TO: Ms. Susan Hugo
Alameda County Health Care Services Agency
Division of Hazardous Materials
80 Swan Way, #200
Oakland, Califonria 94612

DATE: May 20, 1994
PROJECT 4050 Horton Street, Emeryville
SCI JOB NUMBER: 851.001

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1 copies

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- [ ] a draft of our report
- [ ] a Service Agreement
- [ ] a proposed scope of services
- [ ] specifications
- [ ] grading/foundation plans
- [ ] soil samples/groundwater samples
- [ ] an executed contract
- [ ] _____

- [ ] if you have any questions, please call
- [ ] for your review and comment
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- [ ] for geotechnical services
- [ ] with our comments
- [ ] with Chain of Custody documents
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REMARKS:

COPIES TO:

BY: Mark Kawakami

■ Subsurface Consultants, Inc.

171 12th Street • Suite 201 • Oakland, California 94607 • Telephone 510-268-0461 • FAX 510-268-0137

5

**SOIL CONTAMINATION ASSESSMENT AND
WORK PLAN FOR SOIL REMEDIATION
AND GROUNDWATER QUALITY ASSESSMENT
4050 HORTON STREET
EMERYVILLE, CALIFORNIA
SCI 851.001**

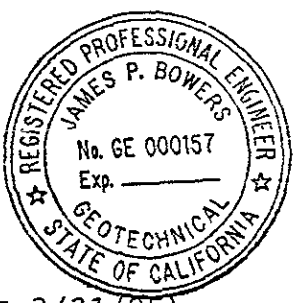
Prepared for:

Mr. Jeff Hunt
Plywood & Lumber Sales, Inc.
4050 Horton Street
Emeryville, California 94608

By:

Mark Kawakami
Project Engineer

James P. Bowers
Geotechnical Engineer 157 (expires 3/31/95)




Subsurface Consultants, Inc.
171 - 12th Street, Suite 201
Oakland, California 94607
(510) 268-0461

November 16, 1993

# I INTRODUCTION

This report presents the results of a soil contamination assessment conducted by Subsurface Consultants, Inc. (SCI) regarding a gasoline storage tank at the Plywood and Lumber Sales, Inc. facility located at 4050 Horton Street in Emeryville, California. The location of the site is shown on the Site Plan, Plate 1.

In December 1990, a 1000 gallon underground fuel storage tank was removed from the site. Zaccor, Inc. removed the tank and obtained soil samples from the excavation. Analytical results indicated that low concentrations of petroleum hydrocarbons (diesel, gasoline and oil and grease), and 1,2 dichloroethane (2.2 ug/kg) were present in the soil and groundwater near the tank. Hydrocarbon concentrations were less than 177 mg/kg (see Table 1). Additionally, petroleum hydrocarbons and chromium, lead, nickel and zinc were detected in groundwater obtained from the excavation during tank removal. A copy of the Zaccor report is presented in the Appendix.

In June 1992, Plywood and Lumber Sales, Inc. retained SCI to further define the extent of soil contamination associated with the previous underground storage tank. In June 1993, our scope of services was expanded to include additional field and laboratory studies. Specifically, our services included:

1. Drilling and sampling 15 test borings,

2. Performing analytical tests on selected soil samples,
3. Evaluating the data generated, and
4. Preparing this report.

The adjacent Electro Coating, Inc. facility at 1401 Park Avenue has been identified to be a source of soil and groundwater contamination in the area. Previous studies by others have indicated that groundwater has been impacted by chromium and several volatile organic chemicals, specifically trichloroethylene (TCE), trichloroethane (TCA) and tetrachloroethylene (PCE). The groundwater contaminant plume has migrated off-site in a westerly direction, and extends onto the property at 4050 Horton Street. Two monitoring wells have been installed in Horton Street in front of the property as part of the groundwater investigation. The well locations are shown on Plate 1.

## II FIELD INVESTIGATION

Subsurface conditions were explored on June 6, 1992 and June 18, 1993 by drilling 15 test borings extending to depths varying from 9.5 to 15.5 feet. The test borings were drilled using truck-mounted, 8-inch-diameter, hollow stem auger equipment. Boring locations are shown on Plate 1.

Our engineer observed drilling operations and prepared detailed logs of the borings. Soil samples were obtained from the borings using a California drive sampler having an outside diameter

of 2.5 inches and an inside diameter of 2.0 inches. The sampler was driven with a 140 pound hammer having a drop of 30 inches. The blows required to drive the sampler the final 12 inches of each 18 inch penetration were recorded and are shown on the boring logs, Plates 2 through 9. Soils are classified in accordance with the Unified Soil Classification System described on Plate 10.

Soil samples were retained in brass sample liners. Samples for environmental analysis were capped and sealed with duct tape. Teflon sheeting was placed between the caps and the soil samples. The sealed liners were placed in an ice filled cooler and remained iced until delivery to the laboratory. Chain-of-Custody Records accompanied the samples to the laboratory.

The shoe sample from each drive was placed in a plastic bag and screened for volatile organic chemicals using an organic vapor meter (OVM). OVM measurements are recorded on the boring logs.

All augers, drill rods, sampling equipment, etc., that were placed in the test borings were thoroughly cleaned prior to their initial use and each subsequent use to reduce the likelihood of cross contamination between borings.

All borings were backfilled with cement grout upon completion of drilling. Soil cuttings generated during drilling were placed in 55 gallon drums and left on-site.

## III SITE CONDITIONS

### A. Regional Geology

The site is located on a broad alluvial plain bordered by the Berkeley Hills on the east and San Francisco Bay on the west. According to Radbruch (1957), the site is underlain by the Temescal Formation, an alluvial fan deposit comprised of interfingered lenses of clayey gravel, sandy-silty clay and sand-clay-silt mixtures.

### B. Surface Conditions

The site is relatively level and occupied generally by a one-story office building with a concrete slab-on-grade. The parking and lumber storage areas on the north and east sides of the building are paved with asphalt concrete. The previous underground fuel storage tank was located beneath the sidewalk along Horton Street, as shown on Plate 1.

### C. Subsurface Conditions

Our test borings indicate that the site is blanketed by approximately 2 feet of fill which consists of medium-dense to dense clayey sand and sandy gravel. Underlying the fill and extending to the maximum depth drilled (about 15 feet) were stiff silty clays and medium dense clayey sands. The clayey sands contained varying amounts of clay and occasional gravel.

Hydrocarbon odors were noted in soils near the groundwater level in Borings 1, 2, 3 and 5. Additionally, the near surface soils in Borings 3, 5 and 11 contained mild hydrocarbon odors.

Groundwater was encountered at a depth of about 6 feet in Boring 1. Groundwater was not encountered in the remaining borings during drilling. The soils generally possessed very low permeabilities and did not allow groundwater to seep into the boreholes during drilling. The borings were backfilled before water levels could stabilize. Based upon available data, we judge that the water level encountered in Boring 1 reflects stabilized groundwater levels in the area. Based on data generated during study of the adjacent Electro Coating facility, it appears that groundwater flows in a westerly direction, toward San Francisco Bay.

## IV ANALYTICAL TESTING

Soil samples were analyzed by Curtis and Tompkins, Ltd., a California Department of Health Services (DHS) certified analytical laboratory. Selected samples were analyzed for:

1. Total volatile hydrocarbons (TVH) - EPA methods 5030/8015 modified,
2. Total extractable hydrocarbons (TEH) - EPA methods 3550/8015 modified,
3. Oil and grease (O&G) - SMWW 17:5220 E&F,
4. Purgeable halocarbons - EPA method 8010,
5. Benzene, toluene, xylene and ethylbenzene (BTXE) - EPA methods 5030/8020, and
6. Heavy metals Cd, Cr, Pb, Ni, and Zn.

The analytical results are summarized in Tables 1 through 3. Analytical test reports are presented in the Appendix. The results are also graphically presented on Plates 11 and 12.

## V CONCLUSIONS

### A. General

Petroleum hydrocarbons (oil and grease, diesel, gasoline) were detected in the soil near the former underground storage tank. However, the primary contaminant is gasoline. In our opinion, the diesel weight hydrocarbons reported by the laboratory may represent weathered gasoline or more simply, extractable components of gasoline. The hydrocarbon contamination appears to be limited in extent, and is likely the result of small quantities of fuel being released to the soil. Near the previous tank, the soil has been impacted by hydrocarbons to depths not greater than approximately 7 feet.

Heavy metals including cadmium, chromium, lead, nickel and zinc were present in the samples analyzed. However, only lead was detected at an elevated concentration. In our opinion, the lead concentration is not sufficiently high to necessitate a remediation response by itself. However, it could affect off-site soil disposal options. The source of the lead is currently uncertain. However, we judge that it is likely associated with leaded gasoline stored in the previous tank. Volatile organic chemicals (EPA 8010) were not detected in any of the samples analyzed at

concentrations in excess of analytical detection limits.

Groundwater quality at the site has not been evaluated to date. However, petroleum hydrocarbons, heavy metals, benzene, toluene, xylene, ethylbenzene and dichloroethane were detected in a "grab" groundwater sample obtained from the tank excavation following tank removal. Each of these conditions is discussed in more detail in the following sections.

## B. Soil Contamination

### 1. Oil and Grease

Oil and grease were present in soil samples obtained from Borings 1 and 3, and in the sidewall sample (ZAC 1) obtained during tank removal, at concentrations up to 177 mg/kg. The extent of contamination appears to be localized and confined approximately to the area indicated on Plate 11. The vertical extent of contamination appears to be less than about 7 feet.

### 2. Gasoline

The analytical results indicate that gasoline is also present in the soil near the former tank. The highest gasoline concentration detected to date is 530 mg/kg (Boring 11 at 6 feet). However, this concentration is not indicative of conditions in the other borings. Gasoline concentrations in the other borings were less than 210 mg/kg. The approximate lateral extent of the gasoline is shown on Plate 12; the vertical extent is less than about 7 feet.

### 3. Heavy Metals

Several heavy metals were detected in the soils surrounding the former tank. However, their concentrations were generally low and are consistent with "background" levels in soils throughout the Bay Area. However, lead was detected in Boring 1, which was drilled nearest to the previous tank, at a concentration of 761 mg/kg. This concentration is in our opinion, elevated and not representative of background levels. As discussed previously, the lead concentrations may become an issue when evaluating soil disposal options. The extent of the lead contamination does not appear to be wide spread. Rather, it appears limited to an area adjacent to and below the former tank.

## C. Recommendations

In our opinion, the extent of soil contamination has been relatively well defined by the studies completed to date. The data indicates that past tank release(s) have impacted a limited area near the previous tank. The gasoline and oil and grease concentrations are sufficiently high that in our opinion, some form of soil remediation will be required. Given the relatively limited area impacted by the hydrocarbons and the soil conditions, we judge the most appropriate means of soil remediation will be to excavate and dispose of the contaminated soils off-site. The extent of remediation should be negotiated with the Alameda County Health Care Services Agency (ACHCSA). A work plan for soil remediation is presented in Section VI of this report.

As previously stated, petroleum hydrocarbons, heavy metals and dichloroethane (DCA) were detected in a "grab" groundwater sample from the tank excavation. In our opinion, the concentrations in the water sample may not accurately reflect groundwater conditions in the area. For this reason, we recommend that groundwater quality be evaluated following soil remediation.

## VI SOIL REMEDIATION WORK PLAN

Based on the results of our assessment, it appears that the petroleum hydrocarbon contamination is limited in extent. For this reason, it is proposed to remediate the contaminated soil by excavating it and properly disposing of the material off-site. If necessary, the soil will be bio-treated on-site or at a permitted facility off-site to reduce hydrocarbon concentrations prior to disposal at an appropriate landfill.

Our goal will be to remove soils contaminated with petroleum hydrocarbons in excess of 10 mg/kg. In this regard, the approximate extent of remediation will be as shown on Plate 12, to a depth of about 7 feet. However, if the contamination terminates at a shallower depth, excavation will cease at a lesser depth.

On behalf of the property owner, SCI will observe soil remediation activities and obtain soil samples after excavation to evaluate the adequacy of cleanup activities. Wherever practical, the excavation will be enlarged until the cleanup goal is achieved.

The excavated soils will be temporarily stockpiled on-site and securely covered with plastic sheeting. Samples of the material will be obtained and analyzed in accordance with criteria set by local landfills. The most appropriate disposal alternative cannot be identified until the stockpiled soil analytical results are obtained. However, we judge that the soils will either be transported to and disposed of at (1) the Liquid Waste Management facility in McKittrick, California or (2) a Class III landfill. If necessary, the soils will be transported under manifest by a licensed waste-hauler.

**A. Confirmation Sampling**

Upon completion of excavation, at least four soil samples will be obtained from the bottom of the excavation and eight samples from the sidewalls. Soil samples will be obtained using the following procedure:

> Approximately 3 inches of soil will be removed from the exposed surface. A new brass sampler liner will be driven in to the soil with a rubber/wooden mallet. The liner will be removed and the ends covered with teflon sheeting, capped, and wrapped with duct tape. The samples will be labeled and promptly placed in an ice-filled cooler and transported to the analytical laboratory.

The samples will be analyzed for the chemicals/compounds discussed subsequently.

**B. Excavation Backfilling**

Once remediation efforts are complete, the excavation will be backfilled with imported fill. The fill will be compacted in thin layers to at least 90 percent relative compaction in accordance with the ASTM D1557 test method. An SCI field representative will

perform field density tests to check that the material is properly compacted. The fill will be provided by a local quarry or other similar source. The fill will have low expansion characteristics (plasticity index less than 15) and at least 10 percent of the material will be silt and clay size particles.

**C. Analytical Testing**

Analytical testing will be performed by a State of California Department of Health Services (DHS) certified laboratory. Soil and groundwater samples will be analyzed for the following:

1. Oil and grease (O&G) - SMWW 5520 E&F,
2. Total volatile hydrocarbons - EPA 5030/8015,
3. Benzene, toluene, xylene and ethylbenzene - EPA 8020, and
4. Lead.

**D. Report**

A report will be prepared recording all remediation activities and analytical test results. Copies of all analytical reports and Chain-of-Custody documents will be included. Additionally, the lateral and vertical extent of soil removal, and the location of confirmation samples will be presented.

Prior to the start of construction, we will notify the ACHCSA in writing that a contractor has been selected and that remediation activities will be initiated. Additionally, a Health and Safety plan will be submitted to the ACHCSA for their review and approval.

## VII GROUNDWATER CONTAMINATION ASSESSMENT WORK PLAN

The analytical data generated to date indicates that groundwater in the previous tank area may have been impacted by past tank releases. We propose to install one monitoring well downgradient of the previous tank to evaluate local impacts on groundwater quality. The location of the proposed well is shown on Plate 1.

Groundwater investigations associated with the chlorinated solvent plume originating from the adjacent Electro Coatings facility has documented the groundwater flow to be toward the west, as indicated on Plate 1. A drawing from a previous Electro Coating investigation showing groundwater flow patterns is presented in the Appendix.

If groundwater has been significantly impacted by the tank releases, additional monitoring wells may be required to evaluate the extent of groundwater contamination. The need for these wells will be evaluated based upon the water quality data obtained from the proposed well.

The well will extend to a depth of about 15 feet. The test boring/monitoring well will be drilled using hollow-stem auger equipment. Drilling and sampling equipment will be steam-cleaned prior to its use. Soil cuttings generated during drilling will be stored in 55-gallon drums and left on site for later disposal.

Our engineer will observe drilling operations and prepare a log of the soils encountered. Undisturbed soil samples will be obtained at frequent intervals. The samples will be retained in brass liners. Teflon sheeting will be placed over the ends prior to capping, taping, and labeling. The samples will be refrigerated until delivery to the analytical laboratory. The samples will be accompanied by Chain-of-Custody records.

The groundwater monitoring well will be constructed of 2-inch-diameter, Schedule 40 PVC pipe having flush-threaded joints. The lower portion of the well will consist of machine slotted well-screen having 0.02-inch-wide slots. The annular space around the screened section will be backfilled with Lonestar No. 3 sand. A bentonite seal approximately 12 inches thick, will be placed above the sand. The annulus above the bentonite seal will be backfilled with cement/bentonite grout. The wellhead will be set below grade in a traffic rated utility box. The well will be installed in accordance with Regional Water Quality Control Board (RWQCB) guidelines.

The well will be developed by surging and removing water until the water becomes relatively clear. The removed water will be placed in 55 gallon drums and left on-site for later disposal. Groundwater will be obtained using a disposal sampler. Water samples will be placed in pre-cleaned containers and refrigerated until delivery to the analytical laboratory. The water samples will be accompanied by Chain-of-Custody records.

Analytical testing will be performed by State of California Department of Health Services (DHS) certified analytical laboratory. Groundwater samples will be analyzed for the following:

1. Oil and grease - SMWW 5520:17,
2. Total volatile hydrocarbons and EPA 5030/8015 modified,
3. Benzene, toluene, xylene and ethylbenzene - EPA 8020,
4. Volatile organic chemicals - EPA 8010, and
5. Lead, Cr, Cl, Kc.

The results of the assessment will be recorded in a written report. Sampling and reporting will be performed on a quarterly basis.

## VII LIMITATIONS

This study was intended to characterize the extent of soil contamination associated with releases from the previous underground storage tank, based on limited subsurface investigation and analytical testing. If areas of contamination exist on other portions of the property, away from the area investigated, it is possible that they would not have been detected during this study.

Environmental sampling studies are by nature non-comprehensive and subject to limitations. This study was not designed to identify all potential concerns nor eliminate all risks.

SCI has performed this assessment in accordance with generally accepted standards of care which currently exist in Northern California. It should be recognized that the definition and evaluation of environmental conditions is difficult and inexact. Judgements leading to conclusions and recommendations are generally made with an incomplete knowledge of subsurface and/or historic conditions applicable to the site. In addition, the conclusions recorded herein reflect site conditions at the time of the investigation. These conditions may change with time and as such, our conclusions may also change.

The conclusions and opinions expressed herein may be affected by future changes in the practice of environmental engineering and laws governing hazardous wastes. The reader is advised to consult with SCI prior to relying upon the information provided.

