

SCS ENGINEERS

December 17, 2003
File No.: 01203087.00

Ms. Eva Chu
Alameda County Health
Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-9335

**Subject: Fourth Quarter 2003 Groundwater Monitoring Report
Friesman Ranch Property, Livermore, California**


Dear Ms. Chu:

Attached is the Fourth Quarter 2003 Groundwater Monitoring Report for the Friesman Ranch Property, 1600 Friesman Road, Livermore, California (Site). The results of this report are consistent with the results of the previous groundwater monitoring events that have been performed at the Site, with chemicals of concern only being detected in monitoring wells KMW-6 and KMW-7, and at concentrations generally lower than those previously detected. No chemicals of concern were detected in the other monitoring wells sampled (KMW-1 and KMW-8).

As detailed in our previously submitted report for the Site entitled "*Groundwater Monitoring, Soil Vapor Survey, and Source Removal Report*", dated November 21, 2003, SCS Engineers recommends regulatory closure of the Site fuel leak case.

We trust that the attached submittal meets your requirements. Should you require any additional information and/or clarification, please call me at (925) 426-0080.

Very truly yours,



James A. Lehrman, RG, CHG
Senior Technical Manager

Attachments

cc: Ms. Lorraine del Prado, Children's Hospital Medical Foundation
Ms. Emily M. De Falla, Children's Hospital Medical Foundation
Ms. Leah Goldberg, Hansen, Bridgett, Marcus, Vlahos and Rudy, LLP



**QUARTERLY
GROUNDWATER MONITORING REPORT
FOURTH QUARTER 2003
FRIESMAN RANCH PROPERTY
LIVERMORE, CALIFORNIA**

Prepared for:

Children's Hospital and Research Center Foundation
5225 Dover Street
Oakland, California 94609-1809

Prepared by:

SCS Engineers
6850 Regional Street, Suite 240
Dublin, California 94568

December 17, 2003
File No. 01203087.00



160-2484

SCS ENGINEERS

December 17, 2003
File No.: 01203087.00

Ms. Eva Chu
Alameda County Health
Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-9335

**Subject: Fourth Quarter 2003 Groundwater Monitoring Report
Friesman Ranch Property, Livermore, California**

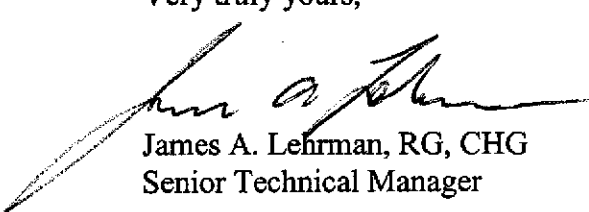
Dear Ms. Chu:

Attached is the Fourth Quarter 2003 Groundwater Monitoring Report for the Friesman Ranch Property, 1600 Friesman Road, Livermore, California (Site). The results of this report are consistent with the results of the previous groundwater monitoring events that have been performed at the Site, with chemicals of concern only being detected in monitoring wells KMW-6 and KMW-7, and at concentrations generally lower than those previously detected. No chemicals of concern were detected in the other monitoring wells sampled (KMW-1 and KMW-8).

As detailed in our previously submitted report for the Site entitled "*Groundwater Monitoring, Soil Vapor Survey, and Source Removal Report*", dated November 21, 2003, SCS Engineers recommends regulatory closure of the Site fuel leak case.

We trust that the attached submittal meets your requirements. Should you require any additional information and/or clarification, please call me at (925) 426-0080.

Very truly yours,



James A. Lehrman, RG, CHG
Senior Technical Manager

Attachments

cc: Ms. Lorraine del Prado, Children's Hospital Medical Foundation
Ms. Emily M. De Falla, Children's Hospital Medical Foundation
Ms. Leah Goldberg, Hansen, Bridgett, Marcus, Vlahos and Rudy, LLP



This Quarterly Monitoring Report for the Fourth Quarter of 2003 for the Friesman Ranch Property, Livermore, California, dated December 17, 2003 has been prepared and reviewed by the following:

Emily Harris

Emily Harris
Staff Geologist

James A. Lehrman

James A. Lehrman
Senior Technical Manager
California Registered Geologist #5032
California Certified Hydrogeologist #HG 69
SCS ENGINEERS



TABLE OF CONTENTS

1.	INTRODUCTION.....	1
1.1	OBJECTIVES AND SCOPE OF WORK.....	1
2.	FIELD ACTIVITES	1
2.1	GROUNDWATER MONITORING ACTIVITIES	1
2.2	WATER LEVEL MEASUREMENT.....	2
2.3	GROUNDWATER SAMPLE COLLECTION.....	2
2.4	ANALYTICAL LABORATORY PARAMETERS	2
2.5	QUALITY ASSURANCE/QUALITY CONTROL SAMPLE COLLECTION	3
2.6	INVESTIGATION-DERIVED WASTE HANDLING PROCEDURES.....	3
2.7	SITE RESTORATION	3
3.	SUMMARY OF GROUNDWATER MONITORING RESULTS.....	4
3.1	WATER LEVELS.....	4
3.2	GROUNDWATER SAMPLES.....	4
3.3	CHEMICALS OF CONCERN.....	4
3.4	BIO-PARAMETERS	5
3.5	QUALITY ASSURANCE/QUALITY CONTROL SAMPLES	7
4.	GROUNDWATER MONITORING SUMMARY AND CONCLUSIONS.....	7
4.1	FIELD ACTIVITIES	7
4.2	GROUNDWATER CHEMISTRY	7
4.3	RECOMMENDATIONS	8

LIST OF FIGURES

Figure 1	Site Vicinity Map
Figure 2	Site Plan
Figure 3	Groundwater Elevations and Hydraulic Gradient
Figure 4	Groundwater Analytical Results: October 2003

LIST OF TABLES

Table 1	Summary of Groundwater Elevation Data
Table 2	Summary of Groundwater Analytical Results
Table 3	Quality Assurance/Quality Control Sample Results
Table 4	Summary of Bio-attenuation Parameter Analytical Results

LIST OF APPENDICES

APPENDIX A FIELD MONITORING NOTES

Record of Water Level Measurements – October 30, 2003

Well Sampling Records – October 30, 2003

**APPENDIX B CHAIN-OF-CUSTODY RECORDS AND CERTIFIED ANALYTICAL
LABORATORY REPORTS**

DISCLAIMER

This report has been prepared for the Children's Hospital and Research Center Foundation with specific application to a Quarterly Monitoring report for property located at 1600 Friesman Road, Livermore, California. Field activities and sampling were conducted in accordance with the care and skill generally exercised by reputable professionals, under similar circumstances, in this or similar localities. No other warranty, either expressed or implied, is made as to the professional advice presented herein.

