page 11

LABORATORY RESULTS

Laboratory Job No.: 916178

COMPOUNDS:	LAB#	44629	DET.
	SMP#	MSD	LIM.
	dil.	1	
PURGEABLES		ug/kg	
BENZENE		50	0.50
CHLOROBENZENE		48	0.50
1,2-DICHLOROBENZENE		43	0.50
1,3-DICHLOROBENZENE		44	0.50
1,4-DICHLOROBENZENE		ND	0.50
ETHYL BENZENE		ND	0.50
TOLUENE		ND	0.50
XYLENE		ND	0.50

NOTES: MBS WAS SPIKED AT 10 ug/L. MS AND MSD WERE SPIKED AT 50 ug/kg.

SPIKING COMPOUNDS ARE: BENZENE, CHLOROBENZENE, 1,2- and 1,3-DICHLOROBENZENE.

EPA 8010 ANALYSES ARE NOT REPORTED BECAUSE HOLDING TIMES WERE EXCEEDED.

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92-0979

1 of 2

RECEIVED
LIBRARIES
WORK SERIES

SAMPLE CHAIN OF CUSTODY / WORK ORDER

Client's Name Dames + Moore

Address 2901 Folsom Blvd. #200

City, State, Zip Sacramento CA 95820

Client's or Representative's Signature [Signature]
(signature authorizes the work and terms listed below)

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pick up samples.

PROJ. NO. 00173-C72 -C44		PROJECT NAME UPRR SAC.		NO. OF CON- TAINERS		REMARKS LAB USE ON LAB NO.	
SAMPLERS (Signature) <i>Thomas E. Williams</i>							
STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION		
ATB-1	3/31/92	1045		-	ATB-7: 3.0-3.5	1	X
ATB-4		1120		-	ATB-9: 3.0-3.5	1	X
ATB-15		1415		-	ATB-15: 5.0-5.5	1	X
ATB-14		1355		-	ATB-14: 3.5-4.0	1	X
ATB-8		1105		-	ATB-8: 3.0-3.5	1	X
ATB-6		1020		✓	ATB-6: 3.0-3.5	1	X
ATB-3		0815		✓	ATB-3: 2.0-2.5	1	X
ATB-17		1440		✓	ATB-17: 3.0-2.5	1	X
ATB-14		1500		✓	ATB-14: 3.0-3.5	1	X
ATB-18		1450		✓	ATB-18: 2.0-2.5	1	X
ATB-2		0830		✓	ATB-2: 3.0-3.5	1	X
ATB-12		1140		✓	ATB-12: 3.5-4.0	1	X
ATB-10		1155		✓	ATB-10: 3.0-3.5	1	X
ATB-13		1345		✓	ATB-13: 5.0-5.5	1	X
ATB-4		0855		✓	ATB-4: 3.0-3.5	1	X
ATB-1		0840		✓	ATB-1: 1.0-1.5	1	X
ATB-16		1425		✓	ATB-16: 3.0-3.5	1	X
ATB-20		1510		✓	ATB-20: 3.5-4.0	1	X
ATB-5		1000		✓	ATB-5: 3.0-3.5	1	X
						SAMPLES RECEIVED IN GOOD CONDITION NO BROKEN OR LEAKING CONTAINERS	
Relinquished by: (Signature) <i>Thomas E. Williams</i>		DATE 4/1/92	TIME 1600	Received by: (Signature) <i>L. Finkert</i>		General Remarks: Please send Results to Sac. Office. Attn. Mark E. Egan Return Blue Ice & Ice Chest!	
Relinquished by: (Signature)		DATE	TIME	Received by: (Signature)			
Relinquished by: (Signature)		DATE	TIME	Received by: (Signature)			

CLIENT COPY



3700 Lakeville Highway, Petaluma, CA 94952
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Telephone: (707) 763-8245 FAX: (707) 763-4065

92-0479

2 of 3

SAMPLE CHAIN OF CUSTODY / WORK ORDER

RECEIVED
LABORATORIES

Client's Name Davies + Moore

Address Agri Science Blvd. #200

City, State, Zip Sacramento, CA 95826

Phone (916) 387-8500

Client's or Representative's Signature [Signature]

(signature authorizes the work and terms listed below)

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pick up samples.

PROJ. NO.		PROJECT NAME		NO. OF CONTAINERS		REMARKS														
00173-072-044		UPRR S.A.C.																		
SAMPLERS (Signature)						LAB USE ONLY														
STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	LAB NO														
ATB-11	3/1/02	1615		✓	ATB-11 : 9.0-9.5	1	X													
" "	"	1625		✓	ATB-11 : 16.0-16.5	1	X													
" "	"	1610		✓	ATB-11 : 4.5-5.0	1	X													
" "	"	1630		✓	ATB-11 : 28.5-29.0	1	X													
SAMPLES RECEIVED IN GOOD CONDITION NO BROKEN OR LEAKING CONTAINERS																				
Relinquished by: (Signature)		DATE	TIME	Received by: (Signature)		General Remarks:														
[Signature]		4/1/02	1600	L. Fickert		Send Results to sac. office														
Relinquished by: (Signature)		DATE	TIME	Received by: (Signature)		Attn. Mark Eisen														
Relinquished by: (Signature)		DATE	TIME	Received by: (Signature)		Return Blue ice cooler chest														

Gary Dithensen

1 of 2

3700 Lakeville Highway, Petaluma, CA 94952
P.O. Box 508024, Petaluma, CA, 94975-8024
Telephone: (707) 763-8245 FAX: (707) 763-4065

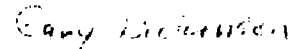
SAMPLE CHAIN OF CUSTODY / WORK ORDER

Client's Name Dames - Moore Phone (916) 367-6600
Address 6801 Folsom Blvd. #200
City, State, Zip Sacramento, CA 95826

Client's or Representative's Signature Gary Dithensen
(signature authorizes the work and terms listed below)

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pick up samples.

PROJ. NO. C0173-072- -C44		PROJECT NAME UPRR Sac.				REMARKS										LAB USE ONLY LAB NO.			
SAMPLERS (Signature) <u>Gary Dithensen</u>						NO. OF CON- TAINERS													
STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION														
ATB-7	7/1/42	1045		-	ATB-7: 3.0-3.5	1	X												
ATB-9		1120		-	ATB-9: 3.0-3.5	1	X												
ATB-15		1415		-	ATB-15: 5.0-5.5	1	X												
ATB-14		1355		-	ATB-14: 3.5-4.0	1	X												
ATB-8		1105		-	ATB-8: 3.0-3.5	1	X												
ATB-6		1020		-	ATB-6: 3.0-3.5	1	X												
ATB-3		0815		✓	ATB-3: 2.0-2.5	1	X												
ATB-17		1440		✓	ATB-17: 2.0-2.5	1	X												
ATB-14		1500		✓	ATB-14: 3.0-3.5	1	X												
ATB-18		1450		✓	ATB-18: 2.0-2.5	1	X												
ATB-2		0830		✓	ATB-2: 3.0-3.5	1	X												
ATB-12		1140		✓	ATB-12: 3.5-4.0	1	X												
ATB-10		1155		✓	ATB-10: 3.0-3.5	1	X												
ATB-13		1345		✓	ATB-13: 5.0-5.5	1	X												
ATB-4		0455		✓	ATB-4: 3.0-3.5	1	X												
ATB-1		0600		✓	ATB-1: 1.0-1.5	1	X												
ATB-16		1435		✓	ATB-16: 3.0-3.5	1	X												
ATB-20		1510		✓	ATB-20: 3.5-4.0	1	X												
ATB-5		1000		✓	ATB-5: 3.0-3.5	1	X												
Relinquished by: (Signature) <u>Gary Dithensen</u>						DATE 4/1/42		TIME 1600		Received by: (Signature) <u>Mark Eison</u>						General Remarks: Please send Results to Sac. Office. Return Blue Ice + Ice Chest!			
Relinquished by: (Signature)						DATE		TIME		Received by: (Signature)									
Relinquished by: (Signature)						DATE		TIME		Received by: (Signature)									



2 of 2

SAMPLE CHAIN OF CUSTODY / WORK ORDER

Telephone: (707) 763-8246 FAX: (707) 763-4068

Phone (410) 587-8900

Address 2501 17th St NW, Apt. #200

City, State, Zip San Francisco, CA 95811

Client's or Representative's Signature [Signature]

(signature authorizes the work and terms listed below)

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pick up samples.

[illegible]



3700 Lakeville Highway, Petaluma, CA 94954
P.O. Box 808024, Petaluma, CA 94975-8024
Telephone: (707) 763-8245
FAX (707) 763-4065

Tim Parker
Dames & Moore
8801 Folsom Blvd., Suite 200
Sacramento, CA 95826

Client Code: DAMM7
Survey # UPRR-SACTO.
Project/Release # 00173-072-044

Page 1

LABORATORY RESULTS

Date Collected: 03/31/92
Date Extracted: 04/06/92
Date Analyzed: 04/06/92

Laboratory Job No.: 920979
Date Received: 04/02/92
Date Reported: 04/16/92

ASSAY:
PURGEABLES IN SOIL (EPA 5030/8010)

COMPOUNDS:	LAB#	8477	DET.	8478	DET.	8479	DET.
	SMP#	ATB-7	LIM.	ATB-9	LIM.	ATB-15	LIM.
	dil.	1		1		1	
PURGEABLES		ug/kg		ug/kg		ug/kg	
BROMODICHLOROMETHANE		ND	0.50	ND	0.50	ND	0.50
BROMOFORM		ND	0.50	ND	0.50	ND	0.50
BROMOMETHANE		ND	1.0	ND	1.0	ND	1.0
CARBON TETRACHLORIDE		ND	0.50	ND	0.50	ND	0.50
CHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
CHLOROETHANE		ND	1.0	ND	1.0	ND	1.0
CHLOROFORM		ND	0.50	ND	0.50	ND	0.50
CHLOROMETHANE		ND	1.0	ND	1.0	ND	1.0
DIBROMOCHLOROMETHANE		ND	0.50	ND	0.50	ND	0.50
1,4-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,3-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,1-DICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
1,1-DICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
CIS-1,2-DICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
TRANS-1,2-DICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROPROPANE		ND	0.50	ND	0.50	ND	0.50
CIS-1,3-DICHLOROPROPENE		ND	0.50	ND	0.50	ND	0.50
TRANS-1,3-DICHLOROPROPENE		ND	0.50	ND	0.50	ND	0.50
METHYLENE CHLORIDE	4.6	0.50	5.1	0.50	5.6	0.50	
1,1,2,2-TETRACHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
TETRACHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
1,1,1-TRICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50

THIS REPORT HAS BEEN REVIEWED
AND APPROVED FOR RELEASE.

L A B O R A T O R Y R E S U L T S

Laboratory Job No.: 920979

COMPOUNDS:	LAB#	8477	DET.	8478	DET.	8479	DET.
	SMP#	ATB-7	LIM.	ATB-9	LIM.	ATB-15	LIM.
	dil.	1		1		1	
PURGEABLES		ug/kg		ug/kg		ug/kg	
1,1,2-TRICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
TRICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
TRICHLOROFLUOROMETHANE		ND	1.0	ND	1.0	ND	1.0
VINYL CHLORIDE		ND	1.0	ND	1.0	ND	1.0

LABORATORY RESULTS

Laboratory Job No.: 920979

COMPOUNDS:	LAB#	8480	DET.	8481	DET.	8482	DET.
	SMP#	ATB-14	LIM.	ATB-8	LIM.	ATB-6	LIM.
	dil.	1		1		1	
PURGEABLES		ug/kg		ug/kg		ug/kg	
BROMODICHLOROMETHANE		ND	0.50	ND	0.50	ND	0.50
BROMOFORM		ND	0.50	ND	0.50	ND	0.50
BROMOMETHANE		ND	1.0	ND	1.0	ND	1.0
CARBON TETRACHLORIDE		ND	0.50	ND	0.50	ND	0.50
CHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
CHLOROETHANE		ND	1.0	ND	1.0	ND	1.0
CHLOROFORM		ND	0.50	ND	0.50	ND	0.50
CHLOROMETHANE		ND	1.0	ND	1.0	ND	1.0
DIBROMOCHLOROMETHANE		ND	0.50	ND	0.50	ND	0.50
1,4-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,3-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,1-DICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
1,1-DICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
CIS-1,2-DICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
TRANS-1,2-DICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROPROPANE		ND	0.50	ND	0.50	ND	0.50
CIS-1,3-DICHLOROPROPENE		ND	0.50	ND	0.50	ND	0.50
TRANS-1,3-DICHLOROPROPENE		ND	0.50	ND	0.50	ND	0.50
METHYLENE CHLORIDE		7.2	0.50	9.2	0.50	4.8	0.50
1,1,2,2-TETRACHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
TETRACHLOROETHENE		ND	0.50	ND	0.50	0.7	0.50
1,1,1-TRICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
1,1,2-TRICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
TRICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
TRICHLOROFLUOROMETHANE		ND	1.0	ND	1.0	ND	1.0
VINYL CHLORIDE		ND	1.0	ND	1.0	ND	1.0

LABORATORY RESULTS

Laboratory Job No.: 920979

COMPOUNDS:	LAB#	8483	DET.	8484	DET.	8485	DET.
	SMP#	ATB-3	LIM.	ATB-17	LIM.	ATB-19	LIM.
	dil.	1		1		1	
PURGEABLES		ug/kg		ug/kg		ug/kg	
BROMODICHLOROMETHANE		ND	0.50	ND	0.50	ND	0.50
BROMOFORM		ND	0.50	ND	0.50	ND	0.50
BROMOMETHANE		ND	1.0	ND	1.0	ND	1.0
CARBON TETRACHLORIDE		ND	0.50	ND	0.50	ND	0.50
CHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
CHLOROETHANE		ND	1.0	ND	1.0	ND	1.0
CHLOROFORM		ND	0.50	ND	0.50	ND	0.50
CHLOROMETHANE		ND	1.0	ND	1.0	ND	1.0
DIBROMOCHLOROMETHANE		ND	0.50	ND	0.50	ND	0.50
1,4-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,3-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,1-DICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
1,1-DICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
CIS-1,2-DICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
TRANS-1,2-DICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROPROPANE		ND	0.50	ND	0.50	ND	0.50
CIS-1,3-DICHLOROPROPENE		ND	0.50	ND	0.50	ND	0.50
TRANS-1,3-DICHLOROPROPENE		ND	0.50	ND	0.50	ND	0.50
METHYLENE CHLORIDE		3.8	0.50	3.4	0.50	4.0	0.50
1,1,2,2-TETRACHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
TETRACHLOROETHENE		3.0	0.50	3.4	0.50	3.2	0.50
1,1,1-TRICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
1,1,2-TRICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
TRICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
TRICHLOROFLUOROMETHANE		ND	1.0	ND	1.0	ND	1.0
VINYL CHLORIDE		ND	1.0	ND	1.0	ND	1.0

LABORATORY RESULTS

Laboratory Job No.: 920979

COMPOUNDS:	LAB# SMP# dil.	8486 ATB-18	DET. LIM.	8487 ATB-2	DET. LIM.	8488 ATB-12	DET. LIM.
		1 ug/kg		1 ug/kg		1 ug/kg	
PURGEABLES							
BROMODICHLOROMETHANE		ND	0.50	ND	0.50	ND	0.50
BROMOFORM		ND	0.50	ND	0.50	ND	0.50
BROMOMETHANE		ND	1.0	ND	1.0	ND	1.0
CARBON TETRACHLORIDE		ND	0.50	ND	0.50	ND	0.50
CHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
CHLOROETHANE		ND	1.0	ND	1.0	ND	1.0
CHLOROFORM		ND	0.50	ND	0.50	ND	0.50
CHLOROMETHANE		ND	1.0	ND	1.0	ND	1.0
DIBROMOCHLOROMETHANE		ND	0.50	ND	0.50	ND	0.50
1,4-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,3-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,1-DICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
1,1-DICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
CIS-1,2-DICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
TRANS-1,2-DICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROPROPANE		ND	0.50	ND	0.50	ND	0.50
CIS-1,3-DICHLOROPROPENE		ND	0.50	ND	0.50	ND	0.50
TRANS-1,3-DICHLOROPROPENE		ND	0.50	ND	0.50	ND	0.50
METHYLENE CHLORIDE		4.8	0.50	5.3	0.50	5.4	0.50
1,1,2,2-TETRACHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
TETRACHLOROETHENE		2.8	0.50	ND	0.50	2.5	0.50
1,1,1-TRICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
1,1,2-TRICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
TRICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
TRICHLOROFLUOROMETHANE		ND	1.0	ND	1.0	ND	1.0
VINYL CHLORIDE		ND	1.0	ND	1.0	ND	1.0

LABORATORY RESULTS

Laboratory Job No.: 920979

COMPOUNDS:	LAB#	8489	DET.	8490	DET.	8491	DET.
	SMP#	ATB-10	LIM.	ATB-13	LIM.	ATB-4	LIM.
	dil.	1		1		1	
PURGEABLES		ug/kg		ug/kg		ug/kg	
BROMODICHLOROMETHANE		ND	0.50	ND	0.50	ND	0.50
BROMOFORM		ND	0.50	ND	0.50	ND	0.50
BROMOMETHANE		ND	1.0	ND	1.0	ND	1.0
CARBON TETRACHLORIDE		ND	0.50	ND	0.50	ND	0.50
CHLORO BENZENE		ND	0.50	ND	0.50	ND	0.50
CHLOROETHANE		ND	1.0	ND	1.0	ND	1.0
CHLOROFORM		ND	0.50	ND	0.50	ND	0.50
CHLOROMETHANE		ND	1.0	ND	1.0	ND	1.0
DIBROMOCHLOROMETHANE		ND	0.50	ND	0.50	ND	0.50
1,4-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,3-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,1-DICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
1,1-DICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
CIS-1,2-DICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
TRANS-1,2-DICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROPROPANE		ND	0.50	ND	0.50	ND	0.50
CIS-1,3-DICHLOROPROPENE		ND	0.50	ND	0.50	ND	0.50
TRANS-1,3-DICHLOROPROPENE		ND	0.50	ND	0.50	ND	0.50
METHYLENE CHLORIDE		4.2	0.50	4.2	0.50	5.0	0.50
1,1,2,2-TETRACHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
TETRACHLOROETHENE		2.6	0.50	ND	0.50	3.0	0.50
1,1,1-TRICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
1,1,2-TRICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
TRICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
TRICHLOROFLUOROMETHANE		ND	1.0	ND	1.0	ND	1.0
VINYL CHLORIDE		ND	1.0	ND	1.0	ND	1.0

LABORATORY RESULTS

Laboratory Job No.: 920979

COMPOUNDS:	LAB#	8492	DET.	8493	DET.	8494	DET.
	SMP#	ATB-1	LIM.	ATB-16	LIM.	ATB-20	LIM.
	dil.	1		1		1	
PURGEABLES		ug/kg		ug/kg		ug/kg	
BROMODICHLOROMETHANE		ND	0.50	ND	0.50	ND	0.50
BROMOFORM		ND	0.50	ND	0.50	ND	0.50
BROMOMETHANE		ND	1.0	ND	1.0	ND	1.0
CARBON TETRACHLORIDE		ND	0.50	ND	0.50	ND	0.50
CHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
CHLOROETHANE		ND	1.0	ND	1.0	ND	1.0
CHLOROFORM		ND	0.50	ND	0.50	ND	0.50
CHLOROMETHANE		ND	1.0	ND	1.0	ND	1.0
DIBROMOCHLOROMETHANE		ND	0.50	ND	0.50	ND	0.50
1,4-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,3-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,1-DICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
1,1-DICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
CIS-1,2-DICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
TRANS-1,2-DICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROPROPANE		ND	0.50	ND	0.50	ND	0.50
CIS-1,3-DICHLOROPROPENE		ND	0.50	ND	0.50	ND	0.50
TRANS-1,3-DICHLOROPROPENE		ND	0.50	ND	0.50	ND	0.50
METHYLENE CHLORIDE		5.6	0.50	6.0	0.50	8.4	0.50
1,1,2,2-TETRACHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
TETRACHLOROETHENE		3.4	0.50	4.2	0.50	ND	0.50
1,1,1-TRICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
1,1,2-TRICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
TRICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
TRICHLOROFLUOROMETHANE		ND	1.0	ND	1.0	ND	1.0
VINYL CHLORIDE		ND	1.0	ND	1.0	ND	1.0