**Tables:**

| | |
|---|---|
| Table 1 | Hydrocarbon Concentrations in Soil |
| Table 2 | Heavy Metal Concentrations in Soil |
| Table 3 | Volatile Organic Chemicals Concentrations in Soil |

**List of Attached Plates:**

| | |
|---|---|
| Plate 1 | Site Plan |
| Plates 2 through 9 | Logs of Test Borings 1 through 15 |
| Plate 10 | Unified Soil Classification System |
| Plate 11 | Oil and Grease Concentrations in Soil |
| Plate 12 | Gasoline Concentrations in Soil |

**Appendix:** Zaccor Report, dated January 20, 1990
Analytical Test Reports
Chain-of-Custody Documents
Plate 6, Electro Coatings Facility

**Distribution:**

2 copies: Mr. Jeff Hunt
Plywood and Lumber Sales, Inc.
4050 Horton Street
Emeryville, California 94608

3 copies: Mr. Randall Morrison
Crosby, Heafey, Roach & May
1999 Harrison Street
Oakland, California 94612

MK:JPB:sld

**Table 1**
**Hydrocarbon Concentrations in Soil**

| Boring | Depth (feet) | Oil and Grease (mg/kg)[3] | TEH[1] (mg/kg) | TVH[2] (mg/kg) | Benzene (ug/kg)[4] | Toluene (ug/kg) | Ethyl-Benzene (ug/kg) | Xylene (ug/kg) |
|---|---|---|---|---|---|---|---|---|
| Zac 1[6] | 6.0 | 177 | <10 | 26 | 2200 | 1600 | 310 | 540 |
| Zac 2 | 6.0 | <30 | 44 | 68 | 130 | 240 | 450 | 1100 |
| 1 | 6.0 | 60 | 30 | 150 | 5300 | 5100 | 5500 | 17000 |
| 1 | 8.0 | <50 | <1 | 2 | 43 | 15 | 7 | 15 |
| 1 | 10.5 | <50 | <1 | 1 | 30 | 24 | <5 | 9 |
| 2 | 4.0 | <50 | 3 | 13 | 250 | 29 | 180 | 220 |
| 2 | 6.0 | <50 | 34 | 170 | <400 | 420 | 1300 | 1500 |
| 3 | 6.0 | 170 | 57 | 210 | 570 | <400 | 2100 | 950 |
| 3 | 7.5 | <50 | <1 | 1 | <5 | 6 | <5 | 5 |
| 4 | 4.0 | <50 | <1 | 2 | 14 | 5 | <5 | 9 |
| 4 | 6.0 | <50 | <1 | 2 | 14 | <5 | <5 | 6 |
| 5 | 6.0 | <50 | 4 | 160 | <200 | 490 | 630 | <200 |
| 5 | 8.0 | <50 | <1 | <1 | <5 | 11 | <5 | <5 |
| 7 | 4.0 | <50 | 7 | 7 | 120 | 68 | 4 | 270 |
| 7 | 6.0 | <50 | <1 | 1 | 270 | 28 | <5 | 12 |
| 8 | 6.5 | --[5] | <1 | <1 | <5 | <5 | <5 | <5 |
| 8 | 9.5 | -- | -- | <1 | -- | -- | -- | -- |
| 9 | 6 | -- | <1 | <1 | <5 | <5 | <5 | <5 |
| 9 | 9 | -- | -- | <1 | -- | -- | -- | -- |
| 10 | 6 | -- | -- | <1 | <5 | <5 | <5 | <5 |
| 11 | 6 | -- | -- | 530 | -- | -- | -- | -- |
| 12 | 3 | -- | -- | <1 | -- | -- | -- | -- |
| 12 | 6 | -- | -- | <1 | <5 | <5 | <5 | <5 |
| 13 | 3 | -- | -- | <1 | -- | -- | -- | -- |
| 13 | 6 | -- | -- | <1 | <5 | <5 | <5 | <5 |
| 15 | 3 | -- | -- | <1 | -- | -- | -- | -- |
| 15 | 6 | -- | -- | <1 | <5 | <5 | <5 | <5 |

---

1 TEH = Total extractable hydrocarbons, as diesel
2 TVH = Total volatile hydrocarbons, as gasoline
3 mg/kg = milligrams per kilogram
4 ug/kg = micrograms per kilogram
5 Test not requested
6 Samples obtained by Zaccor, Inc. following tank removal

**Table 2**
**Heavy Metal Concentrations in Soil**

| Boring | Depth (feet) | Cadmium (mg/kg)[1] | Chromium (total) (mg/kg) | Lead (mg/kg) | Nickel (mg/kg) | Zinc (mg/kg) |
|---|---|---|---|---|---|---|
| Zac 1 | 6.0 | 0.34 | 28.1 | 61 | 46.6 | 179 |
| Zac 2 | 6.0 | <0.25 | 30.5 | 6.6 | 27.9 | 29.1 |
| 1 | 6.0 | 1.3 | 33.3 | 761 | 44.7 | 421 |
| 2 | 4.0 | 0.32 | 36.8 | 5 | 35.0 | 37 |
| 3 | 6.0 | <0.25 | 33.1 | 5 | 30.6 | 171 |
| 4 | 4.0 | <0.25 | 36.6 | 4 | 32.3 | 45 |
| 5 | 6.0 | <0.25 | 36.0 | 3 | 28.5 | 30 |

**Table 3**
**Volatile Organic Chemical Concentrations in Soil**

| Boring | Depth (feet) | 1,2 DCA[2] (ug/kg)[3] | EPA 8010 Chemicals (mg/kg) |
|---|---|---|---|
| Zac 1 | 6.0 | <50 | ND[4] |
| Zac 2 | 6.0 | 2.2 | ND |
| 1 | 6.0 | <250 | ND |
| 2 | 4.0 | <10 | ND |
| 3 | 6.0 | <250 | ND |
| 4 | 4.0 | <5 | ND |
| 5 | 6.0 | <25 | ND |

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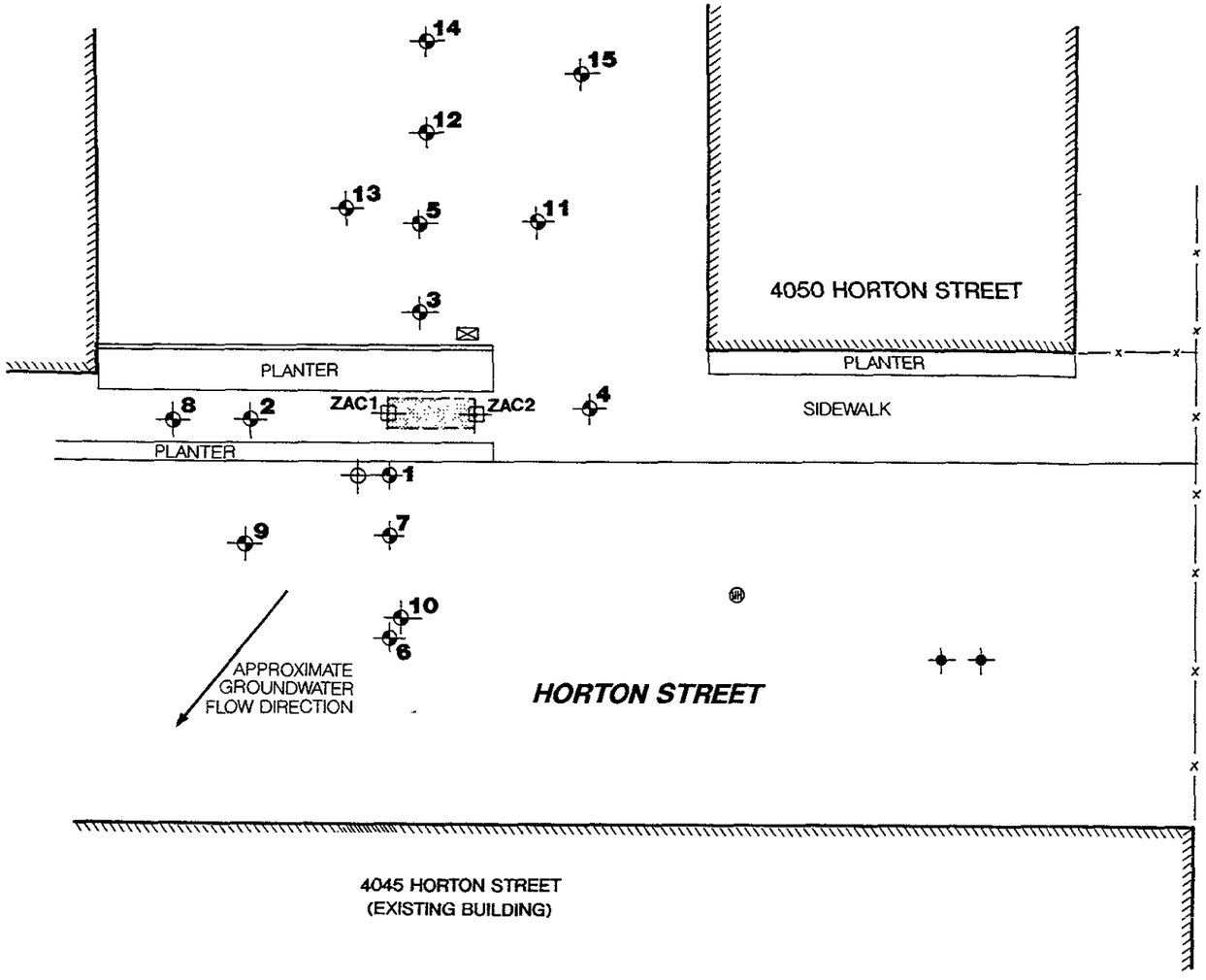
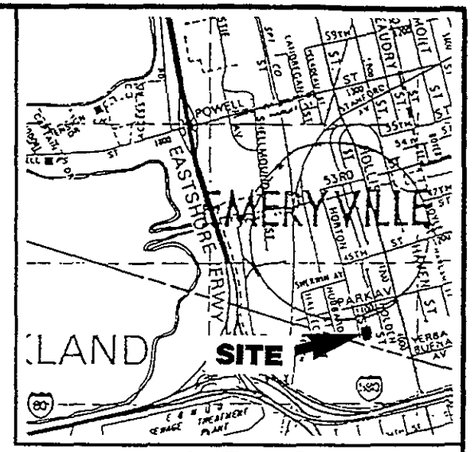
[1] mg/kg = milligrams per kilogram
[2] 1,2-dichloroethane
[3] micrograms per kilograms
[4] not detected above the reporting limits




VICINITY MAP

- TEST BORING
- ZACCOR SOIL SAMPLE LOCATION FOLLOWING TANK REMOVAL
- PROPOSED MONITORING WELL
- EXISTING MONITORING WELL BY OTHERS
- PREVIOUS TANK
- PREVIOUS FUEL DISPENSER
- EXISTING BUILDING
- EXISTING FENCE
- MANHOLE COVER

APPROXIMATE SCALE (feet)

0 20 40

# SITE PLAN

Subsurface Consultants

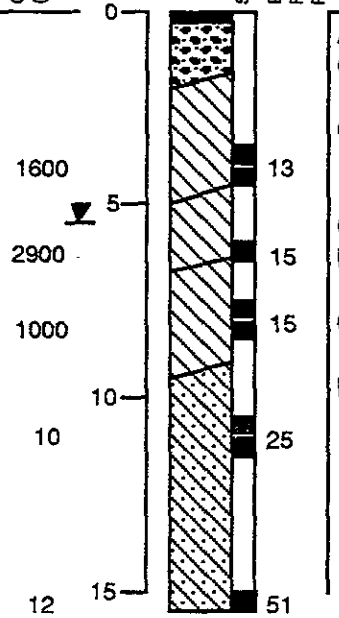
4050 HORTON STREET – EMERYVILLE, CA

| JOB NUMBER | DATE | APPROVED |
|---|---|---|
| 851.001 | 8/23/93 | |

PLATE 1

# LOG OF TEST BORING 1

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/4/92
ELEVATION - -



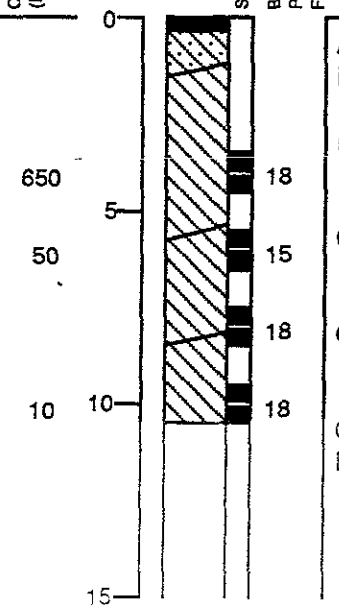

ASPHALTIC CONCRETE - 2.5" thick
GRAY SANDY GRAVEL (GW)
dense, moist (fill)
GRAY SILTY CLAY (CL)
stiff, moist
slight hydrocarbon odor
GROUNDWATER LEVEL DURING DRILLING
LIGHT GREEN GRAY SILTY CLAY (CL)
stiff, moist
GRAY SANDY SILTY CLAY (CL)
stiff, moist
BROWN CLAYEY GRAVELLY SAND (SC)
medium dense, wet

SAMPLER TYPE:
CALIFORNIA DRIVE
O.D.: 2.5 inches
I.D.: 2.0 inches

HAMMER WEIGHT: 140 pounds
HAMMER DROP: 30 inches

# LOG OF TEST BORING 2

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/4/92
ELEVATION - -




ASPHALTIC CONCRETE - 5" thick
LIGHT BROWN CLAYEY SAND (SC)
medium dense, moist (fill)
DARK GRAY SILTY CLAY (CL)
stiff, moist
hydrocarbon odor
GREEN GRAY SILTY CLAY (CL)
stiff, moist, with some sand

GRAY BROWN SANDY SILTY CLAY (CL)
stiff, moist

GROUNDWATER NOT ENCOUNTERED
DURING DRILLING

Subsurface Consultants

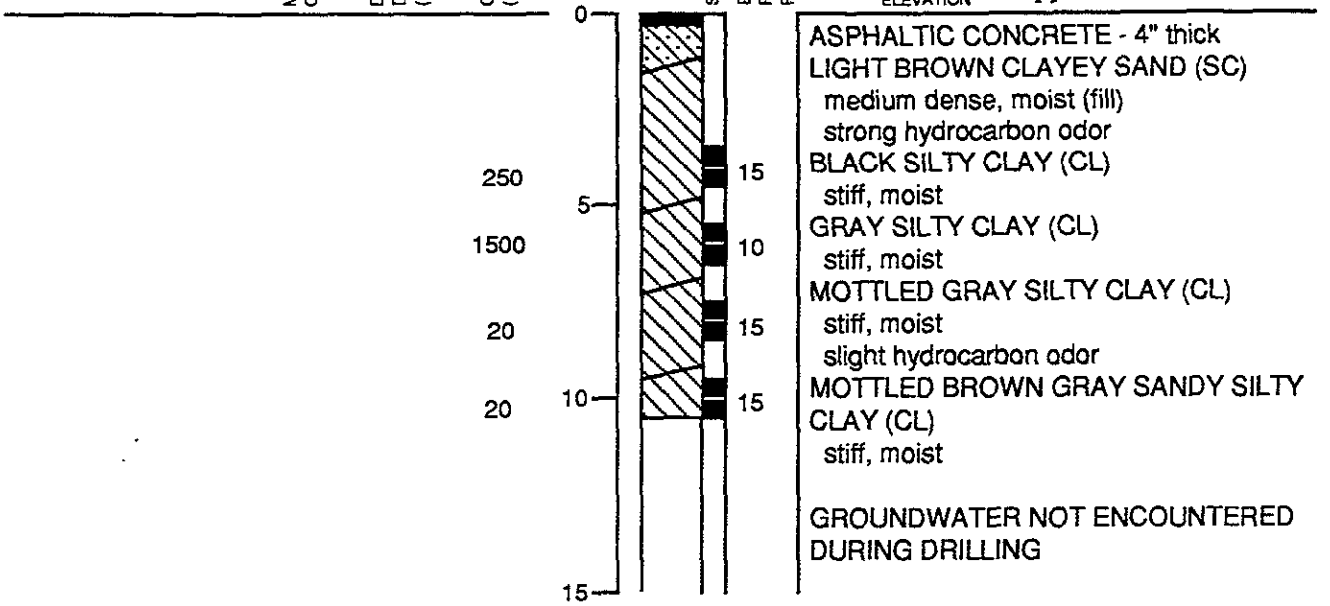
4050 HORTON STREET - EMERYVILLE, CA

| JOB NUMBER | DATE | APPROVED |
|---|---|---|
| 851 001 | 6/24/92 | MC |

PLATE 2

# LOG OF TEST BORING 3

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/4/92
ELEVATION - -

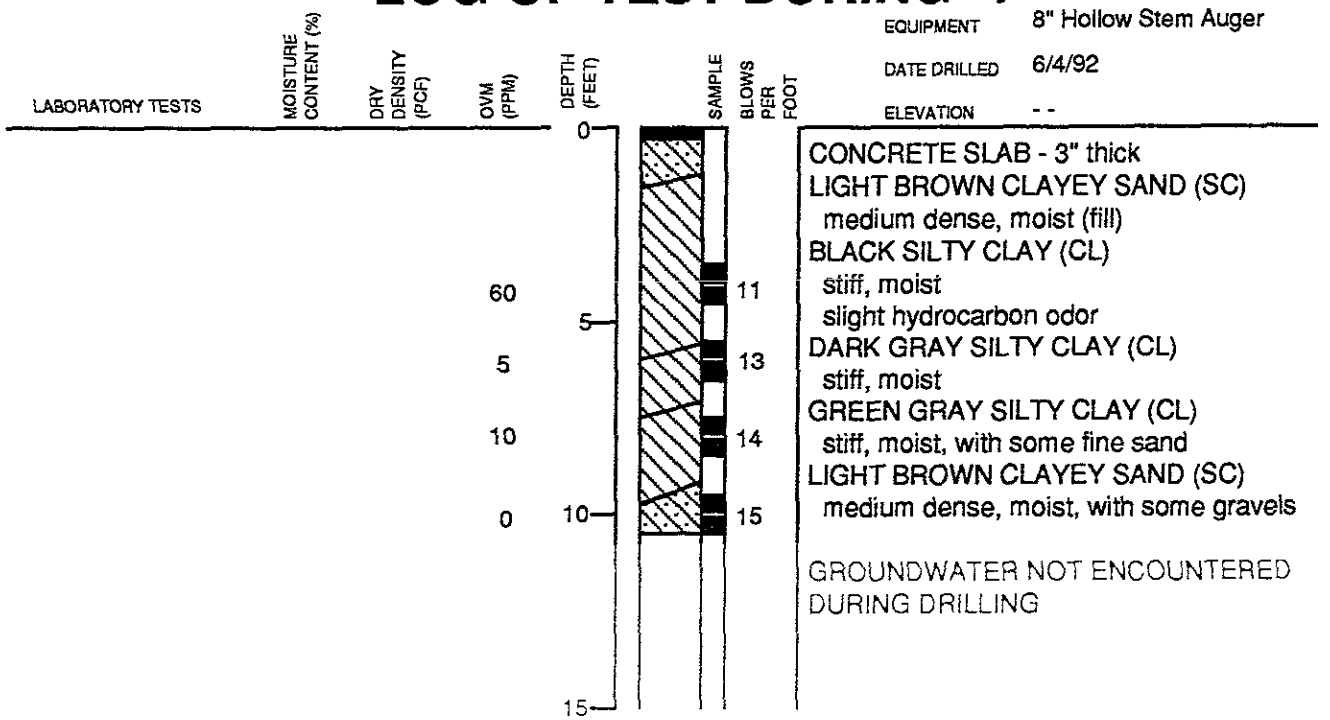



ASPHALTIC CONCRETE - 4" thick
LIGHT BROWN CLAYEY SAND (SC)
medium dense, moist (fill)
strong hydrocarbon odor
BLACK SILTY CLAY (CL)
stiff, moist
GRAY SILTY CLAY (CL)
stiff, moist
MOTTLED GRAY SILTY CLAY (CL)
stiff, moist
slight hydrocarbon odor
MOTTLED BROWN GRAY SANDY SILTY CLAY (CL)
stiff, moist

GROUNDWATER NOT ENCOUNTERED DURING DRILLING

# LOG OF TEST BORING 4

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/4/92
ELEVATION - -




CONCRETE SLAB - 3" thick
LIGHT BROWN CLAYEY SAND (SC)
medium dense, moist (fill)
BLACK SILTY CLAY (CL)
stiff, moist
slight hydrocarbon odor
DARK GRAY SILTY CLAY (CL)
stiff, moist
GREEN GRAY SILTY CLAY (CL)
stiff, moist, with some fine sand
LIGHT BROWN CLAYEY SAND (SC)
medium dense, moist, with some gravels

GROUNDWATER NOT ENCOUNTERED DURING DRILLING

Subsurface Consultants

4050 HORTON STREET - EMERYVILLE, CA

| JOB NUMBER | DATE | APPROVED |
|---|---|---|
| 851 001 | 6/24/92 | |

PLATE 3

# LOG OF TEST BORING 5

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/4/92
ELEVATION - -

| LABORATORY TESTS | MOISTURE CONTENT (%) | DRY DENSITY (PCF) | OVM (PPM) | DEPTH (FEET) | SAMPLE | BLOWS PER FOOT | |
|---|---|---|---|---|---|---|---|
| | | | | 0 | | | CONCRETE SLAB - 4" thick |
| | | | | | | | LIGHT BROWN CLAYEY SAND (SC) |
| | | | | | | | medium dense, moist (fill) |
| | | | | | | | BLACK SILTY CLAY (CL) |
| | | | | | | | stiff, moist |
| | | | 500 | | | 14 | slight hydrocarbon odor |
| | | | | 5 | | | GRAY SILTY CLAY (CL) |
| | | | 1400 | | | 14 | stiff, moist |
| | | | | | | | GRAY BROWN SANDY SILTY CLAY (CL) |
| | | | 15 | | | 12 | stiff, moist |
| | | | | | | | |
| | | | 0 | 10 | | 17 | GROUNDWATER NOT ENCOUNTERED DURING DRILLING |
| | | | | 15 | | | |

# LOG OF TEST BORING 6

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/4/92
ELEVATION - -

| LABORATORY TESTS | MOISTURE CONTENT (%) | DRY DENSITY (PCF) | OVM (PPM) | DEPTH (FEET) | SAMPLE | BLOWS PER FOOT | |
|---|---|---|---|---|---|---|---|
| | | | | 0 | | | ASPHALTIC CONCRETE - 4" thick |
| | | | | | | | LIGHT BROWN CLAYEY SAND (SC) |
| | | | | | | | medium dense, moist (fill) |
| | | | | | | | BLACK SILTY CLAY (CL) |
| | | | 10 | | | 12 | stiff, moist |
| | | | | 5 | | | LIGHT BROWN GRAY SILTY CLAY (CL) |
| | | | 0 | | | 13 | stiff, moist |
| | | | | | | | |
| | | | 5 | | | 15 | |
| | | | | | | | BROWN CLAYEY SAND (SC) |
| | | | 0 | 10 | | 32 | medium dense, moist |
| | | | | | | | GROUNDWATER NOT ENCOUNTERED DURING DRILLING |
| | | | | 15 | | | |

