# SITE CHARACTERIZATION REPORT

**PROJECT SITE:**

**20450 HESPERIAN BOULEVARD**
**HAYWARD, CALIFORNIA**



**PREPARED FOR:**

**MIKE KHATRI**
**AIRPORT ALLIANCE**
**16384 FOOTHILL BOULEVARD #12**
**SAN LEANDRO,CALIFORNIA**
**(510) 481-0166**
**(510) 887-6337 FAX**

**PREPARED BY:**

**RAFAEL GALLARDO**
**CERTIFIED ENVIRONMENTAL CONSULTING, INC.**
**536 STONE ROAD, SUITE J**
**BENICIA, CA 94510-1113**
**(707) 745-0171**

**CEC PROJECT # 94-510-1440-2**

**October 6, 1994**

CERTIFIED
ENVIRONMENTAL
CONSULTING INC.

October 6, 1994

**REF: 94-510-1440-2**

Mr. Mike Khatri
Airport Alliance
16384 Foothill Boulevard #12
San Leandro, CA 94578
(510) 481-0166
(510) 887-6337 FAX

**SUBJECT: SITE CHARACTERIZATION FOR ALLIANCE GAS STATION LOCATED AT 20450 HESPERIAN BOULEVARD, HAYWARD, CALIFORNIA.**

Dear Mr. Khatri:

Please find enclosed Certified Environmental Consulting, Inc's Site Characterization Report for the Alliance Gas Station located at 20450 Hesperian Boulevard, Hayward, California.

We are pleased to be able to perform this work for you and look forward to helping you in the future. If you have any questions regarding this report, please call me at (707) 745-0171.

Respectfully,

Rafael Gallardo
Project Manager/Geologist

Stanley L. Klemetson, Ph.D., P.E.
Executive Vice President

Enclosure

RG/tc

(707) 745-0171

536 Stone Road, Suite J
Benicia, California 94510-1170

Ofc (707) 745-0171
Fax (707) 745-0163

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# EXECUTIVE SUMMARY

On June 24, 27, and July 7, 1994, Certified Environmental Consulting, Inc. (CEC) conducted a Site Characterization study at 20450 Hesperian Boulevard, Hayward, California. The intent of the study was to determine the extent of the existing impacted soil and groundwater beneath the property. Seven borings were drilled within the property line. Three borings were continuous cores and 4 were standard borings. Two borings (B-6, and B-9) were converted into groundwater monitoring wells. The borings ranged in depth from approximately 5.0 to 35.5 feet below grade surface, (bgs). Soil samples were collected at 5 foot intervals along with a water sample at each location. The soil and groundwater samples were delivered to a certified analytical laboratory and tested for Total Petroleum Hydrocarbons as Diesel (TPH-D), Total Petroleum Hydrocarbons as Gas (TPH-G), and Benzene, Toluene, Ethylbenzene, and Xylene (BTEX).

The results of the analytical data indicated the presence of elevated levels of Diesel, Gasoline, and BTEX in the soil and groundwater along the western half of the property. The groundwater gasoline plume was wider spread and covered approximately three-quarters of the site.

The two existing monitoring wells installed by the previous consultant were destroyed using the current accepted methods for well destruction.

The eastern border and vertical extent of the plumes were defined. The western and southern borders continued into the adjoining streets, and the northern border continued into the adjacent property. The following tasks are recommended: a plume analysis of the affected areas surrounding the site, a groundwater pump test, an additional boring to the north, and an air sparging soil vapor extraction pilot test.

# SITE HISTORY

On March 19, 1991, Mr. Danny Chauhan, owner of the Alliance Service Station, received a letter from Alameda County requesting proof that the tank systems on the assessment site were not a contributing source of groundwater contamination for the area located at the corner of Hesperian Boulevard and West A Street, (See Figure 1).

On July 24, 1991, Mr. Chauhan received another letter requesting the same information as requested in the March 19, 1991, letter.

On September 23, 1991, Alameda County submitted a second notice of violation to Mr. Danny Chauhan. The letter requested the following information by October 5, 1991:

1. Precision tank test results for the leaded gasoline tank for 1990 and tank test results for all three tanks for 1989.

2. A written report of the investigation of inventory variations noted in excess of tolerance during the past three years.

3. A technical report describing Subsurface Investigation Plan. Include a timetable for implementation.

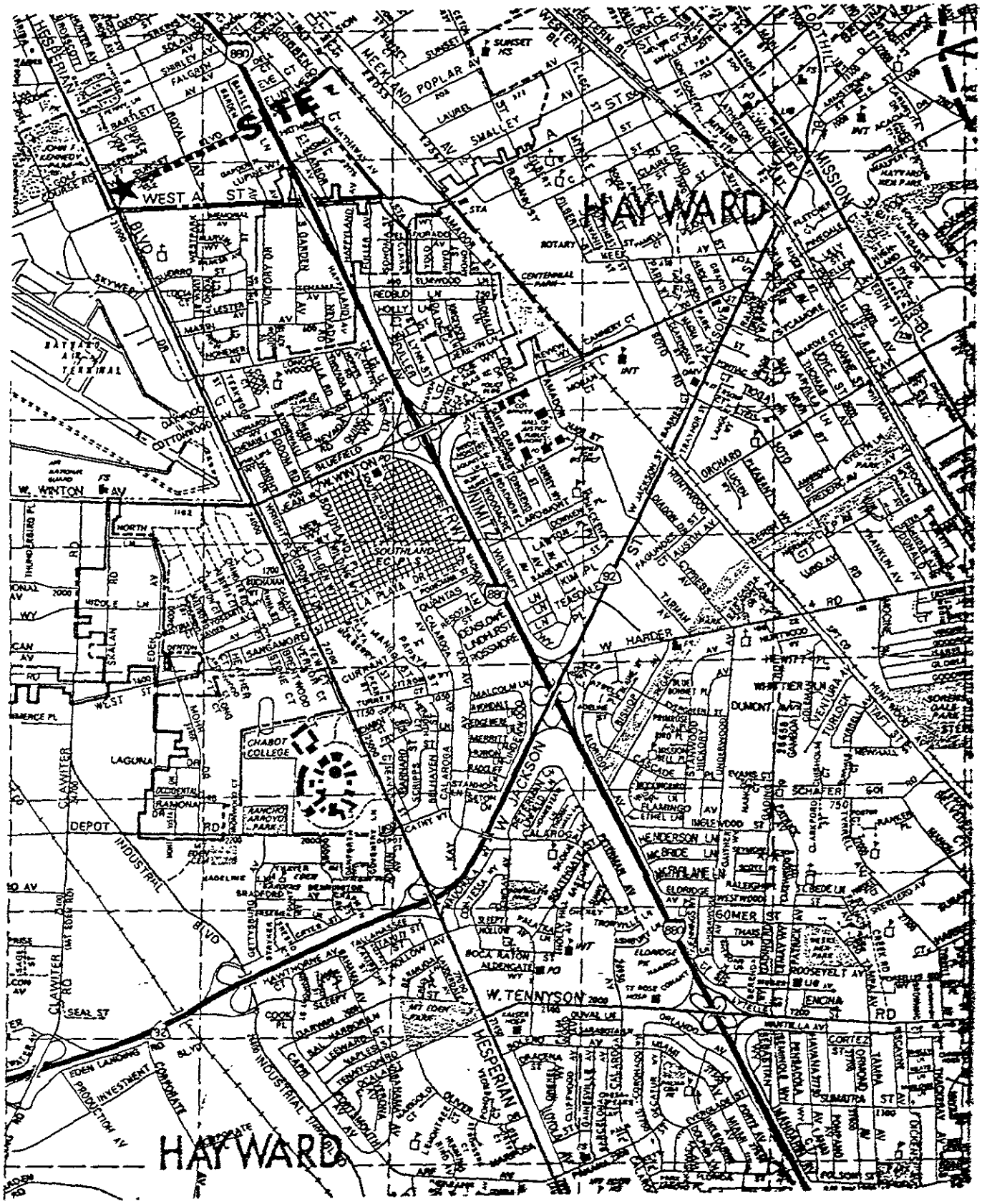
On January 2, 1992, Alameda County submitted a final notice of violation to Mr. Danny Chauhan.

On January 26, 1993, Alameda County submitted a letter to Mr. Chauhan requesting him to submit a Work Plan to investigate the vertical and lateral extent of the potential contamination at his site.

On August 9, 1993, Mr. Zane Miller, a consultant representing Mr. Chauhan, submitted a Drilling Permit Application to Zone 7 Water Agency, for placement of monitoring wells on site. On August 24, 1993, Viking Drillers, Inc. drilled and placed three groundwater monitoring wells at the site. The wells were drilled to a depth of 25 feet. Groundwater was encountered at a depth of 18 feet. Nine soil samples were obtained and delivered on September 9, 1993 to Sequoia Analytical in Sacramento, for analysis of TPH-G and BTEX.

On September 28, 1993, Alameda County submitted a letter to Mr. Danny Chauhan requesting information on the site investigation work performed by Mr. Zane Miller. The proper data was never submitted to the County.

On December 2, 1993, Alameda County submitted a letter to Mr. Danny Chauhan stating that they believed the assessment site was contributing to a regional groundwater contaminant plume consisting of separate and dissolved-phase hydrocarbons.




CERTIFIED ENVIRONMENTAL CONSULTING

536 STONE ROAD SUITE J BENICIA, CA 94510
(707) 745-0171 / (800) 228-0171 / (707) 745-0163 FAX

Figure 1
Site Location Map
20450 Hesperian Blvd
Hayward, CA
Project No. 94-510-1440

On January 7, 1994, the Alliance Gas Station retained the services of Certified Environmental Consulting, Inc. to perform a Phase I Preliminary Site Assessment and a Phase II Site Investigation on the subject site.

On January 10, 1994, CEC submitted a Work Plan to Ms. Juliet Shin of Alameda County for a Subsurface Investigation.

On January 20, 1994, CEC submitted a Phase I Environmental Site Assessment Report of the property to Mr. Chauhan.

On February 2, 1994, CEC submitted a site investigation report to Mr. Khatri. The report revealed the presence of elevated levels of TPH-D, TPH-G, and BTEX in the soil and groundwater beneath the site.

On May 6, 1994, CEC submitted a Work Plan to perform a site characterization study on the property.

# SCOPE OF WORK

This report details the work performed during the site characterization study conducted on June 24, 27, and July 7, 1994. The purpose of the investigation was to define the horizontal and vertical extent of the existing soil and groundwater plumes and to attempt to determine the source of the contamination. The following actions were taken:

- Seven borings were drilled at the site; 3 continuous cores (B-7, B-5, and B-8), and 4 standard borings.
- The borings were sampled at 5-foot intervals.
- Two groundwater monitoring wells were installed, (B-9:MW-2, and B-6:MW-1).
- Soil and groundwater samples were taken at each boring and delivered to an analytical laboratory and tested for TPH-D, TPH-G, and BTEX.
- The monitoring wells were developed, surveyed, and sampled.
- The soil cuttings were placed in DOT approved 55-gallon drums and stored on-site pending laboratory analysis.
- The 55-gallon drums containing soil and rinse water were removed from the site.
- Each boring was backfilled with neat cement to the surface to prevent any migratory pathways for contamination.
- The wells installed from the previous consultant were properly destroyed.
- A report disclosing work performed, data collected, conclusions and recommendations was prepared.

# GEOLOGY AND HYDROGEOLOGY

## Geology

The site rests on undifferentiated deposits consisting of marine clay and sand with minor lenses of gravel underlying a thin cover of alluvium and slope wash. The deposits are of Quaternary age upper pleistocene to recent (QU). These are thick unconsolidated deposits with an average thickness exceeding 600 feet. Bedrock occurs at depths of between 468 and 732 feet.

The closest faults in the Quadrangle are the Hayward Fault located approximately 1-3/4 miles to Northeast, the West Chabot Fault located approximately 2-1/4 miles to the Northeast, and the East Chabot Fault located approximately 2-3/4 miles to the Northeast. The Hayward Fault is considered to be the most threatening to the area. It is an active fault having displayed movement within the last 11,000 years. The East and West Chabot Faults are considered to be inactive.

## Hydrogeology

The site rests within the East Bay Plain. The plain covers an area of approximately 114 square miles. Most of the groundwater is used for irrigation and industrial use, with very little of it pumped for domestic consumption. The groundwater reservoir is comprised of three main unconsolidated water bearing units: The Older Alluvium, the Younger Alluvium, and the Merritt Sand. The reservoir is greater than 1100 feet thick and occurs in unconfined and confined conditions.

The groundwater beneath the East Bay Plain has been seriously threatened by hundreds of documented toxic spills and leaks since 1984. The most serious threat to the groundwater reservoir occurs where the Younger Alluvium and Merritt Sand outcrop and also along the recharge area of the Older Alluvium. Groundwater in the Older Alluvium has not yet been degraded by toxins.

Groundwater flow direction within the plain in general is from the Eastern part of the reservoir to the West, towards San Francisco Bay.

Sources:

Geohydrology and Groundwater-Quality Overview East Bay Plain Area, Alameda County, California, June 1988. 205(J) Report.

Geology of the Hayward Quadrangle, by G.D. Robinson, 1956.

# DRILLING

On June 24, 27, and July 7, 1994, Certified Environmental Consulting, Inc. arrived at the investigation site. Seven borings were drilled using a CME 55 truck mounted rig with 4.5 inch I.D. hollow stem augers, and equipped with a 140 lb. hammer. Four borings were located up gradient of the service islands and Three were placed down gradient of the underground tanks and service islands (See Figure 2).

