

*Do another round of GW sample  
or two*

**REPORT OF SOIL, SOIL VAPOR, AND  
GROUNDWATER SAMPLING**

**Corwood Car Wash UST Site  
6973 Village Parkway  
Dublin, California**

**GA Project No. 106-02-03**

Prepared for:

Mr. Roger Woodward  
R. L. Woodward Industries, Inc.  
P O Box 2688  
Dublin, CA 94568

Prepared by:

Gribi Associates  
1350 Hayes Street, Suite C-14  
Benicia, CA 94510  
(707)748-7743

March 19, 2001

March 19, 2001

Alameda County Department of  
Environmental Health  
1131 Harbor Bay Parkway, 2<sup>nd</sup> Floor  
Alameda, CA 94502

MAY 24 2001

Attention: Eva Chu

Subject: Report of Soil, Soil Vapor, and Groundwater Sampling  
Corwood Car Wash UST Site, 6973 Village Parkway  
Dublin, California  
GA Project No. 106-02-03

Ladies and Gentlemen:

Gribi Associates is pleased to submit this report on behalf of R. L. Woodward Industries, Inc. documenting soil, soil vapor, and groundwater sampling conducted at the at the Corwood Car Wash underground storage tank (UST) site located at 6973 Village Parkway in Dublin, California. This investigation included: (1) The drilling and sampling of two soil borings, IB-3 and IB-4, at the site using direct-push coring equipment; (2) The collection of one soil vapor sample, VS-1, beneath the car wash cashier's kiosk; and (3) The drilling, installation, and sampling of one groundwater monitoring well, MW-1, at the site. The goal of the investigation was to provide additional site characterization in order to move the site towards regulatory site closure.

Both soil and groundwater analytical results from this and previous investigations indicate that low-permeability silts and clays beneath the site have resulted in limited impacts to soil and groundwater from past UST-related hydrocarbon releases at the site. The only hydrocarbon constituent detected in downgradient borings IB-3 and IB-4, located near the south project site property line, was low levels of Methyl Tertiary Butyl Ether (MTBE) in grab groundwater samples from these borings. The grab groundwater sample from the easterly boring IB-3, located downgradient (south-southeast) from the former east fuel dispenser, contained 0.390 parts per million (ppm) of MTBE. The grab groundwater sample from the west boring IB-4, located downgradient from the former project site USTs, contained 0.084 ppm of MTBE. These levels of MTBE are relatively low and do not indicate a widespread MTBE problem. This conclusion is bolstered somewhat by the apparent downgradient natural attenuation of MTBE, from 1.7 ppm and 1.8 ppm in the respective former east dispenser and UST areas, to 0.390 ppm and 0.084 ppm in respective downgradient borings IB-3 and IB-4.

While the grab groundwater sample from previous boring IB-1, located immediately south from the former east fuel dispenser, contained 750 ppm of Total Petroleum Hydrocarbons as Diesel (TPH-D), the groundwater sample from newly-installed well MW-1, located immediately adjacent to IB-1, contained no detectable TPH-D. Thus, while the result from previous boring IB-1 may have suggested significant diesel-range impacts to groundwater (including possible free product), the

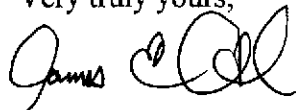
results from MW-1 show that the groundwater result from IB-1 was not representative of true groundwater conditions. In fact, these results conform with our experience, which has shown that grab groundwater samples collected from direct-push borings that have passed through hydrocarbon-impacted soils often result in erroneously high hydrocarbon concentrations in the grab groundwater samples.

The soil vapor sample, VS-1, collected beneath the cashier's kiosk at about three feet in depth contained levels of gasoline constituents that are well below established Risk-Based Screening Levels (RBSLs) for vapors at three feet in depth (*Application of Risk-Based Screening Levels and Decision Making at Sites With Impacted Soil and Groundwater*, San Francisco Bay Regional Water Quality Control Board, August 2000, Table E-2). Vapor sample VS-1 contained only 16 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) of Benzene, and the RBSL for soil gas immediately below a building floor (commercial receptors, fine grained soils) is  $280,000 \mu\text{g}/\text{m}^3$ .

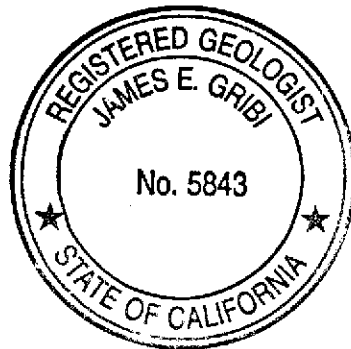
Based on the obvious lack of significant risk to both current and future environmental and human health receptors, we recommend that this site be reviewed for regulatory site closure. Whereas some residual hydrocarbons remain in source areas beneath the site, low-permeability soils appear to have limited downgradient migration of these hydrocarbons. Further, given past UST removal and overexcavation activities at the site, there is little likelihood that conditions will change at this site in the future.

We appreciate the opportunity to present this report for your review. Please call if you have questions or require additional information.

Very truly yours,



James E. Gribi  
Registered Geologist  
California No. 5843



JEG/ct  
Enclosure

c Mr. Roger L. Woodward

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## 1.0 INTRODUCTION

Gribi Associates is pleased to submit this report on behalf of R. L. Woodward Industries, Inc. documenting soil, soil vapor, and groundwater sampling conducted at the at the Corwood Car Wash underground storage tank (UST) site located at 6973 Village Parkway in Dublin, California (see Figure 1 and Figure 2). This investigation included: (1) The drilling and sampling of two soil borings, IB-3 and IB-4, at the site using direct-push coring equipment; (2) The collection of one soil vapor sample, VS-1, beneath the car wash cashier's kiosk; and (3) The drilling, installation, and sampling of one groundwater monitoring well, MW-1, at the site. The goal of the investigation was to provide additional site characterization in order to move the site towards regulatory site closure.

### 1.1 Site Background

Corwood Car Wash previously operated two unleaded gasoline USTs, located in a common excavation cavity on the northwest side of the site. The UST system was apparently installed in about 1968, and it is our understanding that diesel fuel was also stored in the USTs at some time in the distant past. In March 1991, the UST system was completely retrofitted with state-of-the-art leak prevention and monitoring devices, including interior tank linings, overfill/overspill protection, and a sophisticated leak detection monitoring system.

Previous investigations at the site included: (1) The drilling and sampling of several borings in the early 1990s immediately adjacent to project site USTs; (2) The installation of three groundwater monitoring wells, MW-1, MW-2, and MW-3, at the site in 1993; and (3) Monitoring of the three project site wells in June 1993 and in October 1995. Results of these investigations indicated some residual diesel-range hydrocarbons in subsurface soils immediately surrounding the project site USTs, but only low concentrations of diesel-range hydrocarbons in groundwater in downgradient (south-southeast) well MW-2, with no significant concentrations of Benzene. Note that soil and groundwater samples from these investigations were not analyzed for MTBE. Based on results of these previous investigations, regulatory site closure was granted for this site in 1996. The three groundwater monitoring wells were subsequently decommissioned by pressure grouting.

On January 31, 2000, both project site USTs were removed from the site in accordance with Alameda County Department of Environmental Health requirements. In addition, approximately 3,800 gallons of hydrocarbon-impacted groundwater was pumped from the excavation cavity for offsite disposal. Also, approximately 350 tons of hydrocarbon-impacted soil, primarily backfill material, was excavated and removed from the site. After backfilling with clean imported pea gravel, the UST excavation cavity and piping and dispenser excavations were re-surfaced with concrete to match existing surface grade.

Results from soil and groundwater samples collected from the UST removal cavity, together with previous results from soil and groundwater investigations conducted at the site, seem to suggest that although some releases, primarily diesel, occurred from the USTs, these releases remained in the backfill sands for the most part and did not migrate appreciably into native silts and clays surrounding the USTs. Two grab water samples collected from the open UST cavity contained relatively high levels of both diesel- and gasoline-range hydrocarbons, with detections of both Benzene and MTBE. However, given that these samples were collected from an open pit while excavation activities were occurring, we do not believe that these results are representative of true groundwater conditions beneath the site.

Soil samples collected adjacent to removed fuel dispensers indicated no significant releases adjacent to the former west dispenser, and moderate levels of diesel-range hydrocarbons, with no significant level of gasoline-range hydrocarbons, adjacent to the former east fuel dispenser. Given that diesel was only stored in the USTs in the distant past, as well as the apparent aged quality of the gasoline-range hydrocarbons in the east dispenser soil samples, it appears that releases associated with the project site USTs and fuel dispensers occurred in the distant past, prior to UST system upgrades, which included installing secondary containment beneath each dispenser.

On March 3, 2000, Gribi Associates drilled and sampled two soil borings, IB-1 and IB-2, at the site using direct-push coring equipment. Both soil and grab groundwater samples from IB-1, located in an expected downgradient (south-southeast) direction from the former east dispenser island, contained detectable levels of both gasoline- and diesel-range hydrocarbons. In addition, the grab groundwater sample from IB-2, located in an expected downgradient (south-southeast) direction from the former fuel USTs, contained detectable levels of both gasoline- and diesel-range hydrocarbons. However, the laboratory chromatograms for these samples seem to show that the gasoline-range hydrocarbon results in these samples are primarily due to interference from diesel-range hydrocarbons. Thus, soil and groundwater impacts relative the former Corwood Car Wash UST system appear to be primarily related to past diesel releases. Given that diesel was only stored in the USTs in the distant past (probably in the early to mid-1970s), it appears that the majority of releases associated with the USTs occurred in the distant past, prior to UST system upgrades which included installing interior fiberglass linings in both of the USTs.

The only exception to this appeared to be the detection of a low level (0.53 ppm) of MTBE in the IB-2 grab groundwater sample. This MTBE detection was significantly lower than MTBE levels of 5.4 ppm and 1.7 ppm encountered in grab groundwater samples collected from the former UST excavation cavity during tank removal activities. These results seem to suggest minimal downgradient migration of MTBE.

On March 20, 2000, Gribi Associates submitted a workplan to Alameda County Department of Environmental Health. This workplan proposed (1) Installing one groundwater monitoring well downgradient (south-southeast) from the former east fuel dispenser; (2) Conducting quarterly groundwater monitoring of the newly-installed well for approximately two quarters; (3) Drilling and sampling two soil borings downgradient from previous borings IB-1 and IB-2; (4) Conducting soil vapor sampling beneath the Corwood Car Wash cashier's kiosk; and (5) Conducting a Risk-Based Corrective Action (RBCA) assessment for the project site. This workplan was approved by the Alameda County Department of Environmental Health on March 31, 2000.

## **1.2 Scope of Work**

Gribi Associates was contracted by R. L. Woodward Industries to conduct the following scope of work:

- **Task 1            Conduct prefield activities.**
- **Task 2            Conduct soil vapor sampling.**
- **Task 3            Drill and sample two soil borings.**
- **Task 4            Drill, install, and sample one groundwater monitoring well.**

- **Task 5**      **Conduct laboratory analyses.**
- **Task 6**      **Prepare report of findings.**

These tasks were conducted in accordance with the approved workplan and with guidelines contained in *Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites*, (August 10, 1990) and *LUFT Field Manual*, (October 18, 1989).

### **1.3 Limitations**

The services provided under this contract as described in this report include professional opinions and judgments based on data collected. These services have been provided according to generally accepted environmental protocol. The opinions and conclusions contained in this report are typically based on information obtained from:

1. Observations and measurements made by our field staff.
2. Contacts and discussions with regulatory agencies and others.
3. Review of available hydrogeologic data.

## **2.0 DESCRIPTION OF FIELD ACTIVITIES**

On January 5, 2001, Mr. Jim Gribi of Gribi Associates conducted soil and soil vapor sampling, and drilled and installed on groundwater monitoring well at the site. The newly-installed well was purged and sampled by Mr. Gribi on January 8, 2001.

### **2.1 Prefield Activities**

Prior to implementing field activities, written approval was obtained from the Alameda County Department of Environmental Health. Also, a soil boring and monitoring well installation permit was obtained from Alameda County Zone 7 Water Agency. A copy of this permit is contained in Appendix A. In addition, boring and well locations were marked with white paint and Underground Services Alert (USA) was noted more than 48 hours prior to field activities. Also, a private underground utility locator cleared proposed boring and well locations prior to drilling. Prior to initiating drilling activities, a Site Safety Plan was prepared, and a tailgate safety meeting was conducted with all site workers.

### **2.2 Drilling and Sampling of Investigative Soil Borings**

The locations of the two investigative soil borings, IB-3 and IB-4 are shown on Figure 2. Based on the expected south-southeasterly groundwater flow direction beneath the site, the two borings were sited near the south-southeast project site property line.

The two investigative soil borings were drilled to a depth of about 20 feet below surface grade using direct-push hydraulically-driven soil coring equipment. This coring system allowed for the retrieval of almost continuous soil cores, which were contained in a clear plastic acetate tube, nested inside a stainless steel core barrel. After the core barrel was brought to the surface and exposed, the core

was examined, logged, and field screened for hydrocarbons by a qualified Gribi Associates scientist using sight and smell. Boring logs for both soil borings are contained in Appendix B. Following completion, the two investigative borings were grouted to match existing surface grade using a cement/sand slurry.

Subsurface soils were sampled at approximately four-foot intervals starting at about eight feet in depth. After the sample and core barrel were raised to the surface, each sample was collected as follows: (1) The filled acetate tube was exposed for visual examination; (2) The selected sample interval was collected by cutting the sample and acetate plastic tubing to the desired length (typically about six inches); (3) The ends of the selected sample were quickly wrapped with Teflon sheets or aluminum foil, capped with plastic end caps, labeled and wrapped tightly with tape; and (4) The sealed soil sample was labeled and immediately placed in cold storage for transport to the analytical laboratory under formal chain-of-custody. All coring and sampling equipment was thoroughly cleaned and decontaminated between each sample collection by triple rinsing first with water, then with dilute tri-sodium phosphate solution, and finally with distilled water.

Following completion of soil sampling activities, 3/4 inch diameter Schedule 40 PVC well casing was placed in each boring, with 0.01-inch slotted well screen from about 20 feet to five feet in depth, followed by blank well casing to above surface grade. Grab groundwater samples were then collected from each of the borings using the clean stainless steel bailer as follows: (1) Laboratory-supplied containers were completely filled directly from the bailer with a minimum of agitation; (2) After making sure that no air bubbles are present, each container was then tightly sealed with a Teflon-lined septum; and (3) Each container was then labeled and placed in cold storage for transport to the analytical laboratory under formal chain-of-custody. All sampling equipment was thoroughly cleaned and decontaminated between each sample collection by triple rinsing as described above.

### **2.3 Vapor Sample Collection**

One soil vapor sample, VS-1, was collected inside the Corwood Car Wash cashier's kiosk at the approximate location shown on Figure 2. The field log for this vapor sample is contained in Appendix C. This soil vapor sample was collected using the following method:

- A small hole (approximately 1-1/2-inch diameter) was cut in the concrete slab, exposing the underlying subgrade. Base rock was removed, exposing native soils.
- An AMS Gas Vapor Probe was driven approximately three feet below surface grade, and retracted to allow for vapor sampling.
- The vapor probe was purged and the vapor sample was collected using a six-liter, laboratory clean-certified Summa Canister™ supplied by Air Toxics, Ltd. The Summa Canister was evacuated at the laboratory to about 29 inches of mercury (Hg) vacuum pressure, and, as soil vapors entered the Summa Canister during sampling, the vacuum pressure decreased to 3.5 inches Hg vacuum pressure. A flow controller calibrated and supplied by the analytical laboratory was used to allow sampling over at least a one hour period (for sample VS-1, the Summa Canister was left open for 1.5 hours due to low permeability clays beneath the site).
- The vapor probe was extracted, and the concrete slab was patched to meet pre-existing conditions.



- The vapor sample, VS-1, was transported to the analytical laboratory under formal chain-of-custody.

## 2.4 Installation and Sampling of Monitoring Well

The location of monitoring well MW-1 is shown on Figure 2. Well MW-1 was sited immediately adjacent to previous boring IB-1, immediately downgradient (south-southeast) from the former east fuel dispenser.

Monitoring well MW-1 was drilled to a total depth of about 20 feet below surface grade using hollow stem auger equipment. Soils from each well boring were logged by Mr. Jim Gribi, R.G. using sight and smell. A soil boring log for MW-1 is included in Appendix B. Soil cuttings from the well boring were placed in sealed DOT-approved 55-gallon drums pending laboratory analytical results.

Soil samples were collected from MW-1 at 6.0 feet, 11.0 feet, and 16.0 feet in depth. Undisturbed soils were sampled in advance of the auger as follows: (1) A two-inch inside diameter California-style split spoon sampler was driven into undisturbed soil ahead of the drill bit; (2) The sampler was raised quickly to the surface and the brass liners exposed; (3) The brass liner containing the most undisturbed soil was quickly sealed with aluminum foil and plastic end caps, labeled, and wrapped tightly with tape; and (4) The sealed soil sample was placed immediately in a cooler with crushed ice for transport to the analytical laboratory under formal chain-of-custody. All sampling equipment was thoroughly cleaned and decontaminated between each sample collection by triple rinsing as described previously in this report.