LABORATORY RESULTS

Laboratory Job No.: 920979

COMPOUNDS:	LAB#	8495	DET.	8496	DET.
	SMP#	ATB-5	LIM.	ATB11:9.0/9.5	LIM.
	dil.	1		1	
PURGEABLES		ug/kg		ug/kg	
BROMODICHLOROMETHANE		ND 0.50		ND 0.50	
BROMOFORM		ND 0.50		ND 0.50	
BROMOMETHANE		ND 1.0		ND 1.0	
CARBON TETRACHLORIDE		ND 0.50		ND 0.50	
CHLOROBENZENE		ND 0.50		ND 0.50	
CHLOROETHANE		ND 1.0		ND 1.0	
CHLOROFORM		ND 0.50		ND 0.50	
CHLOROMETHANE		ND 1.0		ND 1.0	
DIBROMOCHLOROMETHANE		ND 0.50		ND 0.50	
1,4-DICHLOROBENZENE		ND 0.50		ND 0.50	
1,3-DICHLOROBENZENE		ND 0.50		ND 0.50	
1,2-DICHLOROBENZENE		ND 0.50		ND 0.50	
1,1-DICHLOROETHANE		ND 0.50		ND 0.50	
1,2-DICHLOROETHANE		ND 0.50		ND 0.50	
1,1-DICHLOROETHENE		ND 0.50		ND 0.50	
CIS-1,2-DICHLOROETHENE		ND 0.50		ND 0.50	
TRANS-1,2-DICHLOROETHENE		ND 0.50		ND 0.50	
1,2-DICHLOROPROPANE		ND 0.50		ND 0.50	
CIS-1,3-DICHLOROPROPENE		ND 0.50		ND 0.50	
TRANS-1,3-DICHLOROPROPENE		ND 0.50		ND 0.50	
METHYLENE CHLORIDE	8.2	0.50		6.7	0.50
1,1,2,2-TETRACHLOROETHANE	ND	0.50		ND	0.50
TETRACHLOROETHENE	ND	0.50		6.4	0.50
1,1,1-TRICHLOROETHANE	ND	0.50		ND	0.50
1,1,2-TRICHLOROETHANE	ND	0.50		ND	0.50
TRICHLOROETHENE	ND	0.50		ND	0.50
TRICHLOROFLUOROMETHANE	ND	1.0		ND	1.0
VINYL CHLORIDE	ND	1.0		ND	1.0

LABORATORY RESULTS

Laboratory Job No.: 920979

COMPOUNDS:	LAB#	8497	DET.	8498	DET.
	SMP#	ATB11:16/16.5	LIM.	ATB11:4.5/5.0	LIM.
	dil.	1		1	
PURGEABLES		ug/kg		ug/kg	
BROMODICHLOROMETHANE		ND	0.50	ND	0.50
BROMOFORM		ND	0.50	ND	0.50
BROMOMETHANE		ND	1.0	ND	1.0
CARBON TETRACHLORIDE		ND	0.50	ND	0.50
CHLOROBENZENE		ND	0.50	ND	0.50
CHLOROETHANE		ND	1.0	ND	1.0
CHLOROFORM		ND	0.50	ND	0.50
CHLOROMETHANE		ND	1.0	ND	1.0
DIBROMOCHLOROMETHANE		ND	0.50	ND	0.50
1,4-DICHLOROBENZENE		ND	0.50	ND	0.50
1,3-DICHLOROBENZENE		ND	0.50	ND	0.50
1,2-DICHLOROBENZENE		ND	0.50	ND	0.50
1,1-DICHLOROETHANE		ND	0.50	ND	0.50
1,2-DICHLOROETHANE		ND	0.50	ND	0.50
1,1-DICHLOROETHENE		ND	0.50	ND	0.50
CIS-1,2-DICHLOROETHENE		ND	0.50	ND	0.50
TRANS-1,2-DICHLOROETHENE		ND	0.50	ND	0.50
1,2-DICHLOROPROPANE		ND	0.50	ND	0.50
CIS-1,3-DICHLOROPROPENE		ND	0.50	ND	0.50
TRANS-1,3-DICHLOROPROPENE		ND	0.50	ND	0.50
METHYLENE CHLORIDE		5.9	0.50	16	0.50
1,1,2,2-TETRACHLOROETHANE		ND	0.50	ND	0.50
TETRACHLOROETHENE		3.6	0.50	2.8	0.50
1,1,1-TRICHLOROETHANE		ND	0.50	ND	0.50
1,1,2-TRICHLOROETHANE		ND	0.50	ND	0.50
TRICHLOROETHENE		ND	0.50	ND	0.50
TRICHLOROFLUOROMETHANE		ND	1.0	ND	1.0
VINYL CHLORIDE		ND	1.0	ND	1.0

LABORATORY RESULTS

Laboratory Job No.: 920979

COMPOUNDS:	LAB#	8499	DET.		DET.		DET.
	SMP#	ATB11:28.5/29.0	LIM.		MB	LIM.	MBS
	dil.						
PURGEABLES		1		1		1	
		ug/kg		ug/kg		ug/kg	
BROMODICHLOROMETHANE	ND	0.50	ND	0.50	ND	0.50	
BROMOFORM	ND	0.50	ND	0.50	ND	0.50	
BROMOMETHANE	ND	1.0	ND	1.0	ND	1.0	
CARBON TETRACHLORIDE	ND	0.50	ND	0.50	ND	0.50	
CHLOROBENZENE	ND	0.50	ND	0.50	48	0.50	
CHLOROETHANE	ND	1.0	ND	1.0	ND	1.0	
CHLOROFORM	ND	0.50	ND	0.50	ND	0.50	
CHLOROMETHANE	ND	1.0	ND	1.0	ND	1.0	
DIBROMOCHLOROMETHANE	ND	0.50	ND	0.50	ND	0.50	
1,4-DICHLOROBENZENE	ND	0.50	ND	0.50	ND	0.50	
1,3-DICHLOROBENZENE	ND	0.50	ND	0.50	56	0.50	
1,2-DICHLOROBENZENE	ND	0.50	ND	0.50	49	0.50	
1,1-DICHLOROETHANE	ND	0.50	ND	0.50	56	0.50	
1,2-DICHLOROETHANE	ND	0.50	ND	0.50	ND	0.50	
1,1-DICHLOROETHENE	ND	0.50	ND	0.50	ND	0.50	
CIS-1,2-DICHLOROETHENE	ND	0.50	ND	0.50	ND	0.50	
TRANS-1,2-DICHLOROETHENE	ND	0.50	ND	0.50	ND	0.50	
1,2-DICHLOROPROPANE	ND	0.50	ND	0.50	ND	0.50	
CIS-1,3-DICHLOROPROPENE	ND	0.50	ND	0.50	ND	0.50	
TRANS-1,3-DICHLOROPROPENE	ND	0.50	ND	0.50	ND	0.50	
METHYLENE CHLORIDE	16	0.50	3.9	0.50	5.6	0.50	
1,1,2,2-TETRACHLOROETHANE	ND	0.50	ND	0.50	ND	0.50	
TETRACHLOROETHENE	ND	0.50	ND	0.50	2.6	0.50	
1,1,1-TRICHLOROETHANE	ND	0.50	ND	0.50	ND	0.50	
1,1,2-TRICHLOROETHANE	ND	0.50	ND	0.50	ND	0.50	
TRICHLOROETHENE	ND	0.50	ND	0.50	60	0.50	
TRICHLOROFLUOROMETHANE	ND	1.0	ND	1.0	ND	1.0	
VINYL CHLORIDE	ND	1.0	ND	1.0	ND	1.0	

LABORATORY RESULTS

Laboratory Job No.: 920979

COMPOUNDS:	LAB# SMP# dil.	MX DET. LIM. 1 ug/kg	MS DET. LIM. 1 ug/kg	MSD DET. LIM. 1 ug/kg
PURGEABLES				
BROMODICHLOROMETHANE		ND 0.50	ND 0.50	ND 0.50
BROMOFORM		ND 0.50	ND 0.50	ND 0.50
BROMOMETHANE		ND 1.0	ND 1.0	ND 1.0
CARBON TETRACHLORIDE		ND 0.50	ND 0.50	ND 0.50
CHLOROBENZENE		ND 0.50	43 0.50	46 0.50
CHLOROETHANE		ND 1.0	ND 1.0	ND 1.0
CHLOROFORM		ND 0.50	ND 0.50	ND 0.50
CHLOROMETHANE		ND 1.0	ND 1.0	ND 1.0
DIBROMOCHLOROMETHANE		ND 0.50	ND 0.50	ND 0.50
1,4-DICHLOROBENZENE		ND 0.50	ND 0.50	ND 0.50
1,3-DICHLOROBENZENE		ND 0.50	38 0.50	39 0.50
1,2-DICHLOROBENZENE		ND 0.50	37 0.50	37 0.50
1,1-DICHLOROETHANE		ND 0.50	57 0.50	65 0.50
1,2-DICHLOROETHANE		ND 0.50	ND 0.50	ND 0.50
1,1-DICHLOROETHENE		ND 0.50	ND 0.50	ND 0.50
CIS-1,2-DICHLOROETHENE		ND 0.50	ND 0.50	ND 0.50
TRANS-1,2-DICHLOROETHENE		ND 0.50	ND 0.50	ND 0.50
1,2-DICHLOROPROPANE		ND 0.50	ND 0.50	ND 0.50
CIS-1,3-DICHLOROPROPENE		ND 0.50	ND 0.50	ND 0.50
TRANS-1,3-DICHLOROPROPENE		ND 0.50	ND 0.50	ND 0.50
METHYLENE CHLORIDE		10 0.50	8.6 0.50	13 0.50
1,1,2,2-TETRACHLOROETHANE		ND 0.50	ND 0.50	ND 0.50
TETRACHLOROETHENE		4.2 0.50	3.2 0.50	4.3 0.50
1,1,1-TRICHLOROETHANE		3.2 0.50	ND 0.50	3.2 0.50
1,1,2-TRICHLOROETHANE		ND 0.50	ND 0.50	ND 0.50
TRICHLOROETHENE		ND 0.50	54 0.50	62 0.50
TRICHLOROFLUOROMETHANE		ND 1.0	ND 1.0	ND 1.0
VINYL CHLORIDE		ND 1.0	ND 1.0	ND 1.0

LABORATORY RESULTS

Laboratory Job No.: 920979

COMPOUNDS:	LAB# SMP# dil.	DET.		DET.		DET.	
		MB-2	LIM.	MBS-2	LIM.	MX-2	LIM.
		1		1		1	
PURGEABLES		ug/kg		ug/kg		ug/kg	
BROMODICHLOROMETHANE		ND	0.50	ND	0.50	ND	0.50
BROMOFORM		ND	0.50	ND	0.50	ND	0.50
BROMOMETHANE		ND	1.0	ND	1.0	ND	1.0
CARBON TETRACHLORIDE		ND	0.50	ND	0.50	ND	0.50
CHLOROBENZENE		ND	0.50	44	0.50	ND	0.50
CHLOROETHANE		ND	1.0	ND	1.0	ND	1.0
CHLOROFORM		ND	0.50	ND	0.50	ND	0.50
CHLOROMETHANE		ND	1.0	ND	1.0	ND	1.0
DIBROMOCHLOROMETHANE		ND	0.50	ND	0.50	ND	0.50
1,4-DICHLOROBENZENE		ND	0.50	ND	0.50	ND	0.50
1,3-DICHLOROBENZENE		ND	0.50	51	0.50	ND	0.50
1,2-DICHLOROBENZENE		ND	0.50	46	0.50	ND	0.50
1,1-DICHLOROETHANE		ND	0.50	52	0.50	ND	0.50
1,2-DICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
1,1-DICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
CIS-1,2-DICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
TRANS-1,2-DICHLOROETHENE		ND	0.50	ND	0.50	ND	0.50
1,2-DICHLOROPROPANE		ND	0.50	ND	0.50	ND	0.50
CIS-1,3-DICHLOROPROPENE		ND	0.50	ND	0.50	ND	0.50
TRANS-1,3-DICHLOROPROPENE		ND	0.50	ND	0.50	ND	0.50
METHYLENE CHLORIDE		3.8	0.50	5.4	0.50	4.8	0.50
1,1,2,2-TETRACHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
TETRACHLOROETHENE		2.6	0.50	ND	0.50	3.6	0.50
1,1,1-TRICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
1,1,2-TRICHLOROETHANE		ND	0.50	ND	0.50	ND	0.50
TRICHLOROETHENE		ND	0.50	55	0.50	ND	0.50
TRICHLOROFLUOROMETHANE		ND	1.0	ND	1.0	ND	1.0
VINYL CHLORIDE		ND	1.0	ND	1.0	ND	1.0

LABORATORY RESULTS

Laboratory Job No.: 920979

COMPOUNDS:	LAB# SMP# dil.	MS-2 1 ug/kg	DET. LIM.	MSD-2 1 ug/kg	DET. LIM.
PURGEABLES					
BROMODICHLOROMETHANE		ND	0.50	ND	0.50
BROMOFORM		ND	0.50	ND	0.50
BROMOMETHANE		ND	1.0	ND	1.0
CARBON TETRACHLORIDE		ND	0.50	ND	0.50
CHLOROBENZENE		50	0.50	52	0.50
CHLOROETHANE		ND	1.0	ND	1.0
CHLOROFORM		ND	0.50	ND	0.50
CHLOROMETHANE		ND	1.0	ND	1.0
DIBROMOCHLOROMETHANE		ND	0.50	ND	0.50
1,4-DICHLOROBENZENE		ND	0.50	ND	0.50
1,3-DICHLOROBENZENE		56	0.50	60	0.50
1,2-DICHLOROBENZENE		52	0.50	56	0.50
1,1-DICHLOROETHANE		57	0.50	62	0.50
1,2-DICHLOROETHANE		ND	0.50	ND	0.50
1,1-DICHLOROETHENE		ND	0.50	ND	0.50
CIS-1,2-DICHLOROETHENE		ND	0.50	ND	0.50
TRANS-1,2-DICHLOROETHENE		ND	0.50	ND	0.50
1,2-DICHLOROPROPANE		ND	0.50	ND	0.50
CIS-1,3-DICHLOROPROPENE		ND	0.50	ND	0.50
TRANS-1,3-DICHLOROPROPENE		ND	0.50	ND	0.50
METHYLENE CHLORIDE		7.6	0.50	8.2	0.50
1,1,2,2-TETRACHLOROETHANE		ND	0.50	ND	0.50
TETRACHLOROETHENE		3.8	0.50	4.2	0.50
1,1,1-TRICHLOROETHANE		ND	0.50	ND	0.50
1,1,2-TRICHLOROETHANE		ND	0.50	ND	0.50
TRICHLOROETHENE		61	0.50	66	0.50
TRICHLOROFLUOROMETHANE		ND	1.0	ND	1.0
VINYL CHLORIDE		ND	1.0	ND	1.0

L A B O R A T O R Y R E S U L T S

Laboratory Job No.: 920979

- NOTES: (1) PRESENCE OF METHYLENE CHLORIDE AND TETRACHLOROETHENE ARE DUE TO LABORATORY CONTAMINATION.
- (2) MBS, MS AND MSD WERE SPIKED AT 50 ug/kg. SPIKING COMPOUNDS ARE: CHLOROBENZENE 1,2- and 1,3-DICHLOROBENZENE, 1,1-DICHLOROETHANE, AND TRICHLOROETHENE.
- (3) SAMPLES ATB11:9.0-9.5 AND ATB11:16-16.5 (8496 AND 8497) BOTH SHOWED POOR RECOVERY OF INTERNAL STANDARD AND SURROGATES. THE ANALYSIS WAS REPEATED ON BOTH SAMPLES WITH THE SAME RESULT. THIS IS ASSUMED TO BE DUE TO MATRIX INTERFERENCE.

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92-0063

SAMPLE CHAIN OF CUSTODY / WORK ORDER

Client's Name DAMEE & MOORE Phone 916-387-7532
Address 8801 FOLSOM BLVD. SUITE 200
City, State, Zip SACRAMENTO, CA, 95826

Client's or Representative's Signature [Signature]
(signature authorizes the work and terms listed below)

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pick up samples.

[illegible]

CLIENT COPY



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FAX (707) 763-4065

Mark Eisen
Dames & Moore
8801 Folsom Blvd., Suite 200
Sacramento, CA 95826

Client Code: DAMM14
Survey # UPRR-SACTO
Project/Release # 00173-064-97

Page 1

LABORATORY RESULTS

Date Collected: 01/08/92
Date Analyzed: 01/17/92

Laboratory Job No.: 920063
Date Received: 01/09/92
Date Reported: 01/20/92

ASSAY:

ARSENIC (EPA 7060), 3050 ACID DIGEST
SELENIUM (EPA 7740), 3050 ACID DIGEST
MERCURY (EPA 7470/7471)
THALLIUM (EPA 7840), 3050 ACID DIGEST

MATRIX: SOIL, ACID DIGEST

LABNO	SMPLNO	COMPOUND	FOUND mg/kg	CA TTLC LEV	DET.LIM. mg/kg
507	ATS-3	AS	60.3	500	12.5
		SE	ND	100	2.5
		HG	ND	20	0.2
		TL	9	700	8
508	ATS-4	AS	925	500	250
		SE	ND	100	2.5
		HG	5	20	1
		TL	55	700	8
509	ATS-9	AS	174	500	50
		SE	ND	100	2.5
		HG	ND	20	0.2
		TL	9	700	8
510	ATS-12	AS	216	500	50
		SE	ND	100	2.5
		HG	ND	20	0.2
		TL	9	700	8

THIS REPORT HAS BEEN REVIEWED
AND APPROVED FOR RELEASE

DLF



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Page 2

LABORATORY RESULTS

Laboratory Job No.: 920063

LABNO SMPLNO	COMPOUND	FOUND mg/kg	CA TTLC LEV	DET.LIM. mg/kg
511 ATS-15	AS	47.1	500	12.5
	SE	ND	100	2.5
	HG	ND	20	0.2
	TL	ND	700	8
512 ATS-20	AS	109	500	25
	SE	ND	100	2.5
	HG	ND	20	0.2
	TL	8	700	8
513 ATS-21	AS	1,370	500	250
	SE	3	100	2.5
	HG	6	20	2
	TL	69	700	8
514 ATB-12	AS	13.4	500	2.5
	SE	ND	100	2.5
	HG	ND	20	0.2
	TL	10	700	8
515 ATB-14	AS	195	500	50
	SE	ND	100	2.5
	HG	ND	20	0.2
	TL	ND	700	8
516 ATB-16	AS	103	500	50
	SE	ND	100	2.5
	HG	ND	20	0.2
	TL	ND	700	8
517 ATB-19	AS	120	500	50
	SE	ND	100	2.5
	HG	ND	20	0.2
	TL	8	700	8



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Page 3

LABORATORY RESULTS

Laboratory Job No.: 920063

LABNO	SMPLNO	COMPOUND	FOUND mg/kg	CA TTLC LEV	DET.LIM. mg/kg
518	MB	AS	ND		2.5
		SE	ND		2.5
		HG	ND		0.2
		TL	ND		8
519	MBS			SPIKE LEVELS	
		AS	11.3	12.5 mg/kg	2.5
		SE	12.9	12.5 mg/kg	2.5
		HG	1.0	1.0 mg/kg	0.2
520	MX	TL	251	250 mg/kg	8
		AS	150		50
		SE	ND		2.5
		HG	5		1
521	MS	TL	9		8
				SPIKE LEVELS	
		AS	206	12.5 mg/kg	50
		SE	9.2	12.5 mg/kg	2.5
522	MSD	HG	4	1.0 mg/kg	1
		TL	117	250 mg/kg	8
				SPIKE LEVELS	
		AS	198	12.5 mg/kg	50
		SE	7.8	12.5 mg/kg	2.5
		HG	4	1.0 mg/kg	1
		TL	271	250 mg/kg	8

NOTE: MATRIX INTERFERENCES CAUSED THE POOR RECOVERIES OF ARSENIC AND SELENIUM IN MS AND MSD.

