## **GRIBI** Associates

Geological and Environmental Consulting Services

October 20, 2005

GA Project No. 147-01-04

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

Attention:

Ms. Donna Drogos

Subject:

Report of Angle Borings and Extraction Well Installation

**Dublin Toyota UST Site** 

6450 Dublin Court, Dublin, California Alameda County LOP Site ID No. 699 Alameda County

OCT 2 5 2005

Environmental Health

#### Ladies and Gentlemen:

Gribi Associates is pleased to submit this letter report documenting an angle-boring attempt and the installation of two 2-inch diameter dual-phase extraction wells (EW-1 and EW-2) on behalf of Dublin Toyota for the underground storage tank (UST) site located at 6450 Dublin Court in Dublin, California (see Figure 1 and Figure 2). This letter provides a summary of field activities and soil analytical results for the two angle borings and two extraction wells at the site. All activities were conducted in accordance with Gribi Associates' "Interim Remedial Measures (IRM) Workplan" (IRM Workplan) dated March 18, 2005 and approved by Alameda County Department of Environmental Health.

#### SITE BACKGROUND

The Dublin Toyota UST site consisted of three USTs located in a common tank farm which was located outside near the northeast corner of the maintenance garage (see Figure 2). The USTs included two 2,000-gallon steel gasoline tanks and one 1,000-gallon steel waste oil tank. The three USTs were removed from a common excavation by Scott Company on June 10, 1998. Based on soil and grab groundwater sampling results, which showed elevated levels of gasoline- and diesel-range hydrocarbons, the UST excavation cavity was over-excavated, and approximately 500 gallons of groundwater was pumped from the excavation cavity. Approximately 93 tons of hydrocarbonimpacted soil was disposed of offsite, and the UST excavation cavity was backfilled with 162 tons of clean imported fill material.

In December 1998, Gribi Associates drilled and sampled four investigative soil borings, IB-1 through IB-4, and drilled, installed, and sampled two groundwater monitoring wells, MW-1 and MW-2, at the site. Soil and groundwater samples collected from the borings and wells contained no significant levels of hydrocarbons, except for the groundwater sample from well MW-1, located about 15 feet southwest from the former UST cavity. Groundwater samples from this well contained elevated levels of Methyl-t-butyl Ether (MTBE).

In August 2000, Gribi Associates drilled and sampled one soil boring, IB-5, inside the Dublin Toyota service building west from the former USTs, and drilled, installed, and sampled one groundwater monitoring well, MW-3, south-southwest from the former USTs. Soil analytical results from these borings showed no detectable concentrations of gasoline-range hydrocarbons. Groundwater samples from these borings showed concentrations of MTBE that were significantly lower than MTBE concentrations in MW-1, indicating lateral attenuation of MTBE impacts in groundwater southwest from the former USTs. Subsequent groundwater monitoring of the three site groundwater monitoring wells have generally shown decreasing concentrations of MTBE in well MW-1.

#### DESCRIPTION OF FIELD ACTIVITIES

Two angle borings were drilled and sampled on May 9, 2005. The purpose for angle borings was to attempt to locate the Class II base-rock backfill from the UST excavation by drilling from outside of the existing vehicle wash/detailing structure presently over the footprint of the former UST excavation.

The two angle borings failed to encounter the UST excavation backfill material. Thus, two vertical, dual-phase extraction wells were drilled, sampled, and installed on July 29, 2005 within the existing vehicle wash/detailing structure.

#### Pre-field Activities

Prior to beginning field activities, a drilling permit was obtained from Alameda County Zone 7 Water Agency. The angle borings were conducted under Permit No. 25060 and the extraction wells were installed under Permit No. 25123. Copies of the permits are provided as Attachment A.

The four proposed well locations were marked with white paint, and Underground Services Alert (USA) was notified at least 48 hours prior to drilling. In addition, a private underground utility locator was retained to conducted an independent clearance of the same proposed well locations.

Prior to initiating drilling activities, a Site Safety Plan was prepared, and a tailgate safety meeting was conducted with all site workers.

## **Angle Boring Drilling and Sampling Activities**

Location of Angle Borings

Angle borings were sited outside the southern wall of the vehicle wash/detailing building. The intent was to angle bore downward to the north at an approximate 45-degree angle in order to intercept the Class II base-rock backfill of the UST excavation.

## Drilling of Angle Borings

Two angle boring were cored to a total length of approximately 28 feet, or a total vertical depth of approximately 14 feet. The borings were conducted by Gregg Drilling using a Geoprobe rig. After conducting, z

For each boring, continuous soil cores were collected to total depth in each boring in a clear plastic acetate tube, nested inside a stainless steel core barrel. After each four-foot core barrel was brought to the surface and exposed, the core was sliced lengthwise to expose the soil core, examined, and logged by a qualified geologist using sight and smell. Following completion, the investigative borings were grouted to match existing surface grade using a cement slurry. Soil cuttings generated during this investigation were stored onsite in sealed DOT-approved containers pending laboratory analysis and profiling.

Laboratory Analysis of Soil and Water Samples

Five soil samples and one grab groundwater sample were analyzed for the following parameters:

USEPA 8260B Total Petroleum Hydrocarbons as Gasoline (TPH-G) USEPA 8260B Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) USEPA 8260B Methyl Tert-Butyl Ether (MTBE) USEPA 8260B Oxygenates

All analyses were conducted by a SunStar Laboratories (a state-certified laboratory) with standard turnaround on results.

## **Extraction Well Drilling and Sampling Activities**

#### Location of Extraction Wells

The two extractions wells were installed in the southernmost vehicle washing/detailing bay adjacent to the east wall of the maintenance garage. The borings were located within the UST excavation area that had been backfilled with Class II base-rock. Figure 2 shows the locations of the extraction wells.

## Drilling of Extraction Well Borings

The two extraction well borings were drilled to a depth of 15 feet below surface grade by Gregg Drilling using an 8-inch diameter hollow-stem auger drill rig. Prior to drilling, a pilot boring was conducted using direct-push technology for the purpose of logging soils and collecting soil samples. For each boring, continuous soil cores were collected to total depth in each boring in a clear plastic acetate tube, nested inside a stainless steel core barrel. After each four-foot core barrel was brought to the surface and exposed, the core was sliced lengthwise to expose the soil core, examined, and logged by a qualified geologist using sight and smell. Soil cuttings generated during this

investigation were stored onsite in sealed DOT-approved containers pending laboratory analysis and profiling.