Well MW-1 was constructed using two-inch diameter Schedule 40 threaded PVC casing according to the following specifications: (1) 0.020-inch slotted well casing was placed from approximately 20 feet to five feet in depth; (2) Filter sand was placed around the casing to a depth of approximately four feet below grade; (3) A one foot bentonite seal was placed above the filter sand to approximately three feet below grade; and (4) The remaining annulus was grouted using a cement/sand slurry (bentonite less than five percent) to approximate grade. The top of the well was enclosed in a traffic-rated locking box set in concrete slightly above grade. Well construction details are included with the well boring log in Appendix B.

On Monday, January 8, 2001, newly-installed well MW-1 was purged and sampled using a clean PVC bailer. Well purging consisted of purging the well of at least three well volumes before sampling. During well purging, groundwater was periodically monitored for presence of free-floating product and odor, pH, specific conductance, temperature and visible clarity. After these parameters had stabilized, groundwater was sampled in the following manner: (1) Three 40-ml glass VOA vials and two 0.5 liter amber bottles were completely filled with a minimum of agitation; (2) When no air bubbles were visible, each container was tightly sealed with a Teflon-lined septum; and (3) Each container was labeled and placed in cold storage for transport to the analytical laboratory under formal chain-of-custody. A groundwater sampling data sheet for MW-1 is contained in Appendix D. All purged groundwater was stored onsite in a sealed 55-gallon drum.

## **2.5 Laboratory Analysis of Soil, Soil Vapor, and Groundwater Samples**

The soil vapor sample was analyzed for the following parameters with two-week turn around on results.

USEPA Method TO-14 Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)

This method provides for a benzene detection level of 2.4 ug/m<sup>3</sup>. Laboratory analysis of the soil vapor sample was conducted by Air Toxics, Ltd., a California-certified analytical laboratory.

Six soil samples (two samples each from the two soil borings and one monitoring well boring) and three groundwater samples (one grab groundwater sample each from the two investigative borings and one groundwater sample from MW-1) were analyzed for the following parameters.

USEPA 8015M Total Petroleum Hydrocarbons as Gasoline (TPH-G)  
USEPA 8020/602 Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)  
USEPA 8020/602 Methyl-t-butyl Ether (MTBE)  
USEPA 8015M Total Petroleum Hydrocarbons as Diesel (TPH-D)

In addition, the three groundwater samples were analyzed for the following parameters.

USEPA Method 8260B Oxygenates (TBA, MTBE, DIPE, ETBE, TAME)

All soil and water analyses were conducted by Acculabs, Inc., a California-certified analytical laboratory, with standard turnaround on results.

## **3.0 RESULTS OF INVESTIGATION**

### **3.1 General Subsurface Conditions**

Native soils encountered in borings IB-3, IB-4, and MW-1 were generally similar, consisting primarily of grey clays and silts, with occasional thin sandy layers. In well boring MW-1, grey green very fine silty sands (possible fill materials) were encountered from about three feet to six feet in depth. In the southeast boring IB-3, grey green fine- to medium-grained sands were noted from about 17.5 feet to 20 feet total depth.

Groundwater was encountered in the southeast boring IB-3 at about 17.5 feet and rose to about 12 feet in depth. In the southwest boring IB-4, groundwater was not observed during coring, but rose to about 11 feet in depth after a few minutes. Groundwater was encountered in the MW-1 well boring at about nine feet in depth.

Grey green hydrocarbon staining and moderate to strong hydrocarbon odors were noted in sands and clays in well boring MW-1 from about three feet to nine feet in depth. No free product was encountered in well MW-1, and purged groundwater from MW-1 exhibited slight hydrocarbon odors. No hydrocarbon odors or staining were noted in soils or groundwater from investigative borings IB-3 and IB-4.

### 3.2 Results of Laboratory Analyses

Soil, soil vapor, and groundwater analytical results are summarized in Table 1. In addition, soil and groundwater results from this and previous recent UST removal and investigative activities are depicted on Figure 3 and Figure 4, respectively. Laboratory data reports and chain-of-custody records for soil, soil vapor, and groundwater analyses are contained in Appendix E.

Sample ID	Sample Depth	Concentration							
		TPH-D	TPH-G	B	T	E	X	MTBE	OXY
<b>Soil Samples</b>		Milligrams Per Kilogram (mg/kg)							
IB-3.2	12.0 ft	<1.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	--
IB-3.4	17.5 ft	<1.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	--
IB-4.3	15.0 ft	<1.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	--
IB-4.4	18.0 ft	<1.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	--
MW-1.1	6.0 ft	4,600	850	<0.50	1.5	4.0	2.8	<5.0	--
MW-1.2	11.0 ft	<1.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	--
<b>Groundwater Samples</b>		Milligrams Per <sup>liter</sup> Kilogram (mg/kg) <sup>l</sup>							
IB-3W	(11.0 ft)	<0.050	0.150	<0.0005	<0.0005	<0.0005	<0.0005	0.390	<0.005
IB-4W	(12.0 ft)	<0.050	<0.050	<0.0005	<0.0005	<0.0005	<0.0005	0.084	<0.005
MW-1	(8.28 ft)	<0.050	0.670	0.00082	0.017	0.028	0.120	1.70	<0.025
<b>Soil Vapor Sample</b>		Micrograms Per Cubic Meter (ug/m <sup>3</sup> )							
VS-1	3.0 ft	--	--	16	20	21	33.3	--	--
<b>Vapor RBSL</b>				2.8 x 10 <sup>3</sup>	2.4 x 10 <sup>3</sup>	6.3 x 10 <sup>3</sup>	4.5 x 10 <sup>3</sup>	--	--

TPH-D - Total Petroleum Hydrocarbons as Diesel  
 TPH-G - Total Petroleum Hydrocarbons as Gasoline  
 B - Benzene  
 T - Toluene  
 E - Ethylbenzene  
 X - Xylenes  
 MTBE - Methyl-t-butyl ether  
 OXY = Oxygenates (except MTBE), including Ter-Butanol (TBA), Di-isopropyl Ether (DIPE), Ethyl-t-butyl Ether (ETBE), and Tert-amyl Methyl Ether (TAME).

<1.0 = Not detected above the expressed value.  
 Vapor RBSL = Soil gas Risk-Based Screening Levels for protection of indoor air quality (commercial receptors; fine-grained soils), as contained in *Application of Risk-Based Screening Levels and Decision Making at Sites With Impacted Soil and Groundwater*, San Francisco Bay Regional Water Quality Control Board, August 2000, Table E-2). Soil gas RBSLs are applicable to soil gas concentrations immediately below the building floor.

### 4.0 CONCLUSIONS

Both soil and groundwater analytical results from this and previous investigations indicate that low-permeability silts and clays beneath the site have resulted in limited impacts to soil and groundwater from past UST-related hydrocarbon releases at the site. The only hydrocarbon constituent detected in downgradient borings IB-3 and IB-4, located near the south project site property line, was low levels of Methyl Tertiary Butyl Ether (MTBE) in grab groundwater samples from these borings. The

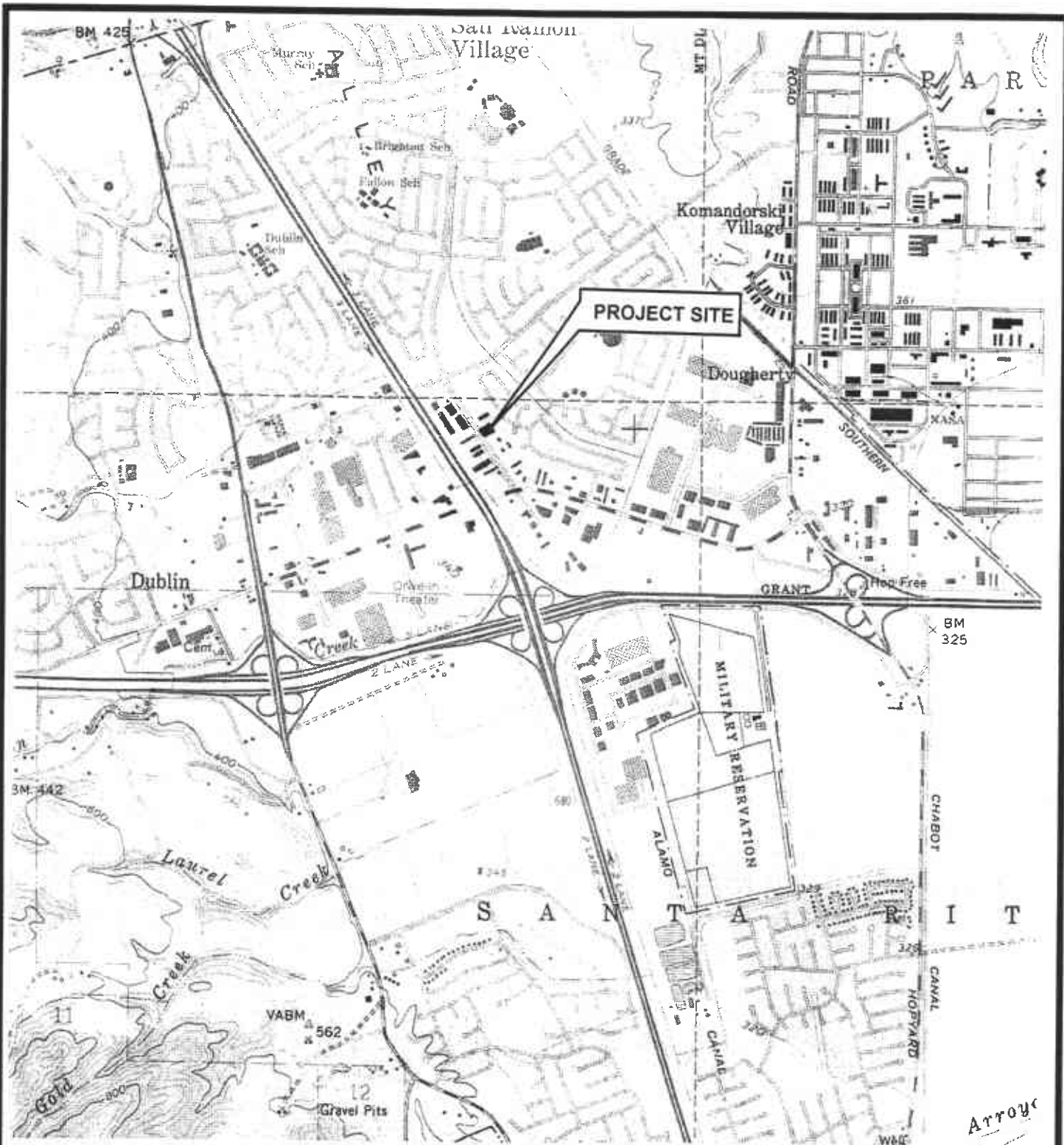
grab groundwater sample from the easterly boring IB-3, located downgradient (south-southeast) from the former east fuel dispenser, contained 0.390 parts per million (ppm) of MTBE. The grab groundwater sample from the west boring IB-4, located downgradient from the former project site USTs, contained 0.084 ppm of MTBE. These levels of MTBE are relatively low and do not indicate a widespread MTBE problem. This conclusion is bolstered somewhat by the apparent downgradient natural attenuation of MTBE, from 1.7 ppm and 1.8 ppm in the respective former east dispenser and UST areas, to 0.390 ppm and 0.084 ppm in respective downgradient borings IB-3 and IB-4.

While the grab groundwater sample from previous boring IB-1, located immediately south from the former east fuel dispenser, contained 750 ppm of Total Petroleum Hydrocarbons as Diesel (TPH-D), the groundwater sample from newly-installed well MW-1, located immediately adjacent to IB-1, contained no detectable TPH-D. Thus, while the result from previous boring IB-1 may have suggested significant diesel-range impacts to groundwater (including possible free product), the results from MW-1 show that the groundwater result from IB-1 was not representative of true groundwater conditions. In fact, these results conform with our experience, which has shown that grab groundwater samples collected from direct-push borings that have passed through hydrocarbon-impacted soils often result in erroneously high hydrocarbon concentrations in the grab groundwater samples.

The soil vapor sample, VS-1, collected beneath the cashier's kiosk at about three feet in depth contained levels of gasoline constituents that are well below established Risk-Based Screening Levels (RBSLs) for vapors at three feet in depth (*Application of Risk-Based Screening Levels and Decision Making at Sites With Impacted Soil and Groundwater*, San Francisco Bay Regional Water Quality Control Board, August 2000, Table E-2). Vapor sample VS-1 contained only 16 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) of Benzene, and the RBSL for soil gas immediately below a building floor (commercial receptors, fine grained soils) is 280,000  $\mu\text{g}/\text{m}^3$ .

## 5.0 RECOMMENDATIONS

Based on the obvious lack of significant risk to both current and future environmental and human health receptors, we recommend that this site be reviewed for regulatory site closure. Whereas some residual hydrocarbons remain in source areas beneath the site, low-permeability soils appear to have limited downgradient migration of these hydrocarbons. Further, given past UST removal and overexcavation activities at the site, there is little likelihood that conditions will change at this site in the future.



TOPOGRAPHY FROM USGS DUBLIN  
7.5-MINUTE QUADRANGLE MAP, (TOPOI 1997)



*Arroyo*

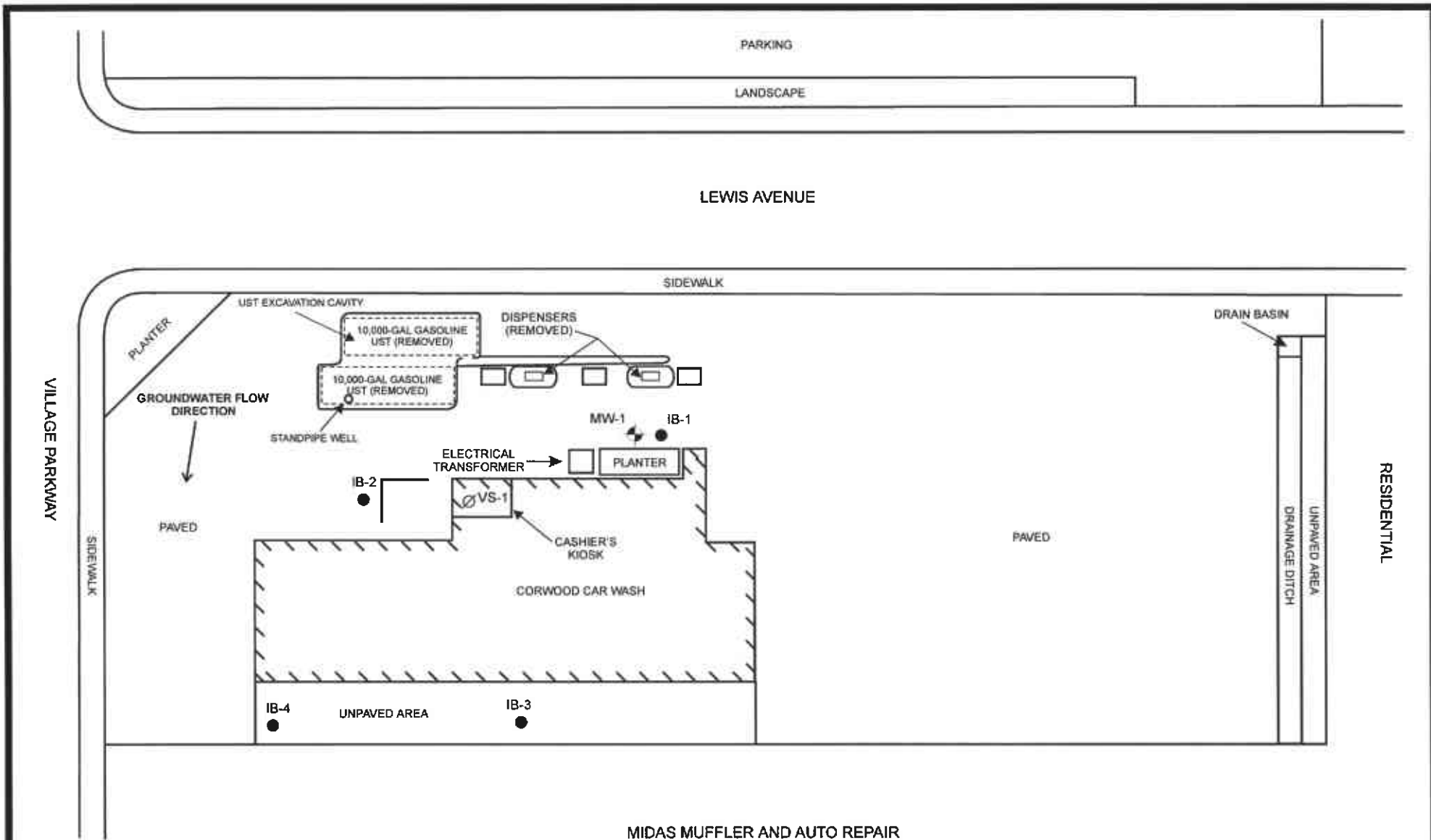
DESIGNED BY:	CHECKED BY:
DRAWN BY: JG	SCALE: 1:24,000
PROJECT NO: 106-02-01	

