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TO: David De Witt
Tosco Marketing Company
2000 Crow Canyon Place, Suite 400
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DATE: July 3, 2001
PROJECT NO. 140175.05
SUBJECT: Tosco 4186

From: Jed Douglas

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Carol Mahoney – Zone 7 Water Agency

GETTLER-RYAN INC.

MONITORING WELL INSTALLATION REPORT

for
Tosco (76) Service Station No. 4186
1771 First Street
Livermore, California

Report No. 140175.05

Prepared for:

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July 3, 2001

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MONITORING WELL INSTALLATION REPORT

for
Tosco (76) Service Station No. 4186
1771 First Street
Livermore, California

Report No. 140175.05

1.0 INTRODUCTION

At the request of Tosco Marketing Company (Tosco), Gettler-Ryan Inc. (GR), has prepared this report describing the installation of two offsite groundwater monitoring wells at the subject site. The purpose of this investigation was to further define the downgradient extent of petroleum hydrocarbon impact to groundwater in the site vicinity. This work was originally proposed in GR's Report No. 140175.04, *Work Plan for Monitoring Well Installation,* dated August 11, 2000. The scope of work included: updating the site safety plan; obtaining the required well installation permits and an encroachment permit; advancing two well borings and installing groundwater monitoring wells in each of the borings; surveying the wellhead elevations; developing and sampling the wells; collecting and submitting selected soil and groundwater samples to a certified analytical laboratory for chemical analysis; arranging for Tosco's contractor to dispose of the waste materials; and preparing a report presenting the observations associated with the well installation and the analytical results of the soil and groundwater sampling. The GR workplan was approved by Ms. Eva Chu of Alameda County Environmental Health Services (ACEHS) in a letter dated September 6, 2000.

2.0 SITE DESCRIPTION

2.1 General

The subject site is an operating service station located on the southwest corner of the intersection of First Street (State Highway 84) and N Street in Livermore, California (Figure 1). The site is bounded to the north by First Street, to the east by N Street, and to the south and west by commercial buildings. Properties in the immediate site vicinity are used for a mix of commercial purposes that include restaurants, automobile repair shops, and shopping facilities. The site is located at an approximate elevation of 480 feet above mean sea level (MSL).

Current aboveground site facilities consist of four dispenser islands, a canopy and a station building/convenience store. Two 10,000-gallon gasoline USTs are located in a common pit on the east side of the site. Pertinent site features are shown on Figure 2.

2.2 Geology and Hydrogeology

The subject site is located in the Livermore Valley and is underlain by Holocene age alluvial fan and gravel facies. These deposits are composed of semi-consolidated deposits of sand and gravel in a matrix of clayey sand. The Livermore Valley contains many northwest trending faults. The site is approximately 1 mile southwest of the Mocho Fault and approximately 1½ miles northeast of the Livermore Fault (California Department of Water Resources, 1974). Previous investigations performed by GR and GeoStrategies, Inc. (GSI) determined that the unsaturated (vadose) zone is comprised predominantly of gravel with varying amounts of clay, silt and sand. The saturated zone is comprised predominantly of clay with varying amounts of silt, sand and gravel.

During previous subsurface investigation conducted by GR and GSI, groundwater was initially encountered at depths ranging from 24 to 25 feet below ground surface (bgs). Historical monitoring data indicate that depth to groundwater has varied from approximately 23 to 31 feet below top of casing as measured during monitoring events through January 8, 2001. Historical groundwater flow direction has also varied from north to southwest, and was toward the southwest at a gradient of 0.02 ft/ft during the January 8, 2001 event. According to Eva Chu of the ACEHS, based on monitoring conducted at other sites in the area, predominant groundwater flow for the site vicinity is toward the northwest. The nearest surface water to the site is Arroyo Mocho Creek, located approximately 2,900 feet south of the site.

2.3 Previous Environmental Investigation

On June 6, 1996, GSI collected six soil samples from beneath the fuel dispensers and along the product delivery piping during dispenser and piping replacement activities. A total of 25 cubic yards of soils was excavated and transported to Forward Landfill located in Manteca, California. Analytical results were reported as not detected (ND) for Total Petroleum Hydrocarbons as gasoline (TPHg) and benzene, toluene, ethylbenzene and xylenes (BTEX) for all samples collected beneath the dispenser islands and product delivery piping (GSI, 1996).

On September 10, 1997, Pacific Environmental Group (PEG) conducted a soil gas survey as part of a baseline site evaluation associated with the property transfer from Unocal Corporation to Tosco. Six soil gas probes were advanced and samples collected at 3 or 15 feet bgs in the vicinity of the UST complex, dispenser islands, and product lines. Analytical results ranged from 41 to 4,500 parts per billion by volume (ppbv) of TPHg, ND to 110 ppbv of benzene and ND to 8,000 ppbv of MtBE. Field data sheets indicate that no petroleum hydrocarbon odors were noted. The area of highest soil vapor concentration appeared to be localized around the UST complex (PEG, 1997).

On April 8, 1998, GR reviewed files at the Alameda County Zone 7 Water Agency to identify water supply wells located within a one half mile radius from the site. Two municipal wells were identified approximately 1,500 and 1,800 feet northwest of the site, and two domestic wells were

located approximately 1,900 and 2,800 feet southwest and west of the site.

On June 16, 1998, GR installed three 2-inch diameter groundwater monitoring wells designated as U-1 through U-3. The wells were installed to a depth of approximately 34 feet bgs. Soil samples collected from the three wells were reported as ND for TPHg, benzene, and MtBE.

Groundwater monitoring and sampling of the wells was initiated in July of 1998, and has continued on a quarterly basis to the present time. Historically, groundwater flow directions have varied from north to southwest. However, according to Eva Chu of the ACEHS, based on monitoring conducted at other sites in the area, predominant groundwater flow for the site vicinity is toward the northwest. Groundwater monitoring well U-1 has been ND for TPHg and benzene, with MtBE detections ranging from ND to 160 ppb. Well U-2 had only one detection of TPHg (1,200 ppb) and benzene (130 ppb) during the first monitoring event (7/13/98) and has been ND for both compounds since that time. Well U-2 has had MtBE detected at concentrations ranging from 150 to 1,100 ppb. Well U-3, located adjacent to the UST area, has consistently contained detectable concentrations of TPHg ranging from 13,000 to 70,000 ppb, benzene ranging from 86 to 5,000 ppb and MtBE ranging from 6,100 to 40,900 ppb.

3.0 FIELD WORK

Field work was conducted in accordance with GR's approved workplan dated August 11, 2000, Field Methods and Procedures (Appendix A) and the Site Safety Plan dated January 19, 2001. Permits were required for the two groundwater monitoring wells and were obtained from the Zone 7 Water Agency (Drilling Permit No. 21037), and from the California Department of Transportation (Caltrans) (Encroachment Permit No. 0400-6SV-2550).

Underground Service Alert was notified as required prior to drilling at the site (reference No. 35663). In addition, Cruz Brothers Sub-Surface Locators, Inc., a private utility locating service, was met onsite prior to drilling, to check and clear the proposed boring locations. As a final safety measure, the borings were excavated and cleared by hand to a depth of 5 feet bgs.

3.1 Drilling and Well Installation Activities

On February 21, 2001, a GR geologist observed Gregg Drilling and Testing, Inc. (C-57 #485165) advance two offsite well borings (U-4 and U-5) at the locations shown on Figure 2. Monitoring well borings U-4 and U-5 were drilled and sampled to a depth of approximately 47 feet bgs using 8-inch hollow-stem augers driven by a truck-mounted drill rig. Soil samples were collected from the borings approximately every five feet at a minimum. The GR geologist prepared a log of each boring and field screened the soil samples for the presence of volatile organic compounds utilizing a photoionization detector (PID). Field screening data are presented on the boring logs (Appendix B).

Upon completion of soil sampling, the borings were converted to groundwater monitoring wells by the installation of 2-inch diameter poly-vinyl chloride (PVC) well casing through the hollow-stem augers. The well casing consisted of blank PVC casing from the ground surface to 35 to 37 feet bgs, and 0.020-inch machine slotted PVC well screen from 35 feet to 45 feet bgs (U-4) and 37 to 47 feet bgs (U-5). Lonestar # 3 sand was installed in the annular space from the bottom of the boring to two feet above the top of the screened interval (33 or 35 feet bgs). The well was then sealed with hydrated bentonite followed by neat cement containing approximately 5% bentonite to a depth of 1.5 feet bgs. The remainder of the annular space was filled with concrete and a steel, water-resistant, traffic-rated well box. An expandable locking well cap was placed on the top of the PVC casing and secured with a lock. Well construction details are presented on the boring logs in Appendix B.

Drill cuttings were placed in labeled 55-gallon drums and stored on-site pending analysis and disposal. A four-part composite stockpile soil sample was collected from the drill cuttings and submitted to the laboratory for disposal profiling.

3.2 Well Monitoring, Development, and Sampling

Monitoring, development, and sampling of the two newly installed wells was performed by GR personnel during the regularly scheduled quarterly monitoring and sampling event at the site. Copies of the well development and field monitoring data sheets are included in Appendix C. Monitoring data for the two new wells are summarized in Table 1.

Wells U-4 and U-5 were developed and sampled on April 3, 2001. Depth to groundwater in the wells were measured and each well checked for the presence of floating product prior to development. Floating product was not observed in the two wells. None of the wells dewatered during development and each yielded a minimum of 10 well volumes. Immediately after the wells were properly developed, groundwater samples were collected in appropriate containers supplied by the laboratory. Groundwater samples were submitted for chemical analysis under chain-of-custody documentation to Sequoia Analytical in Walnut Creek, California.

3.3 Wellhead Survey

Following installation of the wells, the well casing elevations were surveyed by Virgil Chavez Land Surveying of Vallejo, California (California Land Surveyor No. 6323). Top of casing and vault box elevations were measured relative to MSL, and the horizontal locations of the wells measured. Well casing elevation data are presented in Table 1. A copy of the surveyor's report is included in Appendix D.

4.0 RESULTS

4.1 Subsurface Conditions

Soil

Detailed descriptions of the subsurface materials encountered during drilling are presented on the boring logs in Appendix B. In general, the first 12 to 18 feet bgs were composed of gravel with varying amounts of sand and silt, underlain by alternating zones of clay, sand and gravel to the total depth of the borings (47 feet bgs). Groundwater was encountered at approximately 30 feet bgs. The subsurface soils encountered are similar to those observed during previous subsurface investigation performed by GR.

Groundwater

Groundwater typically first occurred in a clay which ranged in depth from approximately 22 to 45 feet bgs. Depth to groundwater in the two new wells was between 31 and 32 feet below the top of casing, as measured on April 3, 2001, prior to purging and sampling of the wells. Depth to groundwater in the pre-existing three wells onsite ranged from 24 to 25 feet bgs. Groundwater flow direction appears to be toward the northwest at a gradient of 0.06 ft/ft (Figure 3).

4.2 Laboratory Analysis

Only one soil sample from the capillary fringe in each boring was submitted for chemical analysis. The capillary fringe and composite stockpile samples were analyzed by Sequoia Analytical in Walnut Creek, California (ELAP #1271). The capillary fringe soil samples were analyzed for TPHg, BTEX, and MtBE by Environmental Protection Agency (EPA) Methods 5030, 8015 Modified, 8020, and 8260, respectively. The composite soil sample was analyzed for TPHg, BTEX, MtBE and total lead by EPA Method 6010.

Groundwater samples were analyzed by Sequoia Analytical in Walnut Creek, California (ELAP #1271), for TPHg, BTEX, and fuel oxygenates MtBE, tertiary butyl alcohol (TBA), tertiary amyl methyl ether (TAME), ethyl tertiary-butyl ether (ETBE), di-isopropyl ether (DIPE), 1,2-dichloroethane (1,2-DCA), 1,2-dibromoethane (EDB) and ethanol by EPA Methods 8015 Modified, 8020, and 8260, respectively. Copies of the laboratory analytical reports and chain-of-custody records are included in Appendix E.

4.3 Soil Analytical Results

TPHg, BTEX or MtBE were not detected in any of the soil samples analyzed. The composite soil sample from the stockpile (SS-1) contained total lead at a concentration of 5.7 ppm. These results were acceptable for landfill disposal. Soil chemical analytical data are summarized in Table 2.

4.4 Groundwater Analytical Results

TPHg or benzene were nondetectable in the groundwater samples analyzed from the two new wells. Other than MtBE, fuel oxygenates were also nondetectable. MtBE was detected in groundwater samples from both wells U-4 and U-5 at concentrations of 38.2 and 55.4 ppb, respectively, as analyzed by EPA Method 8260. Groundwater chemical data are summarized in Table 1.

4.5 Waste Disposal

Approximately 130 gallons of waste water generated by cleaning the drilling equipment and well development and sampling procedures were removed from the site by GR on April 3 2001, and transported to the Tosco Refinery in Rodeo, California, for disposal. Eight 55-gallon drums of soil (drill cuttings) were removed from the site on June 1, 2001, by DenBeste Transportation of Windsor, California and transported to Allied Waste's Forward facility in Manteca, California for disposal. A copy of the Allied Waste landfill acceptance letter is included in Appendix F.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Results of the initial groundwater sampling indicate the presence of low concentrations of MtBE in the two new monitoring wells installed downgradient of the site. The highest concentration of MtBE was detected in the groundwater sample from well U-5 (55.4 ppb). TPHg, benzene or the other fuel oxygenates were not detected in either of the groundwater samples analyzed. Soil samples from the two well borings were reported as ND for all analytes.

This work was performed to further assess soil and groundwater conditions in the downgradient direction of the subject site, especially with respect to MtBE in groundwater. The specific goals of this investigation were to define and quantify the lateral extent of MtBE and the other hydrocarbon constituents in the first encountered groundwater zone.