Installation of Groundwater Monitoring Wells

Extraction wells EW-1 and EW-2 were constructed using 2-inch diameter Schedule 40 threaded PVC casing according to the following specifications: (1) 0.020-inch slotted well casing was placed from approximately 5 feet to 15 feet below surface grade; (2) Filter sand was placed around the casing to approximately 1 feet above of top of screen, or a depth of approximately 4 feet below surface grade; (3) A 1 foot bentonite seal was placed above the filter sand to approximately 3 feet below surface grade; and (4) The remaining annulus was grouted using a Type II Portland cement slurry (two 90-pound bags of cement to 30 gallons of water) to approximate grade. The top of the well casing was cut approximately 6 inches below surface grade was enclosed in traffic-rated, flush-mounted well box set in concrete. Well construction details for the two extraction wells are included on the well boring logs in Appendix B.

Laboratory Analysis of Soil and Water Samples

Two soil samples were analyzed for the following parameters:

USEPA 8260B Total Petroleum Hydrocarbons as Gasoline (TPH-G) USEPA 8260B Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) USEPA 8260B Methyl Tert-Butyl Ether (MTBE) USEPA 8260B Oxygenates

All analyses were conducted by a SunStar Laboratories (a state-certified laboratory) with standard turnaround on results.

#### RESULTS OF FIELD ACTIVITIES

## **General Subsurface Conditions**

Angle Borings

Soils encountered below the 4-inch asphaltic concrete and 6-inch Class II base-rock subsurface consisted primarily of silty, sandy clays near the surface to higher-quality brown to dark grey clays at the total vertical depth of the boring at 15 feet. Slight fuel hydrocarbon odors were observed in soil samples from both angle borings.

Extraction Well Installation

Soils encountered below the 6-inch slab surface in both extraction well borings consisted of Class II base-rock material to approximately 12 feet below grade, followed by a grey clay to the depth of

the boring at 15 feet. Slight fuel hydrocarbon odors were noted in soil cores and cuttings from both borings.

Boring logs for the two extraction well borings are included as Attachment B. Laboratory Analytical Results

Angle Boring Soil and Groundwater Analytical Results

During drilling of AB-1, five soil samples were collected at varying depths, along with one grab groundwater sample. All five samples showed non-detectable levels of total petroleum hydrocarbons as gasoline (TPH-g). Benzene was detected in three of the five samples and showed decreasing concentrations with respect to depth. Benzene concentrations were 18 micrograms per kilogram (mg/kg), 7.8 ug/kg, and 5.5 ug/kg at depths of 1.75 feet, 5.25 feet, and 8.75 feet, respectively. MTBE was detected in four of the five soil samples with concentrations ranging from 430 ug/kg at a depth of 1.75 feet to 1,400 ug/kg at a depth of 13.75 feet.

Analytical results for the grab groundwater sample collected at AB-1 showed concentrations of 74 ug/liter (ug/L) TPH-G, 19 ug/L benzene, 0.80 ug/L toluene, 2.2 ug/L ethylbenzene, and 14,000 ug/L MTBE. Groundwater results also showed detectable levels of other oxygenates.

Extraction Well Soil Analytical Results

Analytical results for the soil sample collected at the backfill-native interface at EW-1 showed non-detectable levels for all analytes except for 410 micrograms per kilogram (ug/kg) MTBE. Analytical results for the soil sample collected at the backfill-native interface at EW-2 showed concentrations of 790 ug/kg TPH-g, 11 ug/kg ethylbenzene, 17 ug/kg total xylenes, 1980 ug/kg tert-butyl alcohol, and 540 ug/kg MTBE.

Soil analytical results are summarized in Table 1. The laboratory data report for soil and groundwater samples is contained in Appendix C.

#### CONCLUSIONS

Gribi Associates was successful at installing two dual-phase extraction wells (EW-1 and EW-2) within the UST excavation area. The extraction wells will be utilized to remove impacted soil vapor and groundwater from the subsurface, which is believed to be a source of groundwater impacts at the site. Soil and groundwater analytical results showed elevated levels of fuel hydrocarbons Soil vapor and groundwater extraction will be conducted as outlined in the IRM Workplan.

We appreciate this opportunity to provide this report for your review. Please contact us if there are questions or if additional information is required.

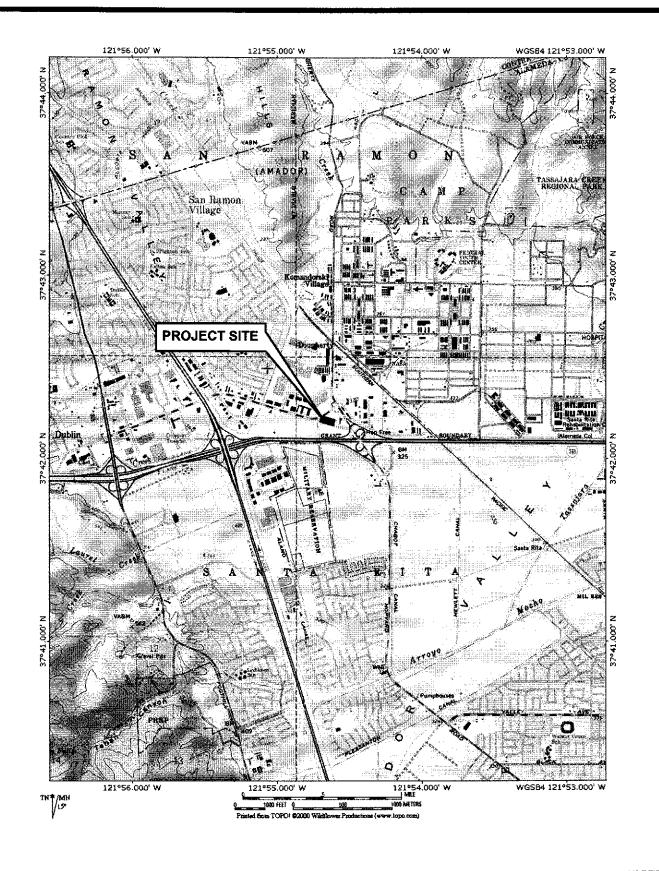
Very truly yours,

Matthew A. Rosman Project Engineer

Enclosure

cc: Mr. Scott Anderson, Dublin Toyota

James E. Gribi Registered Geologist California No. 5843



DESIGNED BY: CHECKED BY:

DRAWN BY: EGH SCALE:

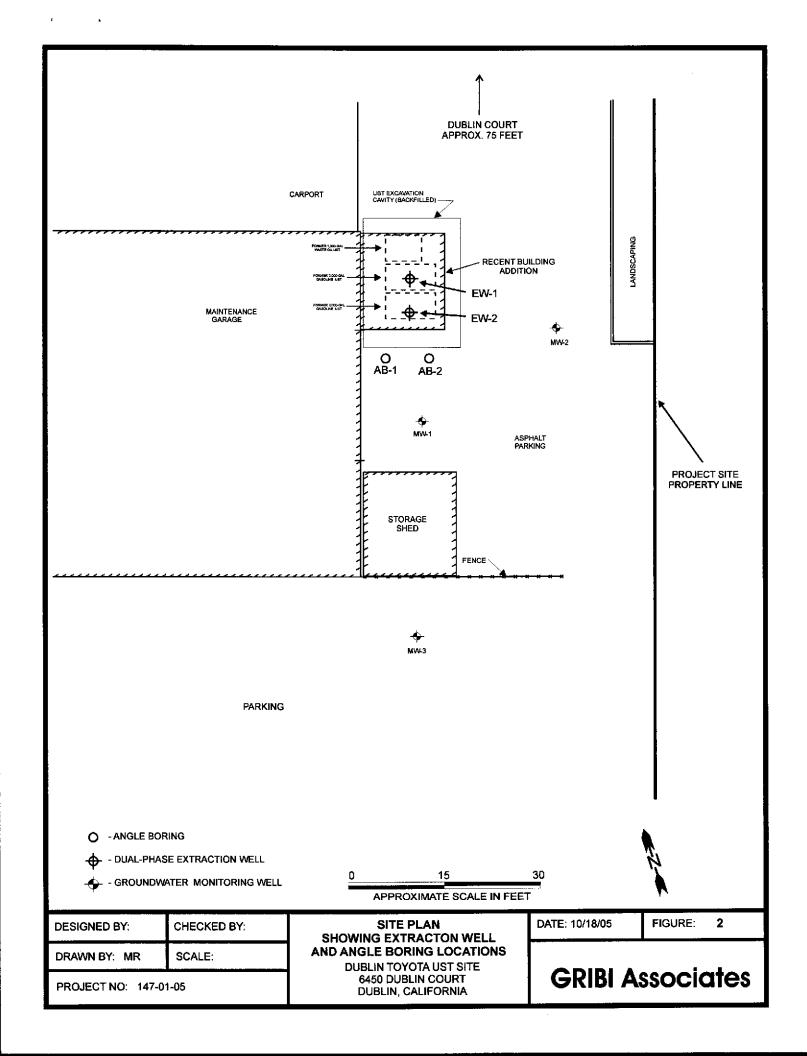
PROJECT NO: 147-01

## SITE VICINITY MAP

DUBLIN TOYOTA 6450 DUBLIN COURT DUBLIN, CALIFORNIA DATE: 05/07/03

FIGURE: 1

**GRIBI Associates** 



## Table 1 SUMMARY OF SOIL LABORATORY ANALYTICAL RESULTS

Dublin Toyota UST Site, San Francisco, CA

	Sample		Concen	trations in part	s per billion (s	oil is ug/kg, wa	er is ug/L)	
Sample ID	Depth	трн-о	Benzene	Toluene	Ethyl- benzene	Xylenes	MTRE	Other Oxygenates
ANGLE BOR	RINGS							
Soil			ı		<u></u>			
AB-1-3.5	1.75 ft	<500	18	17	7.0	14	430	320 TBA
AB-A-10.5	5.25 ft	<500	7.8	<2.0	<2.0	<4.0	1,100	110 TAME
AB-1-17.5	8.75 ft	<500	5.5	<2.0	2.6	<4.0	1,300	230 TBA
AB-1-24.0	12.0 ft	<500	<2.0	5.1	<2.0	<4.0	<5.0	1,100 DIPE
AB-1-27.5	13.75 ft	<500	<2.0	4.7	<2.0	<4.0	1,400	All ND
Water								
AB-1-W	••	74	19	0.80	2.2	<1.0	14,000	14 TAME 470 TBA 2.4 ETBE
EXTRACTIO	ON WELL INS	TALLATION						
Soil			1	1		-1		<del></del>
EW-1	12 ft	<500	<2.0	<2,0	<4.0	<4.0	410	All ND
EW-2	12 ft	790	<2.0	<2.0	11	17	540	190 TBA

#### NOTES:

ug = micrograms

kg = kilograms

L = liter

TPH-G = Total Petroleum Hydrocarbons as Gasoline

MTBE = Methyl Tert-Butyl Ether

TBA = Tert-Butyl Alcohol
TAME = Tert-amyl Methyl Ether
ETBE = Ethyl tert-butyl ether

# ATTACHMENT A DRILLING PERMIT



## **ZONE 7 WATER AGENCY**

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588-5127 VOICE (925) 484-2600 X235 FAX (325) 462-3914