Changes in site use and conditions may occur due to variations in rainfall, temperature, water usage, or other factors. Additional information, which was not available to the consultant at the time of this investigation or changes, which may occur on the site or in the surrounding area may result in modification to the site that would impact the summary presented herein. This report is not a legal opinion.

1. INTRODUCTION

This report describes the results of the Fourth Quarter 2003 Groundwater Monitoring Event at the Friesman Ranch Property, Livermore, California (Site) (Figure 1). Field work was performed by SCS Engineers (SCS) on October 30, 2003. Low-flow purge/micropurge methods were used at the Site for this monitoring event.

1.1 OBJECTIVES AND SCOPE OF WORK

The objectives of the activities performed were to:

- Continue a regularly scheduled groundwater monitoring program to track spatial and temporal variations in groundwater conditions; and
- Assess current Site groundwater conditions.

To meet these objectives, the following scope of work was implemented:

- Implementation of the scheduled groundwater monitoring event. Groundwater monitoring included water-level measurements, an evaluation of free-product thickness (if any); and collection of water quality samples for chemicals-of-concern (COCs) and biological attenuation (bio-attenuation) parameters including biological and chemical oxygen demand of select samples.
- Evaluation of bio-attenuation parameters;
- Preparation of this quarterly groundwater monitoring report.

2. FIELD ACTIVITIES

This section summarizes the field activities performed for the quarterly groundwater monitoring program. Figure 2 shows the locations of the existing groundwater monitoring wells.

2.1 Groundwater Monitoring Activities

The eight Site wells (KMW-1 through KMW-8) were monitored for depth to groundwater during this event; only wells KMW-1, KMW-6, KMW-7 and KMW-8 were sampled. The goal of these activities was to measure water levels and collect water quality samples that accurately represent stabilized aquifer conditions. Prior to sampling, field instrumentation was successfully calibrated and/or checked.

2.2 Water Level Measurement

Prior to purging, the wells were opened and ventilated for a minimum of 0.5-hour, and the depth to water was then measured in the wells to the nearest 0.01-foot using a clean, calibrated electronic water-level indicator. Water-level data were used to calculate the required purge volumes for sampling. Measurements were recorded on Well Sampling Records (Appendix A). Dissolved oxygen (DO) was measured in each of the wells using a down-hole probe after measuring the depth to groundwater.

2.3 Groundwater Sample Collection

All Site wells were purged and sampled using a peristaltic pump and micropurge methodology. Dedicated 21-foot long sections of 0.25-inch inner diameter polyethylene tubing were installed in each well. The tubing sections were used for purging and sampling, and then left in each well as dedicated tubes for possible future sampling. Each well was initially purged until one System Volume (SV) was removed from each well. Purging then continued at an approximate rate of 200 milliliters per minute. The depth to water was measured during purging to ensure that well drawdown was less than four inches. Aquifer parameters (hydrogen ion index [pH], temperature, electrical conductivity, and oxidation-reduction potential [ORP]) were measured to evaluate whether the water from each well had stabilized prior to sampling (see Appendix A for field readings). Notations were made as to odor and color of the water being purged. Field notes detailing observations noted during sampling are provided in Appendix A.

After each well was purged, groundwater samples were collected using the peristaltic pump. Groundwater monitoring well samples were placed in appropriate containers (40-milliliter [ml] glass volatile organic analysis [VOA] vials, 1-liter amber glass bottles and 500-ml polyethylene bottles), and labeled. The samples were stored in an ice chest packed with loose water-based ice maintained at 4 +/- 2 degrees Celsius (°C) for delivery to the laboratory.

Non-dedicated groundwater monitoring equipment, (i.e., water level meters, measuring cup, etc.) was decontaminated prior to measuring, purging, and sampling and between wells using a biodegradable detergent (Liquinox) and three stage distilled water wash and rinse.

2.4 Analytical Laboratory Parameters

Groundwater monitoring well samples were analyzed for the following parameters:

- Total petroleum hydrocarbons as gasoline (TPH-g) using Modified United States Environmental Protection Agency (EPA) Method 8015C;
- Total petroleum hydrocarbons as diesel (TPH-d) using Modified EPA Method 8015C;

- Benzene, toluene, ethylbenzene and total xylenes (BTEX) using EPA Method 8021B;
- Methyl tertiary-butyl ether (MTBE) using EPA Method 8021B;
- Alkalinity using Standard Methods for Water and Wastewater (SM) 2320B;
- Ferrous Iron (Fe^{+2}) using EPA Method 200.7;
- Sulfate (SO_4^{-2}) and Nitrate (NO_3^-) using EPA Method 300.1;
- Biological Oxygen Demand (BOD) using (SM) 5210B (wells KMW-1 and KMW-6 only); and
- Chemical Oxygen Demand (COD) using EPA Method 410.4 (wells KMW-1 and KMW-6 only).

2.5 Quality Assurance/Quality Control Sample Collection

Quality assurance/quality control (QA/QC) sampling activities include the laboratory preparation and analysis of a trip blank that accompanies the ice chest to and from the laboratory. In addition, a blind duplicate was sampled from well KMW-6.

For this event, the following QA/QC samples were prepared or collected:

- A trip blank; and
- A blind duplicate.

Because only dedicated and/or new equipment was used to purge the wells and collect the samples, no equipment blank was collected.

2.6 Investigation-Derived Waste Handling Procedures

Investigation-derived wastes (IDW – purge water and decontamination rinsate liquids) were containerized on-site in one secured, labeled 5-gallon bucket. It will be characterized and transported off-site to an appropriate licensed disposal/recycling facility.

2.7 Site Restoration

Following completion of monitoring activities, the work area was left in a presentable and workable condition as near as practicable to original conditions.



