gettler — ryan inc.
general contractors

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November 16, 1990

Alameda County Health Agency
Department of Environmental Health
80 Swan Way, Room 200
Oakland, California 94621

Attention: Ms. Katherine Chesick

Reference: ARCO Service Station No. 2112
1260 Park Street
Alameda, California

Ms. Chesick:

As requested by ARCO Products Company, we are forwarding a copy of the Tank Replacement Observation Report prepared for the above referenced location. The report documents the tank replacement, excavation activities, soil sampling and analysis.

If you should have any questions or comments, please call.

Sincerely,

Keith E. Bullock

KEB/mc

enclosures

cc: K. Christie, ARCO Products Company
H. C. Winsor, ARCO Products Company
T. Callaghan, Regional Water Quality Control Board

1992 national avenue • hayward, california 94545-1787 • 783-7500

GeoStrategies Inc.

TANK REPLACEMENT OBSERVATION REPORT

ARCO Service Station No. 2112
1260 Park Street
Alameda, California

Report No. 7920-1

November 7, 1990

GeoStrategies Inc.
2140 WEST WINTON AVENUE
HAYWARD, CALIFORNIA 94545
(415) 352-4800

November 7, 1990

Gettler-Ryan Inc.
2150 West Winton Avenue
Hayward, California 94545

Attn: Mr. John Werfal

Re: TANK REPLACEMENT OBSERVATION REPORT
ARCO Service Station #2112
1260 Park Street
Alameda, California

Gentlemen:

INTRODUCTION

This report summarizes the field activities conducted at the above referenced site (Plate 1) during the recent underground storage tank (UGST) replacement. Field work presented in this report was performed between July 27 and September 30, 1990, in compliance with State and local guidelines. A GeoStrategies Inc. (GSI) geologist was present onsite to observe the UGST removal, assist in directing soil excavation and to obtain soil samples from the tank excavation, piping trenches, and soil stockpiles. This report also presents the results of the soil aeration completed through September 30, 1990. Results of work completed after September 30, 1990 will be presented in a future report. A summary of field procedures and sampling results are presented below.

SITE BACKGROUND

In January 1990, Applied Geosystems (AGS) drilled six exploratory borings (B-1 through B-6) to assess soil conditions in the area of the former and present tank complexes. Five borings were drilled in the vicinity of the former UGST complex and one boring was drilled in the area of the present UGST complex. Analytical results of soil samples from the former tank complex indicated the presence of petroleum hydrocarbons. Soil samples from the present tank complex were reported as none detected for petroleum hydrocarbons. Groundwater was first encountered in Borings B-1 and B-6 at approximately 12 feet. Results of this investigation are presented in the AGS report dated February 20, 1990.

The site is presently occupied by an operating ARCO Service Station. Four newly installed 10,000 gallon tanks containing leaded and unleaded gasoline products, two fueling islands, and a mini-mart building are located onsite (Plate 2).

FIELD PROCEDURES

Five UGSTs were excavated and removed from the site on July 26, 1990. These included one 10,000 gallon, two 4,000 gallon, and two 6,000 gallon UGSTs that contained gasoline products. Removal of the subsurface tanks was witnessed by representatives from the Alameda Fire Department (AFD) and the Alameda County Health Care Services Agency (ACHCS). The former tank complex was located on the south-east corner of the site behind the service station building (Plate 2). The maximum extent of the former tank excavation was approximately 77 by 27 feet, with a maximum depth of approximately 12 feet. The present UGST complex was excavated just south of the service islands (Plate 2). The maximum extent of the relocated tank excavation was approximately 57 feet long by 24 feet wide and 13 feet deep. Soil samples normally taken from beneath the tanks were waived by the ACHCS official as a result of findings in the pre-excavation investigation by AGS dated February 20, 1990. The ACHCS official directed other soil sample locations from the sidewalls and bottoms of each excavation (Plate 3).

In order to remove the subsurface product lines and install new product lines, trenches were dug along each side of the fueling islands. The location of the piping trenches are shown on Plate 4. Excavated soils were first stockpiled onsite and then sampled (Plates 5 and 6). Upon receipt of chemical analyses, selected stockpiled soils were removed from the site and transported to an appropriate disposal facility. Soils that contained high levels of petroleum hydrocarbons were aerated onsite in compliance with Bay Area Air Quality Management District (BAAQMD) guidelines.

SOIL SAMPLING

Soil samples were collected from the sidewalls and bottoms of each tank complex excavation, the product line trenches, and the soil stockpiles. These samples were collected in clean brass tubes, then covered at both ends with aluminum foil and sealed with plastic end caps. The soil samples were labeled, entered on a Chain-of-Custody, placed in a cooler on blue ice and transported to a State-certified environmental laboratory. Soil samples were analyzed by either International Technology Analytical Services (IT) located in San Jose, California, Superior Analytical Laboratories, Inc. (Superior) located in Martinez, California, or by a National Environmental Testing, Inc. (NET) mobile laboratory located at the site.

Tank Excavation Sampling

Soil samples were collected from the former UGST excavation from the sidewalls and bottoms of the sidewalls adjacent to the tanks. Samples from the present UGST complex excavation were collected at depths between approximately 6 and 12 feet below existing grade. Soil samples were designated as AX1-1 through AX1-11 for the former UGST excavation and AX2-1 through AX2-7 for the relocated UGST excavation. A backhoe bucket was used to collect soil from each excavation. The samples were collected by first removing the top few inches of soil, then pushing a brass sample tube into the soil until the tube was completely filled. The soil samples were then sealed, labeled, and handled according to the procedures described above. Soil sample locations and the extent of the excavations are presented on Plate 3. The former tank complex was excavated to approximately 13 feet, just above groundwater. Groundwater was not encountered in the present tank complex excavation.

Trench Sampling

Trenches were excavated on the east side of the fueling islands to expose and remove underground product piping. After the piping was removed, one sample for every 20 lineal feet of trench was collected. Additional trenches were excavated on the west side of the fueling islands to install new product piping. Trench depth was approximately 3 feet. Soil was excavated to an approximate depth of 9.5 feet in areas of observed contamination. Soil samples from the trenches were designated AT-1 through AT-33. Selected soil samples were omitted as a result of additional soil excavated from these locations. Trench soil samples were collected using a hand-driven sampler fitted with a brass tube or by driving a brass tube into soil collected with a backhoe bucket after the top few inches of soil were removed. The brass tubes were then removed, sealed, and handled according to the procedures described previously. The location of collected trench soil samplings are shown on Plate 4.

Stockpile Sampling

One composite soil sample consisting of four soil samples were collected for approximately every 50 cubic yards of excavated soil. These four soil samples were laboratory composited and analyzed as one sample. Soil samples were collected by removing the first 6 to 12 inches of soil, a brass tube was then pushed into the soil, removed, sealed, and handled according to the procedures described previously. Soil from the former and present tank complex excavations were stored in separate stockpiles. Excavated soils from the piping trenches were stockpiled with soil from the former tank excavation stockpile. Composite soil sample designations for the former tank excavation and trenching stockpiles are AS-1 through AS-6 and AS-22 through AS-39. The amount of soil in these stockpiles was estimated to be approximately 1200 cubic yards. The present tank excavation stockpiles have composite soil sample designations of AS-7 through AS-21. Soil from the present tank excavation stockpiles was estimated to be approximately 750 cubic yards. Composite soil sample and stockpile locations are presented on Plates 5 and 6.

CHEMICAL ANALYTICAL RESULTS

Soil samples were analyzed by either IT in San Jose, California; Superior in Martinez, California; or the NET mobile laboratory located at the site. The samples were analyzed for Total Petroleum Hydrocarbons calculated as Gasoline (TPH-Gasoline) according to EPA Method 8015 (Modified), and Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) according to EPA Method 8020. NET analyzed for TPH-Gasoline according to DHS procedure GC FID/5030. Copies of the IT, Superior, and NET chemical analytical reports are presented in Appendix A.

Former Tank Excavation Results

Chemical analytical results of soil samples from the former tank excavation identified TPH-Gasoline concentrations ranging from none detected (ND) to 23,000 parts per million (ppm). Benzene was identified in these same soil samples at concentrations ranging from ND to 150 ppm. The highest TPH-Gasoline concentrations were initially reported from a depth of 10 to 12 feet at sample locations AX1-3, AX1-6, AX1-8, and AX1-10. After the excavation was enlarged to the final extent, soil samples collected from locations AX1-2* and AX1-7* at a depth of 10 feet also reported high concentrations of TPH-Gasoline. Soil samples collected from a depth of 6 feet reported TPH-Gasoline at levels of 50 ppm or less, except at sample location AX1-2 where a TPH-Gasoline concentration of 1700 ppm was detected. Additional soil removal from the south, east, and west sides of the excavation was not performed due to property boundaries and the close proximity of the station building. Groundwater from the excavation was not sampled due to the presence of a film of free product on the water surface. Chemical analytical results for soil samples from this excavation are presented in Table 1.

* Asterisks identify soil sample designations that have been repeated and specified as separate and discreet sample locations. These samples were collected in August. Samples that had repeated designations were collected in July.

Present Tank Excavation Results

Chemical analytical results for soil samples from the present tank excavation reported TPH-Gasoline in samples AX2-1-12 and AX2-2-11 at a concentration of 2.0 ppm. Benzene was identified in samples AX2-1-12, AX2-2-11, and AX2-6-11 at concentrations ranging from 0.013 to 0.470 ppm. The remaining samples were reported as ND for both TPH-Gasoline and BTEX analytes. Chemical analytical results for soil samples from this excavation are presented in Table 1.

Trench Sampling Results

TPH-Gasoline was detected in trench soil samples AT-1, AT-2, AT-4, AT-7, AT-8, AT-14, AT-17, AT-26, and AT-28 at concentrations ranging from 1.9 to 5,800 ppm. Benzene was detected in soil samples AT-2, AT-4, AT-7, AT-8, AT-14, and AT-17 at concentrations ranging from 0.008 to 51 ppm. These samples were collected at depths ranging from 2.5 to 9.5 feet below grade. The remaining soil samples were reported as ND for TPH-Gasoline and BTEX. Additional soil excavation from areas of high TPH-Gasoline levels, (sample locations AT-17, AT-26, and AT-28), was not attempted due to the proximity of the overhead canopy foundation. Table 2 summarizes chemical analytical results of soil samples from the trenches.

Stockpile Sampling Results

Chemical analyses for soil sample composites from the former tank excavation and trenching stockpiles identified TPH-Gasoline concentrations ranging from 230 to 5,600 ppm. Benzene was reported in these same composites at concentrations ranging from ND to 3.9 ppm. Highest concentrations of TPH-Gasoline were reported from composite samples AS-22 and AS-23 at levels of 5,500 and 5,600 ppm, respectively. Chemical analytical results for these composites are presented in Table 3.

TPH-Gasoline was identified in soil sample composites from the present tank excavation stockpile at concentrations ranging from ND to 301 ppm. Benzene was reported as ND for each composite sample from this stockpile. Soil sample composite chemical analytical results for the present tank excavation are summarized in Table 4.

SOIL AERATION

Upon receipt of chemical analytical results for stockpiled soils, an allowable volume of stockpiled soil was aerated onsite in compliance with BAAQMD guidelines for uncontrolled soil aeration. Soil was spread out onsite to a thickness of 1 to 2 feet and turned over with a backhoe on a daily basis to assist in the aeration process. Soil samples were collected from the aerating soils using the procedures described previously for the initial stockpile soil sampling. Approximately 350 cubic yards of aerating soil was resampled and analyzed. Composite samples for these soils were designated AS-1*, AS-2*, and AS-40 through AS-48. TPH-Gasoline concentrations for these samples ranged from ND to 490 ppm. Benzene was reported as ND for each composite. Chemical analytical results for these composites are presented in Table 5.

SOIL REMOVAL

Approximately 1950 cubic yards of soil was excavated from the former and present tank complexes and subsurface piping trenches. Soil stockpiles for the former tank excavation and trenches were estimated to contain approximately 1200 cubic yards of soil. Approximately 340 cubic yards of soil from these stockpiles contained TPH-Gasoline at concentrations of greater than 1000 ppm and were transported to GSXs Lokern Road disposal facility, located in Buttonwillow, California. The remaining 860 cubic yards of soil remained onsite for aeration.

Soil stockpiles from the present tank complex contained approximately 750 cubic yards of soil. Approximately 650 cubic yards of soil from these stockpiles contained TPH-Gasoline concentrations of less than 100 ppm and were transported to Redwood Landfill located in Novato, California. The remaining 100 cubic yards of soil remained onsite for aeration.

Approximately 350 cubic yards of soil have been aerated, resampled, and analyzed. Upon receipt of the chemical analytical reports indicating that these soil samples contain less than 100 ppm TPH-Gasoline, the soils were transported to the Redwood Landfill in Novato, California.

PLANNED SITE ACTIVITIES

- Soil stockpiled on-site will continue to be aerated and, upon receipt of chemical analytical results, will be transported to an appropriate disposal facility

- After aerated soils have been removed from the site, the remaining product piping on the north side of the site will be removed. Soil samples will be collected from beneath the product lines approximately every 20 lineal feet. The ACHCS will be notified prior to the start of these activities.

- A work plan will be issued to assess the extent of soil and ground-water contamination at the site.

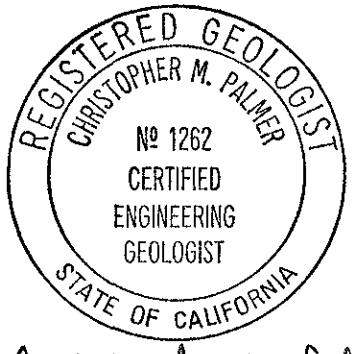
- Design of an appropriate remediation system to mitigate unexcavated soils beneath the site.

If you have any questions, please call.

GeoStrategies Inc. by,

Robert C. Mallory
Geologist

Jeffrey L. Peterson
Senior Hydrogeologist
R.E.A. 1021



Christopher M. Palmer
C.E.G. 1262, R.E.A. 285

RCM/CMP/kjj

Plate 1. Vicinity Map
Plate 2. Site Plan
Plate 3. Excavation Soil Sample Map
Plate 4. Trench Soil Sample Map
Plate 5. Soil Stockpile Map
Plate 6. Soil Stockpile Map

Appendix A: Soil Chemical Analytical Reports

QC Review: DHP

Report No. 7920-1

TABLE 1

SOIL ANALYTICAL DATA
(EXCAVATIONS)

SAMPLE I.D.	SAMPLE DATE	ANALYZED DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
AX1-1-6	26-Jul-90	26-Jul-90	14	<0.005	<0.005	<0.005	1
AX1-1-10	10-Aug-90	21-Aug-90	27.	0.12	1.1	0.7	4.4
AX1-2-6	26-Jul-90	26-Jul-90	1700	<0.005	16	4.8	76
AX1-2*-10	10-Aug-90	19-Aug-90	7700.	60.	360.	150.	930.
AX1-3-6	26-Jul-90	26-Jul-90	<1	<0.005	<0.005	<0.005	<0.005
AX1-3-10	09-Aug-90	21-Aug-90	15000.	130.	850.	330.	1900.
AX1-3-12	26-Jul-90	26-Jul-90	23000	150	490	940	2700
AX1-4-6	26-Jul-90	31-Jul-90	<1	<0.005	<0.005	<0.005	<0.005
AX1-4-12	26-Jul-90	26-Jul-90	1.2	<0.005	0.011	0.018	0.062
AX1-5-6	26-Jul-90	26-Jul-90	<1	0.019	<0.005	<0.005	0.032
AX1-6-6	26-Jul-90	26-Jul-90	<1	0.067	0.011	0.042	0.055
AX1-6-10	10-Aug-90	18-Aug-90	1000.	2.0	24.	18.	110.
AX1-7-6	26-Jul-90	27-Jul-90	50	<0.005	<0.005	<0.005	<0.005
AX1-7*-10	10-Aug-90	21-Aug-90	9400.	96.	570.	200.	1200.

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline
PPM = Parts Per Million

Notes: 1. All data shown as <x are reported as ND (NONE DETECTED).
2. BTEX data analyzed on July 26, 27 and 31, 1990 by NET are reported in micrograms per kilogram.
3. The last number of the Sample I.D. corresponds to the approximate depth below existing grade that the sample was collected.
4. For sample locations, see Plate 3.
5. TPH-G concentration for AX1-8-10' appear to be the more volatile constituents of diesel.