The vertical and lateral extent of hydrocarbons in soil is defined. The lateral extent of MtBE in groundwater is defined to low concentrations downgradient of the site. Based on the information collected and evaluated during this investigation, the groundwater flow direction is toward the northwest. This is consistent with the reported regional groundwater flow direction. It is GR's understanding that as of January 1, 2001, Tosco no longer delivers gasoline containing MtBE to

any of their service stations in northern California.

GR recommends that the newly installed groundwater monitoring wells be added to the quarterly monitoring and sampling program. The wells should be monitored and sampled for one year in order to evaluate groundwater conditions over the course of one hydrologic cycle. GR will evaluate the conditions in the new wells during this period and make recommendations for interim remedial actions, if warranted.

6.0 REFERENCES

Gettler-Ryan Inc., 2001, Groundwater Monitoring and Sampling Report, Second Quarter 2001 – Event of April 3, 2001, dated April 24, 2001.

Gettler-Ryan Inc., 1998, Well Installation Report, Tosco (Unocal) Service Station No. 4186, 1771 First Street, Livermore, California, dated November 23, 1998.

Gettler-Ryan Inc., 1998, Well Search Unocal Service Station No. 4186, 1771 1st Street, Livermore, California, dated April 8, 1998.

Pacific Environmental Group, 1997, Soil Gas Survey Results Report, Unocal Service Station No. 4186, 1771 1st Street, Livermore, California, dated October 29, 1997.

GeoStrategies, Inc., 1996, Product Line Replacement Report, Unocal Service Station No. 4186, 1771 First Street, Livermore, California, dated August 7, 1996.

U.S. Geological Survey, 1961, Livermore Quadrangle, California, 7.5 Minute Series (Topographic): Scale 1:24,000, photorevised 1980.

TABLE 1 - GROUNDWATER MONITORING AND CHEMICAL ANALYTICAL DATA

Tosco (76) Service Station No. 4186
1771 First Street
Livermore, California

Sample No.	Sample Date	Total Well Depth (ft.)	Well[1] Elev. (ft. MSL)	Depth to Water (ft.)	Floating Product (ft.)	Ground Water Elevation (ft. MSL)	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MtBE[2] (ppb)
U-4	4/3/01	45.30	476.93	31.63	0.0	445.30	<50	<0.500	<0.500	<0.500	<0.500	37.8
U-5	4/3/01	47.20	476.51	31.75	0.0	444.76	<50	<0.500	0.728	<0.500	0.993	54.8

Sample No.	Sample Date	MTBE[3] (ppb)	TBA (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	1,2-DCA (ppb)	1,2-DBA (ppb)	Ethanol (ppb)
U-4	4/3/01	38.2	<100	<2.00	<2.00	<2.00	<2.00	<2.00	<1000
U-5	4/3/01	55.40	<100	<2.00	<2.00	<2.00	<2.00	<2.00	<1000

EXPLANATION:

ft. = feet
ft. MSL = feet relative to Mean Sea Level.
ppb = parts per billion

ANALYTICAL LABORATORY:

Sequoia Analytical Walnut Creek (ELAP #1271)

[1] Well elevations reported as top of casing (TOC) surveyed by Virgil Chavez, Licensed California Land Surveyor No. 6323.
[2] MtBE by EPA Method 8020
[3] MtBE by EPA Method 8260

ANALYTICAL METHODS:

TPHg = Total Petroleum Hydrocarbons as gasoline according to EPA Method 8015 Modified
Benzene, Toluene, Ethylbenzene, and Total Xylenes according to EPA Method 8020
MtBE = Methyl tertiary butyl ether according to EPA Method 8020/8260
TBA = tertiary butyl alcohol according to EPA Method 8260
DIPE = di-isopropyl ether according to EPA Method 8260
ETBE = ethyl tertiary butyl ether according to EPA Method 8260
TAME = tertiary amyl methyl ether according to EPA Method 8260
1,2-DCA = 1,2-Dichloroethane according to EPA Method 8260
1,2-DBA = 1,2-Dibromoethane according to EPA Method 8260
Ethanol according to EPA Method 8260

TABLE 2 - SOIL CHEMICAL ANALYTICAL DATA

Tosco (76) Service Station No. 4186
1771 First Street
Livermore, CA

Sample ID	Sample Depth (feet)	Date Collected	TPHg (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total Xylenes (ppm)	MTBE by 8020 (ppm)	MTBE by 8260 (ppm)	Total Lead (ppm)
U4-25	25	2/21/01	<1.00	<0.005	<0.005	<0.005	<0.005	<0.05	<0.10	NA
U5-25	25	2/21/01	<1.00	<0.005	<0.005	<0.005	<0.005	<0.05	<0.10	NA
Stockpile										
SS-1	--	2/21/01	<1.00	<0.005	<0.005	<0.005	<0.005	<0.05	<0.10	5.7

EXPLANATION:

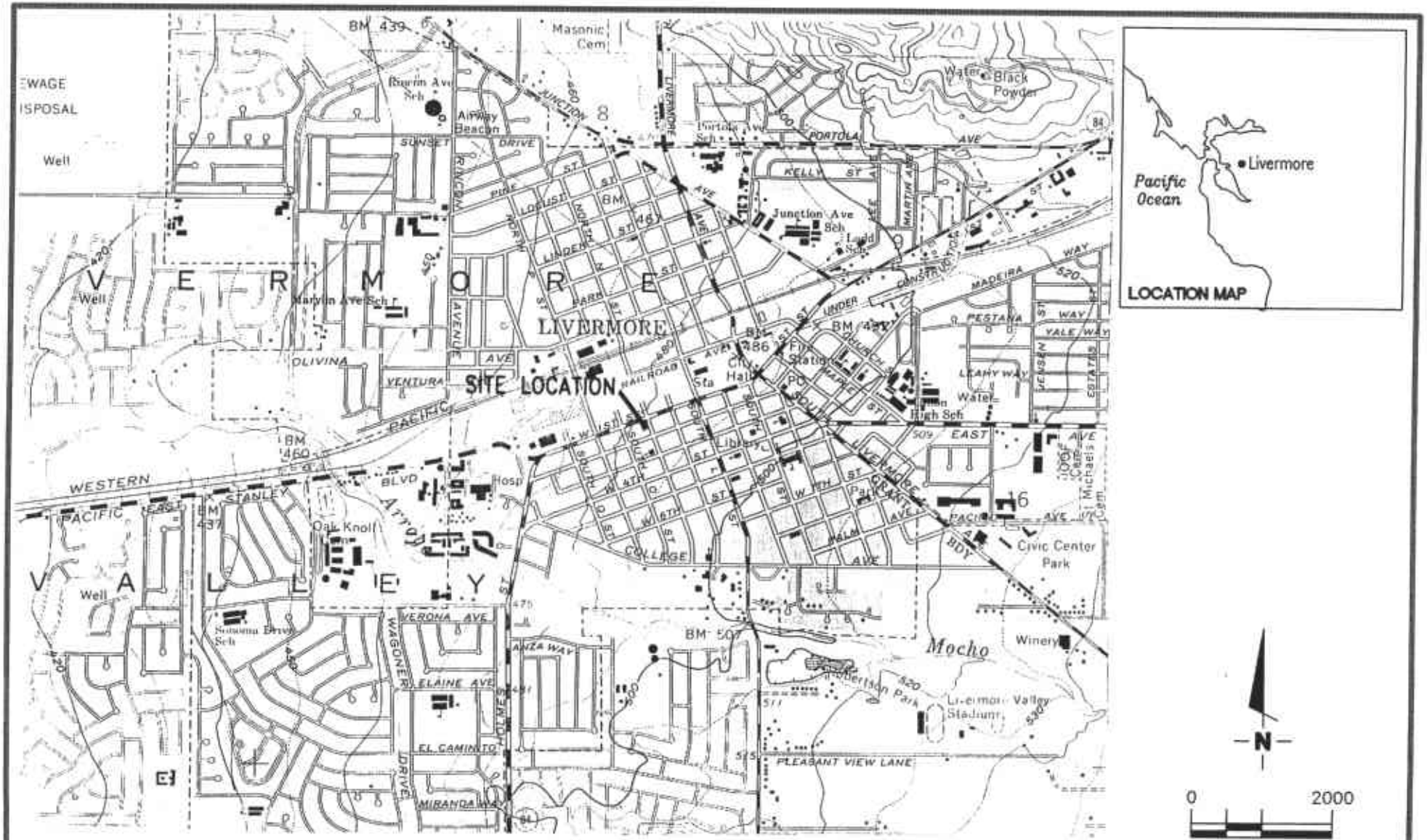
feet = feet below ground surface
ppm = parts per million
<1.00 = not detected at or below laboratories reporting limit
NA = not analyzed

ANALYTICAL LABORATORY

Sequoia Walnut Creek (ELAP No. 1271)

ANALYTICAL METHODS:

TPHg = Total Petroleum Hydrocarbons as gasoline according to EPA Method 8015 Modified.
Benzene, Toluene, Ethylbenzene, and Xylenes according to EPA Method 8020.
MTBE = Methyl tertiary Butyl Ether according to EPA Methods 8020 and 8260.
Total Lead according to EPA Method 6010.



Gettler - Ryan Inc.

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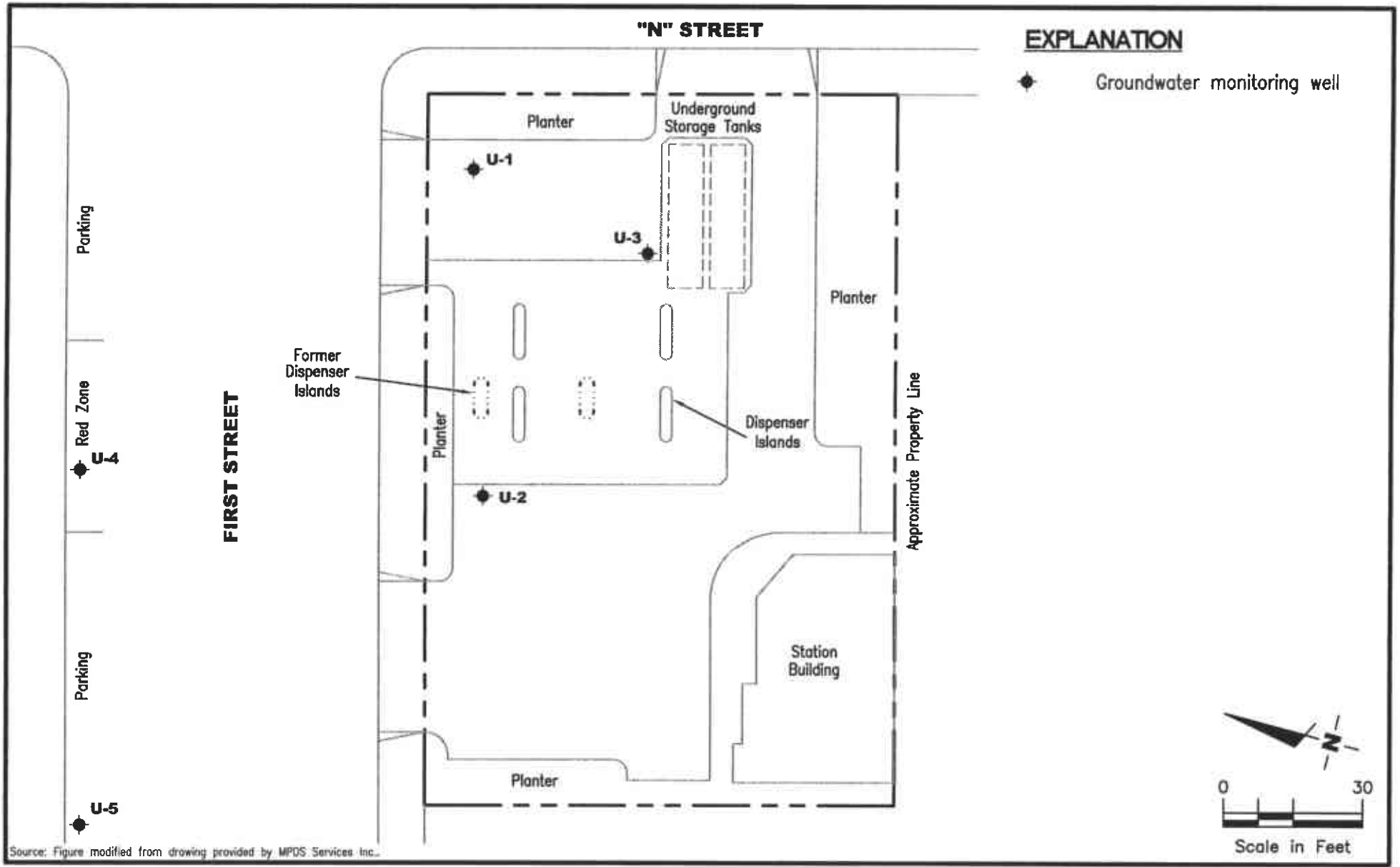
Dublin, CA 94568

VICINITY MAP
Tosco 76 Service Station No. 4186
1771 First Street
Livermore, California

FIGURE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
140175		4/00	



Source: Figure modified from drawing provided by MPDS Services Inc..