3. SUMMARY OF GROUNDWATER MONITORING RESULTS

Water-level measurements were recorded on October 30, 2003. Groundwater samples were collected from four of the eight monitoring wells on the Site and submitted for analysis. The samples were analyzed at McCampbell Analytical, Inc. (McCampbell) of Pacheco, California, a laboratory certified by the California Department of Health Services (DHS) Environmental Laboratory Accreditation Program (ELAP) for the specific analyses performed.

Appendix B contains certified analytical laboratory reports and chain-of-custody records. Table 1 contains historical water level and free-product thickness measurements. Groundwater analytical results for the COCs are summarized in Table 2.

3.1 Water Levels

As part of the groundwater monitoring event, water levels were measured in monitoring wells KMW-1 through KMW-8 on October 30, 2003. Depths to water ranged from 13.19 to 16.02 feet below ground surface (bgs) in wells KMW-3 and KMW-5 respectively (Table 1). In October 2003, groundwater flow was generally to the northwest with a hydraulic gradient of approximately 0.012. Figure 3 shows the Site groundwater elevation contours for the October 2003 event. These results are generally consistent with the previous groundwater monitoring event in July 2003.

3.2 Groundwater Samples

A total of four monitoring wells (KMW-1 and KMW-6 through KMW-8) were sampled and analyzed for TPH-g, TPH-d, BTEX, MTBE and bio-parameters. Analytical results are summarized in Tables 2 and 4. Figure 4 shows the Site groundwater analytical results for the COCs for the October 2003 event.

3.3 Chemicals of Concern

Total Petroleum Hydrocarbons as Gasoline

TPH-g was detected at concentrations of 700 micrograms per liter ($\mu\text{g/L}$) in KMW-6 and 150 $\mu\text{g/L}$ in KMW-7, but was not detected in the other wells. The TPH-g concentrations in the samples from KMW-6 and KMW-7 are generally at least one order of magnitude lower than previous concentrations detected (Table 2).

Total Petroleum Hydrocarbons as Diesel

TPH-d was detected at concentrations of 310 $\mu\text{g/L}$ in KMW-6 and 100 $\mu\text{g/L}$ in KMW-7, but was not detected in the other wells. TPH-d concentrations detected in both samples are generally lower than historical concentrations detected at the same locations (Table 2).

Aromatic Hydrocarbons

Certain aromatic hydrocarbons were detected in monitoring wells KMW-6 and KMW-7, but were not detected in the other wells. Benzene was detected in excess of its drinking water maximum contaminant level (MCL), which is 1 µg/L, only in KMW-6 at a concentration of 23 µg/L. Benzene was detected in KMW-7 at a concentration of 0.54 µg/L. Toluene was detected below its MCL (150 µg/L) at a concentration of 1.1 µg/L in KMW-6, and was not detected in any other wells. Ethylbenzene was detected below its MCL (700 µg/L) at a concentration of 8.0 µg/L in KMW-6, and was not detected in any other wells. Total xylenes were detected below the MCL (1,750 µg/L) in KMW-6 at a concentration of 8.3 µg/L. These results are generally lower than historical concentrations detected at the same locations (Table 2).

Methyl Tertiary-Butyl Ether

MTBE was not detected in any of the sampled wells. These results are consistent with historical findings (Table 2).

3.4 Bio-Parameters

Dissolved Oxygen

Dissolved Oxygen (DO) is the most thermodynamically favored electron acceptor used in the biodegradation of fuel hydrocarbons. During aerobic biodegradation, DO concentrations decrease.

DO was measured at 0.00 milligrams per liter (mg/L) in well KMW-7 (Table 3). This well represents the dissolved oxygen inside the hydrocarbon plume. DO measurements in wells KMW-1 and KMW-8 (wells outside the plume) ranged from 0.31 mg/L to 0.33 mg/L, respectively.

Oxidation-Reduction Potential

The Oxidation-Reduction Potential (ORP) of groundwater is a measure of electron activity and is an indicator of the relative tendency of a solution to accept or transfer electrons. It influences and is influenced by the nature of biologically mediated degradation of COCs.

ORP ranged from -90 millivolts (mV) to -88 mV in wells in which COCs were detected (KMW-6 and KMW-7, respectively) (Table 4). ORP ranged from -37 mV to 108 mV in wells in which COCs were not detected (KMW-8 and KMW-1, respectively). These values generally indicate oxidizing conditions outside the COC plume and reducing conditions inside the plume.

Hydrogen-ion Index (pH) and Temperature

The pH and temperature of the shallow groundwater were at levels conducive for the metabolic activity of bacteria capable of degrading fuel hydrocarbons (Table 4).

Ferrous Iron

In some cases, Ferric Iron (Fe^{+3}) acts as an electron acceptor during anaerobic biodegradation of petroleum hydrocarbons. During this process, Fe^{+3} is reduced to Ferrous Iron (Fe^{+2}). Ferrous Iron can thus be used as an indicator of anaerobic degradation of petroleum compounds. Ferrous Iron (Fe^{+2}) was detected in well KMW-6 at a concentration of 1.4 mg/L. Ferrous Iron was not detected in samples from other wells (Table 4).

Alkalinity

In general, areas impacted by petroleum hydrocarbons exhibit higher total alkalinity than seen in background areas. This is expected because microbially mediated reactions causing biodegradation of these compounds will cause an increase in total alkalinity of the system. Alkalinity was reported at levels ranging from 351 mg/L in KMW-1 to 481 mg/L in KMW-6 (Table 4). In the impacted areas (i.e., wells KMW-6 and KMW-7), the average alkalinity was 436 mg/L. In areas outside the petroleum hydrocarbon plume, the average alkalinity was 387.5 mg/L.

Nitrate

After DO has been depleted in the petroleum hydrocarbon impacted areas, nitrate may be used as an electron acceptor for anaerobic biodegradation via denitrification. Nitrate concentrations are used to estimate the mass of petroleum hydrocarbons that can be degraded by this process. Nitrate was detected in well KMW-8 at a concentration of 1.6 mg/L. Nitrate was not detected in samples from other wells (Table 4).

Sulfate

After DO, nitrate and Fe^{+3} have been depleted in the impacted area, sulfate may be used as an electron acceptor for anaerobic degradation. The process is termed sulfate reduction and results in the production of sulfide. Sulfate concentrations ranged from 3.9 mg/L to 53 mg/L within the impacted area (i.e., wells KMW-6 and KMW-7) (Table 4). Concentrations in KMW-1 and KMW-8 were 84 mg/L and 110 mg/L, respectively. Samples from the impacted area exhibited the lowest sulfate concentrations.