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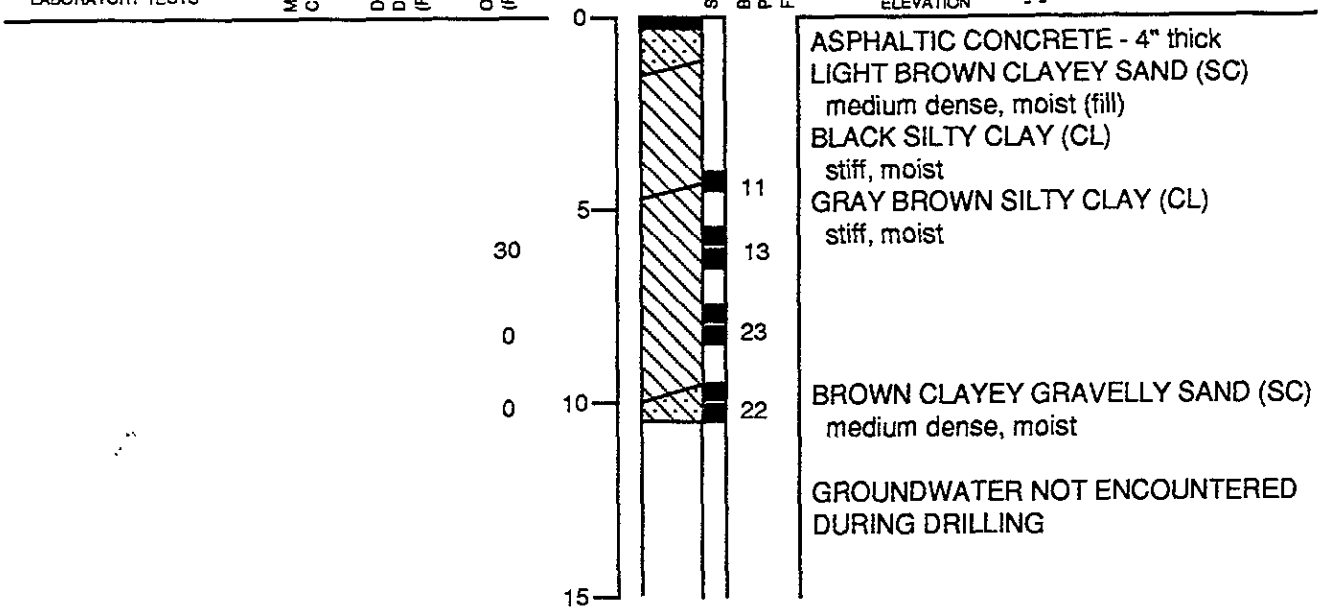
4050 HORTON STREET - EMERYVILLE, CA

| JOB NUMBER | DATE | APPROVED |
|---|---|---|
| 851 001 | 6/24/92 | MC |

PLATE 4

# LOG OF TEST BORING 7

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/4/92
ELEVATION - -




| Subsurface Consultants | 4050 HORTON STREET - EMERYVILLE, CA | | | PLATE |
|---|---|---|---|---|
| | JOB NUMBER | DATE | APPROVED | 5 |
| | 851 001 | 6/24/92 | MC | |

# LOG OF TEST BORING 8

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/18.93
ELEVATION - -

| LABORATORY TESTS | MOISTURE CONTENT (%) | DRY DENSITY (PCF) | OVM (PPM) | DEPTH (FEET) | SAMPLE | BLOWS PER FOOT | |
|---|---|---|---|---|---|---|---|
| | | | 9 | 0 | | | CONCRETE SLAB - 5" thick |
| | | | | | | | LIGHT BROWN CLAYEY SAND (SM) medium dense, moist (fill) |
| | | | 0 | | | 9 | BLACK SILTY CLAY (CL) stiff, moist |
| | | | 1 | 5 | | 8 | GRAY SILTY CLAY (CL) stiff, moist |
| | | | 12 | | | 17 | MOTTLED BROWN AND GRAY SILTY CLAY (CL) stiff, moist |
| | | | 0 | 10 | | 20 | Boring backfilled with cement grout |
| | | | | | | | GROUNDWATER NOT ENCOUNTERED DURING DRILLING |
| | | | | 15 | | | |

HAMMER WEIGHT: 140 pounds
HAMMER DROP: 30 inches

# LOG OF TEST BORING 9

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/18.93
ELEVATION - -

| LABORATORY TESTS | MOISTURE CONTENT (%) | DRY DENSITY (PCF) | OVM (PPM) | DEPTH (FEET) | SAMPLE | BLOWS PER FOOT | |
|---|---|---|---|---|---|---|---|
| | | | | 0 | | | ASPHALTIC CONCRETE - 4" thick |
| | | | | | | | LIGHT BROWN CLAYEY SAND (SC) medium dense, moist (fill) |
| | | | 3 | | | 9 | BLACK SILTY CLAY (CL) medium stiff, moist |
| | | | | 5 | | | GRAY SILTY CLAY (CL) |
| | | | 3 | | | 10 | stiff, moist |
| | | | | | | | BROWN CLAYEY GRAVELLY SAND (SC) |
| | | | 30 | | | 24 | medium dense, moist |
| | | | | 10 | | | Boring backfilled with cement grout |
| | | | | | | | GROUNDWATER NOT ENCOUNTERED DURING DRILLING |
| | | | | 15 | | | |

Subsurface Consultants

4050 HORTON STREET - EMERYVILLE, CA

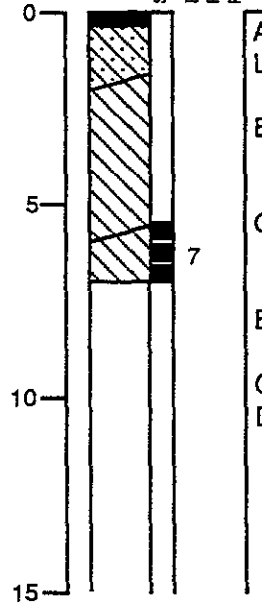
| JOB NUMBER | DATE | APPROVED |
|---|---|---|
| 851.001 | 6/21/93 | MC |

PLATE 6

# LOG OF TEST BORING 10

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/18.93
ELEVATION - -

| LABORATORY TESTS | MOISTURE CONTENT (%) | DRY DENSITY (PCF) | OVM (PPM) | DEPTH (FEET) | SAMPLE | BLOWS PER FOOT |
|---|---|---|---|---|---|---|
| | | | | 0 | | |
| | | | | 5 | | |
| | | | 5 | | | 7 |
| | | | | 10 | | |
| | | | | 15 | | |



ASPHALTIC CONCRETE - 4" thick
LIGHT BROWN CLAYEY SAND (SC)
medium dense, moist (fill)
BLACK SILTY CLAY (CL)
stiff, moist

GRAY SILTY CLAY (CL)
stiff, moist

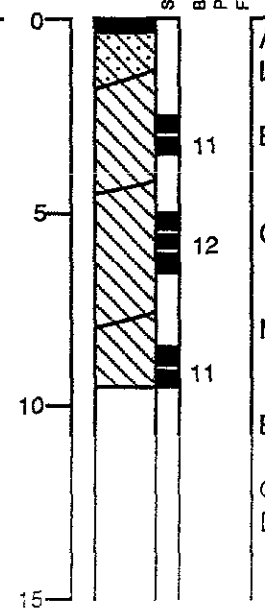
Boring backfilled with cement grout

GROUNDWATER NOT ENCOUNTERED DURING DRILLING

# LOG OF TEST BORING 11

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/18.93
ELEVATION - -

| LABORATORY TESTS | MOISTURE CONTENT (%) | DRY DENSITY (PCF) | OVM (PPM) | DEPTH (FEET) | SAMPLE | BLOWS PER FOOT |
|---|---|---|---|---|---|---|
| | | | | 0 | | |
| | | | 510 | | | 11 |
| | | | | 5 | | |
| | | | 2 | | | 12 |
| | | | 11 | | | 11 |
| | | | | 10 | | |
| | | | | 15 | | |



ASPHALTIC CONCRETE - 4" thick
LIGHT BROWN CLAYEY SAND (SC)
medium dense, moist (fill)
BLACK SILTY CLAY (CL)
medium stiff, moist
hydrocarbon odor
GRAY SILTY CLAY (CL)
stiff, moist

MOTTLED GRAY BROWN SILTY CLAY (CL)
stiff, moist, with some sand

Boring backfilled with cement grout

GROUNDWATER NOT ENCOUNTERED DURING DRILLING

Subsurface Consultants

4050 HORTON STREET - EMERYVILLE, CA

| JOB NUMBER | DATE | APPROVED |
|---|---|---|
| 851.001 | 6/21/93 | MC |

PLATE 7

# LOG OF TEST BORING 12

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/18.93
ELEVATION - -

| LABORATORY TESTS | MOISTURE CONTENT (%) | DRY DENSITY (PCF) | OVM (PPM) | DEPTH (FEET) | SAMPLE | BLOWS PER FOOT | |
|---|---|---|---|---|---|---|---|
| | | | | 0 | | | ASPHALTIC CONCRETE - 4" thick |
| | | | | | | | LIGHT BROWN CLAYEY SAND (SC) |
| | | | | | | | medium dense, moist (fill) |
| | | | 60 | | | 7 | BLACK SILTY CLAY (CL) |
| | | | | | | | medium stiff, moist |
| | | | | 5 | | | GRAY SILTY CLAY (CL) |
| | | | 15 | | | 12 | stiff, moist |
| | | | | | | | MOTTLED GRAY BROWN SILTY CLAY (CL) |
| | | | 3 | | | 14 | stiff, moist |
| | | | | 10 | | | Boring backfilled with cement grout |
| | | | | | | | GROUNDWATER NOT ENCOUNTERED DURING DRILLING |
| | | | | 15 | | | |

# LOG OF TEST BORING 13

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/18.93
ELEVATION - -

| LABORATORY TESTS | MOISTURE CONTENT (%) | DRY DENSITY (PCF) | OVM (PPM) | DEPTH (FEET) | SAMPLE | BLOWS PER FOOT | |
|---|---|---|---|---|---|---|---|
| | | | | 0 | | | CONCRETE SLAB - 4" thick |
| | | | | | | | LIGHT BROWN CLAYEY SAND (SC) |
| | | | | | | | medium dense, moist |
| | | | 18 | | | 14 | BLACK SILTY CLAY (CL) |
| | | | | | | | stiff, moist |
| | | | | 5 | | | GRAY SILTY CLAY (CL) |
| | | | 7 | | | 11 | stiff, moist |
| | | | | | | | MOTTLED GRAY BROWN SILTY CLAY (CL) |
| | | | 1 | 10 | | 13 | stiff, moist |
| | | | | | | | Boring backfilled with cement grout |
| | | | | | | | GROUNDWATER NOT ENCOUNTERED DURING DRILLING |
| | | | | 15 | | | |

Subsurface Consultants

4050 HORTON STREET - EMERYVILLE, CA

| JOB NUMBER | DATE | APPROVED |
|---|---|---|
| 851.001 | 6/21/93 | MC |

PLATE 8

# LOG OF TEST BORING 14

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/18.93
ELEVATION - -

| LABORATORY TESTS | MOISTURE CONTENT (%) | DRY DENSITY (PCF) | OVM (PPM) | DEPTH (FEET) | SAMPLE | BLOWS PER FOOT | |
|---|---|---|---|---|---|---|---|
| | | | | 0 | | | ASPHALTIC CONCRETE - 4" thick |
| | | | | | | | LIGHT BROWN CLAYEY SAND (SC) medium dense, moist (fill) |
| | | | 20 | | | 10 | BLACK SILTY CLAY (CL) medium stiff, moist |
| | | | | 5 | | | GRAY SILTY CLAY (CL) |
| | | | 0 | | | 11 | medium stiff, moist |
| | | | 0 | | | 13 | MOTTLED GRAY BROWN SILTY CLAY (CL) stiff, moist |
| | | | | 10 | | | Boring backfilled with cement grout |
| | | | | | | | GROUNDWATER NOT ENCOUNTERED DURING DRILLING |
| | | | | 15 | | | |

# LOG OF TEST BORING 15

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/18.93
ELEVATION - -

| LABORATORY TESTS | MOISTURE CONTENT (%) | DRY DENSITY (PCF) | OVM (PPM) | DEPTH (FEET) | SAMPLE | BLOWS PER FOOT | |
|---|---|---|---|---|---|---|---|
| | | | | 0 | | | ASPHALTIC CONCRETE - 4" thick |
| | | | | | | | LIGHT BROWN CLAYEY SAND (SC) medium dense, moist (fill) |
| | | | 25 | | | 14 | BLACK SILTY CLAY (CL) stiff, moist |
| | | | | 5 | | | GRAY SILTY CLAY (CL) |
| | | | 5 | | | 10 | stiff, moist |
| | | | 7 | | | 17 | MOTTLED GRAY BROWN SILTY CLAY (CL) stiff, moist |
| | | | | 10 | | | Boring backfilled with cement grout |
| | | | | | | | GROUNDWATER NOT ENCOUNTERED DURING DRILLING |
| | | | | 15 | | | |

Subsurface Consultants

4050 HORTON STREET - EMERYVILLE, CA

| JOB NUMBER | DATE | APPROVED |
|---|---|---|
| 851.001 | 6/21/93 | MC |

PLATE 9

| GENERAL SOIL CATEGORIES | | | SYMBOLS | TYPICAL SOIL TYPES |
|---|---|---|---|---|
| COARSE GRAINED SOILS<br>More than half is larger than No. 200 seive | GRAVEL<br>More than half coarse fraction is larger than No. 4 seive size | Clean Gravel with little or no fines | GW | Well Graded Gravel, Gravel-Sand Mixtures |
| | | | GP | Poorly Graded Gravel, Gravel-Sand Mixtures |
| | | Gravel with more than 12% fines | GM | Silty Gravel, Poorly Graded Gravel-Sand-Silt Mixtures |
| | | | GC | Clayey Gravel, Poorly Graded Gravel-Sand-Clay Mixtures |
| | SAND<br>More than half coarse fraction is smaller than No. 4 seive size | Clean Sand with little or no fines | SW | Well Graded Sand, Gravelly Sand |
| | | | SP | Poorly Graded Sand, Gravelly Sand |
| | | Sand with more than 12% fines | SM | Silty Sand, Poorly Graded Sand-Silt Mixtures |
| | | | SC | Clayey Sand, Poorly Graded Sand-Clay Mixtures |
| FINE GRAINED SOILS<br>More than half is smaller than No. 200 seive | SILT AND CLAY<br>Liquid Limit Less than 50% | | ML | Inorganic Silt and Very Fine Sand, Rock Flour, Silty or Clayey Fine Sand, or Clayey Silt with Slight Plasticity |
| | | | CL | Inorganic Clay of Low to Medium Plasticity, Gravelly Clay, Sandy Clay, Silty Clay, Lean Clay |
| | | | OL | Organic Clay and Organic Silty Clay of Low Plasticity |
| | SILT AND CLAY<br>Liquid Limit Greater than 50% | | MH | Inorganic Silt, Micaceous or Diatomaceous Fine Sandy or Silty Soils, Elastic Silt |
| | | | CH | Inorganic Clay of High Plasticity, Fat Clay |
| | | | OH | Organic Clay of Medium to High Plasticity, Organic Silt |
| HIGHLY ORGANIC SOILS | | | PT | Peat and Other Highly Organic Soils |

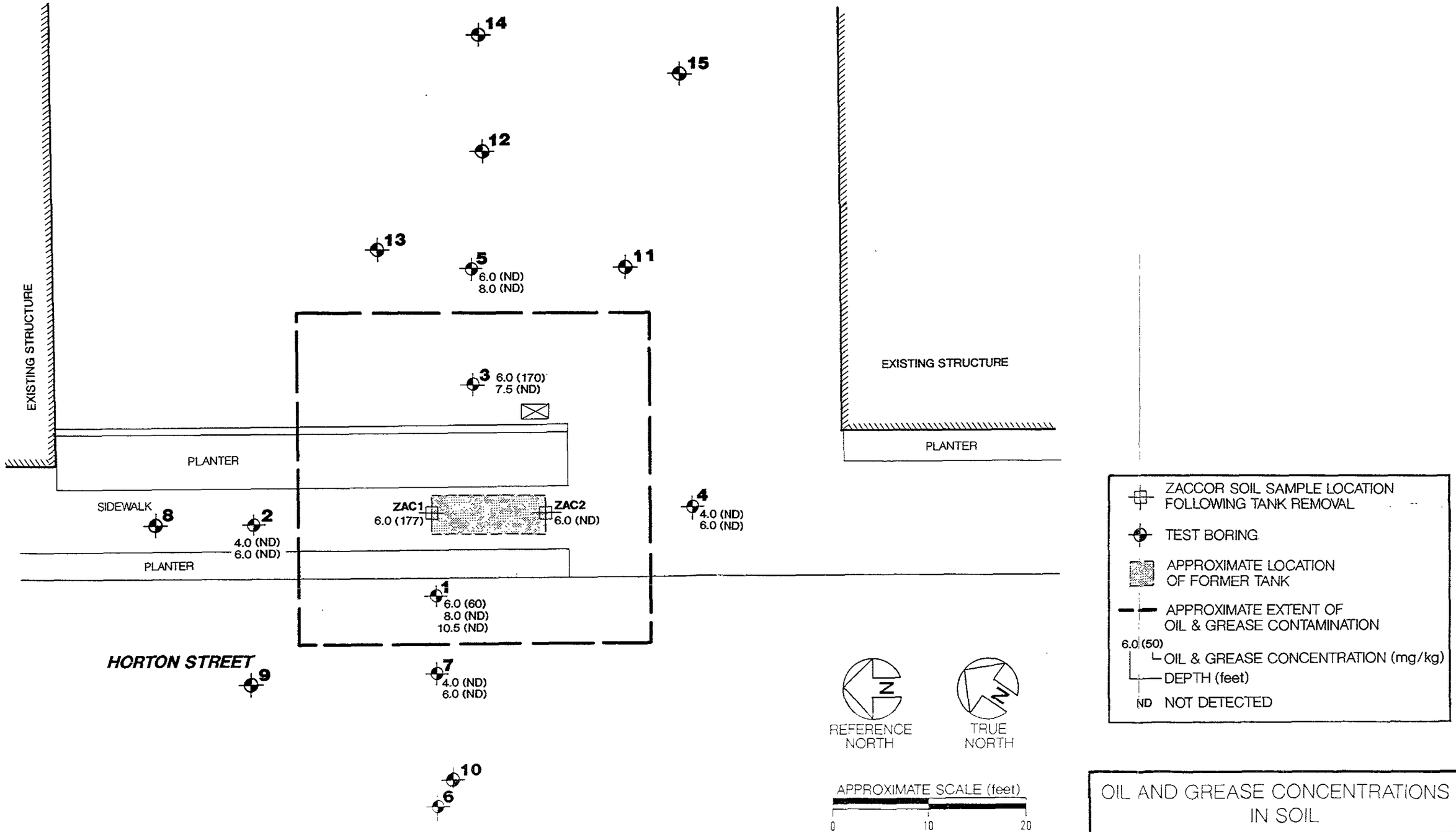
# UNIFIED SOIL CLASSIFICATION SYSTEM

Subsurface Consultants

4050 HORTON STREET - EMERYVILLE, CA

| JOB NUMBER | DATE | APPROVED |
|---|---|---|
| 851.001 | 6/21/93 | ME |

PLATE 10



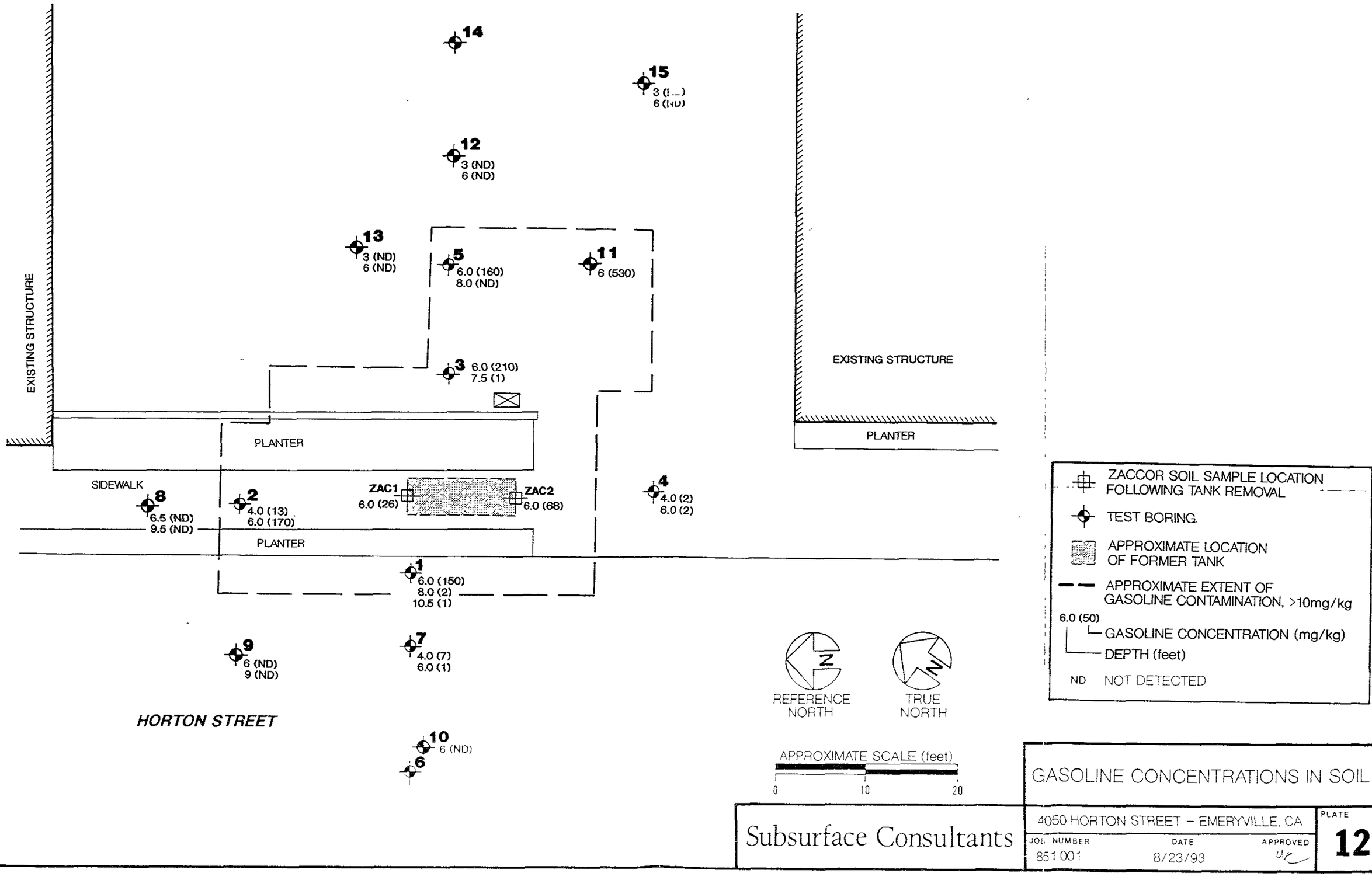

Subsurface Consultants

# OIL AND GREASE CONCENTRATIONS IN SOIL

4050 HORTON STREET – EMERYVILLE, CA

| JOB NUMBER | DATE | APPROVED |
|---|---|---|
| 851001 | 8/23/93 | |

PLATE 11




# GASOLINE CONCENTRATIONS IN SOIL

Subsurface Consultants

4050 HORTON STREET – EMERYVILLE, CA

| JOB NUMBER | DATE | APPROVED |
|---|---|---|
| 851001 | 8/23/93 | |

PLATE 12

Per your request:

UC. #478799

ZACCOR CORPORATION

January 20, 1990

Plywood Lumber and Sales
4050 Horton
Emeryville, CA

RE: The Removal of One Underground Storage Tank and the Subsequent Field Sampling at 4050 Horton Street, Emeryville, CA.

