March 25, 1996

# SOIL REMEDIATION WORKPLAN

**YOUNG'S CLEANERS**
**FOOTHILL SHOPPING CENTER**
**10700 MACARTHUR BLVD.**
**OAKLAND, CA 94605**

**Prepared For:**

**Jay-Phares Corporation**
**10700 MacArthur Blvd.**
**Oakland, California**

**Prepared By:**

**All Environmental, Inc.**
**2641 Crow Canyon Road**
**San Ramon, CA 94583**

ALL ENVIRONMENTAL, INC.
*Environmental Engineering & Construction*

March 25, 1996

Mr. Barney Chan
Alameda County Health Care Services Agency
Department of Environmental Health
Division of Hazardous Materials
80 Swan Way, Room 200
Oakland, CA 94621

Subject: Remediation of Excavated Soil
Foothill Square Shopping Center
10700 MacArthur Blvd.
Oakland, California

Dear Mr. Chan:

Enclosed is the proposed Soil Remediation Workplan for 2,400 yards of contaminated soil currently stockpiled on the subject site. If you have any question please feel free to contact the either of the undersigned.

Sincerely,

Joseph P. Derhake, CAC, EIT
Project Manager

Madhusudan C. Patel, PE
Senior Engineer

CC: John Jay, Jay-Phares Corporation
Richard Gilcrease, Drake Builders

(310) 798-4255

Corporate Headquarters:
2641 Crow Canyon Rd., #5
San Ramon, CA 94583
(510) 820-3224

Los Angeles Office:
5031 Pacific Coast Hwy., #178
Torrance, CA 90505
(310) 328-8879

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## 1.0 Introduction

This report is prepared on behalf of Jay-Phares Corporation as the management agent of Foothill Square Shopping Center, 10700 MacArthur Blvd., Oakland, California. It sets forth a workplan for the remediation of approximately 2,400 cubic yards of contaminated soil excavated from beneath and in the vicinity of the former Young's Cleaners previously located in Space #9 of Foothill Square Shopping Center.

Technical decisions made for this workplan were based on data included in AEI's Soil Remedial Investigation and Excavation Project Summary, dated February 7, 1996 and PES Environmental's Screening Level Risk Evaluation, dated February 15, 1996.

The contaminated soil had elevated levels of tetrachloroethene, trichloroethene, 1,1 dichloroethene, and 1,2 dichloroethene, as documented by the 82 soil samples collected during the excavation. This soil is now stockpiled on approximately an one acre portion of Foothill Square in the extreme southeast corner of the property. All soil has been placed on a six mil plastic overlapping sheets. Hay bales have been placed around the stockpile to inhibit water or soil run off during the rainy season. The entire perimeter has been enclosed by a six foot chain link fence.

AEI recommends treating the 2,400 cubic yards of excavated soil through on-site aeration. Upon attainment of the contamination reduction goals recommended herein, the soil will be eligible for reuse on-site. AEI believes that the soil contamination can be reduce to the target cleanup levels proposed in Section 3 relatively easily. Soil with solvent concentrations at levels below the target cleanup levels will not present any risk to public health or the environment, as long as the guidelines for reuse set forth in Section 5 are followed.

Throughout the aeration process, the general public and Foothill Square employees will be protected from exposure to toxic vapors by application of engineering controls and an air monitoring program designed to alert the contractors of any potential problems. The monitoring program and the engineering controls are described in Section 4.2.2 of this document.

This workplan is being submitted to Alameda County Health Care Services Agency (ACHCSA) for their formal concurrence with the recommended remediation procedures and the eventual re-use of the soil on-site.

## 2.0 Site History

Approximately, the western half of Foothill Square Shopping Center was originally developed with a truck manufacturing facility in the 1920's. The eastern half of the shopping center was an open field prior to the 1960's.

In the 1960's the factory was removed and the entire site was developed with Foothill Square Shopping Center. A coin operated dry cleaners, Norge Cleaners, operated within the shopping center (space #9) during the 1960's and early 1970's. During the 1970's the dry cleaners was operated by two small independent businessmen. Beginning in 1984 Young's Cleaners operated a dry cleaners in this space. In September of 1995 Young's Cleaners vacated the space and moved across the central plaza to a different space within the Foothill Shopping Center.

In 1989, Western Geologic Resources installed several monitoring wells on-site and discovered the presence of chlorinated solvents in the groundwater. The suspected source of the solvents was the dry cleaning operations. Several subsurface investigations were subsequently performed by Augeas Corporation (Augeas) to evaluate the extent of the chlorinated solvent release. In December of 1994, Augeas submitted a workplan for the excavation of the contaminated soil under the former location of Young's Dry Cleaners.

AEI was contracted to execute this workplan in the fall of 1995 and complete the excavation in December of 1995. Figure 1 illustrates the areas excavated. The soil is now stockpiled in the southeast corner of the shopping center (see Figure 2).

PES Environmental recently performed a Screening Level Risk Evaluation for the portion of the subject site surrounding the former dry cleaners. This study evaluated the potential risk to building occupants, which would result from low levels of solvents left in place under the building. PES's evaluation found no significant risk to building occupants from the residual soil concentrations. It is AEI's understanding that this evaluation was recently approved by the ACHCSA.