NOTE: MERCURY SPIKES IN MS AND MSD WERE <10% OF THE SAMPLE RESULT, THEREFORE RECOVERIES HAVE NO SIGNIFICANCE.



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Page 4

LABORATORY RESULTS

Date Collected: 01/08/92
Date Analyzed: 01/16/92

Laboratory Job No.: 920063
Date Received: 01/09/92
Date Reported: 01/20/92

ASSAY: METAL SCAN BY ICP(EPA 6010)

LABNO	SMPLNO-ID	RESULTS		DET. LIM.	
-----	-----	-----	-----	-----	-----
507	ATS-3 SOIL			CA TTLC LEVEL	
	AG	ND		500	2.5 mg/kg
	BA	4,650	mg/kg	10,000	25 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	5.1	mg/kg	100	2.5 mg/kg
	CO	17	mg/kg	8,000	5.0 mg/kg
	CR	52.9	mg/kg	2,500	2.5 mg/kg
	CU	738	mg/kg	2,500	2.5 mg/kg
	MO	7.7	mg/kg	3,500	5.0 mg/kg
	NI	70.0	mg/kg	2,000	5.0 mg/kg
	PB	744	mg/kg	1,000	7.5 mg/kg
	SB	ND		500	5.0 mg/kg
	V	41.7	mg/kg	2,400	2.5 mg/kg
	ZN	1,150	mg/kg	5,000	2.5 mg/kg
508	ATS-4 SOIL			CA TTLC LEVEL	
	AG	ND		500	2.5 mg/kg
	BA	2,080	mg/kg	10,000	25 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	15	mg/kg	100	2.5 mg/kg
	CO	24	mg/kg	8,000	5.0 mg/kg
	CR	47.6	mg/kg	2,500	2.5 mg/kg
	CU	512	mg/kg	2,500	2.5 mg/kg
	MO	77.6	mg/kg	3,500	5.0 mg/kg
	NI	39	mg/kg	2,000	5.0 mg/kg
	PB	866	mg/kg	1,000	7.5 mg/kg
	SB	20	mg/kg	500	5.0 mg/kg
	V	38.8	mg/kg	2,400	2.5 mg/kg
	ZN	1,490	mg/kg	5,000	25 mg/kg



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Page 5

LABORATORY RESULTS

Laboratory Job No.: 920063

LABNO	SMPLNO-ID	RESULTS		DET. LIM.	
-----	-----	-----		-----	
509	ATS-9 SOIL			CA TTLC LEVEL	
	AG	2.5	mg/kg	500	2.5 mg/kg
	BA	527	mg/kg	10,000	2.5 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	13	mg/kg	100	2.5 mg/kg
	CO	48	mg/kg	8,000	5.0 mg/kg
	CR	29.2	mg/kg	2,500	2.5 mg/kg
	CU	1,760	mg/kg	2,500	25 mg/kg
	MO	370	mg/kg	3,500	5.0 mg/kg
	NI	24	mg/kg	2,000	5.0 mg/kg
	PB	1,900	mg/kg	1,000 *	75 mg/kg
	SB	41	mg/kg	500	5.0 mg/kg
	V	59.1	mg/kg	2,400	2.5 mg/kg
	ZN	4,790	mg/kg	5,000	25 mg/kg
510	ATS-12 SOIL			CA TTLC LEVEL	
	AG	ND		500	2.5 mg/kg
	BA	457	mg/kg	10,000	2.5 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	12	mg/kg	100	2.5 mg/kg
	CO	53.8	mg/kg	8,000	5.0 mg/kg
	CR	16	mg/kg	2,500	2.5 mg/kg
	CU	1,800	mg/kg	2,500	25 mg/kg
	MO	320	mg/kg	3,500	5.0 mg/kg
	NI	12	mg/kg	2,000	5.0 mg/kg
	PB	1,610	mg/kg	1,000 *	75 mg/kg
	SB	28	mg/kg	500	5.0 mg/kg
	V	56.2	mg/kg	2,400	2.5 mg/kg
	ZN	4,660	mg/kg	5,000	25 mg/kg



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Page 6

LABORATORY RESULTS

Laboratory Job No.: 920063

LABNO	SAMPLNO-ID	RESULTS		DET. LIM.	
-----	-----	-----	-----	-----	-----
511	ATS-15 SOIL		CA TTLC LEVEL		
	AG	ND	500	2.5	mg/kg
	BA	340 mg/kg	10,000	2.5	mg/kg
	BE	ND	75	0.25	mg/kg
	CD	3.7 mg/kg	100	2.5	mg/kg
	CO	15 mg/kg	8,000	5.0	mg/kg
	CR	40.8 mg/kg	2,500	2.5	mg/kg
	CU	208 mg/kg	2,500	2.5	mg/kg
	MO	15 mg/kg	3,500	5.0	mg/kg
	NI	49 mg/kg	2,000	5.0	mg/kg
	PB	404 mg/kg	1,000	7.5	mg/kg
	SB	ND	500	5.0	mg/kg
	V	36.9 mg/kg	2,400	2.5	mg/kg
	ZN	423 mg/kg	5,000	2.5	mg/kg
512	ATS-20 SOIL		CA TTLC LEVEL		
	AG	ND	500	2.5	mg/kg
	BA	583 mg/kg	10,000	2.5	mg/kg
	BE	ND	75	0.25	mg/kg
	CD	7.1 mg/kg	100	2.5	mg/kg
	CO	35 mg/kg	8,000	5.0	mg/kg
	CR	22 mg/kg	2,500	2.5	mg/kg
	CU	807 mg/kg	2,500	2.5	mg/kg
	MO	215 mg/kg	3,500	5.0	mg/kg
	NI	18 mg/kg	2,000	5.0	mg/kg
	PB	811 mg/kg	1,000	7.5	mg/kg
	SB	17 mg/kg	500	5.0	mg/kg
	V	62.9 mg/kg	2,400	2.5	mg/kg
	ZN	2,580 mg/kg	5,000	25	mg/kg



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Page 7

LABORATORY RESULTS

Laboratory Job No.: 920063

LABNO	SMPLNO-ID	RESULTS		DET. LIM.	
-----	-----	-----	-----	-----	-----
513	ATS-21 SOIL			CA TTLC LEVEL	
	AG	ND		500	2.5 mg/kg
	BA	2,240	mg/kg	10,000	25 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	20	mg/kg	100	2.5 mg/kg
	CO	22	mg/kg	8,000	5.0 mg/kg
	CR	48.5	mg/kg	2,500	2.5 mg/kg
	CU	794	mg/kg	2,500	2.5 mg/kg
	MO	80.1	mg/kg	3,500	5.0 mg/kg
	NI	41	mg/kg	2,000	5.0 mg/kg
	PB	1,090	mg/kg	1,000 *	7.5 mg/kg
	SB	36	mg/kg	500	5.0 mg/kg
	V	34.1	mg/kg	2,400	2.5 mg/kg
	ZN	1,330	mg/kg	5,000	25 mg/kg
514	ATB-12 SOIL			CA TTLC LEVEL	
	AG	ND		500	2.5 mg/kg
	BA	398	mg/kg	10,000	2.5 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	2.7	mg/kg	100	2.5 mg/kg
	CO	22	mg/kg	8,000	5.0 mg/kg
	CR	126	mg/kg	2,500	2.5 mg/kg
	CU	122	mg/kg	2,500	2.5 mg/kg
	MO	9.1	mg/kg	3,500	5.0 mg/kg
	NI	176	mg/kg	2,000	5.0 mg/kg
	PB	165	mg/kg	1,000	7.5 mg/kg
	SB	ND		500	5.0 mg/kg
	V	57.8	mg/kg	2,400	2.5 mg/kg
	ZN	331	mg/kg	5,000	2.5 mg/kg



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Page 8

LABORATORY RESULTS

Laboratory Job No.: 920063

LABNO	SMPLNO-ID	RESULTS		DET. LIM.	
-----	-----	-----		-----	
515	ATB-14 SOIL			CA TTLC LEVEL	
	AG	2.8	mg/kg	500	2.5 mg/kg
	BA	351	mg/kg	10,000	2.5 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	9.2	mg/kg	100	2.5 mg/kg
	CO	47	mg/kg	8,000	5.0 mg/kg
	CR	18	mg/kg	2,500	2.5 mg/kg
	CU	3,810	mg/kg	2,500 *	25 mg/kg
	MO	385	mg/kg	3,500	5.0 mg/kg
	NI	26	mg/kg	2,000	5.0 mg/kg
	PB	1,670	mg/kg	1,000 *	75 mg/kg
	SB	36	mg/kg	500	5.0 mg/kg
	V	44.6	mg/kg	2,400	2.5 mg/kg
	ZN	4,100	mg/kg	5,000	25 mg/kg
516	ATB-16 SOIL			CA TTLC LEVEL	
	AG	ND		500	2.5 mg/kg
	BA	261	mg/kg	10,000	2.5 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	7.3	mg/kg	100	2.5 mg/kg
	CO	38	mg/kg	8,000	5.0 mg/kg
	CR	12	mg/kg	2,500	2.5 mg/kg
	CU	1,070	mg/kg	2,500	2.5 mg/kg
	MO	198	mg/kg	3,500	5.0 mg/kg
	NI	15	mg/kg	2,000	5.0 mg/kg
	PB	938	mg/kg	1,000	7.5 mg/kg
	SB	20	mg/kg	500	5.0 mg/kg
	V	33.2	mg/kg	2,400	2.5 mg/kg
	ZN	2,820	mg/kg	5,000	25 mg/kg



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Page 9

LABORATORY RESULTS

Laboratory Job No.: 920063

LABNO	SMPLNO-ID	RESULTS		DET. LIM.	
-----	-----	-----	-----	-----	-----
517	ATB-19 SOIL			CA TTLC LEVEL	
	AG	ND		500	2.5 mg/kg
	BA	386	mg/kg	10,000	2.5 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	8.7	mg/kg	100	2.5 mg/kg
	CO	42	mg/kg	8,000	5.0 mg/kg
	CR	12	mg/kg	2,500	2.5 mg/kg
	CU	1,090	mg/kg	2,500	2.5 mg/kg
	MO	279	mg/kg	3,500	5.0 mg/kg
	NI	9.8	mg/kg	2,000	5.0 mg/kg
	PB	1,210	mg/kg	1,000 *	75 mg/kg
	SB	27	mg/kg	500	5.0 mg/kg
	V	44.9	mg/kg	2,400	2.5 mg/kg
	ZN	3,720	mg/kg	5,000	25 mg/kg
518	MB SOIL				
	AG	ND			2.5 mg/kg
	BA	ND			2.5 mg/kg
	BE	ND			0.25 mg/kg
	CD	ND			2.5 mg/kg
	CO	ND			5.0 mg/kg
	CR	ND			2.5 mg/kg
	CU	ND			2.5 mg/kg
	MO	ND			5.0 mg/kg
	NI	ND			5.0 mg/kg
	PB	ND			7.5 mg/kg
	SB	ND			5.0 mg/kg
	V	ND			2.5 mg/kg
	ZN	ND			2.5 mg/kg



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Page 10

LABORATORY RESULTS

Laboratory Job No.: 920063

LABNO	SMPLNO-ID	RESULTS		SPIKE LEVELS		DET. LIM.
-----	-----	-----	-----	-----	-----	-----
519	MBS SOIL					
	AG	26.8	mg/kg	25.0	mg/kg	2.5 mg/kg
	BA	25.5	mg/kg	25.0	mg/kg	2.5 mg/kg
	BE	2.1	mg/kg	2.5	mg/kg	0.25 mg/kg
	CD	24	mg/kg	25	mg/kg	2.5 mg/kg
	CO	26	mg/kg	25	mg/kg	5.0 mg/kg
	CR	25.0	mg/kg	25.0	mg/kg	2.5 mg/kg
	CU	25	mg/kg	25.0	mg/kg	2.5 mg/kg
	MO	51.2	mg/kg	50.0	mg/kg	5.0 mg/kg
	NI	27	mg/kg	25	mg/kg	5.0 mg/kg
	PB	52	mg/kg	50	mg/kg	7.5 mg/kg
	SB	46	mg/kg	50	mg/kg	5.0 mg/kg
	V	25.9	mg/kg	25.0	mg/kg	2.5 mg/kg
	ZN	27.0	mg/kg	25.0	mg/kg	2.5 mg/kg
520	MX SOIL					
	AG	ND				2.5 mg/kg
	BA	4,650	mg/kg			2.5 mg/kg
	BE	ND				0.25 mg/kg
	CD	5.1	mg/kg			2.5 mg/kg
	CO	17	mg/kg			5.0 mg/kg
	CR	52.9	mg/kg			2.5 mg/kg
	CU	738	mg/kg			2.5 mg/kg
	MO	7.7	mg/kg			5.0 mg/kg
	NI	70.0	mg/kg			5.0 mg/kg
	PB	744	mg/kg			7.5 mg/kg
	SB	ND				5.0 mg/kg
	V	41.7	mg/kg			2.5 mg/kg
	ZN	1,150	mg/kg			2.5 mg/kg



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Page 11

LABORATORY RESULTS

Laboratory Job No.: 920063

LABNO	SMPLNO-ID	RESULTS		SPIKE LEVELS		DET. LIM.
-----	-----	-----	-----	-----	-----	-----
521	MS SOIL					
	AG	26.8	mg/kg	25.0	mg/kg	2.5 mg/kg
	BA	3,670	mg/kg	25.0	mg/kg	2.5 mg/kg
	BE	1.5	mg/kg	2.5	mg/kg	0.25 mg/kg
	CD	26.9	mg/kg	25	mg/kg	2.5 mg/kg
	CO	43	mg/kg	25	mg/kg	5.0 mg/kg
	CR	82.1	mg/kg	25.0	mg/kg	2.5 mg/kg
	CU	566	mg/kg	25.0	mg/kg	2.5 mg/kg
	MO	51.0	mg/kg	50.0	mg/kg	5.0 mg/kg
	NI	101	mg/kg	25	mg/kg	5.0 mg/kg
	PB	774	mg/kg	50	mg/kg	7.5 mg/kg
	SB	18	mg/kg	50	mg/kg	5.0 mg/kg
	V	67.0	mg/kg	25.0	mg/kg	2.5 mg/kg
	ZN	901	mg/kg	25.0	mg/kg	2.5 mg/kg
522	MSD SOIL					
	AG	27.2	mg/kg	25.0	mg/kg	2.5 mg/kg
	BA	4,010	mg/kg	25.0	mg/kg	2.5 mg/kg
	BE	1.5	mg/kg	2.5	mg/kg	0.25 mg/kg
	CD	26.5	mg/kg	25	mg/kg	2.5 mg/kg
	CO	39	mg/kg	25	mg/kg	5.0 mg/kg
	CR	85.9	mg/kg	25.0	mg/kg	2.5 mg/kg
	CU	540	mg/kg	25.0	mg/kg	2.5 mg/kg
	MO	51.6	mg/kg	50.0	mg/kg	5.0 mg/kg
	NI	95.1	mg/kg	25	mg/kg	5.0 mg/kg
	PB	802	mg/kg	50	mg/kg	7.5 mg/kg
	SB	20	mg/kg	50	mg/kg	5.0 mg/kg
	V	70.1	mg/kg	25.0	mg/kg	2.5 mg/kg
	ZN	853	mg/kg	25.0	mg/kg	2.5 mg/kg

ND=Not Detected

NOTE: ON SOME METALS, THE SPIKING LEVEL WAS LESS THAN 10 PERCENT OF THE SAMPLE RESULTS THEREFORE THE MS AND MSD RECOVERIES ARE NOT SIGNIFICANT.



3700 Lakeville Highway, Petaluma, CA 94952
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Telephone: (707) 763-8245 FAX: (707) 763-4065

92-0058

SAMPLE CHAIN OF CUSTODY / WORK ORDER

Client's Name Dames & Moore Phone (916)-387-7532
Address 8801 Folsom Blvd., Suite 200
City, State, Zip Sacramento, CA 95826

Client's or Representative's Signature Mark Eisen **MARK EISEN**
(signature authorizes the work and terms listed below)

①

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pick up samples.

PROJ. NO. 00173-064 0411-474X		PROJECT NAME UPRR. Sgc				NO. OF CON-TAINERS		REMARKS		LAB USE ONLY LAB NO.	
SAMPLERS (Signature) <u>Mark Eisen</u>											
STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	CCR Metals	AS-Cu, Pb, Zn				
	12/13/91			X	ATB-10-#40	1	X				
	"			X	ATB-20-#200	1	X				
	"			X	ATB-30-#200	1	X				
	"			X	ATB-40-#200	1	X				
	"			X	ATB-50-#200	1	X				
	"			X	ATB-60-#200	1	X				
	"			X	ATB-70-#200	1	X				
	"			X	ATB-80-#200	1	X				
	"			X	ATB-90-#200	1	X				
	"			X	ATB-100-#200	1	X				
	"			X	ATB-110-#200	1	X				
	"			X	ATB-120-#200	1	X				
	"			X	ATB-130-#200	1	X				
	"			X	ATB-140-#200	1	X				
	"			X	ATB-150-#200	1	X				
	"			X	ATB-160-#200	1	X				
	"			X	ATB-170-#200	1	X				
	"			X	ATB-180-#200	1	X				
	"			X	ATB-190-#200	1	X				
	"			X	ATB-200-#200	1	X				
	"			X	ATS-1-#200	1	X				

92 JAN - B AM 9:57

Relinquished by: (Signature) <u>[Signature]</u>	DATE 1/6/92	TIME 1630	Received by: (Signature) <u>Mark Eisen</u>	General Remarks: As and Pb are to run using EPA 7060 and EPA 7421 for all samples. Other metals to be run using EPA 6010. Save all samples.
Relinquished by: (Signature) <u>Mark Eisen</u>	DATE 1/6/92	TIME 1645	Received by: (Signature) <u>[Signature]</u>	
Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	

CLIENT COPY



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92-0058

SAMPLE CHAIN OF CUSTODY / WORK ORDER

Client's Name Dames & Moore Phone (916)-387-7532
Address 8801 Folsom Blvd., Suite 200
City, State, Zip Sacramento, CA 95826
Client's or Representative's Signature [Signature] **(2)**
(signature authorizes the work and terms listed below)

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pick up samples.