Dear Mr. Jeff Hunt:

The following report contains documentation as to the removal of one underground storage tank and subsequent field sampling at 4050 Horton Street, City of Emeryville, County of Alameda, California. Field Sampling was performed in accordance with state and local agency approved methodology, in the presence of Susan L. Hugo, Hazardous Materials Specialist, for the Alameda County Health Agency, Department of Environmental Health. Environmental Technical Services was retained by Zaccor Corporation to perform third party field sampling.

See accompanying site diagram for the tank location prior to removal, field sampling designations, and sampling depths.

TANK REMOVAL

On December 10, 1990, one underground storage tank was removed from the above mentioned address.

Upon tank removal the following observations were noted;

The tank was a 1,000 gallon steel single wall gasoline storage tank. Rust and pitting were noted upon visual inspection, no holes were apparent. Hydrocarbon odor was present in the surrounding fill material and native soil. Groundwater was present within the tank pit excavation.

791 HAMILTON AVENUE MENLO PARK, CA. 94025 (415) 363-2181

## SAMPLING

### Soil Sampling of Tank Pit Excavation

A soil sample was obtained from the tank pit wall within the capillary zone, at each end of the tank. This was accomplished by the clearing of fill material and slough from the designated sample area. A backhoe bucket then obtained a sample from 12" to 18" into the native soil. The surface three inches of soil was removed from the backhoe bucket and a clean brass sleeve driven into the remaining soil. Soil was packed into the sleeve to eliminate the possibility of headspace. The brass sleeve was then covered with aluminum foil, fitted with plastic caps, sealed with duct tape, labeled, and placed on dry ice under chain of custody to be transported to a certified hazardous waste analytical laboratory, where soil was analyzed . Each soil sample was analyzed for Total Petroleum Hydrocarbons as Diesel (TPH-D) (EPA Method 3550), Total Oil and Grease (TOG) (EPA Method 5520 E&F), Total Petroleum Hydrocarbons as Gasoline with Benzene, Toluene, Ethylbenzene, and Xylene distinction (TPH-G & BTEX), Chlorinated Hydrocarbons EPA Method 8010), Cadmium, Total Chromium, Nickel, Lead and Zinc (EPA Method 6010).

### Ground Water Sampling

Groundwater was present within the tank pit excavation at a depth of 6'6". A sample of the groundwater was obtained by lowering a closed one liter amber bottle beneath the groundwater surface, the bottle was then opened, allowed to fill, closed, and removed from the tank pit excavation. This process was repeated till three amber liter bottles and three 40ml VOA vials were filled to a positive meniscus and capped. The bottles were placed on blue ice under chain of custody and transported to a Certified Hazardous Waste Analytical Laboratory. The groundwater sample was analyzed for Total Petroleum Hydrocarbons as Diesel (TPH-D), Total Oil and Grease (TOG), Total Petroleum Hydrocarbons as Gasoline with Benzene, Toluene, Ethylbenzene, and Xylene distinction, Chlorinated Hydrocarbons, Cadmium, Total Chromium, Nickel, Lead and Zinc.

The groundwater was evacuated from the tank pit excavation by pumping and allowed to recharge.

The tank pit was then backfilled with clean imported fill material.

## Stockpile Sampling

The approximately 30 cubic yards of contaminated fill material excavated from the tank pit, was stockpiled on visqueen. A composite soil sample was collected from the stockpile. This was accomplished by dividing the stockpile into three sections then driving a discrete brass sleeve two feet into each section. Soil was packed into the sleeve to eliminate the possibility of headspace. The brass sleeve was then covered with aluminum foil, fitted with plastic caps, sealed with duct tape, labeled, and placed on dry ice under chain of custody to be transported to a certified hazardous waste analytical laboratory, where soil was composited and analyzed.

Each soil sample was analyzed for Total Petroleum Hydrocarbons as Diesel (TPH-D), Total Oil and Grease (TOG), Total Petroleum Hydrocarbons as Gasoline with Benzene, Toluene, Ethylbenzene, and Xylene distinction, Chlorinated Hydrocarbons, Cadmium, Total Chromium, Nickel, Lead and Zinc.

## Sample Locations

Sample #1 was a soil sample collected within the tank pit wall capillary zone at a depth of 6' below grade from the tank end opposite the fill pipe.

Sample #2 was a soil sample collected within the tank pit wall capillary zone at a depth of 6' below grade from the fill pipe end of the tank.

Sample #3 was a subsurface water sample taken from standing water within the tank pit prior to the pumping of the standing water and its subsequent recharge.

Sample #4 was a composite soil sample collected from three points within the stockpiled material to be composited as one analysis at a certified laboratory. Samples were obtained at a depth of 18" to 24" within the stockpile.

## Analytical Results

The chain of custody and certified analytical results have been attached to this report.

Sample #1 contained concentrations of Total Petroleum Hydrocarbons as Gasoline (TPH-G) at 26 ppm, Benzene at 2.2 ppm, Toluene at 1.6 ppm, Ethylbenzene at 0.31 ppm, Total Xylenes at 0.54 ppm, Total Oil and Grease at 177 ppm, Cadmium at 0.34 ppm, Total Chromium at 28.1 ppm, Nickel at 46.6 ppm, Lead at 61.0 ppm, Zinc at 179 ppm. Chlorinated Hydrocarbons and Total Petroleum Hydrocarbons as Diesel were found to be non-detected at their respective detection limits.

Sample #2 contained concentrations of Total Petroleum Hydrocarbons as Gasoline (TPH-G) at 68 ppm, Benzene at 0.13 ppm, Toluene at 0.24 ppm, Ethylbenzene at 0.45 ppm, Total Xylenes at 1.1 ppm, Total Petroleum Hydrocarbons as Diesel at 44 ppm, Total Chromium at 30.5 ppm, Nickel at 27.9 ppm, Lead at 6.6 ppm, Zinc at 29.1 ppm, and 1,2-Dichloroethane at 2.2 ppb. Total Oil and Grease, and Cadmium were found to be non-detected at their respective detection limits.

Sample #3 contained concentrations of Total Petroleum Hydrocarbons as Gasoline (TPH-G) at 200,000 ppb, Benzene at 11,000 ppb, Toluene at 10,000, Total Xylenes at 4,800 ppb, Total Petroleum Hydrocarbons as Diesel at 19,000 ppb, Total Oil and Grease at 6.4 ppm, Total Chromium at 122 ppb, Nickel at 88.0 ppb, Lead at 680 ppb, Zinc at 1740 ppb, and 1,2-Dichloroethane at 180 ppb. Cadmium and Ethylbenzene, were found to be non-detected at their respective detection limits.

Sample #4A-C contained concentrations of Total Petroleum Hydrocarbons as Gasoline (TPH-G) at 71 ppm, Benzene at 0.52 ppm, Toluene at 0.49 ppm, Ethylbenzene at 0.35 ppm, Total Xylenes at 0.72 ppm, Total Petroleum Hydrocarbons as Diesel at 66 ppm, Total Oil and Grease (TOG) at 420 ppm, Total Chromium at 51.1 ppm, Nickel at 38.6 ppm, Lead at 109 ppm, Zinc at 180 ppm. Cadmium and Chlorinated Hydrocarbons were found to be non-detectable at their respective detection limits.

## Recommendations

The State Water Resources Board Document, Leaking Underground Fuel Tank Field Manual (LUFT), supported by the San Francisco Regional Water Quality Control Board (SFRWQCB), defines appropriate actions in dealing with contamination related to an unauthorized fuel release from an underground storage tank.

The presence of significant concentrations of Petroleum Hydrocarbons within the tank pit would necessitate a further investigation of the lateral and vertical extent of contaminants in soil. Due to the tank pits' close proximity to the street and a concrete wall, soil borings are recommended to assess the feasibility, cost, and engineering of the excavation of contaminated soil.

In accordance with the LUFT manual one monitoring well would be placed within 10' of and down gradient from the original tank pit to determine the impact of contaminants upon the first encountered groundwater. A minimum of three groundwater reference points are necessary in order to determine the groundwater direction flow beneath the site. The three points would allow triangulation and the proper surveying of groundwater gradient. Should properly installed and screened wells exist on adjacent properties, they may qualify as eligible reference points.

Reportage

Please forward a copy of this report, the chain of custody, and the certified analytical report to the SFRWQCB and the Alameda County Department of Health Services, Division of Environmental Health.

Water Quality Control Board
San Franciscan Region
1800 Harrison Street
Room 700
Oakland, CA 94612

Alameda County Health Agency
Department of Environmental Health
Division of Hazardous Materials
590 Hamilton Street
Redwood City, CA 94063
ATTN: Susan L. Hugo

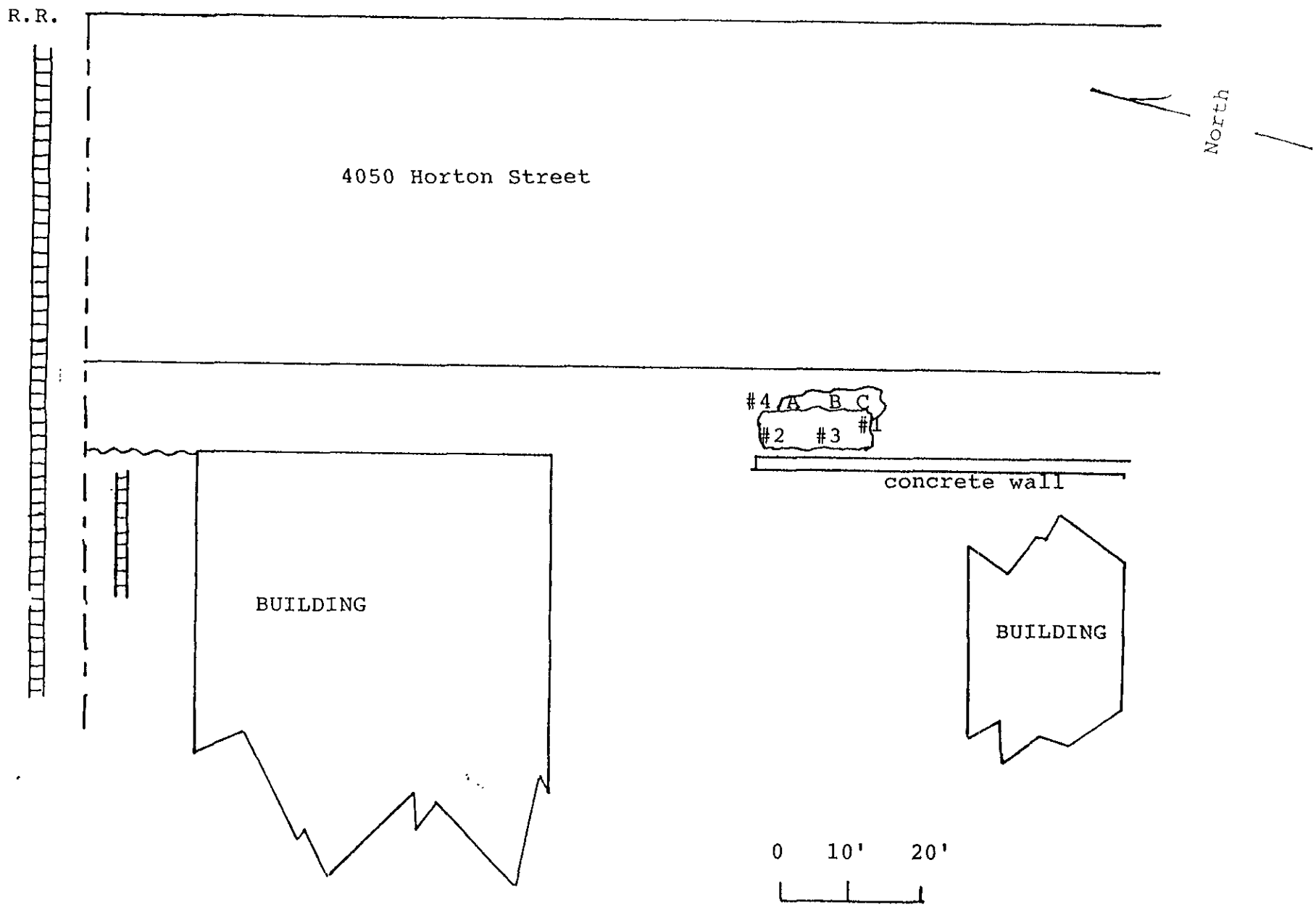
If you have any questions, or if I may be of further assistance, please call me at (415) 325-3235.

Sincerely,
Zaccor Corporation

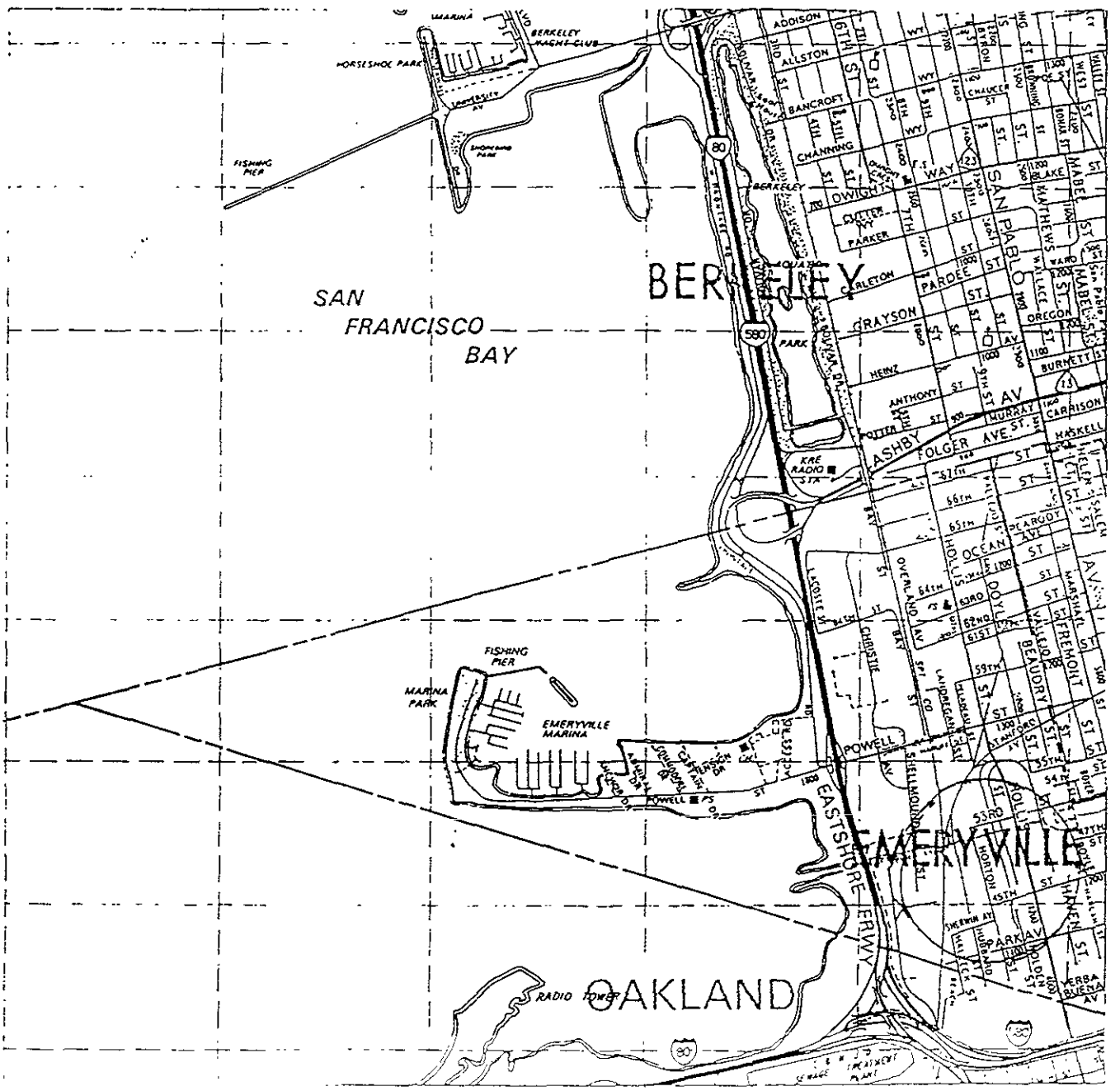
Gary Zaccor
Project Manager

Environmental
Technical
Services

at; 4050 Horton Street, Emeryville, CA



PLYWOOD LUMBER AND SALES
4050 HORTON STREET
EMERYVILLE, CA




North

ANAMETRIX INC
Environmental & Analytical Chemistry
1961 Concourse Drive, Suite E, San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

# REPORT

MR. GARY ZACCOR
ZACCOR CORP.
791 HAMILTON AVE.
MENLO PARK, CA 94025

Workorder # : 9012085
Date Received : 12/10/90
Project ID : Z0121090M1
Purchase Order: N/A

The following samples were received at Anametrix, Inc. for analysis :

| ANAMETRIX ID | CLIENT SAMPLE ID |
|---|---|
| 9012085- 1 | #1 |
| 9012085- 2 | #2 |
| 9012085- 3 | #3 |
| 9012085- 4 | #4A,B,C |

This report is paginated for your convenience and ease of review. It contains 22 pages excluding the cover letter. The report is organized into sections. Each section contains all analytical results and quality assurance data related to a specific group or section within Anametrix. The Report Summary that precedes each section will help you determine which group at Anametrix generated the data. The Report Summary will contain the signatures of the department supervisor and a chemist, both of whom reviewed the analytical data. Please refer all questions to the department supervisor that signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under certificate number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accrediation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

for

Burt Sutherland
Laboratory Director

12-28-90
Date

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. GARY ZACCOR
ZACCOR CORP.
791 HAMILTON AVE.
MENLO PARK, CA 94025

Workorder # : 9012085
Date Received : 12/10/90
Project ID : Z0121090M1
Purchase Order: N/A
Department : GC
Sub-Department: VOA

SAMPLE INFORMATION:

| ANAMETRIX SAMPLE ID | CLIENT SAMPLE ID | MATRIX | DATE SAMPLED | METHOD |
|---|---|---|---|---|
| 9012085- 1 | #1 | SOIL | 12/10/90 | 8010 |
| 9012085- 2 | #2 | SOIL | 12/10/90 | 8010 |
| 9012085- 3 | #3 | H2O | 12/10/90 | 8010 |
| 9012085- 4 | #4A,B,C | SOIL | 12/10/90 | 8010 |

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. GARY ZACCOR
ZACCOR CORP.
791 HAMILTON AVE.
MENLO PARK, CA 94025

Workorder # : 9012085
Date Received : 12/10/90
Project ID : Z0121090M1
Purchase Order: N/A
Department : GC
Sub-Department: VOA

QA/QC SUMMARY :

- Due to interfering hydrocarbon peaks, sample #1 was analyzed at a dilution for EPA Method 8010.