TABLE 1

SOIL ANALYTICAL DATA
(EXCAVATIONS)

SAMPLE I.D.	SAMPLE DATE	ANALYZED DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
AX1-8-10	27-Jul-90	27-Jul-90	7,300	20	130	98	650
AX1-8*-10	10-Aug-90	18-Aug-90	320.	<0.4	<0.4	3.8	12.
AX1-9-10	27-Jul-90	27-Jul-90	<1	0.014	<0.005	0.020	0.017
AX1-9*-10	10-Aug-90	18-Aug-90	1.6	0.037	0.057	0.01	0.051
AX1-10-10	27-Jul-90	27-Jul-90	2,700	36	51	180	320
AX1-10*-10	10-Aug-90	18-Aug-90	120.	0.56	4.3	2.5	15.
AX1-11-10	27-Jul-90	27-Jul-90	<1	12	6	14	35
AX2-1-6	31-Jul-90	31-Jul-90	<1	<0.005	<0.005	0.007	0.007
AX2-1-12	31-Jul-90	31-Jul-90	2.0	0.024	0.073	0.048	0.110
AX2-2-11	31-Jul-90	31-Jul-90	2.0	0.470	0.180	0.005	0.013
AX2-3-6	31-Jul-90	31-Jul-90	<1	<0.005	<0.005	<0.005	<0.005
AX2-3-11.5	31-Jul-90	31-Jul-90	<1	<0.005	<0.005	<0.005	<0.005
AX2-4-6	31-Jul-90	31-Jul-90	<1	<0.005	<0.005	<0.005	<0.005
AX2-4-11	31-Jul-90	31-Jul-90	<1	<0.005	<0.005	<0.005	<0.005
AX2-5-6	31-Jul-90	31-Jul-90	<1	<0.005	<0.005	<0.005	<0.005
AX2-5-11	31-Jul-90	31-Jul-90	<1	<0.005	<0.005	<0.005	<0.005
AX2-6-11	31-Jul-90	31-Jul-90	<1	0.013	0.011	<0.005	<0.005
AX2-7-11	31-Jul-90	31-Jul-90	<1	<0.005	<0.005	<0.005	<0.005

TABLE 2

SOIL ANALYTICAL DATA
(TRENCHING)

SAMPLE I.D.	SAMPLE DATE	ANALYZED DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
AT-1	17-Aug-90	20-Aug-90	2000.	<0.8	23.	28.	210.
AT-2	17-Aug-90	20-Aug-90	6.7	0.023	0.088	0.11	0.84
AT-3	17-Aug-90	20-Aug-90	<1.	<0.005	<0.005	<0.005	<0.005
AT-4	17-Aug-90	20-Aug-90	5.8	0.034	0.12	0.057	0.52
AT-7-2	08-Aug-90	16-Aug-90	2.0	0.008	0.017	0.008	0.061
AT-8-2.5	08-Aug-90	16-Aug-90	14.	0.11	0.15	0.28	1.6
AT-9-9.5	20-Aug-90	29-Aug-90	<1.	<0.01	<0.01	<0.01	<0.01
AT-10-2.5	15-Aug-90	17-Aug-90	<1	<0.003	<0.003	<0.003	<0.003
AT-10-9.5	20-Aug-90	28-Aug-90	<1.	<0.005	<0.005	0.008	0.014
AT-11-2.5	15-Aug-90	17-Aug-90	<1	<0.003	<0.003	<0.003	<0.003
AT-12-2.5	15-Aug-90	17-Aug-90	<1	<0.003	<0.003	<0.003	<0.003

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline
PPM = Parts Per Million

Notes: 1. All data shown as <x are reported as ND (none detected).
2. BTEX data analyzed on August 17, 1990 by Superior are reported in micrograms per kilograms.
3. The last number of the Sample I.D. corresponds to the approximate depth below existing grade that the sample was collected. AT-1 and AT-3 were collected at 3.5 feet below existing grade. AT-2 and AT-4 were collected at 2.5 feet below existing grade.
4. For sample locations, see Plate 4.

TABLE 2

SOIL ANALYTICAL DATA
(TRENCHING)

SAMPLE I.D.	SAMPLE DATE	ANALYZED DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
AT-13-2.5	15-Aug-90	17-Aug-90	<1	<0.003	<0.003	<0.003	<0.003
AT-14-2.5	15-Aug-90	17-Aug-90	250	0.019	0.032	0.110	3.0
AT-14-7	23-Aug-90	24-Aug-90	1.9	0.025	0.034	0.026	0.25
AT-17-8.5	20-Aug-90	28-Aug-90	5800.	51.	330.	100.	560.
AT-24-5	22-Aug-90	29-Aug-90	<1.	<0.005	<0.005	<0.005	<0.005
AT-25-5	22-Aug-90	28-Aug-90	<1.	<0.008	<0.008	<0.008	<0.008
AT-26-5	22-Aug-90	28-Aug-90	890.	<1.	1.6	2.5	38.
AT-27-5	22-Aug-90	28-Aug-90	<1.	<0.005	<0.005	<0.005	0.006
AT-28-5	23-Aug-90	28-Aug-90	4600.	<2.	46.	56.	460.
AT-29-5	23-Aug-90	27-Aug-90	<1.	<0.005	<0.005	<0.005	<0.005
AT-30-5	23-Aug-90	24-Aug-90	<1.0	<0.005	<0.005	<0.005	<0.005
AT-31-5	23-Aug-90	29-Aug-90	<1.	<0.005	<0.005	<0.005	0.007
AT-32-5	24-Aug-90	28-Aug-90	<1.	<0.005	<0.005	<0.005	<0.005
AT-33-5	24-Aug-90	28-Aug-90	<1.	<0.005	0.008	<0.005	0.009

TABLE 3

COMPOSITED SOIL ANALYTICAL DATA
(FORMER UGT COMPLEX AND TRENCH STOCKPILES)

SAMPLE ID	SAMPLE DATE	ANALYSIS DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
AS-1 (A-D) (composite)	26-Jul-90	26-Jul-90	940	<0.005	5.3	1.9	24
AS-2 (A-D) (composite)	27-Jul-90	27-Jul-90	640	<0.005	0.91	<0.005	12
AS-3 (A-D) (composite)	27-Jul-90	27-Jul-90	1,100	<0.005	14	3.6	52
AS-4 (A-D) (composite)	27-Jul-90	27-Jul-90	930	<0.005	<0.005	<0.005	24
AS-5 (A-D) (composite)	27-Jul-90	27-Jul-90	2,300	<0.005	20	15	130
AS-6 (A-D) (composite)	27-Jul-90	27-Jul-90	1,300	3.9	16	14	72

TPH-G = Total Petroleum Hydrocarbons as Gasoline
PPM = Parts Per Million

Note: 1. All data shown as <x are reported as ND (none detected).
2. BTEX data analyzed on July 26 and 27, 1990 by NET, and August 2 and 22, 1990 by Superior, are reported in micrograms per kilogram.
3. For sample locations, see Plates 5 and 6.

TABLE 3

COMPOSITED SOIL ANALYTICAL DATA
(FORMER UGT COMPLEX AND TRENCH STOCKPILES)

SAMPLE ID	SAMPLE DATE	ANALYSIS DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
AS-22 (A-D) (composite)	31-Jul-90	02-Aug-90	5,500	<0.3	62	48	480
AS-23 (A-D) (composite)	31-Jul-90	02-Aug-90	5,600	<0.3	75	55	560
AS-24 (A-D) (composite)	31-Jul-90	02-Aug-90	2,300	<0.3	1.5	1.1	170
AS-25 (A-D) (composite)	31-Jul-90	02-Aug-90	2,000	<0.3	<0.3	0.39	83
AS-26 (A-D) (composite)	31-Jul-90	02-Aug-90	870	<0.3	0.39	<0.3	42
AS-27 (A-D) (composite)	31-Jul-90	02-Aug-90	1,800	<0.3	<0.3	<0.3	59
AS-28 (A-D) (composite)	15-Aug-90	22-Aug-90	860	<0.15	0.8	0.69	56
AS-29 (A-D) (composite)	15-Aug-90	22-Aug-90	900	<0.15	1	0.72	66
AS-30 (A-D) (composite)	15-Aug-90	22-Aug-90	260	<0.15	<0.15	0.25	9.6
AS-31 (A-D) (composite)	15-Aug-90	22-Aug-90	550	<0.15	<0.25	0.41	24

TABLE 3

COMPOSITED SOIL ANALYTICAL DATA
(FORMER UGT COMPLEX AND TRENCH STOCKPILES)

SAMPLE ID	SAMPLE DATE	ANALYSIS DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
AS-32 (A-D) (composite)	15-Aug-90	22-Aug-90	460	<0.15	0.59	0.62	29
AS-33 (A-D) (composite)	15-Aug-90	22-Aug-90	1,600	1.6	2.9	2.8	110
AS-34 (A-D) (composite)	15-Aug-90	22-Aug-90	620	0.37	0.85	0.44	48
AS-35 (A-D) (composite)	15-Aug-90	22-Aug-90	900	0.2	0.87	0.53	63
AS-36 (A-D) (composite)	15-Aug-90	22-Aug-90	680	0.54	5.4	2.6	50
AS-37 (A-D) (composite)	15-Aug-90	22-Aug-90	590	<0.15	2.4	0.89	43
AS-38 (A-D) (composite)	15-Aug-90	22-Aug-90	280	<0.15	0.33	0.2	19
AS-39 (A-D) (composite)	15-Aug-90	22-Aug-90	230	<0.15	<0.15	0.21	14

TABLE 4

COMPOSITED SOIL ANALYTICAL DATA
(PRESENT UGT COMPLEX STOCKPILE)

SAMPLE ID	SAMPLE DATE	ANALYZED DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
AS-7 (A-D) (composite)	31-Jul-90	02-Aug-90	3	<0.003	0.014	0.013	0.120
AS-8 (A-D) (composite)	31-Jul-90	02-Aug-90	5	<0.003	0.035	0.033	0.280
AS-9 (A-D) (composite)	31-Jul-90	02-Aug-90	2	<0.003	0.008	0.007	0.075
AS-10 (A-D) (composite)	31-Jul-90	02-Aug-90	1	<0.003	0.005	0.006	0.064
AS-11 (A-D) (composite)	31-Jul-90	02-Aug-90	4	<0.003	0.013	0.015	0.130
AS-12 (A-D) (composite)	31-Jul-90	02-Aug-90	3	<0.003	<0.003	<0.003	0.016
AS-13 (A-D) (composite)	31-Jul-90	02-Aug-90	1	<0.003	<0.003	<0.003	0.005

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline
PPM = Parts Per Million

Note: 1. All data shown as <x are reported as ND (none detected).
2. BTEX data are reported in micrograms per kilogram.
3. For sample locations, see Plate 5.

TABLE 4

COMPOSITED SOIL ANALYTICAL DATA
(PRESENT UGT COMPLEX STOCKPILE)

SAMPLE ID	SAMPLE DATE	ANALYZED DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
AS-14 (A-D) (composite)	31-Jul-90	02-Aug-90	13	<0.003	0.042	0.036	0.280
AS-15 (A-D) (composite)	31-Jul-90	02-Aug-90	273	<0.150	0.270	0.730	5.100
AS-16 (A-D) (composite)	31-Jul-90	02-Aug-90	301	<0.150	0.980	1.600	9.900
AS-17 (A-D) (composite)	31-Jul-90	02-Aug-90	4	<0.003	0.018	0.013	0.084
AS-18 (A-D) (composite)	31-Jul-90	02-Aug-90	2	<0.003	0.004	0.005	0.036
AS-19 (A-D) (composite)	31-Jul-90	02-Aug-90	<1	<0.003	<0.003	<0.003	<0.003
AS-20 (A-D) (composite)	31-Jul-90	02-Aug-90	3	<0.003	<0.003	<0.003	0.010
AS-21 (A-D) (composite)	31-Jul-90	02-Aug-90	<1	<0.003	<0.003	<0.003	0.007

TABLE 5

COMPOSITED SOIL ANALYTICAL DATA
(AERATED SOIL)

SAMPLE I.D.	SAMPLE DATE	ANALYSIS DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENE (PPM)	SOIL REMOVED
AS-1* (A-D) (composite)	17-Aug-90	21-Aug-90	19.	<0.005	0.009	0.026	0.16	Approximately 50 cubic yards to Redwood Landfill
AS-2* (A-D) (composite)	17-Aug-90	20-Aug-90	6.4	<0.005	0.008	0.006	0.038	Approximately 50 cubic yards to Redwood Landfill
AS-40 (A-D) (composite)	22-Aug-90	28-Aug-90	12.	<0.17	<0.017	<0.017	0.099	Approximately 50 cubic yards to Redwood Landfill
AS-41 (A-D) (composite)	30-Aug-90	06-Sep-90	<1	<0.003	<0.003	<0.003	<0.003	
AS-42 (A-D) (composite)	30-Aug-90	06-Sep-90	14	<0.003	<0.003	<0.003	0.008	
AS-43 (A-D) (composite)	10-Sep-90	10-Sep-90	490.	<0.2	0.2	<0.2	21.	
AS-44 (A-D) (composite)	10-Sep-90	10-Sep-90	240.	<0.2	<0.2	<0.2	0.4	
AS-45 (A-D) (composite)	17-Sep-90	24-Sep-90	<1	<0.003	<0.003	<0.003	0.005	Approximately 50 cubic yards to Redwood Landfill

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline
PPM = Parts Per Million

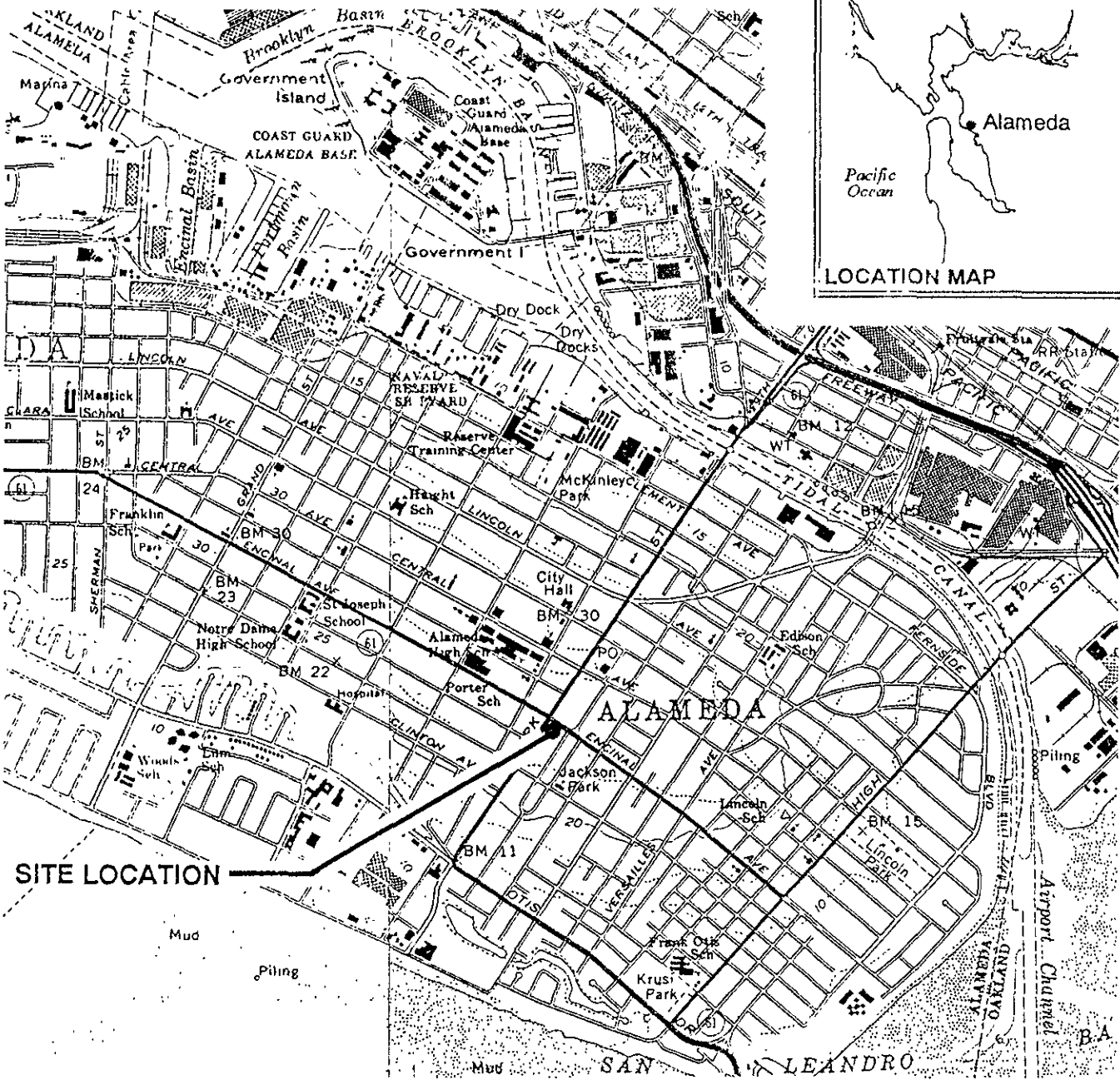
Note: 1. All data shown as <x are reported as ND (none detected)
2. BTEX data analyzed by Superior on September 6 and 24, 1990, are reported in micrograms per kilogram

TABLE 5

COMPOSITED SOIL ANALYTICAL DATA
(AERATED SOIL)

SAMPLE I.D.	SAMPLE DATE	ANALYSIS DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENE (PPM)	SOIL REMOVED
AS-46 (A-D) (composite)	17-Sep-90	24-Sep-90	3	<0.003	<0.003	0.006	0.017	Approximately 50 cubic yards to Redwood Landfill
AS-47 (A-D) (composite)	21-Sep-90	24-Sep-90	<1	<0.003	<0.003	<0.003	<0.003	Approximately 50 cubic yards to Redwood Landfill
AS-48 (A-D) (composite)	21-Sep-90	24-Sep-90	<1	<0.003	<0.003	<0.003	0.004	Approximately 50 cubic yards to Redwood Landfill

ILLUSTRATIONS



Base Map: USGS Topographic Map

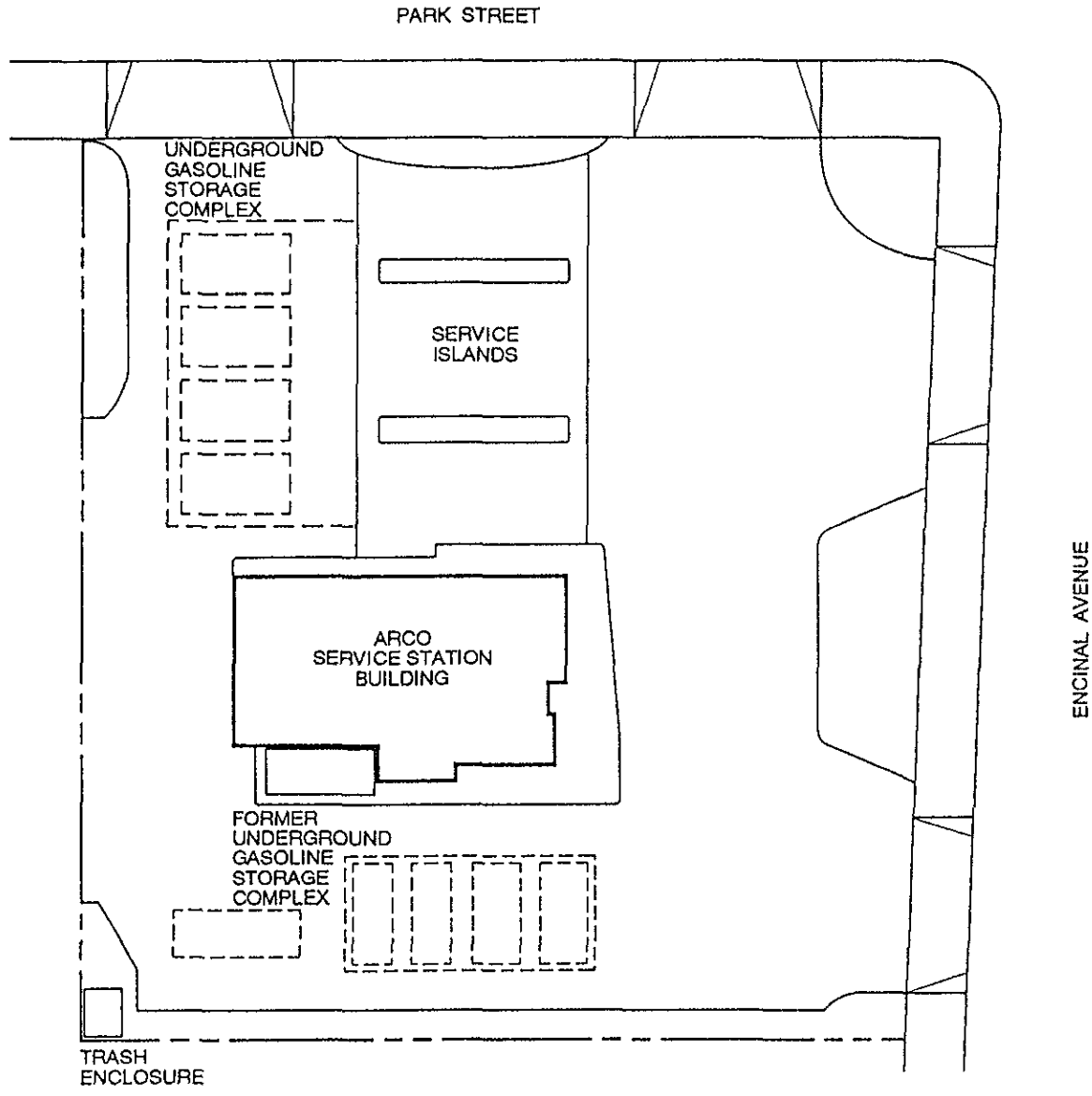
Approximate Scale : 1" = 2000'

GeoStrategies Inc.