Biological Oxygen Demand

BOD is a measure of the demand for oxygen in the subsurface by biological processes. BOD levels ranged from <2.0 mg/L in well KMW-1 (outside the plume) to 1.7 mg/L in well KMW-6 (inside the plume).

Chemical Oxygen Demand

COD is a measure of the demand for oxygen in the subsurface by chemical processes. COD was not detected above the reporting limit of 20 mg/L in either of the two samples (KMW-1 and KMW-6) analyzed for COD. This indicates that except for biological demands, there are no significant demands for oxygen in this environment.

3.5 Quality Assurance/Quality Control Samples

The QA/QC samples collected and analyzed during this groundwater monitoring event included one trip blank and one blind duplicate sample. The results for these QA/QC samples are summarized on Table 3 and certified analytical laboratory reports are contained in Appendix B.

The blind duplicate sample (KMW-16) was collected from monitoring well KMW-6 on October 30, 2003. This duplicate sample was analyzed for TPH-g, TPH-d, BTEX, and MTBE. The Relative Percent Differences (RPDs) for TPH-d, TPH-g, benzene, toluene, ethylbenzene and total xylenes (the analytes detected) were 12.1, 6.9, 4.3, 16.7, 6.1, and 5.8 percent, respectively (Table 3). The RPDs for all the analytes detected were below the QA/QC goal of less than 20 percent.

4. GROUNDWATER MONITORING SUMMARY AND CONCLUSIONS

The summary and conclusions presented in this section are based on research implemented, information collected, and interpretations developed during this and previous investigations performed at the property. The data evaluated in this report was collected by SCS during October 2003. The summary and conclusions that follow are presented in the categories of field activities and groundwater chemistry.

4.1 Field Activities

- Field activities performed consisted of the Fourth Quarter 2003 groundwater monitoring event.
- Water level measurements and the collection of water quality samples were conducted using micropurge methodologies. The samples collected were analyzed for COCs (TPH-g, TPH-d, BTEX, and MTBE), bio-attenuation parameters (DO, ORP, alkalinity, Ferrous Iron, nitrate, sulfate, BOD and COD).
- Prior to the initiation of field activities, and between sampling locations, all equipment was decontaminated.
- Purge water and decontamination rinsate liquids were containerized and stored on-site in one 5-gallon bucket. It will be disposed of at a licensed facility.
- Following completion of field activities, the work area was left in a presentable and workable condition, as nearly as practicable to original conditions.

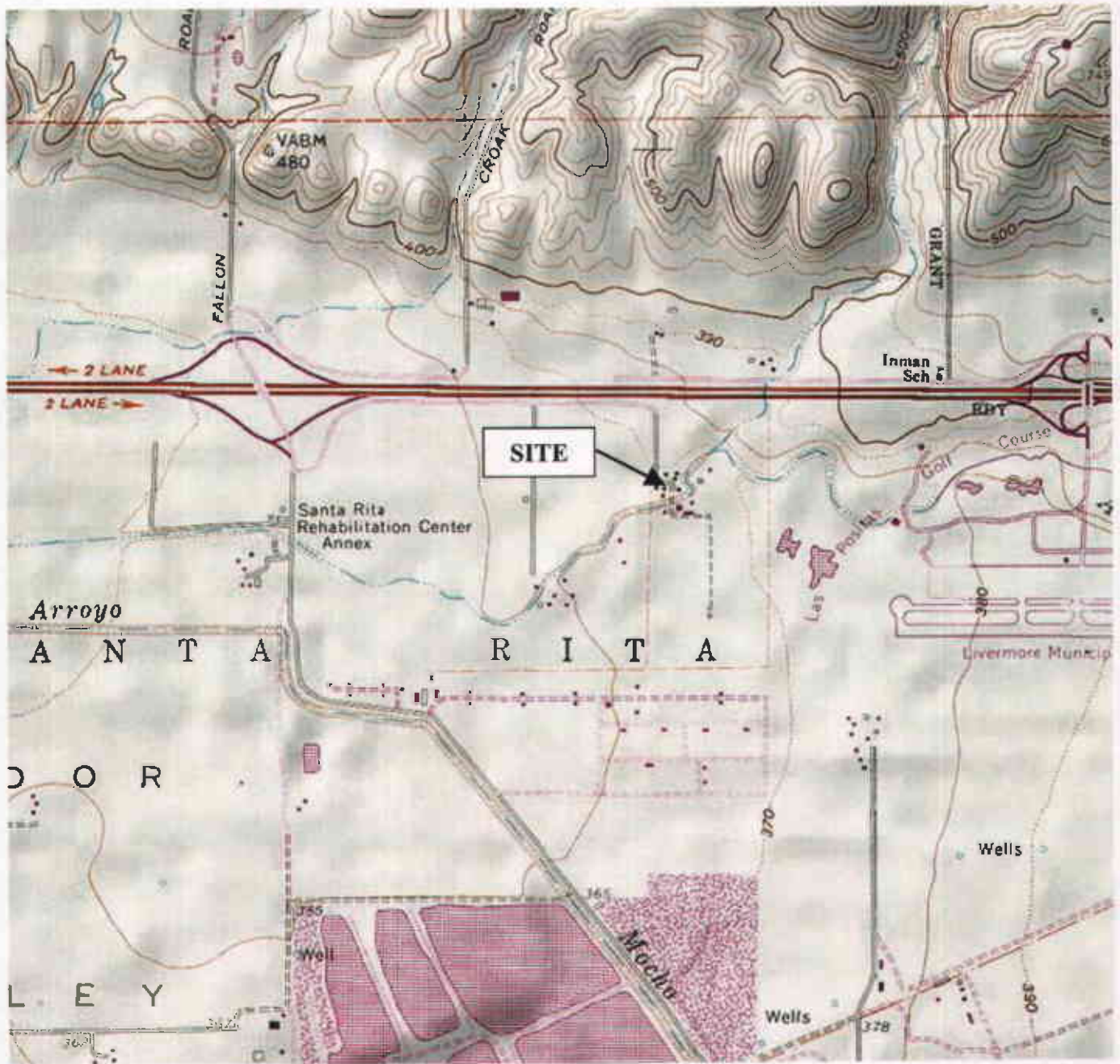
4.2 Groundwater Chemistry

- Only two groundwater monitoring well samples (KMW-6 and KMW-7) contained detectable concentrations of petroleum hydrocarbon compounds. Groundwater samples collected from monitoring wells KMW-1 and KMW-8 did not contain detectable concentrations of petroleum hydrocarbon compounds.