Corinne Hanf 12/28/90
Department Supervisor Date

Arthur Lemos 12/28/90
Chemist Date

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 601/8010
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : Z0121090M1 #1
Matrix : SOIL
Date sampled : 12/10/90
Date analyzed: 12/17/90
Dilution : 100

Anametrix I.D. : 9012085-01
Analyst : AK
Supervisor : CP
Date released : 12/27/90
Instrument ID : HP24

| CAS # | Compound Name | Reporting Limit (ug/Kg) | Amount Found (ug/Kg) |
|---|---|---|---|
| 74-87-3 | * Chloromethane | 100 | ND |
| 74-83-9 | * Bromomethane | 50 | ND |
| 75-71-8 | * Dichlorodifluoromethane | 100 | ND |
| 75-01-4 | * Vinyl Chloride | 50 | ND |
| 75-00-3 | * Chloroethane | 50 | ND |
| 75-09-2 | * Methylene Chloride | 50 | ND |
| 79-69-4 | * Trichlorofluoromethane | 50 | ND |
| 75-35-4 | * 1,1-Dichloroethene | 50 | ND |
| 75-34-3 | * 1,1-Dichloroethane | 50 | ND |
| 156-59-2 | # Cis-1,2-Dichloroethene | 50 | ND |
| 156-60-5 | * Trans-1,2-Dichloroethene | 50 | ND |
| 67-66-3 | * Chloroform | 50 | ND |
| 76-13-1 | # Trichlorotrifluoroethane | 50 | ND |
| 107-06-2 | * 1,2-Dichloroethane | 50 | ND |
| 71-55-6 | * 1,1,1-Trichloroethane | 50 | ND |
| 56-23-5 | * Carbon Tetrachloride | 50 | ND |
| 75-27-4 | * Bromodichloromethane | 50 | ND |
| 78-87-5 | * 1,2-Dichloropropane | 50 | ND |
| 10061-02-6 | * Trans-1,3-Dichloropropene | 50 | ND |
| 79-01-6 | * Trichloroethene | 50 | ND |
| 124-48-1 | * Dibromochloromethane | 50 | ND |
| 79-00-5 | * 1,1,2-Trichloroethane | 50 | ND |
| 10061-01-5 | * cis-1,3-Dichloropropene | 50 | ND |
| 110-75-8 | * 2-Chloroethylvinylether | 100 | ND |
| 75-25-2 | * Bromoform | 50 | ND |
| 127-18-4 | * Tetrachloroethene | 50 | ND |
| 79-34-5 | * 1,1,2,2-Tetrachloroethane | 50 | ND |
| 108-90-7 | * Chlorobenzene | 50 | ND |
| 541-73-1 | * 1,3-Dichlorobenzene | 100 | ND |
| 95-50-1 | * 1,2-Dichlorobenzene | 100 | ND |
| 106-46-7 | * 1,4-Dichlorobenzene | 100 | ND |
| | % Surrogate Recovery | 33-134% | 105% |

ND : Not detected at or above the practical quantitation limit for the method.
* A 601/8010 approved compound (Federal Register, 10/26/84).
\# A compound added by Anametrix, Inc.

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 601/8010
ANAMETRIX, INC. (408) 432-8192

| | | | |
|---|---|---|---|
| Sample I.D. | : Z0121090M1 #2 | Anametrix I.D. | : 9012085-02 |
| Matrix | : SOIL | Analyst | : ARP |
| Date sampled | : 12/10/90 | Supervisor | : CP |
| Date analyzed | : 12/17/90 | Date released | : 12/27/90 |
| Dilution | : NONE | Instrument ID | : HP24 |

| CAS # | Compound Name | Reporting Limit (ug/Kg) | Amount Found (ug/Kg) |
|---|---|---|---|
| 74-87-3 | * Chloromethane | 1 | ND |
| 74-83-9 | * Bromomethane | 0.5 | ND |
| 75-71-8 | * Dichlorodifluoromethane | 1 | ND |
| 75-01-4 | * Vinyl Chloride | 0.5 | ND |
| 75-00-3 | * Chloroethane | 0.5 | ND |
| 75-09-2 | * Methylene Chloride | 0.5 | ND |
| 79-69-4 | * Trichlorofluoromethane | 0.5 | ND |
| 75-35-4 | * 1,1-Dichloroethene | 0.5 | ND |
| 75-34-3 | * 1,1-Dichloroethane | 0.5 | ND |
| 156-59-2 | # Cis-1,2-Dichloroethene | 0.5 | ND |
| 156-60-5 | * Trans-1,2-Dichloroethene | 0.5 | ND |
| 67-66-3 | * Chloroform | 0.5 | ND |
| 76-13-1 | # Trichlorotrifluoroethane | 0.5 | ND |
| 107-06-2 | * 1,2-Dichloroethane | 0.5 | 2.2 |
| 71-55-6 | * 1,1,1-Trichloroethane | 0.5 | ND |
| 56-23-5 | * Carbon Tetrachloride | 0.5 | ND |
| 75-27-4 | * Bromodichloromethane | 0.5 | ND |
| 78-87-5 | * 1,2-Dichloropropane | 0.5 | ND |
| 10061-02-6 | * Trans-1,3-Dichloropropene | 0.5 | ND |
| 79-01-6 | * Trichloroethene | 0.5 | ND |
| 124-48-1 | * Dibromochloromethane | 0.5 | ND |
| 79-00-5 | * 1,1,2-Trichloroethane | 0.5 | ND |
| 10061-01-5 | * cis-1,3-Dichloropropene | 0.5 | ND |
| 110-75-8 | * 2-Chloroethylvinylether | 1 | ND |
| 75-25-2 | * Bromoform | 0.5 | ND |
| 127-18-4 | * Tetrachloroethene | 0.5 | ND |
| 79-34-5 | * 1,1,2,2-Tetrachloroethane | 0.5 | ND |
| 108-90-7 | * Chlorobenzene | 0.5 | ND |
| 541-73-1 | * 1,3-Dichlorobenzene | 1 | ND |
| 95-50-1 | * 1,2-Dichlorobenzene | 1 | ND |
| 106-46-7 | * 1,4-Dichlorobenzene | 1 | ND |
| | % Surrogate Recovery | 33-134% | 47% |

ND : Not detected at or above the practical quantitation limit for the method.
* A 601/8010 approved compound (Federal Register, 10/26/84).
\# A compound added by Anametrix, Inc.

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 601/8010
ANAMETRIX, INC. (408) 432-8192

| | | | |
|---|---|---|---|
| Sample I.D. | : Z0121090M1 #3 | Anametrix I.D. | : 9012085-03 |
| Matrix | : WATER | Analyst | : |
| Date sampled | : 12/10/90 | Supervisor | : |
| Date analyzed | : 12/17/90 | Date released | : 12/27/90 |
| Dilution | : 100 | Instrument ID | : HP24 |

| CAS # | Compound Name | Reporting Limit (ug/l) | Amount Found (ug/l) |
|---|---|---|---|
| 74-87-3 | * Chloromethane | 100 | ND |
| 74-83-9 | * Bromomethane | 50 | ND |
| 75-71-8 | * Dichlorodifluoromethane | 100 | ND |
| 75-01-4 | * Vinyl Chloride | 50 | ND |
| 75-00-3 | * Chloroethane | 50 | ND |
| 75-09-2 | * Methylene Chloride | 50 | ND |
| 75-69-4 | * Trichlorofluoromethane | 50 | ND |
| 75-35-4 | * 1,1-Dichloroethene | 50 | ND |
| 75-34-3 | * 1,1-Dichloroethane | 50 | ND |
| 156-59-2 | # Cis-1,2-Dichloroethene | 50 | ND |
| 156-60-5 | * Trans-1,2-Dichloroethene | 50 | ND |
| 67-66-3 | * Chloroform | 50 | ND |
| 76-13-1 | # Trichlorotrifluoroethane | 50 | ND |
| 107-06-2 | * 1,2-Dichloroethane | 50 | 180 |
| 71-55-6 | * 1,1,1-Trichloroethane | 50 | ND |
| 56-23-5 | * Carbon Tetrachloride | 50 | ND |
| 75-27-4 | * Bromodichloromethane | 50 | ND |
| 78-87-5 | * 1,2-Dichloropropane | 50 | ND |
| 10061-02-6 | * Trans-1,3-Dichloropropene | 50 | ND |
| 79-01-6 | * Trichloroethene | 50 | ND |
| 124-48-1 | * Dibromochloromethane | 50 | ND |
| 79-00-5 | * 1,1,2-Trichloroethane | 50 | ND |
| 10061-01-5 | * cis-1,3-Dichloropropene | 50 | ND |
| 110-75-8 | * 2-Chloroethylvinylether | 100 | ND |
| 75-25-2 | * Bromoform | 50 | ND |
| 127-18-4 | * Tetrachloroethene | 50 | ND |
| 79-34-5 | * 1,1,2,2-Tetrachloroethane | 50 | ND |
| 108-90-7 | * Chlorobenzene | 50 | ND |
| 95-50-1 | * 1,2-Dichlorobenzene | 100 | ND |
| 541-73-1 | * 1,3-Dichlorobenzene | 100 | ND |
| 106-46-7 | * 1,4-Dichlorobenzene | 100 | ND |
| | % Surrogate Recovery | 51-136% | 105% |

ND : Not detected at or above the practical quantitation limit for the method.
* A 601/8010 approved compound (Federal Register, 10/26/84).
\# A compound added by Anametrix, Inc.

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 601/8010
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : Z0121090M1 #4A,B,C
Matrix : SOIL
Date sampled : 12/10/90
Date analyzed: ~~12/17/90~~ 12/21/90
Dilution : NONE

Anametrix I.D. : 9012085-04
Analyst : ✓
Supervisor :
Date released : 12/27/90
Instrument ID : HP24

| CAS # | Compound Name | Reporting Limit (ug/Kg) | Amount Found (ug/Kg) |
|---|---|---|---|
| 74-87-3 | * Chloromethane | 1 | ND |
| 74-83-9 | * Bromomethane | 0.5 | ND |
| 75-71-8 | * Dichlorodifluoromethane | 1 | ND |
| 75-01-4 | * Vinyl Chloride | 0.5 | ND |
| 75-00-3 | * Chloroethane | 0.5 | ND |
| 75-09-2 | * Methylene Chloride | 0.5 | ND |
| 79-69-4 | * Trichlorofluoromethane | 0.5 | ND |
| 75-35-4 | * 1,1-Dichloroethene | 0.5 | ND |
| 75-34-3 | * 1,1-Dichloroethane | 0.5 | ND |
| 156-59-2 | # Cis-1,2-Dichloroethene | 0.5 | ND |
| 156-60-5 | * Trans-1,2-Dichloroethene | 0.5 | ND |
| 67-66-3 | * Chloroform | 0.5 | ND |
| 76-13-1 | # Trichlorotrifluoroethane | 0.5 | ND |
| 107-06-2 | * 1,2-Dichloroethane | 0.5 | ND |
| 71-55-6 | * 1,1,1-Trichloroethane | 0.5 | ND |
| 56-23-5 | * Carbon Tetrachloride | 0.5 | ND |
| 75-27-4 | * Bromodichloromethane | 0.5 | ND |
| 78-87-5 | * 1,2-Dichloropropane | 0.5 | ND |
| 10061-02-6 | * Trans-1,3-Dichloropropene | 0.5 | ND |
| 79-01-6 | * Trichloroethene | 0.5 | ND |
| 124-48-1 | * Dibromochloromethane | 0.5 | ND |
| 79-00-5 | * 1,1,2-Trichloroethane | 0.5 | ND |
| 10061-01-5 | * cis-1,3-Dichloropropene | 0.5 | ND |
| 110-75-8 | * 2-Chloroethylvinylether | 1 | ND |
| 75-25-2 | * Bromoform | 0.5 | ND |
| 127-18-4 | * Tetrachloroethene | 0.5 | ND |
| 79-34-5 | * 1,1,2,2-Tetrachloroethane | 0.5 | ND |
| 108-90-7 | * Chlorobenzene | 0.5 | ND |
| 541-73-1 | * 1,3-Dichlorobenzene | 1 | ND |
| 95-50-1 | * 1,2-Dichlorobenzene | 1 | ND |
| 106-46-7 | * 1,4-Dichlorobenzene | 1 | ND |
| | % Surrogate Recovery | 33-134% | 52% |

ND : Not detected at or above the practical quantitation limit for the method.
* A 601/8010 approved compound (Federal Register, 10/26/84).
\# A compound added by Anametrix, Inc.

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 601/8010
ANAMETRIX, INC. (408) 432-8192

| | | | |
|---|---|---|---|
| Sample I.D. | : METHOD BLANK | Anametrix I.D. | : 24B1217H02 |
| Matrix | : WATER | Analyst | : AKL |
| Date sampled | : N/A | Supervisor | : CP |
| Date analyzed | : 12/17/90 | Date released | : 12/27/90 |
| Dilution | : NONE | Instrument ID | : HP24 |

| CAS # | Compound Name | Reporting Limit (ug/l) | Amount Found (ug/l) |
|---|---|---|---|
| 74-87-3 | * Chloromethane | 1 | ND |
| 74-83-9 | * Bromomethane | 0.5 | ND |
| 75-71-8 | * Dichlorodifluoromethane | 1 | ND |
| 75-01-4 | * Vinyl Chloride | 0.5 | ND |
| 75-00-3 | * Chloroethane | 0.5 | ND |
| 75-09-2 | * Methylene Chloride | 0.5 | 0.8 |
| 75-69-4 | * Trichlorofluoromethane | 0.5 | ND |
| 75-35-4 | * 1,1-Dichloroethene | 0.5 | ND |
| 75-34-3 | * 1,1-Dichloroethane | 0.5 | ND |
| 156-59-2 | # Cis-1,2-Dichloroethene | 0.5 | ND |
| 156-60-5 | * Trans-1,2-Dichloroethene | 0.5 | ND |
| 67-66-3 | * Chloroform | 0.5 | ND |
| 76-13-1 | # Trichlorotrifluoroethane | 0.5 | ND |
| 107-06-2 | * 1,2-Dichloroethane | 0.5 | ND |
| 71-55-6 | * 1,1,1-Trichloroethane | 0.5 | ND |
| 56-23-5 | * Carbon Tetrachloride | 0.5 | ND |
| 75-27-4 | * Bromodichloromethane | 0.5 | ND |
| 78-87-5 | * 1,2-Dichloropropane | 0.5 | ND |
| 10061-02-6 | * Trans-1,3-Dichloropropene | 0.5 | ND |
| 79-01-6 | * Trichloroethene | 0.5 | ND |
| 124-48-1 | * Dibromochloromethane | 0.5 | ND |
| 79-00-5 | * 1,1,2-Trichloroethane | 0.5 | ND |
| 10061-01-5 | * cis-1,3-Dichloropropene | 0.5 | ND |
| 110-75-8 | * 2-Chloroethylvinylether | 1 | ND |
| 75-25-2 | * Bromoform | 0.5 | ND |
| 127-18-4 | * Tetrachloroethene | 0.5 | ND |
| 79-34-5 | * 1,1,2,2-Tetrachloroethane | 0.5 | ND |
| 108-90-7 | * Chlorobenzene | 0.5 | ND |
| 95-50-1 | * 1,2-Dichlorobenzene | 1 | ND |
| 541-73-1 | * 1,3-Dichlorobenzene | 1 | ND |
| 106-46-7 | * 1,4-Dichlorobenzene | 1 | ND |
| | % Surrogate Recovery | 51-136% | 105% |

ND : Not detected at or above the practical quantitation limit for the method.
* A 601/8010 approved compound (Federal Register, 10/26/84).
\# A compound added by Anametrix, Inc.

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 601/8010
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : METHOD BLANK
Matrix : SOIL
Date sampled : N/A
Date analyzed: 12/21/90
Dilution : NONE

Anametrix I.D. : 24B1221H02
Analyst : ARL
Supervisor : CP
Date released : 12/27/90
Instrument ID : HP24

| CAS # | Compound Name | Reporting Limit (ug/Kg) | Amount Found (ug/Kg) |
|---|---|---|---|
| 74-87-3 | * Chloromethane | 1 | ND |
| 74-83-9 | * Bromomethane | 0.5 | ND |
| 75-71-8 | * Dichlorodifluoromethane | 1 | ND |
| 75-01-4 | * Vinyl Chloride | 0.5 | ND |
| 75-00-3 | * Chloroethane | 0.5 | ND |
| 75-09-2 | * Methylene Chloride | 0.5 | ND |
| 75-69-4 | * Trichlorofluoromethane | 0.5 | ND |
| 75-35-4 | * 1,1-Dichloroethene | 0.5 | ND |
| 75-34-3 | * 1,1-Dichloroethane | 0.5 | ND |
| 156-59-2 | # Cis-1,2-Dichloroethene | 0.5 | ND |
| 156-60-5 | * Trans-1,2-Dichloroethene | 0.5 | ND |
| 67-66-3 | * Chloroform | 0.5 | ND |
| 76-13-1 | # Trichlorotrifluoroethane | 0.5 | ND |
| 107-06-2 | * 1,2-Dichloroethane | 0.5 | ND |
| 71-55-6 | * 1,1,1-Trichloroethane | 0.5 | ND |
| 56-23-5 | * Carbon Tetrachloride | 0.5 | ND |
| 75-27-4 | * Bromodichloromethane | 0.5 | ND |
| 78-87-5 | * 1,2-Dichloropropane | 0.5 | ND |
| 10061-02-6 | * Trans-1,3-Dichloropropene | 0.5 | ND |
| 79-01-6 | * Trichloroethene | 0.5 | ND |
| 124-48-1 | * Dibromochloromethane | 0.5 | ND |
| 79-00-5 | * 1,1,2-Trichloroethane | 0.5 | ND |
| 10061-01-5 | * cis-1,3-Dichloropropene | 0.5 | ND |
| 110-75-8 | * 2-Chloroethylvinylether | 1 | ND |
| 75-25-2 | * Bromoform | 0.5 | ND |
| 127-18-4 | * Tetrachloroethene | 0.5 | ND |
| 79-34-5 | * 1,1,2,2-Tetrachloroethane | 0.5 | ND |
| 108-90-7 | * Chlorobenzene | 0.5 | ND |
| 95-50-1 | * 1,2-Dichlorobenzene | 1 | ND |
| 541-73-1 | * 1,3-Dichlorobenzene | 1 | ND |
| 106-46-7 | * 1,4-Dichlorobenzene | 1 | ND |
| | % Surrogate Recovery | 33-134% | 108% |

ND : Not detected at or above the practical quantitation limit for the method.
* A 601/8010 approved compound (Federal Register, 10/26/84).
\# A compound added by Anametrix, Inc.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. GARY ZACCOR
ZACCOR CORP.
791 HAMILTON AVE.
MENLO PARK, CA 94025

Workorder # : 9012085
Date Received : 12/10/90
Project ID : Z0121090M1
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

| ANAMETRIX SAMPLE ID | CLIENT SAMPLE ID | MATRIX | DATE SAMPLED | METHOD |
|---|---|---|---|---|
| 9012085- 1 | #1 | SOIL | 12/10/90 | TPHd |
| 9012085- 2 | #2 | SOIL | 12/10/90 | TPHd |
| 9012085- 3 | #3 | H2O | 12/10/90 | TPHd |
| 9012085- 4 | #4A,B,C | SOIL | 12/10/90 | TPHd |
| 9012085- 1 | #1 | SOIL | 12/10/90 | TPHg/BTEX |
| 9012085- 2 | #2 | SOIL | 12/10/90 | TPHg/BTEX |
| 9012085- 3 | #3 | H2O | 12/10/90 | TPHg/BTEX |
| 9012085- 4 | #4A,B,C | SOIL | 12/10/90 | TPHg/BTEX |

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. GARY ZACCOR
ZACCOR CORP.
791 HAMILTON AVE.
MENLO PARK, CA 94025

Workorder # : 9012085
Date Received : 12/10/90
Project ID : Z0121090M1
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

| ANAMETRIX SAMPLE ID | CLIENT SAMPLE ID | MATRIX | DATE SAMPLED | METHOD |
|---|---|---|---|---|
| 9012085- 1 | #1 | SOIL | 12/10/90 | TPHd |
| 9012085- 2 | #2 | SOIL | 12/10/90 | TPHd |
| 9012085- 3 | #3 | H2O | 12/10/90 | TPHd |
| 9012085- 4 | #4A,B,C | SOIL | 12/10/90 | TPHd |
| 9012085- 1 | #1 | SOIL | 12/10/90 | TPHg/BTEX |
| 9012085- 2 | #2 | SOIL | 12/10/90 | TPHg/BTEX |
| 9012085- 3 | #3 | H2O | 12/10/90 | TPHg/BTEX |
| 9012085- 4 | #4A,B,C | SOIL | 12/10/90 | TPHg/BTEX |

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. GARY ZACCOR
ZACCOR CORP.
791 HAMILTON AVE.
MENLO PARK, CA 94025

Workorder # : 9012085
Date Received : 12/10/90
Project ID : Z0121090M1
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- Surrogate recoveries were high for samples #2 and #4 due to matrix interference.
- Concentrations reported as TPHd appear to be primarily due to extractable components of gasoline.