Vicinity Map
ARCO Service Station #2112
1260 Park Street
Alameda, California

PLATE
1

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7920		3/90		

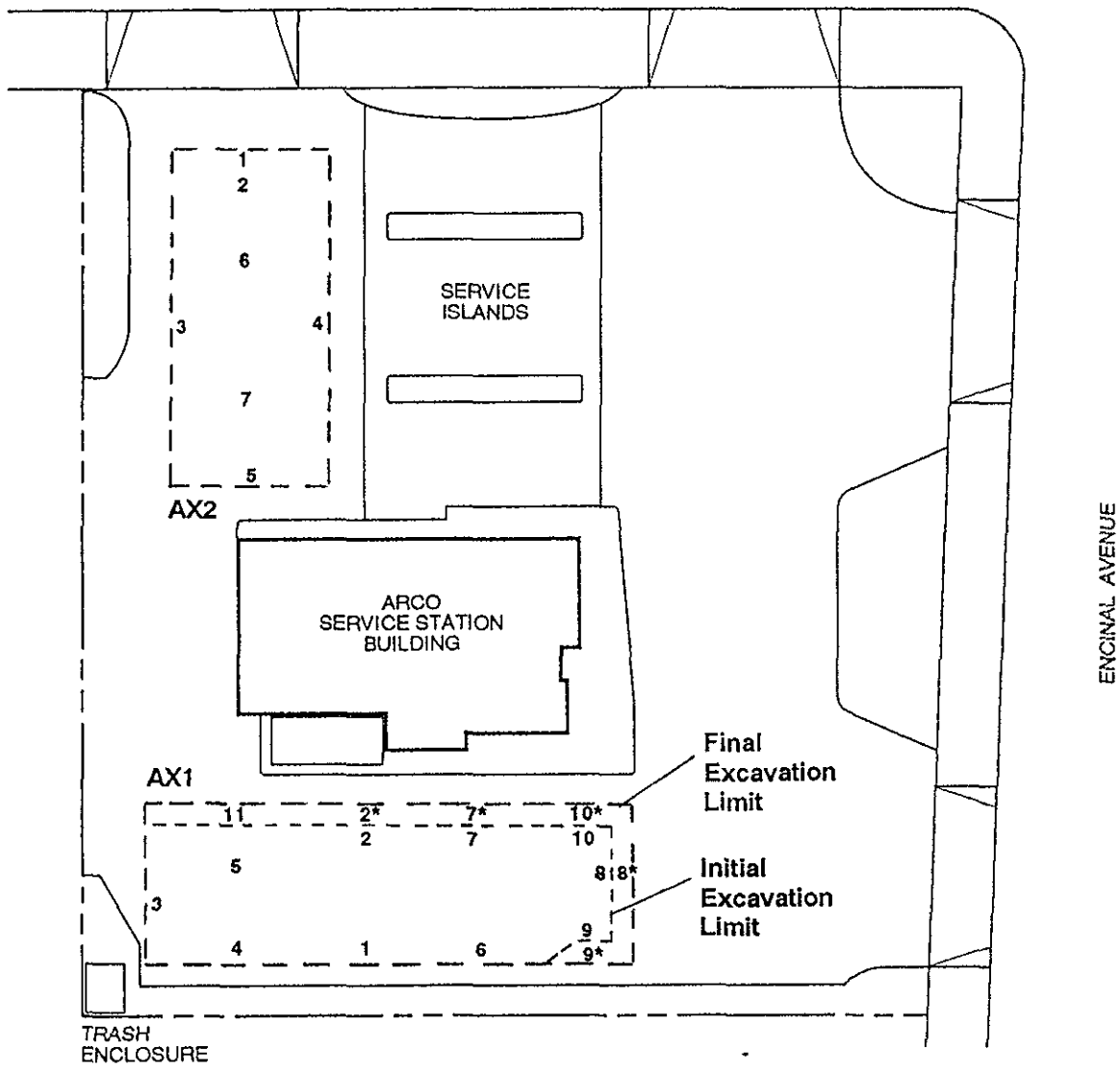


GeoStrategies Inc.

Site Plan
ARCO Service Station #2112
1260 Park Street
Alameda, California

PLATE
2

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7920	RWP CEG 1262	10/90		



EXPLANATION

AX1 — Excavated area and designation

1 — Sample location and designation

N

0 30 60

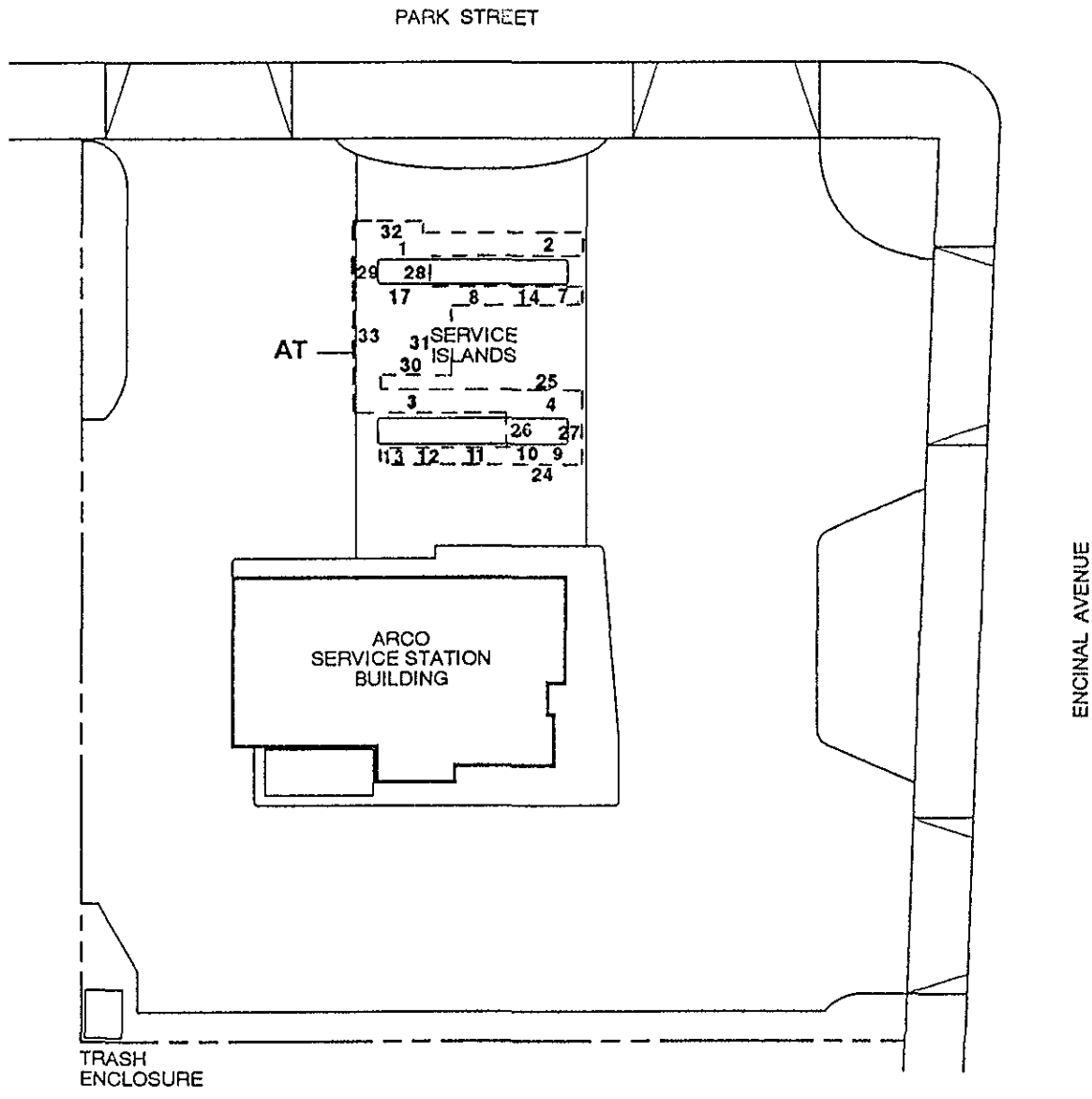
Scale in Feet

GSI GeoStrategies Inc.

Excavation Soil Sample Map
ARCO Service Station #2112
1260 Park Street
Alameda, California

PLATE 3

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7920	RGP CEG 1262	10/90		



EXPLANATION

AT — Trench excavation and designation

1 — Sample location and designation

N

0 30 60

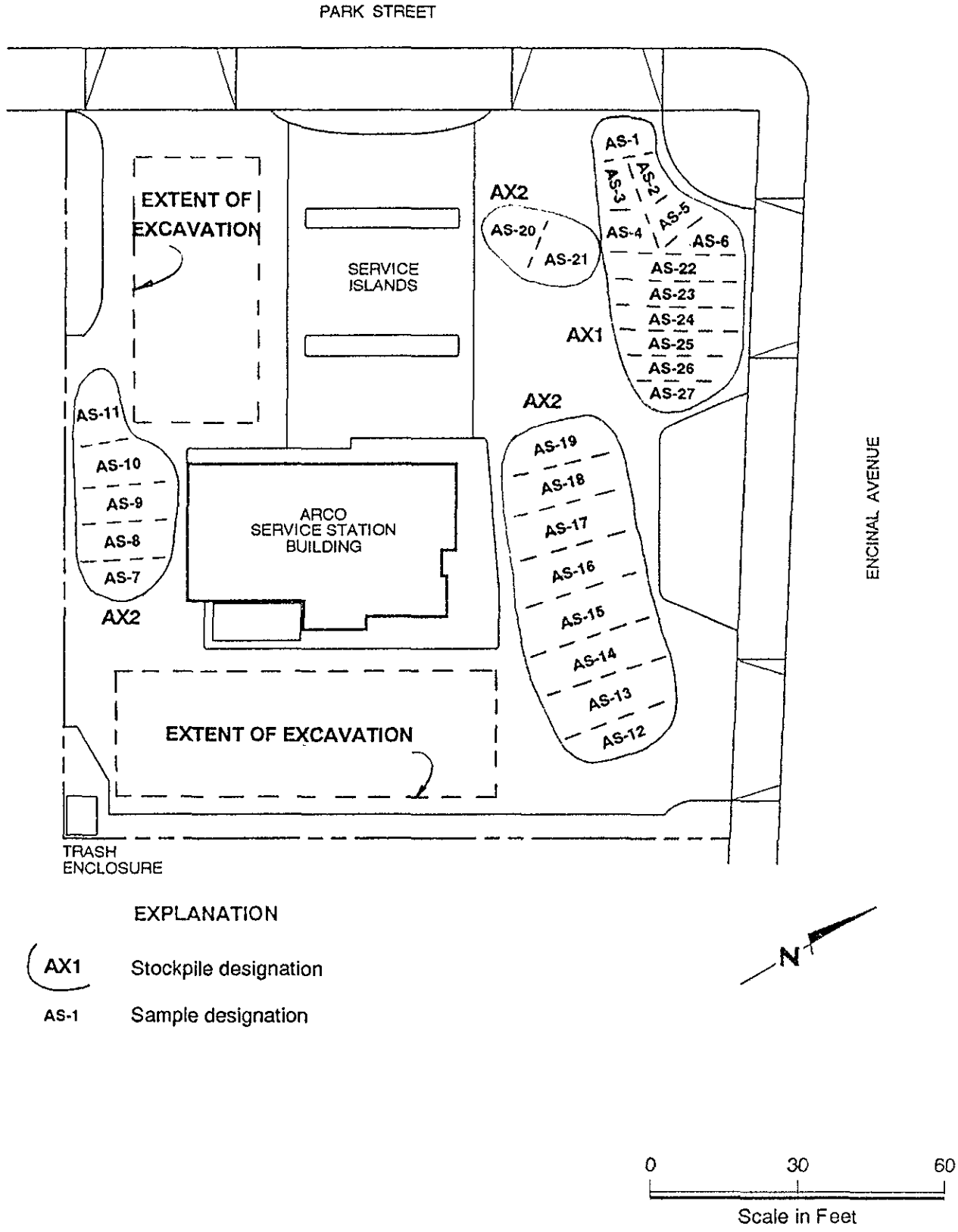
Scale in Feet

GeoStrategies Inc.

Trench Soil Sample Map
ARCO Service Station #2112
1260 Park Street
Alameda, California

PLATE
4

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7920	CMP CEG 12/02	10/90		

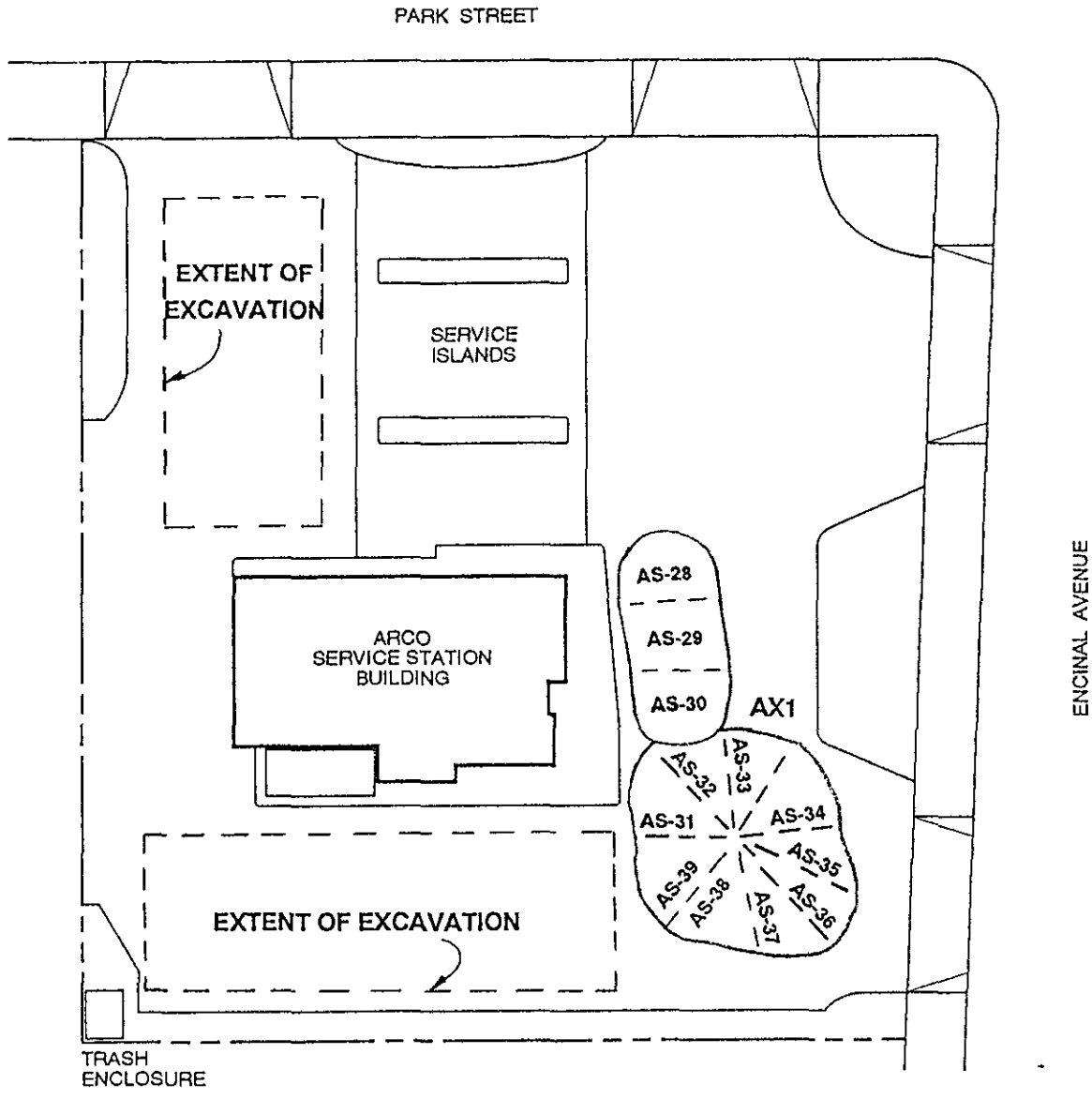


GeoStrategies Inc.