- The concentrations of COCs detected were generally lower than previous concentrations detected.
- The plume is confined to the Site and is stable. Concentrations of COCs continue to generally decrease with time, indicating that natural processes are working to remediate the plume.
- The subsurface environment appears to be poorly oxygenated. It appears that anaerobic processes (such as iron reduction and sulfate reduction) are operating to decrease the concentrations of COCs in the groundwater.

4.3 Recommendations

Analytical results from the most recent and the previous groundwater monitoring events indicate that the plume is stable and generally decreasing in concentration. Natural processes are working to remediate the plume, and therefore concentrations of the COCs will continue to decrease with time. There are no environmental conditions evident to SCS, which remain at the Site; therefore no further action, and Site Closure, is recommended at this time.



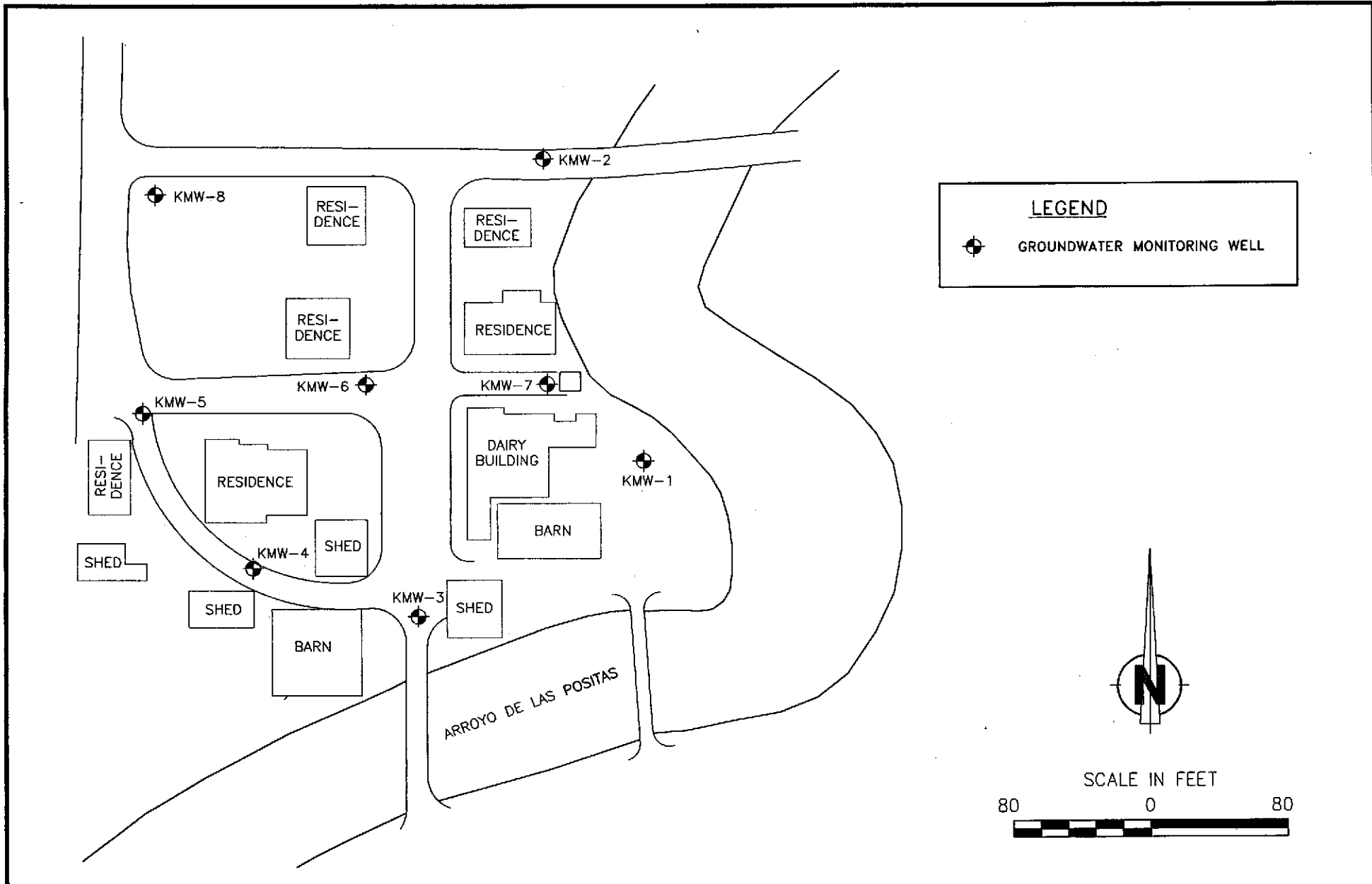
Printed from TOPO! ©2000 Wildflower Productions (www.topo.com)



SOURCE: UNITED STATES GEOLOGICAL SURVEY LIVERMORE QUADRANGLE, CALIFORNIA 7.5 MINUTE SERIES (TOPOGRAPHIC) MAP. OBTAINED FROM THE 2000 NATIONAL GEOGRAPHIC TOPO SOFTWARE..

SCS ENGINEERS		
6601 Koll Center Pkwy, Ste. 140 Pleasanton, CA 94566 (925) 426-0080		
PROJECT NO: 01203087.00		
DESIGNED BY: ATC	SCALE: SHOWN	REVIEWED BY: JAL
DRAWN BY: EC	DATE: 10/03	