**SITE VICINITY MAP**

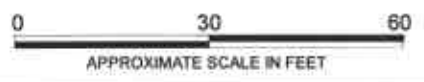
CORWOOD CAR WASH  
6973 VILLAGE PARKWAY

DATE: 02/28/00	FIGURE: 1
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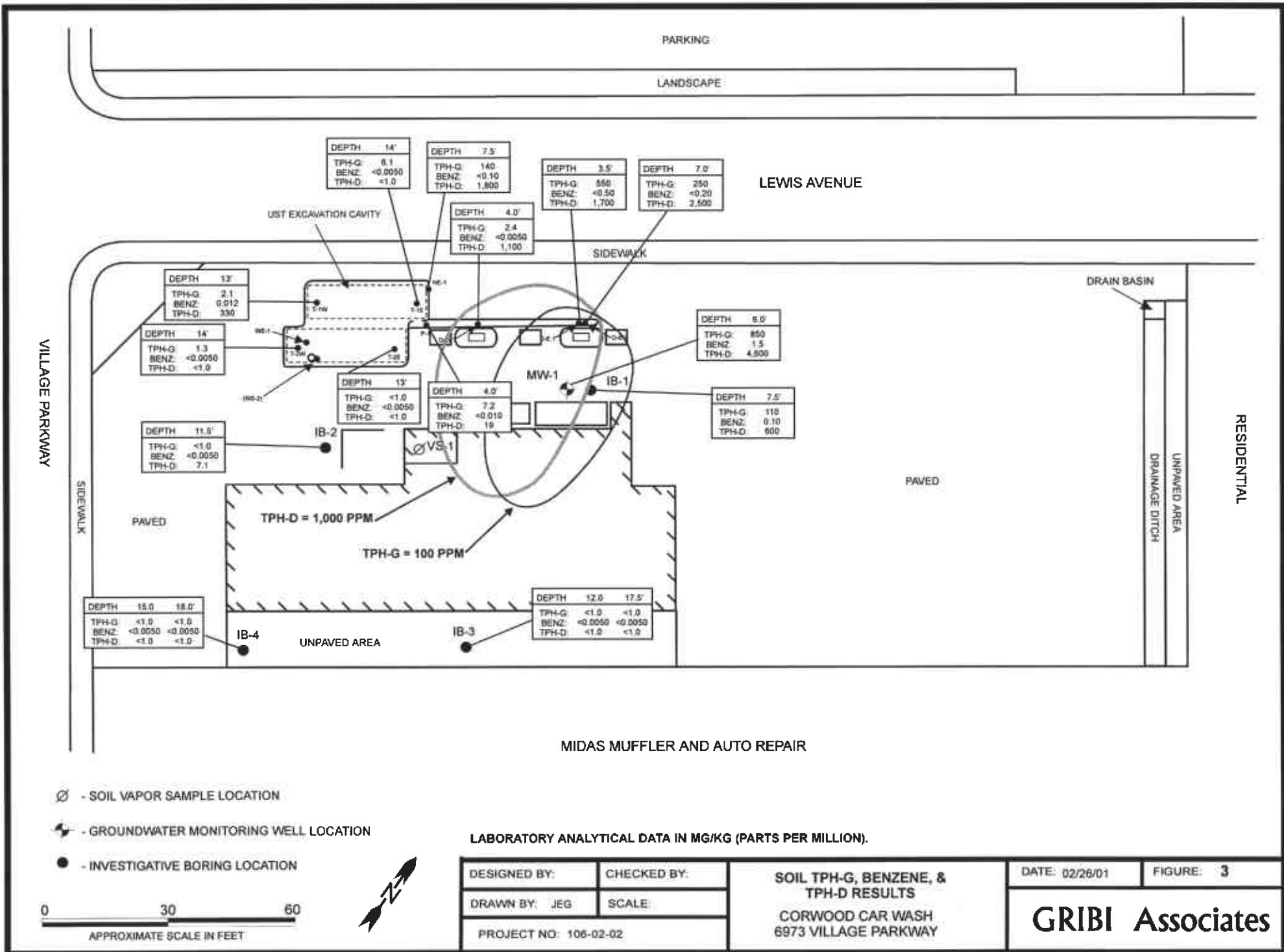
**GRIBI Associates**



- ⊘ - SOIL VAPOR SAMPLE LOCATION
- ⊕ - GROUNDWATER MONITORING WELL LOCATION
- - INVESTIGATIVE BORING LOCATION



DESIGNED BY:	CHECKED BY:	<b>SITE PLAN</b>	DATE: 02/26/01	FIGURE: 2
DRAWN BY: JEG	SCALE:		<b>GRIBI Associates</b>	
PROJECT NO: 106-02-02		CORWOOD CAR WASH 6973 VILLAGE PARKWAY		



PARKING

LANDSCAPE

LEWIS AVENUE

VILLAGE PARKWAY

RESIDENTIAL

DEPTH 14'  
TPH-G: 6.1  
BENZ: <0.0050  
TPH-D: <1.0

DEPTH 7.5'  
TPH-G: 140  
BENZ: <0.10  
TPH-D: 1,800

DEPTH 3.5'  
TPH-G: 550  
BENZ: <0.50  
TPH-D: 1,700

DEPTH 7.0'  
TPH-G: 250  
BENZ: <0.20  
TPH-D: 2,500

UST EXCAVATION CAVITY

DEPTH 4.0'  
TPH-G: 2.4  
BENZ: <0.0050  
TPH-D: 1,100

SIDEWALK

DRAIN BASIN

DEPTH 13'  
TPH-G: 2.1  
BENZ: 0.012  
TPH-D: 330

DEPTH 14'  
TPH-G: 1.3  
BENZ: <0.0050  
TPH-D: <1.0

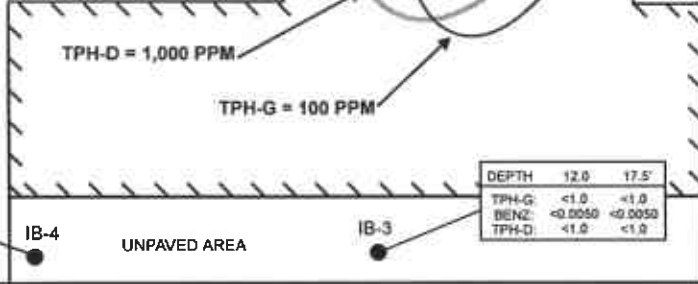
DEPTH 6.0'  
TPH-G: 850  
BENZ: 1.5  
TPH-D: 4,800

DEPTH 13'  
TPH-G: <1.0  
BENZ: <0.0050  
TPH-D: <1.0

DEPTH 4.0'  
TPH-G: 7.2  
BENZ: <0.010  
TPH-D: 19

DEPTH 7.5'  
TPH-G: 110  
BENZ: 0.10  
TPH-D: 600

DEPTH 11.5'  
TPH-G: <1.0  
BENZ: <0.0050  
TPH-D: 7.1



PAVED

UNPAVED AREA  
DRAINAGE DITCH

MIDAS MUFFLER AND AUTO REPAIR

- ⊗ - SOIL VAPOR SAMPLE LOCATION
- ⚡ - GROUNDWATER MONITORING WELL LOCATION
- - INVESTIGATIVE BORING LOCATION



**APPENDIX A**

**SOIL BORING AND WELL PERMIT**





ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE

PLEASANTON, CALIFORNIA 94588-5127

PHONE (925) 484-2600 FAX (925) 462-3914

January 4, 2001

Mr. Jim Gribi  
Gribi Associates  
1350 Hayes Street, #C-14  
Benicia, CA 94510

Dear Mr. Gribi:

Enclosed is drilling permit 21008 for a monitoring well construction project at 6973 Village Parkway in Dublin for Corwood Car Wash. Also enclosed are current drilling permit applications for your files.

Please note that permit condition A-2 requires that a well construction report be submitted after completion of the work. The report should include drilling and completion logs, location sketch, and permit number. Please submit the original of your completion report. We will forward your submittal to the California Department of Water Resources.

If you have any questions, please contact me at extension 235 or Matt Katen at extension 234.

Sincerely,

Wyman Hong  
Water Resources Technician II

Enc.



# 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

FOR OFFICE

LOCATION OF PROJECT Corwood CAR WASH  
6973 VILLAGE PARKWAY  
DUBLIN CA

PERMIT NUMBER 21008  
WELL NUMBER 3S/1W-1C7  
APN \_\_\_\_\_

California Coordinates Source \_\_\_\_\_ ft. Accuracy \_\_\_\_\_ ft.  
CCN \_\_\_\_\_ ft. CCE \_\_\_\_\_ ft.  
APN \_\_\_\_\_

### PERMIT CONDITIONS

Circled Permit Requirements Apply

CLIENT  
Name R.L. Woodward Industries  
Address P.O. Box 2688 Phone 925/828-519  
City Dublin CA Zip 94568

- 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.

APPLICANT  
Name Jim Grubi  
Grubi Associates Fax 707/748-7763  
Address 1350 Hayes ST #C-14 Phone 707/748-7743  
City BENICIA CA Zip 94510

- 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.

TYPE OF PROJECT  
Well Construction  Geotechnical Investigation   
Cathodic Protection  General     
Water Supply  Contamination     
Monitoring  Well Destruction

- 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.

PROPOSED WATER SUPPLY WELL USE  
New Domestic  Replacement Domestic   
Municipal  Irrigation   
Industrial  Other \_\_\_\_\_

- 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.

DRILLING METHOD:  
Mud Rotary  Air Rotary  HSAuger x (1 well)  
Cable  Other  Geoprobe x (2 borings)

- E. CATHODIC. Fill hole above anode zone with concrete placed by tremie.
- F. WELL DESTRUCTION. See attached.
- G. SPECIAL CONDITIONS

DRILLER'S LICENSE NO. 485615 (Gregg)

WELL PROJECTS  
Drill Hole Diameter 6 in. Maximum Depth 20 ft.  
Casing Diameter 2 in. Number 1 (MU-1)  
Surface Seal Depth 4 1/2 ft.

GEOTECHNICAL PROJECTS  
Number of Borings 2 Maximum Depth 20 ft.  
Hole Diameter 2 1/2 in.

ESTIMATED STARTING DATE 1-5-01  
ESTIMATED COMPLETION DATE 1-5-01

Approved Wyman Hong Date 1/4/01  
Wyman Hong

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-88

APPLICANT'S SIGNATURE [Signature] Date 12-26-00

**APPENDIX B**  
**SOIL BORING LOGS**

BORING NUMBER : MW-1

BORING LOCATION:

SOUTH OF DISPENSER

BORING TYPE: INVESTIGATIVE BORING

PROJECT NAME: CORWOOD CAR WASH

PROJECT NUMBER: 106-02-03

# LOG OF WELL BORING GRIBI Associates

SHEET 1 OF 1

DRILLING CONTRACTOR: GREGG DRILLING

DRILLING METHOD: HOLLOW STEM AUGER

BOREHOLE DIAMETER: 6-1/2 INCH

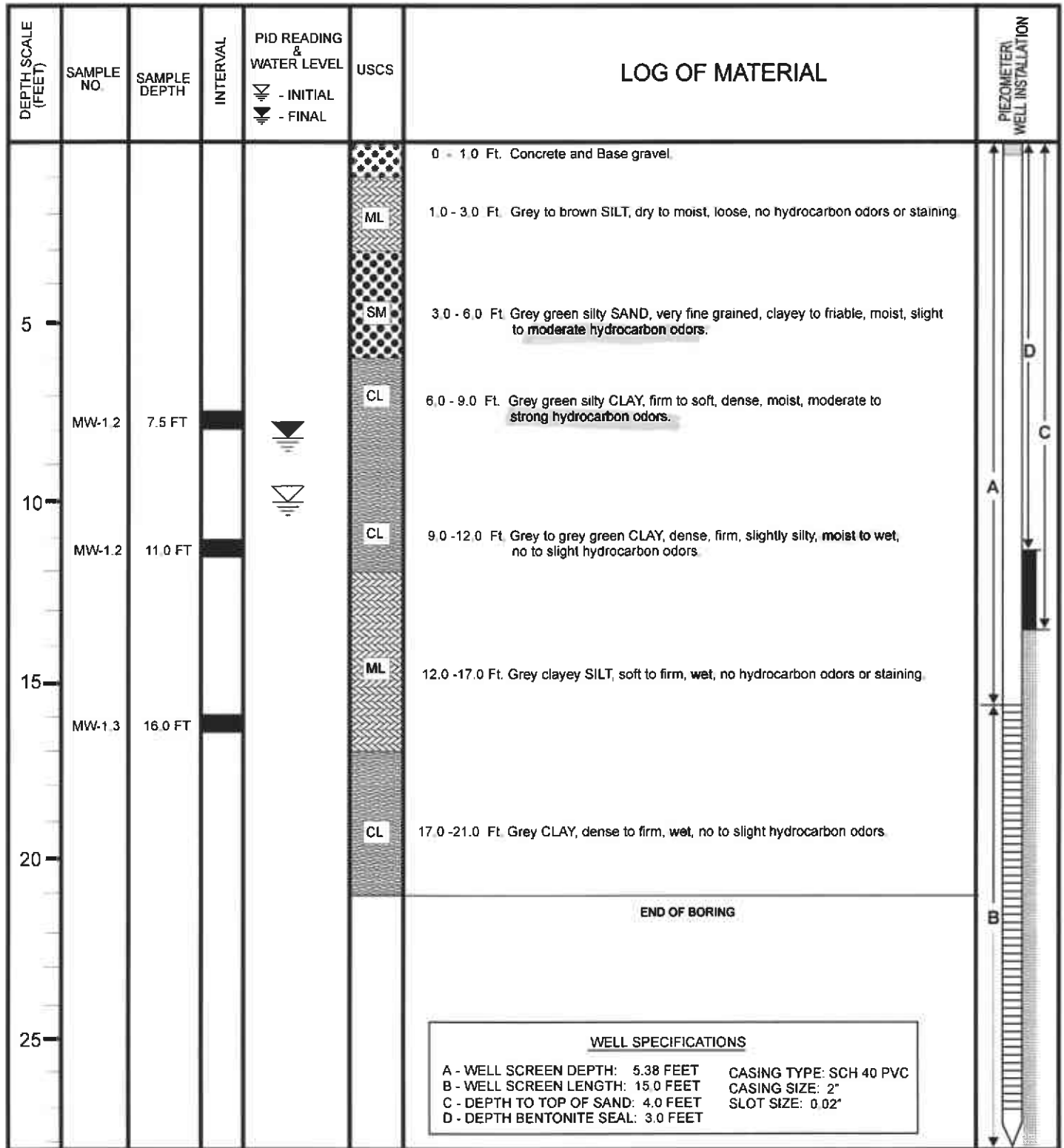
COMPLETION METHOD: WELL

BORING TOTAL DEPTH: 21 FEET

GROUNDWATER TOTAL DEPTH: 12 FT INITIAL  
8.28 FT FINAL

START DATE: 01/05/01

COMPLETION DATE: 01/05/01



BORING NUMBER : IB-3

BORING LOCATION: SOUTHEAST

BORING TYPE: INVESTIGATIVE BORING

PROJECT NAME: CORWOOD CAR WASH

PROJECT NUMBER: 106-02-03

# LOG OF WELL BORING GRIBI Associates

SHEET 1 OF 1

DRILLING CONTRACTOR: GREGG DRILLING

DRILLING METHOD: DIRECT PUSH

BOREHOLE DIAMETER: 2-1/2 INCH

COMPLETION METHOD: GROUTED

BORING TOTAL DEPTH: 20 FEET

START DATE: 01/05/01

COMPLETION DATE: 01/05/01

GROUNDWATER TOTAL DEPTH: 17.5 FT INITIAL  
12.0 FT FINAL

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING & WATER LEVEL ▽ - INITIAL ▽ - FINAL	USCS	LOG OF MATERIAL		PIEZOMETER WELL INSTALLATION
5					ML	0.0 - 8.0 Ft. Brown to grey SILT, clayey, soft, friable moist, no hydrocarbon odors or staining.		
10	IB-3.1	8.5 FT			CL	8.0 - 11.0 Ft. Grey to dark grey CLAY, firm, dense, moist, no hydrocarbon odors or staining.		
15	IB-3.2	12.0 FT		▽	CL	11.0 -17.5 Ft. Grey to brown silty CLAY, soft to firm, moist, no hydrocarbon odors or staining.		
	IB-3.3	15.5 FT		▽				
20	IB-3.4	17.5 FT		▽	SM	17.5 -20.0 Ft. Grey green silty SAND, very fine to medium grained, loose to firm, wet, no hydrocarbon odors or staining.		
25						END OF BORING		

BORING NUMBER : IB-4

BORING LOCATION: SOUTHWEST

BORING TYPE: INVESTIGATIVE BORING

PROJECT NAME: CORWOOD CAR WASH

PROJECT NUMBER: 106-02-03

# LOG OF WELL BORING

## GRIBI Associates

SHEET 1 OF 1

DRILLING CONTRACTOR: GREGG DRILLING

DRILLING METHOD: DIRECT PUSH

BOREHOLE DIAMETER: 2-1/2 INCH





COMPLETION METHOD: GROUTED

BORING TOTAL DEPTH: 20 FEET

GROUNDWATER TOTAL DEPTH: NONE INITIAL  
11.0 FT FINAL

START DATE: 01/05/01

COMPLETION DATE: 01/05/01

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING & WATER LEVEL  - INITIAL  - FINAL	USCS	LOG OF MATERIAL		PIEZOMETER WELL INSTALLATION
5					ML	0.0 - 7.0 Ft. Grey to brown clayey SILT, soft, friable moist, no hydrocarbon odors or staining.		
	IB-4.1	7.5 FT			CL	7.0 - 11.0 Ft. Grey green to dark grey CLAY, silty, soft to firm, moist, slight swampy odor, no hydrocarbon odors or staining.		
10					CL	11.0 - 17.0 Ft. Grey brown silty CLAY, soft to firm, moist, slightly sandy, no hydrocarbon odors or staining.		
	IB-4.2	11.5 FT			CL	17.0 - 20.0 Ft. Grey brown silty CLAY, soft to firm, some sand and fine gravel, moist, no hydrocarbon odors or staining.		
15					CL			
	IB-4.3	15.0 FT						
20								
	IB-4.4	18.0 FT						
25								
END OF BORING								
						No groundwater encountered during drilling, but rose to about 11 feet in depth after a few minutes.		