PROJ. NO.		PROJECT NAME		NO. OF CONTAINERS		REMARKS														
00173-004 044-97xx		UPRR Sac																		
SAMPLERS (Signature)																				
STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	LAB USE ONLY LAB NO.														
	12/13/91			X	ATS-2- #200	1	X													
	"			X	ATS-3- #200	1	X													
	"			X	ATS-4- #200	1	X													
	"			X	ATS-5- #200	1	X													
	"			X	ATS-6- #200	1	X													
	"			X	ATS-7- #200	1	X													
	"			X	ATS-8- #200	1	X													
	"			X	ATS-9- #200	1	X													
	"			X	ATS-10- #200	1	X													
	"			X	ATS-11- #200	1	X													
	"			X	ATS-12- #200	1	X													
	"			X	ATS-13- #200	1	X													
	"			X	ATS-14- #200	1	X													
	"			X	ATS-15- #200	1	X													
	"			X	ATS-16- #200	1	X													
	"			X	ATS-17- #200	1	X													
	"			X	ATS-18- #200	1	X													
	"			X	ATS-19- #200	1	X													
	"			X	ATS-20- #200	1	X													
	"			X	ATS-21- #200	1	X													
	"			X	ATS-22- #200	1	X													

Relinquished by: (Signature)
[Signature]

DATE
11/6/92

TIME
1630

Received by: (Signature)
[Signature]

DATE
11/6/92

TIME
1630

Received by: (Signature)
[Signature]

General Remarks:
Asad Pb are to be run using EPA 7060 and EPA 7421 for all samples

Telephone: (707) 783-8245 FAX: (707) 783-4065

SAMPLE CHAIN OF CUSTODY / WORK ORDER

Client's Name James & Moore

Phone (916) 387-7532

Address 8801 Folsom Blvd. Suite 200

City, State, Zip Sacramento, CA 95826

Client's or Representative's Signature

(signature authorizes the work and terms listed below)

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pick up samples.

[illegible]

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Telephone: (707) 763-8245
FAX (707) 763-4065

Mark Eisen
Dames & Moore
8801 Folsom Blvd., Suite 200
Sacramento, CA 95826

Client Code: DAMM14
Survey # UPRR-SACTO.
Project/Release #
00173-064-044-97XX

Page 1

LABORATORY RESULTS

Date Collected: 12/13/91
Date Analyzed: 01/13/92

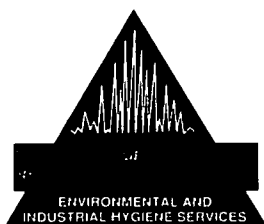
Laboratory Job No.: 920058
Date Received: 01/09/92
Date Reported: 01/20/92

ASSAY:METAL SCAN BY ICP(EPA 6010)

LABNO	SMPLNO-ID	RESULTS	DET. LIM.
399	ATB-1.0#40 SOIL		CA TTLC LEVEL
	CU	187 mg/kg	2,500 2.5 mg/kg
	ZN	506 mg/kg	5,000 2.5 mg/kg
400	ATB-2.0#200 SOIL		CA TTLC LEVEL
	CU	772 mg/kg	2,500 2.5 mg/kg
	ZN	1,750 mg/kg	5,000 25 mg/kg
402	ATB-4.0#200 SOIL		CA TTLC LEVEL
	CU	390 mg/kg	2,500 2.5 mg/kg
	ZN	808 mg/kg	5,000 2.5 mg/kg
403	ATB-5.0#200 SOIL		CA TTLC LEVEL
	CU	405 mg/kg	2,500 2.5 mg/kg
	ZN	964 mg/kg	5,000 2.5 mg/kg
404	ATB-6.0#200 SOIL		CA TTLC LEVEL
	CU	351 mg/kg	2,500 2.5 mg/kg
	ZN	1,830 mg/kg	5,000 25 mg/kg
405	ATB-7.0#200 SOIL		CA TTLC LEVEL
	CU	118 mg/kg	2,500 2.5 mg/kg
	ZN	303 mg/kg	5,000 2.5 mg/kg

THIS REPORT HAS BEEN REVIEWED
AND APPROVED FOR RELEASE

DUF



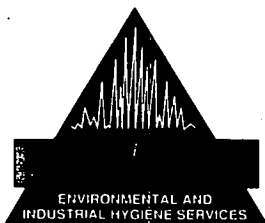
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Page 2

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLENO-ID	RESULTS		DET. LIM.	
-----	-----	-----	-----	-----	-----
406	ATB-8.0#200 SOIL			CA TTLC LEVEL	
	CU	1,520	mg/kg	2,500	25 mg/kg
	ZN	4,620	mg/kg	5,000	25 mg/kg
408	ATB-10.0#200SOIL			CA TTLC LEVEL	
	CU	398	mg/kg	2,500	2.5 mg/kg
	ZN	515	mg/kg	5,000	2.5 mg/kg
409	ATB-11.0#200SOIL			CA TTLC LEVEL	
	CU	418	mg/kg	2,500	2.5 mg/kg
	ZN	6,480	mg/kg	5,000 *	25 mg/kg
410	ATB-12.0#200SOIL			CA TTLC LEVEL	
	CU	227	mg/kg	2,500	2.5 mg/kg
	ZN	411	mg/kg	5,000	2.5 mg/kg
411	ATB-13.0#200SOIL			CA TTLC LEVEL	
	CU	4,370	mg/kg	2,500 *	25 mg/kg
	ZN	4,780	mg/kg	5,000	25 mg/kg
412	ATB-14.0#200SOIL			CA TTLC LEVEL	
	CU	2,630	mg/kg	2,500 *	25 mg/kg
	ZN	4,770	mg/kg	5,000	25 mg/kg
414	ATB-16.0#200SOIL			CA TTLC LEVEL	
	CU	2,850	mg/kg	2,500 *	25 mg/kg
	ZN	4,150	mg/kg	5,000	25 mg/kg
415	ATB-17.0#200SOIL			CA TTLC LEVEL	
	CU	1,840	mg/kg	2,500	25 mg/kg
	ZN	3,940	mg/kg	5,000	25 mg/kg
416	ATB-18.0#200SOIL			CA TTLC LEVEL	
	CU	2,040	mg/kg	2,500	25 mg/kg
	ZN	5,290	mg/kg	5,000 *	25 mg/kg
418	ATB-20.0#200SOIL			CA TTLC LEVEL	
	CU	2,240	mg/kg	2,500	25 mg/kg
	ZN	3,490	mg/kg	5,000	25 mg/kg



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Page 3

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS	DET.	LIM.
-----	-----	-----	-----	-----
419	ATS-1-#200 SOIL		CA TTLC LEVEL	
	CU	305 mg/kg	2,500	2.5 mg/kg
	ZN	821 mg/kg	5,000	2.5 mg/kg
420	ATS-2-#200 SOIL		CA TTLC LEVEL	
	CU	467 mg/kg	2,500	2.5 mg/kg
	ZN	756 mg/kg	5,000	2.5 mg/kg
423	ATS-5-#200 SOIL		CA TTLC LEVEL	
	CU	309 mg/kg	2,500	2.5 mg/kg
	ZN	475 mg/kg	5,000	2.5 mg/kg
424	ATS-6-#200 SOIL		CA TTLC LEVEL	
	CU	1,010 mg/kg	2,500	2.5 mg/kg
	ZN	1,180 mg/kg	5,000	2.5 mg/kg
448	MB-2 SOIL			
	CU	ND		2.5 mg/kg
	ZN	ND		2.5 mg/kg
449	MBS-2 SOIL			
	CU	24 mg/kg		2.5 mg/kg
	ZN	23 mg/kg		2.5 mg/kg
450	MX-2 SOIL			
	CU	1,520 mg/kg	25	mg/kg
	ZN	4,620 mg/kg	25	mg/kg
451	MS-2 SOIL			
	CU	1,520 mg/kg	25	mg/kg
	ZN	4,550 mg/kg	25	mg/kg
452	MSD-2 SOIL			
	CU	1,510 mg/kg	25	mg/kg
	ZN	4,580 mg/kg	25	mg/kg



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Page 4

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO SMPLNO-ID

RESULTS

DET. LIM.

ND=Not Detected

NOTE: MBS, MS AND MSD WERE SPIKED AT 25 mg/kg.

SPIKING AMOUNT IN MS AND MSD WAS LESS THAN 10 PERCENT OF SAMPLE RESULTS
THEREFORE RECOVERIES HAVE NO SIGNIFICANCE.



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Page 5

LABORATORY RESULTS

Date Collected: 12/13/91
Date Analyzed: 01/13/92

Laboratory Job No.: 920058
Date Received: 01/09/92
Date Reported: 01/20/92

ASSAY: METAL SCAN BY ICP(EPA 6010)

LABNO	SMPLNO-ID	RESULTS	DET. LIM.
-----	-----	-----	-----
399	ATB-1.0#40 SOIL PB	166 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg
400	ATB-2.0#200 SOIL PB	573 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg
402	ATB-4.0#200 SOIL PB	421 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg
403	ATB-5.0#200 SOIL PB	690 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg
404	ATB-6.0#200 SOIL PB	466 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg
405	ATB-7.0#200 SOIL PB	121 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg
406	ATB-8.0#200 SOIL PB	2,260 mg/kg	CA TTLC LEVEL 1,000 * 75 mg/kg
408	ATB-10.0#200SOIL PB	642 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg
409	ATB-11.0#200SOIL PB	915 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg
410	ATB-12.0#200SOIL PB	262 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg



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Page 6

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS	DET. LIM.
-----	-----	-----	-----
411	ATB-13.0#200SOIL PB	2,320 mg/kg	CA TTLC LEVEL 1,000 * 75 mg/kg
412	ATB-14.0#200SOIL PB	2,010 mg/kg	CA TTLC LEVEL 1,000 * 75 mg/kg
414	ATB-16.0#200SOIL PB	1,150 mg/kg	CA TTLC LEVEL 1,000 * 7.5 mg/kg
415	ATB-17.0#200SOIL PB	2,260 mg/kg	CA TTLC LEVEL 1,000 * 75 mg/kg
416	ATB-18.0#200SOIL PB	2,070 mg/kg	CA TTLC LEVEL 1,000 * 75 mg/kg
418	ATB-20.0#200SOIL PB	1,640 mg/kg	CA TTLC LEVEL 1,000 * 75 mg/kg
419	ATS-1-#200 SOIL PB	792 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg
420	ATS-2-#200 SOIL PB	733 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg
423	ATS-5-#200 SOIL PB	334 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg
424	ATS-6-#200 SOIL PB	1,830 mg/kg	CA TTLC LEVEL 1,000 * 75 mg/kg
448	MB-2 SOIL PB	ND	7.5 mg/kg
449	MBS-2 SOIL PB	43 mg/kg	7.5 mg/kg
450	MX-2 SOIL PB	2,260 mg/kg	7.5 mg/kg



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Page 7

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS	DET. LIM.
----	-----	-----	-----
451	MS-2 SOIL PB	2,290 mg/kg	7.5 mg/kg
452	MSD-2 SOIL PB	2,250 mg/kg	7.5 mg/kg

ND=Not Detected

NOTE: MBS, MS AND MSD WERE SPIKED AT 50 mg/kg.
SPIKING AMOUNT WAS LESS THAN 10 PERCENT OF THE SAMPLE RESULTS, THEREFORE
THE MS AND MSD RECOVERIES HAVE NO SIGNIFICANCE.



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Page 8

LABORATORY RESULTS

Date Collected: 12/13/91
Date Analyzed: 01/15/92

Laboratory Job No.: 920058
Date Received: 01/09/92
Date Reported: 01/20/92

ASSAY:METAL SCAN BY ICP(EPA 6010)

LABNO	SMPLNO-ID	RESULTS	DET. LIM.
-----	-----	-----	-----
425	ATS-7-#200 SOIL		CA TTLC LEVEL
	CU	770 mg/kg	2,500 2.5 mg/kg
	PB	1,410 mg/kg	1,000 * 75 mg/kg
	ZN	2,330 mg/kg	5,000 25 mg/kg
426	ATS-8-#200 SOIL		CA TTLC LEVEL
	CU	2,970 mg/kg	2,500 * 25 mg/kg
	PB	3,080 mg/kg	1,000 * 75 mg/kg
	ZN	7,460 mg/kg	5,000 * 25 mg/kg
427	ATS-9-#200 SOIL		CA TTLC LEVEL
	CU	1,040 mg/kg	2,500 25 mg/kg
	PB	976 mg/kg	1,000 75 mg/kg
	ZN	1,050 mg/kg	5,000 25 mg/kg
428	ATS-10-#200 SOIL		CA TTLC LEVEL
	CU	706 mg/kg	2,500 2.5 mg/kg
	PB	1,700 mg/kg	1,000 * 75 mg/kg
	ZN	1,380 mg/kg	5,000 25 mg/kg
431	ATS-13-#200 SOIL		CA TTLC LEVEL
	CU	2,810 mg/kg	2,500 * 25 mg/kg
	PB	10,500 mg/kg	1,000 * 75 mg/kg
	ZN	7,420 mg/kg	5,000 * 25 mg/kg
432	ATS-14-#200 SOIL		CA TTLC LEVEL
	CU	3,870 mg/kg	2,500 * 25 mg/kg
	PB	2,750 mg/kg	1,000 * 75 mg/kg
	ZN	5,450 mg/kg	5,000 * 25 mg/kg



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Page 9

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS		DET. LIM.	
-----	-----	-----	-----	-----	-----
433	ATS-15-#200 SOIL			CA TTLC LEVEL	
	CU	505	mg/kg	2,500	2.5 mg/kg
	PB	802	mg/kg	1,000	7.5 mg/kg
	ZN	948	mg/kg	5,000	2.5 mg/kg
435	ATS-17-#200 SOIL			CA TTLC LEVEL	
	CU	512	mg/kg	2,500	2.5 mg/kg
	PB	580	mg/kg	1,000	7.5 mg/kg
	ZN	763	mg/kg	5,000	2.5 mg/kg
436	ATS-18-#200 SOIL			CA TTLC LEVEL	
	CU	1,800	mg/kg	2,500	25 mg/kg
	PB	1,930	mg/kg	1,000 *	75 mg/kg
	ZN	3,140	mg/kg	5,000	25 mg/kg
437	ATS-19-#200 SOIL			CA TTLC LEVEL	
	CU	2,080	mg/kg	2,500	25 mg/kg
	PB	3,400	mg/kg	1,000 *	75 mg/kg
	ZN	6,450	mg/kg	5,000 *	25 mg/kg
439	ATS-21-#200 SOIL			CA TTLC LEVEL	
	CU	898	mg/kg	2,500	2.5 mg/kg
	PB	1,920	mg/kg	1,000 *	75 mg/kg
	ZN	1,860	mg/kg	5,000	25 mg/kg
441	ATS-24-#200 SOIL			CA TTLC LEVEL	
	CU	358	mg/kg	2,500	2.5 mg/kg
	PB	188	mg/kg	1,000	7.5 mg/kg
	ZN	615	mg/kg	5,000	2.5 mg/kg
442	ATS-23-#200 SOIL			CA TTLC LEVEL	
	CU	884	mg/kg	2,500	2.5 mg/kg
	PB	949	mg/kg	1,000	7.5 mg/kg
	ZN	1,940	mg/kg	5,000	25 mg/kg
453	MB-3 SOIL				
	CU	ND			2.5 mg/kg
	PB	ND			7.5 mg/kg
	ZN	ND			2.5 mg/kg



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Page 10

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS	DET. LIM.
454	MBS-3 SOIL		
	CU	25.2 mg/kg	2.5 mg/kg
	PB	52 mg/kg	7.5 mg/kg
	ZN	26.3 mg/kg	2.5 mg/kg
455	MX-3 SOIL		
	CU	770 mg/kg	2.5 mg/kg
	PB	1,410 mg/kg	75 mg/kg
	ZN	2,330 mg/kg	25 mg/kg
456	MS-3 SOIL		
	CU	788 mg/kg	2.5 mg/kg
	PB	1,430 mg/kg	75 mg/kg
	ZN	2,280 mg/kg	25 mg/kg
457	MSD-3 SOIL		
	CU	786 mg/kg	2.5 mg/kg
	PB	1,450 mg/kg	75 mg/kg
	ZN	2,280 mg/kg	25 mg/kg

ND=Not Detected

NOTE: SPIKING AMOUNT WAS <10% OF SAMPLE RESULTS, THEREFORE MS AND MSD RECOVERIES HAVE NO SIGNIFICANCE.



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Page 11

LABORATORY RESULTS

Date Collected: 12/13/91
Date Analyzed: 01/10/92

Laboratory Job No.: 920058
Date Received: 01/09/92
Date Reported: 01/20/92

ASSAY: METAL SCAN BY ICP (EPA 6010)

LABNO	SMPLNO-ID	RESULTS		DET. LIM.	
-----	-----	-----	-----	-----	-----
401	ATB-3.0#200 SOIL	CA TTLC LEVEL			
	AG	ND	500	2.5	mg/kg
	BA	1,780	10,000	25	mg/kg
	BE	ND	75	0.25	mg/kg
	CD	4.3	100	2.5	mg/kg
	CO	21	8,000	5.0	mg/kg
	CR	74.0	2,500	2.5	mg/kg
	CU	201	2,500	2.5	mg/kg
	MO	12	3,500	5.0	mg/kg
	NI	81.4	2,000	5.0	mg/kg
	PB	281	1,000	7.5	mg/kg
	SB	ND	500	5.0	mg/kg
	V	67.1	2,400	2.5	mg/kg
	ZN	504	5,000	2.5	mg/kg
407	ATB-9.0#200 SOIL	CA TTLC LEVEL			
	AG	ND	500	2.5	mg/kg
	BA	1,470	10,000	25	mg/kg
	BE	ND	75	0.25	mg/kg
	CD	7.6	100	2.5	mg/kg
	CO	21	8,000	5.0	mg/kg
	CR	70.0	2,500	2.5	mg/kg
	CU	657	2,500	2.5	mg/kg
	MO	5.8	3,500	5.0	mg/kg
	NI	81.4	2,000	5.0	mg/kg
	PB	1,340	1,000 *	75	mg/kg
	SB	10	500	5.0	mg/kg
	V	69.7	2,400	2.5	mg/kg
	ZN	1,700	5,000	25	mg/kg



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Page 12

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS		DET. LIM.	
-----	-----	-----	-----	-----	-----
413	ATB-15.0#200SOIL			CA TTLC LEVEL	
	AG	3.9	mg/kg	500	2.5 mg/kg
	BA	655	mg/kg	10,000	2.5 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	16	mg/kg	100	2.5 mg/kg
	CO	70.7	mg/kg	8,000	5.0 mg/kg
	CR	67.4	mg/kg	2,500	2.5 mg/kg
	CU	3,260	mg/kg	2,500 *	25 mg/kg
	MO	386	mg/kg	3,500	5.0 mg/kg
	NI	56.5	mg/kg	2,000	5.0 mg/kg
	PB	1,850	mg/kg	1,000 *	75 mg/kg
	SB	36	mg/kg	500	5.0 mg/kg
	V	78.9	mg/kg	2,400	2.5 mg/kg
	ZN	4,960	mg/kg	5,000	25 mg/kg
417	ATB-19.0#200SOIL			CA TTLC LEVEL	
	AG	3.6	mg/kg	500	2.5 mg/kg
	BA	1,890	mg/kg	10,000	25 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	15	mg/kg	100	2.5 mg/kg
	CO	54.0	mg/kg	8,000	5.0 mg/kg
	CR	52.5	mg/kg	2,500	2.5 mg/kg
	CU	2,700	mg/kg	2,500 *	25 mg/kg
	MO	439	mg/kg	3,500	5.0 mg/kg
	NI	49	mg/kg	2,000	5.0 mg/kg
	PB	2,210	mg/kg	1,000 *	75 mg/kg
	SB	19	mg/kg	500	5.0 mg/kg
	V	67.8	mg/kg	2,400	2.5 mg/kg
	ZN	6,140	mg/kg	5,000 *	25 mg/kg