FIGURE 1
SITE LOCATION MAP
 FRIESMAN RANCH PROPERTY
 1600 FRIESMAN ROAD
 LIVERMORE, CALIFORNIA

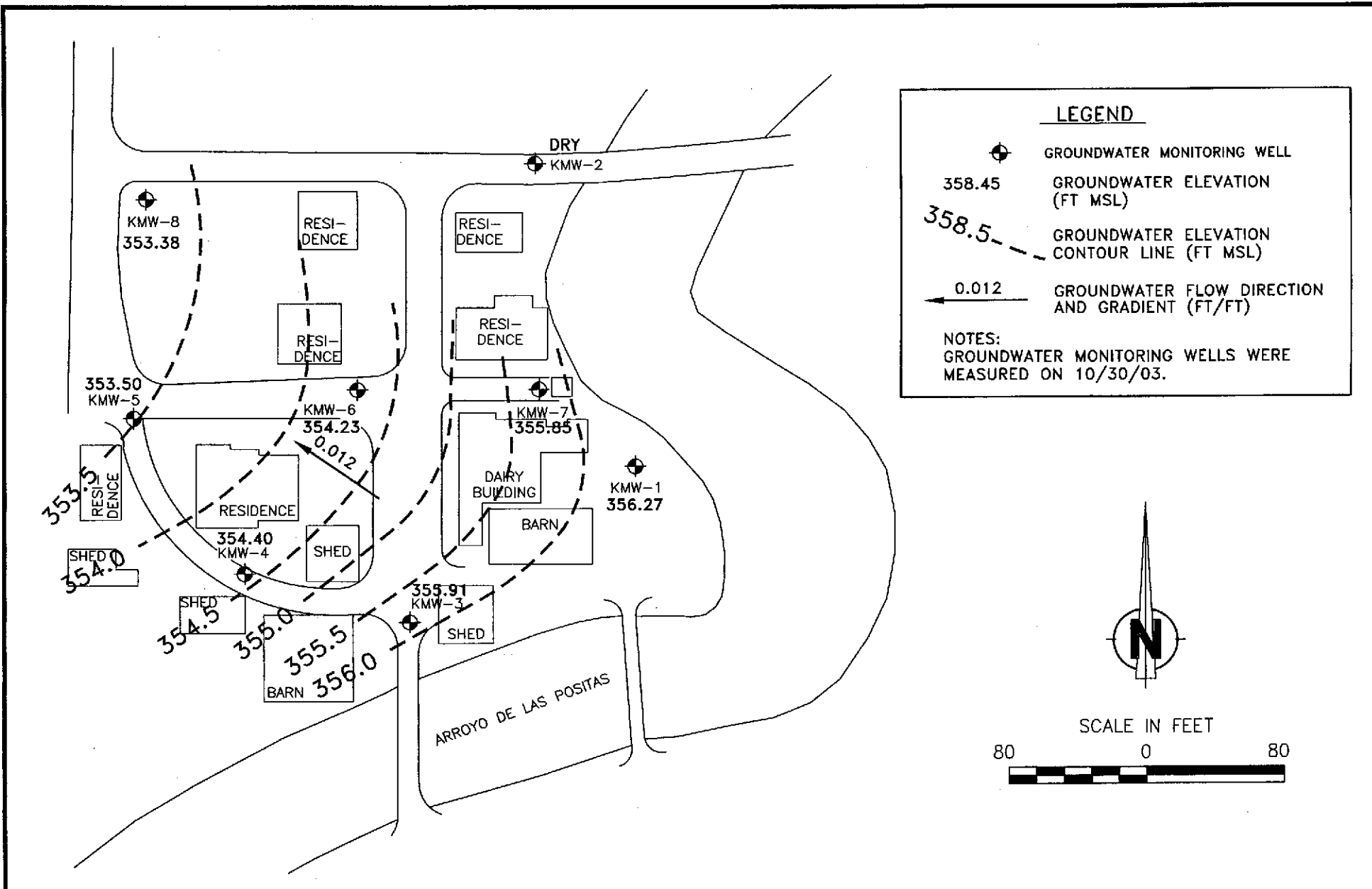


SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
 8601 KOLL CENTER PKWY, SUITE 140
 PLEASANTON, CALIFORNIA 94588
 PH. (925) 426-0080 FAX (925) 426-0707


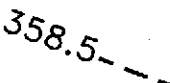
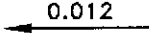
PROJ. NO. 01203087.00	DWN. BY. CRD	ACAD FILE. Fig-02_Site Plan.dwg
DATE 11/21/03	CHK. BY. EH	APP. BY. JAL

SHEET TITLE: SITE PLAN	SCALE: 1" = 80'
PROJECT TITLE: FRIESMAN RANCH PROPERTY 1800 FRIESMAN ROAD LIVERMORE, CALIFORNIA	FIGURE: 2

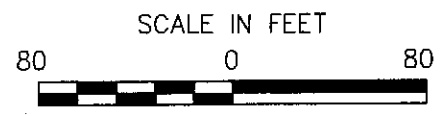
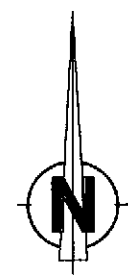
BASE:
 ATC ASSOCIATES INC. MARCH 28, 2003. QUARTERLY GROUNDWATER
 MONITORING REPORT, FIRST QUARTER 2003, FRIESMAN RANCH
 PROPERTY, LIVERMORE, CALIFORNIA



LEGEND

 GROUNDWATER MONITORING WELL
 358.45 GROUNDWATER ELEVATION (FT MSL)
 358.5 GROUNDWATER ELEVATION CONTOUR LINE (FT MSL)
 0.012 GROUNDWATER FLOW DIRECTION AND GRADIENT (FT/FT)

NOTES:
 GROUNDWATER MONITORING WELLS WERE MEASURED ON 10/30/03.