Soil Stockpile Map
ARCO Service Station #2112
1260 Park Street
Alameda, California

PLATE 5

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7920	CWP CEG 12/92	10/90		



GeoStrategies Inc.

Soil Stockpile Map
ARCO Service Station #2112
1260 Park Street
Alameda, California

PLATE 6

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7920	CWP CEG 1262	10/90		

APPENDIX A

SOIL CHEMICAL ANALYTICAL REPORTS

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Date: 08/23/90

Gettler-Ryan
2150 West Winton
Hayward, CA 94545
John Werfal

Work Order: TO-08-154 P.O. Number: 7920

This is the Certificate of Analysis for the following samples:

Client Work ID: GR7920, Arco
Date Received: 08/15/90
Number of Samples: 8
Sample Type: solid

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Suzanne Veaudry
Project Manager

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/23/90
Client Work ID: GR7920, Arco

Work Order: TO-08-154

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AX1-3-10'
SAMPLE DATE: 08/09/90
LAB SAMPLE ID: TO08154-01
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/15/90	08/21/90
Low Boiling Hydrocarbons	Mod.8015	08/15/90	08/21/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	400.	15000.
BTEX		
Benzene	4.0	130.
Toluene	4.0	850.
Ethylbenzene	4.0	330.
Xylenes (total)	4.0	1900.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/23/90
Client Work ID: GR7920, Arco

Work Order: TO-08-154

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AX1-2-10'
SAMPLE DATE: 08/10/90
LAB SAMPLE ID: T008154-02
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/15/90	08/19/90
Low Boiling Hydrocarbons	Mod.8015	08/15/90	08/19/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	200.	7700.
BTEX		
Benzene	2.0	60.
Toluene	2.0	360.
Ethylbenzene	2.0	150.
Xylenes (total)	2.0	930.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/23/90
Client Work ID: GR7920, Arco

Work Order: TO-08-154

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AX1-1-10'
SAMPLE DATE: 08/10/90
LAB SAMPLE ID: T008154-03
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/15/90	08/21/90
Low Boiling Hydrocarbons	Mod.8015	08/15/90	08/21/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	2.0	27.
BTEX		
Benzene	0.02	0.12
Toluene	0.02	1.1
Ethylbenzene	0.02	0.7
Xylenes (total)	0.02	4.4

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/23/90
Client Work ID: GR7920, Arco

Work Order: TO-08-154

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AX1-7-10'
SAMPLE DATE: 08/10/90
LAB SAMPLE ID: TO08154-04
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/15/90	08/21/90
Low Boiling Hydrocarbons	Mod.8015	08/15/90	08/21/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	400.	9400.
BTEX		
Benzene	4.0	96.
Toluene	4.0	570.
Ethylbenzene	4.0	200.
Xylenes (total)	4.0	1200.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/23/90
Client Work ID: GR7920, Arco

Work Order: TO-08-154

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AX1-6-10'
SAMPLE DATE: 08/10/90
LAB SAMPLE ID: TO08154-05
SAMPLE MATRIX: Solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/15/90	08/18/90
Low Boiling Hydrocarbons	Mod.8015	08/15/90	08/18/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	40.	1000.
BTEX		
Benzene	0.5	2.0
Toluene	0.5	24.
Ethylbenzene	0.5	18.
Xylenes (total)	0.5	110.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/23/90
Client Work ID: GR7920, Arco

Work Order: TO-08-154

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AX1-10-10'
SAMPLE DATE: 08/10/90
LAB SAMPLE ID: TO08154-06
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/15/90	08/21/90
Low Boiling Hydrocarbons	Mod.8015	08/15/90	08/21/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	4.0	120.
BTEX		
Benzene	0.04	0.56
Toluene	0.04	4.3
Ethylbenzene	0.04	2.5
Xylenes (total)	0.04	15.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/23/90
Client Work ID: GR7920, Arco

Work Order: TO-08-154

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AX1-9-10'
SAMPLE DATE: 08/10/90
LAB SAMPLE ID: T008154-07
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/15/90	08/18/90
Low Boiling Hydrocarbons	Mod.8015	08/15/90	08/18/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.0	1.6
BTEX		
Benzene	0.005	0.037
Toluene	0.005	0.057
Ethylbenzene	0.005	0.01
Xylenes (total)	0.005	0.051

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/23/90
Client Work ID: GR7920, Arco

Work Order: TO-08-154

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AX1-8-10'
SAMPLE DATE: 08/10/90
LAB SAMPLE ID: TO08154-08
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/15/90	08/18/90
Low Boiling Hydrocarbons	Mod.8015	08/15/90	08/18/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	40.	*320.
BTEX		
Benzene	0.4	None
Toluene	0.4	None
Ethylbenzene	0.4	3.8
Xylenes (total)	0.4	12.

*Compounds detected and calculated as gasoline appear to be the more volatile constituents of diesel.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/23/90
Client Work ID: GR7920, Arco

Work Order: TO-08-154

TEST CODE TPHVB TEST NAME TPH Gas,BTEX by 8015/8020

The method of analysis for low boiling hydrocarbons is taken from E.P.A. Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatograhy using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethylbenzene and xylenes.

Gettler - Ryan Inc. TO-08-154 ENVIRONMENTAL DIVISION 0626 Chain of Custod

COMPANY ARCO TO-08-155 JOB NO 7920

JOB LOCATION 1260 PARK ST. / ENCINAL

CITY ALAMEDA PHONE NO.

AUTHORIZED JOHN WERFAL DATE 8/14/90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AX1-3-10'	1	SOIL	8/7/90 8:25	TPH-GAS, BTEX	Cool
AX1-2-10'	1		8/10/90 12:30		
AX1-1-10'	1		12:32		
AX1-7-10'	1		14:50		
AX1-6-10'	1		15:45		
AX1-10-10'	1		17:30		
AX1-9-10'	1		17:35		
AX1-8-10'	1		17:40		
AT-7-2'	1	SOIL	8/8/90 10:49		
AT-8-2.5'	1		10:59		

RELINQUISHED BY: Robert C. Mallory 8-15-90

RECEIVED BY: 8-15-90 a7:30

RELINQUISHED BY: 8-15-90 11:30

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY LAB: 8-15-90 1155

DESIGNATED LABORATORY: ZT/SCF DHS #: 137

REMARKS:

AXL 5-Day TAT

AT 48-72hr TAT

DATE COMPLETED FOREMAN

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

John Werfal
Gettler-Ryan Inc.
2150 Winton Ave.
Hayward, CA 94545

Date: 08-06-90
NET Client Acct No: 679
NET Pacific Log No: 3048
Received: 07-28-90 0930

Client Reference Information

Arco, 1260 Park St./Encinal, Alameda, Job: 7920

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

JS:rct
Enclosure(s)

Client No: 679
Client Name: Gettler-Ryan Inc.
NET Log No: 3048

Date: 08-06-90

Page: 2

Ref: Arco, 1260 Park St./Encinal, Alameda, Job: 7920

			Descriptor, Lab No. and Results		
			AS-2 comp 07-27-90	AS-3 comp 07-27-90	
Parameter	Method	Reporting Limit	58811	58812	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)			--	--	
DILUTION FACTOR *			200	300	
DATE ANALYZED			07-27-90	07-27-90	
METHOD GC FID/5030			--	--	
as Gasoline		1	640	1,100	mg/Kg
METHOD 8020			--	--	
Benzene		5	ND	ND	ug/Kg
Ethylbenzene		5	910	14,000	ug/Kg
Toluene		5	ND	3,600	ug/Kg
Xylenes		5	12,000	52,000	ug/Kg

Client No: 679 Date: 08-06-90
Client Name: Gettler-Ryan Inc.
NET Log No: 3048 Page: 3

Ref: Arco, 1260 Park St./Encinal, Alameda, Job: 7920

			Descriptor, Lab No. and Results		
			AS-4 comp 07-27-90	AS-5 comp 07-27-90	
Parameter	Method	Reporting Limit	58813	58814	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)			--	--	
DILUTION FACTOR *			600	600	
DATE ANALYZED			07-27-90	07-27-90	
METHOD GC FID/5030			--	--	
as Gasoline		1	930	2,300	mg/Kg
METHOD 8020			--	--	
Benzene		5	ND	ND	ug/Kg
Ethylbenzene		5	ND	20,000	ug/Kg
Toluene		5	ND	15,000	ug/Kg
Xylenes		5	24,000	130,000	ug/Kg

Client No: 679 Date: 08-0[illegible]-90
Client Name: Gettler-Ryan Inc.
NET Log No: 3048 Page: 4

Ref: Arco, 1260 Park St./Encinal, Alameda, Job: 7920

			Descriptor, Lab No. and Results		
			AS-6 comp 07-27-90	AS-1 comp 07-26-90	
Parameter	Method	Reporting Limit	58815	58816[a]	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)	---		--	--	
DILUTION FACTOR *			375	600	
DATE ANALYZED	---		07-27-90	07-26-90	
METHOD GC FID/5030			--	--	
as Gasoline		1	1,300	940	mg/Kg
METHOD 8020			--	--	
Benzene		5	3,900	ND	ug/Kg
Ethylbenzene		5	16,000	5,300	ug/Kg
Toluene		5	14,000	1,900	ug/Kg
Xylenes		5	72,000	24,000	ug/Kg

[a] The dilution factor for Benzene, Ethylbenzene, and Toluene on this sample is 60.

Client No: 679 Date: 08-06-90
Client Name: Gettler-Ryan Inc.
NET Log No: 3048 Page: 5

Ref: Arco, 1260 Park St./Encinal, Alameda, Job: 7920

			Descriptor, Lab No. and Results		
			AX1-11-10.0 07-27-90 0947	AX1-1-6.0 07-26-90 1100	
Parameter	Method	Reporting Limit	58817	58818	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)	—		--	--	
DILUTION FACTOR *	—		1	40	
DATE ANALYZED			07-27-90	07-26-90	
METHOD GC FID/5030			--	--	
as Gasoline		1	ND	14	mg/Kg
METHOD 8020			--	--	
Benzene		5	12	ND	ug/Kg
Ethylbenzene		5	6	ND	ug/Kg
Toluene		5	14	ND	ug/Kg
Xylenes		5	35	1,000	ug/Kg

Client No: 679 Date: 08-06-90
Client Name: Gettler-Ryan Inc.
NET Log No: 3048 Page: 6

Ref: Arco, 1260 Park St./Encinal, Alameda, Job: 7920

			Descriptor, Lab No. and Results		
			AX1-2-6.0 07-26-90 1105	AX1-3-6.0 07-26-90 1119	
Parameter	Method	Reporting Limit	58819	58820	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)	---		--	--	
DILUTION FACTOR *	---		300	1	
DATE ANALYZED			07-26-90	07-26-90	
METHOD GC FID/5030			--	--	
as Gasoline		1	1,700	ND	mg/Kg
METHOD 8020			--	--	
Benzene		5	ND	ND	ug/Kg
Ethylbenzene		5	16,000	ND	ug/Kg
Toluene		5	4,800	ND	ug/Kg
Xylenes		5	76,000	ND	ug/Kg

Client No: 679 Date: 08-06-90
Client Name: Gettler-Ryan Inc.
NET Log No: 3048 Page: 7

Ref: Arco, 1260 Park St./Encinal, Alameda, Job: 7920

			Descriptor, Lab No. and Results		
			AX1-3-12.0 07-26-90 1124	AX1-4-6.0 07-26-90 1131	
Parameter	Method	Reporting Limit	58821	58822	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)	----		--	--	
DILUTION FACTOR *			20,000	1	
DATE ANALYZED	----		07-26-90	07-31-90	
METHOD GC FID/5030	-		--	--	
as Gasoline		1	23,000	ND	mg/Kg
METHOD 8020			--	--	
Benzene		5	150,000	ND	ug/Kg
Ethylbenzene		5	490,000	ND	ug/Kg
Toluene		5	940,000	ND	ug/Kg
Xylenes		5	2,700,000	ND	ug/Kg

Client No: 679 Date: 08-06-90
Client Name: Gettler-Ryan Inc.
NET Log No: 3048 Page: 8

Ref: Arco, 1260 Park St./Encinal, Alameda, Job: 7920

			Descriptor, Lab No. and Results		
			AX1-4-12.0 07-26-90 1137	AX1-5-6.0 07-26-90 1145	
Parameter	Method	Reporting Limit	58823	58824	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			07-26-90	07-26-90	
METHOD GC FID/5030			--	--	
as Gasoline		1	1.2	ND	mg/Kg
METHOD 8020			--	--	
Benzene		5	ND	19	ug/Kg
Ethylbenzene		5	11	ND	ug/Kg
Toluene		5	18	ND	ug/Kg
Xylenes		5	62	32	ug/Kg

Client No: 679 Date: 08-06-90
Client Name: Gettler-Ryan Inc.
NET Log No: 3048 Page: 9

Ref: Arco, 1260 Park St./Encinal, Alameda, Job: 7920

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results AX1-6-6.0 07-26-90 1344 58825	AX1-7-6.0 07-26-90 1344 58826	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)	---		--	--	
DILUTION FACTOR *			1	200	
DATE ANALYZED	---		07-26-90	07-27-90	
METHOD GC FID/5030	-		--	--	
as Gasoline		1	ND	50	mg/Kg
METHOD 8020			--	--	
Benzene		5	67	ND	ug/Kg
Ethylbenzene		5	11	ND	ug/Kg
Toluene		5	42	ND	ug/Kg
Xylenes		5	55	ND	ug/Kg

Client No: 679 Date: 08-06-90
Client Name: Gettler-Ryan Inc.
NET Log No: 3048 Page: 10

Ref: Arco, 1260 Park St./Encinal, Alameda, Job: 7920

			Descriptor, Lab No. and Results		
			AX1-8-10.0 07-26-90 1510	AX1-9-10.0 07-26-90 1512	
Parameter	Method	Reporting Limit	58827	58828	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)	—		--	--	
DILUTION FACTOR *	—		3000	1	
DATE ANALYZED	—		07-27-90	07-27-90	
METHOD GC FID/5030			--	--	
as Gasoline		1	7,300	ND	mg/Kg
METHOD 8020			--	--	
Benzene		5	20,000	14	ug/Kg
Ethylbenzene		5	130,000	ND	ug/Kg
Toluene		5	98,000	20	ug/Kg
Xylenes		5	650,000	17	ug/Kg

Client No: 679 Date: 08-06-90
Client Name: Gettler-Ryan Inc.
NET Log No: 3048 Page: 11

Ref: Arco, 1260 Park St./Encinal, Alameda, Job: 7920

			Descriptor, Lab No. and Results	
			AX1-10-10.0 07-26-90 1514	
Parameter	Method	Reporting Limit	58829	Units
PETROLEUM HYDROCARBONS			--	
VOLATILE (SOIL)	—		--	
DILUTION FACTOR *			3000	
DATE ANALYZED	—		07-27-90	
METHOD GC FID/5030			--	
as Gasoline		1	2,700	mg/Kg
METHOD 8020			--	
Benzene		5	36,000	ug/Kg
Ethylbenzene		5	51,000	ug/Kg
Toluene		5	180,000	ug/Kg
Xylenes		5	320,000	ug/Kg

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results colum indicates analyte not detected at the value following, which supercedes the listed reporting limit.
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

* Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated reporting limits by the dilution factor.

NATIONAL
ENVIRONMENTAL
TESTING, INC.

NET Pacific, Inc
435 Tesconi Circle
Santa Rosa, CA 95401
Tel. (707) 526-7200
Fax. (707) 526-9623

Requirements for Sample Submittal

Our policy with all clients requires that liquid samples be submitted as three containers per analysis (or combination analyses) per sample. This requirement exists for three reasons:

1) The occasional need to re-analyze samples when the initial analysis is not satisfactory (e.g. matrix interferences, instrument failure, etc),

2) The need for sufficient sample to perform quality control procedures, including sample spike and duplicate sample analyses,

3) The occasional instance when there is a problem sample (e.g., VOA submitted with headspace, sample preserved improperly, sample broken during handling).

To routinely produce high quality data and consistently meet reporting commitments at a competitive price, as NET does, we need your cooperation with these sample submittal requirements. Failure to adhere to these guidelines will, in general, limit NET's liability to the cost of the sample analysis. Please encourage your staff to contact their NET Client Services Representative any time they need advice pertaining to the required number of sample containers and/or types of analyses necessary.

Gettler - Ryan Inc. — ENVIRONMENTAL DIVISION — 0663 **Chain of Custod**

COMPANY ARCO JOB NO. 7920

JOB LOCATION 1260 PARK ST. / ENCINAL

CITY ALAMEDA PHONE NO.

AUTHORIZED JOHN WERFAL DATE 7/26/90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AX1-1-6.0	1	SOIL	11:00 7/26/90	TPH-GAS, BTEX	
AX1-2 6.0	1		11:05		
AX1-3-6.0	1		11:19		
AX1-3-12.0	1		11:24		
AX1-4-6.0	1		11:31		
AX1-4-12.0	1		11:37		
AX1-5-6.0	1		11:45		
AX1-6-6.0	1		13:44		
AX1-7-6.0	1		13:44		
AX1-8-10.0	1		15:10		
AX1-9-10.0	1		15:12		
AX1-10-10.0	1		15:14		

RELINQUISHED BY: Robert C. Millberg 16:21 7/26/90 RECEIVED BY: John C. Pond 1621 7/26/90

RELINQUISHED BY: RECEIVED BY:

RELINQUISHED BY: RECEIVED BY LAB:

DESIGNATED LABORATORY: DHS #:

REMARKS:

DATE COMPLETED FOREMAN

Getter - Ryan Inc. ENVIRONMENTAL DIVISION 0662 **Chain of Custody**

COMPANY ARCO JOB NO. 7920

JOB LOCATION 1260 PARK ST. / ENCINAL

CITY ALAMEDA PHONE NO.