The portion of the site, where the soil has been stockpiled and the aeration cells are proposed was formally a USA Petroleum Service Station, which sold gasoline and diesel fuel. In 1995 the underground storage tanks were removed and soil significantly contaminated with gasoline and diesel fuel was overexcavated. The excavation was backfilled with clean fill material. Seven groundwater monitoring wells have subsequently been installed in and around the former service station site. Except in the excavated areas the entire site is covered with concrete and asphaultic surfaces. All structures associated with the service station operation have been demolished and the debris removed.

The contaminated soil stockpile was characterized in February of 1996 by collecting ten soil samples from random locations and analyzing the soil samples for chlorinated volatile organic hydrocarbons by EPA Method 8010. The stockpile was found to have a mean tetrachloroethene concentration of 110 parts per billion with a standard deviation of 130 parts per billion. This data will serve as the baseline soil profile prior to remediation.

## 3.0 Objectives

The objective of the course of action recommended in this workplan is to treat the soil so that it will be eligible for on-site reuse. Jay-Phares Corporation indicated the remediated soil will likely be used as fill soil to raise depressions in the parking lot. AEI believes that any residual solvent concentrations present in the remediated soil will not represent a substantial threat to the water quality of the area or the tenants and patrons of the shopping center.

The proposed Target Cleanup Levels have been developed using the EPA Region IX Preliminary Remediation Goals (PRG) for soil (Second Half of 1995). In order to provide a factor of safety, AEI proposes to remediate the soil stockpiled on-site until its levels are two orders of magnitude below the PRGs for soil at residential properties.

The following table shows the proposed Target Cleanup Levels next to the PRG for each chemical.

| Compound | Target Cleanup Level | Residential PRGs |
|---|---|---|
| Tetrachloroethene | 70 ug/Kg | 7,000 ug/Kg |
| Trichloroethene | 71 ug/Kg | 7,100 ug/Kg |
| 1,2 Dichloroethene | 590 ug/Kg | 59,000 ug/Kg* |
| 1,1 Dichloroethene | <5 ug/Kg ** | 38 ug/Kg |

Do a wet test on cleaned soil

* *The PRG for Cis 1,2 Dichloroethene was used, in order to be conservative because the PRG for Trans 1,2 Dichloroethene is greater. The Target Cleanup Level for 1, 2 Dichloroethene will apply to mixtures of Cis and Trans 1,2 Dichloroethene.*

** *5 ug/Kg is the method detection limit.*

The Target Cleanup Levels are generally an order of magnitude lower than concentrations in soil which were left unexcavated. The health risks associated with the levels, which were left in place, were evaluated by PES Environmental in February of 1996, and were not found to represent a significant health risk to building occupants. AEI understands that PES Environmental's risk evaluation was subsequently approved by ACHCSA.

Risks to human health from subsurface contaminants depend not only on contaminant concentrations in the soil, but also on the availability of an exposure pathway, the building's physical characteristics, and air circulation within the building. From the standpoint of risk to human health, use of the soil under an asphalt pad in an open air environment is a far more conservative use than the situation modeled by PES for soil under a building. AEI believes that the remediated soil will not present any significant risk to human health once it has been remediated and placed.

# 4.0 Remedial Method

## *4.1 Feasibility of On-Site Aeration*

AEI recommends treating the soil on-site through on-site aeration. The soil has characteristics suitable for on-site aeration, as all of the four contaminants present are volatile hydrocarbons.

The Bay Area Air Quality Management District (BAAQMD) defines a "contaminated soil" as soil with hydrocarbon concentrations above 50 parts per million (Regulation 8, Rule 40). Since the stockpile has a mean soil concentration of 0.1 parts per million, the BAAQMD does not regulate the aeration of soil with these concentrations.

## *4.2 On-site Aeration Procedure*

The aeration will consist of the following seven tasks: 1) baseline sampling, 2) air monitoring and engineering controls; 3) construction of the aeration cell, 4) spreading the soil within the aeration cell, 5) tilling the soil, 6) measuring contamination reduction, and 7) confirmation sampling.

AEI does not anticipate vapor concentration in the air around the perimeter of the stockpiled soil to reach levels which will endanger the public health. Nevertheless, within this workplan, AEI sets forth an air monitoring program, which will monitor the vapor levels around the perimeter of the aeration cell. If vapor levels are higher than expected, AEI will discontinue aeration and implement changes in the remedial methods.

What cone ? + how monitored

While AEI does not anticipate any significant surfacial runoff from the aeration cell during the aeration process, if a significant amount of runoff does occur, storm water runoff samples will be collected and risks to human health will be evaluated.