## SITE SOILS

The site consisted of approximately a 1/2 inch layer of asphalt overlying a 1 to 1.5 foot thick layer of imported yellowish brown baserock (Leona Quarry). Below the baserock was a 4 to 4.5 foot thick layer of very dark grey silty clay (Danville silty clay loam) of medium plasticity. A 2 foot layer of mottled grey-brown silty clay with sand followed the dark grey silty clay in two of the borings. At a depth of between 5 to 7 feet, a greenish brown silty clay with 3 inch silty sand seams was encountered. The layer varied in thickness from between 4.5 to 10.5 feet. Below the greenish clay layer, at a depth of approximately 14.0 feet, a 2 to 3 foot zone of transitional silty sand/sandy silt soil was encountered. The saturated zone was encountered within this layer at each boring location. The deepest soil discovered below the site consisted of a beige sandy clay at 34.0 feet bgs, (See Appendix B).

## PRELIMINARY FINDINGS

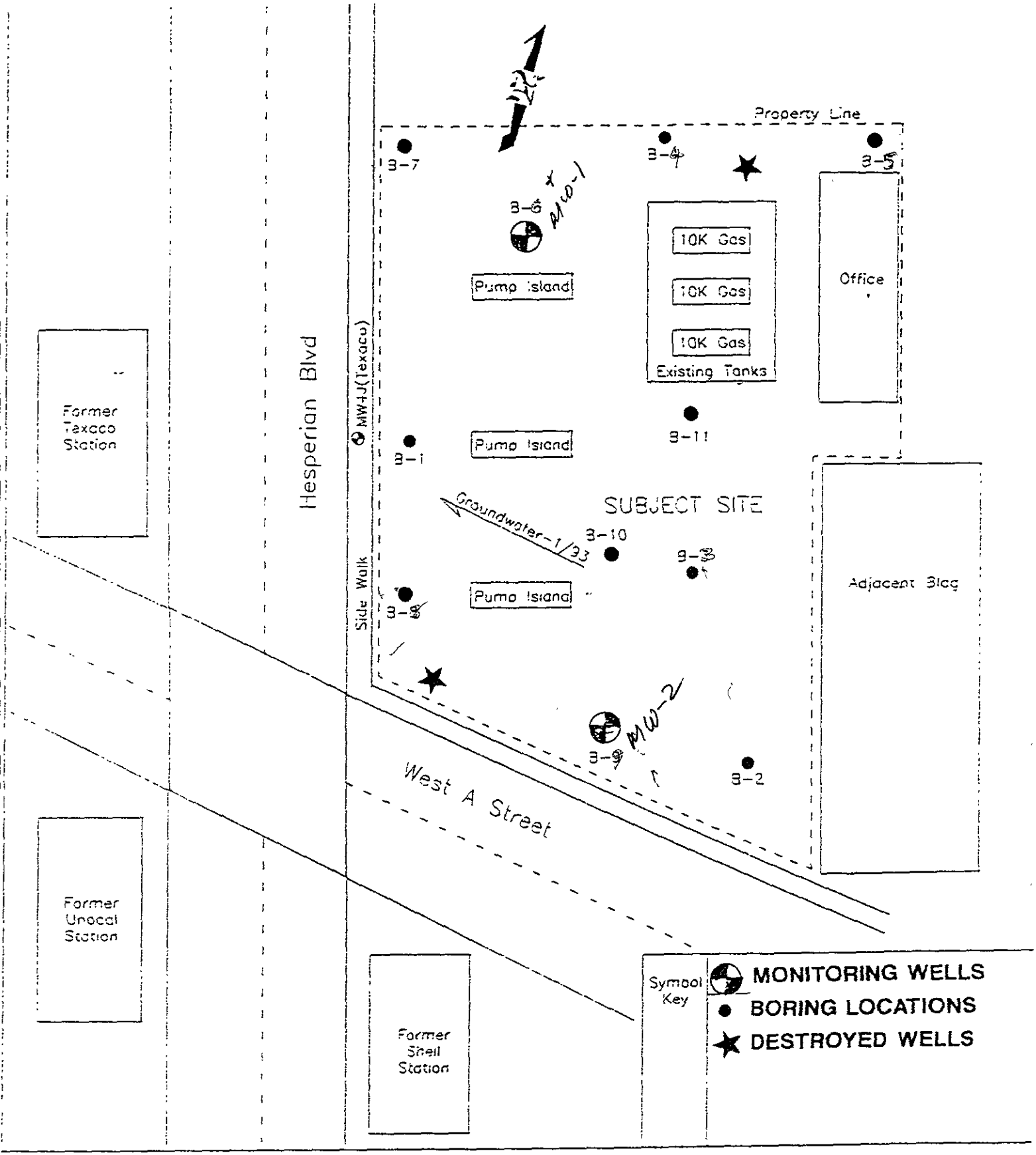
### Boring B-5 (Continuous Core)

The upper 8-inches of material consisted of 2-inches of asphalt followed by 6-inches of baserock. underlying the baserock was a 4.5 foot thick layer of black silty clay, with roots. At a depth of 5.0 feet, the material changed to a mottled, platty textured grey-brown sandy clay. A medium grey sandy clay was encountered at a depth of 6.5 feet containing 3 (3-inch) thick seams of silty sand. The seams gave off a strong solvent odor. A medium mottled brown-grey sandy clay was encountered at a depth of 13.75 feet followed by a 2-foot layer of sandy silt. Underlying the sandy silt, at a depth of 17.5 feet, was a 1-foot layer of greyish brown silty sand containing what appeared to be marsh grass. A brown silty sand was encountered at a depth of 18.5 feet and contained alternating 1-inch seams of black clay from 24.0 to 27.5 feet. The boring was terminated at a depth of 28.0 feet bgs.

Three soil and 1 water sample were collected. Groundwater was first observed at a depth of 13.0 feet.

### Boring 6 (Monitoring Well MW-1)

The upper 4.5 feet of material consisted of approximately 2-inches of asphalt followed by approximately 2.5 inches of baserock, and a 4.0 foot layer of black sandy clay. The soil




CERTIFIED ENVIRONMENTAL CONSULTING
536 STONE ROAD SUITE J, BENICIA, CA 94510
(707) 745-0171 / (800) 223-0171 / (707) 745-0163 FAX

FIGURE 2
20450 HESPERIAN BLVD.
HAYWARD, CALIFORNIA
PROJECT NO. 94-510-1440-2

changed to a medium grey-brown mottled silty sandy clay. A motor oil odor was detected at a depth of approximately 6.0 feet. At a depth of 9.5 feet, the soil changed to a medium grey sandy clay with sandy seams from 9.5 to 11.0 feet. The seams emitted a strong hydrocarbon odor (gasoline). The soil changed back to a mottled grey-brown sandy clay at a depth of 13.5 feet. Vertical worm holes were observed containing product. A brown silty sand was observed at a depth of 17.0 to 34.0 feet. Graded bedding was observed from 29.9 to 30.5 feet. At a depth of 34.0 feet, the soil changed to a beige sandy clay. The boring was terminated at a depth of 35.0 feet.

Two soil samples were collected.

Groundwater was first observed at a depth of approximately 17.0 feet.

**Boring B-7 (Continuous Core)**

The upper 4.25 feet of material consisted of approximately 2-inches of asphalt followed by 6-inches of baserock and 3.5 feet of black sandy clay. A slight motor oil odor was noted. At a depth of approximately 4.25 feet, the material changed to a mottled grey-brown sandy clay. A medium grey sandy clay was encountered at a depth of 6.0 feet. Two-inch sand seams were observed within this layer at a depth of 9.5, and 10.5 feet. The gasoline odor increased between 14.0, and 15.5 feet. Free product was observed at a depth of 16.5 feet bgs. At a depth of 15.5 feet, the soil changed to a brown sandy silty clay. The clay contained vertical worm borings containing product. A brown silty sand followed the clay to a depth of 34.0 feet. No odor was noted in this layer. Graded bedding was observed at 22.0 feet, and at 25.0 feet. A gravelly silty sand was observed from 27.5 feet to 29 feet. At a depth of 34.0 feet a beige sandy clay was observed. The boring was terminated at a depth of approximately 35.5 feet.

Four soil and 1 water sample were collected.

Groundwater was first observed at a depth of 14.0 feet.

**Boring B-8**

The upper 5.5 feet of material consisted of 2-inches of asphalt and 6-inches of baserock followed by approximately 5.0 feet of black sandy silty clay. Underlying this layer was a mottled grey-brown sandy clay to a depth of 10.5 feet. Two thin sandy seams were observed within this layer at a depth of 9.5 feet and 10.5 feet. The soil changed to a medium grey sandy silt from 10.5 feet to 13.5 feet. The layer contained vertical worm borings containing free product. A 3-inch sand seam was observed at a depth of 12.5 feet. Below this layer, at a depth of 13.5 feet, the soil changed to a mottled yellow-brown sandy clay, with vertical worm borings containing free product. A brown silty sand was encountered at a depth of 17.5 feet. At a depth of 28.0 feet, a brown sand was observed. The sand graded to a coarser grained sand from 32.0 feet to 34.0 feet. The sand was followed by a layer of beige sandy clay at a depth of 34.0 feet. The boring was terminated at a depth of 35.0 feet.

Three soil and one water sample were collected.

Groundwater was first encountered at a depth of approximately 15.0 feet.

**Boring B-9 (Monitoring Well MW-2)**

The upper 5.0 feet of material consisted of 2.5-inches of asphalt, and 4-inches of baserock followed by a 4.5 foot thick layer of black sandy clay. A medium grey-brown sandy clay was observed from 5.0 feet to 14.25 feet. A strong waste oil odor was detected at a depth of approximately 8.0 feet. A silty sandy seam was observed within the layer at a depth of 10.5 feet. A mottled grey-brown sandy silty clay was observed underlying the sandy clay. The layer contained vertical grey worm borings containing water. Below this layer, at a depth of 19.25 feet, a brown silty sand was observed. Graded bedding was noted within the layer at a depth of 29.0 feet. The boring was terminated at a depth of 29.5 feet.

Two soil samples were collected.

Groundwater was first observed at a depth of 19.25 feet.

**Boring B-10 (Shallow Boring)**

The upper 5.0 feet of material consisted of 2-inches of asphalt, and 6-inches of baserock followed by a 4.5 foot layer of black sandy clay. A waste oil odor was detected within the layer. A mottled grey-brown sandy clay was observed at a depth of 5.0 feet. The boring was terminated at a depth of 5.5 feet. The purpose of this boring was to see if the product lines were leaking into the soil.

One soil sample was collected.

**Boring B-11**

The upper 4.0 feet of material consisted of 2-inches of asphalt and 6-inches of baserock. Underlying the baserock was a 3.5 foot layer of fill material consisting of dark grey sandy clay with debris. Below the fill a black sandy silty clay was observed, followed by a mottled grey-brown sandy clay. Two sandy silt seams were observed within the layer at 9.0 feet and 14.0 feet. A gasoline odor was noted at 7.0 feet and was strongest from 9.0 feet to 10.5 feet. Vertical worm borings containing product were observed at a depth of 14.5 feet. A brown silty sand was observed from 17.0 feet to the bottom of the boring. The boring was terminated at a depth of 25.5 feet.

Three soil and one water sample were collected.

Groundwater was first observed at a depth of 15.0 feet.

## SOIL SAMPLING

The soil samples were collected using a 2-inch modified California Split Spoon Sampler containing 3, six-inch-long brass tubes. The sampler was driven into the ground 18 inches, using a 140 lb. hammer with a 30 inch drop. The standard borings (B-1, B-3, B-4) were sampled at 5 foot intervals and in some cases at the first detection of hydrocarbon odor. The soil samples obtained from the continuous core boring (B-2) were sampled at the end of each 5 foot run, again exercising the same sampling method as for the other three borings.

The sampler barrel was decontaminized before and after each use by using an Alconox solution wash and tap water. Each sample was covered at each end with Teflon sheeting and PVC end caps. The samples were then placed in an ice chest fill with ice for transportation to an analytical laboratory.

A total of 18 soil samples were collected from the 7 borings.

## WELL CONSTRUCTION

On June 28, 1994, CEC installed two groundwater monitoring wells. MW-1 (B-6) was installed to a depth of 35'. The well was screened (.02 slotted) from 10.0 to 35.0 feet. The sand pack (#3 sand) interval was from 8.0 to 35.0 feet. MW-2 (B-9) was installed to a depth of 29'. The well screen (.02 slotted) interval was from 19.0 to 29.0 feet. The sand pack (#3 sand) interval was from 17.0 to 29.0 feet. Both wells were plugged with a 1-foot bentonite seal and grouted to the bottom of the well box. The well boxes were concreted and raised slightly above the paved ground surface. The wells were surveyed and developed by CEC on July 5, 1994, (See Sampling Event Data Sheets, Appendix C).

## WELL DESTRUCTION

On July 7, 1994, CEC destroyed the two existing monitoring wells that were installed by another consultant. The wells were 25.0 feet deep and contained 15.0 feet of screen. Each well was reemed to 25.0 feet to remove the well screen and casing. The wells were backfilled to the surface using a lean grout mix.

## GROUNDWATER SAMPLING

Groundwater sampling was performed by placing a disposable bailer down the hollow stem augers to retrieve the water samples. A one liter amber bottle was filled at each boring location for diesel analysis along with two VOA vials containing HCL as a preservative for gasoline and BTEX analysis.

A total of 5 groundwater samples were collected from the 7 borings. Two borings were not sampled: Boring B-7 contained free product and B-10 was shallow (5 feet). The samples were labeled and placed in an ice chest filled with ice for transportation to an analytical laboratory.

The samples were recorded on the chain of custody and delivered to McCampbell Analytical Inc. for TPH-D, TPH-G, and BTEX analysis.

The analysis results are listed in Appendix B of this report.

Monitor wells MW-1 and MW-2 were sampled by placing a disposable bailer down the well head after well development. Each well was sampled on two occasions, (July 5, 1994, and August 17, 1994).

The samples were recorded on a Chain of Custody and delivered to McCampbell Analytical, Inc. for TPH-D, TPH-G and BTEX analysis.