AUTHORIZED JOHN WERFAL DATE 7/27/90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AX1-11-10.0	1	SOIL	7/27/90 9:47	TPH-GAS, BTEX	

RELINQUISHED BY: Robert C. Mellon 7/27/90 12:02 RECEIVED BY: John C. Pond 7/27/90 12:02

RELINQUISHED BY: RECEIVED BY:

RELINQUISHED BY: RECEIVED BY LAB:

DESIGNATED LABORATORY: DHS #:

REMARKS:

0661 **Chain of Custody**

Gettler - Ryan Inc. ENVIRONMENTAL DIVISION

COMPANY ARCO JOB NO. 7920

JOB LOCATION 1260 PARK ST. /ENCINAL

CITY ALAMEDA PHONE NO.

AUTHORIZED JOHN WERFAL DATE 7/27/90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AS-2A	1	SOIL	7/27/90 10:10		
AS-2B	1	↓	↓ 10:11		
AS-2C	1	↓	↓ 10:16		
AS-2D	1	↓	↓ 10:14		
AS-2(COMP)				TPH-GAS, BTEX	
AS-3A	1	SOIL	7/27/90 10:05		
AS-3B	1	↓	↓ 10:06		
AS-3C	1	↓	↓ 10:08		
AS-3D	1	↓	↓ 10:07		
AS-3(COMP)				TPH-GAS, BTEX	

RELINQUISHED BY: Robert C. Melby 7/27/90 12:02 RECEIVED BY: [signature] 7/27/90 12:02

RELINQUISHED BY: RECEIVED BY:

RELINQUISHED BY: RECEIVED BY LAB:

DESIGNATED LABORATORY: DHS #:

REMARKS:

Gettler - Ryan Inc. — ENVIRONMENTAL DIVISION — 0660 Chain of Custody

COMPANY ARCO JOB NO. 7920

JOB LOCATION 1260 PARK ST. / ENCINAL

CITY ALAMEDA PHONE NO.

AUTHORIZED JOHN WERFAL DATE 7/27/90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AS-4A	1	SOIL	7/27/90 10:19		
AS-4B	1	SOIL	10:20		
AS-4C	1	SOIL	10:32		
AS-4D	1	SOIL	10:34		
AS-4 (COMP)				TPH-GAS, BTEX	
AS-5A	1	SOIL	7/27/90 10:43		
AS-5B	1	SOIL	10:45		
AS-5C	1	SOIL	10:49		
AS-5D	1	SOIL	10:50		
AS-5 (COMP)				TPH-GAS, BTEX	

RELINQUISHED BY: Robert C. Mallory 7/27/90 12:02 RECEIVED BY: 7/27/90 1202

RELINQUISHED BY: RECEIVED BY:

RELINQUISHED BY: RECEIVED BY LAB:

DESIGNATED LABORATORY: DHS #:

REMARKS:

DATE COMPLETED FOREMAN

Gettler - Ryan Inc. ENVIRONMENTAL DIVISION — 0659 **Chain of Custody**

COMPANY ARCO — JOB NO. 7920

JOB LOCATION 1260 PARK ST. / ENCINAL

CITY ALAMEDA — PHONE NO.

AUTHORIZED JOHN WERFAL — DATE 7/27/90 — P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AS-6A	1	SOIL	7/27/90 10:57		
AS-6B	1	↓	10:58		
AS-6C	1		11:01		
AS-6D	1		11:03		
AS-6 (COMP)				TPH-GAS, BTEX	

RELINQUISHED BY: Peter C. Malloy 7/27/90 12:02 — RECEIVED BY: J. C. D. 7/27/90 1202

RELINQUISHED BY: — RECEIVED BY:

RELINQUISHED BY: — RECEIVED BY LAB:

DESIGNATED LABORATORY: — DHS #:

REMARKS:

DATE COMPLETED — FOREMAN

NATIONAL
ENVIRONMENTAL
TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel (707) 526-7200
Fax: (707) 526-9623

John Werfal
Gettler-Ryan Inc.
2150 Winton Ave.
Hayward, CA 94545

Date: 08-06-90
NET Client Acct No: 679
NET Pacific Log No: 3103
Received: 08-02-90 0800

Client Reference Information

ARCO, 1260 Park St.,/Encinal, Job: 7920

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

JS:rct
Enclosure(s)

Client No: 679 Date: 08-06-90
Client Name: Gettler-Ryan Inc.
NET Log No: 3103 Page: 2

Ref: ARCO, 1260 Park St.,/Encinal, Job: 7920

			Descriptor, Lab No. and Results		
			AX2-1-6.0' 07-31-90 0921	AX2-1-12.0' 07-31-90 0928	
Parameter	Method	Reporting Limit	59104	59105	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			07-31-90	07-31-90	
METHOD GC FID/5030			--	--	
as Gasoline		1	ND	2.0	mg/Kg
METHOD 8020			--	--	
Benzene		5	ND	24	ug/Kg
Ethylbenzene		5	ND	73	ug/Kg
Toluene		5	7	48	ug/Kg
Xylenes		5	7	110	ug/Kg

Client No: 679 Date: 08-06-90
Client Name: Gettler-Ryan Inc.
NET Log No: 3103 Page: 3

Ref: ARCO, 1260 Park St.,/Encinal, Job: 7920

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results AX2-2-11.0' 07-31-90 0935 59106[a]	 AX2-3-6.0' 07-31-90 0943 59107	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)			--	--	
DILUTION FACTOR *	----		1	1	
DATE ANALYZED			07-31-90	07-31-90	
METHOD GC FID/5030			--	--	
as Gasoline		1	2.0	ND	mg/Kg
METHOD 8020			--	--	
Benzene		5	470	ND	ug/Kg
Ethylbenzene		5	180	ND	ug/Kg
Toluene		5	5	ND	ug/Kg
Xylenes		5	13	ND	ug/Kg

[a] The dilution factor for Benzene and Ethylbenzene on this sample is 60.

Client No: 679 Date: 08-06-90
Client Name: Gettler-Ryan Inc.
NET Log No: 3103 Page: 4

Ref: ARCO, 1260 Park St.,/Encinal, Job: 7920

			Descriptor, Lab No. and Results		
			AX2-4-6.0' 07-31-90 0945	AX2-5-6.0' 07-31-90 0949	
Parameter	Method	Reporting Limit	59108	59109	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)			--	--	
DILUTION FACTOR *	---		1	1	
DATE ANALYZED			07-31-90	07-31-90	
METHOD GC FID/5030			--	--	
as Gasoline		1	ND	ND	mg/Kg
METHOD 8020			--	--	
Benzene		5	ND	ND	ug/Kg
Ethylbenzene		5	ND	ND	ug/Kg
Toluene		5	ND	ND	ug/Kg
Xylenes		5	ND	ND	ug/Kg

Client No: 679 Date: 08-06-90
Client Name: Gettler-Ryan Inc.
NET Log No: 3103 Page: 5

Ref: ARCO, 1260 Park St.,/Encinal, Job: 7920

			Descriptor, Lab No. and Results		
			AX2-6-11' 07-31-90 0956	AX2-7-1 ' 07-31-90 1000	
Parameter	Method	Reporting Limit	59110	59111	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)	----		--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED	----		07-31-90	07-31-90	
METHOD GC FID/5030			--	--	
as Gasoline		1	ND	ND	mg/Kg
METHOD 8020			--	--	
Benzene		5	13	ND	ug/Kg
Ethylbenzene		5	11	ND	ug/Kg
Toluene		5	ND	ND	ug/Kg
Xylenes		5	ND	ND	ug/Kg

Client No: 679 Date: 08-06-90
Client Name: Gettler-Ryan Inc.
NET Log No: 3103 Page: 6

Ref: ARCO, 1260 Park St.,/Encinal, Job: 7920

			Descriptor, Lab No. and Results		
			AX2-5-11' 07-31-90 1005	AX2-3-11.5' 07-31-90 1013	
Parameter	Method	Reporting Limit	59112	59113	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			07-31-90	07-31-90	
METHOD GC FID/5030			--	--	
as Gasoline		1	ND	ND	mg/Kg
METHOD 8020			--	--	
Benzene		5	ND	ND	ug/Kg
Ethylbenzene		5	ND	ND	ug/Kg
Toluene		5	ND	ND	ug/Kg
Xylenes		5	ND	ND	ug/Kg

Client No: 679 Date: 08-06-90
Client Name: Gettler-Ryan Inc.
NET Log No: 3103 Page: 7

Ref: ARCO, 1260 Park St.,/Encinal, Job: 7920

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results AX2-4-11' 07-31-90 1017 59114	Units
PETROLEUM HYDROCARBONS			--	
VOLATILE (SOIL)			--	
DILUTION FACTOR *			1	
DATE ANALYZED			07-31-90	
METHOD GC FID/5030			--	
as Gasoline		1	ND	mg/Kg
METHOD 8020			--	
Benzene		5	ND	ug/Kg
Ethylbenzene		5	ND	ug/Kg
Toluene		5	ND	ug/Kg
Xylenes		5	ND	ug/Kg

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following, which supercedes the listed reporting limit.
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

* Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated reporting limits by the dilution factor.

Geltler - Ryan Inc. ENVIRONMENTAL DIVISION 0657 **Chain of Custody**

COMPANY ARCC JOB NO. 7920

JOB LOCATION 1266 PARK ST / ENCINAL (3103)

CITY ALAMEDA PHONE NO.

AUTHORIZED JOHN WERFAL DATE 7/31/90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AXZ-1-6.0	1	SOIL	7/31/90 9:21	TPH-GAS, BTEX	
AXZ-1-12.0	1	↓	↓ 9:28	↓	
AXZ-2-11.0	1		9:35		
AXZ-3-6.0	1		9:43		
AXZ-4-6.0	1		9:45		
AXZ-5-6.0	1		9:49		
AXZ-6-11	1		9:56		
AXZ-7-11	1		10:00		
AXZ-5-11	1		10:05		
AXZ-3-11.5	1		10:13		
AXZ-4-11	1		10:17		

RELINQUISHED BY: Robert C. Mallory 7/31/90 16:35

RECEIVED BY: John C. [illegible] 7/31/90 [illegible]

RELINQUISHED BY:

RECEIVED BY: K[illegible] 8/2/90 0800

RELINQUISHED BY:

RECEIVED BY LAB:

DESIGNATED LABORATORY: DHS #:

REMARKS:

DATE COMPLETED FOREMAN

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Date: 08/21/90

Gettler-Ryan
2150 West Winton
Hayward, CA 94545
John Werfal

Work Order: TO-08-195 P.O. Number: 7920

This is the Certificate of Analysis for the following samples:

Client Work ID: GR7920, Arco #2112
Date Received: 08/17/90
Number of Samples: 4
Sample Type: solid

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Suzanne Veaudry
Project Manager

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/21/90
Client Work ID: GR7920, Arco #2112

Work Order: TO-08-195

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-1
SAMPLE DATE: 08/17/90
LAB SAMPLE ID: T008195-01
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/17/90	08/20/90
Low Boiling Hydrocarbons	Mod.8015	08/17/90	08/20/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	80.	2,000.
BTEX		
Benzene	0.8	None
Toluene	0.8	23.
Ethylbenzene	0.8	28.
Xylenes (total)	0.8	210.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/21/90
Client Work ID: GR7920, Arco #2112

Work Order: TO-08-195

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-2
SAMPLE DATE: 08/17/90
LAB SAMPLE ID: TO08195-02
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/17/90	08/20/90
Low Boiling Hydrocarbons	Mod.8015	08/17/90	08/20/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.0	6.7
BTEX		
Benzene	0.005	0.023
Toluene	0.005	0.088
Ethylbenzene	0.005	0.11
Xylenes (total)	0.005	0.84

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/21/90
Client Work ID: GR7920, Arco #2112

Work Order: TO-08-195

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-3
SAMPLE DATE: 08/17/90
LAB SAMPLE ID: TO08195-03
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/17/90	08/20/90
Low Boiling Hydrocarbons	Mod.8015	08/17/90	08/20/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.	None
BTEX		
Benzene	0.005	None
Toluene	0.005	None
Ethylbenzene	0.005	None
Xylenes (total)	0.005	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Geitler-Ryan
Date: 08/21/90
Client Work ID: GR7920, Arco #2112

Work Order: TO-08-195

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-4
SAMPLE DATE: 08/17/90
LAB SAMPLE ID: TO08195-04
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX.	8020	08/17/90	08/20/90
Low Boiling Hydrocarbons	Mod.8015	08/17/90	08/20/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.0	5.8
BTEX		
Benzene	0.005	0.034
Toluene	0.005	0.12
Ethylbenzene	0.005	0.057
Xylenes (total)	0.005	0.52

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/21/90
Client Work ID: GR7920, Arco #2112

Work Order: TO-08-195

TEST CODE TPHVB TEST NAME TPH Gas,BTEX by 8015/8020

The method of analysis for low boiling hydrocarbons is taken from E.P.A. Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatograhy using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethylbenzene and xylenes.

TO-08-195

Gettler - Ryan Inc. — ENVIRONMENTAL DIVISION — Chain of Custod

COMPANY ARCO #2112 JOB NO 7920

JOB LOCATION 1260 Park St

CITY Alameda PHONE NO.

AUTHORIZED John Werfal DATE 8-17-90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AT-1	1	Soil	8-17-90	Gas, BTEX	Cool
AT-2	1	"	"	"	"
AT-3	1	"	"	"	"
AT-4	1	"	"	"	"

RELINQUISHED BY: Matt Janowiak 2:55 P.M 8-17-90 RECEIVED BY:

RELINQUISHED BY: RECEIVED BY:

RELINQUISHED BY: RECEIVED BY LAB: 8/17/90 1455

DESIGNATED LABORATORY: I-T San Jose DHS #: 137

REMARKS: 48 hour TAT

DATE COMPLETED 8-17-90 FOREMAN Matt Janowiak

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Date: 08/17/90

Gettler-Ryan
2150 West Winton
Hayward, CA 94545
John Werfal

Work Order: TO-08-155 P.O. Number: 7920

This is the Certificate of Analysis for the following samples:

Client Work ID: GR7920, Arco
Date Received: 08/15/90
Number of Samples: 2
Sample Type: solid

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Suzanne Veaudry
Project Manager

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/17/90
Client Work ID: GR7920, Arco

Work Order: TO-08-155

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-7-2'
SAMPLE DATE: 08/08/90
LAB SAMPLE ID: T008155-01
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/15/90	08/16/90
Low Boiling Hydrocarbons	Mod.8015	08/15/90	08/16/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.3	2.0
BTEX		
Benzene	0.003	0.008
Toluene	0.003	0.017
Ethylbenzene	0.003	0.008
Xylenes (total)	0.003	0.061

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/17/90
Client Work ID: GR7920, Arco

Work Order: TO-08-155

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-8-2.5'
SAMPLE DATE: 08/08/90
LAB SAMPLE ID: TO08155-02
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/15/90	08/16/90
Low Boiling Hydrocarbons	Mod.8015	08/15/90	08/16/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.4	14.
BTEX		
Benzene	0.004	0.11
Toluene	0.004	0.15
Ethylbenzene	0.004	0.28
Xylenes (total)	0.004	1.6

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/17/90
Client Work ID: GR7920, Arco

Work Order: TO-08-155

TEST CODE TPHVB TEST NAME TPH Gas,BTEX by 8015/8020

The method of analysis for low boiling hydrocarbons is taken from E.P.A. Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatograhy using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethylbenzene and xylenes.

Gettler - Ryan Inc. TO-08-154 0626 Chain of Custody

ENVIRONMENTAL DIVISION

COMPANY ARCO TO-08-155 JOB NO. 7920

JOB LOCATION 1260 PARK ST. / ENCINAL

CITY ALAMEDA PHONE NO.

AUTHORIZED JOHN WERFAL DATE 8/14/90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AX1-3-10'	1	SOIL	8/9/90 8:25	TPH-GAS, BTEX	Cool
AX1-2-10'	1		8/10/90 12:30		
AX1-1-10'	1		12:32		
AX1-7-10'	1		14:50		
AX1-6-10'	1		15:45		
AX1-10-10'	1		17:30		
AX1-9-10'	1		17:35		
AX1-8-10'	1		17:40		
AT-7-2'	1	SOIL	8/8/90 10:49		
AT-8-2.5'	1		10:59		

RELINQUISHED BY: Robert C. Mallory 8-15-90

RECEIVED BY: 8-15-90 a7:30

RELINQUISHED BY: 8-15-90 11:30

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY LAB: 8-15-90 1155

DESIGNATED LABORATORY: ZT/SCF DHS #: 137

REMARKS:

AX1 5-Day TAT

AT 48-72hr TAT

DATE COMPLETED FOREMAN

SUPERIOR ANALYTICAL LABORATORIES, INC.

825 ARNOLD, STE. 114 • MARTINEZ, CALIFORNIA 94553 • (415) 229-1512

DOHS #319
DOHS #220

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 81400
CLIENT: Gettler Ryan Co.
CLIENT JOB NO.: 7920

DATE RECEIVED: 08/16/90
DATE REPORTED: 08/22/90

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range
1	AT-10-2.5	ND<1
2	AT-11-2.5	ND<1
3	AT-12-2.5	ND<1
4	AT-13-2.5	ND<1
5	AT-14-2.5	250

mg/kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 1 mg/Kg

Date Sampled: 08/15/90 Date Analyzed: 08/17/90

QAQC Summary:

Daily Standard run at 2mg/L: RPD Gasoline = 14%
MS/MSD Average Recovery = 89%: Duplicate RPD = 0%

Richard Srna, Ph.D.

Dorena Srna for

Laboratory Manager

SUPERIOR ANALYTICAL LABORATORIES, INC.