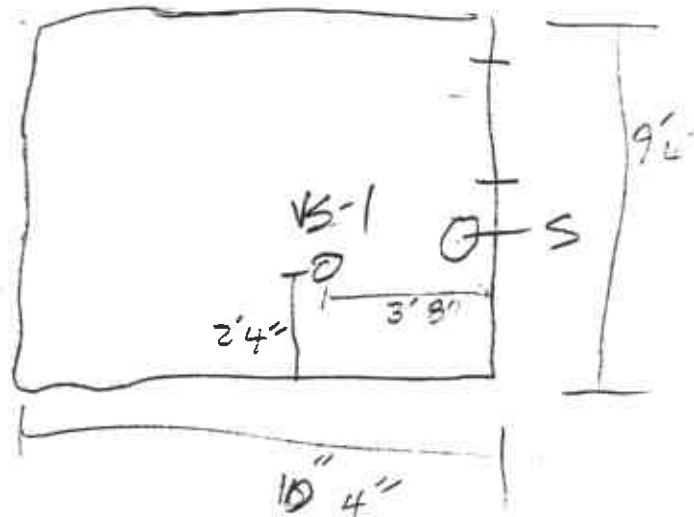
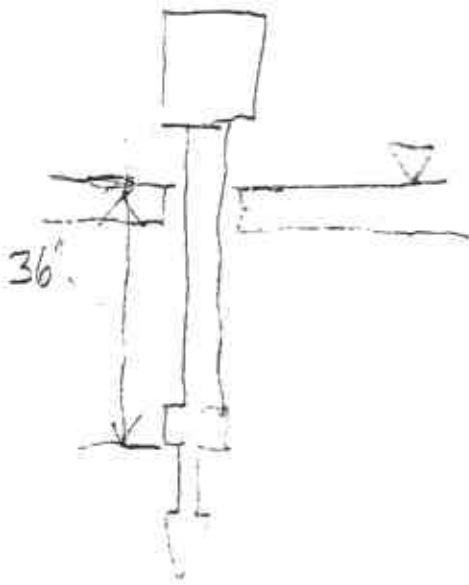
**APPENDIX C**

**SOIL VAPOR SAMPLING FIELD LOG**

Cor wood CW

12:00

9



9:54	30" Hg
10:04	26.5"
10:14	23.0
10:24	19.5
10:34	15.5
10:44	12.5
10:54	9.5
11:04	8.0
11:14	6 1/2
11:29	5.0





**APPENDIX D**

**GROUNDWATER SAMPLING FIELD LOG**

GROUNDWATER SAMPLING RECORD		GRIBI Associates	
Well No. MW-1	Well Loc.		
Project Name Corwood CW	Project No.		
Date 1/9/01	Time	TOC Elevation	GW Elevation
Depth to Water 9.28	NO FP	Well Depth	Well Diameter
Purge Water, 2": Wtr Column X 0.163 X 3 =		Purge Water, 4": Wtr Column X 0.653 X 3 =	
Purge/Sample Method		Lab Analyses	
Weather Conditions		Laboratory	

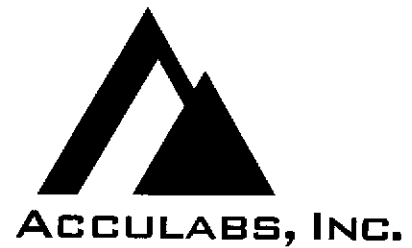
Time	Volume Purged	Temp.	Cond.	pH	Visual
0	59.1	4.73		5.72	CLR SL 45
2	59.1	4.64		5.52	0
4	61.9	5.01	<del>5.69</del> 5.69	5.4	MRK CLR SL 45
6	61.9	5.12	5.69	5.62	

Remarks

**APPENDIX E**

**LABORATORY DATA REPORTS AND  
CHAIN OF CUSTODY RECORDS**

Sample Log 22190  
January 16, 2001



Jim Gribi  
Gribi Associates  
1350 Hayes Street, #C-14  
Benicia, CA 94510

Subject : 11 Soil & 2 Water Samples  
Project Name : Corwood CW  
Project Number :

Dear Mr. Gribi,

Chemical analysis on the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. USEPA protocols for sample storage and preservation were followed.

Acculabs - Davis is certified by the State of California (# 2330), the State of Arizona (AZ0583) and the State of Nevada (CA00039-2000-32). If you have any questions regarding procedures or results, please call me at 530-757-0920.

Sincerely,



Tom Kwoka




Sample Log 22190

MTBE (Methyl-t-butyl ether) By EPA Method 8020/602

From : Corwood CW  
Sampled : 01/05/01  
Received : 01/05/01  
Matrix : Soil

SAMPLE	Date Analyzed	(MRL) <small>mg/kg</small>	Measured Value <small>mg/kg</small>
MW-1.1 (6.0')	01/16/01	(5.0)	<5.0
MW-1.2 (11.0')	01/13/01	(.050)	<.050
IB-3.2 (12.0')	01/13/01	(.050)	<.050
IB-3.4 (17.5')	01/13/01	(.050)	<.050
IB-4.3 (15.0')	01/13/01	(.050)	<.050
IB-4.4 (18.0')	01/13/01	(.050)	<.050

Approved By:

  
\_\_\_\_\_  
Tom Kwoka  
Lab Director




Sample Log 22190

MTBE (Methyl-t-butyl ether) By EPA Method 8020/602

From : Corwood CW  
Sampled : 01/05/01  
Received : 01/05/01  
Matrix : Water

SAMPLE	Date Analyzed	(MRL) <small>ug/L</small>	Measured Value <small>ug/L</small>
IB-3W	01/13/01	(12.5)	390
IB-4W	01/13/01	(5.0)	100

Approved By:

  
\_\_\_\_\_  
Tom Kwoka  
Lab Director

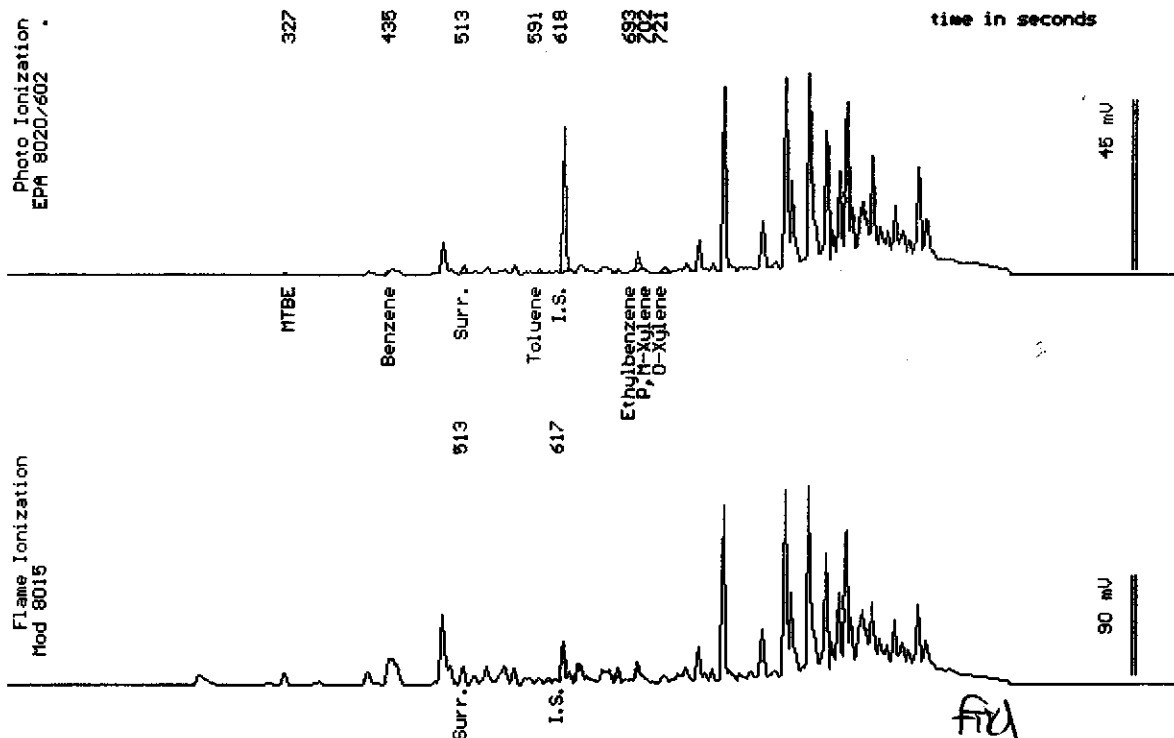
Sample Log 22190  
22190-01

Sample: MW-1.1 (6.0')

From : Corwood CW  
Sampled : 01/05/01  
Dilution : 1:100  
Matrix : Soil

Run Log : 2199Q

Parameter	(MRL) mg/kg	Measured Value mg/kg
Benzene	(.50)	<.50
Toluene	(.50)	1.5
Ethylbenzene	(.50)	4.0
Total Xylenes	(.50)	2.8
TPH as Gasoline	(100)	850
Surrogate Recovery		*** Diluted Out



Date Analyzed: 01-16-01  
Column : 0.53mm X 60m Restek Rtx-1301

Stewart Appolsky  
Senior Chemist

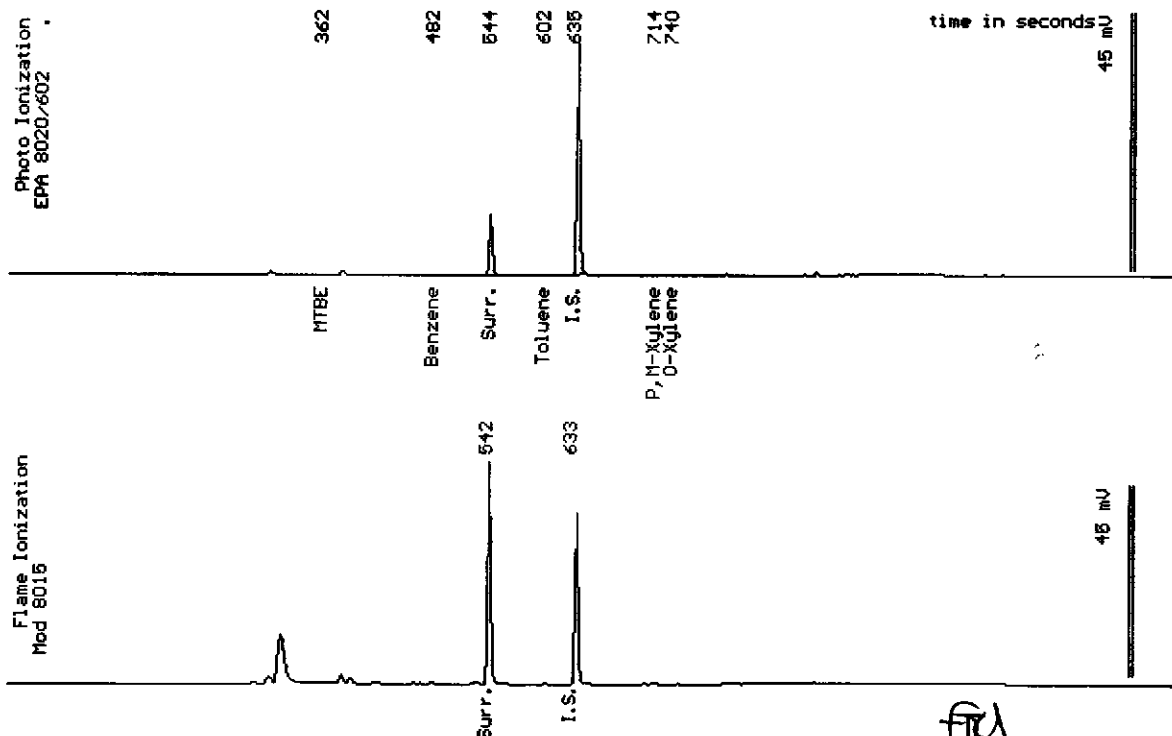
Sample Log 22190  
22190-02

Sample: MW-1.2 (11.0')

From : Corwood CW  
Sampled : 01/05/01  
Dilution : 1:1  
Matrix : Soil

Run Log : 21990

Parameter	(MRL) $\mu\text{g}/\text{kg}$	Measured Value $\mu\text{g}/\text{kg}$
Benzene	(.0050)	<.0050
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	<.0050
Total Xylenes	(.0050)	<.0050
TPH as Gasoline	(1.0)	<1.0
Surrogate Recovery		98 %



Date Analyzed: 01-13-01  
Column : 0.53mm X 60m Restek Rtx-1301

*FLU*  
Steven Podolsky  
Senior Chemist



Sample Log 22190

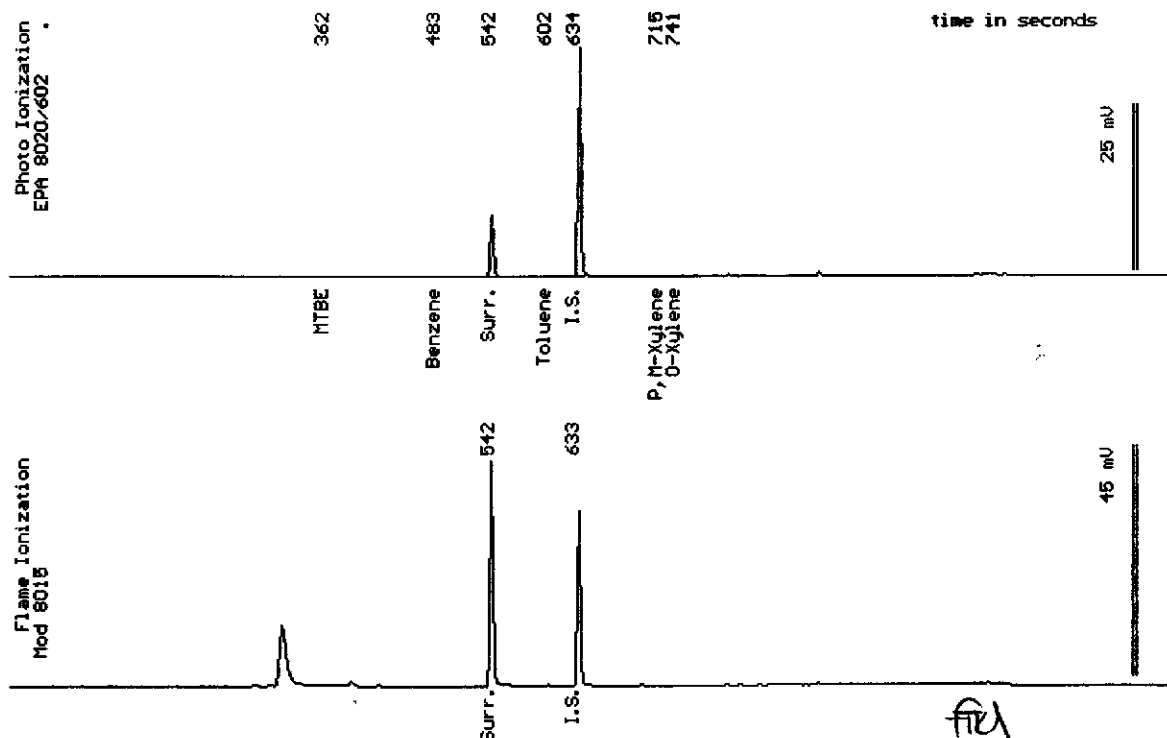
22190-05

Sample: IB-3.2 (12.0')

From : Corwood CW  
 Sampled : 01/05/01  
 Dilution : 1:1  
 Matrix : Soil

Run Log : 21990

Parameter	(MRL) $\mu\text{g}/\text{kg}$	Measured Value $\mu\text{g}/\text{kg}$
Benzene	(.0050)	<.0050
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	<.0050
Total Xylenes	(.0050)	<.0050
TPH as Gasoline	(1.0)	<1.0
Surrogate Recovery		98 %