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Page 13

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS		DET. LIM.	
-----	-----	-----	-----	-----	-----
421	ATS-3-#200 SOIL	CA TTLC LEVEL			
	AG	ND	500	2.5	mg/kg
	BA	8,190 mg/kg	10,000	25	mg/kg
	BE	ND	75	0.25	mg/kg
	CD	7.5 mg/kg	100	2.5	mg/kg
	CO	19 mg/kg	8,000	5.0	mg/kg
	CR	68.7 mg/kg	2,500	2.5	mg/kg
	CU	841 mg/kg	2,500	2.5	mg/kg
	MO	11 mg/kg	3,500	5.0	mg/kg
	NI	96.4 mg/kg	2,000	5.0	mg/kg
	PB	991 mg/kg	1,000	7.5	mg/kg
	SB	ND	500	5.0	mg/kg
	V	54.5 mg/kg	2,400	2.5	mg/kg
	ZN	1,280 mg/kg	5,000	25	mg/kg
422	ATS-4-#200 SOIL	CA TTLC LEVEL			
	AG	2.9 mg/kg	500	2.5	mg/kg
	BA	8,000 mg/kg	10,000	25	mg/kg
	BE	ND	75	0.25	mg/kg
	CD	37.0 mg/kg	100	2.5	mg/kg
	CO	25 mg/kg	8,000	5.0	mg/kg
	CR	81.8 mg/kg	2,500	2.5	mg/kg
	CU	932 mg/kg	2,500	2.5	mg/kg
	MO	70.1 mg/kg	3,500	5.0	mg/kg
	NI	61.9 mg/kg	2,000	5.0	mg/kg
	PB	1,830 mg/kg	1,000 *	75	mg/kg
	SB	36 mg/kg	500	5.0	mg/kg
	V	52.3 mg/kg	2,400	2.5	mg/kg
	ZN	2,000 mg/kg	5,000	25	mg/kg



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Page 14

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS		DET. LIM.	
-----	-----	-----	-----	-----	-----
429	ATS-11-#200 SOIL			CA TTLC LEVEL	
	AG	3.8	mg/kg	500	2.5 mg/kg
	BA	6,420	mg/kg	10,000	25 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	15	mg/kg	100	2.5 mg/kg
	CO	64.4	mg/kg	8,000	5.0 mg/kg
	CR	52.1	mg/kg	2,500	2.5 mg/kg
	CU	3,620	mg/kg	2,500 *	25 mg/kg
	MO	380	mg/kg	3,500	5.0 mg/kg
	NI	46	mg/kg	2,000	5.0 mg/kg
	PB	2,290	mg/kg	1,000 *	75 mg/kg
	SB	33	mg/kg	500	5.0 mg/kg
	V	66.9	mg/kg	2,400	2.5 mg/kg
	ZN	5,730	mg/kg	5,000 *	25 mg/kg
430	ATS-12-#200 SOIL			CA TTLC LEVEL	
	AG	5.7	mg/kg	500	2.5 mg/kg
	BA	3,010	mg/kg	10,000	25 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	18	mg/kg	100	2.5 mg/kg
	CO	63.7	mg/kg	8,000	5.0 mg/kg
	CR	53.8	mg/kg	2,500	2.5 mg/kg
	CU	4,910	mg/kg	2,500 *	25 mg/kg
	MO	398	mg/kg	3,500	5.0 mg/kg
	NI	50.7	mg/kg	2,000	5.0 mg/kg
	PB	2,610	mg/kg	1,000 *	75 mg/kg
	SB	26	mg/kg	500	5.0 mg/kg
	V	73.4	mg/kg	2,400	2.5 mg/kg
	ZN	6,650	mg/kg	5,000 *	25 mg/kg



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Page 15

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS		DET. LIM.	
-----	-----	-----	-----	-----	-----
434	ATS-16-#200 SOIL			CA TTLC LEVEL	
	AG	ND		500	2.5 mg/kg
	BA	1,530	mg/kg	10,000	25 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	9.2	mg/kg	100	2.5 mg/kg
	CO	29	mg/kg	8,000	5.0 mg/kg
	CR	84.8	mg/kg	2,500	2.5 mg/kg
	CU	905	mg/kg	2,500	2.5 mg/kg
	MO	103	mg/kg	3,500	5.0 mg/kg
	NI	104	mg/kg	2,000	5.0 mg/kg
	PB	898	mg/kg	1,000	7.5 mg/kg
	SB	6.4	mg/kg	500	5.0 mg/kg
	V	58.0	mg/kg	2,400	2.5 mg/kg
	ZN	1,750	mg/kg	5,000	25 mg/kg
438	ATS-20-#200 SOIL			CA TTLC LEVEL	
	AG	ND		500	2.5 mg/kg
	BA	1,470	mg/kg	10,000	25 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	8.6	mg/kg	100	2.5 mg/kg
	CO	50.3	mg/kg	8,000	5.0 mg/kg
	CR	34.9	mg/kg	2,500	2.5 mg/kg
	CU	545	mg/kg	2,500	2.5 mg/kg
	MO	54.7	mg/kg	3,500	5.0 mg/kg
	NI	38	mg/kg	2,000	5.0 mg/kg
	PB	297	mg/kg	1,000	7.5 mg/kg
	SB	12	mg/kg	500	5.0 mg/kg
	V	221	mg/kg	2,400	2.5 mg/kg
	ZN	900	mg/kg	5,000	2.5 mg/kg



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Page 16

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS		DET. LIM.
-----	-----	-----		-----
440	ATS-22-#200 SOIL	CA TTLC LEVEL		
	AG	3.9	mg/kg	2.5 mg/kg
	BA	6,640	mg/kg	25 mg/kg
	BE	ND		0.25 mg/kg
	CD	16	mg/kg	2.5 mg/kg
	CO	66.0	mg/kg	5.0 mg/kg
	CR	50.4	mg/kg	2.5 mg/kg
	CU	3,590	mg/kg	25 mg/kg
	MO	379	mg/kg	5.0 mg/kg
	NI	47	mg/kg	5.0 mg/kg
	PB	2,410	mg/kg	75 mg/kg
	SB	41	mg/kg	5.0 mg/kg
	V	70.8	mg/kg	2.5 mg/kg
	ZN	5,630	mg/kg	25 mg/kg
443	MB SOIL			
	AG	ND		2.5 mg/kg
	BA	ND		2.5 mg/kg
	BE	ND		0.25 mg/kg
	CD	ND		2.5 mg/kg
	CO	ND		5.0 mg/kg
	CR	ND		2.5 mg/kg
	CU	ND		2.5 mg/kg
	MO	ND		5.0 mg/kg
	NI	ND		5.0 mg/kg
	PB	ND		7.5 mg/kg
	SB	ND		5.0 mg/kg
	V	ND		2.5 mg/kg
	ZN	ND		2.5 mg/kg



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LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS		SPIKE LEVELS		DET. LIM.
-----	-----	-----	-----	-----	-----	-----
444	MBS SOIL					
	AG	25	mg/kg	25	mg/kg	2.5 mg/kg
	BA	25.1	mg/kg	25.0	mg/kg	2.5 mg/kg
	BE	2.1	mg/kg	2.5	mg/kg	0.25 mg/kg
	CD	25	mg/kg	25	mg/kg	2.5 mg/kg
	CO	25	mg/kg	25	mg/kg	5.0 mg/kg
	CR	24	mg/kg	25	mg/kg	2.5 mg/kg
	CU	25	mg/kg	25	mg/kg	2.5 mg/kg
	MO	47	mg/kg	50	mg/kg	5.0 mg/kg
	NI	27	mg/kg	25	mg/kg	5.0 mg/kg
	PB	45	mg/kg	50	mg/kg	7.5 mg/kg
	SB	41	mg/kg	50	mg/kg	5.0 mg/kg
	V	25.6	mg/kg	25.0	mg/kg	2.5 mg/kg
	ZN	25.4	mg/kg	25.0	mg/kg	2.5 mg/kg
445	MX SOIL					
	AG	ND				2.5 mg/kg
	BA	82.5	mg/kg			2.5 mg/kg
	BE	ND				0.25 mg/kg
	CD	ND				2.5 mg/kg
	CO	15	mg/kg			5.0 mg/kg
	CR	27.7	mg/kg			2.5 mg/kg
	CU	22	mg/kg			2.5 mg/kg
	MO	ND				5.0 mg/kg
	NI	20	mg/kg			5.0 mg/kg
	PB	ND				7.5 mg/kg
	SB	ND				5.0 mg/kg
	V	76.7	mg/kg			2.5 mg/kg
	ZN	64.8	mg/kg			2.5 mg/kg



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Page 18

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS		SPIKE LEVELS		DET. LIM.	
-----	-----	-----	-----	-----	-----	-----	-----
446	MS SOIL						
	AG	22	mg/kg	25	mg/kg	2.5	mg/kg
	BA	113	mg/kg	25.0	mg/kg	2.5	mg/kg
	BE	1.4	mg/kg	2.5	mg/kg	0.25	mg/kg
	CD	24	mg/kg	25	mg/kg	2.5	mg/kg
	CO	35	mg/kg	25	mg/kg	5.0	mg/kg
	CR	49.4	mg/kg	25	mg/kg	2.5	mg/kg
	CU	48.3	mg/kg	25	mg/kg	2.5	mg/kg
	MO	48	mg/kg	50	mg/kg	5.0	mg/kg
	NI	42	mg/kg	25	mg/kg	5.0	mg/kg
	PB	49	mg/kg	50	mg/kg	7.5	mg/kg
	SB	ND		50	mg/kg	5.0	mg/kg
	V	100	mg/kg	25.0	mg/kg	2.5	mg/kg
	ZN	92.5	mg/kg	25.0	mg/kg	2.5	mg/kg
447	MSD SOIL						
	AG	22	mg/kg	25	mg/kg	2.5	mg/kg
	BA	113	mg/kg	25.0	mg/kg	2.5	mg/kg
	BE	1.4	mg/kg	2.5	mg/kg	0.25	mg/kg
	CD	23	mg/kg	25	mg/kg	2.5	mg/kg
	CO	36	mg/kg	25	mg/kg	5.0	mg/kg
	CR	48.7	mg/kg	25	mg/kg	2.5	mg/kg
	CU	54.9	mg/kg	25	mg/kg	2.5	mg/kg
	MO	49	mg/kg	50	mg/kg	5.0	mg/kg
	NI	43	mg/kg	25	mg/kg	5.0	mg/kg
	PB	47	mg/kg	50	mg/kg	7.5	mg/kg
	SB	ND		50	mg/kg	5.0	mg/kg
	V	92.6	mg/kg	25.0	mg/kg	2.5	mg/kg
	ZN	94.1	mg/kg	25.0	mg/kg	2.5	mg/kg

ND=Not Detected

NOTE: LOW RECOVERY OF BE AND SB IN MS AND MSD DUE TO MATRIX INTERFERENCE.



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Page 19

LABORATORY RESULTS

Date Collected: 12/13/91
Date Analyzed: 01/16/92

Laboratory Job No.: 920058
Date Received: 01/09/92
Date Reported: 01/20/92

ASSAY:

ARSENIC (EPA 7060), 3050 ACID DIGEST
SELENIUM (EPA 7740), 3050 ACID DIGEST
MERCURY (EPA 7470/7471)
THALLIUM (EPA 7840), 3050 ACID DIGEST

MATRIX: SOIL, ACID DIGEST

LABNO SMPLNO	COMPOUND	FOUND mg/kg	CA TTLC LEV	DET.LIM. mg/kg
399 ATB-1.0#40	AS	29.4	500	12.5
400 ATB-2.0#20	AS	108	500	25
401 ATB-3.0#20	AS	33.5	500	12.5
	SE	ND	100	2.5
	HG	0.2	20	0.2
	TL	ND	700	8
402 ATB-4.0#20	AS	57.6	500	12.5
403 ATB-5.0#20	AS	99	500	25
404 ATB-6.0#20	AS	46.1	500	12.5
405 ATB-7.0#20	AS	19.3	500	2.5
406 ATB-8.0#20	AS	100	500	25
407 ATB-9.0#20	AS	46.8	500	12.5
	SE	ND	100	2.5
	HG	ND	20	0.2
	TL	8	700	8



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Page 20

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO	COMPOUND	FOUND mg/kg	CA TTLC LEV	DET.LIM. mg/kg
408	ATB-10.0#2	AS	96.5	500	12.5
409	ATB-11.0#2	AS	66.1	500	12.5
410	ATB-12.0#2	AS	21	500	5
411	ATB-13.0#2	AS	505	500	125
412	ATB-14.0#2	AS	454	500	125
413	ATB-15.0#2	AS	383	500	50
		SE	ND	100	2.5
		HG	ND	20	0.2
		TL	12	700	8
414	ATB-16.0#2	AS	495	500	125
415	ATB-17.0#2	AS	745	500	125
416	ATB-18.0#2	AS	436	500	125
417	ATB-19.0#2	AS	670	500	250
		SE	ND	100	2.5
		HG	0.3	20	0.2
		TL	13	700	8
418	ATB-20.0#2	AS	1,190	500	250
419	ATS-1-#200	AS	263	500	50
420	ATS-2-#200	AS	106	500	25
421	ATS-3-#200	AS	116	500	50
		SE	ND	100	2.5
		HG	0.3	20	0.2
		TL	ND	700	8



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Page 21

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO	COMPOUND	FOUND mg/kg	CA TTLC LEV	DET.LIM. mg/kg
422	ATS-4-#200	AS	3,120	500	500
		SE	10.6	100	2.5
		HG	15	20	5
		TL	103	700	8
423	ATS-5-#200	AS	33.2	500	12.5
424	ATS-6-#200	AS	66.3	500	12.5
425	ATS-7-#200	AS	94	500	25
426	ATS-8-#200	AS	344	500	125
427	ATS-9-#200	AS	224	500	50
428	ATS-10-#20	AS	149	500	50
429	ATS-11-#20	AS	455	500	250
		SE	ND	100	2.5
		HG	0.5	20	0.2
		TL	13	700	8
430	ATS-12-#20	AS	765	500	250
		SE	3.8	100	2.5
		HG	0.6	20	0.2
		TL	13	700	8
431	ATS-13-#20	AS	282	500	50
432	ATS-14-#20	AS	418	500	125
433	ATS-15-#20	AS	150	500	50
434	ATS-16-#20	AS	149.6	500	62.5
		SE	ND	100	2.5
		HG	0.4	20	0.2
		TL	8	700	8
435	ATS-17-#20	AS	89	500	25



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Page 22

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO	COMPOUND	FOUND mg/kg	CA TTLC LEV	DET.LIM. mg/kg
436	ATS-18-#20	AS	131	500	50
437	ATS-19-#20	AS	1,230	500	250
438	ATS-20-#20	AS	68.9	500	12.5
		SE	ND	100	2.5
		HG	ND	20	0.2
		TL	13	700	8
439	ATS-21-#20	AS	2,390	500	500
440	ATS-22-#20	AS	429	500	250
		SE	ND	100	2.5
		HG	0.6	20	0.2
		TL	11	700	8
441	ATS-24-#20	AS	32.9	500	12.5
442	ATS-23-#20	AS	116	500	50
443	MB	AS	ND	500	2.5
		SE	ND	100	2.5
		HG	ND	20	0.2
		TL	ND	700	8
444	MBS	AS	11.8	12.5 mg/kg	2.5
		SE	10.9	12.5 mg/kg	2.5
		HG	1.0	1.0 mg/kg	0.2
		TL	238	250 mg/kg	8



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Page 23

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO	COMPOUND	FOUND mg/kg	CA TTLC LEV	DET.LIM. mg/kg
445	MX	AS	56.7		12.5
		SE	ND		2.5
		HG	5		2
		TL	8		8
446	MS	AS	76.6	SPIKE LEVELS 12.5 mg/kg	12.5
		SE	10.6	12.5 mg/kg	2.5
		HG	16	10.0 mg/kg	2
		TL	258	250 mg/kg	8
447	MSD	AS	77.8	SPIKE LEVELS 12.5 mg/kg	12.5
		SE	10.5	12.5 mg/kg	2.5
		HG	15	10.0 mg/kg	2
		TL	256	250 mg/kg	8
448	MB-2	AS	ND	500	2.5
449	MBS-2	AS	11.5	500	2.5
450	MX-2	AS	263	500	50
451	MS-2	AS	265	500	50
452	MSD-2	AS	261	500	50
453	MB-3	AS	ND	500	2.5
454	MBS-3	AS	11.3	500	2.5
455	MX-3	AS	150	500	50
456	MS-3	AS	206	500	50
457	MSD-3	AS	198	500	50

NOTE: NON-HOMOGENOUS MATRIX MIGHT HAVE BEEN USED FOR SPIKES AND HIGH ARSENIC CONCENTRATIONS GIVE VARIABLE RECOVERIES.



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Client Code: DAMM14
Survey # UPRR-SACTO.
Project/Release #
00173-064-044-97XX

REVISED REPORT - 02/10/92

Page 1

LABORATORY RESULTS

Date Collected: 12/13/91
Date Analyzed: 01/13/92

Laboratory Job No.: 920058
Date Received: 01/09/92
Date Reported: 01/20/92

ASSAY:METAL SCAN BY ICP(EPA 6010)

LABNO	SMPLNO-ID	RESULTS	DET. LIM.
-----	-----	-----	-----
399	ATB-1.0#40 SOIL		CA TTLC LEVEL
	CU	187 mg/kg	2,500
	ZN	506 mg/kg	5,000
			2.5 mg/kg
			2.5 mg/kg
400	ATB-2.0#200 SOIL		CA TTLC LEVEL
	CU	772 mg/kg	2,500
	ZN	1,750 mg/kg	5,000
			2.5 mg/kg
			25 mg/kg
402	ATB-4.0#200 SOIL		CA TTLC LEVEL
	CU	390 mg/kg	2,500
	ZN	808 mg/kg	5,000
			2.5 mg/kg
			2.5 mg/kg
403	ATB-5.0#200 SOIL		CA TTLC LEVEL
	CU	405 mg/kg	2,500
	ZN	964 mg/kg	5,000
			2.5 mg/kg
			2.5 mg/kg
404	ATB-6.0#200 SOIL		CA TTLC LEVEL
	CU	351 mg/kg	2,500
	ZN	1,830 mg/kg	5,000
			2.5 mg/kg
			25 mg/kg
405	ATB-7.0#200 SOIL		CA TTLC LEVEL
	CU	118 mg/kg	2,500
	ZN	303 mg/kg	5,000
			2.5 mg/kg
			2.5 mg/kg

THIS REPORT HAS BEEN REVIEWED
AND APPROVED FOR RELEASE.