825 ARNOLD, STE. 114 • MARTINEZ, CALIFORNIA 94553 • (415) 229-1512

DOHS #319
DOHS #220

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 81400
CLIENT: Gettler Ryan Co.
CLIENT JOB NO.: 7920

DATE RECEIVED: 08/16/90
DATE REPORTED: 08/22/90

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration(ug/Kg) Benzene	Toluene	Ethyl Benzene	Xylenes
1	AT-10-2.5	ND<3	ND<3	ND<3	ND<3
2	AT-11-2.5	ND<3	ND<3	ND<3	ND<3
3	AT-12-2.5	ND<3	ND<3	ND<3	ND<3
4	AT-13-2.5	ND<3	ND<3	ND<3	ND<3
5	AT-14-2.5	19	32	110	3000

ug/Kg - parts per billion (ppb)

Method Detection Limit in Soil: 3 ug/Kg

Date Sampled: 08/15/90 Date Analyzed: 08/17/90

QAQC Summary:

Daily Standard run at 20ug/L: RPD = <15%
MS/MSD Average Recovery = 104 %: Duplicate RPD = <7%

Richard Srna, Ph.D.

Dorena Srna for
Laboratory Manager

Cattlor - Ryan Inc. ENVIRONMENTAL DIVISION 0698 Chain of Custody

COMPANY ARCO JOB NO. 7920

JOB LOCATION 1260 PARK ST. / ENCINAL

CITY ALAMEDA PHONE NO.

AUTHORIZED JOHN WERFAL DATE 8/15/90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE COND'TION LAB ID
AT-10-2.5	1	SOIL	8/15/90 8:59	TPH-GAS, BTEX	
AT-11-2.5	1		9:12		
AT-12-2.5	1		9:17		
AT-13-2.5	1		9:24		
AT-14-2.5	1		9:27		

RELINQUISHED BY: Robert F. Mallory 14:35 8/15/90

RECEIVED BY: Yanke Stewart Express SJ-IT 1435 8/15/90

RELINQUISHED BY: Yanke Stewart Express SJ-IT 16:12 8/15/90

RECEIVED BY: 8/15/90 1635

RELINQUISHED BY:

RECEIVED BY LAB: Judith K Haines 8/16/90 1000

DESIGNATED LABORATORY: DHS #:

REMARKS: 5 - DAY TAT.

DATE COMPLETED FOREMAN

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Date: 08/27/90

Gettler-Ryan
2150 West Winton
Hayward, CA 94545
John Werfal

Work Order: TO-08-262 P.O. Number: 7920

This is the Certificate of Analysis for the following samples:

Client Work ID: GR7920, ARCO
Date Received: 08/24/90
Number of Samples: 2
Sample Type: solid

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Suzanne Veaudry
Project Manager

Company: Gettler-Ryan
Date: 08/27/90
Client Work ID: GR7920, ARCO

IT ANALYTICAL SERVICES
SAN JOSE, CA

Work Order: TO-08-262

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-30-5'
SAMPLE DATE: 08/23/90
LAB SAMPLE ID: TO08262-01
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/24/90	08/24/90
Low Boiling Hydrocarbons	Mod.8015	08/24/90	08/24/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.0	None
BTEX		
Benzene	0.005	None
Toluene	0.005	None
Ethylbenzene	0.005	None
Xylenes (total)	0.005	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/27/90
Client Work ID: GR7920, ARCO

Work Order: TO-08-262

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-14-7'
SAMPLE DATE: 08/23/90
LAB SAMPLE ID: T008262-02
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/24/90	08/24/90
Low Boiling Hydrocarbons	Mod.8015	08/24/90	08/24/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.0	1.9
BTEX		
Benzene	0.005	0.025
Toluene	0.005	0.034
Ethylbenzene	0.005	0.026
Xylenes (total)	0.005	0.25

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/27/90
Client Work ID: GR7920, ARCO

Work Order: TO-08-262

TEST CODE TPHVB TEST NAME TPH Gas,BTEX by 8015/8020

The method of analysis for low boiling hydrocarbons is taken from E.P.A. Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatograhy using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethylbenzene and xylenes.

Results for organic chemical parameters in soils have been corrected for moisture content and are reported on a dry soil basis unless noted otherwise. Results for inorganic chemical parameters have not been corrected for moisture content.

~~10-08-262~~ 10-08-26

Getler - Ryan Inc. ENVIRONMENTAL DIVISION — 0699 Chain of Custody

COMPANY Nilco — JOB NO 1520

JOB LOCATION 1260 PARK ST. / ENCINAL

CITY ALAMEDA — PHONE NO.

AUTHORIZED JOHN WEIRFALL — DATE 8/20/90 — P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AT-17-8.5'	1	SOIL	8/20/90 11:40	TTN-GAS, BTEX	Cool
AT-10-9.5'	1		8/20/90 12:00		
AT-9-9.5'	1		8/20/90 12:10		
AT-24-5'	1		8/22/90 15:08		
AT-25-5'	1		8/22/90 15:19		
AT-26-5'	1		8/22/90 15:45		
AT-27-5'	1		8/22/90 16:12		
AT-28-5'	1		8/23/90 10:14		
AT-29-5'	1		8/23/90 10:30		
AT-31-5'	1		8/23/90 14:32		
AT 30-5'	1		8/23/90 14:28		
AT 14-7'	1		8/23/90 15:32		

RELINQUISHED BY: Robert C. Mallory 8-24-90 9:05

RECEIVED BY: John D. Zwerneff

RELINQUISHED BY: John D Zwerneff

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY LAB: Samantha 8/24/90 9:05

DESIGNATED LABORATORY: KT SAN JOSE — DHS #:

REMARKS: * 24 HOUR TAT FOR SAMPLES AT-30-5' AND AT-14-7'. 72 HOUR TAT FOR REMAINDER OF SAMPLES. CALL JOHN WEIRFALL W/ VERBAL RESULTS ASAP.

DATE COMPLETED — FOREMAN

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Date: 08/30/90

Gettler-Ryan
2150 West Winton
Hayward, CA 94545
John Werfal

Work Order: TO-08-261 P.O. Number: 7920

This is the Certificate of Analysis for the following samples:

Client Work ID: GR7920, ARCO
Date Received: 08/24/90
Number of Samples: 10
Sample Type: solid

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Suzanne Veaudry
Project Manager

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/30/90
Client Work ID: GR7920, ARCO

Work Order: TO-08-261

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-17-8.5'
SAMPLE DATE: 08/20/90
LAB SAMPLE ID: T008261-01
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/24/90	08/28/90
Low Boiling Hydrocarbons	Mod.8015	08/24/90	08/28/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	200.	5800.
BTEX		
Benzene	2.	51.
Toluene	2.	330.
Ethylbenzene	2.	100.
Xylenes (total)	2.	560.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/30/90
Client Work ID: GR7920, ARCO

Work Order: TO-08-261

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-10-9.5'
SAMPLE DATE: 08/20/90
LAB SAMPLE ID: T008261-02
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/24/90	08/28/90
Low Boiling Hydrocarbons	Mod.8015	08/24/90	08/28/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.	None
BTEX		
Benzene	0.005	None
Toluene	0.005	None
Ethylbenzene	0.005	0.008
Xylenes (total)	0.005	0.014

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/30/90
Client Work ID: GR7920, ARCO

Work Order: TO-08-261

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-9-9.5'
SAMPLE DATE: 08/20/90
LAB SAMPLE ID: T008261-03
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/24/90	08/29/90
Low Boiling Hydrocarbons	Mod.8015	08/24/90	08/29/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.	None
BTEX		
Benzene	0.01	None
Toluene	0.01	None
Ethylbenzene	0.01	None
Xylenes (total)	0.01	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/30/90
Client Work ID: GR7920, ARCO

Work Order: TO-08-261

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-24-5'
SAMPLE DATE: 08/22/90
LAB SAMPLE ID: T008261-04
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/24/90	08/29/90
Low Boiling Hydrocarbons	Mod.8015	08/24/90	08/29/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.	None
BTEX		
Benzene	0.005	None
Toluene	0.005	None
Ethylbenzene	0.005	None
Xylenes (total)	0.005	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/30/90
Client Work ID: GR7920, ARC

Work Order: TO-08-261

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-25-5'
SAMPLE DATE: 08/22/90
LAB SAMPLE ID: TO0826l-05
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/24/90	08/28/90
Low Boiling Hydrocarbons	Mod.8015	08/24/90	08/28/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.	None
BTEX		
Benzene	0.008	None
Toluene	0.008	None
Ethylbenzene	0.008	None
Xylenes (total)	0.008	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/30/90
Client Work ID: GR7920, ARCO

Work Order: TO-08-261

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-26-5'
SAMPLE DATE: 08/22/90
LAB SAMPLE ID: T008261-06
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/24/90	08/28/90
Low Boiling Hydrocarbons	Mod.8015	08/24/90	08/28/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	100.	890.
BTEX		
Benzene	1.	None
Toluene	1.	1.6
Ethylbenzene	1.	2.5
Xylenes (total)	1.	38.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/30/90
Client Work ID: GR7920, ARCO

Work Order: TO-08-261

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-27-5'
SAMPLE DATE: 08/22/90
LAB SAMPLE ID: T008261-07
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/24/90	08/28/90
Low Boiling Hydrocarbons	Mod.8015	08/24/90	08/28/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.	None
BTEX		
Benzene	0.005	None
Toluene	0.005	None
Ethylbenzene	0.005	None
Xylenes (total)	0.005	0.006

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/30/90
Client Work ID: GR7920, ARCO

Work Order: TO-08-261

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-28-5'
SAMPLE DATE: 08/23/90
LAB SAMPLE ID: T008261-08
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/24/90	08/28/90
Low Boiling Hydrocarbons	Mod.8015	08/24/90	08/28/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	200.	4600.
BTEX		
Benzene	2.	None
Toluene	2.	46.
Ethylbenzene	2.	56.
Xylenes (total)	2.	460.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/30/90
Client Work ID: GR7920, ARCO

Work Order: TC-08-261

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-29-5'
SAMPLE DATE: 0[illegible]/23/90
LAB SAMPLE ID: T008261-09
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/24/90	08/29/90
Low Boiling Hydrocarbons	Mod.8015	08/24/90	08/29/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.	None
BTEX		
Benzene	0.005	None
Toluene	0.005	None
Ethylbenzene	0.005	None
Xylenes (total)	0.005	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/30/90
Client Work ID: GR7920, ARCO

Work Order: TO-08-261

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-31-5'
SAMPLE DATE: 08/23/90
LAB SAMPLE ID: T008261-10
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/24/90	08/29/90
Low Boiling Hydrocarbons	Mod.8015	08/24/90	08/29/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.	None
BTEX		
Benzene	0.005	None
Toluene	0.005	None
Ethylbenzene	0.005	None
Xylenes (total)	0.005	0.007

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/30/90
Client Work ID: GR7920, ARCO

Work Order: TG-08-261

TEST CODE TPHVB TEST NAME TPH Gas,BTEX by 8015/8020

The method of analysis for low boiling hydrocarbons is taken from E.P.A. Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatograhy using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethylbenzene and xylenes.

Results for organic chemical parameters in soils have been corrected for moisture content and are reported on a dry soil basis unless noted otherwise.

Gettler - Ryan Inc. ~~TO-CS-24~~ TO-CS-24 ENVIRONMENTAL DIVISION 0699 Chain of Custod

COMPANY ARCO JOB NO 7970

JOB LOCATION 1260 PARK ST. / ENCINAL

CITY ALAMEDA PHONE NO.

AUTHORIZED JOHN WERFAL DATE 8/20/90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AT-17-8.5'	1	SOIL	8/20/90 11:40	TTN-GOS, BTEX	Cool
AT-10-9.5'	1		8/20/90 12:00		
AT-9-9.5'	1		8/20/90 12:10		
AT-24-5'	1		8/22/90 15:08		
AT-25-5'	1		8/22/90 15:19		
AT-26-5'	1		8/22/90 15:45		
AT-27-5'	1		8/22/90 16:12		
AT-28-5'	1		8/23/90 10:14		
AT-29-5'	1		8/23/90 10:30		
AT-31-5'	1		8/23/90 14:32		
AT 30-5'	1		8/23/90 14:28		
*AT 14-7'	1		8/23/90 15:32		

RELINQUISHED BY: Robert C. Mallory 8-24-90 9:05

RECEIVED BY: John D. Zwerneff

RELINQUISHED BY: John D. Zwerneff

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY LAB: Eleanor 8/24/90 9:05

DESIGNATED LABORATORY: KT SAN JOSE DHS #:

REMARKS: * 24 HOUR TAT FOR SAMPLES AT-30-5' AND AT-14-7'. 72 HOUR TAT FOR REMAINDER OF SAMPLES. CALL JOHN WERFAL W/ VERBAL RESULTS ASAP.

DATE COMPLETED FOREMAN

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Date: 08/28/90

Gettler-Ryan
2150 West Winton
Hayward, CA 94545
John Werfal

Work Order: TO-08-276 P.O. Number: 7920

This is the Certificate of Analysis for the following samples:

Client Work ID: -GR7920, Arco
Date Received: 08/24/90
Number of Samples: 2
Sample Type: solid

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Suzanne Veaudry
Project Manager

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/28/90
Client Work ID: GR7920, Arco

Work Order: TO-08-276

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-32-5'
SAMPLE DATE: 08/24/90
LAB SAMPLE ID: T008276-01
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/27/90	08/28/90
Low Boiling Hydrocarbons	Mod.8015	08/27/90	08/28/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.	None
BTEX		
Benzene	0.005	None
Toluene	0.005	None
Ethylbenzene	0.005	None
Xylenes (total)	0.005	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/28/90
Client Work ID: GR7920, Arco

Work Order: TO-08-276

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-33-5'
SAMPLE DATE: 08/24/90
LAB SAMPLE ID: TO08276-02
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per ~~Kilo~~gram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/27/90	08/28/90
Low Boiling Hydrocarbons	Mod.8015	08/27/90	08/28/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.	None
BTEX		
Benzene	0.005	None
Toluene	0.005	0.008
Ethylbenzene	0.005	None
Xylenes (total)	0.005	0.009

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/28/90
Client Work ID: GR7920, Arco

Work Order: TO-08-27(

TEST CODE TPHVB TEST NAME TPH Gas,BTEX by 8015/8020

The method of analysis for low boiling hydrocarbons is taken from E.P.A. Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatograhy using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethylbenzene and xylenes.

Results for organic chemical parameters in soils have been corrected for moisture content and are reported on a dry soil basis unless noted otherwise. Results for inorganic chemical parameters have not been corrected for moisture content.

Getler - Ryan Inc. — TC-08-27 — ENVIRONMENTAL DIVISION — 0654 Chain of Custody

COMPANY FCO JOB NO. 7920

JOB LOCATION 1260 PARK ST / ENCINAL

CITY ALAMEDA PHONE NO.

AUTHORIZED JOHN WERFAL DATE 8/24/90 P.O. NO. 3

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AT-32-5'	1	SOIL	8/24/90 11:42	TPH-GAS, BTEX	Cool/Ice
AT-33-5'	1	↓	↓ 12:02	↓	1

RELINQUISHED BY: Robert C. Mallory

RECEIVED BY: 8-24-90 15:30

RELINQUISHED BY: 8-24-90 16:45

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY LAB: 8/24/90 1645

DESIGNATED LABORATORY: IT/SCX DHS #: 13

REMARKS: 48 HR. T.A.T. CONTACT JOHN WERFAL WITH VERBAL RESULTS.

DATE COMPLETED FOREMAN

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Date: 08/23/90

Gettler-Ryan
2150 West Winton
Hayward, CA 94545
John Werfal

Work Order: TO-08-196 P.O. Number: 7920

This is the Certificate of Analysis for the following samples:

Client Work ID: GR7920, Arco #2112
Date Received: 08/17/90
Number of Samples: 8; 2 Composites of 4 ea.
Sample Type: solid

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Suzanne Veaudry
Project Manager

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/23/90
Client Work ID: GR7920, Arco #2112

Work Order: TO-08-196

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: COMPOSITE AS-1
SAMPLE DATE: 08/17/90
LAB SAMPLE ID: T008196-01, -02, -03, -04 [Composite]
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/17/90	08/20/90
Low Boiling Hydrocarbons	Mod.8015	08/17/90	08/21/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	2.0	19.
BTEX		
Benzene	0.005	None
Toluene	0.005	0.009
Ethylbenzene	0.005	0.026
Xylenes (total)	0.005	0.16

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/23/90
Client Work ID: GR7920, Arco #2112

Work Order: TO-08-196

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: COMPOSITE AS-2
SAMPLE DATE: 08/17/90
LAB SAMPLE ID: TO08196-05, -06, -07, -08 [Composite]
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/17/90	08/20/90
Low Boiling Hydrocarbons	Mod.8015	08/17/90	08/20/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.0	6.4
BTEX		
Benzene	0.005	None
Toluene	0.005	0.008
Ethylbenzene	0.005	0.006
Xylenes (total)	0.005	0.038

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/23/90
Client Work ID: GR7920, Arco #2112

Work Order: TO-08-196

TEST CODE TPHVB TEST NAME TPH Gas,BTEX by 8015/8020

The method of analysis for low boiling hydrocarbons is taken from E.P.A. Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatograhy using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethylbenzene and xylenes.

Gettler - Ryan Inc. ENVIRONMENTAL DIVISION

Chain of Custody

COMPANY ARCO #[illegible] JOB NO. 7920

JOB LOCATION 1260 Park St

CITY Alameda PHONE NO.