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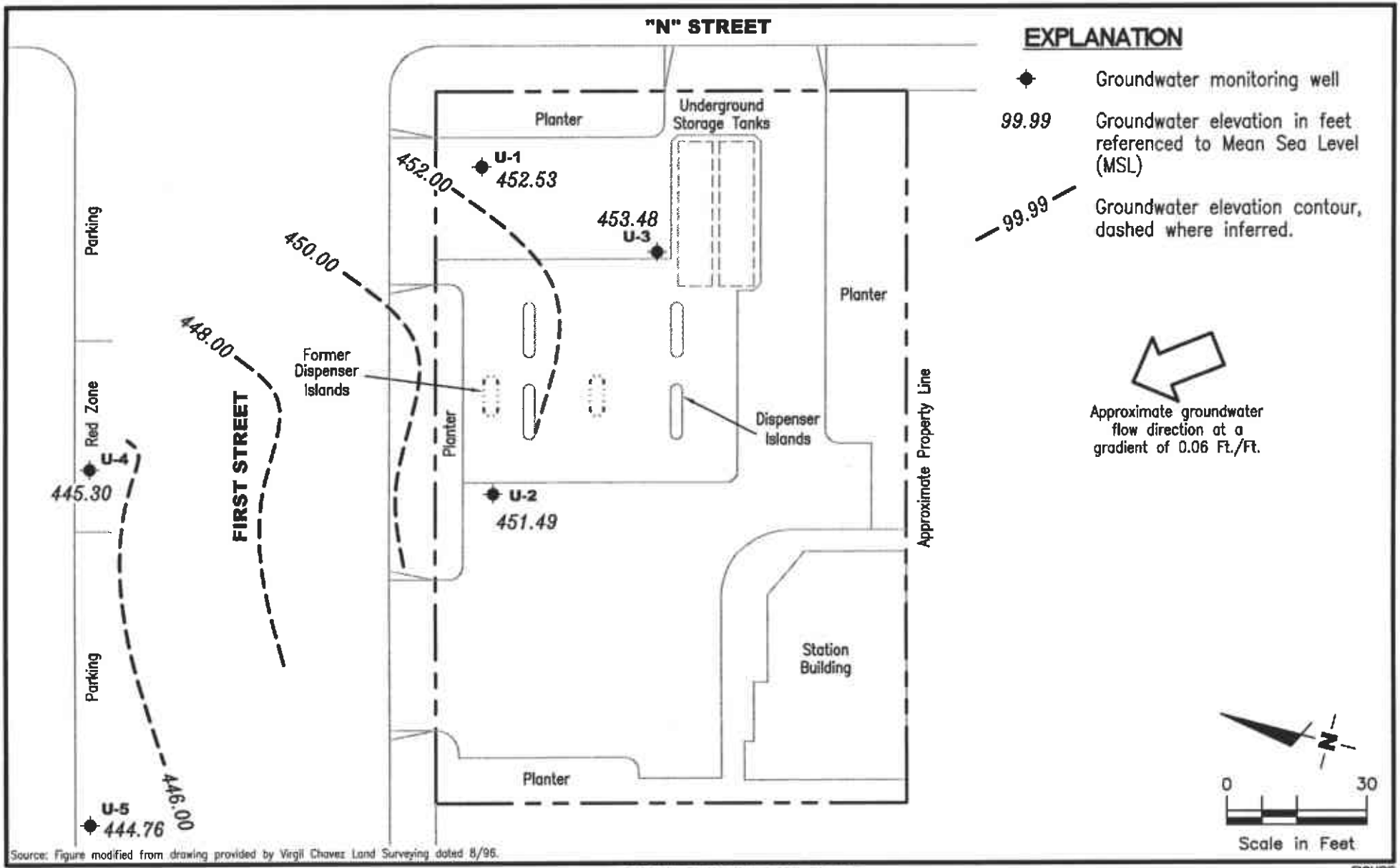
SITE PLAN
Tosco (76) Service Station No. 4186
1771 First Street
Livermore, California

FIGURE
2

PROJECT NUMBER	REVIEWED BY	DATE	REVISED DATE
140175		3/01	

FILE NAME: P:\ENVIRO\TOSCO\4186\A00-4186.DWG | Layout Tab: Well Install 3-01



Source: Figure modified from drawing provided by Virgil Chavez Land Surveying dated 8/96.

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POTENTIOMETRIC MAP
Tosco (Unocal) Service Station #4186
1771 First Street
Livermore, California

FIGURE
3

PROJECT NUMBER	REVIEWED BY	DATE	REVISED DATE
180181		April 3, 2001	

FILE NAME: P:\ENVIRO\TOSCO\4186\Q01-4186.DWG | Layout Tab: Pot2

APPENDIX A

GR FIELD METHODS AND PROCEDURES

GETTLER-RYAN INC.
FIELD METHODS AND PROCEDURES

Site Safety Plan

Field work performed by Gettler-Ryan Inc. (GR) is conducted in accordance with GR's Health and Safety Plan and the Site Safety Plan. GR personnel and subcontractors who perform work at the site are briefed on the of these plans contents prior to initiating site work. The GR geologist or engineer at the site when the work is performed acts as the Site Safety Officer. GR utilizes a photoionization detector (PID) to monitor ambient conditions as part of the Health and Safety Plan.

Collection of Soil Samples

Exploratory soil borings are drilled by a California-licensed well driller. A GR geologist is present to observe the drilling, collect soil samples for description, physical testing, and chemical analysis, and prepare a log of the exploratory soil boring. Soil samples are collected from the exploratory soil boring with a split-barrel sampler or other appropriate sampling device fitted with clean brass or stainless steel liners. The sampling device is driven approximately 18 inches with a 140-pound hammer falling 30 inches. The number of blows required to advance the sampler each successive 6 inches is recorded on the boring log. The encountered soil is described using the Unified Soil Classification System (ASTM 2488-84) and the Munsell Soil Color Chart.

After removal from the sampling device, soil samples for chemical analysis are covered on both ends with Teflon sheeting or aluminum foil, capped, labeled, and placed in a cooler with blue ice for preservation. A chain-of-custody form is initiated in the field and accompanies the selected soil samples to the analytical laboratory. Samples are selected for chemical analysis based on:

a. depth relative to underground storage tanks and existing ground surface
b. depth relative to known or suspected groundwater
c. presence or absence of contaminant migration pathways
d. presence or absence of discoloration or staining
e. presence or absence of obvious gasoline hydrocarbon odors
f. presence or absence of organic vapors detected by headspace analysis

Field Screening of Soil Samples

A PID is used to perform head-space analysis in the field for the presence of organic vapors from the soil sample. This test procedure involves removing some soil from one of the sample tubes not retained for chemical analysis and immediately covering the end of the tube with a plastic cap. The PID probe is inserted into the headspace inside the tube through a hole in the plastic cap. Head-space screening results are recorded on the boring log. Head-space screening procedures are performed and results recorded as reconnaissance data. GR does not consider field screening techniques to be verification of the presence or absence of hydrocarbons.

Stockpile Sampling

Stockpile samples consist of four individual sample liners collected from each 100 cubic yards (yd^3) of stockpiled soil material. Four arbitrary points on the stockpiled material are chosen, and discrete soil sample is collected at each of these points. Each discrete stockpile sample is collected by removing the upper 3 to 6 inches of soil, and then driving the stainless steel or brass tube into the stockpiled material with a wooden mallet or hand driven soil sampling device. The sample tubes are then covered on both ends with Teflon sheeting, capped, labeled, placed in the cooler with blue ice for preservation. A chain-of-custody form is initiated in the field and accompanies the selected soil samples to the analytical laboratory. Stockpiled soils are covered with plastic sheeting after completion of sampling.

Construction of Monitoring Wells

Monitoring wells are constructed in the exploratory borings with Schedule 40 polyvinyl Chloride (PVC) casing. All joints are thread-joined; no glues, cements, or solvents are used in well construction. The screened interval is constructed of machine-slotted PVC well screen which generally extends from the total well depth to a point above the groundwater. An appropriately-sized sorted sand is placed in the annular space adjacent to the entire screened interval. A bentonite transition seal is placed in the annular space above the sand, and the remaining annular space is sealed with neat cement or cement grout.

Wellheads are protected with water-resistant traffic rated vault boxes placed flush with the ground surface. The top of the well casing is sealed with a locking cap. A lock is placed on the well cap to prevent vandalism and unintentional introduction of materials into the well.

Storing and Sampling of Drill Cuttings

Drill cuttings are stockpiled on plastic sheeting or stored in drums depending on site conditions and regulatory requirements. Stockpile samples are collected and analyzed on the basis of one composite sample per 50 cubic yards of soil. Stockpile samples are composed of four discrete soil samples, each collected from an arbitrary location on the stockpile. The four discrete samples are then composited in the laboratory prior to analysis.

Each discrete stockpile sample is collected by removing the upper 3 to 6 inches of soil, and then driving the stainless or brass sample tube into the stockpiled material with a hand, mallet, or drive sampler. The sample tubes are then covered on both ends with Teflon sheeting, capped, labeled, and placed in a cooler with blue ice for preservation. A chain-of-custody form is initiated in the field and accompanies the selected soil samples to the analytical laboratory. Stockpiled soils are covered with plastic sheeting after completion of sampling.

Wellhead Survey

The top of the newly-installed well casing is surveyed by a California-licensed Land Surveyor to mean sea level (MSL).

Well Development

The purpose of well development is to improve hydraulic communication between the well and surrounding aquifer. Prior to development, each well is monitored for the presence of separate-phase hydrocarbons and the depth-to-water is recorded. Wells are then developed by alternately surging the well with the bailer, then purging the well with a pump to remove accumulated sediments and draw groundwater into the well. Development continues until the groundwater parameters (temperature, pH, and conductivity) have stabilized.

Groundwater Monitoring and Sampling

Decontamination Procedures

All physical parameter measuring and sampling equipment are decontaminated prior to sample collection using Alconox or equivalent detergent followed by steam cleaning with deionized water. During field sampling, equipment placed in a well are decontaminated before purging or sampling the next well by cleaning with Alconox or equivalent detergent followed by steam cleaning with deionized water.

Water-Level Measurements

Prior to sampling each well, the static water level is measured using an electric sounder and/or calibrated portable oil-water interface probe. Both static water-level and separate-phase product thickness are measured to the nearest ±0.01 foot. The presence of separate-phase product is confirmed using a clean, acrylic or polyvinylchloride (PVC) bailer, measured to the nearest ±0.01 foot with a decimal scale tape. The monofilament line used to lower the bailer is replaced between borings with new line to preclude the possibility of cross-contamination. Field observations (e.g. product color, turbidity, water color, odors, etc.) are noted. Water-levels are measured in wells with known or suspected lowest dissolved chemical concentrations to the highest dissolved concentrations.

Sample Collection and Labeling

A temporary PVC screen is installed in the boring to facilitate a grab groundwater sample collection. Samples of groundwater are collected from the surface of the water in each well or boring using the Teflon bailer or a pump. The water samples are then gently poured into laboratory-cleaned containers and sealed with Teflon-lined caps, and inspected for air bubbles to check for headspace. The samples are then labeled by an adhesive label, noted in permanent ink, and promptly placed in an ice storage. A Chain-of-Custody Record is initiated and updated throughout handling of the samples, and accompanies the samples to the laboratory certified by the State of California for analyses requested.

APPENDIX B

PERMITS AND BORING LOGS

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588-5127 VOICE (925) 484-2600 X235
FAX (925) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT Tosco 76 Station #4186
1771 First Street
Livermore, CA

California Coordinates Source _____ ft. Accuracy± _____ ft.
CCN _____ ft. CCE _____ ft.
APN Caltrans right of way

CLIENT
Name Tosco Marketing Company
Address 2000 Crow Canyon Pl. Phone 925-277-2384
City San Ramon Zip 94583

APPLICANT
Name Getter-Ryan Inc.
Jack Douglas Fax 707-789-3218
Address 1364 N. McDowell Blvd Phone 707-789-3253
City Petaluma Zip 94954

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☐
Monitoring	☒	Well Destruction	☐

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other _____	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☒
Cable	☐	Other	☐		

DRILLER'S LICENSE NO. C57-485165

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 45 ft.
Surface Seal Depth 33 ft. Number 3

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 2-12-01
ESTIMATED COMPLETION DATE 2-13-01

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.
APPLICANT'S SIGNATURE _____ Date 2-6-01

FOR OFFICE

PERMIT NUMBER 21037
WELL NUMBER 3S/2E 8R19 & 8R20
APN _____

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.
3. An access port at least 0.5 inches in diameter is required on the wellhead for water level measurements.
4. A sample port is required on the discharge pipe near the wellhead.

(C.) GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.
E. CATHODIC. Fill hole above anode zone with concrete placed by tremie.
F. WELL DESTRUCTION. See attached.
G. SPECIAL CONDITIONS

Approved Wyman Hong Date 2/8/01
Wyman Hong

8/6/99

STATE OF CALIFORNIA • DEPARTMENT TRANSPORTATION

ENCROACHMENT PERMIT

TR-0120

Permit No.	0400-6SV-2550
Dist/Co/Rte/PM	04-Ala-84 27.2
Date	November 22, 2000
Fee Paid	$350.00
Deposit	$
Performance Bond Amount (1)	$4,000.00
Payment Bond Amount (2)	
Bond Company	Safeco Insurance Co.
Bond Number (1)	6094103
Bond Number (2)	

In compliance with (*Check one*):

☒ Your application of August 1, 2000

☐ Utility Notice No. _____ of _____

☐ Agreement No. _____ of _____

☐ R/W Contract No. _____ of _____

TO: ☐ GETTLER-RYAN INC
1364 N. Mc Dowell Blvd; Suite B2
Petaluma, CA 94954

Attn: Jed Douglas
☐ Phone: (707) 789-3251

☐ , **PERMITTEE**

and subject to the following, **PERMISSION IS HEREBY GRANTED** to:

Install 2-2 inch diameter groundwater monitoring wells on State Highway 04-Ala-84, Post Miles 27.2, just west of 'N' Street, in the City of Livermore.

Two days before work is started under this permit, notice shall be given to, and approval of construction details, operations, public safety, and traffic control shall be obtained from State Representatives N. Freitag, 600 Lewelling Blvd., San Leandro, 94579, 510-614-5951, weekdays, between 7:30 AM and 4:00 PM.