TUF



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Page 2

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS		DET. LIM.	
-----	-----	-----	-----	-----	-----
406	ATB-8.0#200 SOIL			CA TTLC LEVEL	
	CU	1,520	mg/kg	2,500	25 mg/kg
	ZN	4,620	mg/kg	5,000	25 mg/kg
408	ATB-10.0#200SOIL			CA TTLC LEVEL	
	CU	398	mg/kg	2,500	2.5 mg/kg
	ZN	515	mg/kg	5,000	2.5 mg/kg
409	ATB-11.0#200SOIL			CA TTLC LEVEL	
	CU	418	mg/kg	2,500	2.5 mg/kg
	ZN	6,480	mg/kg	5,000 *	25 mg/kg
410	ATB-12.0#200SOIL			CA TTLC LEVEL	
	CU	227	mg/kg	2,500	2.5 mg/kg
	ZN	411	mg/kg	5,000	2.5 mg/kg
411	ATB-13.0#200SOIL			CA TTLC LEVEL	
	CU	4,370	mg/kg	2,500 *	25 mg/kg
	ZN	4,780	mg/kg	5,000	25 mg/kg
412	ATB-14.0#200SOIL			CA TTLC LEVEL	
	CU	2,630	mg/kg	2,500 *	25 mg/kg
	ZN	4,770	mg/kg	5,000	25 mg/kg
414	ATB-16.0#200SOIL			CA TTLC LEVEL	
	CU	2,850	mg/kg	2,500 *	25 mg/kg
	ZN	4,150	mg/kg	5,000	25 mg/kg
415	ATB-17.0#200SOIL			CA TTLC LEVEL	
	CU	1,840	mg/kg	2,500	25 mg/kg
	ZN	3,940	mg/kg	5,000	25 mg/kg
416	ATB-18.0#200SOIL			CA TTLC LEVEL	
	CU	2,040	mg/kg	2,500	25 mg/kg
	ZN	5,290	mg/kg	5,000 *	25 mg/kg
418	ATB-20.0#200SOIL			CA TTLC LEVEL	
	CU	2,240	mg/kg	2,500	25 mg/kg
	ZN	3,490	mg/kg	5,000	25 mg/kg



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Page 3

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS	DET. LIM.
-----	-----	-----	-----
419	ATS-1-#200 SOIL		CA TTLC LEVEL
	CU	305 mg/kg	2,500
	ZN	821 mg/kg	5,000
			2.5 mg/kg
			2.5 mg/kg
420	ATS-2-#200 SOIL		CA TTLC LEVEL
	CU	467 mg/kg	2,500
	ZN	756 mg/kg	5,000
			2.5 mg/kg
			2.5 mg/kg
423	ATS-5-#200 SOIL		CA TTLC LEVEL
	CU	309 mg/kg	2,500
	ZN	475 mg/kg	5,000
			2.5 mg/kg
			2.5 mg/kg
424	ATS-6-#200 SOIL		CA TTLC LEVEL
	CU	1,010 mg/kg	2,500
	ZN	1,180 mg/kg	5,000
			2.5 mg/kg
			2.5 mg/kg
448	MB-2 SOIL		
	CU	ND	2.5 mg/kg
	ZN	ND	2.5 mg/kg
449	MBS-2 SOIL		
	CU	24 mg/kg	2.5 mg/kg
	ZN	23 mg/kg	2.5 mg/kg
450	MX-2 SOIL		
	CU	1,520 mg/kg	25 mg/kg
	ZN	4,620 mg/kg	25 mg/kg
451	MS-2 SOIL		
	CU	1,520 mg/kg	25 mg/kg
	ZN	4,550 mg/kg	25 mg/kg
452	MSD-2 SOIL		
	CU	1,510 mg/kg	25 mg/kg
	ZN	4,580 mg/kg	25 mg/kg



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Page 4

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO SMPLNO-ID

RESULTS

DET. LIM.

ND=Not Detected

NOTE: MBS, MS AND MSD WERE SPIKED AT 25 mg/kg.

SPIKING AMOUNT IN MS AND MSD WAS LESS THAN 10 PERCENT OF SAMPLE RESULTS
THEREFORE RECOVERIES HAVE NO SIGNIFICANCE.



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Page 5

LABORATORY RESULTS

Date Collected: 12/13/91
Date Analyzed: 01/13/92

Laboratory Job No.: 920058
Date Received: 01/09/92
Date Reported: 01/20/92

ASSAY: METAL SCAN BY ICP (EPA 6010)

LABNO	SAMPLNO-ID	RESULTS	DET. LIM.
-----	-----	-----	-----
399	ATB-1.0#40 SOIL PB	166 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg
400	ATB-2.0#200 SOIL PB	573 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg
402	ATB-4.0#200 SOIL PB	421 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg
403	ATB-5.0#200 SOIL PB	690 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg
404	ATB-6.0#200 SOIL PB	466 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg
405	ATB-7.0#200 SOIL PB	121 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg
406	ATB-8.0#200 SOIL PB	2,260 mg/kg	CA TTLC LEVEL 1,000 * 75 mg/kg
408	ATB-10.0#200SOIL PB	642 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg
409	ATB-11.0#200SOIL PB	915 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg
410	ATB-12.0#200SOIL PB	262 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg



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Page 6

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS	DET. LIM.
-----	-----	-----	-----
411	ATB-13.0#200SOIL PB	2,320 mg/kg	CA TTLC LEVEL 1,000 * 75 mg/kg
412	ATB-14.0#200SOIL PB	2,010 mg/kg	CA TTLC LEVEL 1,000 * 75 mg/kg
414	ATB-16.0#200SOIL PB	1,150 mg/kg	CA TTLC LEVEL 1,000 * 7.5 mg/kg
415	ATB-17.0#200SOIL PB	2,260 mg/kg	CA TTLC LEVEL 1,000 * 75 mg/kg
416	ATB-18.0#200SOIL PB	2,070 mg/kg	CA TTLC LEVEL 1,000 * 75 mg/kg
418	ATB-20.0#200SOIL PB	1,640 mg/kg	CA TTLC LEVEL 1,000 * 75 mg/kg
419	ATS-1-#200 SOIL PB	792 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg
420	ATS-2-#200 SOIL PB	733 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg
423	ATS-5-#200 SOIL PB	334 mg/kg	CA TTLC LEVEL 1,000 7.5 mg/kg
424	ATS-6-#200 SOIL PB	1,830 mg/kg	CA TTLC LEVEL 1,000 * 75 mg/kg
448	MB-2 SOIL PB	ND	7.5 mg/kg
449	MBS-2 SOIL PB	43 mg/kg	7.5 mg/kg
450	MX-2 SOIL PB	2,260 mg/kg	7.5 mg/kg



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Page 7

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS	DET. LIM.
----	-----	-----	-----
451	MS-2 SOIL PB	2,290 mg/kg	7.5 mg/kg
452	MSD-2 SOIL PB	2,250 mg/kg	7.5 mg/kg

ND=Not Detected

NOTE: MBS, MS AND MSD WERE SPIKED AT 50 mg/kg.
SPIKING AMOUNT WAS LESS THAN 10 PERCENT OF THE SAMPLE RESULTS, THEREFORE
THE MS AND MSD RECOVERIES HAVE NO SIGNIFICANCE.



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Page 8

LABORATORY RESULTS

Date Collected: 12/13/91
Date Analyzed: 01/15/92

Laboratory Job No.: 920058
Date Received: 01/09/92
Date Reported: 01/20/92

ASSAY: METAL SCAN BY ICP (EPA 6010)

LABNO	SMPLNO-ID	RESULTS		DET. LIM.	
-----	-----	-----	-----	-----	-----
425	ATS-7-#200 SOIL		CA TTLC LEVEL		
	CU	770 mg/kg	2,500	2.5 mg/kg	
	PB	1,410 mg/kg	1,000 *	75 mg/kg	
	ZN	2,330 mg/kg	5,000	25 mg/kg	
426	ATS-8-#200 SOIL		CA TTLC LEVEL		
	CU	2,970 mg/kg	2,500 *	25 mg/kg	
	PB	3,080 mg/kg	1,000 *	75 mg/kg	
	ZN	7,460 mg/kg	5,000 *	25 mg/kg	
427	ATS-9-#200 SOIL		CA TTLC LEVEL		
	CU	1,040 mg/kg	2,500	25 mg/kg	
	PB	976 mg/kg	1,000	75 mg/kg	
	ZN	1,050 mg/kg	5,000	25 mg/kg	
428	ATS-10-#200 SOIL		CA TTLC LEVEL		
	CU	706 mg/kg	2,500	2.5 mg/kg	
	PB	1,700 mg/kg	1,000 *	75 mg/kg	
	ZN	1,380 mg/kg	5,000	25 mg/kg	
431	ATS-13-#200 SOIL		CA TTLC LEVEL		
	CU	2,810 mg/kg	2,500 *	25 mg/kg	
	PB	10,500 mg/kg	1,000 *	75 mg/kg	
	ZN	7,420 mg/kg	5,000 *	25 mg/kg	
432	ATS-14-#200 SOIL		CA TTLC LEVEL		
	CU	3,870 mg/kg	2,500 *	25 mg/kg	
	PB	2,750 mg/kg	1,000 *	75 mg/kg	
	ZN	5,450 mg/kg	5,000 *	25 mg/kg	



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Page 9

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS	DET. LIM.
-----	-----	-----	-----
433	ATS-15-#200 SOIL		CA TTLC LEVEL
	CU	505 mg/kg	2,500 2.5 mg/kg
	PB	802 mg/kg	1,000 7.5 mg/kg
	ZN	948 mg/kg	5,000 2.5 mg/kg
435	ATS-17-#200 SOIL		CA TTLC LEVEL
	CU	512 mg/kg	2,500 2.5 mg/kg
	PB	580 mg/kg	1,000 7.5 mg/kg
	ZN	763 mg/kg	5,000 2.5 mg/kg
436	ATS-18-#200 SOIL		CA TTLC LEVEL
	CU	1,800 mg/kg	2,500 25 mg/kg
	PB	1,930 mg/kg	1,000 * 75 mg/kg
	ZN	3,140 mg/kg	5,000 25 mg/kg
437	ATS-19-#200 SOIL		CA TTLC LEVEL
	CU	2,080 mg/kg	2,500 25 mg/kg
	PB	3,400 mg/kg	1,000 * 75 mg/kg
	ZN	6,450 mg/kg	5,000 * 25 mg/kg
439	ATS-21-#200 SOIL		CA TTLC LEVEL
	CU	898 mg/kg	2,500 2.5 mg/kg
	PB	1,920 mg/kg	1,000 * 75 mg/kg
	ZN	1,860 mg/kg	5,000 25 mg/kg
441	ATS-24-#200 SOIL		CA TTLC LEVEL
	CU	358 mg/kg	2,500 2.5 mg/kg
	PB	188 mg/kg	1,000 7.5 mg/kg
	ZN	615 mg/kg	5,000 2.5 mg/kg
442	ATS-23-#200 SOIL		CA TTLC LEVEL
	CU	884 mg/kg	2,500 2.5 mg/kg
	PB	949 mg/kg	1,000 7.5 mg/kg
	ZN	1,940 mg/kg	5,000 25 mg/kg
453	MB-3 SOIL		
	CU	ND	2.5 mg/kg
	PB	ND	7.5 mg/kg
	ZN	ND	2.5 mg/kg



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Page 10

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS	DET. LIM.
454	MBS-3 SOIL		
	CU	25.2 mg/kg	2.5 mg/kg
	PB	52 mg/kg	7.5 mg/kg
	ZN	26.3 mg/kg	2.5 mg/kg
455	MX-3 SOIL		
	CU	770 mg/kg	2.5 mg/kg
	PB	1,410 mg/kg	75 mg/kg
	ZN	2,330 mg/kg	25 mg/kg
456	MS-3 SOIL		
	CU	788 mg/kg	2.5 mg/kg
	PB	1,430 mg/kg	75 mg/kg
	ZN	2,280 mg/kg	25 mg/kg
457	MSD-3 SOIL		
	CU	786 mg/kg	2.5 mg/kg
	PB	1,450 mg/kg	75 mg/kg
	ZN	2,280 mg/kg	25 mg/kg

ND=Not Detected

NOTE: SPIKING AMOUNT WAS <10% OF SAMPLE RESULTS, THEREFORE MS AND MSD RECOVERIES HAVE NO SIGNIFICANCE.



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Page 11

LABORATORY RESULTS

Date Collected: 12/13/91
Date Analyzed: 01/10/92

Laboratory Job No.: 920058
Date Received: 01/09/92
Date Reported: 01/20/92

ASSAY: METAL SCAN BY ICP (EPA 6010)

LABNO	SMPLNO-ID	RESULTS		DET. LIM.	
-----	-----	-----	-----	-----	-----
401	ATB-3.0#200 SOIL			CA TTLC LEVEL	
	AG	ND		500	2.5 mg/kg
	BA	1,780	mg/kg	10,000	25 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	4.3	mg/kg	100	2.5 mg/kg
	CO	21	mg/kg	8,000	5.0 mg/kg
	CR	74.0	mg/kg	2,500	2.5 mg/kg
	CU	201	mg/kg	2,500	2.5 mg/kg
	MO	12	mg/kg	3,500	5.0 mg/kg
	NI	81.4	mg/kg	2,000	5.0 mg/kg
	PB	281	mg/kg	1,000	7.5 mg/kg
	SB	ND		500	5.0 mg/kg
	V	67.1	mg/kg	2,400	2.5 mg/kg
	ZN	504	mg/kg	5,000	2.5 mg/kg
407	ATB-9.0#200 SOIL			CA TTLC LEVEL	
	AG	ND		500	2.5 mg/kg
	BA	1,470	mg/kg	10,000	25 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	7.6	mg/kg	100	2.5 mg/kg
	CO	21	mg/kg	8,000	5.0 mg/kg
	CR	70.0	mg/kg	2,500	2.5 mg/kg
	CU	657	mg/kg	2,500	2.5 mg/kg
	MO	5.8	mg/kg	3,500	5.0 mg/kg
	NI	81.4	mg/kg	2,000	5.0 mg/kg
	PB	1,340	mg/kg	1,000 *	75 mg/kg
	SB	10	mg/kg	500	5.0 mg/kg
	V	69.7	mg/kg	2,400	2.5 mg/kg
	ZN	1,700	mg/kg	5,000	25 mg/kg



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Page 12

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS		DET. LIM.	
-----	-----	-----	-----	-----	-----
413	ATB-15.0#200SOIL			CA TTLC LEVEL	
	AG	3.9	mg/kg	500	2.5 mg/kg
	BA	655	mg/kg	10,000	2.5 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	16	mg/kg	100	2.5 mg/kg
	CO	70.7	mg/kg	8,000	5.0 mg/kg
	CR	67.4	mg/kg	2,500	2.5 mg/kg
	CU	3,260	mg/kg	2,500 *	25 mg/kg
	MO	386	mg/kg	3,500	5.0 mg/kg
	NI	56.5	mg/kg	2,000	5.0 mg/kg
	PB	1,850	mg/kg	1,000 *	75 mg/kg
	SB	36	mg/kg	500	5.0 mg/kg
	V	78.9	mg/kg	2,400	2.5 mg/kg
	ZN	4,960	mg/kg	5,000	25 mg/kg
417	ATB-19.0#200SOIL			CA TTLC LEVEL	
	AG	3.6	mg/kg	500	2.5 mg/kg
	BA	1,890	mg/kg	10,000	25 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	15	mg/kg	100	2.5 mg/kg
	CO	54.0	mg/kg	8,000	5.0 mg/kg
	CR	52.5	mg/kg	2,500	2.5 mg/kg
	CU	2,700	mg/kg	2,500 *	25 mg/kg
	MO	439	mg/kg	3,500	5.0 mg/kg
	NI	49	mg/kg	2,000	5.0 mg/kg
	PB	2,210	mg/kg	1,000 *	75 mg/kg
	SB	19	mg/kg	500	5.0 mg/kg
	V	67.8	mg/kg	2,400	2.5 mg/kg
	ZN	6,140	mg/kg	5,000 *	25 mg/kg



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Page 13

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS	DET. LIM.
-----	-----	-----	-----
421	ATS-3-#200 SOIL		CA TTLC LEVEL
	AG	ND	500 2.5 mg/kg
	BA	8,190 mg/kg	10,000 25 mg/kg
	BE	ND	75 0.25 mg/kg
	CD	7.5 mg/kg	100 2.5 mg/kg
	CO	19 mg/kg	8,000 5.0 mg/kg
	CR	68.7 mg/kg	2,500 2.5 mg/kg
	CU	841 mg/kg	2,500 2.5 mg/kg
	MO	11 mg/kg	3,500 5.0 mg/kg
	NI	96.4 mg/kg	2,000 5.0 mg/kg
	PB	991 mg/kg	1,000 7.5 mg/kg
	SB	ND	500 5.0 mg/kg
	V	54.5 mg/kg	2,400 2.5 mg/kg
	ZN	1,280 mg/kg	5,000 25 mg/kg
422	ATS-4-#200 SOIL		CA TTLC LEVEL
	AG	2.9 mg/kg	500 2.5 mg/kg
	BA	8,000 mg/kg	10,000 25 mg/kg
	BE	ND	75 0.25 mg/kg
	CD	37.0 mg/kg	100 2.5 mg/kg
	CO	25 mg/kg	8,000 5.0 mg/kg
	CR	81.8 mg/kg	2,500 2.5 mg/kg
	CU	932 mg/kg	2,500 2.5 mg/kg
	MO	70.1 mg/kg	3,500 5.0 mg/kg
	NI	61.9 mg/kg	2,000 5.0 mg/kg
	PB	1,830 mg/kg	1,000 * 75 mg/kg
	SB	36 mg/kg	500 5.0 mg/kg
	V	52.3 mg/kg	2,400 2.5 mg/kg
	ZN	2,000 mg/kg	5,000 25 mg/kg



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Page 14

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS		DET. LIM.	
-----	-----	-----	-----	-----	-----
429	ATS-11-#200 SOIL			CA TTLC LEVEL	
	AG	3.8	mg/kg	500	2.5 mg/kg
	BA	6,420	mg/kg	10,000	25 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	15	mg/kg	100	2.5 mg/kg
	CO	64.4	mg/kg	8,000	5.0 mg/kg
	CR	52.1	mg/kg	2,500	2.5 mg/kg
	CU	3,620	mg/kg	2,500 *	25 mg/kg
	MO	380	mg/kg	3,500	5.0 mg/kg
	NI	46	mg/kg	2,000	5.0 mg/kg
	PB	2,290	mg/kg	1,000 *	75 mg/kg
	SB	33	mg/kg	500	5.0 mg/kg
	V	66.9	mg/kg	2,400	2.5 mg/kg
	ZN	5,730	mg/kg	5,000 *	25 mg/kg
430	ATS-12-#200 SOIL			CA TTLC LEVEL	
	AG	5.7	mg/kg	500	2.5 mg/kg
	BA	3,010	mg/kg	10,000	25 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	18	mg/kg	100	2.5 mg/kg
	CO	63.7	mg/kg	8,000	5.0 mg/kg
	CR	53.8	mg/kg	2,500	2.5 mg/kg
	CU	4,910	mg/kg	2,500 *	25 mg/kg
	MO	398	mg/kg	3,500	5.0 mg/kg
	NI	50.7	mg/kg	2,000	5.0 mg/kg
	PB	2,610	mg/kg	1,000 *	75 mg/kg
	SB	26	mg/kg	500	5.0 mg/kg
	V	73.4	mg/kg	2,400	2.5 mg/kg
	ZN	6,650	mg/kg	5,000 *	25 mg/kg



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Page 15

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS		DET. LIM.	
-----	-----	-----	-----	-----	-----
434	ATS-16-#200 SOIL			CA TTLC LEVEL	
	AG	ND		500	2.5 mg/kg
	BA	1,530	mg/kg	10,000	25 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	9.2	mg/kg	100	2.5 mg/kg
	CO	29	mg/kg	8,000	5.0 mg/kg
	CR	84.8	mg/kg	2,500	2.5 mg/kg
	CU	905	mg/kg	2,500	2.5 mg/kg
	MO	103	mg/kg	3,500	5.0 mg/kg
	NI	104	mg/kg	2,000	5.0 mg/kg
	PB	898	mg/kg	1,000	7.5 mg/kg
	SB	6.4	mg/kg	500	5.0 mg/kg
	V	58.0	mg/kg	2,400	2.5 mg/kg
	ZN	1,750	mg/kg	5,000	25 mg/kg
438	ATS-20-#200 SOIL			CA TTLC LEVEL	
	AG	ND		500	2.5 mg/kg
	BA	1,470	mg/kg	10,000	25 mg/kg
	BE	ND		75	0.25 mg/kg
	CD	8.6	mg/kg	100	2.5 mg/kg
	CO	50.3	mg/kg	8,000	5.0 mg/kg
	CR	34.9	mg/kg	2,500	2.5 mg/kg
	CU	545	mg/kg	2,500	2.5 mg/kg
	MO	54.7	mg/kg	3,500	5.0 mg/kg
	NI	38	mg/kg	2,000	5.0 mg/kg
	PB	297	mg/kg	1,000	7.5 mg/kg
	SB	12	mg/kg	500	5.0 mg/kg
	V	221	mg/kg	2,400	2.5 mg/kg
	ZN	900	mg/kg	5,000	2.5 mg/kg