Department Supervisor 12-28-90 Date

Chemist 12-28-90 Date

# ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
## (GASOLINE WITH BTEX)
## ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9012085
Matrix : SOIL
Date Sampled : 12/10/90

Project Number : Z0121090M1
Date Released : 12/27/90

| COMPOUNDS | Reporting Limit (mg/Kg) | Sample I.D.# #1 -01 | Sample I.D.# #2 -02 | Sample I.D.# #4A,B,C -04 | Sample I.D.# 12B1214B BLANK | Sample I.D.# 12B1217B BLANK |
|---|---|---|---|---|---|---|
| Benzene | 0.005 | 2.2 | 0.13 | 0.52 | ND | ND |
| Toluene | 0.005 | 1.6 | 0.24 | 0.49 | ND | ND |
| Ethylbenzene | 0.005 | 0.31 | 0.45 | 0.35 | ND | ND |
| Total Xylenes | 0.005 | 0.54 | 1.1 | 0.72 | ND | ND |
| TPH as Gasoline | 0.5 | 26 | 68 | 71 | ND | ND |
| % Surrogate Recovery | | 133% | 188% | 195% | 115% | 97% |
| Instrument I.D. | | HP12 | HP12 | HP12 | HP12 | HP12 |
| Date Analyzed | | 12/14/90 | 12/17/90 | 12/14/90 | 12/14/90 | 12/17/90 |
| RLMF | | 10 | 10 | 5 | 1 | 1 |

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.
RLMF - Reporting Limit Multiplication Factor.
Anametrix Control limits for surrogate recovery are 50-150%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 12-27-90 Date

Supervisor 12-27-90 Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9012085
Matrix : WATER
Date Sampled : 12/10/90

Project Number : Z0121090M1
Date Released : 12/27/90

| COMPOUNDS | Reporting Limit (ug/L) | Sample I.D.# #3 -03 | Sample I.D.# 12B1217B BLANK |
|---|---|---|---|
| Benzene | 0.5 | 11000 | ND |
| Toluene | 0.5 | 10000 | ND |
| Ethylbenzene | 0.5 | ND | ND |
| Total Xylenes | 0.5 | 4800 | ND |
| TPH as Gasoline | 50 | 200000 | ND |
| % Surrogate Recovery | | 123% | 97% |
| Instrument I.D. | | HP12 | HP12 |
| Date Analyzed | | 12/17/90 | 12/17/90 |
| RLMF | | 2500 | 1 |

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.
RLMF - Reporting Limit Multiplication Factor.
Anametrix control limits for surrogate recovery are 50-150%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 12-27-90 Date

Supervisor 12-27-90 Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9012085
Matrix : SOIL
Date Sampled : 12/10/90
Date Extracted: 12/12/90

Project Number : Z0121090M1
Date released : 12/27/90
Instrument I.D.: HP19

| Anametrix I.D. | Client I.D. | Date Analyzed | Reporting Limit (mg/Kg) | Amount Found (mg/Kg) |
|---|---|---|---|---|
| 9012085-01 | #1 | 12/13/90 | 10 | ND |
| 9012085-02 | #2 | 12/13/90 | 10 | 44 |
| 9012085-04 | #4A,B,C | 12/13/90 | 10 | 66 |
| METHOD BLANK | DSBLK121290 | 12/13/90 | 10 | ND |

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3550.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 12-27-90 Date

Supervisor 12-27-90 Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9012085
Matrix : WATER
Date Sampled : 12/10/90
Date Extracted: 12/13/90

Project Number : Z0121090M1
Date released : 12/27/90
Instrument I.D.: HP19

| Anametrix I.D. | Client I.D. | Date Analyzed | Reporting Limit (ug/L) | Amount Found (ug/L) |
|---|---|---|---|---|
| 9012085-03 | #3 | 12/13/90 | 50 | 19000 |
| DWBLK121390 | METHOD BLANK | 12/13/90 | 50 | ND |

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3510.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 12-28-90 Date

Supervisor 12/28/90 Date

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. GARY ZACCOR
ZACCOR CORP.
791 HAMILTON AVE.
MENLO PARK, CA 94025

Workorder # : 9012085
Date Received : 12/10/90
Project ID : Z0121090M1
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

SAMPLE INFORMATION:

| ANAMETRIX SAMPLE ID | CLIENT SAMPLE ID | MATRIX | DATE SAMPLED | METHOD |
|---|---|---|---|---|
| 9012085- 3 | #3 | H2O | 12/10/90 | 5520BF |
| 9012085- 1 | #1 | SOIL | 12/10/90 | 5520EF |
| 9012085- 2 | #2 | SOIL | 12/10/90 | 5520EF |
| 9012085- 4 | #4A,B,C | SOIL | 12/10/90 | 5520EF |

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. GARY ZACCOR
ZACCOR CORP.
791 HAMILTON AVE.
MENLO PARK, CA 94025

Workorder # : 9012085
Date Received : 12/10/90
Project ID : Z0121090M1
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

QA/QC SUMMARY :

- No QA/QC problems encountered for samples.

Department Supervisor 12-28-90 Date

Chemist 12/27/90 Date

ANALYSIS DATA SHEET - TOTAL OIL AND GREASE
ANAMETRIX, INC. (408) 432-8192

Project # : Z0121090M1
Matrix : SOIL
Date sampled : 12/10/90
Date ext. TOG: 12/13/90
Date anl. TOG: 12/13/90

Anametrix I.D. : 9012085
Analyst : [signature]
Supervisor : [signature]
Date released : 12/27/90

| Workorder # | Sample I.D. | Reporting Limit (mg/Kg) | Amount Found (mg/Kg) |
|---|---|---|---|
| 9012085-01 | #1 | 30 | 177 |
| 9012085-02 | #2 | 30 | ND |
| 9012085-04 | #4A,B,C | 30 | 420 |
| GSBLK121390 | BLANK | 30 | ND |

ND - Not detected at or above the practical quantitation limit for the method.
TOG - Total Oil & Grease is determined by Standard Method 5520EF.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - TOTAL OIL AND GREASE
ANAMETRIX, INC. (408) 432-8192

Project # : Z0121090M1
Matrix : SOIL
Date sampled : 12/10/90
Date ext. TOG: 12/14/90
Date anl. TOG: 12/14/90

Anametrix I.D. : 9012085
Analyst : [illegible]
Supervisor : [illegible]
Date released : 12/27/90

| Workorder # | Sample I.D. | Reporting Limit (mg/L) | Amount Found (mg/L) |
|---|---|---|---|
| 9012085-03 | #3 | 30 | 6.4 |
| GSBLK121490 | BLANK | 30 | ND |

ND - Not detected at or above the practical quantitation limit for the method.
TOG - Total Oil & Grease is determined by Standard Method 5520BF.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. GARY ZACCOR
ZACCOR CORP.
791 HAMILTON AVE.
MENLO PARK, CA 94025

Workorder # : 9012085
Date Received : 12/10/90
Project ID : Z0121090M1
Purchase Order: N/A
Department : METALS
Sub-Department: METALS

SAMPLE INFORMATION:

| ANAMETRIX SAMPLE ID | CLIENT SAMPLE ID | MATRIX | DATE SAMPLED | METHOD |
|---|---|---|---|---|
| 9012085- 1 | #1 | SOIL | 12/10/90 | 6010 |
| 9012085- 2 | #2 | SOIL | 12/10/90 | 6010 |
| 9012085- 3 | #3 | H2O | 12/10/90 | 6010 |
| 9012085- 4 | #4A,B,C | SOIL | 12/10/90 | 6010 |

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. GARY ZACCOR
ZACCOR CORP.
791 HAMILTON AVE.
MENLO PARK, CA 94025

Workorder # : 9012085
Date Received : 12/10/90
Project ID : Z0121090M1
Purchase Order: N/A
Department : METALS
Sub-Department: METALS

QA/QC SUMMARY :

- No QA/QC problems encountered for samples.

Department/Supervisor 12-27-90 Date

Chemist 12/27/90 Date

ANALYSIS DATA SHEET - INDIVIDUAL METALS
ANAMETRIX, INC. - (408) 432-8192

Anametrix I.D.: 9012085
Matrix : SOIL
Date Sampled : 12/10/90
Project Number: Z0121090M1

Date Prepared : 12/18/90
Date Analyzed : 12/19/90
Date Released : 12/27/90
Instrument I.D.: ICP1

| | EPA Method# | Reporting Limit | Sample I.D.# #1 | Sample I.D.# #2 | Sample I.D.# #4A,B,C | Sample I.D.# BLANK |
|---|---|---|---|---|---|---|
| ELEMENTS | | (mg/Kg) | -01 | -02 | -04 | MB1219S |
| Cadmium (Cd) | 6010 | 0.25 | 0.34 | ND | ND | ND |
| Total Cr | 6010 | 0.50 | 28.1 | 30.5 | 51.1 | ND |
| Nickel (Ni) | 6010 | 2.0 | 46.6 | 27.9 | 38.6 | ND |
| Lead (Pb) | 6010 | 2.0 | 61.0 | 6.6 | 109 | ND |
| Zinc (Zn) | 6010 | 1.0 | 179 | 29.1 | 180 | ND |

ND : Not detected at or above the practical quantitation limit for the method.

All Metals by EPA Method 6010/7000, Test Methods for Evaluating Solid Waste, SW-846 3rd Edition November 1986.

Manny Iguyen 12-27-90
Chemist Date

Ken Newberry 12/27/90
Chemist Date

ANALYSIS DATA SHEET - INDIVIDUAL METALS
ANAMETRIX, INC. - (408) 432-8192

Anametrix I.D.: 9012085
Matrix : WATER
Date Sampled : 12/10/90
Project Number: Z0121090M1

Date Prepared : 12/19/90
Date Analyzed : 12/21/90
Date Released : 12/27/90
Instrument I.D.: ICP1

| ELEMENTS | EPA Method# | Reporting Limit (ug/L) | Sample I.D.# #3 -03 | Sample I.D.# BLANK MB1219W |
|---|---|---|---|---|
| Cadmium (Cd) | 6010 | 5.0 | ND | ND |
| Total Cr | 6010 | 10.0 | 122 | ND |
| Nickel (Ni) | 6010 | 40.0 | 88.0 | ND |
| Lead (Pb) | 6010 | 40.0 | 680 | ND |
| Zinc (Zn) | 6010 | 20.0 | 1740 | ND |

ND : Not detected at or above the practical quantitation limit for the method.

All Metals by EPA Method 6010/7000, Test Methods for Evaluating Solid Waste, SW-846 3rd Edition November 1986.

Chemist 12-27-90 Date

Chemist 12/27/90 Date

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

DATE RECEIVED: 06/08/92
DATE REPORTED: 06/18/92

LABORATORY NUMBER: 107598

CLIENT: SUBSURFACE CONSULTANTS

PROJECT ID: 574.006

LOCATION: 4050 HORTON STREET

RESULTS: SEE ATTACHED

Reviewed By

Reviewed By

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 107598-1
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 574.006
LOCATION: 4050 HORTON STREET
SAMPLE ID: 1 @ 6.0

DATE RECEIVED: 06/08/92
DATE ANALYZED: 06/16/92
DATE REPORTED: 06/18/92

EPA 8010 Compound List by EPA 8240
Volatile Halocarbons in Soil & Wastes

| Compound | RESULT ug/Kg | REPORTING LIMIT ug/Kg |
|---|---|---|
| chloromethane | ND | 500 |
| bromomethane | ND | 500 |
| vinyl chloride | ND | 500 |
| chloroethane | ND | 500 |
| methylene chloride | ND | 250 |
| trichlorofluoromethane | ND | 250 |
| 1,1-dichloroethene | ND | 250 |
| 1,1-dichloroethane | ND | 250 |
| cis-1,2-dichloroethene | ND | 250 |
| trans-1,2-dichloroethene | ND | 250 |
| chloroform | ND | 250 |
| freon 113 | ND | 250 |
| 1,2-dichloroethane | ND | 250 |
| 1,1,1-trichloroethane | ND | 250 |
| carbon tetrachloride | ND | 250 |
| bromodichloromethane | ND | 250 |
| 1,2-dichloropropane | ND | 250 |
| cis-1,3-dichloropropene | ND | 250 |
| trichloroethylene | ND | 250 |
| 1,1,2-trichloroethane | ND | 250 |
| trans-1,3-dichloropropene | ND | 250 |
| dibromochloromethane | ND | 250 |
| 2-chloroethylvinyl ether | ND | 500 |
| bromoform | ND | 250 |
| tetrachloroethylene | ND | 250 |
| 1,1,2,2-tetrachloroethane | ND | 250 |
| chlorobenzene | ND | 250 |
| 1,3-dichlorobenzene | ND | 250 |
| 1,2-dichlorobenzene | ND | 250 |
| 1,4-dichlorobenzene | ND | 250 |

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: SURROGATE RECOVERIES

| | |
|---|---|
| 1,2-Dichloroethane-d4 | 103 % |
| Toluene-d8 | 100 % |
| Bromofluorobenzene | 108 % |

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 107598-4
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 574.006
LOCATION: 4050 HORTON STREET
SAMPLE ID: 2 @ 4.0

DATE RECEIVED: 06/08/92
DATE ANALYZED: 06/16/92
DATE REPORTED: 06/18/92

EPA 8010 Compound List by EPA 8240
Volatile Halocarbons in Soil & Wastes

| Compound | RESULT ug/Kg | REPORTING LIMIT ug/Kg |
|---|---|---|
| chloromethane | ND | 20 |
| bromomethane | ND | 20 |
| vinyl chloride | ND | 20 |
| chloroethane | ND | 20 |
| methylene chloride | ND | 10 |
| trichlorofluoromethane | ND | 10 |
| 1,1-dichloroethene | ND | 10 |
| 1,1-dichloroethane | ND | 10 |
| cis-1,2-dichloroethene | ND | 10 |
| trans-1,2-dichloroethene | ND | 10 |
| chloroform | ND | 10 |
| freon 113 | ND | 10 |
| 1,2-dichloroethane | ND | 10 |
| 1,1,1-trichloroethane | ND | 10 |
| carbon tetrachloride | ND | 10 |
| bromodichloromethane | ND | 10 |
| 1,2-dichloropropane | ND | 10 |
| cis-1,3-dichloropropene | ND | 250 |
| trichloroethylene | ND | 250 |
| 1,1,2-trichloroethane | ND | 10 |
| trans-1,3-dichloropropene | ND | 10 |
| dibromochloromethane | ND | 10 |
| 2-chloroethylvinyl ether | ND | 20 |
| bromoform | ND | 10 |
| tetrachloroethylene | ND | 10 |
| 1,1,2,2-tetrachloroethane | ND | 10 |
| chlorobenzene | ND | 10 |
| 1,3-dichlorobenzene | ND | 10 |
| 1,2-dichlorobenzene | ND | 10 |
| 1,4-dichlorobenzene | ND | 10 |

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: SURROGATE RECOVERIES

| | |
|---|---|
| 1,2-Dichloroethane-d4 | 108 % |
| Toluene-d8 | 118 % |
| Bromofluorobenzene | 105 % |

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 107598-6
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 574.006
LOCATION: 4050 HORTON STREET
SAMPLE ID: 3 @ 6.0

DATE RECEIVED: 06/08/92
DATE ANALYZED: 06/16/92
DATE REPORTED: 06/18/92

EPA 8010 Compound List by EPA 8240
Volatile Halocarbons in Soil & Wastes

| Compound | RESULT ug/Kg | REPORTING LIMIT ug/Kg |
|---|---|---|
| chloromethane | ND | 500 |
| bromomethane | ND | 500 |
| vinyl chloride | ND | 500 |
| chloroethane | ND | 500 |
| methylene chloride | ND | 1,000 |
| trichlorofluoromethane | ND | 250 |
| 1,1-dichloroethene | ND | 250 |
| 1,1-dichloroethane | ND | 250 |
| cis-1,2-dichloroethene | ND | 250 |
| trans-1,2-dichloroethene | ND | 250 |
| chloroform | ND | 250 |
| freon 113 | ND | 250 |
| 1,2-dichloroethane | ND | 250 |
| 1,1,1-trichloroethane | ND | 250 |
| carbon tetrachloride | ND | 250 |
| bromodichloromethane | ND | 250 |
| 1,2-dichloropropane | ND | 250 |
| cis-1,3-dichloropropene | ND | 250 |
| trichloroethylene | ND | 250 |
| 1,1,2-trichloroethane | ND | 250 |
| trans-1,3-dichloropropene | ND | 250 |
| dibromochloromethane | ND | 250 |
| 2-chloroethylvinyl ether | ND | 500 |
| bromoform | ND | 250 |
| tetrachloroethylene | ND | 250 |
| 1,1,2,2-tetrachloroethane | ND | 250 |
| chlorobenzene | ND | 250 |
| 1,3-dichlorobenzene | ND | 250 |
| 1,2-dichlorobenzene | ND | 250 |
| 1,4-dichlorobenzene | ND | 250 |

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: SURROGATE RECOVERIES

| | |
|---|---|
| 1,2-Dichloroethane-d4 | 109 % |
| Toluene-d8 | 103 % |
| Bromofluorobenzene | 118 % |

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 107598-8
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 574.006
LOCATION: 4050 HORTON STREET
SAMPLE ID: 4 @ 4.0

DATE RECEIVED: 06/08/92
DATE ANALYZED: 06/16/92
DATE REPORTED: 06/18/92

EPA 8010 Compound List by EPA 8240
Volatile Halocarbons in Soil & Wastes

| Compound | RESULT ug/Kg | REPORTING LIMIT ug/Kg |
|---|---|---|
| chloromethane | ND | 10 |
| bromomethane | ND | 10 |
| vinyl chloride | ND | 10 |
| chloroethane | ND | 10 |
| methylene chloride | ND | 5 |
| trichlorofluoromethane | ND | 5 |
| 1,1-dichloroethene | ND | 5 |
| 1,1-dichloroethane | ND | 5 |
| cis-1,2-dichloroethene | ND | 5 |
| trans-1,2-dichloroethene | ND | 5 |
| chloroform | ND | 5 |
| freon 113 | ND | 5 |
| 1,2-dichloroethane | ND | 5 |
| 1,1,1-trichloroethane | ND | 5 |
| carbon tetrachloride | ND | 5 |
| bromodichloromethane | ND | 5 |
| 1,2-dichloropropane | ND | 5 |
| cis-1,3-dichloropropene | ND | 5 |
| trichloroethylene | ND | 5 |
| 1,1,2-trichloroethane | ND | 5 |
| trans-1,3-dichloropropene | ND | 5 |
| dibromochloromethane | ND | 5 |
| 2-chloroethylvinyl ether | ND | 10 |
| bromoform | ND | 5 |
| tetrachloroethylene | ND | 5 |
| 1,1,2,2-tetrachloroethane | ND | 5 |
| chlorobenzene | ND | 5 |
| 1,3-dichlorobenzene | ND | 5 |
| 1,2-dichlorobenzene | ND | 5 |
| 1,4-dichlorobenzene | ND | 5 |

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: SURROGATE RECOVERIES

| | |
|---|---|
| 1,2-Dichloroethane-d4 | 100 % |
| Toluene-d8 | 90 % |
| Bromofluorobenzene | 71 % |

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 107598-10
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 574.006
LOCATION: 4050 HORTON STREET
SAMPLE ID: 5 @ 6.0

DATE RECEIVED: 06/08/92
DATE ANALYZED: 06/16/92
DATE REPORTED: 06/18/92

EPA 8010 Compound List by EPA 8240
Volatile Halocarbons in Soil & Wastes

| Compound | RESULT ug/Kg | REPORTING LIMIT ug/Kg |
|---|---|---|
| chloromethane | ND | 50 |
| bromomethane | ND | 50 |
| vinyl chloride | ND | 50 |
| chloroethane | ND | 50 |
| methylene chloride | ND | 100 |
| trichlorofluoromethane | ND | 25 |
| 1,1-dichloroethene | ND | 25 |
| 1,1-dichloroethane | ND | 25 |
| cis-1,2-dichloroethene | ND | 25 |
| trans-1,2-dichloroethene | ND | 25 |
| chloroform | ND | 25 |
| freon 113 | ND | 25 |
| 1,2-dichloroethane | ND | 25 |
| 1,1,1-trichloroethane | ND | 25 |
| carbon tetrachloride | ND | 25 |
| bromodichloromethane | ND | 25 |
| 1,2-dichloropropane | ND | 25 |
| cis-1,3-dichloropropene | ND | 25 |
| trichloroethylene | ND | 25 |
| 1,1,2-trichloroethane | ND | 25 |
| trans-1,3-dichloropropene | ND | 25 |
| dibromochloromethane | ND | 25 |
| 2-chloroethylvinyl ether | ND | 50 |
| bromoform | ND | 25 |
| tetrachloroethylene | ND | 25 |
| 1,1,2,2-tetrachloroethane | ND | 25 |
| chlorobenzene | ND | 25 |
| 1,3-dichlorobenzene | ND | 25 |
| 1,2-dichlorobenzene | ND | 25 |
| 1,4-dichlorobenzene | ND | 25 |