## CLEANUP

The cuttings from each boring were placed in 55 gallon DOT approved drums and properly labeled. A total of 25 drums along with the existing 6 drums were left on site pending laboratory results.

The boreholes were filled with neat cement to the surface to eliminate any migratory pathways for contamination.

# ANALYTICAL RESULTS

A total of 3 groundwater and 18 soil samples were obtained from the 7 borings and analyzed for TPH-D, TPH-G, and BTEX. The two groundwater monitoring wells, (MW-1/B-6, and MW-2/B-9) were sampled separately from the boring samples and are presented in the following results:

Soil

The analytical results revealed minor levels of TPH-D, (80 to 97 ppm) in borings B-6, B-7, and B-8. Borings B-5, B-9, and B-11 were non-detect. Elevated levels of TPH-G, (560 and 780 ppm) were revealed in B-6 and B-7 respectively. Minor amounts of TPH-G, (5 to 130 ppm) were revealed in B-8 and B-11. Borings B-5, and B-9 were both non-detect. Benzene detection ranged from .039 to 13 ppm in borings B-9, (.039 ppm), B-11, B-8, B-6, (4.3 ppm), and B-7, (13 ppm). Boring B-5 was non-detect. The analytical sample results were taken at a depth between 10.0 and 10.5 feet, (See Appendix B, Table 1).

Groundwater

The analytical results revealed elevated levels of TPH-D, TPH-G, and BTEX in Borings B-6/MW-1, B-8, and B-11. Elevated levels of TPH-G, (>10,000 ppb) were detected in Borings B-6/MW-1, B-8, and B-7. B-7 contained fee product and was not sampled. Elevated levels of TPH-D, (>2,500 ppb) were detected in Borings B-6/MW-1, and B-8. Borings B-5, and B-9/MW-2 were non-detect for TPH-D, TPH-G, and BTEX.

The concentrations for TPH-G ranged between 31,000 ppb to 400 ppb for Benzene between 8200 ppb to 91 ppb and for TPH-D between 2,700 ppb to 70 ppb (see Appendix B, Table 2).

# CONCLUSIONS

Based on the lab analytical obtained during the initial sampling phase, and data collected, the following conclusions can be made:

- It is apparent that the soil and groundwater located beneath the assessment site contains elevated concentrations of TPH-D, TPH-G, and BTEX.
- The elevated hydrocarbon concentrations were present in the unsaturated zone in a greenish grey silty clay layer at a depth of approximately 8.5 feet below grade surface (bgs).
- The location of the soil plume is approximately between 8.5 to 15.5, ( 7-feet thick).
- The strongest hydrocarbon odor was detected in the silty sand seams located within the silty clay layer.
- The plume is approximately 30 % saturated.
- Groundwater is approximately 13.0 feet (bgs).
- A beige sandy clay defines the bottom confining layer of the aquitard.
- The highest concentrations of TPH-D in the groundwater are located along the western half of the site, with the highest concentration, (6,700 ppb) located around the southwest corner of the property.
- The highest concentrations of TPH-G, and BTEX in the groundwater are located along the middle half of the property, with the highest concentration, (TPH-G/48,000 PPB and Benzene/340 ppb) located at the southwest corner of the site.
- The northern and western extent of the soil and groundwater plume was not defined.
- CEC, therefore, concludes that more detailed investigation is required.

# RECOMMENDATIONS

Based on the data collected and observations recorded during the exploratory drilling, CEC supports the following step-wise recommendations:

- One additional boring to the north to define the plume.
- Pump test to determine the aquifer characteristics (Transmissivity, Storage Coefficient, etc.).
- Perform an air sparging/soil vapor extraction pilot test.
- Plume Analysis of the affected areas surrounding the site.

# LIMITATIONS

This report was prepared by Certified Environmental Consulting, Inc. under the professional direction and review of the person whose name and seal are shown below.

This report has been prepared according to generally accepted geologic and environmental practices. No other warranty, either expressed or implied about the professional advice provided is made. The conclusions and recommendations contained in this report are based on currently available information, and site conditions as they existed at the time of the investigation.


Stanley L. Klemetson, Ph.D, P.E.
Executive Vice President

# APPENDIX A

## DRILLING LOGS
## JUNE 24, 27, AND JULY 7, 1994

CERTIFIED ENVIRONMENTAL CONSULTING
336 STONE ROAD SUITE J BENICIA CA 94510
(707) 745-0171 / (800) 228-0171 / (707) 745-0163 FAX

BORING NUMBER **B1** SHEET 1 OF 1

PROJECT **Alliance Gas Station**

LOCATION **Hayward, CA**

CONTRACT NUMBER **94-510-1440**

LOGGED BY **R. Gallardo**

COORDINATES

SURFACE ELEVATION DATUM

| SAMPLE INFORMATION | | | | | | STRATA | DESCRIPTION | WELL CONSTRUCTION DETAIL | ELEVATION FEET |
|---|---|---|---|---|---|---|---|---|---|
| DEPTH FEET | LAB SAMPLE | SAMPLE TYPE | BLOW COUNTS | Recovery % | HNu (ppm) | | | | |
| | | | | | | | 0.0 - 1/2" Black asphalt<br>1/2" - 1.0' Silty sandy gravel (GM), yellow brown, dry to moist<br>FILL fill material, (Leona Quarry) | | |
| | | | | | | | SILTY CLAY (CL) stiff, dark grey, moist, medium plasticity, no odor | | |
| 5 | | | | | | | SANDY SILTY CLAY (CL) greenish grey, stiff, moist, platy structure; petroluem odor. | | |
| 10 | | | 3<br>4<br>4 | | | | 10' - 10.3' silty sand seam<br>10' - 11.5' very strong fresh product odor (gasoline) | | |
| 15 | | | 3<br>6<br>5 | | | | SILTY SANDY CLAY (CL) stiff, brown-grey, moist, mottled | | |
| | | | 1<br>3<br>4 | | | | SILTY SAND (SM) brown, loose, saturated | ▼ | |
| | | | | | | | Total depth of boring 19.5' BGS. | | |

DRILLING CONTRACTOR **SES**

DRILLING METHOD **Hollow Stem Auger**

DRILLING EQUIPMENT **CME55**

DRILLING STARTED **1/24/94** ENDED **1/24/94**

REMARKS

See key sheet for symbols and abbreviations used above

CERTIFIED ENVIRONMENTAL CONSULTING
536 STONE ROAD SUITE J BENICIA CA 94510
(707) 745-0171 / (800) 228-0171 / (707) 745-0163 FAX

BORING NUMBER B2 SHEET 1 OF 1

PROJECT Alliance Gas Station

LOCATION Hayward, CA

CONTRACT NUMBER 94-510-1440

COORDINATES

SURFACE ELEVATION DATUM

LOGGED BY R. Gallardo

| DEPTH FEET | LAB SAMPLE | SAMPLE TYPE | BLOW COUNTS | Recovery % | HNu (ppm) | STRATA | DESCRIPTION | WELL CONSTRUCTION DETAIL | ELEVATION FEET |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 0.0 - 1/2" Black asphalt | | |
| | | | | | | | 1/2" - 1.0' Silty sandy gravel (GM), yellow brown, dry to moist, dense FILL fill material, (Leona Quarry) | | |
| | | | | | | | SANDY SILTY CLAY (CL) stiff, dark grey, moist, medium plasticity. | | |
| 5 | B-2-1 | | 4<br>9<br>13 | | | | SILTY CLAY (CL) medium (brownish-grey), stiff, moist, low to medium plasticity; mottled, some sand present | | |
| | | | | | | | SILTY CLAY (CL) greenish brown, soft to medium stiff, moist, low to medium plasticity with small 3" clayey sand seams. | | |
| 10 | B-2-2 | | 3<br>3<br>4 | | | | 3" clayey sand seam at 9.5' | | |
| | | | | | | | 3" clayey sand seam at 10.5' | | |
| | | | | | | | 3.5" silty sand seam at 12.5' | | |
| 15 | B-2-3 | | 3<br>5<br>8 | | | | SANDY SILT (ML) greenish brown, stiff, moist, low plasticity; increasing sand and moisture with depth. greenish-brown mottling from 15' to 16' with trace worm holes with free water. No odor | ▼ | |
| | | | | | | | SILT SAND (SM) yellow brown, medium dense, wet to saturated, no odor. Small sand seams. Sand is coarse to fine grained, sub-angular, multi colored grains. | | |
| 20 | | | | | | | Total depth of boring 20' BGS. | | |

DRILLING CONTRACTOR SES

DRILLING METHOD Hollow Stem Auger

DRILLING EQUIPMENT CME55

DRILLING STARTED 1/24/94 ENDED 1/24/94

REMARKS Borehole was logged using a continuous core barrel. Soil samples were collected on select intervals using a modified california split spoon sampler.

See key sheet for symbols and abbreviations used above.

CERTIFIED ENVIRONMENTAL CONSULTING
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BORING NUMBER B3 SHEET 1 OF 1

PROJECT Alliance Gas Station

LOCATION Hayward, CA

CONTRACT NUMBER 94-510-1440

COORDINATES

SURFACE ELEVATION DATUM

LOGGED BY R. Gallardo

| SAMPLE INFORMATION | | | | | | STRATA | DESCRIPTION | WELL CONSTRUCTION DETAIL | ELEVATION FEET |
|---|---|---|---|---|---|---|---|---|---|
| DEPTH FEET | LAB SAMPLE | SAMPLE TYPE | BLOW COUNTS | Recovery % | HNu (ppm) | | | | |
| | | | | | | | 0.0 - 1/2" Black asphalt<br>1/2" - 1.0' Silty sandy gravel (GM), yellow brown, dry to moist, dense FILL fill material, (Leona Quarry) | | |
| | | | | | | | SILTY CLAY (CL) stiff, dark grey, moist, medium plasticity, strong petroleum odor at 2' | | |
| 5 | | | 6<br>13<br>16 | | | | SANDY CLAY (CL) dark grey-brown, stiff, moist, mottled; petroluem odor. | | |
| | | | | | | | SILTY CLAY (CL) medium green-grey, stiff, moist with silty sand lense; petroleum odor | | |
| 10 | | | 3<br>5<br>6 | | | | Grey silty sand lense from 10.5' - 11.0', wet | | |
| | | | | | | | SANDY SILT (ML) greyish brown, moist to wet, slight hydrocarbon odor | ▼ | |
| 15 | | | | | | | SILTY SAND (SM) brown, loose, saturated, no odor | | |
| | | | | | | | Total depth of boring 17.0' BGS. | | |

DRILLING CONTRACTOR SES

DRILLING METHOD Hollow Stem Auger

DRILLING EQUIPMENT CME55

DRILLING STARTED 1/24/94 ENDED 1/24/94

REMARKS

See key sheet for symbols and abbreviations used above.

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BORING NUMBER **B4** SHEET 1 OF 1

PROJECT **Alliance Gas Station**

LOCATION **Hayward, CA**

CONTRACT NUMBER **94-510-1440**

COORDINATES

SURFACE ELEVATION DATUM

LOGGED BY **R. Gallardo**

| SAMPLE INFORMATION | | | | | | STRATA | DESCRIPTION | WELL CONSTRUCTION DETAIL | ELEVATION FEET |
|---|---|---|---|---|---|---|---|---|---|
| DEPTH FEET | LAB SAMPLE | SAMPLE TYPE | BLOW COUNTS | Recovery % | HNu (ppm) | | | | |
| | | | 1 3 3 | | | | 0.0 - 1/2" Black asphalt<br>1/2" - 1.0' Silty sandy gravel (GM), yellow brown, dry to moist, dense FILL fill material, (Leona Quarry)<br>SILTY CLAY (CL) medium stiff, dark grey, moist, medium plasticity, strong petroleum odor; weathered gasoline | | |
| 5 | | | | | | | SILTY CLAY (CL) green-grey, stiff, moist, medium plasticity; slight petroleum odor | | |
| 10 | | | 3 3 4 | | | | Grey silty sand lense from 10.0' - 10.3' | | |
| | | | 4 5 7 | | | | SILTY SAND (SM) brown, loose to medium dense, saturated, no odor<br>Total depth of boring 14.5' BGS. | ▼ | |

DRILLING CONTRACTOR **SES**

DRILLING METHOD **Hollow Stem Auger**

DRILLING EQUIPMENT **CME55**

DRILLING STARTED **1/24/94** ENDED **1/24/94**

REMARKS

See key sheet for symbols and abbreviations used above.

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BORING NUMBER **B5** SHEET 1 OF 1

PROJECT **Alliance Gas Station**

LOCATION **Hayward, CA**

CONTRACT NUMBER **94-510-1440**

COORDINATES

SURFACE ELEVATION DATUM

LOGGED BY

| SAMPLE INFORMATION | | | | | | STRATA | DESCRIPTION | WELL CONSTRUCTION DETAIL | ELEVATION FEET |
|---|---|---|---|---|---|---|---|---|---|
| DEPTH FEET | LAB SAMPLE | SAMPLE TYPE | BLOW COUNTS | Recovery % | HNu (ppm) | | | | |
| | | | | | | | 2<br>ASPHALT black<br>SILTY, SANDY GRAVEL (GM) yellow-brown, dense, dry to moist fill from t he Leona Quarry<br>SILTY CLAY (CH) black, stiff, moist with small roots. | | |
| 5 | | | | | | | SANDY CLAY (CL) mottled grey-brown, stiff and moist with platy structure.<br>SANDY CLAY (CL) medium grey, stiff, moist with platty structure. Old waste oil odor. | | |
| 10 | | | | | | | 3" thick grey silty sand seam with solvent odor.<br>3" thick grey silty sand seam with solvent odor.<br>!0.5' bgs to 14' bgs contains trace gravels, rounded with 1/4" diameter.<br>3" grey silty sand seam with solvent odor. | ▼ | |
| 15 | | | | | | | SANDY CLAY (CL) mottled medium brown with grey, stiff, moist to wet with trace lepard texture. Contains vertical worm holes. | | |
| 20 | | | | | | | SANDY SILT (ML) brown-grey, wet with lepard texture.<br>SILTY SAND (SM) brown with grey, soft and wet with lepard texture. May contain marsh grass.<br>cleaner, loose, wet.<br>coarse grained seam<br>drier | | |
| 25 | | | | | | | 1" black clay seam.<br>1/4" black clay seam.<br>black clay silt seam.<br>black clay silt seam. | | |

DRILLING CONTRACTOR

DRILLING METHOD

DRILLING EQUIPMENT

DRILLING STARTED ENDED

REMARKS

See key sheet for symbols and abbreviations used above.