## **DRILLING PERMIT APPLICATION**

FOR APPLICANT TO COMPLETE	FOR OFFICE USE
LOCATION OF PROJECT Dublin Toyota 6450 Dubling F.	PERMIT NUMBER 25060 WELL NUMBER
خفورات فيسمته والمسمون المسمورين المسمورين والمسالة والكانو باست أرباء والماليون	APN 941-1400-007-00
California Coordinates Source Accuracy± ft.  CON 37 42 //. 7 V 10 COS // 27 56.4 Wft.  APN	PERMIT CONDITIONS
CLIENT	Circled Permit Requirements Apply
Name Dublin Toyota  Address 6450 Dublin CT Phone 915-829-7700  City Dublin CH Zp 975-851-0549  APPLICANT  Name Grib) Associates  Fax for 1-748-776-774-776  City Banicia Ca Zb 94560	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 50 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.
TYPE OF PROJECT:  Well Construction	B. WATER SUPPLY WELLS  1. Minimum surface seal diameter is four inches greater than the well casing diameter.  2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and imagetion wells unless a lesser depth.
PROPOSED WELL USE:  Domestic	Is specially approved.  3. Grout placed by tremle.  4. An access port at least 0.5 inches in diameter is required on the wellhead for water level measurements.  5. A sample port is required on the discharge pipe near the wellhead.
DRILLING METHOD: Mud Rotary D Air Rotary D Hollow Stem Auger D Cable Tool D Direct Push X Other D	GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS     Minimum surface seal diameter is four inches greater than the wall or piezometer casing diameter.
DRILLING COMPANY GIVES Drilling DRILLER'S LICENSE NO. 157 HUBS 1615	<ol> <li>Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feat.</li> <li>Grout placed by tremle.</li> </ol>
WELL SPECIFICATIONS: Drill Hole Diameter in. Maximum Casing Diameter in. Depth ft. Surface Seal Depth ft. Number	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, tramied cement grout shall be used in place of compacted cuttings.  E. CATHODIC. Fill hole above ended zone with concrete placed by tremie.
SOIL BORINGS: Number of Borings / Z Maximum Hole Diameter Z in. Depth S ft.	E. WELL DESTRUCTION. See attached.  SPECIAL CONDITIONS:, Submit to Zone 7 within 60 days after completion of permitted work the well installation report including all
ESTIMATED STARTING DATE MAY Z ZOGST	soil and water laboratory analysis results.
I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.  APPLICANT'S SIGNATURE  Date 4/22/2005	Approved Wyman Hong Date 4/29/05
ATTACH SITE PLAN OR SKETCH	

## **ZONE 7 WATER AGENCY**

100 NORTH CANYONS PARKWAY, LIVERMORE, CALIFORNIA 94651 VOICE (925) 454-5000 FAX (925) 454-5728

## DRILLING PERMIT APPLICATION

LOCATION OF PROJECT Dublin Toyota  Dublin Cat  Dublin Cat	PERMIT NUMBER 25123  WELL NUMBER 35/1E-6F40 & 35/1E-6F41  APN 941-1400-007-00
	PERMIT CONDITIONS
CLIENT Description Toyota Phone 92, 824-7200	Circled Permit Requirements Apply
APPLICANT Name	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 approva date.  3. WATER SUPPLY WELLS  1. Minimum surface seel diameter is four inches greater than the well casing diameter.  2. Minimum seal depth is 50 feat for municipal and industrial wells or 20 feet for domestic and larigation wells unless a lesser depth is specially approved.  3. Grout placed by tremie.  4. An access port at lesst 0.6 inches in diameter is required on the wellfhead for water level measurements.  5. A sample port is required on the discharge pipe near the wellhead.  GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS  1. Minimum surface seal diameter is four inches greater than the well or placemeter casing diameter.  2. Minimum seal depth for monitoring wells is the meximum depth practicable or 20 feet.  3. Grout placed by tremie.  D. GEOTECHNICAL. Backfill bore hole with compacted cuttings on heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, transled cement group 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 Submit to Zone 7 within 60 days after completions of permitted work the wall installation report Including all soil and water laboratory analysis results.