← Runoff of any contaminant S/B exceeded

### 4.2.1 Baseline Sampling

Baseline sampling has already been performed in order to establish the concentrations of solvents in the stockpile at the beginning of the project. Ten soil samples were collected from between one and two feet below the surface of the stockpile at random locations throughout the stockpiled soil. The samples were sent to American Analytics Laboratory for analysis by EPA Method 8010. The results were as follows:

**Baseline Sampling Results**

| Analyte \ Sample # (micrograms per Kilogram) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Mean |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Tetrachloroethene | 88 | 110 | 18 | 40 | 31 | 380 | 14 | 180 | 270 | <5* | 110 |
| Trichloroethene | <5 | 11 | <5 | <5 | <5 | 38 | <5 | <5 | 29 | <5 | 10 |
| 1,1 Dichloroethene | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | NA |
| 1,2 Dichloroethene | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | NA |

* *Results below the detection limit were given a value of 2.5 ug/Kg for the purposes of statistical analysis.*

The baseline sampling data shows that Tetrachloroethene is the primary chemical of concern. The concentrations for Tetrachloroethene in the above data set has an empirical mean of 110 ug/Kg and a standard deviation of 126 ug/Kg. The 90 percent confidence interval, which contains the actual mean tetrachloroethene concentration in soil, is 189 ug/Kg to 36 ug/Kg.

### 4.2.2 Air Monitoring Program and Engineering Controls

In order to protect the general public and the operators from exposure to solvents, AEI proposes the following air monitoring program. The air will be monitored during times maximum exposure, specifically during soil placement, soil tilling, and hot dry weather. Once a president is established, the frequency of the air monitoring events will be determined.

Real time air data will be collected using a Flame Ionization Detector (FID) and it will be compared to the OSHA Permissible Exposure Limits (for workers exposed over an 8 hour period--time weighted average). These levels are shown below for the chemicals present in the soil.

| Compound | OSHA PEL |
|---|---|
| **Tetrachloroethene** | 25 PPM |
| **Trichloroethene** | 50 PPM |
| **1,2 Dichloroethene** | 200 PPM |
| **1,1 Dichloroethene** | NA * |

* *OSHA has not published a PEL for 1,1 Dichloroethene. Based on sample results from the baseline sampling, concentrations of 1,1 Dichloroethene are insignificant compared with the other three chemicals.*

In order to be conservative, sustained vapor readings in excess of 2.5 ppm (one order of magnitude below the PEL for tetrachloroethene) along the fence perimeter will trigger a method change. Likewise if vapor levels in excess of 2.5 ppm are measured in the breathing zone of the operator, the operator will be required to where a negative pressure air purifying respirator.

The following engineering controls will be applied to prevent exposure to the general public. Hay bales will be used to berm the soil to prevent runoff. In the event runoff does occur, the berm will be fixed to prevent further runoff. Based on the solvent concentrations in the stockpile, storm water runoff of water from the soil stockpile is not likely to have significant concentrations of solvents; therefore there would not likely be any risk to the general public in a open air environment. However, if runoff proves to be a problem the storm water will be sampled, the risk to human health will be evaluated, and reporting requirements will be fulfilled. > no!

The fence surrounding the aeration cell will be sufficient to restrict access and warning signs will be posted. The fence will be located ten feet from the aeration cell, in order to provide a buffer zone between the aerating soil and the general public. The buffer zone will provide considerable dilution of vapor concentrations in the air resulting from the aerating soil.

All air monitoring and soil sampling data will be made available to interested parties upon request.

### 4.2.3 Construction of Aeration Cell

The aeration cell will consist of a six mill plastic bottom to prevent vertical contaminant migration. Hay bales will be used to line the perimeter, preventing water from flowing in or out of the aeration cell. All soil will be aerated simultaneously.

10700

### 4.2.4 Spreading of Soil

Soil stockpiled on-site will be spread out over the aeration cells to a thickness of 18". Significant soil aeration is are likely to occur during the movement of the stockpiled soil; thus, the operator will be wearing the appropriate respiratory protective equipment. Vapor levels along the perimeter of the construction cell will be monitored during soil spreading, as described in Section 4.2.2.

### 4.2.5 Soil Tilling

Soil tilling will be performed to expedite the aeration process. Soil tilling will consist of dicing the soil and/or turning the soil with the appropriate equipment. During tilling events the air monitoring described above will be implemented for the perimeter and on-site personnel. Professional judgment will be used in evaluating the data collected, to determine the necessity of vapor level monitoring throughout the entire project.

### 4.2.6 Progress Evaluation

Soil samples will be collected in order to evaluate progress and eventually to signal completion of the project. In order to minimize laboratory expenses, a FID will be used to screen the soil samples in the field and only a small percentage of the samples will be analyzed in the laboratory. A total of twenty soil samples will be collected from random locations and these samples will be field screened using a FID. The four soil samples with the highest FID readings will be sent to the laboratory for analysis by EPA Method 8010.

### 4.2.7 Confirmation Sampling

Once the progress evaluations have shown that the contaminant levels have dropped below the target cleanup level, AEI will conduct confirmation sampling by the same protocol used for the baseline sampling. The goal of the confirmation sampling is to show that all significant quantities of soil have solvent concentrations below the target cleanup levels. Based on the statistical variance of the data collected, a 90 percent confidence interval will be achieved. More than ten soil samples may be necessary to achieve the desired confidence interval.