Immediately following completion of the work permitted herein, the permittee shall fill out and mail the Notice of completion attached to this permit.

All personnel shall wear hard hats and orange vests, shirts, or jackets as appropriate.

The following attachments are also included as part of this permit (*Check applicable*):

☒ Yes	☐ No	General Provisions
☐ Yes	☒ No	Utility Maintenance Provisions
☐ Yes	☒ No	Special Previsions
☒ Yes	☐ No	A Cal-OSHA permit required prior to beginning work: # 2001-900227

In addition to fee, the permittee will be billed actual costs for:

☐ Yes	☒ No	Review
☒ Yes	☐ No	Inspection
☒ Yes	---------	Field Work

(If any Caltrans effort expended)

☐ Yes ☒ No The information in the environmental documentation has been reviewed and considered prior to approval of this permit.

This permit is void unless the work is completed before November 21, 2005

This permit is to be strictly construed and no other work other than specifically mentioned is hereby authorized.
No project work shall be commenced until all other necessary permits and environmental clearances have been obtained.

APPROVED:

HARRY Y. YAHATA, District Director

BY:

S.S. NOZZARI, District Permit Engineer

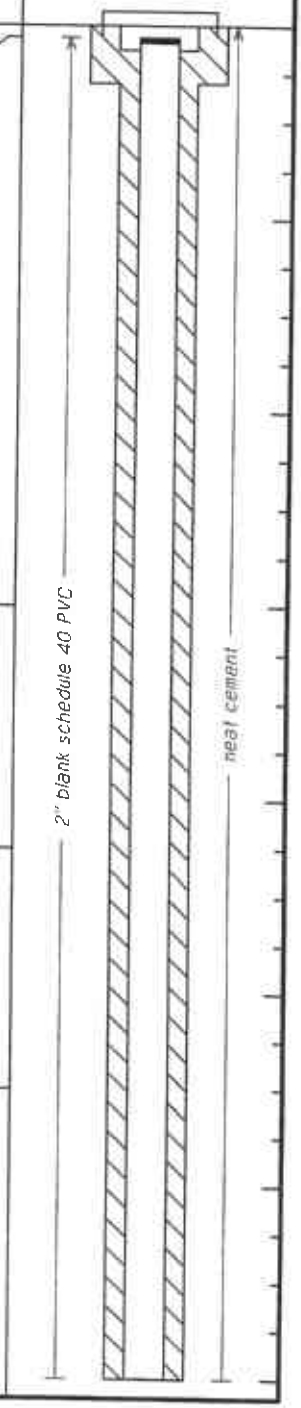
Gettler-Ryan, Inc.

Log of Boring U-4

PROJECT: *Tosco (76) Service Station No. 4186*	LOCATION: *1771 First Street, Livermore, CA*
GR PROJECT NO. : *140175.05*	CASING ELEVATION:
DATE STARTED: *02/21/01*	WL (ft. bgs): *29.5* DATE: *02/21/01* TIME: *10:35*
DATE FINISHED: *02/21/01*	WL (ft. bgs): *33.0* DATE: *02/21/01* TIME: *15:00*
DRILLING METHOD: *8 in. Hollow Stem Auger*	TOTAL DEPTH: *46.5 feet*
DRILLING COMPANY: *Cascade Drilling*	GEOLOGIST: *Jed Douglas*

DEPTH (feet)	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SOIL CLASS	GEOLOGIC DESCRIPTION
				GW	ASPHALT – 3 inches thick. GRAVEL WITH SAND (GW) – dark brown (10YR 3/3), dry, very dense; 60% fine to coarse subangular gravel to 4 cm, 40% fine to coarse sand.
4	0	>100	U-4-5		
8	0	>100			Becomes 50% fine to coarse subangular gravel to 4 cm, 30% fine to coarse sand, 20% silt.
12				SW-SM	SAND WITH SILT AND GRAVEL (SW-SM) – brown (10YR 4/3), dry, very dense; 50% fine to coarse sand, 30% silt, 20% fine gravel.
16	0	>100	U-4-15		
				SW-SC	SAND WITH GRAVEL AND CLAY (SW-SC) – brown (10YR 4/3), dry, very dense; 60% fine to coarse sand, 30% fine to coarse subangular gravel, 20% clay.
20	0	>100	U-4-20		
				CL	CLAY (CL) – yellowish brown (10YR 5/4), dry, hard, medium plasticity; 95% clay, 5% fine sand.
24	0	38	U-4-25		
28					

WELL DIAGRAM



JOB NUMBER: *140175.05*

Gettler-Ryan, Inc.

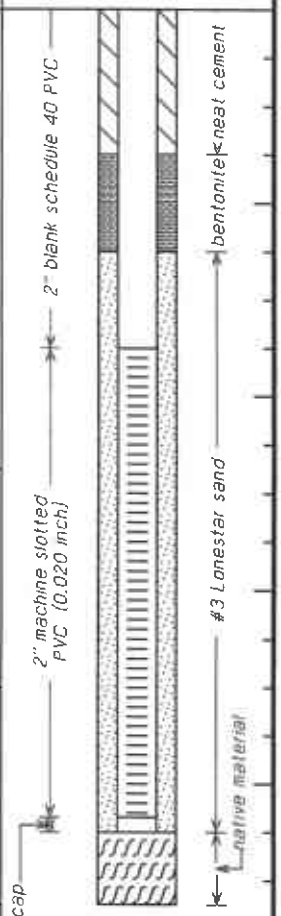
Log of Boring U-4

PROJECT: *Tosco (76) Service Station No. 4186*

LOCATION: *1771 First Street, Livermore, CA*

DEPTH (feet)	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SOIL CLASS	GEOLOGIC DESCRIPTION
				CL	
	0	19	U-4-30		Becomes saturated, very stiff.
32					
	0	31	U-4-35		
36					
				GW-GM	GRAVEL WITH SAND AND SILT (GW-GM) - dark yellowish brown (10YR 4/4), saturated, very dense; 50% fine to coarse gravel, 30% fine to coarse sand, 20% silt.
40	0	>100			
				CL	CLAY (CL) - yellowish brown (10YR 5/4), saturated, hard; 90% clay, 10% fine sand.
44					
	0	24	U-4-45		
					Bottom of boring at 46.5 feet bgs.
48					(* = Converted to equivalent standard penetration blows/foot.)
52					
56					
60					

WELL DIAGRAM



JOB NUMBER: *140175.05*

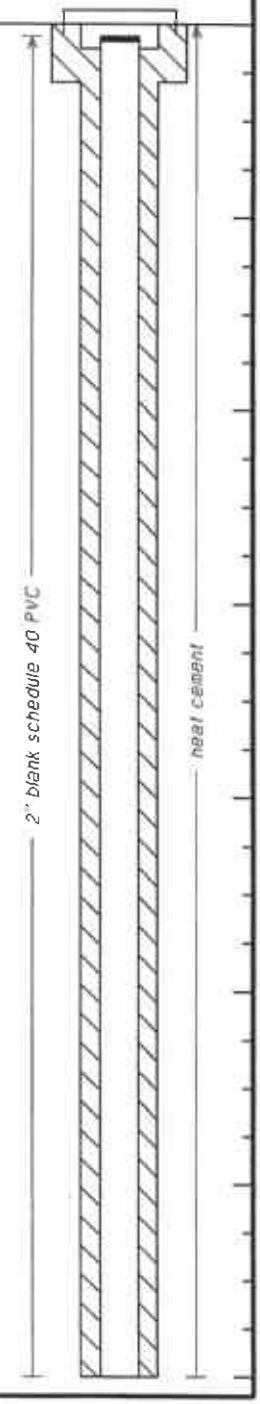
Gettler-Ryan, Inc.

Log of Boring U-5

PROJECT: *Tosco (76) Service Station No. 4186*	LOCATION: *1771 First Street, Livermore, CA*
GR PROJECT NO. : *140175.05*	CASING ELEVATION:
DATE STARTED: *02/21/01*	WL (ft. bgs): *29* DATE: *02/21/01* TIME: *14:05*
DATE FINISHED: *02/21/01*	WL (ft. bgs): *33.4* DATE: *02/21/01* TIME: *15:30*
DRILLING METHOD: *8 in. Hollow Stem Auger*	TOTAL DEPTH: *47 feet*
DRILLING COMPANY: *Cascade Drilling*	GEOLOGIST: *Jed Douglas*

DEPTH (feet)	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SOIL CLASS	GEOLOGIC DESCRIPTION
				GW-GM	ASPHALT – 3 inches thick. GRAVEL WITH SAND AND SILT (GW-GM) – dark brown (10YR 3/3), dry, very dense; 60% fine to coarse subangular gravel to 4.5 cm, 25% fine to coarse sand, 15% silt.
12	0	>100	U-5-10		
16	0	>100		SW	SAND (SW) – dark yellowish brown (10YR 4/4), wet, very dense; 90% fine to coarse sand, 10% clay. (perched zone ?)
20	0	64	U-5-20		
24	0	44	U-5-25	CL	CLAY (CL) – brown (10YR 4/3), dry, hard, low plasticity; 95% clay, 5% fine sand.
28					

WELL DIAGRAM



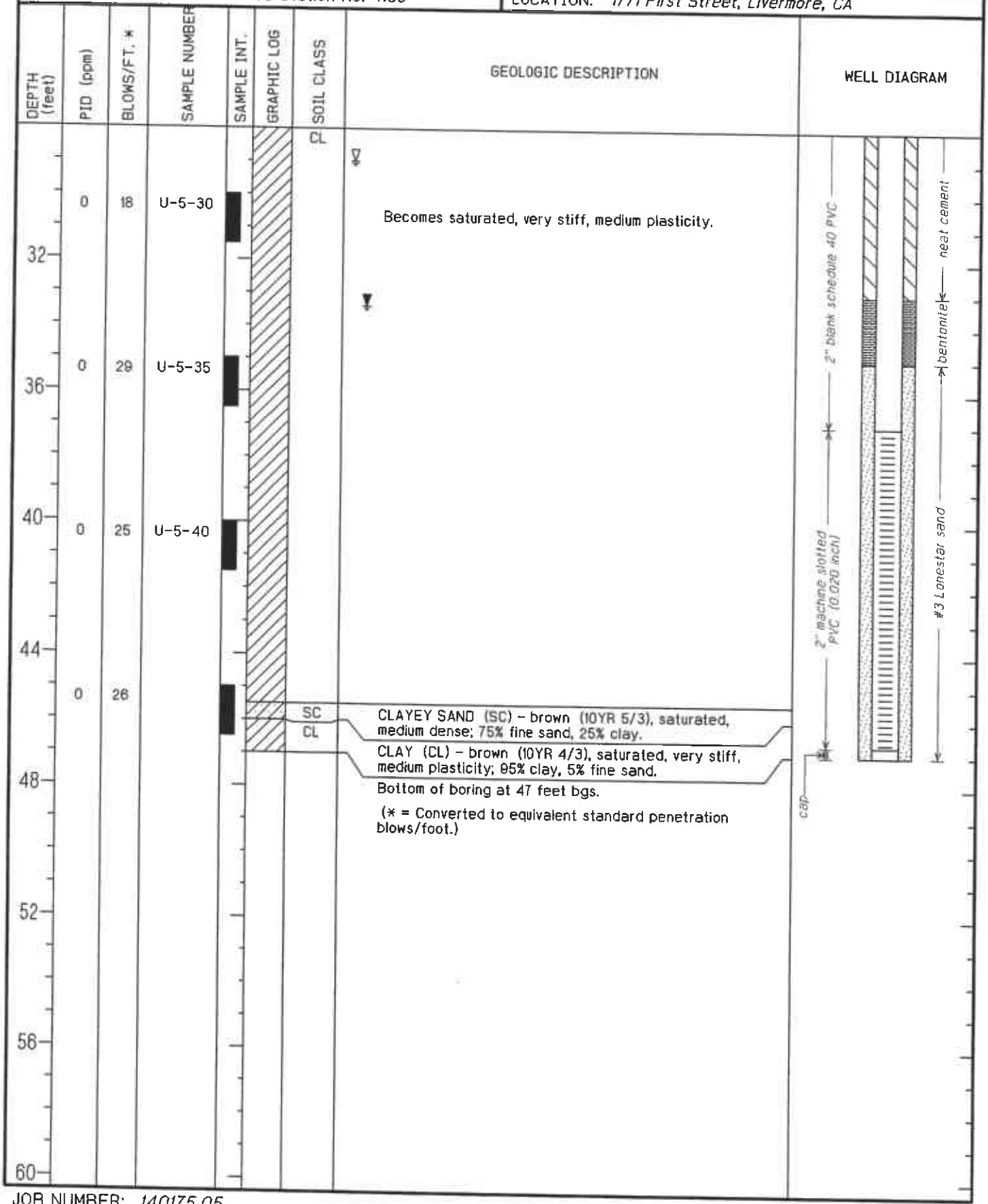
JOB NUMBER: *140175.05*

Gettler-Ryan, Inc.

Log of Boring U-5

PROJECT: *Tosco (76) Service Station No. 4186*

LOCATION: *1771 First Street, Livermore, CA*



JOB NUMBER: *140175.05*

APPENDIX C

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD DATA SHEETS

MONITORING WELL OBSERVATION SUMMARY SHEET

CLIENT/ FACILITY #: Tosco # 4186 G-R JOB #: 180181

LOCATION: 1771 First St DATE: 4/3/01

CITY: Livermore, Ca. TIME:

Well ID	Total Depth	Depth to Water	Product Thickness	TOB or TOC	Comments
U-1	34.05	25.74	0.00	TOC	4.5
U-2	33.20	25.95			4
U-3	33.40	24.98			4.5
U-4	45.30	31.63			23
U-5	47.20	31.75			27

Comments:

Sampler: Matthew Assistant:

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/ Facility # Tesco # 4186 Job#: 180181

Address: 1771 First st. Date: 4/3/01

City: Livermore, Ca. Sampler: Vartes

Well ID U-1 Well Condition: OK

Well Diameter 2 in. Hydrocarbon Thickness: 0.00 in. Amount Bailed (product/water): 0 (gal.)