# ATTACHMENT B BORING LOGS

## LOG OF SOIL BORING

SHEET 1 OF 1

**BORING NUMBER: EW-1** 

BORING LOCATION: 6450 DUBLIN COURT

DUBLIN, CA

BORING TYPE: EXTRACTION WELL

PROJECT NAME: DUBLIN TOYOTA

PROJECT NUMBER: 147-01-05

**GRIBI** Associates

START DATE: 07/29/2005

COMPLETION DATE: 07/29/2005

DRILLING CONTRACTOR: GREGG DRILLING

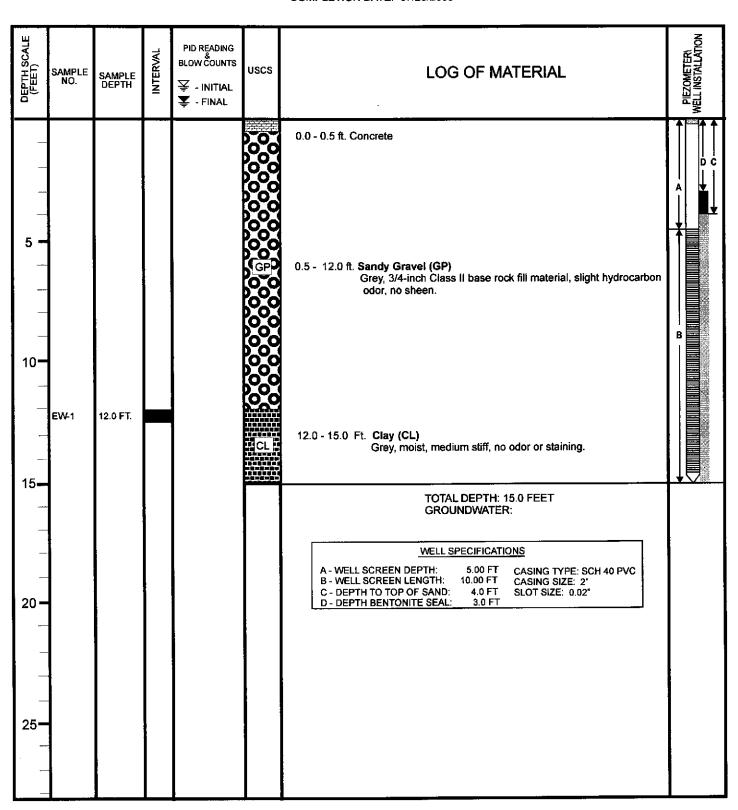
DRILLING METHOD: HOLLOW STEM AUGER

**BOREHOLE DIAMETER: 8.0 INCHES** 

COMPLETION METHOD: MONITORING WELL

BORING TOTAL DEPTH: 15.0 FEET

**GROUNDWATER DEPTH:** 



## BORING NUMBER: EW-2 LOG OF SOIL BORING

SHEET 1 OF 1

**BORING LOCATION: 6450 DUBLIN COURT** 

DUBLIN, CA

BORING TYPE: EXTRACTION WELL

PROJECT NAME: DUBLIN TOYOTA

PROJECT NUMBER: 147-01-05

**GRIBI** Associates

START DATE: 07/29/2005

COMPLETION DATE: 07/29/2005

DRILLING CONTRACTOR: GREGG DRILLING

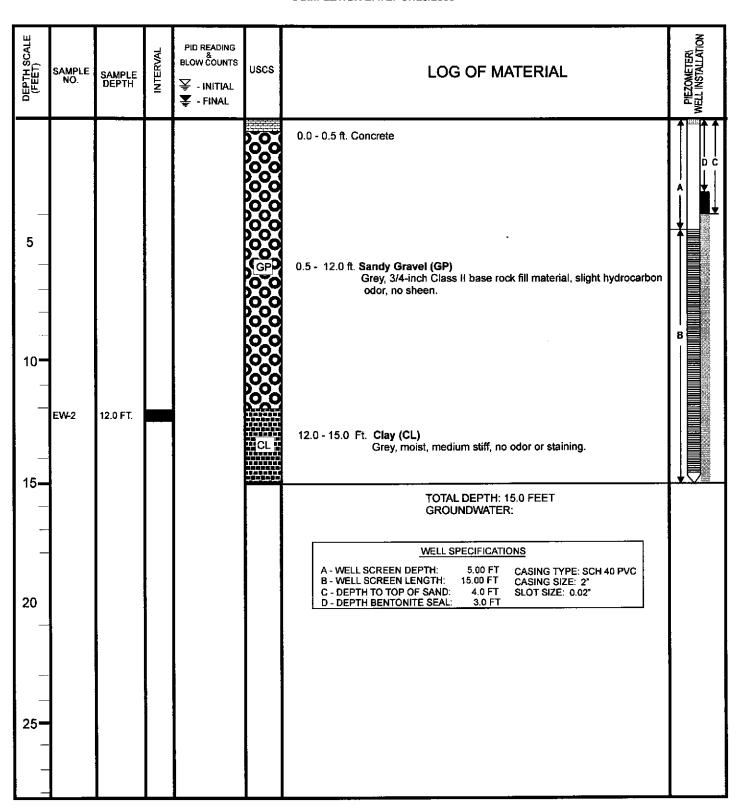
DRILLING METHOD: HOLLOW STEM AUGER

**BOREHOLE DIAMETER: 8.0 INCHES** 

COMPLETION METHOD: MONITORING WELL

**BORING TOTAL DEPTH: 15.0 FEET** 

**GROUNDWATER DEPTH:** 



# ATTACHMENT C LABORATORY ANALYTICAL RESULTS



# SunStar Laboratories, Inc.

16 May 2005

Jim Gribi Gribi Associates 1090 Adam Street, Suite K Benicia, CA 94510

RE: Dublin Toyota

Enclosed are the results of analyses for samples received by the laboratory on 05/11/05 09:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Dennis Dorning

Project Manager

#### Lab Number SunStar Laboratories, Inc. Report 3002 Dow Avenue, Suite 212 Due Date: Tustin, CA 92780 1-800-781-6777 05/10/05 **Gribi Associates** Client **Dublin Toyota** 1090 Adams Steet, Suite K **Project Name** Address Jim Gribi Collector's Name Benicia, CA 94510 City, State & Zip Client's Project Number Jim Gribl Contact Batch Number 707/748-7743 Phone Dublin Location (City) 707/748-7763 Fax Email Results N Proposal Number Page of 1 P.O. Number Analyses SAMPLE TYPE CODES C Requested Compliance DW = drinking water TB = travel blank ā SD = solid Monitoring WW = waste water m MW = monitoring well SO = soil HW = hazardous waste SL = sludge ű. TURNAROUND TIME REQUESTED 'n Lab Director Standard) ű. Approval ı. RUSH 8 p Special e Spl. No. CLIENT'S SAMPLE ID/LOCATION Date Time S AB-1-3.5 8:30 5/9/05 S 1 07 AB-1-10.5 5/9/05 8:45 03 S 1 AB-1-17.5 5/9/05 8:50 1 σÝ 9:00 S AB-1-24.0 5/9/05 AB-1-27.5 5/9/05 9:10 \$ 1 X o٢ W 4 X **AB-1-W** 5/9/05 9:20 96 **Detection Levels** Soil Water Instructions/Comments/Special Requirements: TPH-G&D 50.0 ppb 1.0 ppm 0.005 ppm 0.5 ppb BTEX/MTBE/VOCs 50.0 ppm 5.0 ppm O&G Samples Received By Samples Relinguished By SAMPLE RECEIPT Date Time N7º Received Cold $\hat{N}$ 9.00 Υ **Custody Seals** Seals intact Υ N)

No. of Containers

Gribi Associates 1090 Adam Street, Suite K Benicia CA, 94510 Project: Dublin Toyota

Project Number: [none]
Project Manager: Jim Gribi

Reported: 05/16/05 15:31

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AB-1-3.5	T500574-01	Soil	05/09/05 08:30	05/11/05 09:00
AB-1-10.5	T500574-02	Soil	05/09/05 08:45	05/11/05 09:00
AB-1-17.5	T500574-03	Soil	05/09/05 08:50	05/11/05 09:00
AB-1-24.0	T500574-04	Soil	05/09/05 09:00	05/11/05 09:00
AB-1-27.5	T500574-05	Soil	05/09/05 09:10	05/11/05 09:00
AB-1-W	T500574-06	Water	05/09/05 09:20	05/11/05 09:00

SunStar Laboratories, Inc.

chain of custody document. This analytical report must be reproduced in its entirety.