# of samples s/b verified to a 90% confidence interval via SW846.

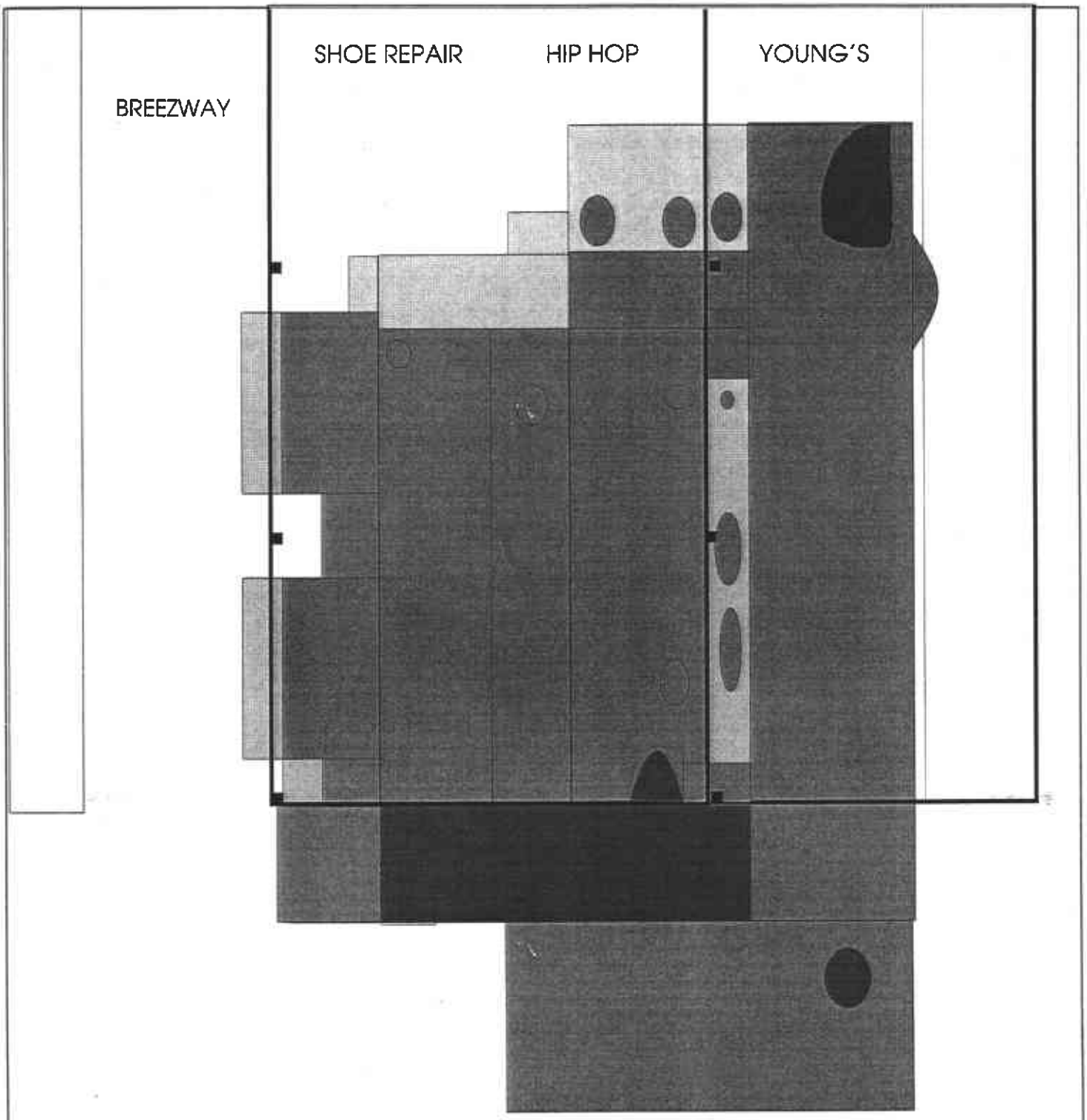
## 5.0 Soil Reuse

Once the soil is remediated to the conservative levels proposed herein, the soil should be considered "clean". However as a final precaution, when the soil is reused as fill material, it will be placed after regrading under gravel and asphalt, in all probability no less than 6" to 8" thick.

This layer of gravel and asphalt will act as a barrier ensuring no public contact with the soil and further protecting the public from any health risks. As a result, once the soil is remediated and placed, the soil will not present any significant risk to public health, nor given the low contaminant levels remaining, if any, create any measurable impact on the groundwater quality of the area.

To ensure proper methodologies are utilized in the reuse of the soil, ACHCSA will be notified in writing prior to placing the soil.

If the soil is not needed on-site, it may be disposed of at a local landfill at Jay-Phares's discretion. In which case, the soil will be manifested and the ACHCSA will be notified.