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Page 16

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS		DET. LIM.	
---	---	---	---	---	---
440	ATS-22-#200 SOIL	CA TTLC LEVEL			
	AG	3.9	mg/kg	2.5	mg/kg
	BA	6,640	mg/kg	25	mg/kg
	BE	ND		0.25	mg/kg
	CD	16	mg/kg	2.5	mg/kg
	CO	66.0	mg/kg	5.0	mg/kg
	CR	50.4	mg/kg	2.5	mg/kg
	CU	3,590	mg/kg	25	mg/kg
	MO	379	mg/kg	5.0	mg/kg
	NI	47	mg/kg	5.0	mg/kg
	PB	2,410	mg/kg	75	mg/kg
	SB	41	mg/kg	5.0	mg/kg
	V	70.8	mg/kg	2.5	mg/kg
	ZN	5,630	mg/kg	25	mg/kg
443	MB SOIL				
	AG	ND		2.5	mg/kg
	BA	ND		2.5	mg/kg
	BE	ND		0.25	mg/kg
	CD	ND		2.5	mg/kg
	CO	ND		5.0	mg/kg
	CR	ND		2.5	mg/kg
	CU	ND		2.5	mg/kg
	MO	ND		5.0	mg/kg
	NI	ND		5.0	mg/kg
	PB	ND		7.5	mg/kg
	SB	ND		5.0	mg/kg
	V	ND		2.5	mg/kg
	ZN	ND		2.5	mg/kg



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Page 17

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS		SPIKE LEVELS		DET. LIM.
-----	-----	-----	-----	-----	-----	-----
444	MBS SOIL					
	AG	25	mg/kg	25	mg/kg	2.5 mg/kg
	BA	25.1	mg/kg	25.0	mg/kg	2.5 mg/kg
	BE	2.1	mg/kg	2.5	mg/kg	0.25 mg/kg
	CD	25	mg/kg	25	mg/kg	2.5 mg/kg
	CO	25	mg/kg	25	mg/kg	5.0 mg/kg
	CR	24	mg/kg	25	mg/kg	2.5 mg/kg
	CU	25	mg/kg	25	mg/kg	2.5 mg/kg
	MO	47	mg/kg	50	mg/kg	5.0 mg/kg
	NI	27	mg/kg	25	mg/kg	5.0 mg/kg
	PB	45	mg/kg	50	mg/kg	7.5 mg/kg
	SB	41	mg/kg	50	mg/kg	5.0 mg/kg
	V	25.6	mg/kg	25.0	mg/kg	2.5 mg/kg
	ZN	25.4	mg/kg	25.0	mg/kg	2.5 mg/kg
445	MX SOIL					
	AG	ND				2.5 mg/kg
	BA	82.5	mg/kg			2.5 mg/kg
	BE	ND				0.25 mg/kg
	CD	ND				2.5 mg/kg
	CO	15	mg/kg			5.0 mg/kg
	CR	27.7	mg/kg			2.5 mg/kg
	CU	22	mg/kg			2.5 mg/kg
	MO	ND				5.0 mg/kg
	NI	20	mg/kg			5.0 mg/kg
	PB	ND				7.5 mg/kg
	SB	ND				5.0 mg/kg
	V	76.7	mg/kg			2.5 mg/kg
	ZN	64.8	mg/kg			2.5 mg/kg



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Page 18

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS		SPIKE LEVELS		DET. LIM.
-----	-----	-----	-----	-----	-----	-----
446	MS SOIL					
	AG	22	mg/kg	25	mg/kg	2.5 mg/kg
	BA	113	mg/kg	25.0	mg/kg	2.5 mg/kg
	BE	1.4	mg/kg	2.5	mg/kg	0.25 mg/kg
	CD	24	mg/kg	25	mg/kg	2.5 mg/kg
	CO	35	mg/kg	25	mg/kg	5.0 mg/kg
	CR	49.4	mg/kg	25	mg/kg	2.5 mg/kg
	CU	48.3	mg/kg	25	mg/kg	2.5 mg/kg
	MO	48	mg/kg	50	mg/kg	5.0 mg/kg
	NI	42	mg/kg	25	mg/kg	5.0 mg/kg
	PB	49	mg/kg	50	mg/kg	7.5 mg/kg
	SB	ND		50	mg/kg	5.0 mg/kg
	V	100	mg/kg	25.0	mg/kg	2.5 mg/kg
	ZN	92.5	mg/kg	25.0	mg/kg	2.5 mg/kg
447	MSD SOIL					
	AG	22	mg/kg	25	mg/kg	2.5 mg/kg
	BA	113	mg/kg	25.0	mg/kg	2.5 mg/kg
	BE	1.4	mg/kg	2.5	mg/kg	0.25 mg/kg
	CD	23	mg/kg	25	mg/kg	2.5 mg/kg
	CO	36	mg/kg	25	mg/kg	5.0 mg/kg
	CR	48.7	mg/kg	25	mg/kg	2.5 mg/kg
	CU	54.9	mg/kg	25	mg/kg	2.5 mg/kg
	MO	49	mg/kg	50	mg/kg	5.0 mg/kg
	NI	43	mg/kg	25	mg/kg	5.0 mg/kg
	PB	47	mg/kg	50	mg/kg	7.5 mg/kg
	SB	ND		50	mg/kg	5.0 mg/kg
	V	92.6	mg/kg	25.0	mg/kg	2.5 mg/kg
	ZN	94.1	mg/kg	25.0	mg/kg	2.5 mg/kg

ND=Not Detected

NOTE: LOW RECOVERY OF BE AND SB IN MS AND MSD DUE TO MATRIX INTERFERENCE.



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Page 19

LABORATORY RESULTS

Date Collected: 12/13/91
Date Analyzed: 01/16/92

Laboratory Job No.: 920058
Date Received: 01/09/92
Date Reported: 01/20/92

ASSAY:

ARSENIC (EPA 7060), 3050 ACID DIGEST
SELENIUM (EPA 7740), 3050 ACID DIGEST
MERCURY (EPA 7470/7471)
THALLIUM (EPA 7840), 3050 ACID DIGEST

MATRIX: SOIL, ACID DIGEST

LABNO SMPLNO	COMPOUND	FOUND mg/kg	CA TTLC LEV	DET.LIM. mg/kg
399 ATB-1.0#40	AS	29.4	500	12.5
400 ATB-2.0#20	AS	108	500	25
401 ATB-3.0#20	AS	33.5	500	12.5
	SE	ND	100	2.5
	HG	0.2	20	0.2
	TL	ND	700	8
402 ATB-4.0#20	AS	57.6	500	12.5
403 ATB-5.0#20	AS	99	500	25
404 ATB-6.0#20	AS	46.1	500	12.5
405 ATB-7.0#20	AS	19.3	500	2.5
406 ATB-8.0#20	AS	100	500	25
407 ATB-9.0#20	AS	46.8	500	12.5
	SE	ND	100	2.5
	HG	ND	20	0.2
	TL	8	700	8



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Page 20

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO SMPLNO	COMPOUND	FOUND mg/kg	CA TTLC. LEV	DET.LIM. mg/kg
408 ATB-10.0#2	AS	96.5	500	12.5
409 ATB-11.0#2	AS	66.1	500	12.5
410 ATB-12.0#2	AS	21	500	5
411 ATB-13.0#2	AS	505	500	125
412 ATB-14.0#2	AS	454	500	125
413 ATB-15.0#2	AS	383	500	50
	SE	ND	100	2.5
	HG	ND	20	0.2
	TL	12	700	8
414 ATB-16.0#2	AS	495	500	125
415 ATB-17.0#2	AS	745	500	125
416 ATB-18.0#2	AS	436	500	125
417 ATB-19.0#2	AS	670	500	250
	SE	ND	100	2.5
	HG	0.3	20	0.2
	TL	13	700	8
418 ATB-20.0#2	AS	1,190	500	250
419 ATS-1-#200	AS	263	500	50
420 ATS-2-#200	AS	106	500	25
421 ATS-3-#200	AS	116	500	50
	SE	ND	100	2.5
	HG	0.3	20	0.2
	TL	ND	700	8



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Page 21

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO SMPLNO	COMPOUND	FOUND mg/kg	CA TTLC LEV	DET.LIM. mg/kg
422 ATS-4-#200	AS	3,120	500	500
	SE	10.6	100	2.5
	HG	15	20	5
	TL	103	700	8
423 ATS-5-#200	AS	33.2	500	12.5
424 ATS-6-#200	AS	66.3	500	12.5
425 ATS-7-#200	AS	94	500	25
426 ATS-8-#200	AS	344	500	125
427 ATS-9-#200	AS	224	500	50
428 ATS-10-#20	AS	149	500	50
429 ATS-11-#20	AS	455	500	250
	SE	ND	100	2.5
	HG	0.5	20	0.2
	TL	13	700	8
430 ATS-12-#20	AS	765	500	250
	SE	3.8	100	2.5
	HG	0.6	20	0.2
	TL	13	700	8
431 ATS-13-#20	AS	282	500	50
432 ATS-14-#20	AS	418	500	125
433 ATS-15-#20	AS	150	500	50
434 ATS-16-#20	AS	149.6	500	62.5
	SE	ND	100	2.5
	HG	0.4	20	0.2
	TL	8	700	8
435 ATS-17-#20	AS	89	500	25



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Page 22

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO SMPLNO	COMPOUND	FOUND mg/kg	CA TTLC LEV	DET.LIM. mg/kg
436 ATS-18-#20	AS	131	500	50
437 ATS-19-#20	AS	569	500	25
438 ATS-20-#20	AS	68.9	500	12.5
	SE	ND	100	2.5
	HG	ND	20	0.2
	TL	13	700	8
439 ATS-21-#20	AS	2,390	500	500
440 ATS-22-#20	AS	429	500	250
	SE	ND	100	2.5
	HG	0.6	20	0.2
	TL	11	700	8
441 ATS-24-#20	AS	32.9	500	12.5
442 ATS-23-#20	AS	116	500	50
443 MB	AS	ND	500	2.5
	SE	ND	100	2.5
	HG	ND	20	0.2
	TL	ND	700	8
444 MBS	AS	11.8	SPIKE LEVELS 12.5 mg/kg	2.5
	SE	10.9	12.5 mg/kg	2.5
	HG	1.0	1.0 mg/kg	0.2
	TL	238	250 mg/kg	8



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Page 23

LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO SMPLNO	COMPOUND	FOUND mg/kg	CA TTLC LEV	DET.LIM. mg/kg
445 MX	AS	56.7		12.5
	SE	ND		2.5
	HG	5		2
	TL	8		8
446 MS	AS	76.6	SPIKE LEVELS 12.5 mg/kg	12.5
	SE	10.6	12.5 mg/kg	2.5
	HG	16	10.0 mg/kg	2
	TL	258	250 mg/kg	8
447 MSD	AS	77.8	SPIKE LEVELS 12.5 mg/kg	12.5
	SE	10.5	12.5 mg/kg	2.5
	HG	15	10.0 mg/kg	2
	TL	256	250 mg/kg	8
448 MB-2	AS	ND	500	2.5
449 MBS-2	AS	11.5	500	2.5
450 MX-2	AS	263	500	50
451 MS-2	AS	265	500	50
452 MSD-2	AS	261	500	50
453 MB-3	AS	ND	500	2.5
454 MBS-3	AS	11.3	500	2.5
455 MX-3	AS	150	500	50
456 MS-3	AS	206	500	50
457 MSD-3	AS	198	500	50

NOTE: NON-HOMOGENOUS MATRIX MIGHT HAVE BEEN USED FOR SPIKES AND HIGH ARSENIC CONCENTRATIONS GIVE VARIABLE RECOVERIES.



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Page 24

A D D E N D U M

SECOND ROUND

L A B O R A T O R Y R E S U L T S

Date Collected: 12/13/91
Date Analyzed: 02/07/92

Laboratory Job No.: 920058
Date Received: 01/09/92
Date Reported: 01/20/92

ASSAY:METAL SCAN BY ICP(EPA 6010)

LABNO	SMPLNO-ID	RESULTS		DET. LIM.	
-----	-----	-----	-----	-----	-----
412	ATB-14.0#200 SOIL	CA TTLC LEVEL			
	AS	555	mg/kg	500 *	80 mg/kg
	CU	2,670	mg/kg	2,500 *	25 mg/kg
	PB	2,040	mg/kg	1,000 *	15 mg/kg
	ZN	5,890	mg/kg	5,000 *	25 mg/kg
422	ATS-4-#200 SOIL	CA TTLC LEVEL			
	AS	2,430	mg/kg	500 *	40 mg/kg
	CU	934	mg/kg	2,500	2.5 mg/kg
	PB	1,980	mg/kg	1,000 *	75 mg/kg
	ZN	2,080	mg/kg	5,000	25 mg/kg
431	ATS-13-#200 SOIL	CA TTLC LEVEL			
	AS	341	mg/kg	500	80 mg/kg
	CU	2,870	mg/kg	2,500 *	25 mg/kg
	PB	10,800	mg/kg	1,000 *	75 mg/kg
	ZN	7,690	mg/kg	5,000 *	25 mg/kg
434	ATS-16-#200 SOIL	CA TTLC LEVEL			
	AS	138	mg/kg	500	40 mg/kg
	CU	825	mg/kg	2,500	2.5 mg/kg
	PB	914	mg/kg	1,000	7.5 mg/kg
	ZN	1,730	mg/kg	5,000	25 mg/kg
437	ATS-19-#200 SOIL	CA TTLC LEVEL			
	AS	688	mg/kg	500 *	80 mg/kg
	CU	2,140	mg/kg	2,500	5.0 mg/kg
	PB	3,590	mg/kg	1,000 *	75 mg/kg
	ZN	7,190	mg/kg	5,000 *	25 mg/kg



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LABORATORY RESULTS

Laboratory Job No.: 920058

LABNO	SMPLNO-ID	RESULTS	DET. LIM.
-----	-----	-----	-----
438	ATS-20-#200 SOIL	CA TTLC LEVEL	
	AS	53 mg/kg	40 mg/kg
	CU	532 mg/kg	2.5 mg/kg
	PB	306 mg/kg	7.5 mg/kg
	ZN	859 mg/kg	2.5 mg/kg
412	ATB-14.0#200 SOIL SPIKE	SPIKE LEVELS	
	CU	5,000 mg/kg	25 mg/kg
	PB	4,580 mg/kg	75 mg/kg
	ZN	8,990 mg/kg	25 mg/kg
412	ATB-14.0#200 SOIL SPIKE	SPIKE LEVELS	
	AS	967 mg/kg	80 mg/kg
422	ATS-4-#200 SOIL SPIKE	SPIKE LEVELS	
	AS	5,020 mg/kg	400 mg/kg
	PB	4,380 mg/kg	7.5 mg/kg
431	ATS-13-#200 SOIL SPIKE	SPIKE LEVELS	
	CU	5,190 mg/kg	25 mg/kg
431	ATS-13-#200 SOIL SPIKE	SPIKE LEVELS	
	PB	20,600 mg/kg	750 mg/kg
	ZN	17,500 mg/kg	250 mg/kg
437	ATS-19-#200 SOIL SPIKE	SPIKE LEVELS	
	PB	5,930 mg/kg	75 mg/kg
437	ATS-19-#200 SOIL SPIKE	SPIKE LEVELS	
	ZN	16,600 mg/kg	250 mg/kg
437	ATS-19-#200 SOIL SPIKE	SPIKE LEVELS	
	AS	1,120 mg/kg	80 mg/kg

ND=Not Detected

UPRR - SACRAMENTO

JOB NO: 920058

REPORTED DATE: 02/07/92

DATE ANALYZED:02/07/92

METAL SCAN BY ICP (EPA 6010)

LAB NO.	SAMPLE NO.	EARLIER* RESULT mg/kg	02/07/92 RESULT mg/kg	% RECOVERY	RELATIVE % DIFFERENCE
412	ATB-14.0 #200				
	As	454	555	102	20
	Cu	2,630	2,670	103	2
	Pb	2,010	2,040	106	1
	Zn	4,770	5,890	92	21
422	ATS-4 #200				
	As	3,120	2,430	112	25
	Cu	932	934	---	0
	Pb	1,830	1,980	101	8
	Zn	2,000	2,080	---	4
431	ATS-13 #200				
	As	282	341	---	19
	Cu	2,810	2,870	102	2
	Pb	10,500	10,800	100	3
	Zn	7,420	7,690	100	4

UPRR - SACRAMENTO

JOB NO: 920058
REPORTED DATE: 02/07/92

DATE ANALYZED:02/07/92

METAL SCAN BY ICP (EPA 6010)

LAB NO.	SAMPLE NO.	EARLIER* RESULT mg/kg	02/07/92 RESULT mg/kg	% RECOVERY	RELATIVE % DIFFERENCE
412	ATB-14.0 #200				
	As	454	555	102	20
	Cu	2,630	2,670	103	2
	Pb	2,010	2,040	106	1
	Zn	4,770	5,890	92	21
422	ATS-4 #200				
	As	3,120	2,430	112	25
	Cu	932	934	---	0
	Pb	1,830	1,980	101	8
	Zn	2,000	2,080	---	4
431	ATS-13 #200				
	As	282	341	---	19
	Cu	2,810	2,870	102	2
	Pb	10,500	10,800	100	3
	Zn	7,420	7,690	100	4



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UPRR - SACRAMENTO

JOB NO: 920058

REPORTED DATE: 02/07/92

DATE ANALYZED: 02/07/92

METAL SCAN BY ICP (EPA 6010)

LAB NO.	SAMPLE NO.	EARLIER* RESULT mg/kg	02/07/92 RESULT mg/kg	% RECOVERY	RELATIVE % DIFFERENCE
412	ATB-14.0 #200				
	As	454	555	102	20
	Cu	2,630	2,670	103	2
	Pb	2,010	2,040	106	1
	Zn	4,770	5,890	92	21
422	ATS-4 #200				
	As	3,120	2,430	112	25
	Cu	932	934	---	0
	Pb	1,830	1,980	101	8
	Zn	2,000	2,080	---	4
431	ATS-13 #200				
	As	282	341	---	19
	Cu	2,810	2,870	102	2
	Pb	10,500	10,800	100	3
	Zn	7,420	7,690	100	4



METAL SCAN BY ICP (EPA 6010)

LAB NO.	SAMPLE NO.	EARLIER* RESULT mg/kg	02/07/92 RESULT mg/kg	% RECOVERY	RELATIVE % DIFFERENCE
434	ATS-16 #200				
	As	149.6	138	---	8
	Cu	905	825	---	9
	Pb	898	914	---	2
	Zn	1,750	1,730	---	1
437	ATS-19 #200				
	As	1,230	688	86	---
	Cu	2,080	2,140	---	3
	Pb	3,400	3,590	101	5
	Zn	6,450	7,190	101	11
438	ATS-20 #200				
	As	68.9	53	---	26
	Cu	545	532	---	2
	Pb	297	306	---	3
	Zn	900	859	---	3

NOTE: All arsenic results are by graphite furnace for the first analysis, and ICP for the 2nd analysis. This explains the higher Relative Percent Difference for Arsenic.