The results in this report apply to the samples analyzed in accordance with the

1090 Adam Street, Suite K Benicia CA, 94510 Project: Dublin Toyota

Project Number: [none] Project Manager: Jim Gribi Reported: 05/16/05 15:31

## AB-1-3.5 T500574-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		SunStar La	aborator	ies, Inc.	_				
Purgeable Petroleum Hydrocarbons by	EPA 8015m								
C6-C12 (GRO)	ND	500	ug/kg	1	5051104	05/11/05	05/12/05	EPA 8015m	
Surrogate: 4-Bromofluorobenzene		83.2 %	65-	135	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	u	"	"	
Volatile Organic Compounds by EPA M	Aethod 8260B								
Benzene	18	2.0	ug/kg	I	5051105	05/11/05	05/12/05.	EPA 8260B	
Toluene	17	2.0	11	"	"	u	II .	**	
Ethylbenzene	7.0	2.0	**	п	II	II .	ш	ч	
m,p-Xylene	14	4.0	R	n	II	u	н	**	
o-Xylene	ND	2.0	H	**	II	II	II .	ıı	
Tert-amyl methyl ether	ND	5.0	n	н	II	ti.	U	"	
Tert-butyl alcohol	320	20	"	H	"	11	II	**	
Di-isopropyl ether	ND	5.0	"	Ħ	"	II .	Ш	**	
Ethyl tert-butyl ether	ND	5.0	n	**	ш	п	li	**	
Methyl tert-butyl ether	430	5.0	*1	**	11	U		**	
Surrogate: Toluene-d8		95.1 %	85.8	-113	n	n	n	#	
Surrogate: 4-Bromofluorobenzene		104 %	73.5	-115	m .	"	n	"	
Surrogate: Dibromofluoromethane		87.6 %	79-	126	"	rr -	n	"	

SunStar Laboratories, Inc.

1090 Adam Street, Suite K

Benicia CA, 94510

Project: Dublin Toyota

Project Number: [none]

Project Manager: Jim Gribi

Reported: 05/16/05 15:31

AB-1-10.5 T500574-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		SunStar L	aborator	ies, Inc.					
Purgeable Petroleum Hydrocarbons l	oy EPA 8015m								
C6-C12 (GRO)	ND	500	ug/kg	1	5051104	05/11/05	05/13/05	EPA 8015m	
Surrogate: 4-Bromofluorobenzene		95.2 %	65-	135	"	"	n	μ	
Volatile Organic Compounds by EPA	Method 8260B								
Benzene	7.8	2.0	ug/kg	1	5051105	05/11/05	05/12/05	EPA 8260B	
Toluene	ND	2.0	11	**	n	**	**	**	
Ethylbenzene	ND	2.0	11	ri	II	Ħ	#	#r	
m,p-Xylene	ND	4.0	11	н	н	Ħ	*	Ħ	
o-Xylene	ND	2.0	*1	II .	II .	π		#1	
Tert-amyl methyl ether	110	5.0	11	п	11	n	"	T T	
Tert-butyl alcohol	ND	20	n	U	н	Ħ	*	н	
Di-isopropyl ether	ND	5.0	н	n	н	11	н	N	
Ethyl tert-butyl ether	ND	5.0	H	н	11		**	49	
Methyl tert-butyl ether	1100	5.0	11	11	**	**	**	*	
Surrogate: Toluene-d8		98.3 %	85.8	-113	"	rr	. "	п	
Surrogate: 4-Bromofluorobenzene		93.6 %	73.5	-115	"	IT	n	rr .	
Surrogate: Dibromofluoromethane		118 %	79-	126	n	n	н	u	

SunStar Laboratories, Inc.

Project: Dublin Toyota

1090 Adam Street, Suite K Benicia CA, 94510 Project Number: [none] Project Manager: Jim Gribi Reported: 05/16/05 15:31

AB-1-17.5 T500574-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Ргерагед	Analyzed	Method	Notes
		SunStar La	aboratorie	s, Inc.					
Purgeable Petroleum Hydrocarbons l	by EPA 8015m								
C6-C12 (GRO)	ND	500	ug/kg	1	5051104	05/11/05	05/12/05	EPA 8015m	
Surrogate: 4-Bromosluorobenzene		86.4 %	65-1.	35	"	р	п	<i>H</i>	
Volatile Organic Compounds by EPA	Method 8260B								
Benzene	5.5	2.0	ug/kg	1	5051105	05/11/05	05/12/05	EPA 8260B	
Toluene	ND	2.0	н	D	**	п	IF	II	
Ethylbenzene	2.6	2.0	H	n	#	н	II .	II .	
m,p-Xylene	ND	4.0	**	п	11	u	Ħ	п	
o-Xylene	ND	2.0	19	п	#	п	II .	II .	
Tert-amyl methyl ether	ND	5.0	Ħ	17	Ħ	II	u	11	
Tert-butyl alcohol	230	20	11	14	Ħ	n	п	11	
Di-isopropyl ether	ND	5.0	**	11	**	n	п	11	
Ethyl tert-butyl ether	ND	5.0	Tř	19	n	II .	11	11	
Methyl tert-butyl ether	1300	5.0	17	19	н	11	11	n	
Surrogate: Toluene-d8	-	96.4 %	85.8-1	13	"	"	n	"	
Surrogate: 4-Bromofluorobenzene		104 %	73.5-1	15	#	H	n	"	
Surrogate: Dibromofluoromethane		88.1 %	79-12	26	u	n	n	"	

SunStar Laboratories, Inc.