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BORING NUMBER MW-1 SHEET 1 OF 2

PROJECT Alliance Gas Station

LOCATION Hayward, CA

CONTRACT NUMBER 94-510-1440

COORDINATES

SURFACE ELEVATION DATUM

LOGGED BY

| DEPTH FEET | LAB SAMPLE | SAMPLE TYPE | BLOW COUNTS | Recovery % | HNu (ppm) | STRATA | DESCRIPTION | WELL CONSTRUCTION DETAIL | ELEVATION FEET |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Asphalt down to .21' bgs. Brown base rock to .3' bgs | | |
| | | | | | | | SANDY CLAY (CL) dark grey, medium stiff, moist with fat clay. | | |
| 5 | | | 5 7 12 | 100 | | | SILTY SANDY CLAY (CL) mottled medium grey and brown, stiff and moist. Motor oil odor present at 6.0' bgs. | | |
| 10 | | | 3 4 4 | 100 | | | SANDY CLAY (CL) medium grey, medium stiff, moist with strong TPH-G odor in sandier seams within sample 9 1/2' to 11' bgs. | | |
| 15 | | | 3 4 5 | 100 | | | SANDY CLAY (CL) mottled grey and brown, medium stiff, moist with vertical worm holes containing product. | | |
| | | | | | | | SILTY SAND (SM) brown, medium dense and wet to saturated. | | |
| 20 | | | 2 5 6 | 100 | | | | | |
| 25 | | | 8 7 9 | 100 | | | sandy silt seam 3" thick. cleaner sand from 24.26' to 25.5' bgs (sand is heaving). | | |
| 30 | | | 10 12 13 | 100 | | | graded bedding from 29' to 30.5' bgs. 1/2" subrounded fine to medium gravels. | | |
| | | | 3 4 | 100 | | | SANDY CLAY (CL) beige, stiff and | | |

DRILLING CONTRACTOR

DRILLING METHOD

DRILLING EQUIPMENT

DRILLING STARTED ENDED

REMARKS

See key sheet for symbols and abbreviations used above.

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BORING NUMBER MW-1 SHEET 2 OF 2

PROJECT Alliance Gas Station

LOCATION Hayward, CA

CONTRACT NUMBER 94-510-1440

COORDINATES

SURFACE ELEVATION DATUM

LOGGED BY

| SAMPLE INFORMATION | | | | | | STRATA | DESCRIPTION | WELL CONSTRUCTION DETAIL | ELEVATION FEET |
|---|---|---|---|---|---|---|---|---|---|
| DEPTH FEET | LAB SAMPLE | SAMPLE TYPE | BLOW COUNTS | Recovery % | HNu (ppm) | | | | |
| | | | 5 | | | | moist. | | |

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BORING NUMBER B7 SHEET 1 OF 2
PROJECT Alliance Gas Station
LOCATION Hayward, CA
CONTRACT NUMBER 94-510-1440
COORDINATES
SURFACE ELEVATION DATUM LOGGED BY

| SAMPLE INFORMATION | | | | | | STRATA | DESCRIPTION | WELL CONSTRUCTION DETAIL | ELEVATION FEET |
|---|---|---|---|---|---|---|---|---|---|
| DEPTH FEET | LAB SAMPLE | SAMPLE TYPE | BLOW COUNTS | Recovery % | HNu (ppm) | | | | |
| | | | | | | | 2" asphalt layer.<br>Yellow brown baserock to .8' bgs.<br>SANDY CLAY (CH) black, stiff, moist, high PI and traces of peat.<br>Motor oil odor. | | |
| 5 | | | | | | | SANDY CLAY (CL) mottled grey and brown,stiff and moist. No odor.<br>SANDY CLAY (CL)medium grey, stiff, moist and a platy texture.<br>TPH odor. | | |
| 10 | | | | | | | CLAYEY SAND (CL) 2" seam with strong gasoline odor.<br>CLAYEY SAND (CL) 4" thick seam.<br>Increasing moisture and silt from 11' to 13.5' bgs, softer. | ▼ | |
| 15 | | | | | | | Strong gasoline odor from 14'to 15.5' bgs.<br>SANDY SILTY CLAY (CL) brown, moist to wet, medium stiff to stiff, vertical worm holes acting as conduits for gasoline.<br>Free product at 18.5' bgs. | | |
| 20 | | | | | | | SILTY SAND (SM) brown, medium dense, moist to wet with no odor.<br>Saturated from 20.5' to 22' bgs. | | |
| 25 | | | | | | | Graded bedding at 22' bgs.<br>Denser.<br>Graded bedding.<br>Graded bedding at 25' bgs.<br>Gravel seam at 25.5' bgs.<br>SILTY CLAYEY SAND (SC)seam at 26' bgs.<br>Gravel seam at 27' bgs.<br>GRAVELLY SILTY SAND (SP-SM) | | |
| 30 | | | | | | | SILTY GRAVELLY SAND (SP) | | |
| | | | | | | | SANDY CLAY (CL) beige, medium | | |

DRILLING CONTRACTOR
DRILLING METHOD
DRILLING EQUIPMENT
DRILLING STARTED ENDED

REMARKS

See key sheet for symbols and abbreviations used above.

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BORING NUMBER B7 SHEET 2 OF 2

PROJECT Alliance Gas Station

LOCATION Hayward, CA

CONTRACT NUMBER 94-510-1440

COORDINATES

SURFACE ELEVATION DATUM

LOGGED BY

| SAMPLE INFORMATION | | | | | | STRATA | DESCRIPTION | WELL CONSTRUCTION DETAIL | ELEVATION FEET |
|---|---|---|---|---|---|---|---|---|---|
| DEPTH FEET | LAB SAMPLE | SAMPLE TYPE | BLOW COUNTS | Recovery % | HNu (ppm) | | | | |
| | | | | | | | stiff, moist with trace lepard texture. | | |

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BORING NUMBER B8 SHEET 1 OF 2

PROJECT Alliance Gas Station

LOCATION Hayward, CA

CONTRACT NUMBER 94-510-1440

COORDINATES

SURFACE ELEVATION DATUM

LOGGED BY

| SAMPLE INFORMATION | | | | | | STRATA | DESCRIPTION | WELL CONSTRUCTION DETAIL | ELEVATION FEET |
|---|---|---|---|---|---|---|---|---|---|
| DEPTH FEET | LAB SAMPLE | SAMPLE TYPE | BLOW COUNTS | Recovery % | HNu (ppm) | | | | |
| | | | | | | | 2" asphalt layer. Yellow brown baserock to .8' bgs. SANDY CLAY dark grey, stiff, and moist. | | |
| 5 | | | | | | | Motor oil odor at 4.5' bgs. SANDY CLAY (CL) mottled grey and brown,stiff and moist with platy texture. | | |
| 10 | | | | | | | SANDY (CL) 2" seam with strong gasoline odor. SANDY SILT (ML) darker grey, medium stiff, moist with vertical worm holes. Gasoline odor. 3" sand seam at 12.5' bgs. | ▼ | |
| 15 | | | | | | | SANDY CLAY (CL)stiff, moist to wet with vertical worm holes containing free product. Increased abundance of worm holes that contain product. Free product on run sample from 15.5' to 16.5' bgs. | | |
| 20 | | | | | | | SILTY SAND (SM-ML) medium dense and wet to saturated. increasing sand content 20' to 24' bgs. | | |
| 25 | | | | | | | Iron staining zone at 24' bgs. Clean sand seam at 27' bgs. | | |
| 30 | | | | | | | SAND (SP) brown, dense, fine grained and saturated. SAND (SP) brown, medium dense, saturated and coarse grained. SANDY CLAY (CL) beige, stiff and | | |

DRILLING CONTRACTOR

DRILLING METHOD

DRILLING EQUIPMENT

DRILLING STARTED ENDED

REMARKS

See key sheet for symbols and abbreviations used above.

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BORING NUMBER B8 SHEET 2 OF 2
PROJECT Alliance Gas Station
LOCATION Hayward, CA
CONTRACT NUMBER 94-510-1440
COORDINATES
SURFACE ELEVATION DATUM
LOGGED BY

| SAMPLE INFORMATION | | | | | | STRATA | DESCRIPTION | WELL CONSTRUCTION DETAIL | ELEVATION FEET |
|---|---|---|---|---|---|---|---|---|---|
| DEPTH FEET | LAB SAMPLE | SAMPLE TYPE | BLOW COUNTS | Recovery % | HNu (ppm) | | | | |
| | | | | | | | moist. | | |

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BORING NUMBER MW-2 SHEET 1 OF 1

PROJECT Alliance Gas Station

LOCATION Hayward, CA

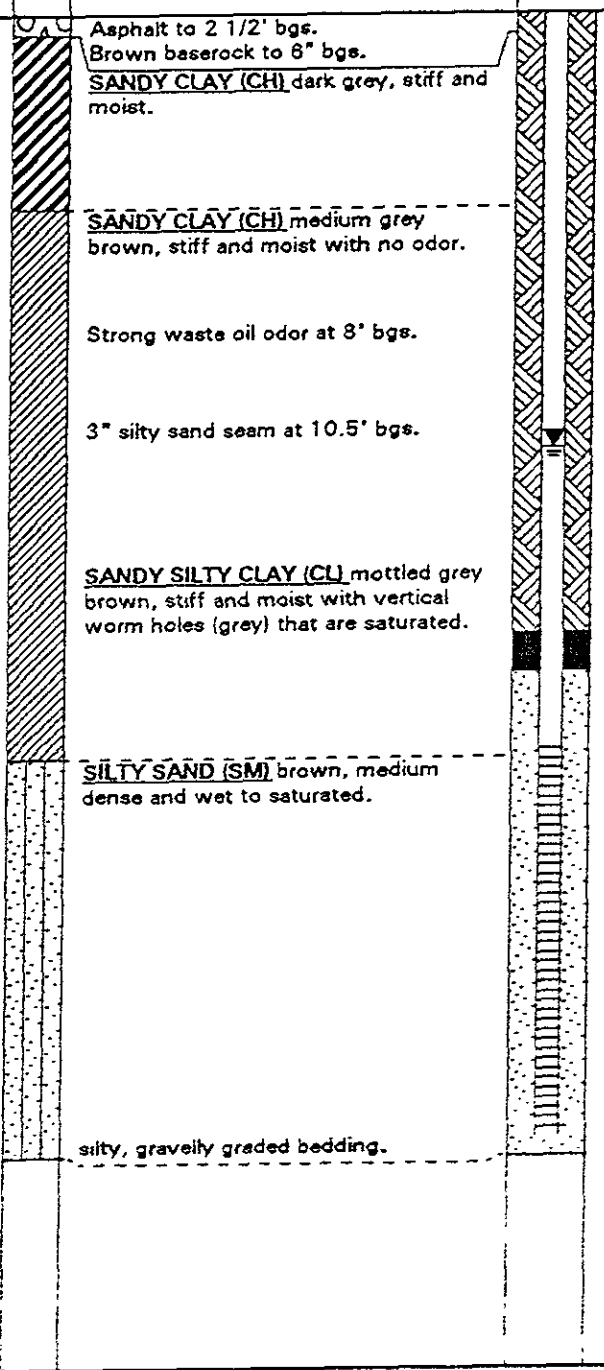
CONTRACT NUMBER 94-510-1440

COORDINATES

SURFACE ELEVATION DATUM

LOGGED BY

| DEPTH FEET | LAB SAMPLE | SAMPLE TYPE | BLOW COUNTS | Recovery % | HNu (ppm) | STRATA | DESCRIPTION | WELL CONSTRUCTION DETAIL | ELEVATION FEET |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Asphalt to 2 1/2' bgs. Brown baserock to 6" bgs. SANDY CLAY (CH) dark grey, stiff and moist. | | |
| 5 | | | | | | | SANDY CLAY (CH) medium grey brown, stiff and moist with no odor. | | |
| | | | 3 5 9 | 100 | | | Strong waste oil odor at 8' bgs. | | |
| 10 | | | 3 5 5 | 100 | | | 3" silty sand seam at 10.5' bgs. | | |
| 15 | | | 1 3 6 | 100 | | | SANDY SILTY CLAY (CL) mottled grey brown, stiff and moist with vertical worm holes (grey) that are saturated. | | |
| 20 | | | 1 2 5 | 100 | | | SILTY SAND (SM) brown, medium dense and wet to saturated. | | |
| 25 | | | NA | 100 | | | | | |
| | | | 3 7 8 | 100 | | | silty, gravelly graded bedding. | | |



DRILLING CONTRACTOR

DRILLING METHOD

DRILLING EQUIPMENT

DRILLING STARTED ENDED

REMARKS

See key sheet for symbols and abbreviations used above.