AUTHORIZED John Werfel DATE 9-17-90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AS-1a	1	Soil	9-17-90	Gas, BTEX	[illegible]
AS-1b	1	|	|	|	(
AS-1c	1	|	|	|	(
AS-1d	1	|	|	|	(
	composite and analyze as one				
AS-2a	1	Soil	9-17-90	Gas, BTEX	[illegible]
AS-2b	1	|	|	|	(
AS-2c	1	|	|	|	(
AS-2d	1	|	|	|	(
	composite and analyze as one				

RELINQUISHED BY: Matt [illegible] 9-17-90 2:55 P.M. RECEIVED BY:

RELINQUISHED BY: RECEIVED BY:

RELINQUISHED BY: RECEIVED BY LAB: [illegible] 9/17/90 1900

DESIGNATED LABORATORY: IT San Jose DHS #: 137

REMARKS: 72 hour TAT

DATE COMPLETED 9-17-90 FOREMAN Matt [illegible]

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 Burke Unit • San Francisco, CA 94124 • Phone (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 12814
CLIENT: Getzler Ryan Consultants
CLIENT JOB NO.: 7820

DATE RECEIVED: 07/21/90
DATE REPORTED: 08/03/90

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW 8,6 Method 5030 and 8015

LAB #	Sample Identification	Concentration (mg/kg) Gasoline Range
1	AS-7A,B,C,D	2
2	AS-8A,B,C,D	6
3	AS-9A,B,C,D	2
4	AS-10A,B,C,D	1
5	AS-11A,B,C,D	4
6	AS-12A,B,C,D	3
7	AS-13A,B,C,D	1
8	AS-14A,B,C,D	13
9	AS-15A,B,C,D	273
10	AS-16A,B,C,D	301
11	AS-17A,B,C,D	4
12	AS-18A,B,C,D	2
13	AS-19A,B,C,D	ND<1
14	AS-20A,B,C,D	3
15	AS-21A,B,C,D	ND<1
16	AS-22A,B,C,D	5500
17	AS-23A,B,C,D	5800
18	AS-24A,B,C,D	2300
19	AS-25A,B,C,D	2000
20	AS-26A,B,C,D	870
21	AS-27A,B,C,D	1800

mg/kg - parts per million (ppm)
Minimum Detection Limit for Gasoline in Soil: 1mg/kg

QAQC Summary:
Daily Standard run at 2mg/L: RPD Gasoline = <15%
MS/MSD Average Recovery = 96%; Duplicate RPD = <1%

Richard Srna, Ph.D.

Cecilia G. Gaquin (for)
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY INC

1555 B[illegible] Unit [illegible] S[illegible] Francisco, C[illegible] 94124 · Phone (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 5332[illegible]
CLIENT: Gettler Ryan Consultants
CLIENT JOB NO.: 7920

DATE RECEIVED: [illegible]
DATE REPORTED: 08/0[illegible]/9[illegible]

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration(ug/kg) Benzene	Toluene	Ethyl Benzene	Xylenes
1	AS-7A,B,C,D	ND<3	14	13	120
2	AS-8A,B,C,D	ND<3	35	33	280
3	AS-9A,B,C,D	ND<3	8	7	75
4	AS-10A,B,C,D	ND<3	5	6	64
5	AS-11A,B,C,D	ND<3	13	15	130
6	AS-12A,B,C,D	ND<3	ND<3	ND<3	16
7	AS-13A,B,C,D	ND<3	ND<3	ND<3	5
8	AS-14A,B,C,D	ND<3	42	36	280
9	AS-15A,B,C,D	ND<150	270	730	6100
10	AS-16A,B,C,D	ND<150	980	1600	9900
11	AS-17A,B,C,D	ND<3	18	13	84
12	AS-18A,B,C,D	ND<3	4	5	36
13	AS-19A,B,C,D	ND<3	ND<3	ND<3	ND<3
14	AS-20A,B,C,D	ND<3	ND<3	ND<3	10
15	AS-21A,B,C,D	ND<3	ND<3	ND<3	7
16	AS-22A,B,C,D	ND<300	62000	48000	480000
17	AS-23A,B,C,D	ND<300	78000	55000	580000
18	AS-24A,B,C,D	ND<300	1500	1100	170000
19	AS-25A,B,C,D	ND<300	ND<300	390	93000
20	AS-26A,B,C,D	ND<300	390	ND<300	42000
21	AS-27A,B,C,D	ND<300	ND<300	ND<300	59000

ug/kg - parts per billion (ppb)

Minimum Detection Limit in Soil: 3.0ug/kg
Higher detection limit due to high hydrocarbon background.

QAQC Summary:
Daily Standard run at 20ug/L: RPD = <15%
MS/MSD Average Recovery = 100% : Duplicate RPD = <6%

Richard Srna, Ph.D.

Cecilia G Joaquin (for)

Laboratory Director

Gettler - Ryan Inc. ENVIRONMENTAL DIVISION 0647 Chain of Custody

COMPANY ARCO JOB NO. 7920

JOB LOCATION 1260 PARK / ENCINAL

CITY ALAMEDA PHONE NO.

AUTHORIZED JOHN WERFAL DATE 7/31/90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AS-7A	1	SOIL	7/31/90 11:01		
AS-7B	1	↓	↓ 11:02	COMPOSITE	
AS-7C	1	↓	↓ 11:05	TPH-GAS (8015)	
AS-7D	1	↓	↓ 11:06	BTEX (8020	
AS-8A	1	SOIL	7/31/90 11:20		
AS-8B	1	↓	↓ 11:21		
AS-8C	1	↓	↓ 11:24	" "	
AS-8D	1	↓	↓ 11:25		
AS-9A	1	SOIL	7/31/90 11:28		
AS-9B	1	↓	↓ 11:29		
AS-9C	1	↓	↓ 11:32	" "	
AS-9D	1	↓	↓ 11:33		

RELINQUISHED BY: Robert Malloy 7/31/90 16:41

RECEIVED BY: 7-31-90 Stacy Mainiller EXPRESSIT 4036 1641

RELINQUISHED BY:

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY LAB:

DESIGNATED LABORATORY: DHS #:

REMARKS: 24HR TAT

DATE COMPLETED 7-31-90 FOREMAN [signature]

Gettler - Ryan Inc. ENVIRONMENTAL DIVISION 0648 Chain of Custody

COMPANY ARCO JOB NO. 7920

JOB LOCATION 1260 PARK / ENCINAL

CITY ALAMEDA PHONE NO.

AUTHORIZED JOHN WERFAL DATE 7-31-90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AS-10A	1	SOIL	7/31/90 1140		
10B	1	↓	1141	COMPOSITE	
10C	1	↓	1144	TPH-GAS (8015)	
10D	1	↓	1146	BTEX (8020)	
AS-11A	1	SOIL	7/31/90 1152	ORGANIC	
11B	1	↓	1153	LEAD	
11C	1	↓	1157	"	
11D	1	↓	1158		
AS-12A	1	SOIL	7/31/90 1305		
12B	1	↓	1306		
12C	1	↓	1319	" "	
12D	1	↓	1321		

RELINQUISHED BY: Robert C. Mallory 7/31/90 16:41

RECEIVED BY: 7-31-90 EXPRESS Tracy McAlister X636 1641

RELINQUISHED BY:

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY LAB:

DESIGNATED LABORATORY: DHS #:

REMARKS: 24HR TAT

ANALYZE AS-11 ALSO FOR ORGANIC LEAD

DATE COMPLETED 7-31-90 FOREMAN [signature]

Gettler - Ryan Inc. ENVIRONMENTAL DIVISION 0649 Chain of Custody

COMPANY ARCO JOB NO. 7920

JOB LOCATION 1260 PARK/ENCINAL

CITY ALAMEDA PHONE NO.

AUTHORIZED JOHN WERFAL DATE 7-31-90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AS-13A	1	SOIL	7/31/90 1327	COMPOSITE	
AS-13B	1	↓	1329	TPH-GAS (8015)	
AS-13C	1	↓	1332	BTEX (8020)	
AS-13D	1	↓	1334		
AS-14A	1	SOIL	7/31/90 1337		
AS-14B	1	↓	1338	" "	
AS-14C	1	↓	1340		
AS-14D	1	↓	1341		
AS-15A	1	SOIL	7/31/90 1353		
AS-15B	1	↓	1354	" "	
AS-15C	1	↓	1359		
AS-15D	1	↓	1400		

RELINQUISHED BY: Robert C. Mulloy 7/31/90 10:41

RECEIVED BY: 7-31-90 [signature] 1641 EXPRESS 634

RELINQUISHED BY:

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY LAB:

DESIGNATED LABORATORY: DHS #:

REMARKS: 24 HR TAT

DATE COMPLETED 7/31/90 FOREMAN [signature]

Gettler - Ryan Inc. ENVIRONMENTAL DIVISION

0650 Chain of Custody

COMPANY ARCO

JOB NO. 7920

JOB LOCATION 1260 PARK/ENCINAL

CITY ALAMEDA

PHONE NO.

AUTHORIZED JOHN WEREAL

DATE 7/31/90

P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AS-16A	1	SOIL	7/31/90 1403		
AS-16B	1	↓	↓ 1404	COMPOSITE	
AS-16C	1	↓	↓ 1408	TPH-GAS (8015)	
AS-16D	1	↓	↓ 1409	BTEX (8020)	
AS-17A	1	SOIL	7/31/90 1412		
AS-17B	1	↓	↓ 1413		
AS-17C	1	↓	↓ 1418	" "	
AS-17D	1	↓	↓ 1419		
AS-18A	1	SOIL	7/31/90 1424		
AS-18B	1	↓	↓ 1425		
AS-18C	1	↓	↓ 1428	" "	
AS-18D	1	↓	↓ 1429		

RELINQUISHED BY: Robert C. Malloy 16:41 7/31/90

RECEIVED BY: 7-31-90 [signature] EXPRESS-IT 634 16:41

RELINQUISHED BY:

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY LAB:

DESIGNATED LABORATORY:

DHS #:

REMARKS: 24 HR TAT

DATE COMPLETED 7/31/90

FOREMAN [signature]

Gettler - Ryan Inc. — ENVIRONMENTAL DIVISION — 0651 Chain of Custody

COMPANY ARCO — JOB NO. 7420

JOB LOCATION 1260 PARK/ENCINAL

CITY ALAMEDA — PHONE NO.

AUTHORIZED JOHN WERFAL — DATE 7/31/90 — P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AS-19A	1	SOIL	7/31/90 1439		
AS-19B	1		1440	COMPOSITE	
AS-19C	1		1442	TPH-GAS (8015)	
AS-19D	1	↓	1443	BTEX (8020)	
AS-20A	1	SOIL	7/31/90 1453		
AS-20B	1		1454		
AS-20C	1		1456	" "	
AS-20D	1	↓	1457		
AS-21A	1	SOIL	7/31/90 1500		
AS-21B	1		1501		
AS-21C	1		1503	" "	
AS-21D	1	↓	1504		

RELINQUISHED BY: Robert C. Mallory 7/31/90 16:41

RECEIVED BY: 7-31-90 Barry Miles EXPRESS IT 1636

RELINQUISHED BY:

RECEIVED BY: 1641

RELINQUISHED BY:

RECEIVED BY LAB:

DESIGNATED LABORATORY: DHS #:

REMARKS: 24 HR TAT

DATE COMPLETED 7/31/90 FOREMAN M. L. Wann

Gettler - Ryan Inc. — ENVIRONMENTAL DIVISION — 0652 Chain of Custody

COMPANY ARCO JOB NO. 7920

JOB LOCATION 1260 PARK/ENCINAL

CITY ALAMEDA PHONE NO.

AUTHORIZED JOHN W. DATE 7-31-90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AS-22A	1	SOIL	7/31/90 1514		
AS-22B	1		1515	COMPOSITE	
AS-22C	1		1518	TPH-GAS (8015)	
AS-22D	1		1519	BTEX (8020)	
AS-23A	1		1522		
AS-23B	1		1523	" "	
AS-23C	1		1527		
AS-23D	1		1528		
AS-24A	1		1535		
AS-24B	1		1536		
AS-24C	1		1543	" "	
AS-24D	1	↓	1542		

RELINQUISHED BY: Robert C. Mallory 7/31/90 16:41

RECEIVED BY: 7-31-90 EXPRESS IT

RELINQUISHED BY:

RECEIVED BY: Susan Mueller 6316 1641

RELINQUISHED BY:

RECEIVED BY LAB:

DESIGNATED LABORATORY: DHS #:

REMARKS: 24 HR TAT

DATE COMPLETED 7/31/90 FOREMAN

Gettler - Ryan Inc. — ENVIRONMENTAL DIVISION — 0653 Chain of Custody

COMPANY ARCO — JOB NO. 7920

JOB LOCATION 1260 PARK/ENCINAL

CITY ALAMEDA — PHONE NO.

AUTHORIZED JOHN W. — DATE 7-31-90 — P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AS-25A	1	SOIL	7/31/90 1547		
25B			1548	COMPOSITE	
25C			1550	TPH-GAS (8015)	
25D			1551	BTEX (8020)	
26A			15:54		
26B			15:55		
26C			1556	" "	
26D			1559		
27A			16:02		
27B			16:03	" "	
27C			16:08		
27D			16:09		

RELINQUISHED BY: Robert C. Miller 7/31/90 16:41 — RECEIVED BY: 7-31-90 Lacy Maddiller 1647 — EXPRESS I.T. X 636

RELINQUISHED BY: — RECEIVED BY:

RELINQUISHED BY: — RECEIVED BY LAB:

DESIGNATED LABORATORY: — DHS #:

REMARKS: 24 HR TAT

DATE COMPLETED 7/31/90 — FOREMAN M. Lamm

SUPERIOR ANALYTICAL LABORATORIES, INC.
825 ARNOLD, STE 114 • MARTINEZ, CALIFORNIA 94553 • (415) 229-1512
DOHS #319
DOHS #220

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 81380
CLIENT: Gettler Ryan Co.
CLIENT JOB NO.: 7920

DATE RECEIVED: 08/15/90
DATE REPORTED: 08/22/90

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range
1	AS-34A-D	620
2	AS-35A-D	900
3	AS-36A-D	680
4	AS-37A-D	590
5	AS-38A-D	280
6	AS-39A-D	230
7	AS-28A-D	860
8	AS-29A-D	900
9	AS-30A-D	260
10	AS-31A-D	550
11	AS-32A-D	460
12	AS-33A-D	1600

mg/Kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 1 mg/Kg

Date Sampled: 08/14/90 Date Analyzed: 08/21/90

QAQC Summary:

Daily Standard run at 2mg/L: RPD Gasoline = 11%
MS/MSD Average Recovery = 93%: Duplicate RPD = 8%

Richard Srna, Ph.D.

Laboratory Manager

SUPERIOR ANALYTICAL LABORATORIES, INC.
825 ARNOLD, STE. 114 • MARTINEZ, CALIFORNIA 94553 • (415) 229-1512
DOHS #319
DOHS #220

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 81380
CLIENT: Gettler Ryan Co.
CLIENT JOB NO.: 7920

DATE RECEIVED: 08/15/90
DATE REPORTED: 08/22/90

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration(ug/Kg) Benzene	Toluene	Ethyl Benzene	Xylenes
1	AS-34A-D	370	850	440	48000
2	AS-35A-D	200	870	530	63000
3	AS-36A-D	540	5400	2600	50000
4	AS-37A-D	ND<150	2400	890	43000
5	AS-38A-D	ND<150	330	200	19000
6	AS-39A-D	ND<150	ND<150	210	14000
7	AS-28A-D	ND<150	800	690	56000
8	AS-29A-D	ND<150	1000	720	66000
9	AS-30A-D	ND<150	ND<150	250	9600
10	AS-31A-D	ND<150	250	410	24000
11	AS-32A-D	ND<150	590	620	29000
12	AS-33A-D	1600	2900	2800	110000

ug/Kg - parts per billion (ppb)

Method Detection Limit in Soil: 3 ug/Kg

Date Sampled: 08/14/90 Date Analyzed: 08/21/90

QAQC Summary:

Daily Standard run at 20ug/L: RPD = <15%
MS/MSD Average Recovery = 98 %: Duplicate RPD = <14%

Richard Srna, Ph.D.

Dorena Srna for
Laboratory Manager

Geffler - Ryan Inc. — 81380 pg 3 of 4

ENVIRONMENTAL DIVISION

0651 Chain of Custoc

COMPANY ARCO JOB NO. 7920

JOB LOCATION 1260 PARK ST. / ENCINAL

CITY ALAMEDA PHONE NO.

AUTHORIZED JOHN WERFAL DATE 8/14/90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AS-29A	1	SOIL	8/14/90 10:11		
AS-28B	1		10:15	TPH-GAS, BTEX (COMPOSITE)	
AS-28C	1		10:19		
AS-28D	1		10:24		
AS-29A	1		10:33		
AS-29B	1		10:40	TPH-GAS, BTEX (COMPOSITE)	
AS-29C	1		10:43		
AS-29D	1		10:44		
AS-30A	1		10:46		
AS-30B	1		10:47	TPH-GAS, BTEX COMPOSITE	
AS-30C	1		10:49		
AS-30D	1		10:50		

RELINQUISHED BY: [signature] 16:50 8/14/90

RECEIVED BY: [signature] 8/14 3:50 PM

RELINQUISHED BY:

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY LAB: [signature] 8/15/90 1045

DESIGNATED LABORATORY: DHS #:

REMARKS: 5-DAY TAT COMPOSITE AS-28 A-D, AS-29-A-D AND AS-30-A-D.

DATE COMPLETED FOREMAN

Gettler - Ryan Inc. — 81280 pg 4 of 4 — ENVIRONMENTAL DIVISION — 0690 Chain of Custody

COMPANY Arco JOB NO. 7920

JOB LOCATION 1260 PARK ST. / ENCINAL

CITY ALAMEDA PHONE NO.

AUTHORIZED JOHN WERFAL DATE 8/14/90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AS-31A	1	SOIL	8/14/90 10:56		
AS-31B	1			TPH-GAS, BTEX (COMPOSITE)	
AS-31C	1				
AS-31D	1				
AS-32A	1		11:07		
AS-32B	1		11:09	TPH-GAS, BTEX (COMPOSITE)	
AS-32C	1		11:15		
AS-32D	1		11:16		
AS-33A	1		11:22		
AS-33B	1		11:23	TPH-GAS, BTEX (COMPOSITE)	
AS-33C	1		11:27		
AS-33D	1		11:29		

RELINQUISHED BY: [signature] C. Mallory 16:30 8/14/90

RECEIVED BY: [signature] 8/14/1850

RELINQUISHED BY:

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY LAB: [signature] 8/15/90 1045

DESIGNATED LABORATORY: DHS #:

REMARKS: 5-DAY TAT. COMPOSITE AS-31 A-D, AS-32 A-D, AND AS-33 A-D.