Total Depth 34.05 ft.

Depth to Water 25.74 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66	6" = 1.50	12" = 5.80

8.31 x VF 0.17 = 1.41 X 3 (case volume) = Estimated Purge Volume: 4.5 (gal.)

Purge Equipment: Disposable Bailer; Bailer; Stack; Suction; Grundfos; Other:

Sampling Equipment: Disposable Bailer; Bailer; Pressure Bailer; Grab Sample; Other:

Starting Time: 11:45 Weather Conditions: clear

Sampling Time: 12:00 Water Color: brn. Odor: NO

Purging Flow Rate: 1 gpm. Sediment Description: silt

Did well de-water? NO If yes; Time: Volume: (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
11:47	1.5	7.60	793	66.9			
11:48	3	7.44	811	67.8			
11:50	4.5	7.41	817	68.4			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
U-1	3 x VOA VIAL	Y	HCL	SEQUOIA	TPHG/BTEX/MTBE

COMMENTS:

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/ Facility # Tesco # 4186 Job#: 180181

Address: 1771 First St. Date: 4/3/01

City: Livermore, Ca Sampler: Vatter

Well ID U-2 Well Condition: OK

Well Diameter 2 in. Hydrocarbon Thickness: 0.00 in. Amount Bailed (product/water): 4 (gal.)

Total Depth 33.20 ft.

Depth to Water 25.95 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66	6" = 1.50	12" = 5.80

7.25 X VF 0.17 = 1.23 X 3 (case volume) = Estimated Purge Volume: 4.0 (gal.)

Purge Equipment: Disposable Bailer / Bailer / Stack / Suction / Grundfos / Other:

Sampling Equipment: Disposable Bailer / Bailer / Pressure Bailer / Grab Sample / Other:

Starting Time: 11:16 Weather Conditions: Clear

Sampling Time: 11:30 Water Color: brn Odor: no

Purging Flow Rate: 1 gpm. Sediment Description: silt

Did well de-water? no If yes; Time: Volume: (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
11:17	1	7.67	763	66.3			
11:19	2.5	7.53	780	67.4			
11:21	4	7.49	788	67.8			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
U-2	x VOA VIAL	Y	HCl	SEQUOIA	TPHG/BTEX/MTBE

COMMENTS:

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/ Facility # Tesco # 4186 Job#: 180181

Address: 1771 First st. Date: 4/3/01

City: Livermore, Ca Sampler: Vartter

Well ID U-3 Well Condition: OK

Well Diameter 2 in. Hydrocarbon Thickness: 0.00 in. Amount Bailed (product/water): 4 (gal.)

Total Depth 33.40 ft.

Depth to Water 24.98 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66	6" = 1.50	12" = 5.80

8.42 x VF 0.17 = 1.43 X 3 (case volume) = Estimated Purge Volume: 4.5 (gal.)

Purge Equipment: Disposable Bailer; Bailer; (Stack); Suction; Grundfos; Other:

Sampling Equipment: (Disposable Bailer); Bailer; Pressure Bailer; Grab Sample; Other:

Starting Time: 12:20 Weather Conditions: clear

Sampling Time: 12:35 Water Color: grayish Odor: Y

Purging Flow Rate: 1 gpm. Sediment Description: SLT

Did well de-water? NO If yes; Time: Volume: (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
12:22	1.5	7.82	671	68.8			
12:23	3	7.67	694	68.3			
12:25	4.5	7.63	690	68.4			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
U-3	5 x VOA VIAL	Y	HCL	SEQUOIA	TPHG/BTEX/MTBE

COMMENTS:

WELL MONITORING/DEVELOPMENT FIELD DATA SHEET

Client/ Facility: Tosco #4186 Job#: 180181

Address: 1771 First st. Date: 4/3/01

City: Livermore, CA Sampler: Vaughn

Well ID: U-4 Well Condition: OK

Well Diameter: 2 in. Hydrocarbon Thickness: 0.00 Ft. Amount Bailed (product/water): F (gal.)

Total Depth: 46.30 ft.

Depth to Water: 31.63 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66	6" = 1.50	12" = 5.80

13.67 x VF 0.17 = 2.32 x 10 (case volume) = Estimated Purge Volume: 23.0 (gal.)

Purge Equipment: Disposable Bailer; Bailer; Stack; Suction; Grundfos; Other:

Sampling Equipment: Disposable Bailer; Bailer; Pressure Bailer; Grab Sample; Other:

Starting Time: 9:55 Weather Conditions: clear

Sampling Time: 10:55 Water Color: brn. Odor: no

Purging Flow Rate: 1 gpm. Sediment Description: sand / silt

Did well de-water? Y If yes; Time: 10:11 Volume: 16 (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
9:57	2.5	7.89	708	68.8			
9:59	5	7.80	731	69.3	very	Turbid	water (muddy)
10:02	7.5	7.78	740	69.5			
10:05	10	7.73	749	69.7	cleared		
10:08	12.6	7.70	755	69.8			
10:10	15	7.71	761	69.9	Turbid again		(SFT)
10:29	17.5	7.68	760	70.1			
10:32	20	7.59	768	69.3	clearing		
10:34	22	7.57	766	69.5			
10:35	23	7.55	770	69.7	cleared		

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
U-4	5 VOA	Y	HCl	SEQUOIA	(6) TPH G/BTEX/MTBE+ (6) Oxy's+1,2 DCA & EDB (8260)

WELL MONITORING/DEVELOPMENT FIELD DATA SHEET

Client/
Facility Tosco #4186 Job#: 180181

Address: 1771 First St. Date: 4/3/01

City: Livermore, Ca. Sampler: Vartkes

Well ID U-5 Well Condition: ok

Well Diameter 2 in. Hydrocarbon Thickness: 0.00 Ft. Amount Bailed (product/water): 0 (gal.)

Total Depth 47.20 ft.

Depth to Water 31.75 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

15.45 x VF 0.17 = 2.62 x 10 (case volume) = Estimated Purge Volume: 27.0 (gal.)

Purge Equipment: Disposable Bailer, Bailer, Stack, Suction, (Grundfos), Other:

Sampling Equipment: (Disposable Bailer), Bailer, Pressure Bailer, Grab Sample, Other:

Starting Time: 8:35 Weather Conditions: clear

Sampling Time: 9:35 Water Color: brn. Odor: no

Purging Flow Rate: 1.5 gpm. Sediment Description: silt

Did well de-water? y If yes; Time: 8:48 Volume: 18 (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
8:37	2.5	8.06	707	67.2	a little	Turbid	(silt)
8:39	5	7.98	722	67.5			
8:40	7.5	7.87	731	67.9	cleared up		
8:42	10	7.73	736	68.2			
8:44	12.5	7.70	743	68.5			
8:46	15	7.64	750	68.8			
8:47	17.5	7.59	756	69.0			
9:05	21	7.58	740	68.7			
9:08	24	7.53	742	69.1			
9:12	27	7.51	741	69.3			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
U-5	5 VOA's	Y	HCl	SEQUOIA	(TPH6/BTEX/MTBE
					6) OVG's + 1,2 DCA + EDB (8260)

Virgil Chavez Land Surveying
312 Georgia Street, Suite 225
Vallejo, California 94590-5907
(707) 553-2476 • Fax (707) 553-8698

April 4, 2001
Project No. 1604-19

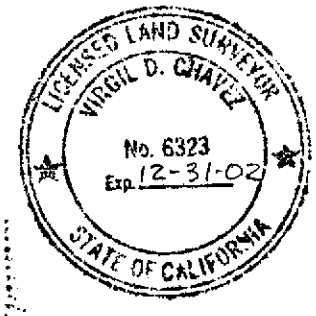
Clyde Galantine
Gettler-Ryan, Inc.
1364 North McDowell Blvd., Ste. B2
Petaluma, Ca 94954-1116

Subject: Monitoring Well Survey
Unocal Service Sta. #4186
1771 First Street
Livermore, Ca.

Dear Clyde:

This is to confirm that we have proceeded at your request to survey the monitoring wells at the above referenced location. The survey was performed March 16, 2001. Measurements were taken at notches on the top of casing. The benchmark for the survey was a City of Livermore survey monument at First & "Q" Streets. The station and offset data is for top of casing locations, using the back of sidewalk on First Street as reference line, beginning at intersection of the back of sidewalk with "H" Street.
Benchmark Elev. = 469.246 feet, MSL.

Well No.	Rim Elevation	TOC Elevation	Station	Offset
U - 1	478.74'	478.27'	0+15.88	-9.81(LT)
U - 2	477.97'	477.44'	0+85.59	-11.71(LT)
U - 3	478.83'	478.46'	0+33.96	-46.81(LT)
U - 4	477.50'	476.93'	0+92.53	72.10(RT)
U - 5	476.85'	476.51'	1+62.29	73.30(RT)
BSW First Street			---	0.00
BSW Intx.			0+00	0.00



Sincerely,

Virgil D. Chavez

Virgil D. Chavez, PLS 6323

APPENDIX E

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY RECORDS

Sequoia
Analytical

404 N. Wiget Lane
Walnut Creek, CA 94598
(925) 988-9600
FAX (925) 988-9673
www.sequoialabs.com

9 March, 2001

Jed Douglas
Gettler Ryan, Inc. - Petaluma
1364 North McDowell Boulevard, Suite B2
Petaluma, CA 94954-1175

RE: Tosco
Sequoia Report: W102584

Enclosed are the results of analyses for samples received by the laboratory on 22-Feb-01 17:05. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Dimple Sharma For Charlie Westwater
Project Manager

CA ELAP Certificate #1271

Sequoia Analytical

404 N. Wiget Lane
Walnut Creek, CA 94598
(925) 988-9600
FAX (925) 988-9673
www.sequoialabs.com

Gettler Ryan, Inc. - Petaluma	Project: Tosco	
1364 North McDowell Boulevard, Suite B2	Project Number: Tosco # 4186	**Reported:**
Petaluma CA, 94954-1175	Project Manager: Jed Douglas	09-Mar-01 10:31

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
U4-25	W102584-01	Soil	21-Feb-01 10:25	22-Feb-01 17:05
U5-25	W102584-02	Soil	21-Feb-01 14:00	22-Feb-01 17:05

Dimple Sharma For Charlie Westwater, Project Manager

Sequoia Analytical

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(925) 988-9600
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Gettler Ryan, Inc. - Petaluma	Project: Tosco	
1364 North McDowell Boulevard, Suite B2	Project Number: Tosco # 4186	**Reported:**
Petaluma CA, 94954-1175	Project Manager: Jed Douglas	09-Mar-01 10:31

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
U4-25 (W102584-01) Soil Sampled: 21-Feb-01 10:25 Received: 22-Feb-01 17:05									
Purgeable Hydrocarbons	ND	1.0	mg/kg	20	1C01003	01-Mar-01	02-Mar-01	EPA 8015/8020	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.050	"	"	"	"	"	"	CC-3
Surrogate: a,a,a-Trifluorotoluene		*98.0 %*	*40-140*		"	"	"	"	
U5-25 (W102584-02) Soil Sampled: 21-Feb-01 14:00 Received: 22-Feb-01 17:05									
Purgeable Hydrocarbons	ND	1.0	mg/kg	20	1C01003	01-Mar-01	02-Mar-01	EPA 8015/8020	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.050	"	"	"	"	"	"	CC-3
Surrogate: a,a,a-Trifluorotoluene		*104 %*	*40-140*		"	"	"	"	

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Gettler Ryan, Inc. - Petaluma	Project: Tosco	
1364 North McDowell Boulevard, Suite B2	Project Number: Tosco # 4186	**Reported:**
Petaluma CA, 94954-1175	Project Manager: Jed Douglas	09-Mar-01 10:31

MTBE by EPA Method 8260A

Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
U4-25 (W102584-01) Soil Sampled: 21-Feb-01 10:25 Received: 22-Feb-01 17:05									
Methyl tert-butyl ether	ND	0.10	mg/kg	100	1B28020	27-Feb-01	01-Mar-01	EPA 8260B	
Surrogate: Dibromofluoromethane		*112 %*		*50-150*	"	"	"	"	
U5-25 (W102584-02) Soil Sampled: 21-Feb-01 14:00 Received: 22-Feb-01 17:05									
Methyl tert-butyl ether	ND	0.10	mg/kg	100	1B28020	27-Feb-01	01-Mar-01	EPA 8260B	
Surrogate: Dibromofluoromethane		*116 %*		*50-150*	"	"	"	"	

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Gettler Ryan, Inc. - Petaluma 1364 North McDowell Boulevard, Suite B2 Petaluma CA, 94954-1175	Project: Tosco Project Number: Tosco # 4186 Project Manager: Jed Douglas	**Reported:** 09-Mar-01 10:31