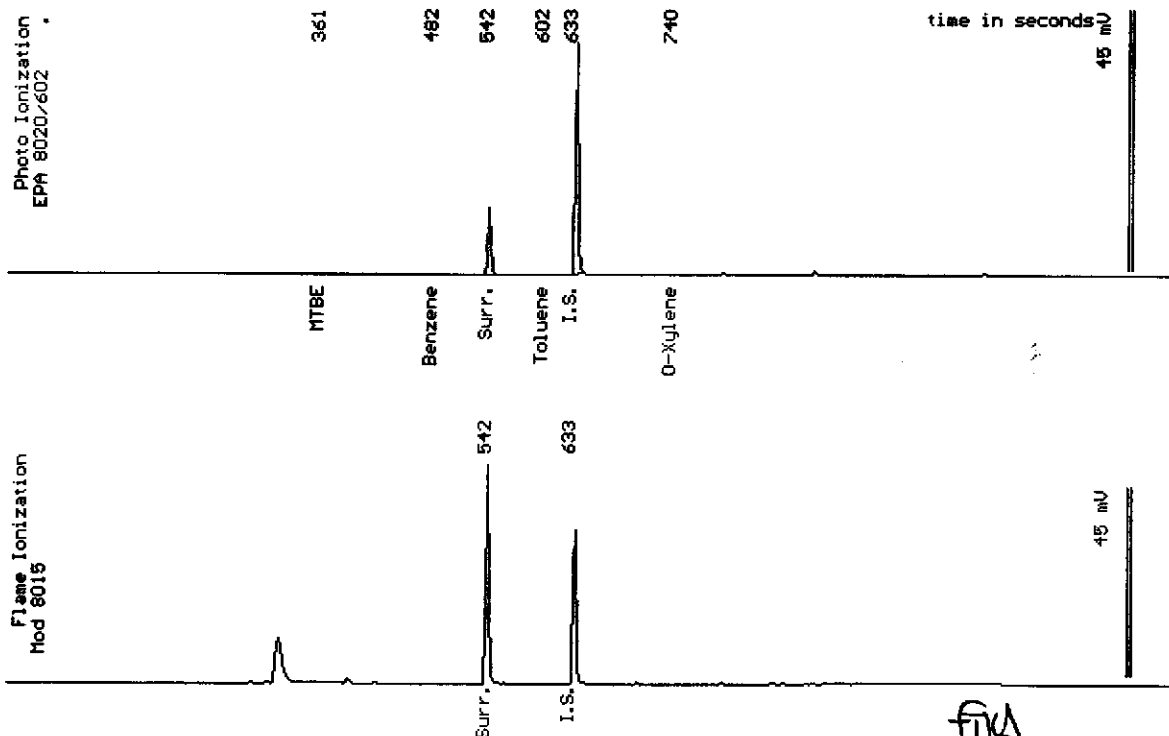
Sample Log 22190  
22190-07

Sample: IB-3.4 (17.5')

From : Corwood CW  
Sampled : 01/05/01  
Dilution : 1:1  
Matrix : Soil

Run Log : 21990

Parameter	(MRL) $\mu\text{g}/\text{kg}$	Measured Value $\mu\text{g}/\text{kg}$
Benzene	(.0050)	<.0050
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	<.0050
Total Xylenes	(.0050)	<.0050
TPH as Gasoline	(1.0)	<1.0
Surrogate Recovery		103 %



Date Analyzed: 01-13-01  
Column : 0.53mm X 60m Restek Rtx-1301

*Stuart Dodolsky*  
Stuart Dodolsky  
Senior Chemist

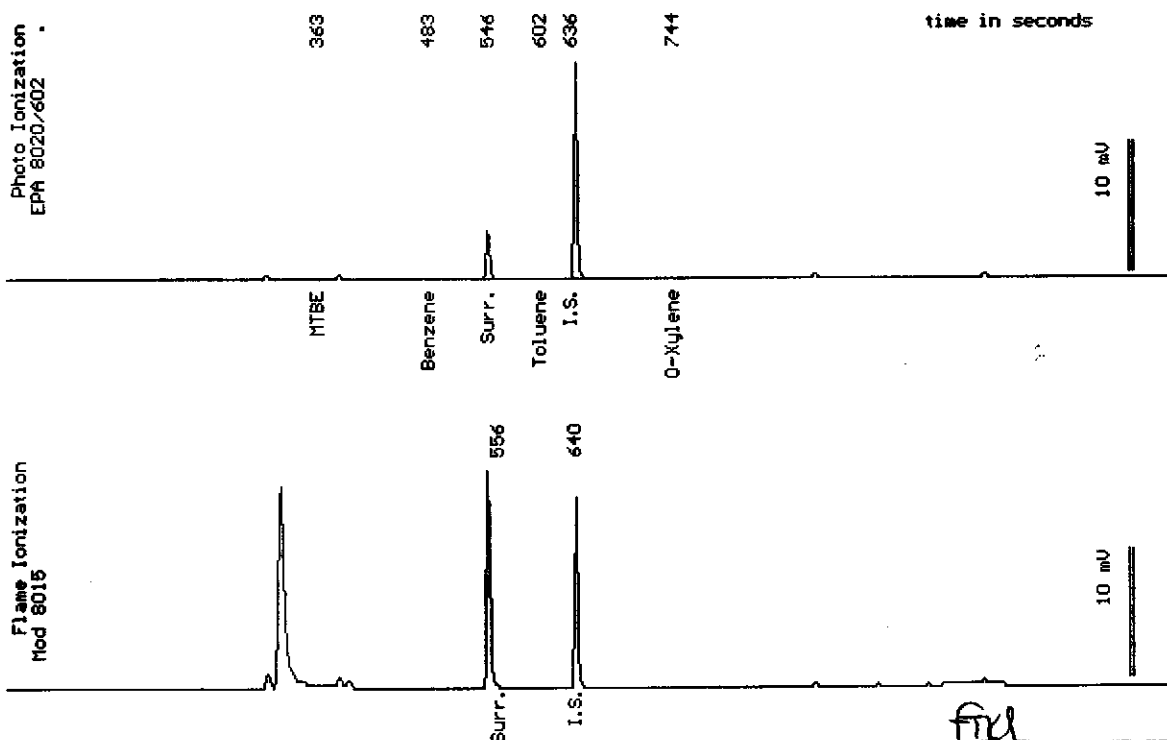
Sample Log 22190  
22190-10

Sample: IB-4.3 (15.0')

From : Corwood CW  
Sampled : 01/05/01  
Dilution : 1:1  
Matrix : Soil

Run Log : 21990

Parameter	(MRL) $\mu\text{g}/\text{kg}$	Measured Value $\mu\text{g}/\text{kg}$
Benzene	(.0050)	<.0050
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	<.0050
Total Xylenes	(.0050)	<.0050
TPH as Gasoline	(1.0)	<1.0
Surrogate Recovery		99 %



Date Analyzed: 01-13-01  
Column : 0.53mm X 60m Restek Rtx-1301

*fyg*  
Stewart Podolsky  
Senior Chemist

Sample Log 22190

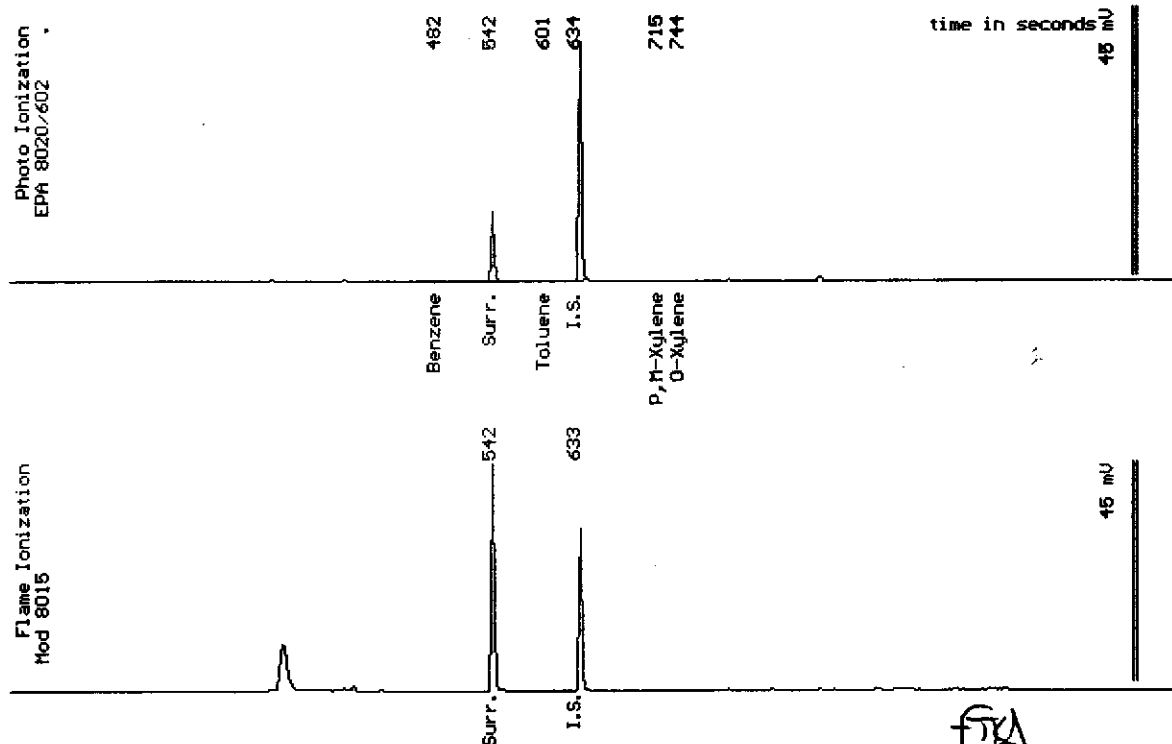
22190-11

Sample: IB-4.4 (18.0')

From : Corwood CW  
 Sampled : 01/05/01  
 Dilution : 1:1  
 Matrix : Soil

Run Log : 21990

Parameter	(MRL) $\mu\text{g}/\text{kg}$	Measured Value $\mu\text{g}/\text{kg}$
Benzene	(.0050)	<.0050
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	<.0050
Total Xylenes	(.0050)	<.0050
TPH as Gasoline	(1.0)	<1.0
Surrogate Recovery		101 %



Date Analyzed: 01-13-01  
 Column : 0.53mm X 60m Restek Rtx-1301

*Stewart Podolsky*  
 Senior Chemist

Sample Log 22190

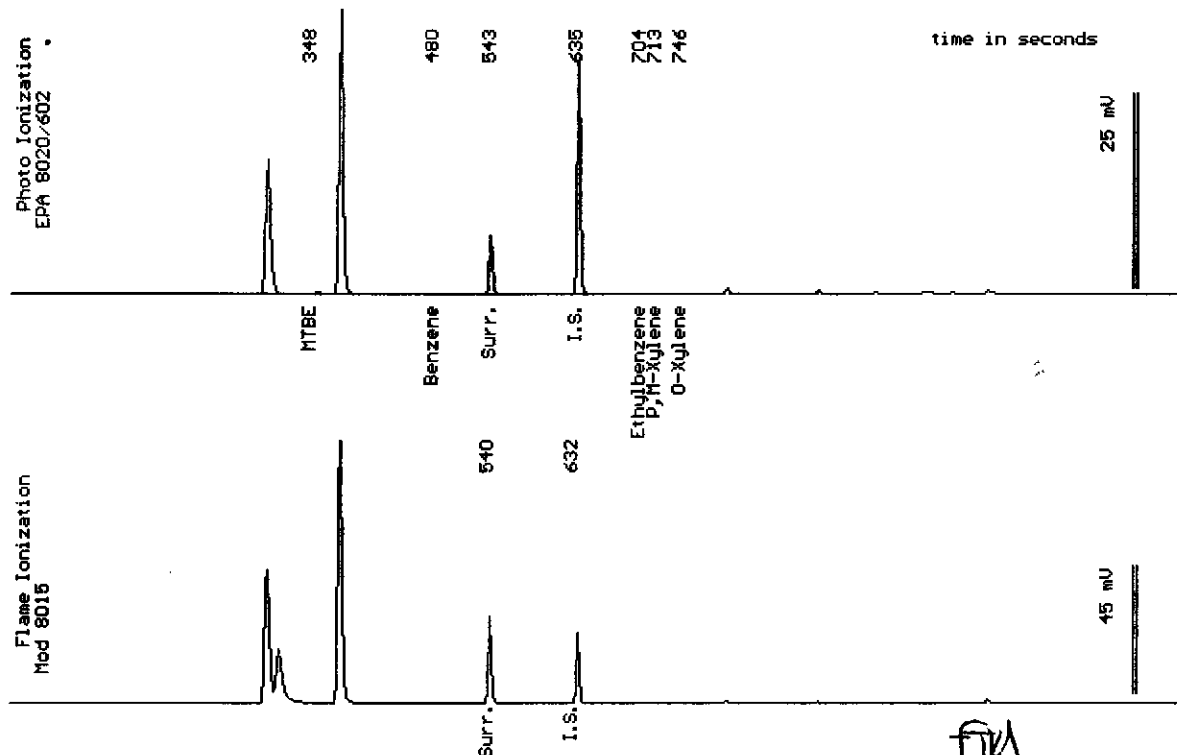
22190-12

Sample: IB-3W

From : Corwood CW  
 Sampled : 01/05/01  
 Dilution : 1:1  
 Matrix : Water

Run Log : 21990

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	150
Surrogate Recovery		99 %



Date Analyzed: 01-13-01  
 Column : 0.53mm X 60m Restek Rtx-1301

*Stewart*  
 Stewart Rodolsky  
 Senior Chemist

Sample Log 22190

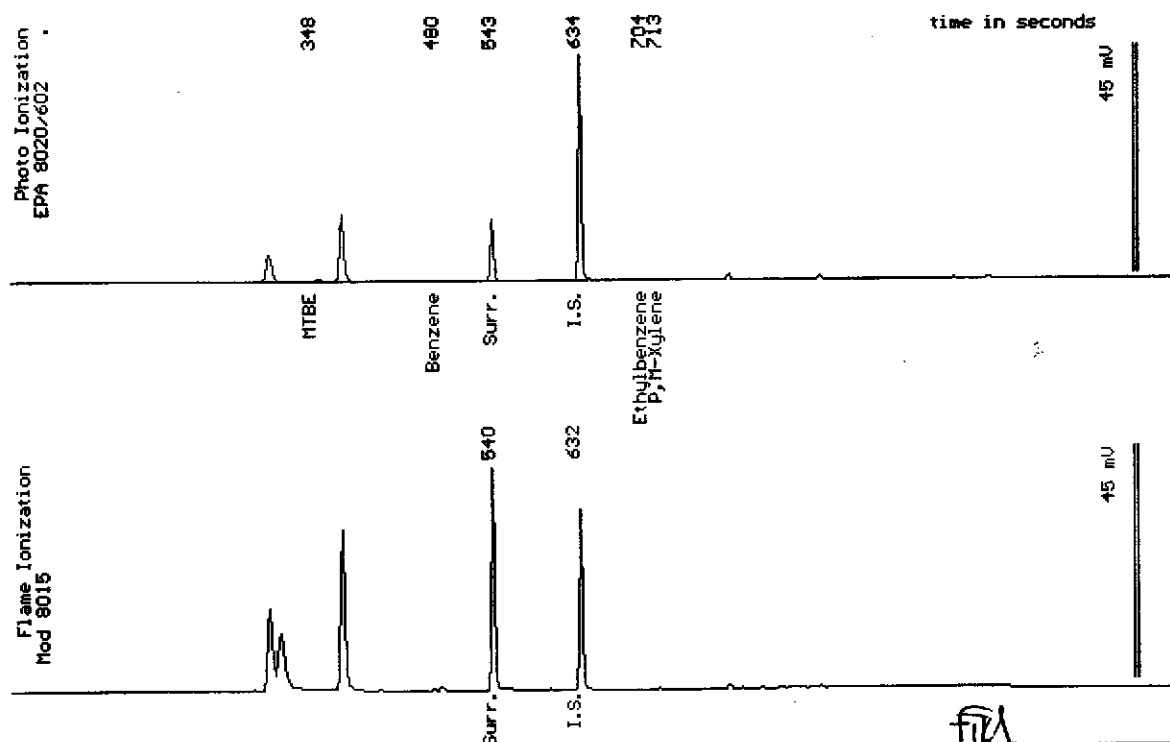
22190-13

Sample: IB-4W

From : Corwood CW  
 Sampled : 01/05/01  
 Dilution : 1:1  
 Matrix : Water

Run Log : 21990

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		102 %



Date Analyzed: 01-13-01  
 Column : 0.53mm X 60m Restek Rtx-1301

*FPD*  
 Steven Podolsky  
 Senior Chemist



January 16, 2001  
Sample Log 22190


QC Report for EPA 8020 & Modified EPA 8015  
Run Log : 2199N,0  
From : Corwood CW  
Sample(s) Received : 01/05/01

Parameter	Matrix Spike % Recovery	Matrix Spike Duplicate % Recovery	RPD *
Benzene	104	95	9
Ethylbenzene	101	95	7
TPH as Gasoline	122	98	22

\* RPD = Relative Percent Difference

Parameter	Laboratory Control Sample % Recovery
Benzene	91
Ethylbenzene	94
Gasoline	127

Parameter	Method Blank
Benzene	<0.0050 mg/Kg
Toluene	<0.0050 mg/Kg
Ethylbenzene	<0.0050 mg/Kg
Total Xylenes	<0.0050 mg/Kg
TPH as Gasoline	<1.0 mg/Kg

  
Tom Kubka  
Lab Director



January 16, 2001  
Sample Log 22190

QC Report for EPA 8020 & Modified EPA 8015  
Run Log : 2199M,N  
From : Corwood CW  
Sample(s) Received : 01/05/01

Parameter	Matrix Spike % Recovery	Matrix Spike Duplicate % Recovery	RPD *
Benzene	97	94	3
Ethylbenzene	97	96	2
TPH as Gasoline	116	108	7

\* RPD = Relative Percent Difference

Parameter	Laboratory Control Sample % Recovery
Benzene	97
Ethylbenzene	96
Gasoline	104

Parameter	Method Blank
Benzene	<0.50 ug/L
Toluene	<0.50 ug/L
Ethylbenzene	<0.50 ug/L
Total Xylenes	<0.50 ug/L
TPH as Gasoline	<50 ug/L