SCS ENGINEERS
 ENVIRONMENTAL CONSULTANTS

6850 REGIONAL STREET, SUITE 240
 DUBLIN, CALIFORNIA 94568-2511
 PH. (925) 829-0661 FAX. (925) 829-5493

PROJ. NO. 01203087.00	DWN. BY: CRD	ACAD FILE: Fig-03 GW Cont.dwg	
DATE 11/21/03	CHK. BY: EH	APP. BY: JAL	

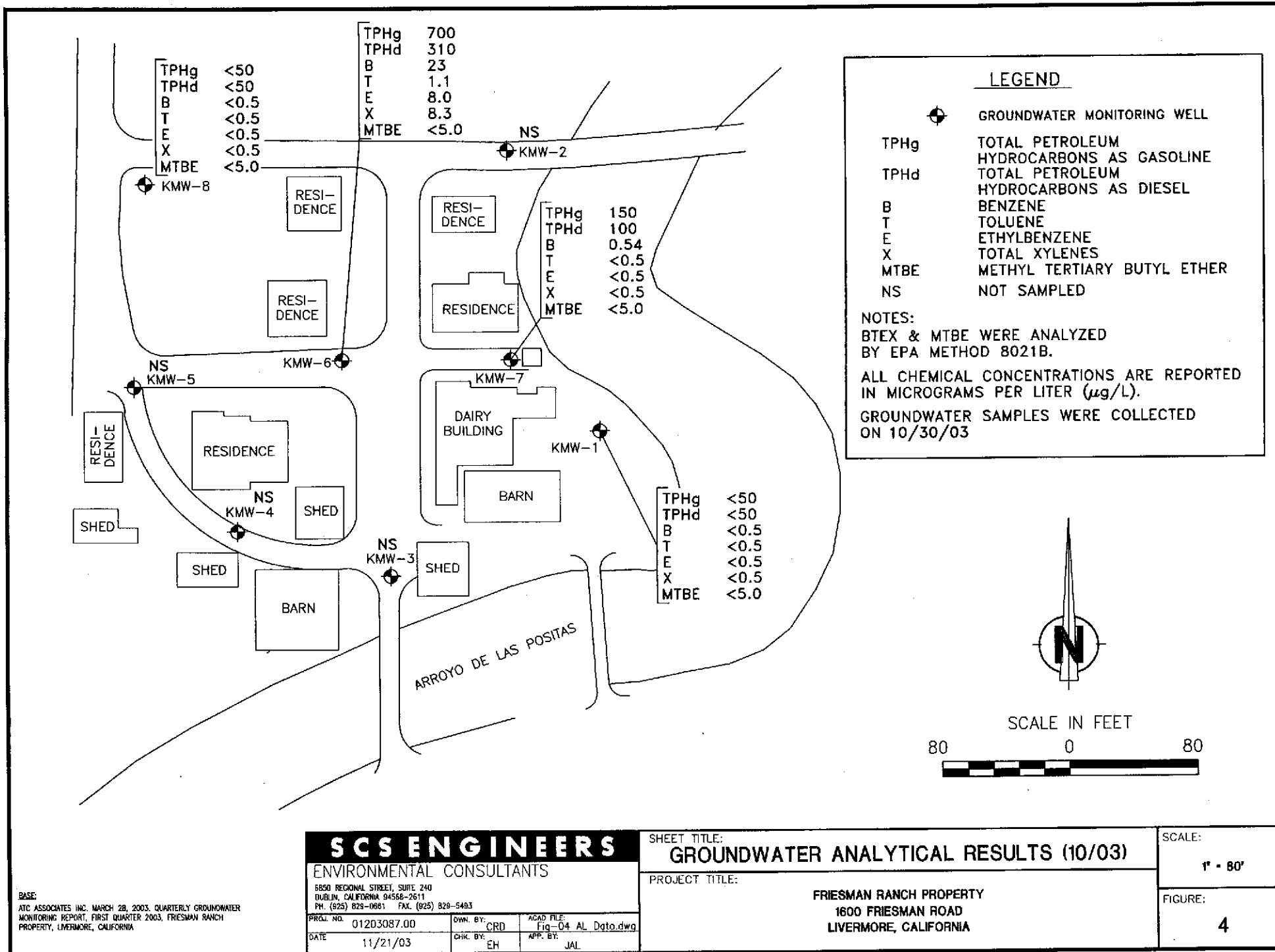
SHEET TITLE: **GROUNDWATER ELEVATION CONTOURS (10/03)**

PROJECT TITLE: **FRIESMAN RANCH PROPERTY
 1600 FRIESMAN ROAD
 LIVERMORE, CALIFORNIA**

SCALE: **1" = 80'**

FIGURE: **3**

BASE:
 ATC ASSOCIATES INC. MARCH 28, 2003. QUARTERLY GROUNDWATER MONITORING REPORT, FIRST QUARTER 2003, FRIESMAN RANCH PROPERTY, LIVERMORE, CALIFORNIA



TPHg <50
 TPHd <50
 B <0.5
 T <0.5
 E <0.5
 X <0.5
 MTBE <5.0

TPHg 700
 TPHd 310
 B 23
 T 1.1
 E 8.0
 X 8.3
 MTBE <5.0

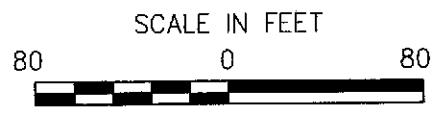
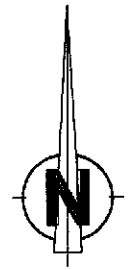
TPHg 150
 TPHd 100
 B 0.54
 T <0.5
 E <0.5
 X <0.5
 MTBE <5.0

TPHg <50
 TPHd <50
 B <0.5
 T <0.5
 E <0.5
 X <0.5
 MTBE <5.0

LEGEND

- GROUNDWATER MONITORING WELL
- TPHg TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
- TPHd TOTAL PETROLEUM HYDROCARBONS AS DIESEL
- B BENZENE
- T TOLUENE
- E ETHYLBENZENE
- X TOTAL XYLENES
- MTBE METHYL TERTIARY BUTYL ETHER
- NS NOT SAMPLED

NOTES:
 BTEX & MTBE WERE ANALYZED BY EPA METHOD 8021B.
 ALL CHEMICAL CONCENTRATIONS ARE REPORTED IN MICROGRAMS PER LITER (µg/L).
 GROUNDWATER SAMPLES WERE COLLECTED ON 10/30/03



SCS ENGINEERS
 ENVIRONMENTAL CONSULTANTS
 6850 REGIONAL STREET, SUITE 240
 DUBLIN, CALIFORNIA 94568-2611
 PH. (925) 829-0961 FAX. (925) 829-5493

PROJ. NO. 01203087.00	OWN. BY: CRD	ACAD. FILE: Fig-04 AL Dqto.dwg
DATE 11/21/03	CHK. BY: EH	APP. BY: JAL

SHEET TITLE: **GROUNDWATER ANALYTICAL RESULTS (10/03)**

PROJECT TITLE: **FRIESMAN RANCH PROPERTY
 1600 FRIESMAN ROAD
 LIVERMORE, CALIFORNIA**

SCALE:
 1" = 80'

FIGURE:
 4

BASE:
 ATC ASSOCIATES INC. MARCH 28, 2003. QUARTERLY GROUNDWATER MONITORING REPORT, FIRST QUARTER 2003, FRIESMAN RANCH PROPERTY, LIVERMORE, CALIFORNIA