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT - Quality Control

Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C01003 - EPA 5030B [MeOH]										
Blank (1C01003-BLK1)				Prepared: 01-Mar-01 Analyzed: 02-Mar-01						
Purgeable Hydrocarbons	ND	1.0	mg/kg							
Benzene	ND	0.0050	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Methyl tert-butyl ether	ND	0.050	"							
Surrogate: a,a,a-Trifluorotoluene	*0.656*		"	*0.600*		*109*	*40-140*			
Blank (1C01003-BLK2)				Prepared & Analyzed: 02-Mar-01						
Purgeable Hydrocarbons	ND	1.0	mg/kg							
Benzene	ND	0.0050	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Methyl tert-butyl ether	ND	0.050	"							
Surrogate: a,a,a-Trifluorotoluene	*0.646*		"	*0.600*		*108*	*40-140*			
LCS (1C01003-BS1)				Prepared: 01-Mar-01 Analyzed: 02-Mar-01						
Benzene	0.602	0.0050	mg/kg	0.800		75.2	50-150			
Toluene	0.652	0.0050	"	0.800		81.5	50-150			
Ethylbenzene	0.710	0.0050	"	0.800		88.7	50-150			
Xylenes (total)	2.34	0.0050	"	2.40		97.5	50-150			
Surrogate: a,a,a-Trifluorotoluene	*0.696*		"	*0.600*		*116*	*40-140*			
LCS (1C01003-BS2)				Prepared & Analyzed: 02-Mar-01						
Benzene	0.576	0.0050	mg/kg	0.800		72.0	50-150			
Toluene	0.642	0.0050	"	0.800		80.3	50-150			
Ethylbenzene	0.704	0.0050	"	0.800		88.0	50-150			
Xylenes (total)	2.12	0.0050	"	2.40		88.3	50-150			
Surrogate: a,a,a-Trifluorotoluene	*0.712*		"	*0.600*		*119*	*40-140*			

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Gettler Ryan, Inc. - Petaluma	Project: Tosco	
1364 North McDowell Boulevard, Suite B2	Project Number: Tosco # 4186	**Reported:**
Petaluma CA, 94954-1175	Project Manager: Jed Douglas	09-Mar-01 10:31

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT - Quality Control

Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C01003 - EPA 5030B [MeOH]										
Matrix Spike (1C01003-MS1)		**Source: W102605-11**		Prepared: 01-Mar-01 Analyzed: 02-Mar-01						
Benzene	0.534	0.0050	mg/kg	0.800	ND	66.7	50-150			
Toluene	0.596	0.0050	"	0.800	ND	74.5	50-150			
Ethylbenzene	0.660	0.0050	"	0.800	ND	82.5	50-150			
Xylenes (total)	1.98	0.0050	"	2.40	ND	82.5	50-150			
Surrogate: a,a,a-Trifluorotoluene	*0.552*		"	*0.600*		*92.0*	*40-140*			
Matrix Spike Dup (1C01003-MSD1)		**Source: W102605-11**		Prepared: 01-Mar-01 Analyzed: 02-Mar-01						
Benzene	0.550	0.0050	mg/kg	0.800	ND	68.8	50-150	2.95	20	
Toluene	0.614	0.0050	"	0.800	ND	76.8	50-150	2.98	20	
Ethylbenzene	0.676	0.0050	"	0.800	ND	84.5	50-150	2.40	20	
Xylenes (total)	2.04	0.0050	"	2.40	ND	85.0	50-150	2.99	20	
Surrogate: a,a,a-Trifluorotoluene	*0.572*		"	*0.600*		*95.3*	*40-140*			

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Gettler Ryan, Inc. - Petaluma 1364 North McDowell Boulevard, Suite B2 Petaluma CA, 94954-1175	Project: Tosco Project Number: Tosco # 4186 Project Manager: Jed Douglas	**Reported:** 09-Mar-01 10:31

MTBE by EPA Method 8260A - Quality Control

Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1B28020 - EPA 5030B [MeOH]										
Blank (1B28020-BLK1)				Prepared: 27-Feb-01 Analyzed: 28-Feb-01						
Methyl tert-butyl ether	ND	0.10	mg/kg							
Surrogate: Dibromofluoromethane	*2.13*		"	*2.50*		*85.2*	*50-150*			
LCS (1B28020-BS1)				Prepared: 27-Feb-01 Analyzed: 28-Feb-01						
Methyl tert-butyl ether	2.38	0.10	mg/kg	2.50		95.2	70-130			
Surrogate: Dibromofluoromethane	*2.51*		"	*2.50*		*100*	*50-150*			
LCS Dup (1B28020-BSD1)				Prepared: 27-Feb-01 Analyzed: 01-Mar-01						
Methyl tert-butyl ether	3.01	0.10	mg/kg	2.50		120	70-130	23.4	25	
Surrogate: Dibromofluoromethane	*2.72*		"	*2.50*		*109*	*50-150*			
Matrix Spike (1B28020-MS1)		**Source: W102564-11**		Prepared: 27-Feb-01 Analyzed: 01-Mar-01						
Methyl tert-butyl ether	2.92	0.10	mg/kg	2.50	ND	117	60-150			
Surrogate: Dibromofluoromethane	*2.91*		"	*2.50*		*116*	*50-150*			
Matrix Spike Dup (1B28020-MSD1)		**Source: W102564-11**		Prepared: 27-Feb-01 Analyzed: 01-Mar-01						
Methyl tert-butyl ether	3.22	0.10	mg/kg	2.50	ND	129	60-150	9.77	25	
Surrogate: Dibromofluoromethane	*2.85*		"	*2.50*		*114*	*50-150*			

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Gettler Ryan, Inc. - Petaluma	Project: Tosco	
1364 North McDowell Boulevard, Suite B2	Project Number: Tosco # 4186	**Reported:**
Petaluma CA, 94954-1175	Project Manager: Jed Douglas	09-Mar-01 10:31

Notes and Definitions

CC-3	Continuing Calibration indicates that the quantitative result for this analyte includes a greater than 15% degree of uncertainty. The value as reported is within method acceptance.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

№ 002667

TOSCO

☐ 885 Jarvis Drive • Morgan Hill, CA 95037 • (408) 776-9600 • FAX (408) 782-6308
☐ 819 Striker Ave., Suite 8 • Sacramento, CA 95834 • (916) 921-9600 FAX (916) 921-0100
☐ 404 N. Wiget Lane • Walnut Creek, CA 94598 • (925) 988-9600 FAX (925) 988-9673
☒ 1455 McDowell Blvd. North, Suite D • Petaluma, CA 94954 • (707) 792-1865 FAX (707) 792-0342
☐ 1551 Industrial Road • San Carlos, CA 94070 • (650) 232-9600 FAX (650) 232-9612

Consultant Company: Getler-Ryan	Project Name: 140175.05 W102584
Address: 1364 N. McDowell Blvd #B2	TOSCO Engineer (required) Dave Deaver
City: Petaluma State: CA Zip Code: 74954	
Telephone: 707-789-3253 FAX #: 707-789-3218	Site #, City, State: 4186, Livermore CA
Report To: Jed Douglas Sampler: J. Douglas	QC Data: ☒ Level D (Standard) ☐ Level C ☐ Level B ☐ Level A

Turnaround Time: ☒ 10 Work Days ☐ 5 Work Days ☐ 3 Work Days ☐ 2 Work Days ☐ 1 Work Day ☐ 2-8 Hours

CODE: ☐ Misc. ☐ Detect. ☐ Eval. ☐ Remed. ☐ Demol. ☐ Closure

☐ Drinking Water ☐ Waste Water ☐ Other

Analyses Requested

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Sequoia's Sample #	TPH (EPA 8015 Mod. Gas)	BTEX (EPA 8020)	MTBE (EPA 8020)	TPH (EPA 8015 Mod. Diesel)	Volatile Organics (EPA 8260)	MTBE Confirmation (EPA 8260)			Hold	Comments
1. U4-5	2-21-01/0945	Soil	1	6-inch liner										X	Hard copy of
2. U4-15	0955													X	data to be
3. U4-20	~~0950~~ 1000													X	received by
4. U4-25	1025				01A	X	X	X			X				3-9-01
5. U4-30	1035													X	
6. U4-35	1040													X	
7. U4-45	1050													X	
8.															
9.															
10.															

Relinquished By:	Date: 2-22-01	Time: 1705	Received By:	Date: 2/22/01	Time: 1705
Relinquished By:	Date: 2-23	Time: 1700	Received By:	Date: 2-23	Time: 1500
Relinquished By:	Date:	Time:	Received By: Mike Gross	Date: 2/23/01	Time: 1700

Were Samples Received in Good Condition? ☒ Yes ☐ No Samples on Ice? ☒ Yes ☐ No Method of Shipment ~~Getler-Ryan~~ Courier Page 1 of 2

To be completed upon receipt of report:

1) Were the analyses requested on the Chain of Custody reported? ☐ Yes ☐ No If no, what analyses are still needed? _____

2) Was the report issued within the requested turnaround time? ☐ Yes ☐ No If no, what was the turnaround time? _____

Approved by: _____ Signature: _____ Company: _____ Date: _____

Pink - Client
Yellow - Sequoia
White - Sequoia

№ 002669

TOSCO

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☒ 1455 McDowell Blvd. North, Suite D • Petaluma, CA 94954 • (707) 792-1865 FAX (707) 792-0342
☐ 1551 Industrial Road • San Carlos, CA 94070 • (650) 232-9600 FAX (650) 232-9612

Consultant Company: Getler-Ryan	Project Name: 140175.05 W102584
Address: 1364 N. McDowell Blvd #B2	TOSCO Engineer (required) Dave Deaver
City: Petaluma State: CA Zip Code: 94954	
Telephone: 707-789-3254 FAX #: 707-789-3218	Site #, City, State: 4186, Livermore CA
Report To: Jed Douglas Sampler: J. Douglas	QC Data: ☒ Level D (Standard) ☐ Level C ☐ Level B ☐ Level A

Turnaround Time: ☒ 10 Work Days ☐ 5 Work Days ☐ 3 Work Days ☐ 2 Work Days ☐ 1Work Day ☐ 2-8 Hours

☐ Drinking Water ☐ Waste Water ☐ Other

CODE: ☐ Misc. ☐ Detect. ☐ Eval. ☐ Remed. ☐ Demol. ☐ Closure

Analyses Requested

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Sequoia's Sample #	TPH (EPA 8015 Mod. Gas)	BTEX (EPA 8020)	MTBE (EPA 8020)	TPH (EPA 8015 Mod. Diesel)	Volatile Organics (EPA 8260)	MTBE Confirmation (EPA 8260)			Hold	Comments
1. US-10	2-21-01/1340	Soil	1	6-inch liner										X	
2. US-20	1355													X	
3. US-25	1400				02A	X	X	X			X				
4. US-30	1405													X	
5. US-35	1410													X	
6. US-40	1420													X	
7.															
8.															
9.															
10.															

Relinquished By:	Date: 2-21-01 2-22-01	Time: 1705	Received By:	Date: 2/22/01 Time: 1705
Relinquished By:	Date: 2-22	Time: 1700	Received By:	Date: 2-23 Time: 1500
Relinquished By:	Date:	Time:	Received By: Mike Gorin	Date: 2/23/01 Time: 1700

Were Samples Received in Good Condition? ☒ Yes ☐ No Samples on Ice? ☒ Yes ☐ No Method of Shipment courier Page 2 of 2

To be completed upon receipt of report:

1) Were the analyses requested on the Chain of Custody reported? ☐ Yes ☐ No If no, what analyses are still needed? _____

2) Was the report issued within the requested turnaround time? ☐ Yes ☐ No If no, what was the turnaround time? _____

Approved by: _____ Signature: _____ Company: _____ Date: _____

Sequoia Analytical

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9 March, 2001

Jed Douglas
Gettler Ryan, Inc. - Petaluma
1364 North McDowell Boulevard, Suite B2
Petaluma, CA 94954-1175

RE: Tosco
Sequoia Report: W102585

Enclosed are the results of analyses for samples received by the laboratory on 22-Feb-01 17:05. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Dimple Sharma For Charlie Westwater
Project Manager

CA ELAP Certificate #1271

Sequoia Analytical

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Gettler Ryan, Inc. - Petaluma	Project: Tosco	
1364 North McDowell Boulevard, Suite B2	Project Number: Tosco # 4186	**Reported:**
Petaluma CA, 94954-1175	Project Manager: Jed Douglas	09-Mar-01 10:37

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-1	W102585-01	Soil	21-Feb-01 11:15	22-Feb-01 17:05

Dimple Sharma For Charlie Westwater, Project Manager

Sequoia Analytical

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Gettler Ryan, Inc. - Petaluma	Project: Tosco	
1364 North McDowell Boulevard, Suite B2	Project Number: Tosco # 4186	**Reported:**
Petaluma CA, 94954-1175	Project Manager: Jed Douglas	09-Mar-01 10:37

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SS-1 (W102585-01) Soil Sampled: 21-Feb-01 11:15 Received: 22-Feb-01 17:05									
Purgeable Hydrocarbons	ND	1.0	mg/kg	20	1C01003	01-Mar-01	02-Mar-01	EPA 8015/8020	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.050	"	"	"	"	"	"	CC-3
Surrogate: a,a,a-Trifluorotoluene		*120 %*	*40-140*		"	"	"	"	

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Gettler Ryan, Inc. - Petaluma	Project: Tosco	
1364 North McDowell Boulevard, Suite B2	Project Number: Tosco # 4186	**Reported:**
Petaluma CA, 94954-1175	Project Manager: Jed Douglas	09-Mar-01 10:37

Total Metals by EPA 6000/7000 Series Methods

Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SS-1 (W102585-01) Soil Sampled: 21-Feb-01 11:15 Received: 22-Feb-01 17:05									
Lead	5.7	1.0	mg/kg	1	1C05026	05-Mar-01	06-Mar-01	EPA 6010A	

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Gettler Ryan, Inc. - Petaluma	Project: Tosco	
1364 North McDowell Boulevard, Suite B2	Project Number: Tosco # 4186	**Reported:**
Petaluma CA, 94954-1175	Project Manager: Jed Douglas	09-Mar-01 10:37