0 10

Scale, feet

N

EXCAVATED TO 5'-7' bgs

EXCAVATED TO 8'-13' bgs

EXCAVATED TO 14'-18' bgs

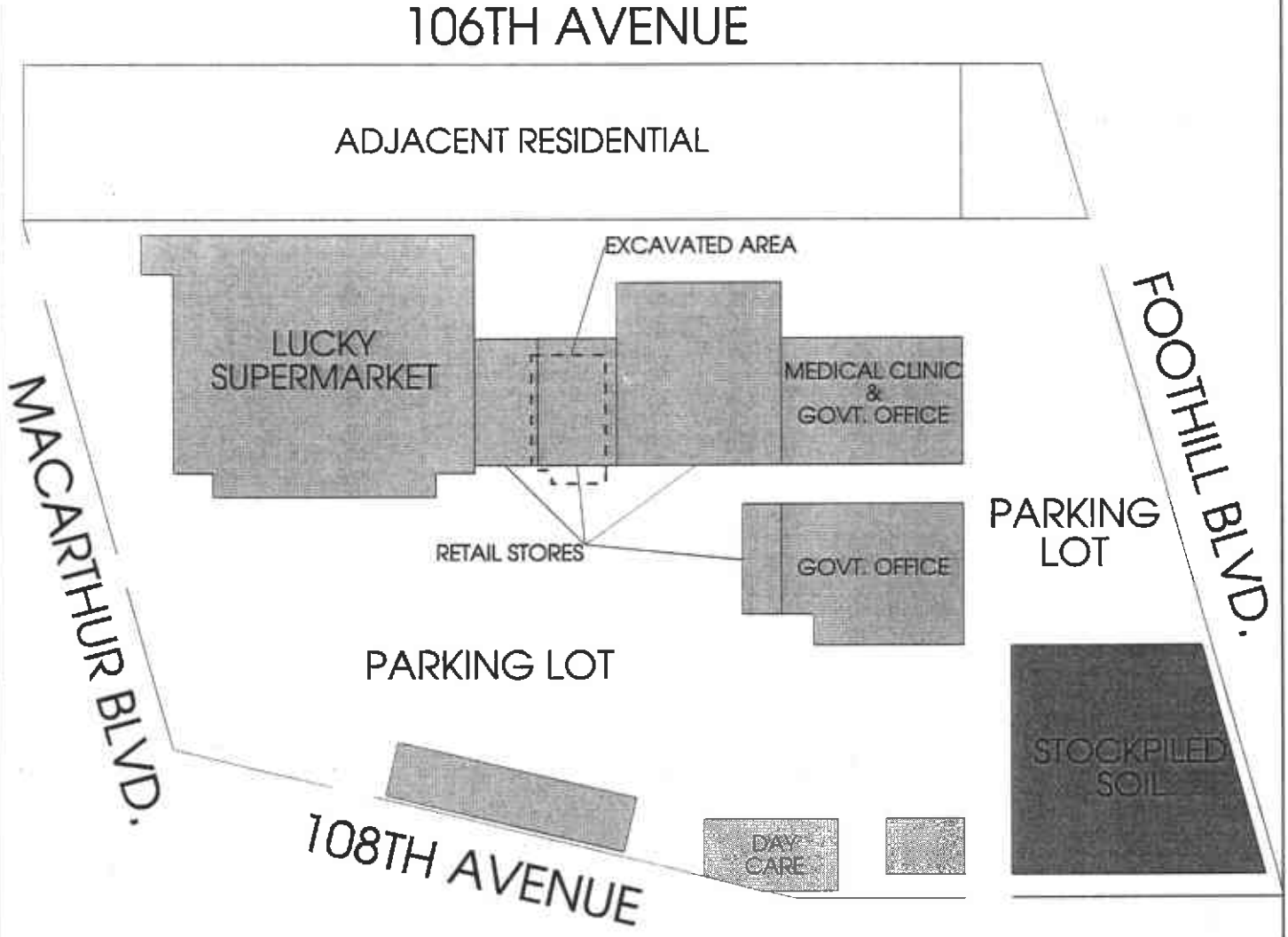
**ALL ENVIRONMENTAL, INC.**

2641 CROW CANYON ROAD, SAN RAMON

| | | |
|---|---|---|
| SCALE: 2 cm = 10 feet | APPROVED BY: JPD | DRAWN BY: B. CAMPBELL |
| DATE: 7 MARCH 1996 | | REVISED: |

# THE AREA OF EXCAVATION

| | |
|---|---|
| Young's Cleaners Soil Remediation | DRAWING NUMBER: FIGURE 1 |




**ALL ENVIRONMENTAL, INC.**
2641 CROW CANYON ROAD, SAN RAMON

| | | |
|---|---|---|
| SCALE: NOT TO SCALE | APPROVED BY: JPD | DRAWN BY: B. CAMPBELL |
| DATE: 7 MARCH 1996 | | REVISED: |

# THE GENERAL SITE PLAN

| | |
|---|---|
| Young's Cleaners Soil Remediation | DRAWING NUMBER: FIGURE 2 |

# APPENDIX A

# BASELINE SAMPLING LABORATORY RESULTS

AMERICAN ANALYTICS

## LABORATORY ANALYSIS RESULTS



**Client:** All Environmental, Inc.
**Project No.:** 1290
**Project Name:** Foothill Sguare
**Sample Matrix:** Soil
**Method:** EPA 8010