* Earlier results were analyzed between 1/13/92 and 1/15/92.

CHAIN-OF-CUSTODY RECORD

SAMPLER (Signature)

Phone 916-387-7527

Date Shipped

Airbill No.

Carrier

Cooler No.

SHIP TO:

Enseco-Cal Lab
2544 Industrial Blvd.
West Sacramento, CA 95691
(916) 372-1393

ATTENTION:

~~Tim Parker~~
Beth Kelly

SEND RESULTS TO:

Client Name TIM PARKER
Company DAMES & MOORE
Address 8801 Folsom Blvd Ste 200
SACRAMENTO, CA 95826
Phone 916-387-7527

PROJECT NAME UPRR - SACTO

P.O. NO. +
PROJECT NO. 00173-072-044 P.O. NO.
WZ 7058

Relinquished by: (Signature)

Tim Parker

Received by: (Signature)

Date Time

2/5/92 1410

Relinquished by: (Signature)

Received by: (Signature)

Date Time

Relinquished by: (Signature)

Received at lab by: (Signature)

Date Time

Robert Bonaly

2/5/92 1410

Relinquished from lab by: (Signature)

Received by: (Signature)

Date Time

ANALYSIS REQUEST

Sample ID Number	Sample Description	Date/Time Sampled	Analysis Requested	Sample Condition Upon Receipt
✓ <u>ATS-20-#200</u>	<u>SOIL/SLAG</u>		<u>As/Cu/Pb/Zn-ICP</u>	<u>Good</u>
~~ATS-15-#200~~	~~SOIL/SLAG~~		" " "	
✓ <u>ATS-4-#200</u>	<u>SOIL/SLAG</u>		" " "	
✓ <u>ATS-13-#200</u>	<u>SOIL/SLAG</u>		" " "	
✓ <u>ATS-16-#200</u>	<u>SOIL/SLAG</u>		" " "	
✓ <u>ATS-19-#200</u>	<u>SOIL/SLAG</u>		" " "	
<u>ATB-14-0-#200</u>	" "		" " "	

RETURN SAMPLES TO CLIENT

Special Instructions/Comments: 24-48 HOUR RUSH - PER BETH Kelly
SUSPECTED CONSTITUENTS INCLUDE (IN PPM): As (100-1000),
Ba (100-10,000), Cd (0-100), Cr (0-100), Co (0-50), Cu (100-5,000),
Pb (100-10,000), Hg (0-10), Mo (0-100), Ni (0-200), Se (0-10), Ag (0-5),
Th (0-10), Vn (0-100), Zn (0-10,000), Fe (10,000-100,000), Si (100,000-500,000)

NOTE: UNUSED PORTIONS OF NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

Expected

Analytical

T.A.T's:

Immediate

Attention (200% surcharge)

X 24-48 hrs
RUSH (50-100% surcharge)

Standard

Cal Lab ID Number: (for lab use only)



February 10, 1992
Lab ID: 062634

Tim Parker
Dames & Moore
8801 Folsom Boulevard
Suite 200
Sacramento, CA 95826

Dear Mr. Parker:

Enclosed is the report for the six soil samples for your UPRR-Sacramento Project, under P.O. #00173-072-044 WI 9058, which were received at Enseco-Cal Lab on 5 February 1992.

The report consists of the following sections:

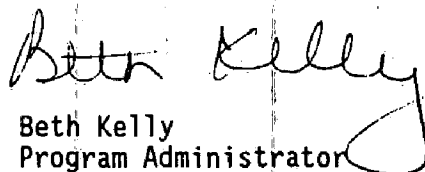
- I Sample Description
- II Analysis Request
- III Quality Control Report
- IV Analysis Results

The results were sent via facsimile 7 February 1992.

The spike level was adjusted higher than our standard level in order to be seen above the level of metals in the samples, per your request.

If you have any questions, please feel free to call.

Sincerely,


Beth Kelly
Program Administrator

ks

I Sample Description

See the attached Sample Description Information.

The samples were received under chain-of-custody.

II Analysis Request

The following analytical test was requested.

<u>Lab ID</u>	<u>Analysis Description</u>
062634-1 thru 6	Arsenic, Copper, Lead, Zinc

III Quality Control

- A. Project Specific QC. As requested, QC matrix spikes were performed using your samples. Results are on the attached Matrix Spike/Spike Duplicate Report.
- B. Method Blank Results. A method blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your samples.

No target parameters were detected in the method blank associated with your samples at the reporting limit levels noted on the attached Method Blank Report.

- C. Laboratory Control Samples - The LCS Program

Duplicate Control Samples. A DCS is a well-characterized matrix (blank water, sand or celite) which is spiked with certain target parameters and analyzed at approximately 10% of the sample load in order to establish method-specific control limits. The DCS results associated with your samples are on the attached Duplicate Control Sample Report.

Accuracy is measured by Percent Recovery as in:

$$\% \text{ recovery} = \frac{(\text{measured concentration})}{(\text{actual concentration})} \times 100$$

Precision is measured using duplicate tests by Relative Percent Difference (RPD) as in:

$$\text{RPD} = \frac{(\% \text{ recovery test 1} - \% \text{ recovery test 2})}{(\% \text{ recovery test 1} + \% \text{ recovery test 2})/2} \times 100$$

Control limits for accuracy (percent recovery) are based on the average, historical percent recovery ± 3 standard deviation units. Control limits for precision (relative percent difference) range from 0 (identical duplicate DCS results) to the average, historical relative percent difference $+ 3$ standard deviation units. In cases where there is not enough historical data, EPA limits or advisory limits are set, with the approval of the Quality Assurance department.

IV Analysis Results

Test methods may include minor modifications of published EPA Methods such as reporting limits or parameter lists. Reporting limits are adjusted to reflect dilution of the sample, when appropriate. Solid and waste samples are reported on an "as received" basis; i.e., no correction is made for moisture content, unless the method requires or the client requests that such correction be made.

Results are on the attached data sheets.

SAMPLE DESCRIPTION INFORMATION
for
Dames & Moore

Lab ID	Client ID	Matrix	Sampled		Received Date
			Date	Time	
062634-0001-SA	ATS-20-#200	SOIL			05 FEB 92
062634-0002-SA	ATS-4-#200	SOIL			05 FEB 92
062634-0002-MS	ATS-4-#200	SOIL			05 FEB 92
062634-0003-SA	ATS-13-#200	SOIL			05 FEB 92
062634-0004-SA	ATS-16-#200	SOIL			05 FEB 92
062634-0005-SA	ATS-19-#200	SOIL			05 FEB 92
062634-0006-SA	ATB-14-0-#200	SOIL	05 FEB 92		05 FEB 92

**MATRIX SPECIFIC QC
ASSIGNMENT REPORT
Metals Analysis and Preparation**

**QC
SAMPLE TYPE**

MATRIX SPIKE

TEST

ICP-SCAN-S

**LABORATORY
SAMPLE NUMBER**

062634-0002-MS

**QC
LOT**

05 FEB 92-N

MATRIX SPIKE REPORT
Metals Analysis and Preparation

Analyte	Sample	Concentration Matrix Spike	Amount Spiked	% Rec
Test: ICP-SCAN-S				
Matrix SOIL				
Sample: 062634-0002				
Units: mg/kg				
Arsenic	2430	3440	1000	NC
Copper	931	1980	1000	105
Lead	1880	2890	1000	102
Zinc	1810	2750	1000	95

All calculations are performed before rounding to avoid round-off errors in calculated results.

QC LOT ASSIGNMENT REPORT
Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
062634-0001-SA	SOIL	ICP-S	05 FEB 92-N	05 FEB 92-N
062634-0002-SA	SOIL	ICP-S	05 FEB 92-N	05 FEB 92-N
062634-0002-MS	SOIL	ICP-S	05 FEB 92-N	05 FEB 92-N
062634-0003-SA	SOIL	ICP-S	05 FEB 92-N	05 FEB 92-N
062634-0004-SA	SOIL	ICP-S	05 FEB 92-N	05 FEB 92-N
062634-0005-SA	SOIL	ICP-S	05 FEB 92-N	05 FEB 92-N
062634-0006-SA	SOIL	ICP-S	05 FEB 92-N	05 FEB 92-N

METHOD BLANK REPORT
Metals Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: ICP-SCAN-S			
Matrix: SOIL			
QC Lot: 05 FEB 92-N QC Run: 05 FEB 92-N			
Arsenic	ND	mg/kg	10.0
Copper	ND	mg/kg	2.0
Lead	ND	mg/kg	5.0
Zinc	ND	mg/kg	2.0

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation

Analyte	Spiked	Concentration		Measured DCS2	AVG	Accuracy Average(%)		Precision (RPD)	
		DCS1				DCS	Limits	DCS	Limit
Category: ICP-S									
Matrix: SOIL									
QC Lot: 05 FEB 92-N									
Concentration Units: mg/kg									
Aluminum	200	193	196	194	97	84-115	1.8	11	
Antimony	50	44.6	45.5	45.1	90	81-115	1.9	10	
Arsenic	50	43.9	45.7	44.8	90	82-115	4.0	10	
Barium	200	195	196	196	98	85-115	0.8	10	
Beryllium	5.0	4.71	4.77	4.74	95	70-110	1.2	10	
Boron	100	90.1	92.0	91.0	91	85-115	2.1	10	
Cadmium	5.0	4.47	4.53	4.50	90	81-118	1.4	15	
Calcium	10000	9780	9900	9840	98	85-115	1.2	10	
Chromium	20	18.9	19.1	19.0	95	84-115	0.9	17	
Cobalt	50	47.1	47.8	47.4	95	80-115	1.5	10	
Copper	25	24.0	24.2	24.1	97	81-115	0.9	10	
Iron	100	95.5	96.7	96.1	96	85-115	1.2	14	
Lead	50	49.0	49.2	49.1	98	80-115	0.4	11	
Lithium	20.0	20.0	20.1	20.0	100	85-115	0.6	10	
Magnesium	5000	5010	5050	5030	101	85-115	0.8	10	
Manganese	50.0	46.6	47.2	46.9	94	80-115	1.2	10	
Molybdenum	20.0	18.9	19.4	19.1	96	85-115	2.8	10	
Nickel	50.0	47.0	46.6	46.8	94	80-115	0.8	10	
Potassium	5000	4890	4890	4890	98	82-115	0.2	10	
Selenium	200.0	188	189	189	94	84-115	0.7	10	
Silver	5.0	4.36	4.63	4.50	90	62-115	5.9	10	
Sodium	10000	9780	9860	9820	98	85-115	0.9	10	
Thallium	200	197	199	198	99	68-110	1.0	10	
Tin	400	358	360	359	90	80-122	0.5	10	
Titanium	200.0	189	191	190	95	85-115	1.0	10	
Vanadium	50.0	47.6	48.2	47.9	96	85-115	1.3	10	
Zinc	50	45.4	45.9	45.7	91	82-115	1.2	10	

Calculations are performed before rounding to avoid round-off errors in calculated results.

ICP Scan**(soil)**

Client Name: Dames & Moore
Client ID: ATS-20-#200
Lab ID: 062634-0001-SA
Matrix: SOIL
Authorized: 05 FEB 92

Sampled: Unknown
Prepared: See Below

Received: 05 FEB 92
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Arsenic	32.5	mg/kg	10.0	6010	05 FEB 92	05 FEB 92 q
Copper	538	mg/kg	2.0	6010	05 FEB 92	05 FEB 92
Lead	337	mg/kg	5.0	6010	05 FEB 92	05 FEB 92
Zinc	898	mg/kg	2.0	6010	05 FEB 92	05 FEB 92

Note q : Arsenic determined by Method 7060 due to matrix interference.

ND = Not detected
NA = Not applicable

Reported By: Evin Mckinney

Approved By: Barry Votaw

The cover letter is an integral part of this report.
Rev 230787

ICP Scan

(soil)

Client Name: Dames & Moore
Client ID: ATS-4-#200
Lab ID: 062634-0002-MS
Matrix: SOIL
Authorized: 05 FEB 92

Sampled: Unknown
Prepared: See Below

Received: 05 FEB 92
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Arsenic	3440	mg/kg	1000	6010	05 FEB 92	05 FEB 92
Copper	1980	mg/kg	1000	6010	05 FEB 92	05 FEB 92
Lead	2890	mg/kg	1000	6010	05 FEB 92	05 FEB 92
Zinc	2750	mg/kg	1000	6010	05 FEB 92	05 FEB 92

ND = Not detected
NA = Not applicable

Reported By: Evin Mckinney

Approved By: Barry Votaw

The cover letter is an integral part of this report.
Rev 230787

ICP Scan**(soil)**

Client Name: Dames & Moore
Client ID: ATS-4-#200
Lab ID: 062634-0002-SA
Matrix: SOIL
Authorized: 05 FEB 92

Sampled: Unknown
Prepared: See Below

Received: 05 FEB 92
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Arsenic	2430	mg/kg	10.0	6010	05 FEB 92	05 FEB 92
Copper	931	mg/kg	2.0	6010	05 FEB 92	05 FEB 92
Lead	1880	mg/kg	5.0	6010	05 FEB 92	05 FEB 92
Zinc	1810	mg/kg	2.0	6010	05 FEB 92	05 FEB 92

ND = Not detected
NA = Not applicable

Reported By: Evin McKinney

Approved By: Barry Votaw

The cover letter is an integral part of this report.
Rev 230787

ICP Scan

(soil)

Client Name: Dames & Moore
Client ID: ATS-13-#200
Lab ID: 062634-0003-SA
Matrix: SOIL
Authorized: 05 FEB 92

Sampled: Unknown
Prepared: See Below

Received: 05 FEB 92
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Arsenic	332	mg/kg	20.0	6010	05 FEB 92	05 FEB 92 Q
Copper	2870	mg/kg	4.0	6010	05 FEB 92	05 FEB 92 Q
Lead	11100	mg/kg	10.0	6010	05 FEB 92	05 FEB 92 Q
Zinc	7010	mg/kg	4.0	6010	05 FEB 92	05 FEB 92 Q

Note Q : Reporting Limit raised due to high level of another
analyte in the sample.

ND = Not detected
NA = Not applicable

Reported By: Evin McKinney

Approved By: Barry Votaw

The cover letter is an integral part of this report.
Rev 230787

ICP Scan

(soil)

Client Name: Dames & Moore
Client ID: ATS-16-#200
Lab ID: 062634-0004-SA
Matrix: SOIL
Authorized: 05 FEB 92

Sampled: Unknown
Prepared: See Below

Received: 05 FEB 92
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Arsenic	90.8	mg/kg	10.0	6010	05 FEB 92	05 FEB 92 q
Copper	805	mg/kg	2.0	6010	05 FEB 92	05 FEB 92
Lead	957	mg/kg	5.0	6010	05 FEB 92	05 FEB 92
Zinc	1600	mg/kg	2.0	6010	05 FEB 92	05 FEB 92

Note q : Arsenic determined by Method 7060 due to matrix interference.

ND = Not detected
NA = Not applicable

Reported By: Evin Mckinney

Approved By: Barry Votaw

The cover letter is an integral part of this report.
Rev 230787

ICP Scan

(soil)

Client Name: Dames & Moore
 Client ID: ATS-19-#200
 Lab ID: 062634-0005-SA
 Matrix: SOIL
 Authorized: 05 FEB 92

Sampled: Unknown
 Prepared: See Below

Received: 05 FEB 92
 Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Arsenic	666	mg/kg	20.0	6010	05 FEB 92	05 FEB 92 Q
Copper	2170	mg/kg	4.0	6010	05 FEB 92	05 FEB 92 Q
Lead	3670	mg/kg	10.0	6010	05 FEB 92	05 FEB 92 Q
Zinc	5390	mg/kg	4.0	6010	05 FEB 92	05 FEB 92 Q

Note Q : Reporting Limit raised due to high level of another analyte in the sample.

ND = Not detected
 NA = Not applicable

Reported By: Evin Mckinney

Approved By: Barry Votaw

The cover letter is an integral part of this report.
 Rev 230787

ICP Scan

(soil)

Client Name: Dames & Moore
 Client ID: ATB-14-0-#200
 Lab ID: 062634-0006-SA
 Matrix: SOIL
 Authorized: 05 FEB 92

Sampled: 05 FEB 92
 Prepared: See Below

Received: 05 FEB 92
 Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Arsenic	550	mg/kg	20.0	6010	05 FEB 92	05 FEB 92 Q
Copper	2700	mg/kg	4.0	6010	05 FEB 92	05 FEB 92 Q
Lead	2280	mg/kg	10.0	6010	05 FEB 92	05 FEB 92 Q
Zinc	5010	mg/kg	4.0	6010	05 FEB 92	05 FEB 92 Q

Note Q : Reporting Limit raised due to high level of another analyte in the sample.

ND = Not detected
 NA = Not applicable

Reported By: Evin McKinney

Approved By: Barry Votaw

The cover letter is an integral part of this report.
 Rev 230787

Telephone: (707) 783-8245 FAX: (707) 783-4085

92-1461

RECEIVED
D & H LABORATORIES

SAMPLE CHAIN OF CUSTODY / WORK ORDER

92 MAY 13 AM 11: 11

Phone (916) 387-7532

Client's Name Dames & Moore

Address 8801 Folsom Blvd. Suite 200

City, State, Zip Sacramento, CA 95826

Client's or Representative's Signature Mark E. ...

(signature authorizes the work and terms listed below)

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fail to pick up samples.

[illegible]

CLIENT COPY



3700 Lakeville Highway, Petaluma, CA 94954
P.O. Box 808024, Petaluma, CA 94975-8024
Telephone: (707) 763-8245
FAX (707) 763-4065

Mark Eisen
Dames & Moore
8801 Folsom Blvd., Suite 200
Sacramento, CA 95826

Client Code: DAMM14
Survey #
UPRR-SACTO. YARD
Project/Release # 00173-072-044

Page 1

LABORATORY RESULTS

Date Collected: 05/03/92
Date Analyzed: 05/22/92

Laboratory Job No.: 921461
Date Received: 05/13/92
Date Reported: 05/27/92

ASSAY:METAL SCAN BY ICP(EPA 6010)

LABNO	SMPLENO-ID	RESULTS	DET.	LIM.
-----	-----	-----	-----	-----
12569	ATS-25-<200 SOIL		CA TTLC LEVEL	
	AS	1,680 mg/kg	500 *	40 mg/kg
	CU	1,050 mg/kg	2,500	2.5 mg/kg
	PB	1,700 mg/kg	1,000 *	75 mg/kg
	ZN	2,050 mg/kg	5,000	25 mg/kg
12570	ATS-26-<200 SOIL		CA TTLC LEVEL	
	AS	1,270 mg/kg	500 *	40 mg/kg
	CU	1,670 mg/kg	2,500	25 mg/kg
	PB	2,330 mg/kg	1,000 *	75 mg/kg
	ZN	5,910 mg/kg	5,000 *	25 mg/kg
12571	ATS-27-<200 SOIL		CA TTLC LEVEL	
	AS	1,770 mg/kg	500 *	40 mg/kg
	CU	704 mg/kg	2,500	2.5 mg/kg
	PB	1,710 mg/kg	1,000 *	75 mg/kg
	ZN	1,500 mg/kg	5,000	25 mg/kg
12572	ATS-25-BULK SOIL		CA TTLC LEVEL	
	AS	358 mg/kg	500	16 mg/kg
	CU	587 mg/kg	2,500	10 mg/kg
	PB	366 mg/kg	1,000	3.1 mg/kg
	ZN	975 mg/kg	5,000	10 mg/kg

THIS REPORT HAS BEEN REVIEWED
AND APPROVED FOR RELEASE.

DLF