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: SURROGATE RECOVERIES

| | |
|---|---|
| 1,2-Dichloroethane-d4 | 119 % |
| Toluene-d8 | 127 % |
| Bromofluorobenzene | 117 % |

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 107598
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 574.006
LOCATION: 4050 HORTON STREET
SAMPLE ID: METHOD BLANK

DATE ANALYZED: 06/16/92
DATE REPORTED: 06/18/92

EPA 8010 Compound List by EPA 8240
Volatile Halocarbons in Soil & Wastes

| Compound | RESULT ug/Kg | REPORTING LIMIT ug/Kg |
|---|---|---|
| chloromethane | ND | 10 |
| bromomethane | ND | 10 |
| vinyl chloride | ND | 10 |
| chloroethane | ND | 10 |
| methylene chloride | ND | 20 |
| trichlorofluoromethane | ND | 5 |
| 1,1-dichloroethene | ND | 5 |
| 1,1-dichloroethane | ND | 5 |
| cis-1,2-dichloroethene | ND | 5 |
| trans-1,2-dichloroethene | ND | 5 |
| chloroform | ND | 5 |
| freon 113 | ND | 5 |
| 1,2-dichloroethane | ND | 5 |
| 1,1,1-trichloroethane | ND | 5 |
| carbon tetrachloride | ND | 5 |
| bromodichloromethane | ND | 5 |
| 1,2-dichloropropane | ND | 5 |
| cis-1,3-dichloropropene | ND | 5 |
| trichloroethylene | ND | 5 |
| 1,1,2-trichloroethane | ND | 5 |
| trans-1,3-dichloropropene | ND | 5 |
| dibromochloromethane | ND | 5 |
| 2-chloroethylvinyl ether | ND | 10 |
| bromoform | ND | 5 |
| tetrachloroethylene | ND | 5 |
| 1,1,2,2-tetrachloroethane | ND | 5 |
| chlorobenzene | ND | 5 |
| 1,3-dichlorobenzene | ND | 5 |
| 1,2-dichlorobenzene | ND | 5 |
| 1,4-dichlorobenzene | ND | 5 |

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: SURROGATE RECOVERIES

| | |
|---|---|
| 1,2-Dichloroethane-d4 | 107 % |
| Toluene-d8 | 120 % |
| Bromofluorobenzene | 122 % |

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 107598
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 574.006
LOCATION: 4050 HORTON STREET
SAMPLE ID: METHOD BLANK-METHANOL

DATE ANALYZED: 06/16/92
DATE REPORTED: 06/18/92

EPA 8010 Compound List by EPA 8240
Volatile Halocarbons in Soil & Wastes

| Compound | RESULT ug/Kg | REPORTING LIMIT ug/Kg |
|---|---|---|
| chloromethane | ND | 250 |
| bromomethane | ND | 250 |
| vinyl chloride | ND | 250 |
| chloroethane | ND | 250 |
| methylene chloride | ND | 500 |
| trichlorofluoromethane | ND | 130 |
| 1,1-dichloroethene | ND | 130 |
| 1,1-dichloroethane | ND | 130 |
| cis-1,2-dichloroethene | ND | 130 |
| trans-1,2-dichloroethene | ND | 130 |
| chloroform | ND | 130 |
| freon 113 | ND | 130 |
| 1,2-dichloroethane | ND | 130 |
| 1,1,1-trichloroethane | ND | 130 |
| carbon tetrachloride | ND | 130 |
| bromodichloromethane | ND | 130 |
| 1,2-dichloropropane | ND | 130 |
| cis-1,3-dichloropropene | ND | 130 |
| trichloroethylene | ND | 130 |
| 1,1,2-trichloroethane | ND | 130 |
| trans-1,3-dichloropropene | ND | 130 |
| dibromochloromethane | ND | 130 |
| 2-chloroethylvinyl ether | ND | 250 |
| bromoform | ND | 130 |
| tetrachloroethylene | ND | 130 |
| 1,1,2,2-tetrachloroethane | ND | 130 |
| chlorobenzene | ND | 130 |
| 1,3-dichlorobenzene | ND | 130 |
| 1,2-dichlorobenzene | ND | 130 |
| 1,4-dichlorobenzene | ND | 130 |

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: SURROGATE RECOVERIES

| | |
|---|---|
| 1,2-Dichloroethane-d4 | 104 % |
| Toluene-d8 | 102 % |
| Bromofluorobenzene | 119 % |

Curtis & Tompkins, Ltd

MS/MSD Report

Matrix Sample Number: 107620-002
Lab No: QC29867 QC29868
Matrix: SOIL (MeOH)
Batch No: 5607 924797 924799 924789

Date Analyzed: 16-JUN-92
Spike File: >BFF22
Spike Dup File: >BFF23
Analyst: AL

| | Instrdg | SpikeAmt | % Rec | Limits |
|---|---|---|---|---|
| MS RESULTS | | | | |
| 1,1-Dichloroethene | 27.48 | 50 | 55 % | 48-116% |
| Trichloroethene | 48.33 | 50 | 97 % | 77-110% |
| Benzene | 48.84 | 50 | 98 % | 79-114% |
| Toluene | 49.17 | 50 | 98 % | 60-149% |
| Chlorobenzene | 48.91 | 50 | 98 % | 80-115% |
| Surrogate Recoveries | | | | |
| 1,2-Dichloroethane-d4 | 53.81 | 50 | 108 % | 68-135% |
| Toluene-d8 | 47.9 | 50 | 96 % | 72-145% |
| Bromofluorobenzene | 56.28 | 50 | 113 % | 44-228% |
| MSD RESULTS | | | | |
| 1,1-Dichloroethene | 26.38 | 50 | 53 % | 48-116% |
| Trichloroethene | 49.03 | 50 | 98 % | 77-110% |
| Benzene | 51.08 | 50 | 102 % | 79-114% |
| Toluene | 50.83 | 50 | 102 % | 60-149% |
| Chlorobenzene | 48.81 | 50 | 98 % | 80-115% |
| Surrogate Recoveries | | | | |
| 1,2-Dichloroethane-d4 | 58.02 | 50 | 116 % | 68-135% |
| Toluene-d8 | 50.56 | 50 | 101 % | 72-145% |
| Bromofluorobenzene | 61.85 | 50 | 124 % | 44-228% |
| MATRIX RESULTS | | | | |
| 1,1-Dichloroethene | 0 | | | |
| Trichloroethene | 0 | | | |
| Benzene | 0 | | | |
| Toluene | 0 | | | |
| Chlorobenzene | 0 | | | |
| RPD DATA | | | | |
| 1,1-Dichloroethene | 4 % | | | < 21% |
| Trichloroethene | 1 % | | | < 11% |
| Benzene | 4 % | | | < 7% |
| Toluene | 3 % | | | < 10% |
| Chlorobenzene | 0 % | | | < 20% |

Results within Specifications - PASS

Curtis & Tompkins, Ltd

8240 Labortory Control Sample Report

Lab No: QC29865
Date Analyzed: 15-JUN-92
Matrix: SOIL (MeOH)
Batch No: 5607 924787

LCS Datafile: >BFF13
Operator: AL

| Compound | Instrdg | SpikeAmt | % Rec | Limits |
|---|---|---|---|---|
| 1,1-Dichloroethene | 33.31 | 50 | 67 % | 48-116% |
| Trichloroethene | 49.85 | 50 | 100 % | 77-110% |
| Benzene | 51.43 | 50 | 103 % | 79-114% |
| Toluene | 53.97 | 50 | 108 % | 60-149% |
| Chlorobenzene | 52.56 | 50 | 105 % | 80-115% |
| Surrogate Recoveries | | | | |
| 1,2-Dichloroethane-d4 | 51.76 | 50 | 104 % | 68-135% |
| Toluene-d8 | 51.02 | 50 | 102 % | 72-145% |
| Bromofluorobenzene | 57.45 | 50 | 115 % | 44-228% |

Results within Specifications - PASS

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 107598-1
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 574.006
LOCATION: 4050 HORTON STREET
SAMPLE ID: 1 @ 6.0

DATE SAMPLED: 06/04/92
DATE RECEIVED: 06/08/92
DATE ANALYZED: 06/10-11/92
DATE REPORTED: 06/18/92

| METAL | RESULT mg/Kg | REPORTING LIMIT mg/Kg | METHOD |
|---|---|---|---|
| Cadmium | 1.3 | 0.25 | EPA 6010 |
| Chromium (total) | 33.3 | 0.5 | EPA 6010 |
| Lead | 761 | 3 | EPA 7420 |
| Nickel | 44.7 | 1.6 | EPA 6010 |
| Zinc | 421 | 1 | EPA 6010 |

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

| | RPD,% | RECOVERY,% |
|---|---|---|
| Cadmium | <1 | 105 |
| Chromium (total) | 2 | 97 |
| Lead | 8 | 104 |
| Nickel | 2 | 97 |
| Zinc | <1 | 93 |

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 107598-4
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 574.006
LOCATION: 4050 HORTON STREET
SAMPLE ID: 2 @ 4.0

DATE SAMPLED: 06/04/92
DATE RECEIVED: 06/08/92
DATE ANALYZED: 06/10-11/92
DATE REPORTED: 06/18/92

| METAL | RESULT mg/Kg | REPORTING LIMIT mg/Kg | METHOD |
|---|---|---|---|
| Cadmium | 0.32 | 0.25 | EPA 6010 |
| Chromium (total) | 36.8 | 0.5 | EPA 6010 |
| Lead | 5 | 3 | EPA 7420 |
| Nickel | 35 | 1.6 | EPA 6010 |
| Zinc | 37 | 1 | EPA 6010 |

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

| | RPD,% | RECOVERY,% |
|---|---|---|
| Cadmium | <1 | 105 |
| Chromium (total) | 2 | 97 |
| Lead | 8 | 104 |
| Nickel | 2 | 97 |
| Zinc | <1 | 93 |

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 107598-6
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 574.006
LOCATION: 4050 HORTON STREET
SAMPLE ID: 3 @ 6.0

DATE SAMPLED: 06/04/92
DATE RECEIVED: 06/08/92
DATE ANALYZED: 06/10-11/92
DATE REPORTED: 06/18/92

| METAL | RESULT mg/Kg | REPORTING LIMIT mg/Kg | METHOD |
|---|---|---|---|
| Cadmium | ND | 0.25 | EPA 6010 |
| Chromium (total) | 33.1 | 0.5 | EPA 6010 |
| Lead | 5 | 3 | EPA 7420 |
| Nickel | 30.6 | 1.6 | EPA 6010 |
| Zinc | 171 | 1 | EPA 6010 |

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

| | RPD,% | RECOVERY,% |
|---|---|---|
| Cadmium | <1 | 105 |
| Chromium (total) | 2 | 97 |
| Lead | 8 | 104 |
| Nickel | 2 | 97 |
| Zinc | <1 | 93 |

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 107598-8
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 574.006
LOCATION: 4050 HORTON STREET
SAMPLE ID: 4 @ 4.0

DATE SAMPLED: 06/04/92
DATE RECEIVED: 06/08/92
DATE ANALYZED: 06/10-11/92
DATE REPORTED: 06/18/92

| METAL | RESULT mg/Kg | REPORTING LIMIT mg/Kg | METHOD |
|---|---|---|---|
| Cadmium | ND | 0.25 | EPA 6010 |
| Chromium (total) | 36.6 | 0.5 | EPA 6010 |
| Lead | 4 | 3 | EPA 7420 |
| Nickel | 32.3 | 1.6 | EPA 6010 |
| Zinc | 45 | 1 | EPA 6010 |

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

| | RPD,% | RECOVERY,% |
|---|---|---|
| Cadmium | <1 | 105 |
| Chromium (total) | 2 | 97 |
| Lead | 8 | 104 |
| Nickel | 2 | 97 |
| Zinc | <1 | 93 |

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 107598-10
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 574.006
LOCATION: 4050 HORTON STREET
SAMPLE ID: 5 @ 6.0

DATE SAMPLED: 06/04/92
DATE RECEIVED: 06/08/92
DATE ANALYZED: 06/10-11/92
DATE REPORTED: 06/18/92

| METAL | RESULT mg/Kg | REPORTING LIMIT mg/Kg | METHOD |
|---|---|---|---|
| Cadmium | ND | 0.25 | EPA 6010 |
| Chromium (total) | 36 | 0.5 | EPA 6010 |
| Lead | 3 | 3 | EPA 7420 |
| Nickel | 28.5 | 1.6 | EPA 6010 |
| Zinc | 30 | 1 | EPA 6010 |

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

| | RPD,% | RECOVERY,% |
|---|---|---|
| Cadmium | <1 | 105 |
| Chromium (total) | 2 | 97 |
| Lead | 8 | 104 |
| Nickel | 2 | 97 |
| Zinc | <1 | 93 |

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 107598
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 574.006
LOCATION: 4050 HORTON STREET

DATE SAMPLED: 06/04/92
DATE RECEIVED: 06/08/92
DATE ANALYZED: 06/11/92
DATE REPORTED: 06/18/92

Total Volatile Hydrocarbons with BTXE in Soils & Wastes
TVH by California DOHS Method/LUFT Manual October 1989
BTXE by EPA 5030/8020

| LAB ID | SAMPLE ID | TVH AS GASOLINE (mg/Kg) | BENZENE (ug/Kg) | TOLUENE (ug/Kg) | ETHYL BENZENE (ug/Kg) | TOTAL XYLENES (ug/Kg) |
|---|---|---|---|---|---|---|
| 107598-1 | 1 @ 6.0 | 150 | 5,300 | 5,100 | 5,500 | 17,000 |
| 107598-5 | 2 @ 6.0 | 170 | ND(400) | 420 | 1,300 | 1,500 |
| 107598-6 | 3 @ 6.0 | 210 | 570 | ND(400) | 2,100 | 950 |
| 107598-10 | 5 @ 6.0 | 160 | ND(200) | 490 | 630 | ND(200) |

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

QA/QC SUMMARY

| | |
|---|---|
| RPD, % | <1 |
| RECOVERY, % | 93 |

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 107598
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 574.006
LOCATION: 4050 HORTON STREET

DATE SAMPLED: 06/04/92
DATE RECEIVED: 06/08/92
DATE ANALYZED: 06/09-10/92
DATE REPORTED: 06/18/92

Total Volatile Hydrocarbons with BTXE in Soils & Wastes
TVH by California DOHS Method/LUFT Manual October 1989
BTXE by EPA 5030/8020

| LAB ID | SAMPLE ID | TVH AS GASOLINE (mg/Kg) | BENZENE (ug/Kg) | TOLUENE (ug/Kg) | ETHYL BENZENE (ug/Kg) | TOTAL XYLENES (ug/Kg) |
|---|---|---|---|---|---|---|
| 107598-2 | 1 @ 8.0 | 2 | 43 | 15 | 7 | 15 |
| 107598-3 | 1 @ 10.5 | 1 | 30 | 24 | ND(5) | 9 |
| 107598-4 | 2 @ 4.0 | 13 | 250 | 29 | 180 | 220 |
| 107598-7 | 3 @ 7.5 | 1 | ND(5) | 6 | ND(5) | 5 |
| 107598-8 | 4 @ 4.0 | 2 | 14 | 5 | ND(5) | 9 |
| 107598-9 | 4 @ 6.0 | 2 | 14 | ND(5) | ND(5) | 6 |
| 107598-11 | 5 @ 8.0 | ND(1) | ND(5) | 11 | ND(5) | ND(5) |
| 107598-13 | 7 @ 6.0 | 1 | 270 | 28 | ND(5) | 12 |

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

QA/QC SUMMARY

| | |
|---|---|
| RPD, % | 16 |
| RECOVERY, % | 101 |

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 107598
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 574.006
LOCATION: 4050 HORTON STREET

DATE SAMPLED: 06/04/92
DATE RECEIVED: 06/08/92
DATE ANALYZED: 06/12/92
DATE REPORTED: 06/18/92

Total Volatile Hydrocarbons with BTXE in Soils & Wastes
TVH by California DOHS Method/LUFT Manual October 1989
BTXE by EPA 5030/8020

| LAB ID | SAMPLE ID | TVH AS GASOLINE (mg/Kg) | BENZENE (ug/Kg) | TOLUENE (ug/Kg) | ETHYL BENZENE (ug/Kg) | TOTAL XYLENES (ug/Kg) |
|---|---|---|---|---|---|---|
| 107598-12 | 7 @ 4.0 | 7 | 120 | 68 | 74 | 270 |

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

QA/QC SUMMARY

| | |
|---|---|
| RPD, % | 13 |
| RECOVERY, % | 89 |

Curtis & Tompkins, Ltd.

Client: Subsurface Consultants

Laboratory Login Number: 107598

Project Name: 4050 Horton Street

Report Date: 16 June 92

Project Number: 574.006

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) METHOD: SMWW 17:5520EF

| Lab ID | Sample ID | Matrix | Sampled | Received | Analyzed | Result | Units | RL | Analyst | QC Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| 107598-001 | 1 @ 6.0 | Soil | 04-JUN-92 | 08-JUN-92 | 13-JUN-92 | 60 | mg/Kg | 50 | TR | 5602 |
| 107598-002 | 1 @ 8.0 | Soil | 04-JUN-92 | 08-JUN-92 | 13-JUN-92 | ND | mg/Kg | 50 | TR | 5602 |
| 107598-003 | 1 @ 10.5 | Soil | 04-JUN-92 | 08-JUN-92 | 13-JUN-92 | ND | mg/Kg | 50 | TR | 5602 |
| 107598-004 | 2 @ 4.0 | Soil | 04-JUN-92 | 08-JUN-92 | 13-JUN-92 | ND | mg/Kg | 50 | TR | 5602 |
| 107598-005 | 2 @ 6.0 | Soil | 04-JUN-92 | 08-JUN-92 | 13-JUN-92 | ND | mg/Kg | 50 | TR | 5602 |
| 107598-006 | 3 @ 6.0 | Soil | 04-JUN-92 | 08-JUN-92 | 13-JUN-92 | 170 | mg/Kg | 50 | TR | 5602 |
| 107598-007 | 3 @ 7.5 | Soil | 04-JUN-92 | 08-JUN-92 | 13-JUN-92 | ND | mg/Kg | 50 | TR | 5602 |
| 107598-008 | 4 @ 4.0 | Soil | 04-JUN-92 | 08-JUN-92 | 13-JUN-92 | ND | mg/Kg | 50 | TR | 5602 |
| 107598-009 | 4 @ 6.0 | Soil | 04-JUN-92 | 08-JUN-92 | 13-JUN-92 | ND | mg/Kg | 50 | TR | 5602 |
| 107598-010 | 5 @ 6.0 | Soil | 04-JUN-92 | 08-JUN-92 | 13-JUN-92 | ND | mg/Kg | 50 | TR | 5602 |
| 107598-011 | 5 @ 8.0 | Soil | 04-JUN-92 | 08-JUN-92 | 13-JUN-92 | ND | mg/Kg | 50 | TR | 5602 |
| 107598-012 | 7 @ 4.0 | Soil | 04-JUN-92 | 08-JUN-92 | 13-JUN-92 | ND | mg/Kg | 50 | TR | 5602 |
| 107598-013 | 7 @ 6.0 | Soil | 04-JUN-92 | 08-JUN-92 | 13-JUN-92 | ND | mg/Kg | 50 | TR | 5602 |

ND = Not Detected at or above Reporting Limit (RL).

Curtis & Tompkins, Ltd.

# QC Batch Report

Client: Subsurface Consultants
Project Name: 4050 Horton Street
Project Number: 574.006

Laboratory Login Number: 107598
Report Date: 16 June 92

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) QC Batch Number: 5602

## Blank Results

| Sample ID | Result | MDL | Units | Method | Date Analyzed |
|---|---|---|---|---|---|
| BLANK | ND | 50 | mg/Kg | SMWW 17:5520EF | 13-JUN-92 |

## Spike/Duplicate Results

| Sample ID | Recovery | Method | Date Analyzed |
|---|---|---|---|
| BS | 85% | SMWW 17:5520EF | 13-JUN-92 |
| BSD | 84% | SMWW 17:5520EF | 13-JUN-92 |

| | | Control Limits |
|---|---|---|
| Average Spike Recovery | 85% | 80% - 120% |
| Relative Percent Difference | 1.3% | < 20% |

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 107598
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 574.006
LOCATION: 4050 HORTON STREET

DATE SAMPLED: 06/04/92
DATE RECEIVED: 06/08/92
DATE EXTRACTED: 06/09/92
DATE ANALYZED: 06/11/92
DATE REPORTED: 06/16/92

## Extractable Petroleum Hydrocarbons in Soils & Wastes
California DOHS Method
LUFT Manual October 1989

| LAB ID | SAMPLE ID | KEROSENE RANGE (mg/Kg) | DIESEL RANGE (mg/Kg) | REPORTING LIMIT* (mg/Kg) |
|---|---|---|---|---|
| 107598-1 | 1 @ 6.0 | ** | 30+ | 1 |
| 107598-2 | 1 @ 8.0 | ND | ND | 1 |
| 107598-3 | 1 @ 10.5 | ND | ND | 1 |
| 107598-4 | 2 @ 4.0 | ** | 3 | 1 |
| 107598-5 | 2 @ 6.0 | ** | 34 | 1 |
| 107598-6 | 3 @ 6.0 | ** | 57+ | 1 |
| 107598-7 | 3 @ 7.5 | ND | ND | 1 |
| 107598-8 | 4 @ 4.0 | ND | ND | 1 |
| 107598-9 | 4 @ 6.0 | ND | ND | 1 |
| 107598-10 | 5 @ 6.0 | ** | 4 | 1 |
| 107598-11 | 5 @ 8.0 | ND | ND | 1 |
| 107598-12 | 7 @ 4.0 | ** | 7+ | 1 |
| 107598-13 | 7 @ 6.0 | ND | ND | 1 |

ND = Not Detected at or above reporting limit.