  
Tom Kwak  
Lab Director





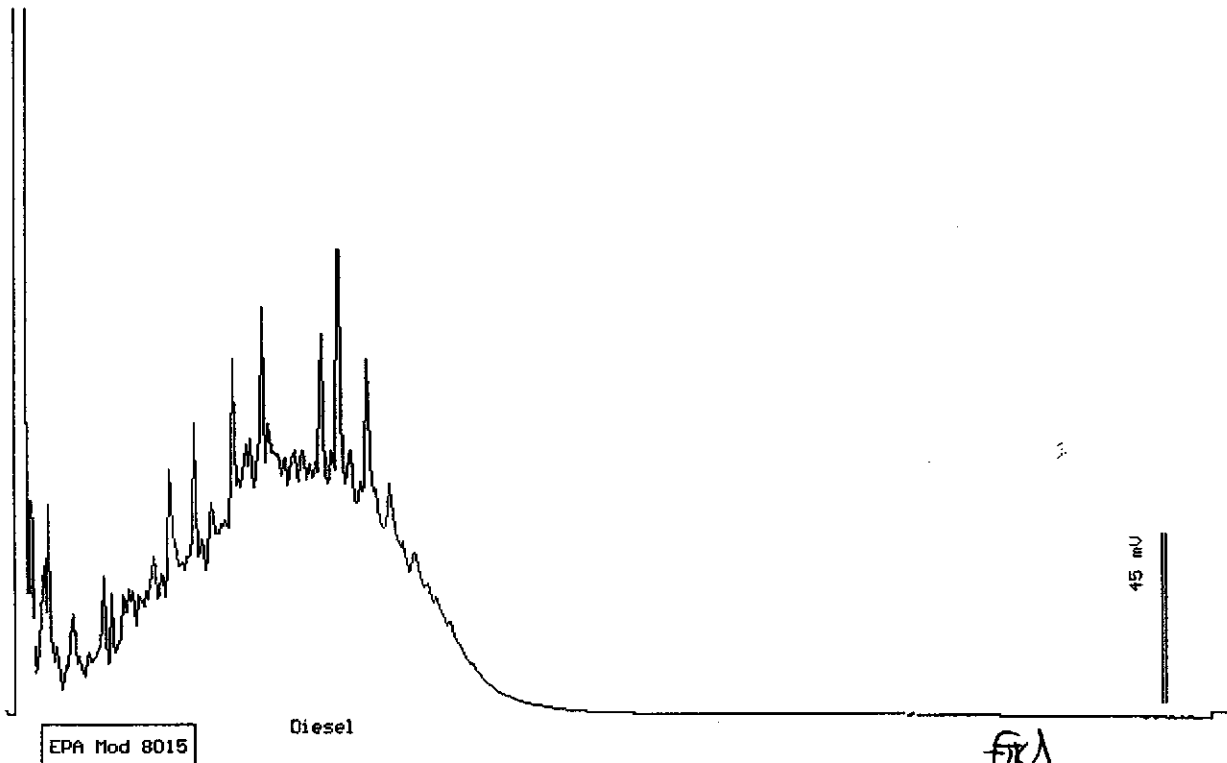
Sample Log 22190  
22190-01

Sample: MW-1.1 (6.0')

From : Corwood CW  
Sampled : 01/05/01  
Extracted: 01/11/01  
Dilution : 1:50  
Matrix : Soil

QC Batch : DS010102  
Run Log : 7486B

Parameter	(MRL) mg/kg	Measured Value mg/kg
TPH as Diesel	(50)	4600



Date: 01-12-01 Time: 13:39:09  
Column : 0.53mm ID X 15m DB1 (J&W Scientific)

*Stuart Podolsky*  
Stuart Podolsky  
Senior Chemist

Sample Log 22190

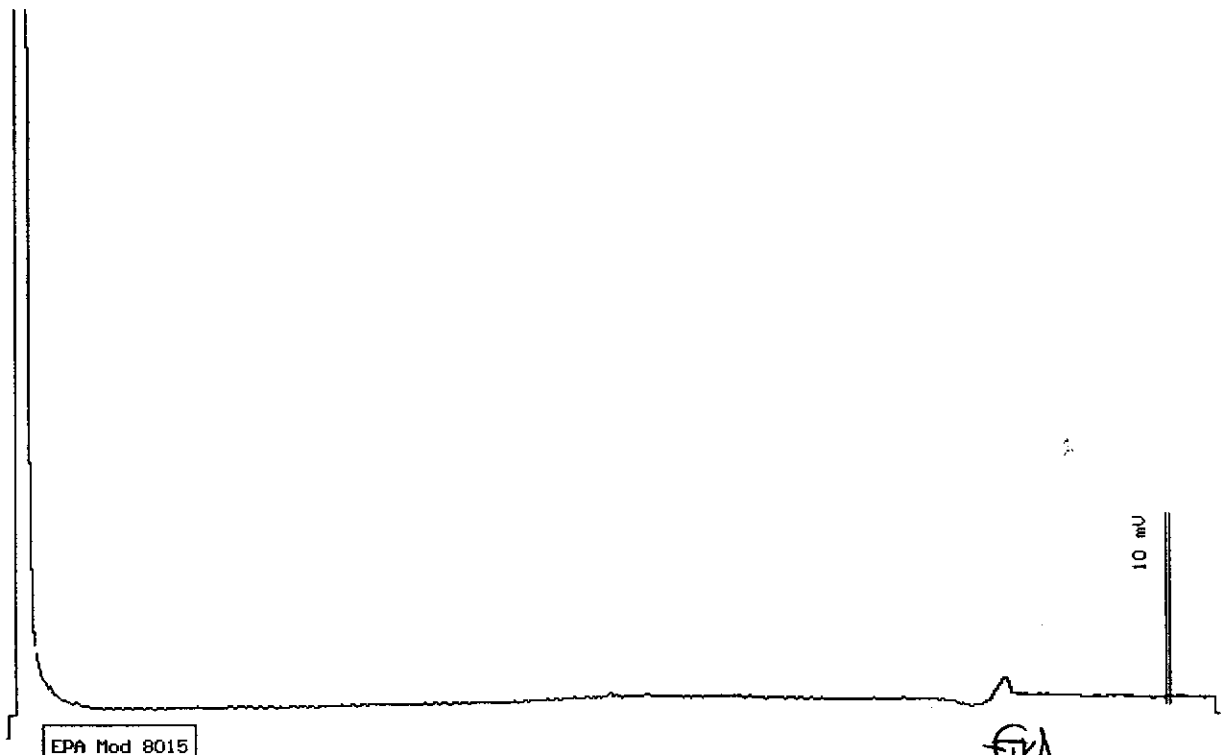
22190-02

Sample: MW-1.2 (11.0')


From : Corwood CW  
Sampled : 01/05/01  
Extracted: 01/11/01  
Dilution : 1:1  
Matrix : Soil

QC Batch : DS010102  
Run Log : 7486A

Parameter	(MRL) mg/kg	Measured Value mg/kg
TPH as Diesel	(1.0)	<1.0



Date: 01-11-01 Time: 11:51:21  
Column : 0.53mm ID X 15m DB1 (J&M Scientific)

  
Stewart Rodolsky  
Senior Chemist



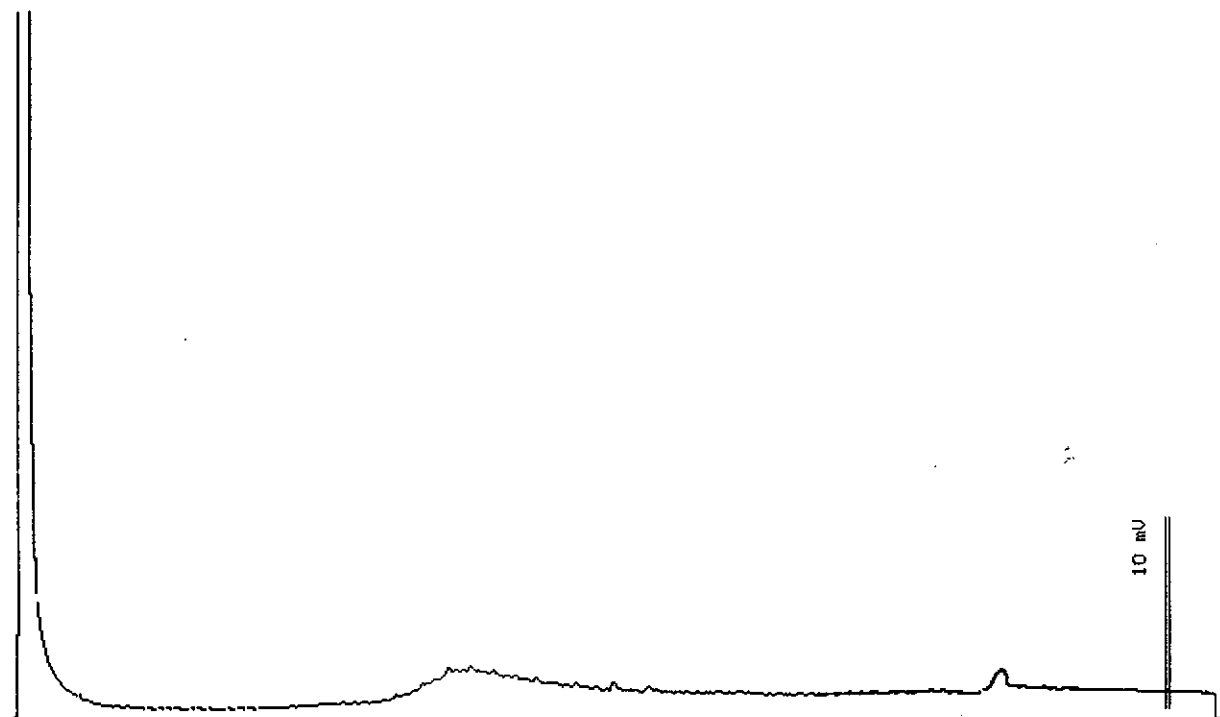
Sample Log 22190  
22190-05

Sample: IB-3.2 (12.0')

From : Corwood CW  
Sampled : 01/05/01  
Extracted: 01/11/01  
Dilution : 1:1  
Matrix : Soil

QC Batch : DS010102  
Run Log : 7486A

Parameter	(MRL) mg/kg	Measured Value mg/kg
TPH as Diesel	(1.0)	<1.0



EPA Mod 8015

Date: 01-11-01 Time: 12:24:58  
Column : 0.83mm ID X 15m DB1 (J&W Scientific)

*fil*  
Stewart Podolsky  
Senior Chemist



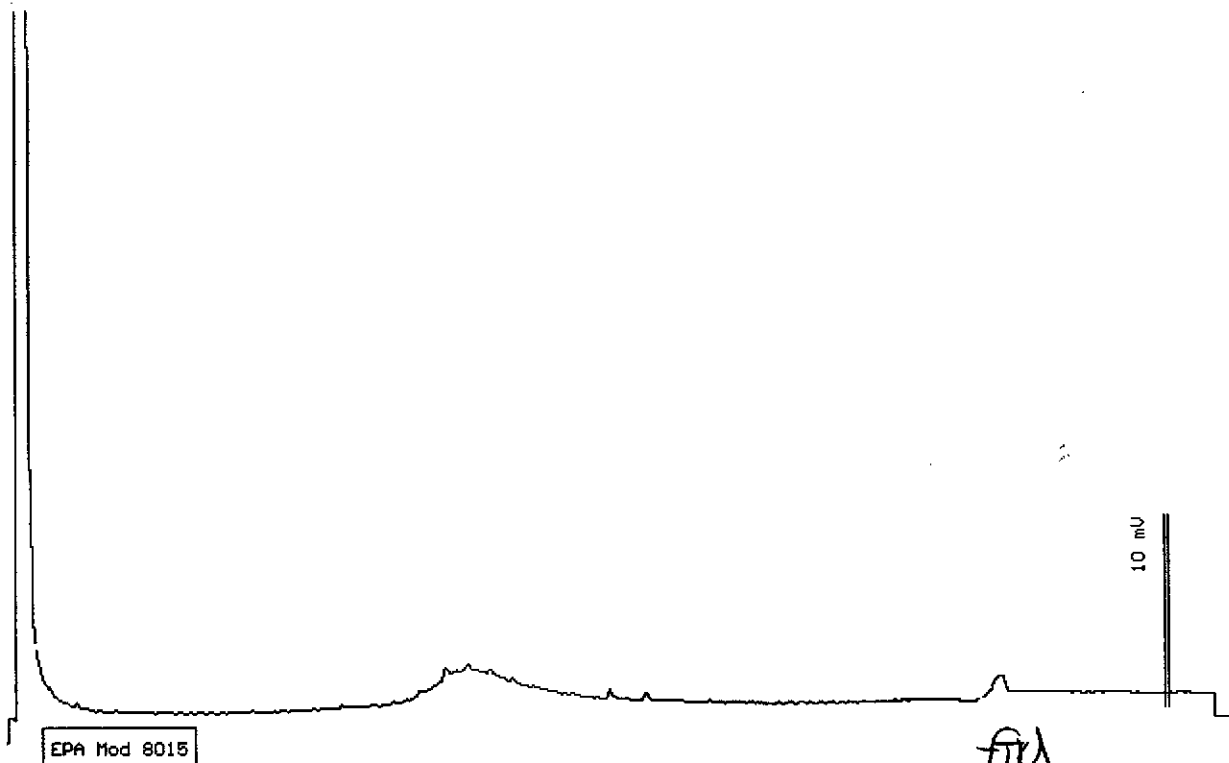
Sample Log 22190  
22190-07

Sample: IB-3.4 (17.5')

From : Corwood CW  
Sampled : 01/05/01  
Extracted: 01/11/01  
Dilution : 1:1  
Matrix : Soil

QC Batch : DS010102  
Run Log : 7486A

Parameter	(MRL) mg/kg	Measured Value mg/kg
TPH as Diesel	(1.0)	<1.0



Date: 01-11-01 Time: 12:58:44  
Column : 0.53mm ID X 15m DB1 (J&W Scientific)

*Stu*  
Stewart Podolsky  
Senior Chemist



Sample Log 22190

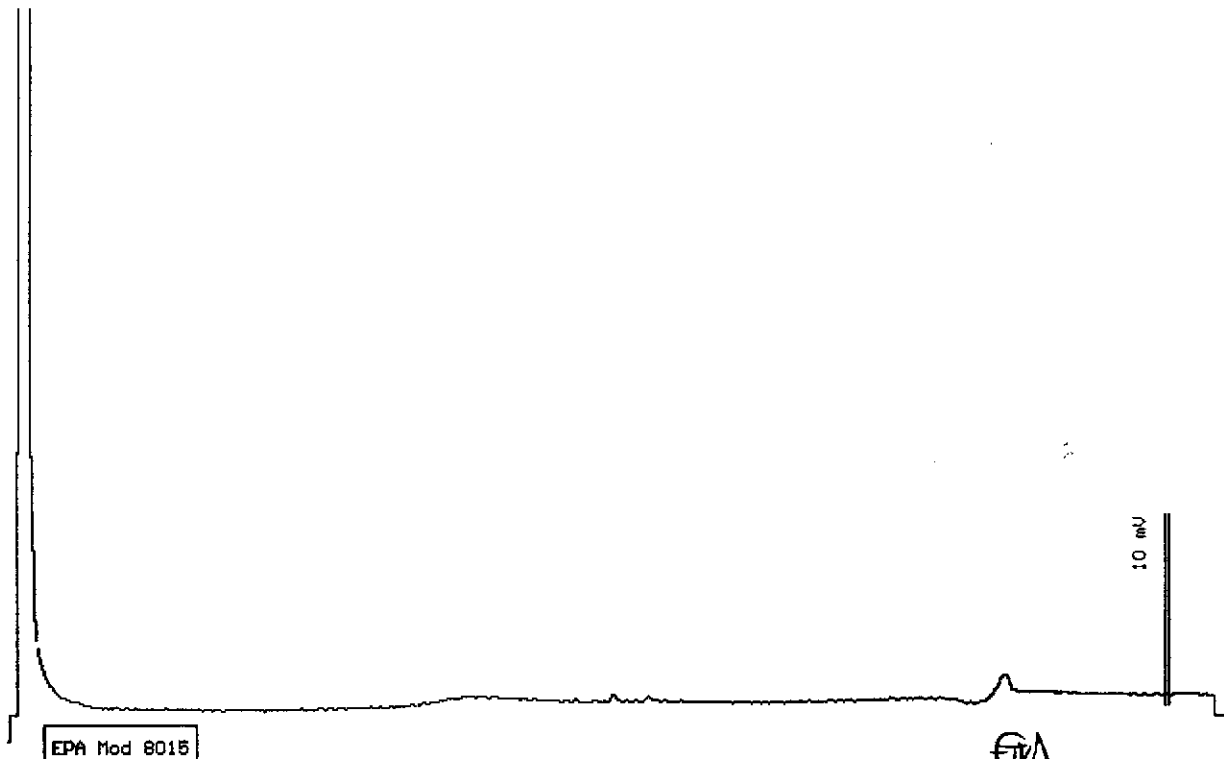
22190-10

Sample: IB-4.3 (15.0')

From : Corwood CW  
Sampled : 01/05/01  
Extracted: 01/11/01  
Dilution : 1:1  
Matrix : Soil

QC Batch : DS010102  
Run Log : 7486A

Parameter	(MRL) mg/kg	Measured Value mg/kg
TPH as Diesel	(1.0)	<1.0



Date: 01-11-01 Time: 13:32:24  
Column : 0.53mm ID X 15m DB1 (J&W Scientific)