**AA Project No.:** A25902
**Date Received:** 02/29/96
**Date Reported:** 03/06/96
**Units:** ug/Kg

| Date Sampled: | 02/29/96 | 02/29/96 | 02/29/96 | 02/29/96 | |
|---|---|---|---|---|---|
| Date Analyzed: | 03/01/96 | 03/01/96 | 03/01/96 | 03/01/96 | |
| AA ID No.: | 43616 | 43617 | 43618 | 43619 | |
| Client ID No.: | 1 | 3 | 4 | 6 | MRL |
| **Compounds:** | | | | | |
| Bromodichloromethane | <5 | <5 | <5 | <5 | 5 |
| Bromoform | <5 | <5 | <5 | <5 | 5 |
| Bromomethane | <5 | <5 | <5 | <5 | 5 |
| Carbon tetrachloride | <5 | <5 | <5 | <5 | 5 |
| Chlorobenzene | <5 | <5 | <5 | <5 | 5 |
| Chloroethane | <5 | <5 | <5 | <5 | 5 |
| Chloroform | <5 | <5 | <5 | <5 | 5 |
| Chloromethane | <5 | <5 | <5 | <5 | 5 |
| Dibromochloromethane | <5 | <5 | <5 | <5 | 5 |
| 1,2-Dichlorobenzene | <5 | <5 | <5 | <5 | 5 |
| 1,3-Dichlorobenzene | <5 | <5 | <5 | <5 | 5 |
| 1,4-Dichlorobenzene | <5 | <5 | <5 | <5 | 5 |
| Dichlorodifluoromethane | <5 | <5 | <5 | <5 | 5 |
| 1,1-Dichloroethane | <5 | <5 | <5 | <5 | 5 |
| 1,2-Dichloroethane | <5 | <5 | <5 | <5 | 5 |
| 1,2-Dichloroethene-(trans) | <5 | <5 | <5 | <5 | 5 |
| 1,1-Dichloroethene | <5 | <5 | <5 | <5 | 5 |
| 1,2-Dichloropropane | <5 | <5 | <5 | <5 | 5 |
| 1,3-Dichloropropene-(cis) | <5 | <5 | <5 | <5 | 5 |
| 1,3-Dichloropropene-(trans) | <5 | <5 | <5 | <5 | 5 |
| Methylene chloride | <50 | <50 | <50 | <50 | 50 |
| 1,1,2,2-Tetrachloroethane | <5 | <5 | <5 | <5 | 5 |
| Tetrachloroethene | 88 | 110 | 18 | 40 | 5 |
| 1,1,1-Trichloroethane | <5 | <5 | <5 | <5 | 5 |
| 1,1,2-Trichloroethane | <5 | <5 | <5 | <5 | 5 |

**George Havalias**
**Laboratory Director**

AMERICAN ANALYTICS

## LABORATORY ANALYSIS RESULTS



**Client:** All Environmental, Inc.
**Project No.:** 1290
**Project Name:** Foothill Sguare
**Sample Matrix:** Soil
**Method:** EPA 8010

**AA Project No.:** A25902
**Date Received:** 02/29/96
**Date Reported:** 03/06/96
**Units:** ug/Kg

| Date Sampled: | 02/29/96 | 02/29/96 | 02/29/96 | 02/29/96 | |
|---|---|---|---|---|---|
| Date Analyzed: | 03/01/96 | 03/01/96 | 03/01/96 | 03/01/96 | |
| AA ID No.: | 43616 | 43617 | 43618 | 43619 | |
| Client ID No.: | 1 | 3 | 4 | 6 | MRL |
| **Compounds:** | | | | | |
| Trichloroethene | <5 | 11 | <5 | <5 | 5 |
| Trichlorofluoromethane | <5 | <5 | <5 | <5 | 5 |
| Vinyl chloride | <5 | <5 | <5 | <5 | 5 |

George Havalias
Laboratory Director

AMERICAN ANALYTICS

## LABORATORY ANALYSIS RESULTS



**Client:** All Environmental, Inc.
**Project No.:** 1290
**Project Name:** Foothill Sguare
**Sample Matrix:** Soil
**Method:** EPA 8010