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BORING NUMBER **B10** SHEET 1 OF 1

PROJECT Alliance Gas Station

LOCATION Hayward, CA

CONTRACT NUMBER 94-510-1440

COORDINATES

SURFACE ELEVATION DATUM

LOGGED BY

| SAMPLE INFORMATION | | | | | | STRATA | DESCRIPTION | WELL CONSTRUCTION DETAIL | ELEVATION FEET |
|---|---|---|---|---|---|---|---|---|---|
| DEPTH FEET | LAB SAMPLE | SAMPLE TYPE | BLOW COUNTS | Recovery % | HNu (ppm) | | | | |
| | | | | | | | Asphalt to 2" bgs. Baserock to 8" bgs. SANDY SILTY CLAY (CH) dark grey, stiff, moist with waste oil odor. | | |
| 5 | | | | | | | SANDY CLAY (CL) mottled grey and brown, stiff and moist. | | |

DRILLING CONTRACTOR

DRILLING METHOD

DRILLING EQUIPMENT

DRILLING STARTED ENDED

REMARKS

See key sheet for symbols and abbreviations used above.

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BORING NUMBER **B-11** SHEET 1 OF 1

PROJECT Alliance Gas Station

LOCATION Hayward, CA

CONTRACT NUMBER 94-510-1440

COORDINATES

SURFACE ELEVATION DATUM

LOGGED BY R. Gallardo

| SAMPLE INFORMATION | | | | | | STRATA | DESCRIPTION | WELL CONSTRUCTION DETAIL | ELEVATION FEET |
|---|---|---|---|---|---|---|---|---|---|
| DEPTH FEET | LAB SAMPLE | SAMPLE TYPE | BLOW COUNTS | Recovery % | HNu (ppm) | | | | |
| | | | | | | | Asphalt to 2" bgs.<br>Brown baserock to 8" bgs. | | |
| | | | | | | | SANDY CLAY (CH) dark grey, stiff and moist with debris. | | |
| 5 | | | 2<br>6<br>8 | 100 | | | SANDY SILTY CLAY (CH) dark grey. | | |
| | | | | | | | SANDY CLAY (CL) mottled grey and brown, stiff and moist with a gasoline odor at 7'. | | |
| 10 | | | 3<br>5<br>6 | 100 | | | SANDY SILT (ML) 3" seam at 9' bgs. Very strong gasoline odor from 9' to 10.5' bgs. | | |
| 15 | | | 3<br>6<br>8 | 100 | | | SANDY SILT (ML) 2" grey seam at 14' bgs. Vertical worm holes saturated with gasoline at 14.5' bgs. | ▽ | |
| 20 | | | 2<br>5<br>8 | 100 | | | SILTY SAND (SM) brown, dense, saturated and fine to coarse grained. Clayey 2" plug at 19.5' bgs. | | |
| 25 | | | 2<br>9<br>8 | 100 | | | | | |

DRILLING CONTRACTOR

DRILLING METHOD

DRILLING EQUIPMENT

DRILLING STARTED 7/7/94 ENDED 7/7/94

REMARKS

See key sheet for symbols and abbreviations used above.

# APPENDIX B

# LABORATORY ANALYSIS RESULTS

# TABLE 1

## SOILS RESULTS
## FOR
## ALLIANCE GAS STATION
## 20450 HESPERIAN BOULEVARD
## HAYWARD, CALIFORNIA

| Sample No. | Sample Date | Depth | TPH-G PPM | TPH-D PPM | Benzene PPM | Toluene PPM | Ethylbenzene PPM | Xylene PPM |
|---|---|---|---|---|---|---|---|---|
| B-1 | 1-24-94 | 6-6.5 | ND | ND | 0.14 | 0.008 | ND | 0.006 |
| B-1 | 1-24-94 | 11-11.5 | 520 | 350 | 6.8 | 3.8 | 7.2 | 15 |
| B-2 | 1-24-94 | 6-6.5 | ND | ND | ND | ND | ND | ND |
| B-2 | 1-24-94 | 11-11.5 | ND | ND | 0.007 | 0.007 | ND | 0.013 |
| B-2 | 1-24-94 | 16-16.5 | ND | ND | ND | ND | ND | ND |
| B-2 | 1-24-94 | 21-21.5 | ND | ND | ND | ND | ND | ND |
| B-3 | 2-24-94 | 6-6.5 | ND | 0.014 | ND | ND | ND | ND |
| B-3 | 1-24-94 | 11-11.5 | ND | ND | 0.13 | 0.005 | 0.013 | 0.011 |
| B-4 | 1-24-94 | 3-3.5 | ND | ND | ND | ND | ND | ND |
| B-4 | 1-24-94 | 11-11.5 | 4.8 | ND | 0.16 | 0.023 | 0.078 | 0.033 |
| B-5 | 6-24-94 | 5-5.5 | ND | ND | ND | ND | ND | ND |
| B-5 | 6-24-94 | 10-10.5 | ND | ND | ND | ND | ND | ND |
| B-5 | 6-24-94 | 15-15.5 | ND | ND | ND | ND | ND | ND |
| B-6 | 6-28-94 | 5-5.5 | ND | ND | 0.18 | .008 | .008 | .019 |
| B-6 | 6-28-94 | 10-10.5 | 780 | 90 | 4.3 | 13 | 4.4 | 23 |
| B-7 | 6-24-94 | 5-5.5 | ND | ND | 0.79 | ND | ND | ND |
| B-7 | 6-24-94 | 10-10.5 | 560 | 97 | 13 | 37 | 11 | 61 |
| B-7 | 6-24-94 | 15-15.5 | 110 | 51 | 1.3 | 2.1 | 2.6 | 14 |
| B-8 | 7-7-94 | 5-5.5 | 1.5 | ND | 0.099 | .023 | ND | 0.044 |
| B-8 | 7-7-94 | 15-15.5 | 4.9 | ND | 0.13 | 0.040 | 0.19 | 0.65 |
| B-9 | 6-28-94 | 7.5-8 | ND | ND | ND | ND | ND | ND |
| B-10 | 7-7-94 | 5-5.5 | ND | ND | ND | ND | ND | ND |
| B-11 | 7-7-94 | 5-5.5 | ND | ND | .077 | ND | .009 | .012 |
| B-11 | 7-7-94 | 10-10.5 | 5.0 | ND | .20 | .023 | .074 | .091 |
| B-11 | 7-7-94 | 15-15.5 | 13.0 | 12 | .017 | 0.040 | .15 | .14 |

## TABLE 2

## GROUNDWATER RESULTS
## FOR
## ALLIANCE GAS STATION
## 20450 HESPERIAN BOULEVARD
## HAYWARD, CALIFORNIA

| Sample No. | Sample Date | Depth | TPH-G PPB | TPH-D PPB | Benzene PPB | Toluene PPB | Ethylbenzene PPB | Xylene PPB |
|---|---|---|---|---|---|---|---|---|
| B-5-W | 6-24-94 | | ND | ND | 1.5 | ND | ND | ND |
| B-8-W | 7-7-94 | | 48,000 | 6,700 | 340 | 1,000 | 1,900 | 8,300 |
| B-11-W | 7-7-94 | | 180 | 200 | 5.4 | .68 | 3.5 | 3.8 |
| | | | | | | | | |
| MW-1 (B-6) | 7-5-94 | | 11,000 | 3,000 | 140 | 560 | 350 | 1,800 |
| MW-2 (B-9) | 7-5-94 | | ND | ND | 1.1 | 1.6 | ND | 2.2 |
| | | | | | | | | |
| WS-1 | 1-24-94 | 17.36 | 31,000 | 2,700 | 8,200 | 1,200 | 1,200 | 2,100 |
| WS-2 | 1-24-94 | 14.70 | ND | ND | ND | ND | ND | ND |
| WS-3 | 1-24-94 | 14.54 | 400 | ND | 91 | 1.8 | 4.0 | 2.2 |
| WS-4 | 1-24-94 | 12.3 | 990 | 150 | 6.8 | 3.8 | 7.2 | 15 |
| WS-5 | | | | | | | | |
| WS-6 | | | | | | | | |

2011

CONFIED ENVIRONMENTAL CONSULTING INC.
536 Stone Road, Ste. J., Benicia, CA 94510-1016
Ofc. (707) 745-0171 (800) 228-0171 Fax. (707) 745-0163

# Chain of Custody Record

Date 1-25-94 Sheet 1 of 2

Project Number: 94-510-1440
Project Name: AIRPORT ALLIANCE
Address: 2045 D. HESPERIAN BLVD Hayward

Sampler's Name: RAFAEL GALLARDO
Sampler's Signature: Rafael Gallardo

Lab Name
Address
Phone Number

Turnaround Time: ☐ Rush ☐ 24 Hour ☐ 48 Hour ☒ 5-Day

Report to:

| Sample Number | Location | Date | Time | TPH as Gasoline 8015 | TPH as Diesel 8015 | TPH-G and B.TEX 8015/8020 | B.TX & E 8020 | Oil and Grease 5520 | Volatile Organics (8010) | CAM Metals (17) | Pr. Pollutant Metals (13) | Base/Neu/Acids (Organic) | Pesticides 8140/8141 | Matrix (Soil/Water) | Containers |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BORING | #1 | 1-24-94 | 5:00 PM | | X | X | X | | | | | | | | 6-6½ |
| | #1 | | 5:15 PM | | | | | | | | | | | | 11-11½ |
| | #2 | | 9:00 AM | | | | | | | | | | | | 6-6½ |
| | #2 | | 9:25 AM | | | | | | | | | | | | 11-11½ |
| | #2 | | 10:00 AM | | | | | | | | | | | | 16-16½ |
| | #2 | | 10:45 AM | | | | | | | | | | | | 21-21½ |
| | #3 | | 1:00 PM | | | | | | | | | | | | 6-6½ |
| | #3 | | 1:30 PM | | | | | | | | | | | | 11-11½ |
| | #4 | | 2:15 PM | | | | | | | | | | | | 3-3½ |
| | #4 | | 2:45 PM | | | | | | | | | | | | 11-11½ |

| Relinquished By | Date | Time | Received By | Date | Time |
|---|---|---|---|---|---|
| 1. Rafael Gallardo | 1-25-94 | 10:26AM | 1. J. Hamilton | 1-25-94 | 10:26 |
| 2. J. Hamilton | 1-25-94 | 10:50 | 2. | | |
| 3. | | | 3. | | |
| Dispatched By | Date | Time | Received in Lab By | Date | Time |
| | | | Heidi Ruiz | 1/26/94 | 10:32 |

Total Number of Containers This Sheet:

Method of Shipment

Special Shipment / Handling or Storage Requirements:

✓ GOOD CONDITION
✓ HEAD SPACE ABSENT
✓ PRESERVATIVE APPROPRIATE
✓ CONTAINERS

VOA's O & G METALS OTHER

33987
33988
33989
33990
34001
34002
34003
34004
34005
34006

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| | | |
|---|---|---|
| Certified Environmental Consulting<br>536 Stone Road, Ste. J<br>Benicia, CA 94510-1016 | Client Project ID: # 94-510-1440; Airport Alliance, Hayward | Date Sampled: 01/24/94 |
| | | Date Received: 01/25/94 |
| | Client Contact: Rafael Gallardo | Date Extracted: 01/25-01/27/94 |
| | Client P.O: | Date Analyzed: 01/25-01/27/94 |

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with BTEX***

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

| Lab ID | Client ID | Matrix | TPH(g)+ | Benzene | Toluene | Ethylbenzene | Xylenes | % Rec. Surrogate |
|---|---|---|---|---|---|---|---|---|
| 33989 | WS-1 | W | 31,000,a | 8200 | 1200 | 1200 | 2100 | 102 |
| 33991 | WS-2 | W | ND | ND | ND | ND | ND | 100 |
| 33993 | WS-3 | W | 400,c | 91 | 1.8 | 4.0 | 2.2 | 107 |
| 33995 | WS-4 | W | 990,a | 210 | 17 | 50 | 14 | 113# |
| 33997 | # 1 @ 6-6.5 | S | ND,d | 0.14 | 0.008 | ND | 0.006 | 98 |
| 33998 | # 1 @ 11-11.5 | S | 520,a | 6.8 | 3.8 | 7.2 | 15 | 102 |
| 33999 | # 2 @ 6-6.5 | S | ND | ND | ND | ND | ND | 103 |
| 34000 | # 2 @ 11-11.5 | S | ND,d | 0.007 | 0.007 | ND | 0.013 | 98 |
| 34001 | # 2 @ 16-16.5 | S | ND | ND | ND | ND | ND | 103 |
| 34002 | # 2 @ 21-21.5 | S | ND | ND | ND | ND | ND | 104 |
| 34003 | # 3 @ 6-6.5 | S | ND,c | 0.014 | ND | ND | ND | 103 |
| 34004 | # 3 @ 11-11.5 | S | ND,c,d | 0.13 | 0.005 | 0.013 | 0.011 | 105 |
| 34005 | # 4 @ 3-3.5 | S | ND,d | ND | ND | ND | ND | 106 |
| 34006 | # 4 @ 11-11.5 | S | 4.8,d | 0.16 | 0.023 | 0.078 | 0.033 | 99 |
| Detection Limit unless otherwise stated; ND means Not Detected | | W | 50 ug/L | 0.5 | 0.5 | 0.5 | 0.5 | |
| | | S | 1.0 mg/kg | 0.005 | 0.005 | 0.005 | 0.005 | |

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

# cluttered chromatogram; sample peak co-elutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds are significant; no recognizable pattern; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible phase is present.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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| | | |
|---|---|---|
| Certified Environmental Consulting<br>536 Stone Road, Ste. J<br>Benicia, CA 94510-1016 | Client Project ID: # 94-510-1440; Airport Alliance, Hayward | Date Sampled: 01/24/94 |
| | | Date Received: 01/25/94 |
| | Client Contact: Rafael Gallardo | Date Extracted: 01/26-01/27/94 |
| | Client P.O: | Date Analyzed: 01/26-01/27/94 |

**Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel ***

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

| Lab ID | Client ID | Matrix | TPH(d)+ | % Recovery Surrogate |
|---|---|---|---|---|
| 33985 | WS-1A | W | 2700,d,e,f | 96 |
| 33986 | WS-2A | W | 70,b,f | 96 |
| 33987 | WS-3A | W | ND,d,f | 89 |
| 33988 | WS-4A | W | 150,d,f | 89 |
| 33997 | # 1 @ 6-6.5 | S | ND | 93 |
| 33998 | # 1 @ 11-11.5 | S | 350,d | 86 |
| 33999 | # 2 @ 6-6.5 | S | ND | 91 |
| 34000 | # 2 @ 11-11.5 | S | ND | 92 |
| 34001 | # 2 @ 16-16.5 | S | ND | 91 |
| 34002 | # 2 @ 21-21.5 | S | ND | 92 |
| 34003 | # 3 @ 6-6.5 | S | ND | 93 |
| 34004 | # 3 @ 11-11.5 | S | ND | 93 |
| 34005 | # 4 @ 3-3.5 | S | ND,g | 94 |
| 34006 | # 4 @ 11-11.5 | S | ND | 89 |
| Detection Limit unless otherwise stated; ND means Not Detected | | W | 50 ug/L | |
| | | S | 10 mg/kg | |

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

# cluttered chromatogram; surrogate and sample peaks co-elute or surrogate peak is on elevated baseline

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) modified diesel?; light($C_L$) or heavy($C_H$) diesel compounds are significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel(kerosine-range compounds); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible phase is present.