*Stuart Rodolsky*  
Stuart Rodolsky  
Senior Chemist



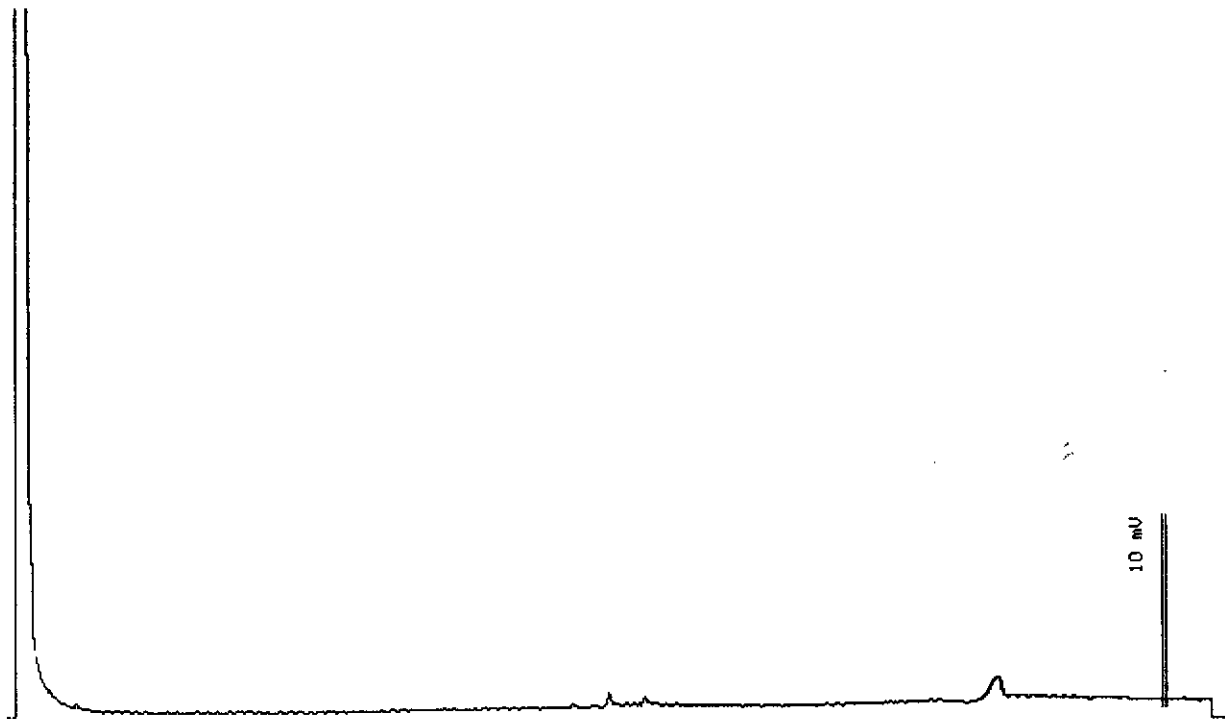
Sample Log 22190  
22190-11

Sample: IB-4.4 (18.0')

From : Corwood CW  
Sampled : 01/05/01  
Extracted: 01/11/01  
Dilution : 1:1  
Matrix : Soil

QC Batch : DS010102  
Run Log : 7486A

Parameter	(MRL) mg/kg	Measured Value mg/kg
TPH as Diesel	(1.0)	<1.0



EPA Mod 8015

Date: 01-11-01 Time: 14:06:08  
Column : 0.53mm ID X 15m DB1 (J&W Scientific)

*file*  
Stewart Podolsky  
Senior Chemist



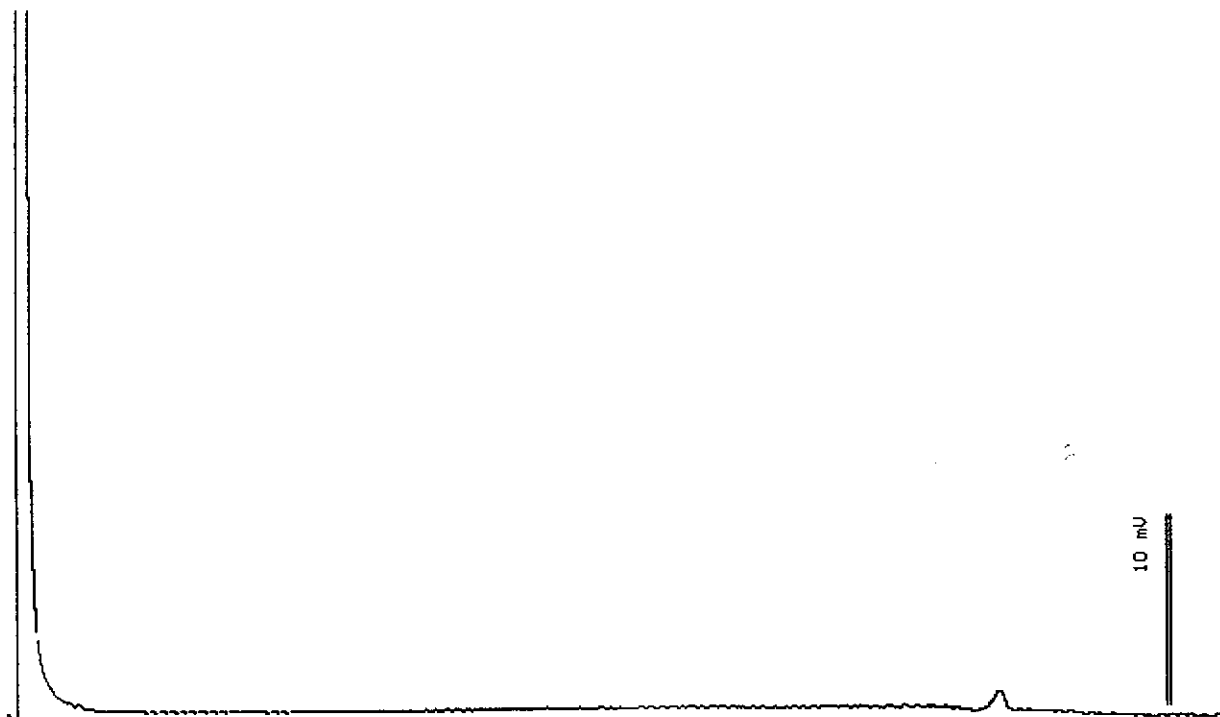
Sample Log 22190  
22190-12

Sample: IB-3W

From : Corwood CW  
Sampled : 01/05/01  
Extracted: 01/09/01  
Dilution : 1:1  
Matrix : Water

QC Batch : DW010101  
Run Log : 7485I

Parameter	(MRL) ug/L	Measured Value ug/L
TPH as Diesel	(50)	<50



EPR Mod 8015

Date: 01-09-01 Time: 12:47:49  
Column : 0.53mm ID X 15m DB1 (J&W Scientific)

*SP*  
Stewart Podolsky  
Senior Chemist

Sample Log 22190  
22190-13

Sample: IB-4W

From : Corwood CW  
Sampled : 01/05/01  
Extracted: 01/09/01  
Dilution : 1:1  
Matrix : Water


QC Batch : DW010101  
Run Log : 7485I

Parameter	(MRL) ug/L	Measured Value ug/L
TPH as Diesel	(50)	<50



EPA Mod 8015

Date: 01-09-01 Time: 13:21:24  
Column : 0.53mm ID X 15m DB1 (J&W Scientific)

  
Stewart Podolsky  
Senior Chemist





# Acculabs Inc. - Davis

## TPH Diesel by 8015 Mod QC Report

Matrix: Soil

Date Extracted: 1/5/01

QC Batch: DS010102

Date Analyzed: 1/5/01

QC Limits Set: 7/27/00


Parameter	Spike Conc	LCS
	mg/Kg	% Rec
TPH as Diesel	33	91

Matrix spike	Matrix spike dup	RPD
% Rec	% Rec	
79	103	26.4

Control Chart Limits	
Lower	Upper
70	130

	MDL	Measured Value
	mg/Kg	mg/Kg
Method Blank		
TPH as Diesel	(1.0)	<1.0
TPH as Motor Oil	(10)	<10

Spiked Sample ID : 22179-01

  
Tom Kwoka  
Laboratory Director



# Acculabs Inc. - Davis

## TPH Diesel by 8015 Mod QC Report

Matrix: Water

Date Extracted: 1/3/01

QC Batch: DW010101


Date Analyzed: 1/3/01

QC Limits Set: 7/27/00

Parameter	Spike Conc	LCS	LCSD	RPD
	ug/L	% Rec	% Rec	
TPH as Diesel	1000	99	103	4.0

Control Chart Limits	
Lower	Upper
70	130

	MDL	Measured value
	ug/L	ug/L
Method Blank	(50)	<50
TPH as Diesel	(100)	<100

  
\_\_\_\_\_  
Tom Kwoka  
Laboratory Director



Sample Log 22190  
January 15, 2001

### EPA 8260B Oxygenates

Sample Name : **IB-3W**

Project Name : Corwood CW

Project Number :

Sample Date : 01/05/01

Date Analyzed : 01/12/01

Date Received : 01/05/01

Dilution : 1:10

Sample Matrix : Water

Lab Number : 22190-12

<u>Parameter</u>	<u>MRL</u>	<u>Measured Conc.</u>	<u>Units</u>
tert-Butanol	200	<200	ug/L
<b>Methyl-tert-butyl ether</b>	<b>50</b>	<b>390</b>	ug/L
Diisopropyl ether	50	<50	ug/L
Ethyl-tert-butyl ether	50	<50	ug/L
tert-Amylmethyl ether	50	<50	ug/L
Dibromofluoromethane		122	% Recovery

MRL = Method Reporting Limit    Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By :

  
Tom Kwoka



ACCULABS, INC.

Sample Log 22190

January 11, 2001

## EPA 8260B Oxygenates

Sample Name : **IB-4W**

Project Name : Corwood CW

Project Number :

Sample Date : 01/05/01

Date Analyzed : 01/10/01

Date Received : 01/05/01

Dilution : 1:1

Sample Matrix : Water

Lab Number : 22190-13

Parameter	MRL	Measured Conc.	Units
tert-Butanol	20	<20	ug/L
<b>Methyl-tert-butyl ether</b>	<b>5.0</b>	<b>84</b>	ug/L
Diisopropyl ether	5.0	<5.0	ug/L
Ethyl-tert-butyl ether	5.0	<5.0	ug/L
tert-Amylmethyl ether	5.0	<5.0	ug/L
Dibromofluoromethane		80	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By :

  
Tom Kwoka

# Acculabs - Davis



## EPA 8260B QC Report - Oxygenates

Matrix: Water

QC Batch: OW010110

Date Analyzed: 1/10/01

QC Limits Set: 11/3/00

### Spike Data

Parameter	Spike Conc ug/L	LCS % Rec	LCSD % Rec	RPD
Methyl-tert-Butyl Ether	50	115	105	9.1

### Method Blank Data

Parameter	MRL	Measured Concentration	Units
tert-Butanol	20	<20	ug/L
Methyl-tert-Butyl Ether	5.0	<5.0	ug/L
Diisopropyl Ether	5.0	<5.0	ug/L
Ethyl tert-Butyl Ether	5.0	<5.0	ug/L
tert-Amylmethyl Ether	5.0	<5.0	ug/L

### Quality Control Data

Surrogate Compounds	Control Chart Limits	
	Lower	Upper
Dibromofluoromethane	67	140

  
 Tom Kwoka  
 Laboratory Director

# Acculabs - Davis



## EPA 8260B QC Report - Oxygenates

Matrix: Water

QC Batch: OW010112

Date Analyzed: 1/12/01

QC Limits Set: 11/3/00

### Spike Data

Parameter	Spike Conc ug/L	LCS % Rec	LCSD % Rec	RPD
Methyl-tert-Butyl Ether	50	118	122	3.6

### Method Blank Data

Parameter	MRL	Measured Concentration	Units
tert-Butanol	20	<20	ug/L
Methyl-tert-Butyl Ether	5.0	<5.0	ug/L
Diisopropyl Ether	5.0	<5.0	ug/L
Ethyl tert-Butyl Ether	5.0	<5.0	ug/L
tert-Amylmethyl Ether	5.0	<5.0	ug/L

### Quality Control Data

Surrogate Compounds	Control Chart Limits	
	Lower	Upper
Dibromofluoromethane	67	140

  
 Tom Kwoka  
 Laboratory Director

# Acculabs Inc.

[ ] 3902 E. University Dr. Phoenix AZ 85034  
 [ ] 710 E. Evans Blvd. Tucson AZ 85713  
 [ ] 2020 W. Lone Cactus Dr. Phoenix AZ 85027  
 [ ] 4663 Table Mountain Dr. Golden CO 80403  
 [ ] 992 Spice Islands Dr. Sparks NV 89431  
 [ ] 1046 Olive Drive #2 Davis CA 95616

602-437-0979 Fax 437-0826  
 520-884-5811 Fax 884-5812  
 602-780-4800 Fax 780-7695  
 303-277-9514 Fax 277-9512  
 702-355-0202 Fax 355-0817  
 530-757-0920 Fax 753-6091

Lab Number  
~~22189~~ 22190

Report  
 Due Date:

Client Gribi Associates		<b>PUBLIC WATER SUPPLY INFORMATION</b>	
Address 1350 Hayes Street, Ste C-14		System Name	
City, State & Zip Benicia, CA 94510		PWS No.	Report to State/EPA Y N
Contact Jim Gribi		POE No.	DWR No.
Phone 707/748-7743	Project Name CORWOOD CW		Collection Point
Fax 707/748-7763	Project Number		Collector's Name
P.O. Number	Fax Results <input checked="" type="radio"/> Y <input type="radio"/> N	Page 1 of 1	Location (City)

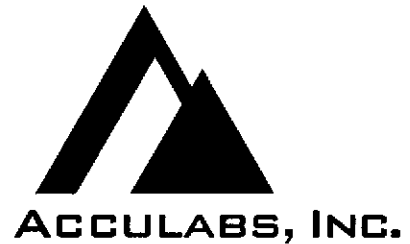
SAMPLE TYPE CODES			S a m p l e  T Y P E	C o m p l i a n c e  M o n i t o r i n g	A n a l y s e s  R e q u e s t e d	ANALYSES REQUESTED										S p l. N o.	
DW = drinking water	TB = travel blank	Compliance Monitoring				TPH	GB	TEX	MTBE	TPH-D	OXYGENATES	HOLD					
WW = waste water	SD = solid	Y N															
MW = monitoring well	SO = soil																
HW = hazardous waste	SL = sludge																
TURNAROUND TIME REQUESTED																	
Standard	Lab Director Approval																
RUSH																	
Special																	
CLIENT'S SAMPLE ID/LOCATION	Date	Time	S	C	TPH	GB	TEX	MTBE	TPH-D	OXYGENATES	HOLD						Spl. No.
MW-1.1 (6.0')	1/5/01		S	1	X	X											01
MW-1.2 (11.0')	1/5/01		S		X	X											02
MW-1.3 (16.0')	1/5/01		S	1										X			03
IB-3.1 (8.5')	1/5/01		S	1										X			04
IB-3.2 (12.0')	1/5/01		S	1	X	X											05
IB-3.3 (15.5')	1/5/01		S	1										X			06
IB-3.4 (17.5')	1/5/01		S	1	X	X											07
IB-4.1 (7.5')	1/5/01		S	1										X			08
IB-4.2 (11.5')	1/5/01		S	1										X			09
IB-4.3 (15.0')	1/5/01		S	1	X	X											10
IB-4.4 (18.0')	1/5/01		S	1	X	X											11
IB-3W	1/5/01		W	5	X	X	X										12
IB-4W	1/5/01		W	5	X	X	X										13

Instructions/Comments/Special Requirements:

SAMPLE RECEIPT		Date	Time	Samples Relinquished By	Samples Received By
Received Cold	Y N	1/5/01	15:03	James [Signature]	[Signature]
Custody Seals	Y N				
Seals Intact	Y N				
No. of Containers					

Acculabs' terms are: Net 40 (Payment must be received by the date shown on the invoice or any discount is void)

Sample Log 22204  
January 18, 2001



Jim Gribi  
Gribi Associates  
1350 Hayes Street, #C-14  
Benicia, CA 94510

Subject : 1 Water Sample  
Project Name : CORWOOD CW  
Project Number :

Dear Mr. Gribi,

Chemical analysis on the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. USEPA protocols for sample storage and preservation were followed.

Acculabs - Davis is certified by the State of California (# 2330), the State of Arizona (AZ0583) and the State of Nevada (CA00039-2000-32). If you have any questions regarding procedures or results, please call me at 530-757-0920.