**AA Project No.:** A25902
**Date Received:** 02/29/96
**Date Reported:** 03/06/96
**Units:** ug/Kg

| Date Sampled: | 02/29/96 | 02/29/96 | 02/29/96 | 02/29/96 | |
|---|---|---|---|---|---|
| Date Analyzed: | 03/01/96 | 03/01/96 | 03/01/96 | 03/01/96 | |
| AA ID No.: | 43620 | 43621 | 43622 | 43623 | |
| Client ID No.: | 7 | 8 | 11 | 12 | MRL |
| **Compounds:** | | | | | |
| Bromodichloromethane | <5 | <5 | <5 | <5 | 5 |
| Bromoform | <5 | <5 | <5 | <5 | 5 |
| Bromomethane | <5 | <5 | <5 | <5 | 5 |
| Carbon tetrachloride | <5 | <5 | <5 | <5 | 5 |
| Chlorobenzene | <5 | <5 | <5 | <5 | 5 |
| Chloroethane | <5 | <5 | <5 | <5 | 5 |
| Chloroform | <5 | <5 | <5 | <5 | 5 |
| Chloromethane | <5 | <5 | <5 | <5 | 5 |
| Dibromochloromethane | <5 | <5 | <5 | <5 | 5 |
| 1,2-Dichlorobenzene | <5 | <5 | <5 | <5 | 5 |
| 1,3-Dichlorobenzene | <5 | <5 | <5 | <5 | 5 |
| 1,4-Dichlorobenzene | <5 | <5 | <5 | <5 | 5 |
| Dichlorodifluoromethane | <5 | <5 | <5 | <5 | 5 |
| 1,1-Dichloroethane | <5 | <5 | <5 | <5 | 5 |
| 1,2-Dichloroethane | <5 | <5 | <5 | <5 | 5 |
| 1,2-Dichloroethene-(trans) | <5 | <5 | <5 | <5 | 5 |
| 1,1-Dichloroethene | <5 | <5 | <5 | <5 | 5 |
| 1,2-Dichloropropane | <5 | <5 | <5 | <5 | 5 |
| 1,3-Dichloropropene-(cis) | <5 | <5 | <5 | <5 | 5 |
| 1,3-Dichloropropene-(trans) | <5 | <5 | <5 | <5 | 5 |
| Methylene chloride | <50 | <50 | <50 | <50 | 50 |
| 1,1,2,2-Tetrachloroethane | <5 | <5 | <5 | <5 | 5 |
| Tetrachloroethene | 31 | 380 | 14 | 180 | 5 |
| 1,1,1-Trichloroethane | <5 | <5 | <5 | <5 | 5 |
| 1,1,2-Trichloroethane | <5 | <5 | <5 | <5 | 5 |

**George Havalias**
**Laboratory Director**

AMERICAN ANALYTICS

## LABORATORY ANALYSIS RESULTS



**Client:** All Environmental, Inc.
**Project No.:** 1290
**Project Name:** Foothill Sguare
**Sample Matrix:** Soil
**Method:** EPA 8010

**AA Project No.:** A25902
**Date Received:** 02/29/96
**Date Reported:** 03/06/96
**Units:** ug/Kg

| Date Sampled: | 02/29/96 | 02/29/96 | 02/29/96 | 02/29/96 | |
|---|---|---|---|---|---|
| Date Analyzed: | 03/01/96 | 03/01/96 | 03/01/96 | 03/01/96 | |
| AA ID No.: | 43620 | 43621 | 43622 | 43623 | |
| Client ID No.: | 7 | 8 | 11 | 12 | MRL |
| **Compounds:** | | | | | |
| Trichloroethene | <5 | 38 | <5 | <5 | 5 |
| Trichlorofluoromethane | <5 | <5 | <5 | <5 | 5 |
| Vinyl chloride | <5 | <5 | <5 | <5 | 5 |

George Havalias
Laboratory Director

AMERICAN ANALYTICS

## LABORATORY ANALYSIS RESULTS



**Client:** All Environmental, Inc.
**Project No.:** 1290
**Project Name:** Foothill Sguare
**Sample Matrix:** Soil
**Method:** EPA 8010

**AA Project No.:** A25902
**Date Received:** 02/29/96
**Date Reported:** 03/06/96
**Units:** ug/Kg

| **Date Sampled:** | **02/29/96** | **02/29/96** | |
|---|---|---|---|
| **Date Analyzed:** | **03/01/96** | **03/01/96** | |
| **AA ID No.:** | **43624** | **43625** | |
| **Client ID No.:** | **13** | **15** | **MRL** |
| **Compounds:** | | | |
| Bromodichloromethane | <5 | <5 | 5 |
| Bromoform | <5 | <5 | 5 |
| Bromomethane | <5 | <5 | 5 |
| Carbon tetrachloride | <5 | <5 | 5 |
| Chlorobenzene | <5 | <5 | 5 |
| Chloroethane | <5 | <5 | 5 |
| Chloroform | <5 | <5 | 5 |
| Chloromethane | <5 | <5 | 5 |
| Dibromochloromethane | <5 | <5 | 5 |
| 1,2-Dichlorobenzene | <5 | <5 | 5 |
| 1,3-Dichlorobenzene | <5 | <5 | 5 |
| 1,4-Dichlorobenzene | <5 | <5 | 5 |
| Dichlorodifluoromethane | <5 | <5 | 5 |
| 1,1-Dichloroethane | <5 | <5 | 5 |
| 1,2-Dichloroethane | <5 | <5 | 5 |
| 1,2-Dichloroethene-(trans) | <5 | <5 | 5 |
| 1,1-Dichloroethene | <5 | <5 | 5 |
| 1,2-Dichloropropane | <5 | <5 | 5 |
| 1,3-Dichloropropene-(cis) | <5 | <5 | 5 |
| 1,3-Dichloropropene-(trans) | <5 | <5 | 5 |
| Methylene chloride | <50 | <50 | 50 |
| 1,1,2,2-Tetrachloroethane | <5 | <5 | 5 |
| Tetrachloroethene | 270 | <5 | 5 |
| 1,1,1-Trichloroethane | <5 | <5 | 5 |
| 1,1,2-Trichloroethane | <5 | <5 | 5 |