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT - Quality Control

Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C01003 - EPA 5030B [MeOH]										
Blank (1C01003-BLK1)				Prepared: 01-Mar-01 Analyzed: 02-Mar-01						
Purgeable Hydrocarbons	ND	1.0	mg/kg							
Benzene	ND	0.0050	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Methyl tert-butyl ether	ND	0.050	"							
Surrogate: a,a,a-Trifluorotoluene	*0.656*		"	*0.600*		*109*	*40-140*			
Blank (1C01003-BLK2)				Prepared & Analyzed: 02-Mar-01						
Purgeable Hydrocarbons	ND	1.0	mg/kg							
Benzene	ND	0.0050	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Methyl tert-butyl ether	ND	0.050	"							
Surrogate: a,a,a-Trifluorotoluene	*0.646*		"	*0.600*		*108*	*40-140*			
LCS (1C01003-BS1)				Prepared: 01-Mar-01 Analyzed: 02-Mar-01						
Benzene	0.602	0.0050	mg/kg	0.800		75.2	50-150			
Toluene	0.652	0.0050	"	0.800		81.5	50-150			
Ethylbenzene	0.710	0.0050	"	0.800		88.7	50-150			
Xylenes (total)	2.34	0.0050	"	2.40		97.5	50-150			
Surrogate: a,a,a-Trifluorotoluene	*0.696*		"	*0.600*		*116*	*40-140*			
LCS (1C01003-BS2)				Prepared & Analyzed: 02-Mar-01						
Benzene	0.576	0.0050	mg/kg	0.800		72.0	50-150			
Toluene	0.642	0.0050	"	0.800		80.3	50-150			
Ethylbenzene	0.704	0.0050	"	0.800		88.0	50-150			
Xylenes (total)	2.12	0.0050	"	2.40		88.3	50-150			
Surrogate: a,a,a-Trifluorotoluene	*0.712*		"	*0.600*		*119*	*40-140*			

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Gettler Ryan, Inc. - Petaluma	Project: Tosco	
1364 North McDowell Boulevard, Suite B2	Project Number: Tosco # 4186	**Reported:**
Petaluma CA, 94954-1175	Project Manager: Jed Douglas	09-Mar-01 10:37

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT - Quality Control

Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C01003 - EPA 5030B [MeOH]										
Matrix Spike (1C01003-MS1)		**Source: W102605-11**		Prepared: 01-Mar-01 Analyzed: 02-Mar-01						
Benzene	0.534	0.0050	mg/kg	0.800	ND	66.7	50-150			
Toluene	0.596	0.0050	"	0.800	ND	74.5	50-150			
Ethylbenzene	0.660	0.0050	"	0.800	ND	82.5	50-150			
Xylenes (total)	1.98	0.0050	"	2.40	ND	82.5	50-150			
Surrogate: a,a,a-Trifluorotoluene	*0.552*		"	*0.600*		*92.0*	*40-140*			
Matrix Spike Dup (1C01003-MSD1)		**Source: W102605-11**		Prepared: 01-Mar-01 Analyzed: 02-Mar-01						
Benzene	0.550	0.0050	mg/kg	0.800	ND	68.8	50-150	2.95	20	
Toluene	0.614	0.0050	"	0.800	ND	76.8	50-150	2.98	20	
Ethylbenzene	0.676	0.0050	"	0.800	ND	84.5	50-150	2.40	20	
Xylenes (total)	2.04	0.0050	"	2.40	ND	85.0	50-150	2.99	20	
Surrogate: a,a,a-Trifluorotoluene	*0.572*		"	*0.600*		*95.3*	*40-140*			

Sequoia Analytical

404 N. Wiget Lane
Walnut Creek, CA 94598
(925) 988-9600
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Gettler Ryan, Inc. - Petaluma	Project: Tosco	
1364 North McDowell Boulevard, Suite B2	Project Number: Tosco # 4186	**Reported:**
Petaluma CA, 94954-1175	Project Manager: Jed Douglas	09-Mar-01 10:37

Total Metals by EPA 6000/7000 Series Methods - Quality Control

Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C05026 - EPA 3050B										
Blank (1C05026-BLK1)				Prepared: 05-Mar-01 Analyzed: 06-Mar-01						
Lead	ND	1.0	mg/kg							
LCS (1C05026-BS1)				Prepared: 05-Mar-01 Analyzed: 06-Mar-01						
Lead	50.4	1.0	mg/kg	50.0		101	80-120			
LCS Dup (1C05026-BSD1)				Prepared: 05-Mar-01 Analyzed: 06-Mar-01						
Lead	52.1	1.0	mg/kg	50.0		104	80-120	3.32	20	
Matrix Spike (1C05026-MS1)		Source: W102585-01		Prepared: 05-Mar-01 Analyzed: 06-Mar-01						
Lead	52.7	1.0	mg/kg	50.0	5.7	94.0	80-120			
Matrix Spike Dup (1C05026-MSD1)		Source: W102585-01		Prepared: 05-Mar-01 Analyzed: 06-Mar-01						
Lead	54.2	1.0	mg/kg	50.0	5.7	97.0	80-120	2.81	20	

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Gettler Ryan, Inc. - Petaluma	Project: Tosco	
1364 North McDowell Boulevard, Suite B2	Project Number: Tosco # 4186	**Reported:**
Petaluma CA, 94954-1175	Project Manager: Jed Douglas	09-Mar-01 10:37

Notes and Definitions

CC-3	Continuing Calibration indicates that the quantitative result for this analyte includes a greater than 15% degree of uncertainty. The value as reported is within method acceptance.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

№ 002668

TOSCO

☐ 885 Jarvis Drive • Morgan Hill, CA 95037 • (408) 776-9600 • FAX (408) 782-6308
☐ 819 Striker Ave., Suite 8 • Sacramento, CA 95834 • (916) 921-9600 FAX (916) 921-0100
☐ 404 N. Wiget Lane • Walnut Creek, CA 94598 • (925) 988-9600 FAX (925) 988-9673
☒ 1455 McDowell Blvd. North, Suite D • Petaluma, CA 94954 • (707) 792-1865 FAX (707) 792-0342
☐ 1551 Industrial Road • San Carlos, CA 94070 • (650) 232-9600 FAX (650) 232-9612

Consultant Company: Getler-Ryan INC	Project Name: 140175-05 W102585
Address: 1364 N. McDowell Blvd, B2	TOSCO Engineer (required) Dave DeWitt
City: Petaluma State: CA Zip Code: 94954	
Telephone: 707-789-3253 FAX #: 707-789-3218	Site #, City, State: 4186, Livermore, CA
Report To: Jed Douglas Sampler: J. Douglas	QC Data: ☒ Level D (Standard) ☐ Level C ☐ Level B ☐ Level A

Turnaround Time: ☒ 10 Work Days ☐ 5 Work Days ☐ 3 Work Days ☐ 2 Work Days ☐ 1 Work Day ☐ 2-8 Hours

☐ Drinking Water ☐ Waste Water ☐ Other

CODE: ☐ Misc. ☐ Detect. ☐ Eval. ☐ Remed. ☐ Demol. ☐ Closure

Analyses Requested

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Sequoia's Sample #	TPH (EPA 8015 Mod. Gas)	BTEX (EPA 8020)	MTBE (EPA 8020)	TPH (EPA 8015 Mod. Diesel)	Volatile Organics (EPA 8260)	MTBE Confirmation (EPA 8260)	Total Lead			Comments
1. SS-1	2-21-01/1115	soil	4	6 inch liner	01A-D	X	X	X				X			Composite 4 liners to one sample prior to analysis
2.															
3.															
4.															
5.															
6.															Hard copy of data to be received by: 3-9-01
7.															
8.															
9.															
10.															

Relinquished By:	Date: 2-22-01	Time: 1705	Received By:	Date: 2/22/01	Time: 1705
Relinquished By:	Date: 2-23	Time: 1700	Received By:	Date: 2-23	Time: 1500
Relinquished By:	Date:	Time:	Received By: Mike Gorin	Date: 2/23/01	Time: 1700

Were Samples Received in Good Condition? ☒ Yes ☐ No Samples on Ice? ☒ Yes ☐ No Method of Shipment Courier Page 1 of 1

To be completed upon receipt of report:

1) Were the analyses requested on the Chain of Custody reported? ☐ Yes ☐ No If no, what analyses are still needed? _____

2) Was the report issued within the requested turnaround time? ☐ Yes ☐ No If no, what was the turnaround time? _____

Approved by: Signature: Company: Date:

Pink - Client

Yellow - Sequoia

White - Sequoia

Sequoia Analytical

1551 Industrial Road
San Carlos, CA 94070-4111
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April 18 , 2001

Deanna Harding
Gettler-Ryan/Geostrategies(1)
6747 Sierra Court, Suite J
Dublin, CA 94568
RE: Tosco(1) / L104025

Enclosed are the results of analyses for samples received by the laboratory on 04/03/01. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Latonya K. Pelt

Latonya Pelt
Project Manager

CA ELAP Certificate Number 2360

Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568	Project: Tosco(1) Project Number: Unocal SS#4186 Project Manager: Deanna Harding	**Reported:** 04/18/01 13:53

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-LB	L104025-01	Water	04/03/01 00:00	04/03/01 19:25
U-1	L104025-02	Water	04/03/01 12:00	04/03/01 19:25
U-2	L104025-03	Water	04/03/01 11:30	04/03/01 19:25
U-3	L104025-04	Water	04/03/01 12:35	04/03/01 19:25
U-4	L104025-05	Water	04/03/01 10:55	04/03/01 19:25
U-5	L104025-06	Water	04/03/01 09:35	04/03/01 19:25

Gettler-Ryan/Geostrategies(1)	Project: Tosco(1)	
6747 Sierra Court, Suite J	Project Number: Unocal SS#4186	**Reported:**
Dublin CA, 94568	Project Manager: Deanna Harding	04/18/01 13:53

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TB-LB (L104025-01) Water Sampled: 04/03/01 00:00 Received: 04/03/01 19:25									
Purgeable Hydrocarbons as Gasoline	ND	50.0	ug/l	1	1040048	04/13/01	04/13/01	DHS LUFT	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.00	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*76.3 %*	*70-130*		"	"	"	"	
U-1 (L104025-02) Water Sampled: 04/03/01 12:00 Received: 04/03/01 19:25									
Purgeable Hydrocarbons as Gasoline	ND	50.0	ug/l	1	1040048	04/13/01	04/13/01	DHS LUFT	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	**55.1**	5.00	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*75.4 %*	*70-130*		"	"	"	"	
U-2 (L104025-03) Water Sampled: 04/03/01 11:30 Received: 04/03/01 19:25									
Purgeable Hydrocarbons as Gasoline	ND	50.0	ug/l	1	1040048	04/13/01	04/13/01	DHS LUFT	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	**30.2**	5.00	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*78.7 %*	*70-130*		"	"	"	"	

Gettler-Ryan/Geostrategies(1)	Project: Tosco(1)	
6747 Sierra Court, Suite J	Project Number: Unocal SS#4186	**Reported:**
Dublin CA, 94568	Project Manager: Deanna Harding	04/18/01 13:53

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
U-3 (L104025-04) Water Sampled: 04/03/01 12:35 Received: 04/03/01 19:25									
Purgeable Hydrocarbons as Gasoline	**5390**	500	ug/l	10	1040049	04/13/01	04/13/01	DHS LUFT	P-01
Benzene	**660**	5.00	"	"	"	"	"	"	
Toluene	**10.8**	5.00	"	"	"	"	"	"	
Ethylbenzene	**304**	5.00	"	"	"	"	"	"	
Xylenes (total)	**356**	5.00	"	"	"	"	"	"	
Methyl tert-butyl ether	**15200**	500	"	100	"	"	"	"	M-04
Surrogate: a,a,a-Trifluorotoluene		*86.3 %*	*70-130*		"	"	"	"	
U-4 (L104025-05) Water Sampled: 04/03/01 10:55 Received: 04/03/01 19:25									
Purgeable Hydrocarbons as Gasoline	ND	50.0	ug/l	1	1040048	04/13/01	04/13/01	DHS LUFT	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	**37.8**	5.00	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*77.1 %*	*70-130*		"	"	"	"	
U-5 (L104025-06) Water Sampled: 04/03/01 09:35 Received: 04/03/01 19:25									
Purgeable Hydrocarbons as Gasoline	ND	50.0	ug/l	1	1040048	04/13/01	04/13/01	DHS LUFT	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	**0.728**	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	**0.993**	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	**54.8**	5.00	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*80.2 %*	*70-130*		"	"	"	"	

Gettler-Ryan/Geostrategies(1)	Project: Tosco(1)	
6747 Sierra Court, Suite J	Project Number: Unocal SS#4186	**Reported:**
Dublin CA, 94568	Project Manager: Deanna Harding	04/18/01 13:53

Volatile Organic 8 Oxyganated Compounds by EPA Method 8260B

Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
U-3 (L104025-04) Water Sampled: 04/03/01 12:35 Received: 04/03/01 19:25									**I-02**
Ethanol	ND	167000	ug/l	166.67	1040057	04/17/01	04/18/01	EPA 8260B	
1,2-Dibromoethane	ND	333	"	"	"	"	"	"	
1,2-Dichloroethane	ND	333	"	"	"	"	"	"	
Di-isopropyl ether	ND	333	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	333	"	"	"	"	"	"	
Methyl tert-butyl ether	**19300**	333	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	333	"	"	"	"	"	"	
Tert-butyl alcohol	**22200**	16700	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*95.6 %*	*76-114*		"	"	"	"	
Surrogate: Toluene-d8		*105 %*	*88-110*		"	"	"	"	
U-4 (L104025-05) Water Sampled: 04/03/01 10:55 Received: 04/03/01 19:25									
Ethanol	ND	1000	ug/l	1	1040017	04/05/01	04/05/01	EPA 8260B	
1,2-Dibromoethane	ND	2.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.00	"	"	"	"	"	"	
Di-isopropyl ether	ND	2.00	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	2.00	"	"	"	"	"	"	
Methyl tert-butyl ether	**38.2**	2.00	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	2.00	"	"	"	"	"	"	
Tert-butyl alcohol	ND	100	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*92.4 %*	*76-114*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*88-110*		"	"	"	"	
U-5 (L104025-06) Water Sampled: 04/03/01 09:35 Received: 04/03/01 19:25									
Ethanol	ND	1000	ug/l	1	1040017	04/05/01	04/05/01	EPA 8260B	
1,2-Dibromoethane	ND	2.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.00	"	"	"	"	"	"	
Di-isopropyl ether	ND	2.00	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	2.00	"	"	"	"	"	"	
Methyl tert-butyl ether	**55.4**	2.00	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	2.00	"	"	"	"	"	"	
Tert-butyl alcohol	ND	100	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*91.8 %*	*76-114*		"	"	"	"	
Surrogate: Toluene-d8		*98.0 %*	*88-110*		"	"	"	"	