DHS Certification No. 1644

Edward Hamilton, Lab Director

2544ACEC636

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# Chain of Custody Record

Date 6-27-94 Sheet 1 of 1

Project Number: 510-1440-2
Project Name: AIRPORT ALLIANCE
Address:

Sampler's Name: RAFAEL GALLARDO
Sampler's Signature: Rafael Gallardo

| Sample Number | Location | Date | Time | TPH as Gasoline 8015 | TPH as Diesel 8015 | TPH-G and B.TEX 8015/8020 | B.TX & E 8020 | Oil and Grease 5520 | Volatile Organics (8010) | CAM Metals (17) | Pr. Pollutant Metals (13) | Base/Neu/Acids (Organic) | Pesticides 8140/8141 | Matrix (Soil/Water) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B-7-1 | 5-5.5' | 6-24-94 | 8:35 AM | | X | X | | | | | | | | S |
| B-7-2 | 10-10.5' | | 8:52 | | | | | | | | | | | |
| B-7-3 | 15-15.5' | | 9:15 | | | | | | | | | | | |
| B-7-4 | 20-20.5' | | 9:45 | | | | | | | | | | | |
| B-5-1 | 5-5½ | | 12:45 Pm | | | | | | | | | | | |
| B-5-2 | 10-10½ | | 1:00 | | | | | | | | | | | |
| B-5-3 | 15-15½ | | 1:25 | | | | | | | | | | | |
| B-5-W | | | 2:30 | | | | | | | | | | | W |

Parameters

Lab Name
Address
Phone Number

Turnaround Time
☐ Rush ☐ 24 Hour ☐ 48 Hour ☒ 5 Day

Report to:

36333
36334
36335
36336
36337
36338
36339
36340

| Relinquished By | Date | Time | Received By | Date | Time |
|---|---|---|---|---|---|
| 1. Rafael Gallardo | 6-27-94 | 4:00 Pm | 1. [illegible] | 6/27/94 | 4:00 Pm |
| 2. [illegible] | 6-27-94 | 4:30 Pm | 2. [illegible] | 6-27-94 | 16:30 |
| 3. | | | 3. | | |
| Dispatched By | Date | Time | Received For Laboratory By | Date | Time |
| | | | | | |

Total Number of Containers This Sheet:

Method of Shipment

Special Shipment / Handling or Storage Requirements:

ICE? ✓ GOOD CONDITION ✓ HEAD SPACE ABSENT ___
PRESERVATIVE APPROPRIATE ✓ CONTAINERS ✓
VOAs ✓ O & G ✓ METALS ✓ OTHER ✓

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| | | |
|---|---|---|
| Certified Environmental Consulting<br>536 Stone Road, Ste. J<br>Benicia, CA 94510-1016 | Client Project ID: # 510-1440-2; Airport Alliance | Date Sampled: 06/24/94 |
| | | Date Received: 06/27/94 |
| | Client Contact: Rafael Gallardo | Date Extracted: 06/29-07/04/94 |
| | Client P.O: | Date Analyzed: 06/29-07/04/94 |

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with BTEX***

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

| Lab ID | Client ID | Matrix | TPH(g)+ | Benzene | Toluene | Ethylben-zene | Xylenes | % Rec. Surrogate |
|---|---|---|---|---|---|---|---|---|
| 36333 | B-7-1 | S | ND,a | 0.79 | ND | ND | ND | 111 |
| 36334 | B-7-2 | S | 560,a | 13 | 37 | 11 | 61 | 101 |
| 36335 | B-7-3 | S | 110,a | 1.3 | 2.1 | 2.6 | 14 | 91 |
| 36336 | B-7-4 | S | ND | ND | ND | ND | ND | 109 |
| 36337 | B-5-1 | S | ND | ND | ND | ND | ND | 108 |
| 36338 | B-5-2 | S | ND | ND | ND | ND | ND | 105 |
| 36339 | B-5-3 | S | ND | ND | ND | ND | ND | 10? |
| 36340 | B-5-W | W | ND,d | 1.5 | ND | ND | ND | 108 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Detection Limit unless otherwise stated; ND means Not Detected | | W | 50 ug/L | 0.5 | 0.5 | 0.5 | 0.5 | |
| | | S | 1.0 mg/kg | 0.005 | 0.005 | 0.005 | 0.005 | |

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

# cluttered chromatogram; sample peak co-elutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds are significant; no recognizable pattern; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible phase is present.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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| | | |
|---|---|---|
| Certified Environmental Consulting<br>536 Stone Road, Ste. J<br>Benicia, CA 94510-1016 | Client Project ID: # 510-1440-2; Airport Alliance | Date Sampled: 06/24/94 |
| | | Date Received: 06/27/94 |
| | Client Contact: Rafael Gallardo | Date Extracted: 06/27-06/28/94 |
| | Client P.O: | Date Analyzed: 06/27-06/30/94 |

**Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel ***

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

| Lab ID | Client ID | Matrix | TPH(d)+ | % Recovery Surrogate |
|---|---|---|---|---|
| 36333 | B-7-1 | S | ND | 92 |
| 36334 | B-7-2 | S | 97,d | 89 |
| 36335 | B-7-3 | S | 51,d | 90 |
| 36336 | B-7-4 | S | ND | 92 |
| 36337 | B-5-1 | S | ND | 93 |
| 36338 | B-5-2 | S | ND | 93 |
| 36339 | B-5-3 | S | ND | 94 |
| 36340 | B-5-W | W | ND | 99 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Detection Limit unless otherwise stated; ND means Not Detected | | W | 50 ug/L | |
| | | S | 10 mg/kg | |

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L.

# cluttered chromatogram; surrogate and sample peaks co-elute or surrogate peak is on elevated baseline

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) modified diesel?; light($C_L$) or heavy($C_H$) diesel compounds are significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel(?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible phase is present.

DHS Certification No. 1644

Edward Hamilton, Lab Director

2553ACEC637

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# Chain of Custody Record

Date _____ Sheet 1 of 1

Project Number: 510-1440-2
Project Name: Airport Alliance
Address: 2045 Hyperion Blvd.

Sampler's Name: Rafael Gallardo
Sampler's Signature: _____

| Sample Number | Location | Date | Time |
|---|---|---|---|
| B-6-1 | 5-5½ | 6-28-94 | 8:32 AM |
| B-6-2 | 10-10½ | 6-28-94 | 8:50 AM |
| B-9-1 | 7.5-8 | ↓ | 1:30 PM |
| B-9-2 | 11-11.5 | ↓ | 1:45 PM |

Parameters

| TPH as Gasoline 8015 | TPH as Diesel 8015 | TPH-G and B.T.E.X 8015/8020 | B.T.X. & E 8020 | Oil and Grease 5520 | Volatile Organics (8010) | CAM Metals (17) | Pr. Pollutant Metals (13) | Base/Neu/Acids (Organic) | Pesticides 8140/8141 | Matrix (Soil/Water) |
|---|---|---|---|---|---|---|---|---|---|---|
| | X | X | | | | | | | | S |
| | ↓ | ↓ | | X | | | | | | ↓ |
| | | | | X | | | | | | |

Lab Name _____
Address _____
Phone Number _____

Turnaround Time
☐ Rush ☐ 24 Hour ☐ 48 Hour ☒ 5-Day
Report to: _____

Comments
36377
36378
36379
36380

GOOD CONDITION ✓
HEAD SPACE ABSENT ✓
PRESERVATIVE APPROPRIATE ✓
CONTAINERS ✓
BOAS D&G METALS OTHER

| Relinquished By | Date | Time | Received By | Date | Time |
|---|---|---|---|---|---|
| 1. Rafael Gallardo | 6-29-94 | 11:00 AM | 1. [illegible] | 6-29-94 | 11:05 |
| 2. [illegible] | 6-29-94 | 11:20 | 2. [illegible] | 6/29/94 | 11:20 |
| 3. | | | 3. | | |
| Dispatched By | Date | Time | Received In Lab By | Date | Time |

Total Number of Containers This Sheet:
Method of Shipment
Special Shipment / Handling or Storage Requirements:

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| | | |
|---|---|---|
| Certified Environmental Consulting<br>536 Stone Road, Ste. J<br>Benicia, CA 94510-1016 | Client Project ID: # 510-1440-2; Airport Alliance | Date Sampled: 06/28/94 |
| | | Date Received: 06/29/94 |
| | Client Contact: Rafael Gallardo | Date Extracted: 06/29/94 |
| | Client P.O: | Date Analyzed: 06/29-06/30/94 |

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with BTEX***

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

| Lab ID | Client ID | Matrix | TPH(g)+ | Benzene | Toluene | Ethylbenzene | Xylenes | % Rec. Surrogate |
|---|---|---|---|---|---|---|---|---|
| 36377 | B-6-1 | S | ND,a | 0.18 | 0.008 | 0.008 | 0.019 | 100 |
| 36378 | B-6-2 | S | 780,a | 4.3 | 13 | 4.4 | 23 | 112# |
| 36379 | B-9-1 | S | ND | ND | ND | ND | ND | 106 |
| 36380 | B-9-2 | S | ND,a | 0.039 | 0.010 | ND | 0.011 | 102 |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Detection Limit unless otherwise stated; ND means Not Detected | | W | 50 ug/L | 0.5 | 0.5 | 0.5 | 0.5 | |
| | | S | 1.0 mg/kg | 0.005 | 0.005 | 0.005 | 0.005 | |

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

# cluttered chromatogram; sample peak co-elutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds are significant; no recognizable pattern; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible phase is present.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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| | | |
|---|---|---|
| Certified Environmental Consulting<br>536 Stone Road, Ste. J<br>Benicia, CA 94510-1016 | Client Project ID: # 510-1440-2; Airport Alliance | Date Sampled: 06/28/94 |
| | | Date Received: 06/29/94 |
| | Client Contact: Rafael Gallardo | Date Extracted: 06/29/94 |
| | Client P.O: | Date Analyzed: 06/30/94 |

**Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel ***

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

| Lab ID | Client ID | Matrix | TPH(d)+ | % Recovery Surrogate |
|---|---|---|---|---|
| 36377 | B-6-1 | S | ND | 93 |
| 36378 | B-6-2 | S | 90,d | 86 |
| 36379 | B-9-1 | S | ND | 92 |
| 36380 | B-9-2 | S | ND | 92 |
| | | | | |
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| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Detection Limit unless otherwise stated; ND means Not Detected | | W | 50 ug/L | |
| | | S | 10 mg/kg | |

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

# cluttered chromatogram; surrogate and sample peaks co-elute or surrogate peak is on elevated baseline

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) modified diesel?; light($C_L$) or heavy($C_H$) diesel compounds are significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel(?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible phase is present.