**George Havalias**
**Laboratory Director**

AMERICAN ANALYTICS

## LABORATORY ANALYSIS RESULTS



**Client:** All Environmental, Inc.
**Project No.:** 1290
**Project Name:** Foothill Sguare
**Sample Matrix:** Soil
**Method:** EPA 8010

**AA Project No.:** A25902
**Date Received:** 02/29/96
**Date Reported:** 03/06/96
**Units:** ug/Kg

| **Date Sampled:** | **02/29/96** | **02/29/96** | |
|---|---|---|---|
| **Date Analyzed:** | **03/01/96** | **03/01/96** | |
| **AA ID No.:** | **43624** | **43625** | |
| **Client ID No.:** | **13** | **15** | **MRL** |
| **Compounds:** | | | |
| Trichloroethene | 29 | <5 | 5 |
| Trichlorofluoromethane | <5 | <5 | 5 |
| Vinyl chloride | <5 | <5 | 5 |

MRL: Method Reporting Limit

**George Havalias**
**Laboratory Director**

AMERICAN ANALYTICS

## LABORATORY QA/QC REPORT



**Client:** All Environmental, Inc.
**Project Name:** Foothill Sguare
**Method:** EPA 8010
**Sample ID:** Matrix Spike
**Concentration:** 40 ug/Kg

**AA ID No.:** 43625
**Project No.:** 1290
**AA Project No.:** A25902
**Date Analyzed:** 03/01/96
**Date Reported:** 03/06/96

| Compounds | Result (ug/Kg) | Spike Recovery (%) | Dup. Result (ug/Kg) | Spike/Dup. Recovery (%) | RPD (%) | Accept.Rec. Range (%) |
|---|---|---|---|---|---|---|
| Chlorobenzene | 38.58 | 96 | 40.86 | 102 | 6 | 38 - 150 |
| Chloroform | 37.68 | 94 | 38.36 | 96 | 2 | 49 - 133 |
| 1,3-Dichlorobenzene | 36.80 | 92 | 40.18 | 100 | 8 | 7 - 187 |
| Methylene chloride | 42.08 | 105 | 42.92 | 107 | 2 | 25 - 162 |
| Tetrachloroethene | 42.50 | 106 | 46.24 | 116 | 9 | 26 - 162 |
| Trichloroethene | 35.64 | 89 | 37.08 | 93 | 4 | 35 - 146 |

George Havalias
Laboratory Director

# Chain of Custody

**ALL ENVIRONMENTAL, INC.**
2641 Crow Canyon Road, Ste. 5
San Ramon, CA 94583
(510) 820-3224 FAX: (510) 838-2687

DATE: 2/29/96 PAGE: 1 OF: 1

AEI PROJECT MANAGER: Joe Derhake, Bryan Campbell
PROJECT NAME: Foothill Square
PROJECT NUMBER: 1290
SIGNATURE:
TOTAL # OF CONTAINERS: 10
RECD. GOOD COND./COLD:

## ANALYSIS REQUEST

| SAMPLE I.D. | DATE | TIME | MATRIX | TPH-Gasoline (EPA 5030.8015) | TPH-Gasoline (EPA 5030.8015) w/ BTEX (EPA 602.8020) | TPH-Diesel (EPA 3510/3550.8015) | PURGEABLE AROMATICS BTEX (EPA 602.8020) | TOTAL OIL & GREASE (EPA 5520 E&F) | TOTAL LEAD (AA) (EPA 7420) | VOLATILE ORGANIC COMPOUNDS (EPA 8240) | LUFT Metals (EPA 7130,7190,7420,7520,7950) | STLC CAM 17 (EPA 1310/6010) | RCI REACTIVITY, CORROSIVITY, IGNITABILITY (Title 22, CCR 66261.21-3) | EPA 8010 | | | NUMBER OF CONTAINERS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2/29 | 3:30 | Soil | 43616 | | | | | | | | | | X | | | |
| 3 | | | | 43617 | | | | | | | | | | | | | |
| 4 | | | | 43618 | | | | | | | | | | | | | |
| 6 | | | | 43619 | | | | | | | | | | | | | |
| 7 | | | | 43620 | | | | | | | | | | | | | |
| 8 | | | | 43621 | | | | | | | | | | | | | |
| 11 | | | | 43622 | | | | | | | | | | | | | |
| 12 | | | | 43623 | | | | | | | | | | | | | |
| 13 | | | | 43624 | | | | | | | | | | | | | |
| 15 | | | | 43625 | | | | | | | | | | | | | |

ANALYTICAL LAB: American Analytics
ADDRESS: 9765 Eton Avenue
Chatsworth, CA 91311
PHONE: (818) 998 - 5547 FAX: (818) 998 - 7258

INSTRUCTIONS/COMMENTS:
A25902

| RELINQUISHED BY: 1 | RECEIVED BY: 1 | RELINQUISHED BY: 2 | RECEIVED BY: 2 |
|---|---|---|---|
| Signature | Signature | Signature | Signature |
| Bryan Campbell | George Horvat | | |
| Printed Name | Printed Name | Printed Name | Printed Name |
| AEI | FOP X | | |
| Company | Company | Company | Company |
| Time 3:30 Date 2/29 | Time Date | Time Date | Time Date |