Gettler-Ryan/Geostrategies(1)	Project: Tosco(1)	
6747 Sierra Court, Suite J	Project Number: Unocal SS#4186	**Reported:**
Dublin CA, 94568	Project Manager: Deanna Harding	04/18/01 13:53

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT - Quality Control

Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1040048 - EPA 5030B (P/T)										
Blank (1040048-BLK1)				Prepared & Analyzed: 04/13/01						
Purgeable Hydrocarbons as Gasoline	ND	50.0	ug/l							
Benzene	ND	0.500	"							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	0.500	"							
Methyl tert-butyl ether	ND	5.00	"							
Surrogate: a,a,a-Trifluorotoluene	*7.96*		"	*10.0*		*79.6*	*70-130*			
LCS (1040048-BS1)				Prepared & Analyzed: 04/13/01						
Benzene	8.49	0.500	ug/l	10.0		84.9	70-130			
Toluene	8.65	0.500	"	10.0		86.5	70-130			
Ethylbenzene	8.49	0.500	"	10.0		84.9	70-130			
Xylenes (total)	25.8	0.500	"	30.0		86.0	70-130			
Surrogate: a,a,a-Trifluorotoluene	*8.26*		"	*10.0*		*82.6*	*70-130*			
LCS (1040048-BS2)				Prepared & Analyzed: 04/13/01						
Purgeable Hydrocarbons as Gasoline	263	50.0	ug/l	250		105	70-130			
Surrogate: a,a,a-Trifluorotoluene	*9.63*		"	*10.0*		*96.3*	*70-130*			
Matrix Spike (1040048-MS1)		**Source: L104025-05**		Prepared & Analyzed: 04/13/01						
Purgeable Hydrocarbons as Gasoline	229	50.0	ug/l	250	ND	91.6	60-140			
Surrogate: a,a,a-Trifluorotoluene	*7.92*		"	*10.0*		*79.2*	*70-130*			
Matrix Spike Dup (1040048-MSD1)		**Source: L104025-05**		Prepared & Analyzed: 04/13/01						
Purgeable Hydrocarbons as Gasoline	267	50.0	ug/l	250	ND	107	60-140	15.3	25	
Surrogate: a,a,a-Trifluorotoluene	*9.18*		"	*10.0*		*91.8*	*70-130*			

Gettler-Ryan/Geostrategies(1)	Project: Tosco(1)	
6747 Sierra Court, Suite J	Project Number: Unocal SS#4186	**Reported:**
Dublin CA, 94568	Project Manager: Deanna Harding	04/18/01 13:53

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT - Quality Control

Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1040049 - EPA 5030B (P/T)										
Blank (1040049-BLK1)				Prepared & Analyzed: 04/13/01						
Purgeable Hydrocarbons as Gasoline	ND	50.0	ug/l							
Benzene	ND	0.500	"							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	0.500	"							
Methyl tert-butyl ether	ND	5.00	"							
Surrogate: a,a,a-Trifluorotoluene	*10.3*		"	*10.0*		*103*	*70-130*			
LCS (1040049-BS1)				Prepared & Analyzed: 04/13/01						
Benzene	10.0	0.500	ug/l	10.0		100	70-130			
Toluene	9.91	0.500	"	10.0		99.1	70-130			
Ethylbenzene	10.1	0.500	"	10.0		101	70-130			
Xylenes (total)	30.4	0.500	"	30.0		101	70-130			
Surrogate: a,a,a-Trifluorotoluene	*10.4*		"	*10.0*		*104*	*70-130*			
LCS (1040049-BS2)				Prepared & Analyzed: 04/13/01						
Purgeable Hydrocarbons as Gasoline	226	50.0	ug/l	250		90.4	70-130			
Surrogate: a,a,a-Trifluorotoluene	*11.4*		"	*10.0*		*114*	*70-130*			
Matrix Spike (1040049-MS1)		**Source: L104038-04**		Prepared & Analyzed: 04/13/01						
Purgeable Hydrocarbons as Gasoline	255	50.0	ug/l	250	ND	102	60-140			
Surrogate: a,a,a-Trifluorotoluene	*11.4*		"	*10.0*		*114*	*70-130*			
Matrix Spike Dup (1040049-MSD1)		**Source: L104038-04**		Prepared & Analyzed: 04/13/01						
Purgeable Hydrocarbons as Gasoline	240	50.0	ug/l	250	ND	96.0	60-140	6.06	25	
Surrogate: a,a,a-Trifluorotoluene	*11.3*		"	*10.0*		*113*	*70-130*			

Gettler-Ryan/Geostrategies(1)	Project: Tosco(1)	
6747 Sierra Court, Suite J	Project Number: Unocal SS#4186	**Reported:**
Dublin CA, 94568	Project Manager: Deanna Harding	04/18/01 13:53

Volatile Organic 8 Oxyganated Compounds by EPA Method 8260B - Quality Control

Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1040017 - EPA 5030B [P/T]										
Blank (1040017-BLK1)				Prepared & Analyzed: 04/05/01						
Ethanol	ND	1000	ug/l							
1,2-Dibromoethane	ND	2.00	"							
1,2-Dichloroethane	ND	2.00	"							
Di-isopropyl ether	ND	2.00	"							
Ethyl tert-butyl ether	ND	2.00	"							
Methyl tert-butyl ether	ND	2.00	"							
Tert-amyl methyl ether	ND	2.00	"							
Tert-butyl alcohol	ND	100	"							
Surrogate: 1,2-Dichloroethane-d4	*48.0*		"	*50.0*		*96.0*	*76-114*			
Surrogate: Toluene-d8	*52.7*		"	*50.0*		*105*	*88-110*			
LCS (1040017-BS1)				Prepared & Analyzed: 04/05/01						
Methyl tert-butyl ether	44.5	2.00	ug/l	50.0		89.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	*45.8*		"	*50.0*		*91.6*	*76-114*			
Surrogate: Toluene-d8	*51.2*		"	*50.0*		*102*	*88-110*			
Matrix Spike (1040017-MS1)	**Source: L104025-05**			Prepared & Analyzed: 04/05/01						
Methyl tert-butyl ether	80.0	2.00	ug/l	50.0	38.2	83.6	60-140			
Surrogate: 1,2-Dichloroethane-d4	*47.0*		"	*50.0*		*94.0*	*76-114*			
Surrogate: Toluene-d8	*51.7*		"	*50.0*		*103*	*88-110*			
Matrix Spike Dup (1040017-MSD1)	**Source: L104025-05**			Prepared & Analyzed: 04/05/01						
Methyl tert-butyl ether	79.3	2.00	ug/l	50.0	38.2	82.2	60-140	0.879	25	
Surrogate: 1,2-Dichloroethane-d4	*47.6*		"	*50.0*		*95.2*	*76-114*			
Surrogate: Toluene-d8	*51.1*		"	*50.0*		*102*	*88-110*			
Batch 1040057 - EPA 5030B [P/T]										
Blank (1040057-BLK1)				Prepared & Analyzed: 04/17/01						
Ethanol	ND	1000	ug/l							
1,2-Dibromoethane	ND	2.00	"							
1,2-Dichloroethane	ND	2.00	"							
Di-isopropyl ether	ND	2.00	"							
Ethyl tert-butyl ether	ND	2.00	"							
Methyl tert-butyl ether	ND	2.00	"							
Tert-amyl methyl ether	ND	2.00	"							
Tert-butyl alcohol	ND	100	"							

Gettler-Ryan/Geostrategies(1)	Project: Tosco(1)	
6747 Sierra Court, Suite J	Project Number: Unocal SS#4186	**Reported:**
Dublin CA, 94568	Project Manager: Deanna Harding	04/18/01 13:53

Volatile Organic 8 Oxyganated Compounds by EPA Method 8260B - Quality Control

Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1040057 - EPA 5030B [P/T]										
Blank (1040057-BLK1)				Prepared & Analyzed: 04/17/01						
Surrogate: 1,2-Dichloroethane-d4	*48.8*		*ug/l*	*50.0*		*97.6*	*76-114*			
Surrogate: Toluene-d8	*50.7*		*"*	*50.0*		*101*	*88-110*			
LCS (1040057-BS1)				Prepared & Analyzed: 04/17/01						
Methyl tert-butyl ether	53.2	2.00	ug/l	50.0		106	70-130			
Surrogate: 1,2-Dichloroethane-d4	*48.2*		*"*	*50.0*		*96.4*	*76-114*			
Surrogate: Toluene-d8	*48.7*		*"*	*50.0*		*97.4*	*88-110*			
Matrix Spike (1040057-MS1)	**Source: L104095-05**			Prepared & Analyzed: 04/17/01						
Methyl tert-butyl ether	181	2.00	ug/l	50.0	119	124	60-140			
Surrogate: 1,2-Dichloroethane-d4	*48.7*		*"*	*50.0*		*97.4*	*76-114*			
Surrogate: Toluene-d8	*50.9*		*"*	*50.0*		*102*	*88-110*			
Matrix Spike Dup (1040057-MSD1)	**Source: L104095-05**			Prepared & Analyzed: 04/17/01						
Methyl tert-butyl ether	171	2.00	ug/l	50.0	119	104	60-140	5.68	25	
Surrogate: 1,2-Dichloroethane-d4	*49.2*		*"*	*50.0*		*98.4*	*76-114*			
Surrogate: Toluene-d8	*49.9*		*"*	*50.0*		*99.8*	*88-110*			

Notes and Definitions

I-02	This sample was analyzed outside of the EPA recommended holding time.
M-04	MTBE was reported from second analysis.
P-01	Chromatogram Pattern: Gasoline C6-C12
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

TOSCO

Tosco Marketing Company
3033 Cow Canyon Pl., Ste. 400
San Ramon, California 94583

Facility Number: UNOCAL SS# 4186
Facility Address: 1771 FIRST STREET, LIVERMORE, CA
Consultant Project Number: 180181.85
Consultant Name: Gettler-Ryan Inc. (G-R Inc.)
Address: 6747 Sierra Court, Suite J, Dublin, CA 94568
Project Contact (Name): Deanna L. Harding
(Phone): 510-551-7555 (Fax Number): 510-551-7888

Contact (Name): MS. TINA BERRY DeWitt
(Phone): (925) 277-2321
Laboratory Name: Sequoia Analytical
Laboratory Release Number:
Samples Collected by (Name): Vaetkes Tashjian
Collection Date: 4/3/01
Signature:

404025

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	Analyses To Be Performed: TPH Gas + BTEX w/MTBE (8015)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Ni (TCLP or AA)	(6) OXY's (8260) 1,2 DCA & EDB				DO NOT BILL TB-LB ANALYSIS — Remarks
TB-LB	01	1	W	G		HCl	Y	X												
U-1	02	3	"	"	12:00 PM	"	"	X												
U-2	03	3	"	"	11:30 AM	"	"	X												
U-3	04	5	"	"	12:32 PM	"	"	X												
U-4	05	5	"	"	10:55 AM	"	"	X								X				
U-5	06	5	"	"	9:35 AM	"	"	X								X				Run (6) OXY's + 1,2 DCA & EDB by 8260 on 8020 MTBE Hits on U-3 only.

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
	G-R Inc.	4/3/01 7:20 PM		SAL	4/3/01 1925
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted

APPENDIX F

ALLIED WASTE FORWARD LANDFILL ACCEPTANCE LETTER

NORTHERN CALIFORNIA SALES OFFICE • SPECIAL WASTE

Forward • Keller Canyon • Newby Island • Ox Mountain

ALLIED WASTE COMPANIES BFI

March 16, 2001

Gettler-Ryan
1364 N. McDowell Blvd #B2
Petaluma, CA 94954

Attn: Mr. Douglas

Re: Approval No. 574
Gasoline Contaminated Soil
S/S#4186-1771 First St.

Dear Mr. Douglas:

FORWARD INC. is pleased to inform you that the approximately 8 drums of Gasoline Contaminated Soil from the referenced site has been approved for acceptance at our Manteca, California Landfill as a Class 2 waste. This approval has been based on the information provided in the waste profile and associated materials submitted on behalf of Tosco Marketing Company (Generator). Acceptance of the waste is subject to regulatory requirements, and is also subject to the "Terms and Conditions" agreed to and signed by Generator in the waste profile.

Your approval number for this project will be 574. This number should be used in all scheduling and correspondence with ***FORWARD, INC.*** regarding this waste profile.

This profile shall remain in effect until March 11, 2002, or until any significant changes in the waste stream occur. At that time, ***FORWARD, INC.*** will re-evaluate the profile, and current analytical data and requirements will be reviewed.

Please schedule all waste shipments with the Landfill (209-982-4298) at least 24 hours in advance. The landfills hours of operation are Monday through Friday 6:00 am to 6:00 pm for soil, 6:00 am to 3:00 pm for asbestos, 6:00 am to 5:00 pm for all other waste types.

Thank you for the opportunity to be of service. Should you have any questions, please do not hesitate to contact me or our Customer Service at (800) 204-4242.

Sincerely,

Allied Waste Industries

Brad Bonner /J.F.

Brad J. Bonner
Special Waste Sales Manager
Northern, CA

BJB/jf

F:\FORWARD\MERGE FORMS\ACCEPT.DOC