DATE COMPLETED FOREMAN

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Gettler - Ryan Inc. ENVIRONMENTAL DIVISION 0689 **Chain of Custody**

COMPANY: ARCO JOB NO. 7920

JOB LOCATION: 1260 PARK ST. / ENCINAL

CITY: ALAMEDA PHONE NO.

AUTHORIZED: JOHN WERFALL DATE 8/14/90 P.O. NO

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AS-34A	1	SOIL	8/14/90 11:37		
AS-34B	1	↓	11:39	TPH-GAS, BTEX (COMPOSITE)	
AS-34C	1	↓	11:42		
AS-34D	1	↓	11:43		
AS-35A	1	↓	11:48		
AS-35B	1	↓	11:49	TPH-GAS, BTEX (COMPOSITE)	
AS-35C	1	↓	11:55		
AS-35D	1	↓	11:57		
AS-36A	1	↓	12:00		
AS-36B	1	↓	12:02	TPH-GAS, BTEX (COMPOSITE)	
AS-36C	1	↓	12:05		
AS-36D	1	↓	12:06		

RELINQUISHED BY: Robert C Mullory 16:50 8/14/90

RECEIVED BY: [signature] GCL 8/14 15:50

RELINQUISHED BY:

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY LAB: Kristin K Gaines 8/15/90 1045

DESIGNATED LABORATORY: DHS #:

REMARKS: 5-DAY TAT. COMPOSITE AS-34A-D, AS-35A-D, AND AS36A-D.

DATE COMPLETED FOREMAN

81380 pg 2 of 5

Gettler - Ryan Inc. ENVIRONMENTAL DIVISION

0687 Chain of Custc

COMPANY ARCO JOB NO. 7920

JOB LOCATION 120 PARK ST. / ENCINAL

CITY ALAMEDA PHONE NO.

AUTHORIZED JOHN WERFAL DATE 8/14/90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AS-37A	1	SOIL	8/14/90/12:12		
AS-37B	1	↓	/ 12:13	TPH-GAS, BTEX (COMPOSITE)	
AS-37C	1	↓	/ 12:17		
AS-37D	1	↓	/ 12:18		
AS-38A	1	↓	/ 12:21		
AS-38B	1	↓	/ 12:22	TPH-GAS, BTEX (COMPOSITE)	
AS-38C	1	↓	/ 12:27		
AS-38D	1	↓	/ 12:28		
AS-39A	1	↓	/ 12:32		
AS-39B	1	↓	/ 12:33	TPH-GAS, BTEX (COMPOSITE)	
AS-39C	1	↓	/ 12:39		
AS-39D	1	↓	/ 12:40		

RELINQUISHED BY: Robert C. Mallory 16:50 8/14/90

RECEIVED BY: [signature] 8/14 15:50

RELINQUISHED BY:

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY LAB: Kristin K Gaines 8/15/90 1045

DESIGNATED LABORATORY: DHS #:

REMARKS: 5 - DAY TAT. COMPOSITE AS-37A-D, AS38A-D, AND AS-39A-D.

DATE COMPLETED FOREMAN

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Date: 08/28/90

Gettler-Ryan
2150 West Winton
Hayward, CA 94545
John Werfal

Work Order: TO-08-263 P.O. Number: 7920

This is the Certificate of Analysis for the following samples:

Client Work ID: GR7920, ARCO
Date Received: 08/24/90
Number of Samples: 4; 1 Composite of 4
Sample Type: solid

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Suzanne Veaudry
Project Manager

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/28/90
Client Work ID: GR7920, ARCO

Work Order: TO-08-263

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AS-40-A, AS-40-B, AS-40-C, AS-40-D [Composite]
SAMPLE DATE: 08/22/90
LAB SAMPLE ID: TO08263-01, -02, -03, -04 [Composite]
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	08/24/90	08/28/90
Low Boiling Hydrocarbons	Mod.8015	08/24/90	08/28/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	2.0	12.
BTEX		
Benzene	0.017	None
Toluene	0.017	None
Ethylbenzene	0.017	None
Xylenes (total)	0.017	0.099

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 08/28/90
Client Work ID: GR7920, ARCO

Work Order: TO-08-263

TEST CODE TPHVB TEST NAME TPH Gas,BTEX by 8015/8020

The method of analysis for low boiling hydrocarbons is taken from E.P.A. Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatograhy using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethylbenzene and xylenes.

Results for organic chemical parameters in soils have been corrected for moisture content and are reported on a dry soil basis unless noted otherwise. Results for inorganic chemical parameters have not been corrected for moisture content.

Geltler - Ryan Inc. ENVIRONMENTAL DIVISION 0700 Chain of Custo

COMPANY BRCO JOB NO. 7920

JOB LOCATION 1260 PARK ST. / ENCINAL

CITY ALAMEDA PHONE NO.

AUTHORIZED JOHN WERFAL DATE 8/22/90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
1 AS-40-A	1	SOIL	8/22/90 14:50	TPH-GAS, BTEX	
2 AS-40-B	1	↓	14:51	↓	
3 AS-40-C	1		15:00		
4 AS-40-D	1		15:02		

RELINQUISHED BY: Mallory 8-21-90

RELINQUISHED BY: 9:05

RELINQUISHED BY:

RECEIVED BY:

RECEIVED BY:

RECEIVED BY LAB: 8/24/90 9:05

DESIGNATED LABORATORY: IT (CLV) DHS #: 137

REMARKS: ~~24/72 HOUR~~ / ~~TAT~~ 72 Hour TAT

1 Please composite 4 to 1

DATE COMPLETED FOREMAN

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I · SAN FRANCISCO, CA 94124 · PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 52437
CLIENT: Gettler Ryan Consultants
CLIENT JOB NO.: 7920

DATE RECEIVED: 08/30/90
DATE REPORTED: 09/06/90

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range
1	AS-41A,B,C,D,COMP	ND<1
2	AS-42A,B,C,D,COMP	14*

mg/kg - parts per million (ppm)
Minimum Detection Limit for Gasoline in Soil: 1mg/kg

QAQC Summary:
Daily Standard run at 2mg/L: RPD Gasoline = <15%
MS/MSD Average Recovery = 93%: Duplicate RPD = 0%

* Not with the typical gasoline pattern

Richard Srna, Ph.D.
Cecilia G. Jozami (for)
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE. UNIT I · SAN FRANCISCO. CA 94124 · PHONE (415) 647-2081

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 52437
CLIENT: Gettler Ryan Consultants
CLIENT JOB NO.: 7920

DATE RECEIVED: 08/30/90
DATE REPORTED: 09/06/90

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration(ug/Kg) Benzene	Toluene	Ethyl Benzene	Xylenes
1	AS-41A,B,C,D,COMP	ND<3	ND<3	ND<3	ND<3
2	AS-42A,B,C,D,COMP	ND<3	ND<3	ND<3	8

ug/kg - parts per billion (ppb)

Minimum Detection Limit in Soil: 3.0ug/kg

QAQC Summary:
Daily Standard run at 20ug/L: RPD = <15%
MS/MSD Average Recovery = 94% : Duplicate RPD = <6%

Richard Srna, Ph.D.
Cecilia G. Joaquin (for)
Laboratory Director

Gettler - Ryan Inc. — SF # 52437

ENVIRONMENTAL DIVISION

Chain of Custod

COMPANY ARCO JOB NO. 7920

JOB LOCATION 1260 PARK ST. / ENCINAL

CITY ALAMEDA PHONE NO.

AUTHORIZED JOHN WEKKAL DATE 8/30/90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AS-41A	1	SOIL	8/30/90 10:00		
AS-41B	1		10:02		
AS-41C	1		10:04		
AS-41D	1		10:05		
AS-41-COMP				TPH-GAS, BTEX	
AS-42A		SOIL	8/30/90 10:07		
AS-42B			10:08		
AS-42C			10:10		
AS-42D			10:13		
AS-42-COMP				TPH-GAS, BTEX	

RELINQUISHED BY: 8/30/90 16:40

RECEIVED BY: 8/30/90 1640 (Sealed)

RELINQUISHED BY:

RECEIVED BY: 8/30/90

RELINQUISHED BY:

RECEIVED BY LAB:

DESIGNATED LABORATORY: DHS #:

REMARKS: NORMAL T.A.T.

DATE COMPLETED FOREMAN

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Date: 09/13/90

Gettler-Ryan
2150 West Winton
Hayward, CA 94545
John Werfal

Work Order: TO-09-075 P.O. Number: 7920

This is the Certificate of Analysis for the following samples:

Client Work ID: GR7920, Arco #2112
Date Received: 09/10/90
Number of Samples: 8; 2 Composites of 4 ea.
Sample Type: solid

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Suzanne Veaudry
Project Manager

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 09/13/90
Client Work ID: GR7920, Arco #2112

Work Order: TO-09-075

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: Composite AS-43
SAMPLE DATE: 09/10/90
LAB SAMPLE ID: T009075-01, -02, -03, -04 [Composite]
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	09/10/90	09/10/90
Low Boiling Hydrocarbons	Mod.8015	09/10/90	09/10/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	20.	490.
BTEX		
Benzene	0.2	None
Toluene	0.2	0.2
Ethylbenzene	0.2	None
Xylenes (total)	0.2	21.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 09/13/90
Client Work ID: GR7920, Arco #2112

Work Order: TO-09-075

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: Composite AS-44
SAMPLE DATE: 09/10/90
LAB SAMPLE ID: TO09075-05, -06, -07, -08 [Composite]
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020	09/10/90	09/10/90
Low Boiling Hydrocarbons	Mod.8015	09/10/90	09/10/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	20.	240.
BTEX		
Benzene	0.2	None
Toluene	0.2	None
Ethylbenzene	0.2	None
Xylenes (total)	0.2	0.4

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan
Date: 09/13/90
Client Work ID: GR7920, Arco #2112

Work Order: TO-09-075

TEST CODE TPHVB TEST NAME TPH Gas,BTEX by 8015/8020

The method of analysis for low boiling hydrocarbons is taken from E.P.A. Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatograhy using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethylbenzene and xylenes.

Results for organic chemical parameters in soils have been corrected for moisture content and are reported on a dry soil basis unless noted otherwise.

Gettler - Ryan Inc. — ENVIRONMENTAL DIVISION — Chain of Custody

COMPANY NILCO — JOB NO 7920

JOB LOCATION 1260 PARK ST. / ENCINAL

CITY ALAMEDA — PHONE NO.

AUTHORIZED JOHN WERFAL — DATE 9/11/90 — P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AS-43-A	1	SOIL	9/11/90 10:33		Cool
AS-43-B	1		10:35		
AS-43-C	1		10:37		
AS-43-D	1		10:39		
AS-43 COMP				TPH-GAS, BTEX	
AS-44-A	1	SOIL	9/11/90 10:40		Cool
AS-44-B	1		10:42		
AS-44-C	1		10:44		
AS-44-D	1		10:46		
AS-44 COMP				TPH-GAS, BTEX	

RELINQUISHED BY: [signature] 11:55 9/11/90 — RECEIVED BY:

RELINQUISHED BY: [signature] — RECEIVED BY:

RELINQUISHED BY: — RECEIVED BY LAB: [signature] 9/12/90 1155

DESIGNATED LABORATORY: — DHS #:

REMARKS: 24 HR. TAT. COMPOSITE AS-43-A-D AND AS-44-A-D

DATE COMPLETED — FOREMAN

SUPERIOR ANALYTICAL LABORATORIES, INC.
825 ARNOLD, STE. 114 • MARTINEZ, CALIFORNIA 94553 • (415) 229-1512
DOHS #319
DOHS #220

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 91566
CLIENT: Gettler Ryan Co.
CLIENT JOB NO.: 7920

DATE RECEIVED: 09/19/90
DATE REPORTED: 09/25/90
DATE SAMPLED: 09/17/90
DATE ANALYZED: 09/24/90

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range
1	AS-45-A,B,C,D	ND<1
2	AS-46-A,B,C,D	3

mg/kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 1 mg/Kg

QAQC Summary:

Daily Standard run at 2mg/L: RPD Gasoline = 1%
MS/MSD Average Recovery = 97%: Duplicate RPD = 0.8%

Richard Srna, Ph.D.
Laboratory Manager

SUPERIOR ANALYTICAL LABORATORIES, INC.

825 ARNOLD, STE. 114 • MARTINEZ, CALIFORNIA 94553 • (415) 229-1512

DOHS #319
DOHS #220

LABORATORY NO.: 81566
CLIENT: Gettler Ryan Co.
CLIENT JOB NO.: 7920

DATE RECEIVED: 09/18/90
DATE REPORTED: 09/25/90
DATE SAMPLED: 09/17/90
DATE ANALYZED: 09/24/90

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES -
by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration(ug/Kg) Benzene	Toluene	Ethyl Benzene	Xylenes
1	AS-45-A,B,C,D	ND<3	ND<3	ND<3	5
2	AS-46-A,B,C,D	ND<3	ND<3	6	17

ug/Kg - parts per billion (ppb)

Method Detection Limit in Soil: 3 ug/Kg

QAQC Summary:

Daily Standard run at 20ug/L: RPD = <15%
MS/MSD Average Recovery = 102 %: Duplicate RPD = <4%

Richard Srna, Ph.D.

Dorena Srna

Laboratory Manager

Gettler - Ryan Inc. — ENVIRONMENTAL DIVISION — 81560 Chain of Custod

COMPANY: ARCO — JOB NO.: 7920

JOB LOCATION: 1260 PARK st. / ENCINAL

CITY: ALAMEDA — PHONE NO.:

AUTHORIZED: JOHN WERFAL — DATE: 9/17/90 — P.O. NO.:

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AS-45-A	1	Soil	9/17/90 15:32		
AS-45-B	1		9/17/90 15:33		
AS-45-C	1		15:38		
AS-45-D	1		15:39		
AS-45 Comp.				TPH-GAS, BTEX	
AS-46-A	1	Soil	9/17/90 15:41		
AS-46-B	1		15:43		
AS-46-C	1		15:46		
AS-46-D	1		15:49		
AS-46 Comp.				TPH-GAS BTEX	

RELINQUISHED BY: Thomas Lewis — 8:20 AM 9/18/90

RECEIVED BY: Robert C. Mallory — 8:20 9/18/90

RELINQUISHED BY: Robert C. Mallory — 9/18/90 16:14

RECEIVED BY: Jon Dorris — 9-18-90 1614

RELINQUISHED BY: Jon Dorris Express 9-15 1750

RECEIVED BY LAB: [signature] 9-18-90 1250

DESIGNATED LABORATORY: — DHS #:

REMARKS:

DATE COMPLETED — FOREMAN

SUPERIOR ANALYTICAL LABORATORIES, INC.
825 ARNOLD, STE. 114 • MARTINEZ, CALIFORNIA 94553 • (415) 229-1512
DOHS #319
DOHS #220

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 81596
CLIENT: Gettler Ryan Co.
CLIENT JOB NO.: 7920

DATE RECEIVED: 09/24/90
DATE REPORTED: 09/25/90
DATE SAMPLED : 09/21/90
DATE ANALYZED: 09/24/90

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range
1	AS-47A, 47B, 47C, 47D	ND<1
2	AS-48A, 48B, 48C, 48D COMP	ND<1

mg/kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 1 mg/Kg

QAQC Summary:

Daily Standard run at 2mg/L: RPD Gasoline = 10%
MS/MSD Average Recovery = 96%: Duplicate RPD = 0%

Richard Srna, Ph.D.

Dorena Srna for

Laboratory Manager

SUPERIOR ANALYTICAL LABORATORIES, INC.
825 ARNOLD, STE. 114 • MARTINEZ, CALIFORNIA 94553 • (415) 229-1512
DOHS #319
DOHS #220

C E R T I F I C A T E O F A N A

LABORATORY NO.: 81596
CLIENT: Gettler Ryan Co.
CLIENT JOB NO.: 7920

DATE RECEIVED: 09/24/90
DATE REPORTED: 09/25/90
DATE SAMPLED: 09/21/90
DATE ANALYZED: 09/24/90

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-~~846~~ Methods 5030 and 8020

LAB #	Sample Identification	Concentration(ug/Kg) Benzene	Toluene	Ethyl Benzene	Xylenes
1	AS-47A, 47B, 47C, 47D COMP	ND<3	ND<3	ND<3	ND<3
2	AS-48A, 48B, 48C, 48D COMP	ND<3	ND<3	ND<3	4

ug/Kg - parts per billion (ppb)

Method Detection Limit in Soil: 3 ug/Kg

QAQC Summary:

Daily Standard run at 20ug/L: RPD = <15%
MS/MSD Average Recovery = 96 %: Duplicate RPD = <10%

Richard Srna, Ph.D.

Donna Srna for
Laboratory Manager

Gettler - Ryan Inc. — 81596 — ENVIRONMENTAL DIVISION — Chain of Custody

COMPANY ARCO JOB NO. 7920

JOB LOCATION 1260 PARK St. / ENCINAL

CITY ALAMEDA PHONE NO.

AUTHORIZED JOHN WARFEL DATE 9/24/90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AS-47A	1	Soil	9/21/90	TPH-GAS	
AS-47B	↓	↓		BTEX	
AS-47C				Composite and analyze as one Sample	
AS-47D					
AS-48A	1	Soil	9/21/90	Composite and analyze as one sample for:	
AS-48B				TPH-GAS	
AS-48C				BTEX	
AS-48D	↓	↓			

RELINQUISHED BY: Dan Wacht

RECEIVED BY: Kelly J McCoy 1440

RELINQUISHED BY: Kelly J McCoy

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY LAB: Dorena Sraq 9/24/90 16:15

DESIGNATED LABORATORY: DHS #:

REMARKS: Composite and analyze as one sample (2 sets)
24 TAT

DATE COMPLETED 9/24/90 FOREMAN Dan Wacht