1090 Adam Street, Suite K Benicia CA, 94510 Project: Dublin Toyota

Project Number: [none]
Project Manager: Jim Gribi

Reported: 05/16/05 15:31

### AB-1-24.0 T500574-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
		SunStar L	aboratori	es, Inc.					
Purgeable Petroleum Hydrocarbons	by EPA 8015m								
C6-C12 (GRO)	ND	500	ug/kg	1	5051104	05/11/05	05/13/05	EPA 8015m	
Surrogate: 4-Bromofluorobenzene		88.0 %	65-1	135	*	"	л	"	
Volatile Organic Compounds by EPA	Method 8260B								
Benzene	ND	2.0	ug/kg	1	5051105	05/11/05	05/12/05	EPA 8260B	
Toluene	5.1	2.0	μ	#1	и	**	11	**	
Ethylbenzene	ND	2.0	II	#	"	17	н	H	
m,p-Xylene	ND	4.0	II	Ħ	II	19	H	*	
o-Xylene	ND	2.0	Ħ	77	н	19	"	"	
Tert-amyl methyl ether	ND	5.0	**	"	**	**	11	11	
Tert-butyl alcohol	ND	20	**	9	PF .	*	**	#1	
Di-isopropyl ether	1100	5.0	"	"	"	11	77	11	
Ethyl tert-butyl ether	ND	5.0	**	11	11	11	"	n	
Methyl tert-butyl ether	ND	5.0	ŧī	II .	Ħ	11	11	11	
Surrogate: Toluene-d8		96.5 %	85.8-	113	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	73.5	115	"	#	H	"	
Surrogate: Dibromofluoromethane		89.9 %	79	126	"	"	H	rr .	

SunStar Laboratories, Inc.

Benicia CA, 94510

Project: Dublin Toyota

1090 Adam Street, Suite K

Project Number: [none]
Project Manager: Jim Gribi

Reported: 05/16/05 15:31

AB-1-27.5 T500574-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		SunStar L	aboratorio	s, Inc.					
Purgeable Petroleum Hydrocarbons l	oy EPA 8015m								
C6-C12 (GRO)	ND	500	ug/kg	1	5051104	05/11/05	05/12/05	EPA 8015m	
Surrogate: 4-Bromofluorobenzene		92.0 %	65-1.	35	"	"	,,	u	
Volatile Organic Compounds by EPA	Method 8260B								
Benzene	ND	2.0	ug/kg	1	5051105	05/11/05	05/12/05	EPA 8260B	
Toluene	4.7	2.0	Ħ	н	ti	**	11	W	
Ethylbenzene	ND	2.0	19	,,	n	••	n	10	
m,p-Xylene	ND	4.0	IF	н	Ħ	**	11	**	
o-Xylene	ND	2.0	IF	н	11	**	"	**	
Tert-amyl methyl ether	ND	5.0	II .	п	P	17	भ	tt	
Tert-butyl alcohol	ND	20	n	II,	w	N	и	, er	
Di-isopropyl ether	ND	5.0	II .	11	*	н	u	PP	
Ethyl tert-butyl ether	ND	5.0	н	11	**	Ħ	W	ti	
Methyl tert-butyl ether	1400	5.0	11	п	tt	**	11	U	
Surrogate: Toluene-d8		96.1 %	85.8-1	13	п	'n	"	u	•
Surrogate: 4-Bromofluorobenzene		105 %	73.5-1	15	U	п	"	,,	
Surrogate: Dibromofluoromethane		89.2 %	79-1.	26	н	n	"	"	

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1090 Adam Street, Suite K

Benicia CA, 94510

Project: Dublin Toyota

Project Number: [none]
Project Manager: Jim Gribi

Reported: 05/16/05 15:31

## AB-1-W T500574-06 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		SunStar L	aborator	ies, Inc.					
Purgeable Petroleum Hydrocarbons l	by EPA 8015m								
C6-C12 (GRO)	74	50	ug/l	1	5051107	05/11/05	05/13/05	EPA 8015m	
Surrogate: 4-Bromofluorobenzene		75.0 %	65-	135	"	"	"	r	
Volatile Organic Compounds by EPA	Method 8260B								
Benzene	19	0.50	ug/l	1	5051106	05/11/05	05/11/05	EPA 8260B	•
Toluene	0.80	0.50	**	11	н	II	n	U	
Ethylbenzene	2.2	0.50	**	ıı	п	п	**	n	
m,p-Xylene	ND	1.0	H	11	II	U	н	ш	
o-Xylene	ND	0.50	Ħ	**	U	11	H	19	
Tert-amyl methyl ether	14	2.0	H	**	**	11	**	11	
Tert-butyl alcohol	470	10	It	и	n	11	fr.	11	
Di-isopropyl ether	ND	2.0	It	"	19	"	17	**	
Ethyl tert-butyl ether	2.4	2.0	11	н	**	11	11	"	
Methyl tert-butyl ether	14000	50		50	ч	II	P	n	
Surrogate: Toluene-d8		94.2 %	87.6	-115	"	"	n	"	
Surrogate: 4-Bromofluorobenzene		103 %	80-	112	"	"	n	"	
Surrogate: Dibromofluoromethane		81.5 %	78.6	-122	"	"	n	"	

SunStar Laboratories, Inc.

2.12

Gribi Associates 1090 Adam Street, Suite K Benicia CA, 94510 Project: Dublin Toyota

Project Number: [none]
Project Manager: Jim Gribi

Reported: 05/16/05 15:31

## Purgeable Petroleum Hydrocarbons by EPA 8015m - Quality Control SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5051104 - EPA 5030 GC										
Blank (5051104-BLK1)				Prepared:	05/11/05	Analyzed	: 05/12/05			
C6-C12 (GRO)	ND	500	ug/kg							
Surrogate: 4-Bromofluorobenzene	105		ıı	125		84.0	65-135			
LCS (5051104-BS1)				Prepared:	05/11/05	Analyzed	: 05/12/05			
C6-C12 (GRO)	15000	500	ug/kg	13800		109	75-125			
Surrogate: 4-Bromofluorobenzene	109		Ħ	125		87.2	65-135		•	
LCS Dup (5051104-BSD1)				Prepared:	05/11/05	Analyzed	: 05/13/05			
C6-C12 (GRO)	15000	500	ug/kg	13800		109	75-125	0.00	20	
Surrogate: 4-Bromofluorobenzene	116		н	125		92.8	65-135			
Batch 5051107 - EPA 5030 GC										
Blank (5051107-BLK1)				Prepared:	05/11/05	Analyzed	: 05/13/05			
C6-C12 (GRO)	ND	50	ug/l							
Surrogate: 4-Bromofluorobenzene	41.9		"	50.0		83.8	65-135			
LCS (5051107-BS1)				Prepared:	05/11/05	Analyzed	: 05/13/05			
C6-C12 (GRO)	6260	50	ug/l	5500		114	75-125			
Surrogate: 4-Bromofluorobenzene	46.7		"	50.0		93.4	65-135			
LCS Dup (5051107-BSD1)				Prepared:	05/11/05	Analyzed	1: 05/16/05			
C6-C12 (GRO)	6160	50	ug/l	5500		112	75-125	1.61	20	
Surrogate: 4-Bromofluorobenzene	45.7		"	50.0		91.4	65-135			

SunStar Laboratories, Inc.