Sincerely,



Tom Kwoka






Sample Log 22204

MTBE (Methyl-t-butyl ether) By EPA Method 8020/602

From : CORWOOD CW  
Sampled : 01/08/01  
Received : 01/10/01  
Matrix : Water

SAMPLE	Date Analyzed	(MRL) <small>ug/L</small>	Measured Value <small>ug/L</small>
MW-1	01/17/01	(25)	800

Approved By:

  
\_\_\_\_\_  
Tom Kwoka  
Lab Director

Sample Log 22204

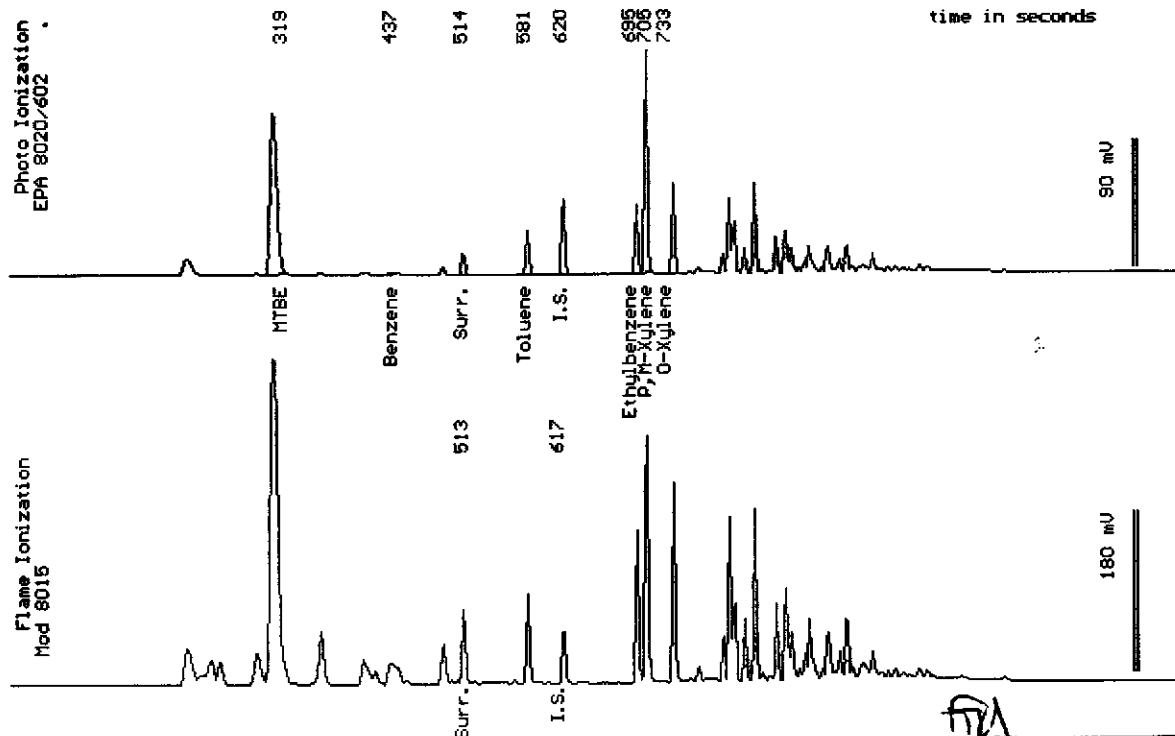
22204-01

Sample: MW-1

From : CORWOOD CW  
 Sampled : 01/08/01  
 Dilution : 1:1  
 Matrix : Water

Run Log : 2199P

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.50)	.82
Toluene	(.50)	17
Ethylbenzene	(.50)	28
Total Xylenes	(.50)	120
TPH as Gasoline	(50)	670
Surrogate Recovery		105 %



Date Analyzed: 01-15-01  
 Column : 0.53mm X 60m Restek Rtx-1301

*SP*  
 Stuart Podolsky  
 Senior Chemist



January 18, 2001  
Sample Log 22204


QC Report for EPA 8020 & Modified EPA 8015  
Run Log : 2199T  
From : CORWOOD CW  
Sample(s) Received : 01/10/01

Parameter	Matrix Spike % Recovery	Matrix Spike Duplicate % Recovery	RPD *
Benzene	102	102	0
Ethylbenzene	99	101	2
TPH as Gasoline	110	107	3

\* RPD = Relative Percent Difference

Parameter	Laboratory Control Sample % Recovery
Benzene	95
Ethylbenzene	98
Gasoline	92

Parameter	Method Blank
Benzene	<0.50 ug/L
Toluene	<0.50 ug/L
Ethylbenzene	<0.50 ug/L
Total Xylenes	<0.50 ug/L
TPH as Gasoline	<50 ug/L

  
Tom McQuinn  
Lab Director



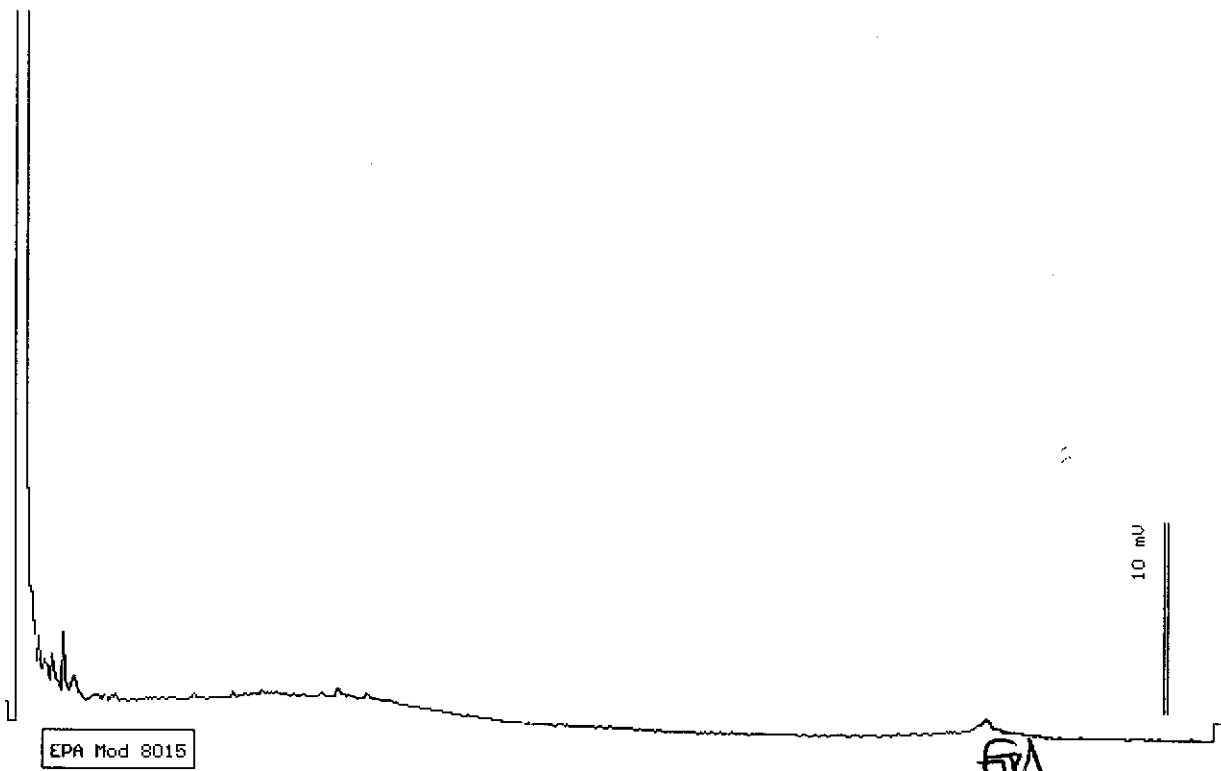
Sample Log 22204  
22204-01

Sample: MW-1

From : CORWOOD CW  
Sampled : 01/08/01  
Extracted: 01/11/01  
Dilution : 1:1  
Matrix : Water

QC Batch : DW010102  
Run Log : 7486C

Parameter	(MRL) ug/L	Measured Value ug/L
TPH as Diesel	(50)	<50



Date: 01-12-01 Time: 17:05:35  
Column : 0.53mm ID X 15m DB1 (J&W Scientific)

*Stewart Rodolsky*  
Stewart Rodolsky  
Senior Chemist



# Acculabs Inc. - Davis

## TPH Diesel by 8015 Mod QC Report

Matrix: Water

Date Extracted: 1/11/01

QC Batch: DW010102


Date Analyzed: 1/12/01

QC Limits Set: 7/27/00

Parameter	Spike Conc	LCS	LCSD	RPD
	ug/L	% Rec	% Rec	
TPH as Diesel	1000	98	102	4.0

Control Chart Limits	
Lower	Upper
66	127

	MDL	Measured value
	ug/L	ug/L
Method Blank		
TPH as Diesel	(50)	<50
TPH as Motor Oil	(100)	<100

  
Tom Kwoka  
Laboratory Director



Sample Log 22204  
January 15, 2001

## EPA 8260B Oxygenates

Sample Name : **MW-1**

Project Name : CORWOOD CW

Project Number :

Sample Date : 01/08/01

Date Analyzed : 01/12/01

Date Received : 01/10/01

Dilution : 1:5

Sample Matrix : Water

Lab Number : 22204-01

<u>Parameter</u>	<u>MRL</u>	<u>Measured Conc.</u>	<u>Units</u>
tert-Butanol	100	<100	ug/L
<b>Methyl-tert-butyl ether</b>	<b>25</b>	<b>1700</b>	ug/L
Diisopropyl ether	25	<25	ug/L
Ethyl-tert-butyl ether	25	<25	ug/L
tert-Amylmethyl ether	25	<25	ug/L
Dibromofluoromethane		101	% Recovery

MRL = Method Reporting Limit    Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By :

  
Tom Kwoka

# Acculabs - Davis



## EPA 8260B QC Report - Oxygenates

Matrix: Water

QC Batch: OW010112

Date Analyzed: 1/12/01

QC Limits Set: 11/3/00

### Spike Data

Parameter	Spike Conc ug/L	LCS % Rec	LCSD % Rec	RPD
Methyl-tert-Butyl Ether	50	118	122	3.6

### Method Blank Data

Parameter	MRL	Measured Concentration	Units
tert-Butanol	20	<20	ug/L
Methyl-tert-Butyl Ether	5.0	<5.0	ug/L
Diisopropyl Ether	5.0	<5.0	ug/L
Ethyl tert-Butyl Ether	5.0	<5.0	ug/L
tert-Amylmethyl Ether	5.0	<5.0	ug/L

### Quality Control Data

Surrogate Compounds	Control Chart Limits	
	Lower	Upper
Dibromofluoromethane	67	140

  
 Tom Kwoka  
 Laboratory Director

# Acculabs Inc.

[ ] 3902 E. University Dr. Phoenix AZ 85034  
 [ ] 710 E. Evans Blvd. Tucson AZ 85713  
 [ ] 2020 W. Lone Cactus Dr. Phoenix AZ 85027  
 [ ] 4663 Table Mountain Dr. Golden CO 80403  
 [ ] 992 Spice Islands Dr. Sparks NV 89431  
 [ ] 1046 Olive Drive #2 Davis CA 95616

602-437-0979 Fax 437-0826  
 520-884-5811 Fax 884-5812  
 602-780-4800 Fax 780-7695  
 303-277-9514 Fax 277-9512  
 702-355-0202 Fax 355-0817  
 530-757-0920 Fax 753-6091

Lab Number  
**22204**

Report  
 Due Date:

Client Gribi Associates		PUBLIC WATER SUPPLY INFORMATION	
Address 1350 Hayes Street, Ste C-14		System Name	
City, State & Zip Benicia, CA 94510		PWS No.	Report to State/EPA Y N
Contact Jim Gribi		POE No.	DWR No.
Phone 707/748-7743	Project Name CORWOOD CW		Collection Point
Fax 707/748-7763	Project Number		Collector's Name
P.O. Number	Fax Results (Y) N	Page 1 of 1	Location (City)

SAMPLE TYPE CODES				S A M P L E T Y P E	C O N T A I N E R S	A N A L Y S E S R E Q U E S T E D	T P H - G B T E X M T B E	T P H - D	O X Y G E N A T E S
DW = drinking water	TB = travel blank	Compliance Monitoring							
WW = waste water	SD = solid	Y N							
MW = monitoring well	SO = soil								
HW = hazardous waste	SL = sludge								
TURNAROUND TIME REQUESTED									
Standard		Lab Director Approval							
RUSH 2/3/00, PM									
Special									
CLIENT'S SAMPLE ID/LOCATION		Date	Time						Spl. No.

MW-1	1/8/01	8:15	W	5	X	X	X												01

Instructions/Comments/Special Requirements:

SAMPLE RECEIPT			Date	Time	Samples Relinquished By	Samples Received By
Received Cold	Y	N	01/10/01	8:10	<i>James [Signature]</i>	<i>[Signature]</i>
Custody Seals	Y	N				
Seals Intact	Y	N				
No. of Containers						

Acculabs' terms are: Net 40 (Payment must be received by the date shown on the invoice or any discount is void)



**WORK ORDER #: 0101103**

Work Order Summary

**CLIENT:** Mr. Jim Gribi  
Gribi and Associates  
1350 Hayes Street  
Suite C-14  
Benicia, CA 94510

**BILL TO:** Mr. Jim Gribi  
Gribi and Associates  
1350 Hayes Street  
Suite C-14  
Benicia, CA 94510

**PHONE:** 707-748-7743

**P.O. #** NR

**FAX:** 707-748-7763

**PROJECT #** 108-02-02 Corwood CW

**DATE RECEIVED:** 1/8/01

**DATE COMPLETED:** 1/24/01

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>
01A	VS-1	TO-14	3.0 "Hg
02A	Lab Blank	TO-14	NA

CERTIFIED BY:

*Nathan J. Hoffman*  
Laboratory Director

DATE: 1.24.01

Certification numbers: CA ELAP - 1149, NY ELAP - 11291, UT ELAP - E-217, AZ ELAP - AZ0567

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630  
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

# LABORATORY NARRATIVE

## TO-14

Gribi and Associates

Workorder# 0101103

One 6 Liter Summa Canister sample was received on January 08, 2001. The laboratory performed analysis via EPA Method TO-14 using GC/MS in the full scan mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis. See the data sheets for the reporting limits for each compound.

During the five point calibration, two low-level standards are used. The low-level standard for TO-14 compounds is spiked at 0.5 ppbv and represents the reporting limit for these compounds. The low-level standard for the non-TO-14 compounds is spiked at 2.0 ppbv and represents the reporting limit for these compounds. The TO-14 compounds are present in both standards but are excluded from reporting in the 2.0 ppbv standard since a lower level is already included in the curve.

Method modifications taken to run these samples include:

<i>Requirement</i>	<i>TO-14</i>	<i>ATL Modifications</i>
Internal standard retention times.	Not specified.	Within 0.50 minutes of most recent daily CCV internal standards
Internal standard recoveries.	Not specified.	Within 40% of the daily CCV internal standard area for blanks and samples.
Internal standard retention times.	Not specified.	Within 0.50 minutes of most recent daily CCV internal standards
Internal calibration criteria.	Not specified.	RSD of 30% or less for standard compounds, 40% or less for non-standard and polar compounds
Continuing calibration verification criteria	Not specified.	70 - 130% for at least 90% of standard compounds, 60 - 140% for at least 80% of non-standard and polar compounds
Response factor for quantitation.	Average response factor (ICAL).	Average response factor (ICAL).

### Receiving Notes

There were no receiving discrepancies.

### Analytical Notes

There were no analytical discrepancies.

### Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit(background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.  
N - The identification is based on presumptive evidence.

# AIR TOXICS LTD.

SAMPLE NAME: VS-1

ID#: 0101103-01A

EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	g011118	Date of Collection:	1/5/01
Dil. Factor:	1.49	Date of Analysis:	1/11/01

Compound	Det. Limit (ppbv)	Det. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Benzene	0.74	2.4	4.8	16
Toluene	0.74	2.8	5.3	20
Ethyl Benzene	0.74	3.3	4.8	21
m,p-Xylene	0.74	3.3	6.2	27
o-Xylene	0.74	3.3	1.4	6.3

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	122	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	96	70-130

# AIR TOXICS LTD.

SAMPLE NAME: Lab Blank

ID#: 0101103-02A

EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	g011104	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	1/11/01

Compound	Det. Limit (ppbv)	Det. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Benzene	0.50	1.6	Not Detected	Not Detected
Toluene	0.50	1.9	Not Detected	Not Detected
Ethyl Benzene	0.50	2.2	Not Detected	Not Detected
m,p-Xylene	0.50	2.2	Not Detected	Not Detected
o-Xylene	0.50	2.2	Not Detected	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	87	70-130

**Sample Transportation Notice**

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

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FOLSOM, CA 95630-4719  
(916) 985-1000 FAX: (916) 985-1020

**CHAIN-OF-CUSTODY RECORD**

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Contact Person <u>JIM Gribi</u> Company <u>Gribi ASSOCIATES</u> Address <u>1350 Hayes #C-14</u> City <u>BENICHA</u> State <u>CA</u> Zip <u>94510</u> Phone <u>707/748-7743</u> FAX <u>707/748-7763</u> Collected By: Signature <u>[Signature]</u>	Project info: P.O. # _____ Project # <u>108-02-02</u> Project Name <u>Corwood CW</u>	Turn Around Time: <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush _____ Specify _____
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Lab I.D.	Field Sample I.D.	Date & Time	Analyses Requested	Canister Pressure / Vacuum		
				Initial	Final	Receipt
--1A	VS-1	4/5/01 11:25	TO-14 BTEX	30	5	3.0" Hg

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Relinquished By: (Signature) <u>[Signature]</u> Date/Time <u>4/5/01</u>	Received By: (Signature) _____ Date/Time _____	Notes:
Relinquished By: (Signature) _____ Date/Time <u>14:00</u>	Received By: (Signature) _____ Date/Time _____	
Relinquished By: (Signature) _____ Date/Time _____	Received By: (Signature) <u>[Signature]</u> Date/Time <u>1-8-01 1100</u>	

Lab Use Only	Shipper Name <u>URS</u>	Air Bill # <u>12477203</u>	Opened By: <u>EO</u>	Temp. (°C) <u>—</u>	Condition <u>Good</u>	Custody Seals Intact? Yes No <u>None</u>	Work Order # <u>0101103</u>
		<u>10467720</u>					