DHS Certification No. 1644

Edward Hamilton, Lab Director

2591ACEC 642

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# Chain of Custody Record

Date _____ Sheet 1 of 1

Project Number: 510-1440-2
Project Name: AIRPORT ALLIANCE
Address: 2450 HESPERIAN BLVD

Sampler's Name: RAFAEL GALLARDO
Sampler's Signature: Rafael Gallardo

Parameters

| Sample Number | Location | Date | Time | TPH as Gasoline 8015 | TPH as Diesel 8015 | TPH-G and BTEX 8015/8020 | B, T, X & E 8020 | Oil and Grease 5520 | Volatile Organics (8010) | CAM Metals (17) | Pr. Pollutant Metals (13) | Base/Neu/Acids (Organic) | Pesticides 8140/8141 | Matrix (Soil/Water) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B-8-1 | 5-5½ | 7-7-94 | 8:35 AM | | X | X | | | | | | | | S |
| B-8-2 | 10-10½ | | 8:50 | | | | | | | | | | | S |
| B-8-3 | 15-15½ | | 9:10 | | | | | | | | | | | S |
| B-8-W | 20.39 | | 12:10 PM | | | | | | | | | | | W |
| B-10-1 | 5-5½ | | 10:45 AM | | | | | | | | | | | S |
| B-11-1 | 5-5½ | | 1:10 PM | | | | | | | | | | | S |
| B-11-2 | 10-10½ | | 1:20 | | | | | | | | | | | S |
| B-11-3 | 15-15½ | | 1:30 | | | | | | | | | | | S |
| B-11-W | | | 2:30 | | | | | | | | | | | W |

Lab Name _____
Address _____
Phone Number _____

Turnaround Time
☐ Rush ☐ 24 Hour ☐ 48 Hour ☒ 5-Day

Report to: _____

Comments

36543
36544
36545
36546
36547
36548
36549
36550
36551

| Relinquished By | Date | Time |
|---|---|---|
| 1. Rafael Gallardo | 7-8-94 | 1000 |
| 2. Ron Hamilton | 7-8-94 | 3:00 |
| 3. | | |

| Received By | Date | Time |
|---|---|---|
| 1. Ron Hamilton | 7-8-94 | 1:00 |
| 2. Kristi Ruiz | 7-8-94 | 3:00pm |
| 3. | | |

| Dispatched By | Date | Time |
|---|---|---|
| | | |

| Received In Lab By | Date | Time |
|---|---|---|
| | | |

Total Number of Containers This Sheet:

Method of Shipment

Special Shipment / Handling or Storage Requirements:

McCAMPBELL ANALYTICAL INC.
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Tele: 510-798-1620 Fax: 510-798-1622

| | | |
|---|---|---|
| Certified Environmental Consulting<br>536 Stone Road, Ste. J<br>Benicia, CA 94510-1016 | Client Project ID: # 510-1440-2; Airport Alliance | Date Sampled: 07/07/94 |
| | | Date Received: 07/08/94 |
| | Client Contact: Rafael Gallardo | Date Extracted: 07/08/94 |
| | Client P.O: | Date Analyzed: 07/08-07/09/94 |

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with BTEX***

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

| Lab ID | Client ID | Matrix | TPH(g)+ | Benzene | Toluene | Ethylbenzene | Xylenes | % Rec. Surrogate |
|---|---|---|---|---|---|---|---|---|
| 36543 | B-8-1 | S | 1.5,d | 0.099 | ND | ND | 0.044 | 107 |
| 36544 | B-8-2 | S | 130,b,d | 0.82 | 1.4 | 2.1 | 7.5 | 107 |
| 36545 | B-8-3 | S | 4.9,b,c | 0.13 | 0.057 | 0.19 | 0.65 | 103 |
| 36546 | B-8-W | W | 48,000,b,c,h | 340 | 1000 | 1900 | 8300 | 113# |
| 36547 | B-10-1 | S | ND | ND | ND | ND | ND | 107 |
| 36548 | B-11-1 | S | ND,d | 0.077 | ND | 0.009 | 0.012 | 105 |
| 36549 | B-11-2 | S | 5.0,d | 0.20 | 0.023 | 0.074 | 0.091 | 101 |
| 36550 | B-11-3 | S | 13,d | 0.017 | 0.040 | 0.15 | 0.14 | 99 |
| 36551 | B-11-W | W | 180,b,d | 5.4 | 0.68 | 3.5 | 3.8 | 101 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Detection Limit unless otherwise stated; ND means Not Detected | | W | 50 ug/L | 0.5 | 0.5 | 0.5 | 0.5 | |
| | | S | 1.0 mg/kg | 0.005 | 0.005 | 0.005 | 0.005 | |

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

# cluttered chromatogram; sample peak co-elutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds are significant; no recognizable pattern; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

| | | |
|---|---|---|
| Certified Environmental Consulting<br>536 Stone Road, Ste. J<br>Benicia, CA 94510-1016 | Client Project ID: # 510-1440-2; Airport Alliance | Date Sampled: 07/07/94 |
| | | Date Received: 07/08/94 |
| | Client Contact: Rafael Gallardo | Date Extracted: 07/08-07/09/94 |
| | Client P.O: | Date Analyzed: 07/08-07/13/94 |

**Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel ***

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

| Lab ID | Client ID | Matrix | TPH(d)+ | % Recovery Surrogate |
|---|---|---|---|---|
| 36543 | B-8-1 | S | ND | 100 |
| 36544 | B-8-2 | S | 80,d | 105 |
| 36545 | B-8-3 | S | ND,d | 101 |
| 36546 | B-8-W | W | 6700,d,h | 97 |
| 36547 | B-10-1 | S | ND | 100 |
| 36548 | B-11-1 | S | ND | 100 |
| 36549 | B-11-2 | S | ND,d | 100 |
| 36550 | B-11-3 | S | 12,d | 96 |
| 36551 | B-11-W | W | 200,d | 96 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Detection Limit unless otherwise stated; ND means Not Detected | | W | 50 ug/L | |
| | | S | 10 mg/kg | |

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

# cluttered chromatogram; surrogate and sample peaks co-elute or surrogate peak is on elevated baseline

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) modified diesel?; light($c_L$) or heavy($c_H$) diesel compounds are significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel(?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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CERTIFIED ENVIRONMENTAL CONSULTING, INC.
536 Stone Road, Ste. J., Benicia, CA 94510-1016
Ofc. (707) 745 0171 (800) 228 0171 Fax. (707) 745-0163

# Chain of Custody Record

Date 7-5-94 Sheet 1 of 1

Project Number: 94-510-1440-2
Project Name: Hesperian BLVD
Address: 20450 Hesperian Blvd Hayward, Ca.
Sampler's Name: TROY W. PEW
Sampler's Signature: Troy W. Pew

Lab Name: McCampbell
Address:
Phone Number:

Turnaround Time: ☐ Rush ☐ 24 Hour ☐ 48 Hour ☒ 5-Day
Report to: Rafael G.

| Sample Number | Location | Date | Time | TPH as Gasoline 8015 | TPH as Diesel 8015 | TPH-G and B.T.E.X 8015/8020 | B.T.X.& E 8020 | Oil and Grease 5520 | Volatile Organics (8010) | CAM Metals (17) | P. Pollutant Metals (13) | Base/Neu/Acids (Organic) | Pesticides 8140/8141 | Matrix (Soil/Water) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | | 7-5-94 | | | X | X | | | | | | | | W |
| MW-2 | | 11 | | | X | X | | | | | | | | W |

Comments
36501
36502

ICE ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓
PRESERVATIVE APPROPRIATE ✓
CONTAINERS ✓
WORKING WEEKEND

| Relinquished By | Date | Time | Received By | Date | Time |
|---|---|---|---|---|---|
| 1. Troy W. Pew | 7-5-94 | 4:45 | 1. Christie Rice | 7/5/94 | 4:45 |
| 2. | | | 2. | | |
| 3. | | | 3. | | |
| Dispatched By | Date | Time | Received In Lab By | Date | Time |
| | | | | | |

Total Number of Containers This Sheet: 8
Method of Shipment
Special Shipment / Handling or Storage Requirements:

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

| | | |
|---|---|---|
| Certified Environmental Consulting<br>536 Stone Road, Ste. J<br>Benicia, CA 94510-1016 | Client Project ID: # 94-510-1440-2; Hesperian Blvd. | Date Sampled: 07/05/94 |
| | | Date Received: 07/05/94 |
| | Client Contact: Rafael Gallardo | Date Extracted: 07/06/94 |
| | Client P.O: | Date Analyzed: 07/06/94 |

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with BTEX***

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

| Lab ID | Client ID | Matrix | TPH(g)+ | Benzene | Toluene | Ethylbenzene | Xylenes | % Rec. Surrogate |
|---|---|---|---|---|---|---|---|---|
| 36501 | MW-1 | W | 11,000,b | 140 | 560 | 350 | 1800 | 100 |
| 36502 | MW-2 | W | ND,a | 1.1 | 1.6 | ND | 2.2 | 102 |
| | | | | | | | | |
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| | | | | | | | | |
| Detection Limit unless otherwise stated; ND means Not Detected | | W | 50 ug/L | 0.5 | 0.5 | 0.5 | 0.5 | |
| | | S | 1.0 mg/kg | 0.005 | 0.005 | 0.005 | 0.005 | |

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

# cluttered chromatogram; sample peak co-elutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds are significant; no recognizable pattern; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible phase is present.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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Tele: 510-798-1620 Fax: 510-798-1622

| | | |
|---|---|---|
| Certified Environmental Consulting<br>536 Stone Road, Ste. J<br>Benicia, CA 94510-1016 | Client Project ID: # 94-510-1440-2; Hesperian Blvd. | Date Sampled: 07/05/94 |
| | | Date Received: 07/05/94 |
| | Client Contact: Rafael Gallardo | Date Extracted: 07/02/94 |
| | Client P.O: | Date Analyzed: 07/05-07/06/94 |

**Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel ***

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

| Lab ID | Client ID | Matrix | TPH(d)+ | % Recovery Surrogate |
|---|---|---|---|---|
| 36501 | MW-1 | W | 3000,d | 94 |
| 36502 | MW-2 | W | ND | 94 |
| | | | | |
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| | | | | |
| Detection Limit unless otherwise stated; ND means Not Detected | | W | 50 ug/L | |
| | | S | 10 mg/kg | |

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

# cluttered chromatogram; surrogate and sample peaks co-elute or surrogate peak is on elevated baseline

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) modified diesel?; light($C_L$) or heavy($C_H$) diesel compounds are significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel(?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible phase is present.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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140 West Industrial Way, Benicia, CA, 94510-1016
Ofc. (707) 745-0171 (800) 447-0171 Fax. (707) 745-0163


# Chain of Custody Record

Date 8-17-94 Sheet 1 of 1

Project Number:
Project Name: Airport Alliance
Address: 20450 Hesperian Blvd.

Sampler's Name: Igor W. Pew
Sampler's Signature:

Lab Name McCampbell
Address 110 2nd Ave S.
#7 Pacheco, Ca.
Phone Number 510-798-1620

Turnaround Time: ☐ Rush ☐ 24 Hour ☐ 48 Hour ☒ 5 Day
Report to: R. Gallardo

| Sample Number | Location | Date | Time | Matrix (Soil/Water) | Comments |
|---|---|---|---|---|---|
| MW-1 | B-6 | 8-17 | | W | 40373 |
| MW-2 | B-7 | " | | W | 40374 |
| T-B | BLANK | " | | W | 40375 |

Parameters:
- TPH as Gasoline 8015
- TPH as Diesel 8015
- TPH-G and BTEX 8015/8020
- BTEX & E 8020
- Oil and Grease 5520
- Volatile Organics (8010)
- CAM Metals (17)
- Pr. Pollutant Metals (13)
- Base/Neu/Acids (Organic)
- Pesticides 8140/8141

| | | | |
|---|---|---|---|
| 10/15 | ✓ | PRESERVATIVE | ✓ |
| GOOD CONDITION | ✓ | APPROPRIATE | |
| HEAD SPACE ABSENT | ✓ | CONTAINERS | ✓ |

| Relinquished By | Date | Time | Received By | Date | Time |
|---|---|---|---|---|---|
| 1 | 8-17-94 | 5:40 | 1 | | |
| 2 | | | 2 | | |
| 3 | | | 3 | | |
| Dispatched By | Date | Time | Received in Lab By | Date | Time |

Total Number of Containers This Sheet: 11

Method of Shipment

Special Shipment / Handling or Storage Requirements:

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax 510-798-1622

| | | |
|---|---|---|
| Certified Environmental Consulting<br>536 Stone Road, Ste. J<br>Benicia, CA 94510-1016 | Client Project ID: Airport Alliance | Date Sampled: 08/17/94 |
| | | Date Received: 08/17/94 |
| | Client Contact: Rafael Gallardo | Date Extracted: 08/18-08/19/94 |
| | Client P.O: | Date Analyzed: 08/18-08/19/94 |

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with BTEX***

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

| Lab ID | Client ID | Matrix | TPH(g)+ | Benzene | Toluene | Ethylbenzene | Xylenes | % Rec. Surrogate |
|---|---|---|---|---|---|---|---|---|
| 40373 | MW-1 | W | 3200,b,c | 58 | 49 | 4.9 | 290 | 92 |
| 40374 | MW-2 | W | ND,d | 0.007 | ND | ND | 0.006 | 93 |
| 40375 | F-B | W | ND | ND | ND | ND | ND | 92 |
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| | | | | | | | | |
| Detection Limit unless otherwise stated; ND means Not Detected | | W | 50 ug/L | 0.5 | 0.5 | 0.5 | 0.5 | |
| | | S | 1.0 mg/kg | 0.005 | 0.005 | 0.005 | 0.005 | |

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

# cluttered chromatogram; sample peak co-elutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds are significant; no recognizable pattern; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible phase is present.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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|---|---|

| Certified Environmental Consulting<br>536 Stone Road, Ste. J<br>Benicia, CA 94510-1016 | Client Project ID: Airport Alliance | Date Sampled: 08/17/94 |
|---|---|---|
| | | Date Received: 08/17/94 |
| | Client Contact: Rafael Gallardo | Date Extracted: 08/19/94 |
| | Client P.O: | Date Analyzed: 08/19/94 |

**Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel ***

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

| Lab ID | Client ID | Matrix | TPH(d)+ | % Recovery Surrogate |
|---|---|---|---|---|
| 40373 | MW-1 | W | 980,a | 107 |
| 40374 | MW-2 | W | ND | 107 |
| | | | | |
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| | | | | |
| | | | | |
| Detection Limit unless otherwise stated; ND means Not Detected | | W | 50 ug/L | |
| | | S | 10 mg/kg | |

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

# cluttered chromatogram; surrogate and sample peaks co-elute or surrogate peak is on elevated baseline

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) modified diesel?; light($C_L$) or heavy($C_H$) diesel compounds are significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel(?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible phase is present.