Project: Dublin Toyota

1090 Adam Street, Suite K

Project Number: [none] Project Manager: Jim Gribi Reported: 05/16/05 15:31

Benicia CA, 94510

## Volatile Organic Compounds by EPA Method 8260B - Quality Control SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5051105 - EPA 5030 GCMS									· · · · · · · · · · · · · · · · · · ·	
Blank (5051105-BLK1)				Prepared:	05/11/05	Analyze	d: 05/12/05			
Benzene	ND	2.0	ug/kg							
Toluene	ND	2.0	11							
Ethylbenzene	ND	2.0	11							
m,p-Xylene	ND	4.0	11							
o-Xylene	ND	2.0	**							
Tert-amyl methyl ether	ND	5.0	*1							
Tert-butyl alcohol	ND	20	"							
Di-isopropyl ether	ND	5.0	н							
Ethyl tert-butyl ether	ND	5.0	н							
Methyl tert-butyl ether	ND	5.0	н							
Surrogate: Toluene-d8	94.2		"	100		94.2	85.8-113			
Surrogate: 4-Bromofluorobenzene	106		"	100		106	73.5-115			
Surrogate: Dibromofluoromethane	<i>87.8</i>		"	100		<i>87.8</i>	<i>79-126</i>			
LCS (5051105-BS1)				Prepared:	05/11/05	Analyze	d: 05/13/05			
Benzene	213	2.0	ug/kg	250		85.2	75-125			
Toluene	210	2.0	н	250		84.0	75-125			
Surrogate: Toluene-d8	95.3		"	100		95.3	85.8-113			
Surrogate: 4-Bromofluorobenzene	102		"	100		102	73.5-115			
Surrogate: Dibromofluoromethane	108		"	100		108	79-126			
LCS Dup (5051105-BSD1)				Prepared:	05/11/05	Analyze	d: 05/13/05			
Benzene	224	2.0	ug/kg	250		89.6	75-125	5.03	20	•
Toluene	204	2.0	-,, -	250		81.6	75-125	2.90	20	
Surrogate: Toluene-d8	99.0		н	100		99.0	85.8-113	_		
Surrogate: 4-Bromofluorobenzene	106		ff	100		106	73.5-115			
Surrogate: Dibromofluoromethane	115		Ħ	100		115	79-126			

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Gribi Associates 1090 Adam Street, Suite K Project: Dublin Toyota

1090 Adam Street, Suite K Benicia CA, 94510 Project Number: [none]
Project Manager: Jim Gribi

Reported: 05/16/05 15:31

## Volatile Organic Compounds by EPA Method 8260B - Quality Control SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5051106 - EPA 5030 GCMS									_	
Blank (5051106-BLK1)	Prepared & Analyzed: 05/11/05									
Benzene	ND	0.50	ug/l						<b></b>	
Toluene	ND	0.50	,,							
Ethylbenzene	ND	0.50	**							
m,p-Xylene	ND	1.0	**							
o-Xylene	ND	0.50	н							
Tert-amyl methyl ether	ND	2.0	"							
Tert-butyl alcohol	ND	10	**							
Di-isopropyl ether	ND	2.0	**							
Ethyl tert-butyl ether	ND	2.0	71							
Methyl tert-butyl ether	ND	1.0	r							
Surrogate: Toluene-d8	37.2		"	40.0		93.0	87.6-115			
Surrogate: 4-Bromofluorobenzene	42.8		"	40.0		107	80-112			
Surrogate: Dibromofluoromethane	35.4		"	40.0		88.5	78.6-122			
LCS (5051106-BS1)				Prepared a	& Analyze	:d: 05/11/	05			
Benzene	84.9	0.50	ug/l	100		84.9	75-125			
Toluene	80.6	0.50	"	100		80.6	75-125			
Surrogate: Toluene-d8	37.9		'n	40.0		94.8	87.6-115			
Surrogate: 4-Bromofluorobenzene	43.8		m	40.0		110	80-112			
Surrogate: Dibromofluoromethane	42.8		#	40.0		107	78.6-122			
Matrix Spike (5051106-MS1)	So	Source: T500573-01		Prepared & Analyzed: 05/11/0			05			
Benzene	162	0.50	ug/l	100	79	83.0	75-125			
Toluene	89.4	0.50	"	100	6.4	83.0	75-125			
Surrogate: Toluene-d8	38.8		tt	40.0		97.0	87.6-115			
Surrogate: 4-Bromofluorobenzene	39.9		n	40.0		99.8	80-112			

40.0

36.5

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Surrogate: Dibromofluoromethane

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

91.2

78.6-122

Gribi Associates 1090 Adam Street, Suite K

Benicia CA, 94510

Project: Dublin Toyota

Project Number: [none]
Project Manager: Jim Gribi

Reported: 05/16/05 15:31

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

## SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5051106 - EPA 5030 GCMS										··· <del>·</del>
Matrix Spike Dup (5051106-MSD1)	Source: T500573-01			Prepared & Analyzed: 05/11/05						
Benzene Toluene	167 86.0	0.50 0.50	ug/l	100 100	79 6.4	88.0 79.6	75-125 75-125	3.04 3.88	20 20	
Surrogate: Toluene-d8 Surrogate: 4-Bromofluorobenzene Surrogate: Dibromofluoromethane	37.4 41.0 34.8		# # "	40.0 40.0 40.0		93.5 102 87.0	87.6-115 80-112 78.6-122	"		

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0.12

Project: Dublin Toyota

Project Number: [none]
Project Manager: Jim Gribi

Reported: 05/16/05 15:31

**Notes and Definitions** 

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

Gribi Associates

Benicia CA, 94510

1090 Adam Street, Suite K

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

SunStar Laboratories, Inc.