*Reporting limit applies to all analytes.

** Quantitated as diesel.

+ Pattern does not resemble diesel standard.

QA/QC SUMMARY

| | |
|---|---|
| RPD, % | 4 |
| RECOVERY, % | 113 |

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

# A N A L Y T I C A L  R E P O R T

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 29-JUN-93
Lab Job Number: 111289
Project ID: 851.001
Location: 4050 Horton Street

Reviewed by: _____

Reviewed by: _____

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 111289
CLIENT: SUBSURFACE CONSULTANTS, INC.
PROJECT ID: 851.001
LOCATION: 4050 HORTON ST

DATE SAMPLED: 06/18/93
DATE RECEIVED: 06/21/93
DATE ANALYZED: 06/23,24/93
DATE REPORTED: 06/29/93

## Total Volatile Hydrocarbons with BTXE in Soils & Wastes
## BTXE by EPA 5030/8020

| LAB ID | SAMPLE ID | TVH AS GASOLINE (mg/Kg) | BENZENE (ug/Kg) | TOLUENE (ug/Kg) | ETHYL BENZENE (ug/Kg) | TOTAL XYLENES (ug/Kg) |
|---|---|---|---|---|---|---|
| 111289-1 | 8@6.5 | ND(1) | ND(5) | ND(5) | ND(5) | ND(5) |
| 111289-5 | 10@6 | ND(1) | ND(5) | ND(5) | ND(5) | ND(5) |
| 111289-8 | 12@6 | ND(1) | ND(5) | ND(5) | ND(5) | ND(5) |
| 111289-10 | 13@6 | ND(1) | ND(5) | ND(5) | ND(5) | ND(5) |
| 111289-14 | 15@6 | ND(1) | ND(5) | ND(5) | ND(5) | ND(5) |

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

QA/QC SUMMARY

| | |
|---|---|
| RPD, % | 6 |
| RECOVERY, % | 107 |

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 111289
CLIENT: SUBSURFACE CONSULTANTS, INC.
PROJECT ID: 851.001
LOCATION: 4050 HORTON ST

DATE SAMPLED: 06/18/93
DATE RECEIVED: 06/21/93
DATE ANALYZED: 06/25/93
DATE REPORTED: 06/29/93

## Total Volatile Hydrocarbons with BTXE in Soils & Wastes
## BTXE by EPA 5030/8020

| LAB ID | SAMPLE ID | TVH AS GASOLINE (mg/Kg) | BENZENE (ug/Kg) | TOLUENE (ug/Kg) | ETHYL BENZENE (ug/Kg) | TOTAL XYLENES (ug/Kg) |
|---|---|---|---|---|---|---|
| 111289-3 | 9@6 | ND(1) | ND(5) | ND(5) | ND(5) | ND(5) |

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

QA/QC SUMMARY

| | |
|---|---|
| RPD, % | 4 |
| RECOVERY, % | 88 |

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 111289
CLIENT: SUBSURFACE CONSULTANTS, INC.
PROJECT ID: 851.001
LOCATION: 4050 HORTON ST

DATE SAMPLED: 06/18/93
DATE RECEIVED: 06/21/93
DATE ANALYZED: 06/24/93
DATE REPORTED: 06/29/93

## Total Volatile Hydrocarbons as Gasoline in Soils & Wastes
California DOHS Method
LUFT Manual October 1989

| LAB ID | CLIENT ID | TVH AS GASOLINE (mg/Kg) | REPORTING LIMIT (mg/Kg) |
|---|---|---|---|
| 111289-6 | 11@6 | 530 | 20 |

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

| | |
|---|---|
| RPD, % | 2 |
| RECOVERY, % | 97 |

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 111289
CLIENT: SUBSURFACE CONSULTANTS, INC.
PROJECT ID: 851.001
LOCATION: 4050 HORTON ST

DATE SAMPLED: 06/18/93
DATE RECEIVED: 06/21/93
DATE ANALYZED: 06/23,24/93
DATE REPORTED: 06/29/93

## Total Volatile Hydrocarbons as Gasoline in Soils & Wastes
California DOHS Method
LUFT Manual October 1989

| LAB ID | CLIENT ID | TVH AS GASOLINE (mg/Kg) | REPORTING LIMIT (mg/Kg) |
|---|---|---|---|
| 111289-2 | 8@9.5 | ND | 1 |
| 111289-4 | 9@9 | ND | 1 |
| 111289-7 | 12@3 | ND | 1 |
| 111289-9 | 13@3 | ND | 1 |
| 111289-13 | 15@3 | ND | 1 |

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

| | |
|---|---|
| RPD, % | 6 |
| RECOVERY, % | 107 |

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 111289
CLIENT: SUBSURFACE CONSULTANTS, INC.
PROJECT ID: 851.001
LOCATION: 4050 HORTON ST

DATE SAMPLED: 06/18/93
DATE RECEIVED: 06/21/93
DATE REQUESTED: 06/23/93
DATE EXTRACTED: 06/25/93
DATE ANALYZED: 06/27/93
DATE REPORTED: 06/29/93

## Extractable Petroleum Hydrocarbons in Soils & Wastes
California DOHS Method
LUFT Manual October 1989

| LAB ID | SAMPLE ID | KEROSENE RANGE (mg/Kg) | DIESEL RANGE (mg/Kg) | REPORTING LIMIT* (mg/Kg) |
|---|---|---|---|---|
| 111289-001 | 8@6.5 | ND | ND | 1 |
| 111289-003 | 9@6 | ND | ND | 1 |

ND = Not Detected at or above reporting limit.

* Reporting limit applies to all analytes.

QA/QC SUMMARY

| | |
|---|---|
| RPD, % | <1 |
| RECOVERY, % | 87 |

# CHAIN OF CUSTODY FORM

PAGE 1 OF 2

PROJECT NAME: 4051 HORTON ST

JOB NUMBER: 574.006 LAB: CURTINS & TOMPKINS

PROJECT CONTACT: MARK KAWAKAMI TURNAROUND: NORMAL

SAMPLED BY: ERIC CHANG REQUESTED BY: ERIC CHANG

| LABORATORY ID NUMBER | SCI SAMPLE NUMBER | MATRIX: WATER | MATRIX: SOIL | MATRIX: WASTE | MATRIX: AIR | CONTAINERS: VOA | CONTAINERS: LITER | CONTAINERS: PINT | CONTAINERS: TUBE | METHOD PRESERVED: HCL | METHOD PRESERVED: $H_2SO_4$ | METHOD PRESERVED: $HNO_3$ | METHOD PRESERVED: ICE | METHOD PRESERVED: NONE | SAMPLING DATE: MONTH | SAMPLING DATE: DAY | SAMPLING DATE: YEAR | SAMPLING DATE: TIME | NOTES | ANALYSIS REQUESTED: TVH / BTXE (8015/8020) | ANALYSIS REQUESTED: TEH (8015 modified/3550) | ANALYSIS REQUESTED: O&G (SMWW 5520) | ANALYSIS REQUESTED: EPA 5010 | ANALYSIS REQUESTED: Cd, Cr, Ni, Pb, Zn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1@6.0 | | X | | | | | | X | | | | X | | 06 | 04 | 92 | | | X | X | X | X | X |
| | 1@8.0 | | X | | | | | | X | | | | X | | | | | | | X | X | X | | |
| | 1@10.5 | | X | | | | | | X | | | | X | | | | | | | X | X | X | X | X |
| | 2@4.0 | | X | | | | | | X | | | | X | | | | | | | X | X | X | X | |
| | 2@6.0 | | X | | | | | | X | | | | X | | | | | | | X | X | X | X | X |
| | 3@6.0 | | X | | | | | | X | | | | X | | | | | | | X | X | X | | |
| | 3@7.5 | | X | | | | | | X | | | | X | | | | | | | X | X | X | X | X |
| | 4@4.0 | | X | | | | | | X | | | | X | | | | | | | X | X | X | | |
| | 4@6.0 | | X | | | | | | X | | | | X | | | | | | | X | X | X | | |

COMMENTS & NOTES:

## CHAIN OF CUSTODY RECORD

| RELEASED BY: (Signature) | DATE/TIME | RECEIVED BY: (Signature) | DATE/TIME |
|---|---|---|---|
| [illegible] | 06/08/12 13:20 | [illegible] | 6/8/12 13:20 |
| RELEASED BY: (Signature) | DATE/TIME | RECEIVED BY: (Signature) | DATE/TIME |
| | | | |
| RELEASED BY: (Signature) | DATE/TIME | RECEIVED BY: (Signature) | DATE/TIME |
| | | | |


Subsurface Consultants, Inc.

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# CHAIN OF CUSTODY FORM

PAGE 2 OF 2

PROJECT NAME: 4050 HORTON ST

JOB NUMBER: 574.006 LAB: CURTIS & TOMPKINS

PROJECT CONTACT: MARK KAWAKAMI TURNAROUND: NORMAL

SAMPLED BY: ERIC CHANG REQUESTED BY: ERIC CHANG

| LABORATORY ID NUMBER | SCI SAMPLE NUMBER | MATRIX: WATER | SOIL | WASTE | AIR | | | CONTAINERS: VOA | LITER | PINT | TUBE | | | METHOD PRESERVED: HCL | $H_2SO_4$ | $HNO_3$ | ICE | NONE | SAMPLING DATE: MONTH | DAY | YEAR | TIME | | | | NOTES | ANALYSIS REQUESTED: TVH / BTXE (8015/8020) | TEPH (8015/3050) | O&G (SMWW 5520) | EPA 8010 | Cd, Cr, Ni, Pb, Zn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 5@6.0 | | X | | | | | | | | X | | | | | | X | | 06 | 04 | 92 | | | | | X | X | X | X | X |
| | 5@8.0 | | X | | | | | | | | X | | | | | | X | | | | | | | | | X | X | X | | |
| | 7@4.0 | | X | | | | | | | | X | | | | | | X | | | | | | | | | X | X | X | | |
| | 7@6.0 | | X | | | | | | | | X | | | | | | X | | | | | | | | | X | X | X | | |
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COMMENTS & NOTES:

## CHAIN OF CUSTODY RECORD

| RELEASED BY: (Signature) | DATE/TIME | RECEIVED BY: (Signature) | DATE/TIME |
|---|---|---|---|
| [signature] | 06-08-92 13:20 | [signature] | 6/8/92 13:20 |
| RELEASED BY: (Signature) | DATE/TIME | RECEIVED BY: (Signature) | DATE/TIME |
| | | | |
| RELEASED BY: (Signature) | DATE/TIME | RECEIVED BY: (Signature) | DATE/TIME |
| | | | |


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# CHAIN OF CUSTODY FORM



PROJECT NAME: 4050 HORTON ST

JOB NUMBER: 851.001 LAB: CURTIS & TOMPKINS

PROJECT CONTACT: MARK KAWAKAMI TURNAROUND: NORMAL

SAMPLED BY: ERIC O'HONEY REQUESTED BY: MARK KAWAKAMI

| LABORATORY ID NUMBER | SCI SAMPLE NUMBER | MATRIX: WATER | SOIL | WASTE | AIR | | | CONTAINERS: VOA | LITER | PINT | TUBE | | | METHOD PRESERVED: HCL | $H_2SO_4$ | $HNO_3$ | ICE | NONE | SAMPLING DATE: MONTH | DAY | YEAR | TIME | | | NOTES | ANALYSIS REQUESTED: TVH | BTXE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 8 0 6.5 | | X | | | | | | | | X | | | | | | X | | 0 6 | 1 8 | 9 3 | | | | | X | X |
| | 8 @ 9.5 | | X | | | | | | | | X | | | | | | X | | | | | | | | | X | X |
| | 9 0 6 | | X | | | | | | | | X | | | | | | X | | | | | | | | | X | X |
| | 9 0 9 | | X | | | | | | | | X | | | | | | X | | | | | | | | | X | X |
| | 10 0 6 | | X | | | | | | | | X | | | | | | X | | | | | | | | | X | X |
| | 11 0 6 | | X | | | | | | | | X | | | | | | X | | | | | | | | | X | X |
| | 12 0 3 | | X | | | | | | | | X | | | | | | X | | | | | | | | | X | X |
| | 12 0 6 | | X | | | | | | | | X | | | | | | X | | | | | | | | | X | X |
| | 13 0 3 | | X | | | | | | | | X | | | | | | X | | | | | | | | | X | X |
| | 13 0 6 | | X | | | | | | | | X | | | | | | X | | | | | | | | | X | X |
| | 14 0 3 | | X | | | | | | | | X | | | | | | X | | | | | | | | | X | X |
| | 14 0 6 | | X | | | | | | | | X | | | | | | X | | 0 6 | 1 8 | 9 3 | | | | | X | X |

## CHAIN OF CUSTODY RECORD

| RELEASED BY: (Signature) | DATE / TIME | RECEIVED BY: (Signature) | DATE / TIME |
|---|---|---|---|
| [signature] | 6/21/93 | | |
| RELEASED BY: (Signature) | DATE / TIME | RECEIVED BY: (Signature) | DATE / TIME |
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| RELEASED BY (Signature) | DATE / TIME | RECEIVED BY: (Signature) | DATE / TIME |
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| RELEASED BY (Signature) | DATE / TIME | RECEIVED BY: (Signature) | DATE / TIME |
| | | [signature] | 6/21/93 1405 |

COMMENTS & NOTES:

HOLD ON ANALYSES FOR SAMPLES 1403 AND 1406

**Subsurface Consultants, Inc.**
171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607
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# CHAIN OF CUSTODY FORM

PAGE 2 OF 2

PROJECT NAME: 4401 HORTON STREET

JOB NUMBER: 95-001 LAB: CURTIS & TOMPKINS

PROJECT CONTACT: MACK KAWAKAMI TURNAROUND: NORMAL

SAMPLED BY: [illegible] REQUESTED BY: MACK KAWAKAMI

| LABORATORY I.D. NUMBER | SCI SAMPLE NUMBER | MATRIX: WATER | MATRIX: SOIL | MATRIX: WASTE | MATRIX: AIR | CONTAINERS: VOA | CONTAINERS: LITER | CONTAINERS: PINT | CONTAINERS: TUBE | METHOD PRESERVED: HCL | METHOD PRESERVED: $H_2SO_4$ | METHOD PRESERVED: $HNO_3$ | METHOD PRESERVED: ICE | METHOD PRESERVED: NONE | SAMPLING DATE: MONTH | SAMPLING DATE: DAY | SAMPLING DATE: YEAR | SAMPLING DATE: TIME | NOTES | ANALYSIS REQUESTED: TVH | ANALYSIS REQUESTED: BTXE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1503 | | X | | | | | | X | | | | X | | 06 | 18 | 93 | | | / | |
| | 1506 | | X | | | | | | X | | | | X | | 06 | 18 | 93 | | | / | / |

## CHAIN OF CUSTODY RECORD

| RELEASED BY (Signature) | DATE / TIME | RECEIVED BY: (Signature) | DATE / TIME |
|---|---|---|---|
| [signature] | 6/21/93 | | |
| RELEASED BY (Signature) | DATE / TIME | RECEIVED BY: (Signature) | DATE / TIME |
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| RELEASED BY (Signature) | DATE / TIME | RECEIVED BY: (Signature) | DATE / TIME |
| | | [signature] | 6/21/93 1405 |

COMMENTS & NOTES:


**Subsurface Consultants, Inc.**

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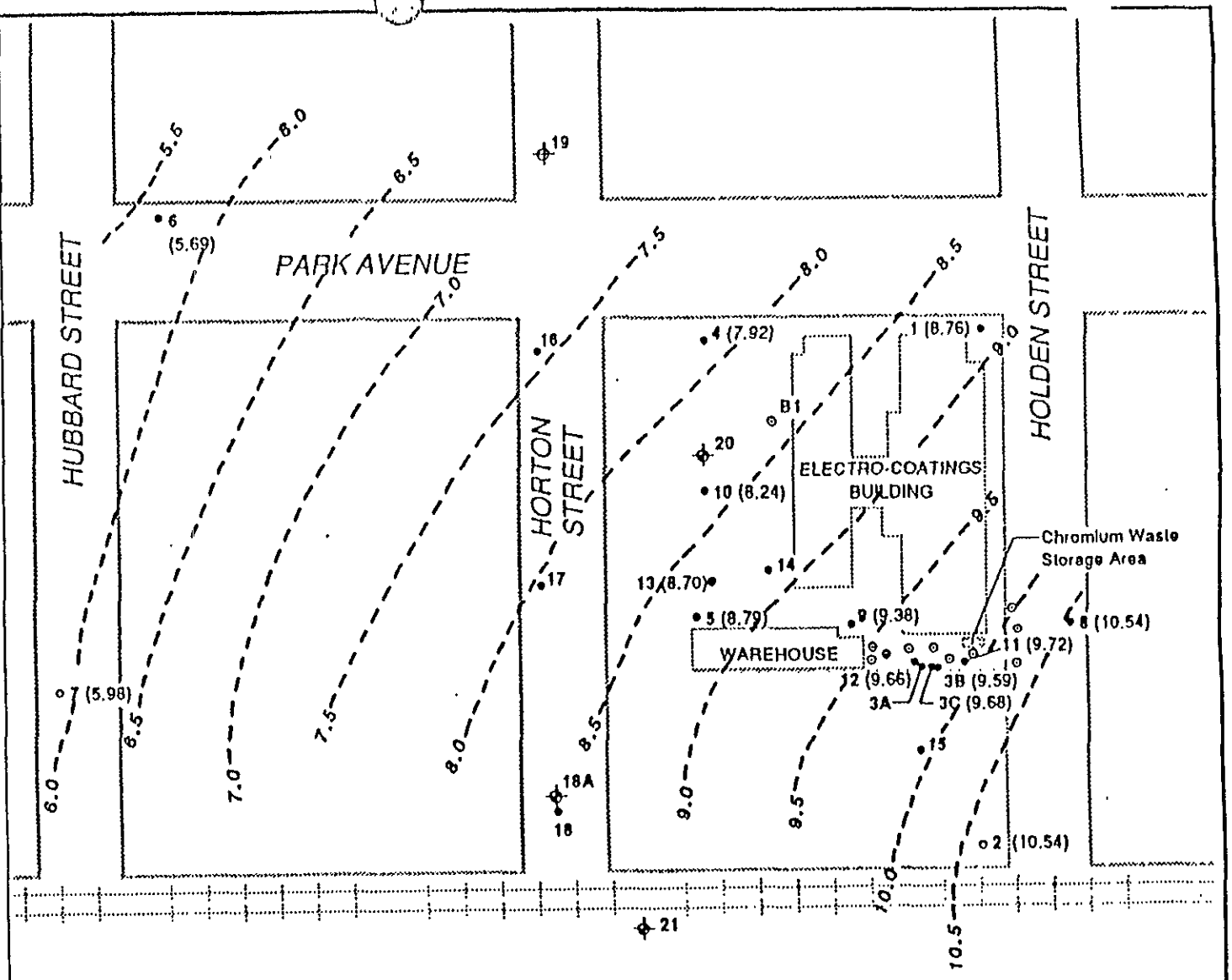
## LEGEND

- ELECTRO COATINGS, INC. PROPERTY LINE
- • 1 — WELLS INSTALLED BY PREVIOUS INVESTIGATORS
- ⌖ 20 — WELLS INSTALLED BY KLEINFELDER AS OF 1985
- ○ 2 — WELLS INSTALLED BY PREVIOUS INVESTIGATORS THAT COULD NOT BE LOCATED AS OF FEBRUARY 1991
- ⌖ 19 — WELLS INSTALLED BY KLEINFELDER THAT COULD NOT BE LOCATED AS OF FEBRUARY 1991
- B1 ○ — SOIL BORING
- (5.90) — GROUND WATER SURFACE ELEVATION (feet)
- 6.5 — GROUND WATER SURFACE ELEVATION CONTOUR (feet)

NOTE: Ground water elevations are based on an arbitrary survey datum




120 0 120
Approximate Scale (feet)

KLEINFELDER

DRAFTED BY: L. Sue/L. Latman DATE: 4-17-91

CHECKED BY: J. Romle DATE: 4-23-91

INFERRED PIEZOMETRIC SURFACE CONTOUR MAP FOR SHALLOW WATER BEARING ZONE, JANUARY 1991

ELECTRO-COATINGS, INC.
1401 PARK AVENUE
EMERYVILLE, CALIFORNIA

PROJECT NO. 10-2200-01

PLATE 6