DHS Certification No. 1644

Edward Hamilton, Lab Director

# APPENDIX C

## WELL DATA SAMPLING SHEETS

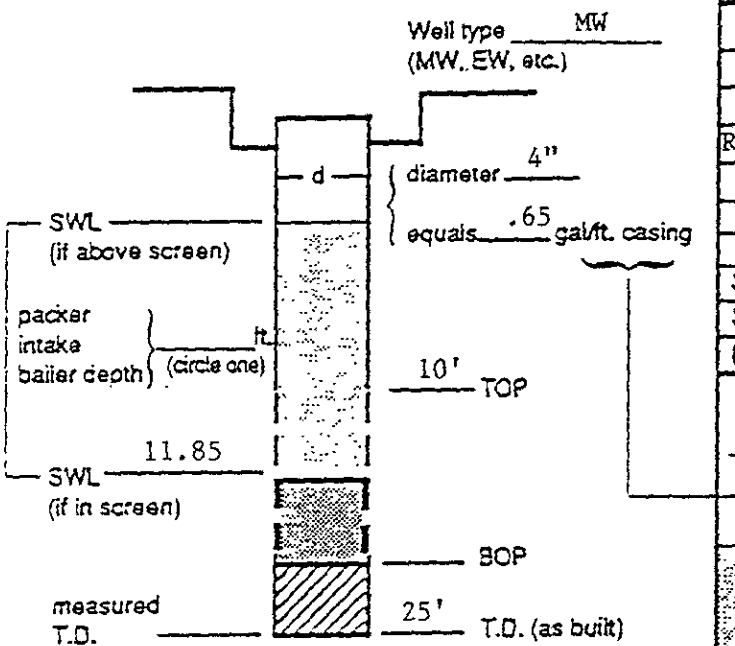
# SAMPLING EVENT DATA SHEET

(fill out completely)

WELL OR LOCATION MW-1

PROJECT Hesperian Blvd. EVENT Development SAMPLER T. Pew DATE 7-5-94

## Well / Hydrologic statistics




| Action | Time | Pump rate | IWL (low yield) |
|---|---|---|---|
| Start pump / Begin | 11:23 | | |
| | | | |
| Dry 28 gals | 12:32 | | |
| Recharged only 6" | 1:50 | | |
| W/ - 27.6 | 3:10 | | |
| | | | |
| | | | |
| Stop | | | |
| Sampled | 3:30 | | |
| (Final IWL) | 27.45 | | |

**Purge calculation**

.65 gal/ft. • 23.15 ft. = 15.1 gals x 3 = 45.3 gals.

(.65: SWL to BOP or packer to BOP; 15.1: one volume; 45.3: purge volume - 3 casings)

**Head purge calculation (Airlift only)**

gal/ft. • ft. = gals.

(packer to SWL)

Equipment Used / Sampling Method / Description of Event:

2" Submersible Pump
Control Box
40' Tubing
HYDAC
Generator
Bailer

Actual gallons purged 28

Actual volumes purged 1.85

Well yield ⊕ (see below) VLY

COC #

| Sample I.D. | Analysis | Lab |
|---|---|---|
| MW-1 | TPH-D | McCampbell |
| | TPH-G | |
| | BTEX | |
| | | |
| | | |

Additional comments:

MW-4 - SWL - 11.65
Swabbed at 5' intervals then full casing
sampling conditions good 85° - no obstructions

| Gallons purged * | TEMP °C / °F (circle one) | EC (µs / cm) | PH | TURBIDITY (NTU) | | |
|---|---|---|---|---|---|---|
| 1. 1 | 69.4 | 1091 | 5.57 | | | |
| 2. 20 | 69.1 | 1215 | 5.02 | | | |
| 3. 40 | | | | | | |
| 4. | | | | | | |
| 5. | | | | | | |

* Take measurement at approximately each casing volume purged.

⊕ HY- Minimal W.L. drop

MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump.

LY - Able to purge 3 volumes by returning later or next day.

VLY - Minimal recharge - unable to purge 3 volumes.

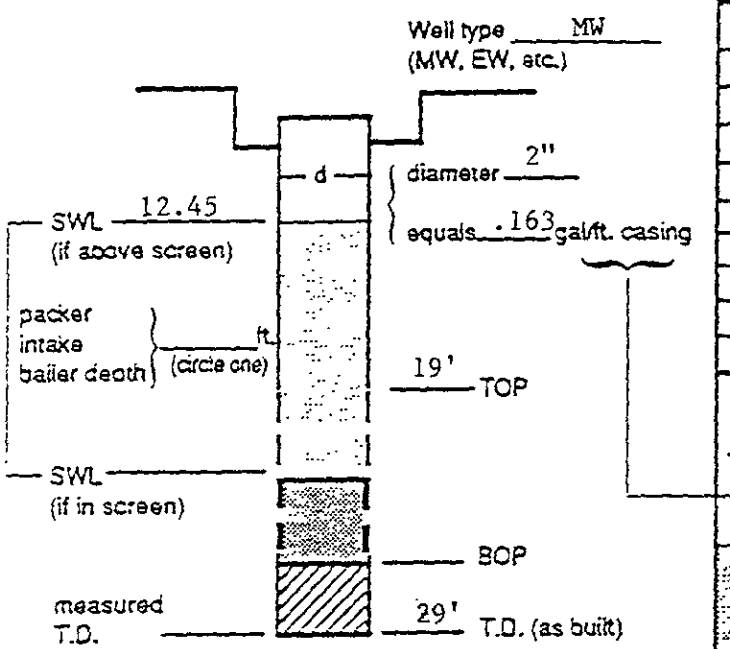
# SAMPLING EVENT DATA SHEET

(fill out completely)

WELL OR LOCATION MW-2

PROJECT Airport Alliance Hesperian Blvd. EVENT Development SAMPLER T. Pew DATE 7-5-94

## Well / Hydrologic statistics




| Action | Time | Pump rate | IWL (low yield) |
|---|---|---|---|
| Start pump / Begin | 2:05 | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| Stop | 2:40 | | |
| Sampled | 3:20 | | |
| (Final IWL) | 12.55 | | |

**Purge calculation**

.163 gal/ft. * 16.55 ft. = 2.8 gals x 3 = 8.4 gals.

(.163 gal/ft.) (SWL to BOP or packer to BOP) (one volume) (purge volume- 3 casings)

**Head purge calculation (Airlift only)**

____ gal/ft. * ____ ft. = ____ gals.

(packer to SWL)

Equipment Used / Sampling Method / Description of Event:

2" Submersible Pump
Control Box
40' Tubing
HYDAC
Generator
Bailer

Actual gallons purged ____

Actual volumes purged ____

Well yield ⊖ ____
(see below)

COC # ____

| Sample I.D. | Analysis | Lab |
|---|---|---|
| MW-2 | TPH-D | McCampbell |
| | TPH-G | |
| | BTEX | |
| | | |
| | | |

Additional comments:

M-4 - SWL - 11.65
Swabbed at 5' intervals then full casing
sampling conditions good 85° - no obstructions.

| Gallons purged * | TEMP °C / °F (circle one) | EC (µs / cm) | PH | TURBIDITY (NTU) | | |
|---|---|---|---|---|---|---|
| 1. 1 | 75.1 | 1198 | 4.25 | | | |
| 2. 3 | 70.5 | 1247 | 4.38 | | | |
| 3. 8.5 | 69.8 | 1230 | 4.53 | | | |
| 4. 15 | 70.9 | 1227 | 4.65 | | | |
| 5. 20 | | | | | | |

* Take measurement at aproximately each casing volume purged.

⊖ HY- Minimal W.L. drop

MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump.

LY - Able to purge 3 volumes by returning later or next day.

VLY - Minimal recharge - unable to purge 3 volumes.

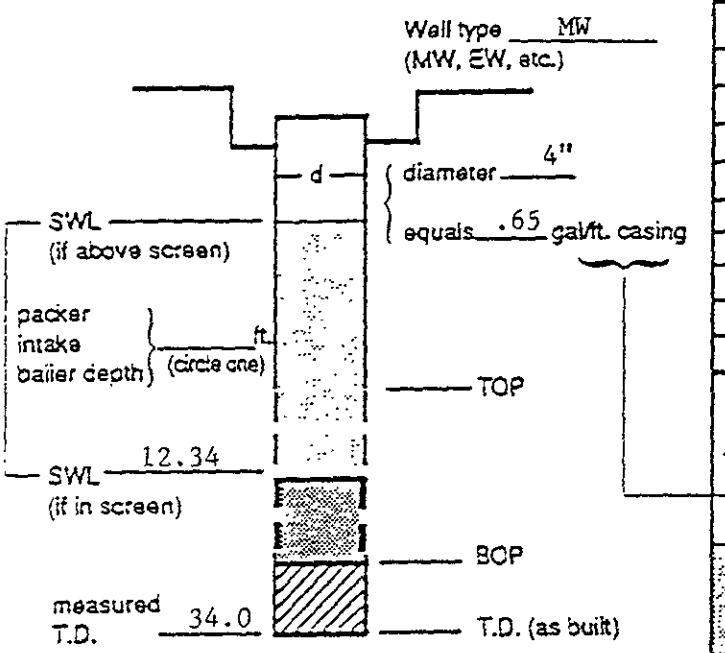
# SAMPLING EVENT DATA SHEET

(fill out completely)

WELL OR LOCATION MW-1/B-6

PROJECT Airport Alliance Hesperian Blvd. EVENT Quarterly SAMPLER T. Pew DATE 8-17-84

## Well / Hydrologic statistics




| Action | Time | Pump rate | IWL (low yield) |
|---|---|---|---|
| Start pump / Begin | 10:51 | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| Stop | 11:48 | | |
| Sampled | 4:45 | | |
| (Final IWL) | | | |

### Purge calculation

.65 gal/ft. * 21.66 ft. = 14.08 gals x 3 = 42.24 gals.

SWL to BOP or packer to BOP | one volume | purge volume- 3 casings

### Head purge calculation (Airlift only)

gal/ft. * ft. = gals.

packer to SWL

Equipment Used / Sampling Method / Description of Event:

2" Submersible Pump
Control Box
Generator
HYDAC
$H_2O$ Level
Disposable bailer

Actual gallons purged 28

Actual volumes purged 2

Well yield ⊖ VLY
(see below)

Additional comments:

MJ - 12.23

COC #

| Sample I.D. | Analysis | Lab |
|---|---|---|
| MW-1 | TPH-D | McCampbell |
| | TPH-G | |
| | BTEX | |
| | | |
| | | |

| Gallons purged * | TEMP °C / °F (circle one) | EC (µs / cm) | PH | TURBIDITY (NTU) | | |
|---|---|---|---|---|---|---|
| 1. 1 | 70.0 | 1193 | 7.66 | | | |
| 2. 7 | 71.4 | 1210 | 6.15 | | | |
| 3. 14 | 70.1 | 1185 | 5.56 | | | |
| 4. 28 | 73.6 | 1193 | 5.47 | | | |
| 5. | | | | | | |

* Take measurement at approximately each casing volume purged.

⊖ HY - Minimal W.L. drop

MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump.

LY - Able to purge 3 volumes by returning later or next day.

VLY - Minimal recharge - unable to purge 3 volumes.

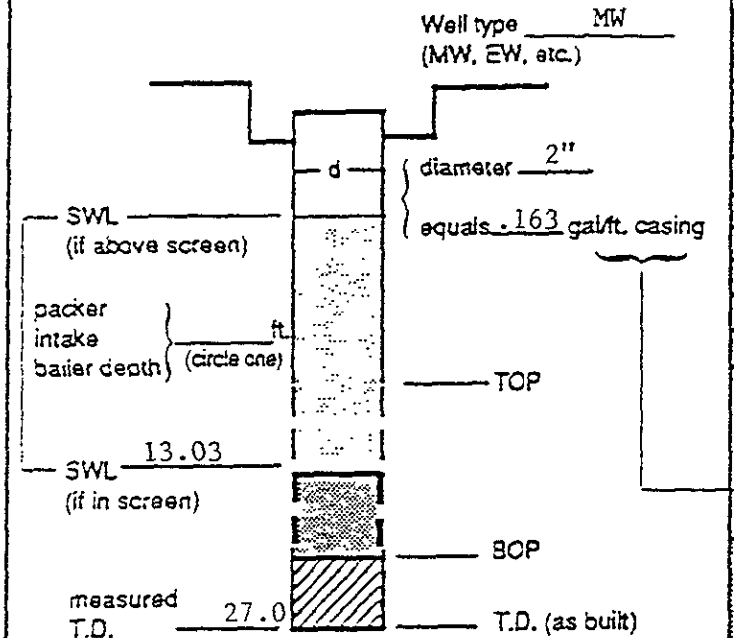
# SAMPLING EVENT DATA SHEET

(fill out completely)

WELL OR LOCATION MW-2/B-9

PROJECT Airport Alliance Hesperian Blvd. EVENT Quarterly SAMPLER T. Pew DATE 8-17-94

## Well / Hydrologic statistics




| Action | Time | Pump rate | IWL (low yield) |
|---|---|---|---|
| Start pump / Begin | 12:28 | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| Stop | 12:47 | | |
| Sampled | 2:10 | | |
| (Final IWL) | 13.02 | | |

### Purge calculation

.163 gal/ft. * 13.97 ft. = 2.3 gals x 3 = 6.9 gals.

SWL to BOP or packer to BOP | one volume | purge volume- 3 casings

### Head purge calculation (Airlift only)

gal/ft. * ft. = gals.

packer to SWL

Equipment Used / Sampling Method / Description of Event:

Actual gallons purged 7

Actual volumes purged 3

Well yield ⊖ MY
(see below)

COC #

| Sample I.D. | Analysis | Lab |
|---|---|---|
| MW-2 | TPH-D | McCampbell |
| | TPH-G | |
| | BTEX | |
| | | |
| | | |

Additional comments:

Hand bailed.

| Gallons purged * | TEMP °C / °F (circle one) | EC (µs / cm) | PH | TURBIDITY (NTU) | | |
|---|---|---|---|---|---|---|
| 1. 1 | | | | | | |
| 2. 2.3 | 72.2 | 1137 | 5.20 | | | |
| 3. 4.6 | 73.8 | 1151 | 4.67 | | | |
| 4. 6.9 | 74.2 | 1153 | 4.38 | | | |
| 5. | | | | | | |

* Take measurement at approximately each casing volume purged.

⊖ HY- Minimal W.L. drop

MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump.

LY - Able to purge 3 volumes by returning later or next day.

VLY - Minimal recharge - unable to purge 3 volumes.