TABLE 1
SUMMARY OF GROUNDWATER ELEVATION DATA
FRIESMAN RANCH PROPERTY
LIVERMORE, ALAMEDA COUNTY, CALIFORNIA

WELL NUMBER	SAMPLING DATE	WATER LEVEL FROM T.O.C. (feet)	FREE-PRODUCT THICKNESS (feet)	T.O.C. ELEVATION USGS Datum (ft. above MSL)	GROUNDWATER ELEVATIONS USGS Datum (ft. above MSL)
KMW-1	9/8/1997	12.82	0.00	370.12	357.30
	12/28/1998	12.72	0.00		357.40
	1/12/1999	12.97	0.00		357.15
	3/25/1999	11.99	0.00		358.13
	6/21/1999	NM	NM		NC
	9/16/1999	NM	NM		NC
	10/16/2002	14.27	0.00		355.85
	1/17/2003	11.67	0.00		358.45
	4/15/2003	11.08	0.00		359.04
	7/21/2003	13.23	NM		356.89
10/30/2003	13.85	NM	356.27		
KMW-2	9/8/1997	14.28	0.00	370.72	356.44
	12/28/1998	14.08	0.00		356.64
	1/12/1999	14.32	0.00		356.40
	3/25/1999	13.19	0.00		357.53
	6/21/1999	NM	NM		NC
	9/16/1999	NM	NM		NC
	10/16/2002	*	*		*
	1/17/2003	12.77	0.00		357.95
	4/15/2003	12.73	0.00		357.99
	7/21/2003	13.64	NM		357.08
10/30/2003	Dry	NM	Dry		
KMW-3	9/8/1997	12.34	0.00	369.10	356.76
	12/28/1998	12.39	0.00		356.71
	1/12/1999	15.13	0.00		353.97
	3/25/1999	11.59	0.00		357.51
	6/21/1999	NM	NM		NC
	9/16/1999	NM	NM		NC
	10/16/2002	13.69	0.00		355.41
	1/17/2003	10.85	0.00		345.20
	4/15/2003	10.16	0.00		358.94
	7/21/2003	12.59	NM		356.51
10/30/2003	13.19	NM	355.91		

TABLE 1
SUMMARY OF GROUNDWATER ELEVATION DATA
FRIESMAN RANCH PROPERTY
LIVERMORE, ALAMEDA COUNTY, CALIFORNIA

WELL NUMBER	SAMPLING DATE	WATER LEVEL FROM T.O.C. (feet)	FREE-PRODUCT THICKNESS (feet)	T.O.C. ELEVATION USGS Datum (Ft. above MSL)	GROUNDWATER ELEVATIONS USGS Datum (Ft. above MSL)
KMW-4	9/8/1997	13.76	0.00	369.80	356.04
	12/28/1998	13.76	0.00		356.04
	1/12/1999	14.40	0.00		355.40
	3/25/1999	12.89	0.00		356.91
	6/21/1999	NM	NM		NC
	9/16/1999	NM	NM		NC
	10/16/2002	15.92	0.00		353.88
	1/17/2003	12.17	0.00		357.63
	4/15/2003	11.90	0.00		357.90
	7/21/2003	14.55	NM		355.25
10/30/2003	15.40	NM	354.40		
KMW-5	9/8/1997	14.24	0.00	369.52	355.28
	12/28/1998	14.17	0.00		355.35
	1/12/1999	15.32	0.00		354.20
	3/25/1999	13.27	0.00		356.25
	6/21/1999	NM	NM		NC
	9/16/1999	NM	NM		NC
	10/16/2002	16.45	0.00		353.07
	1/17/2003	12.60	0.00		356.92
	4/15/2003	12.76	0.00		356.76
	7/21/2003	15.08	NM		354.44
10/30/2003	16.02	NM	353.50		
KMW-6	9/8/1997	14.28	0.00	370.08	355.80
	12/28/1998	14.16	0.00		355.92
	1/12/1999	14.47	0.00		355.61
	3/25/1999	13.22	0.00		356.86
	6/21/1999	14.56	0.00		355.52
	9/16/1999	14.29	0.00		355.79
	10/16/2002	16.27	0.00		353.81
	1/17/2003	12.54	0.00		357.54
	4/15/2003	12.56	0.00		357.52
	7/21/2003	14.82	NM		355.26
10/30/2003	15.85	NM	354.23		

TABLE 1
SUMMARY OF GROUNDWATER ELEVATION DATA
FRIESMAN RANCH PROPERTY
LIVERMORE, ALAMEDA COUNTY, CALIFORNIA

WELL NUMBER	SAMPLING DATE	WATER LEVEL FROM T.O.C. (feet)	FREE PRODUCT THICKNESS (feet)	T.O.C. ELEVATION USGS Datum (Ft. above MSL)	GROUNDWATER ELEVATIONS USGS Datum (Ft. above MSL)
KMW-7	12/28/1998	12.91	0.00	370.04	357.13
	1/12/1999	13.15	0.00		356.89
	3/25/1999	12.12	0.00		357.92
	6/21/1999	12.86	0.00		357.18
	9/16/1999	13.00	0.00		357.04
	10/16/2002	14.63	0.00		355.41
	1/17/2003	11.77	0.00		358.27
	4/15/2003	11.31	0.00		358.73
	7/21/2003	13.59	NM		356.45
	10/30/2003	14.19	NM		355.85
KMW-8	12/28/1998	13.37	0.00	368.61	355.24
	1/12/1999	13.70	0.00		354.91
	3/25/1999	12.48	0.00		356.13
	6/21/1999	13.30	0.00		355.31
	9/16/1999	13.57	0.00		355.04
	10/16/2002	15.85	0.00		352.76
	1/17/2003	11.87	0.00		356.74
	4/15/2003	12.25	0.00		356.36
	7/21/2003	14.31	NM		354.30
	10/30/2003	15.23	NM		353.38

NOTES:

MSL = Mean Sea Level

NC = Not Calculable

NM = Not Measured

T.O.C. = Top of casing. All measurements in feet relative to top of casing

USGS = United States Geological Survey

All wells have 4" ID casing = 0.65 gallons per casing length (foot).

Wells KMW-7 and KMW-8 installed on December 23, 1998

* Well obstructed, no water level measurement taken

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
FRIESMAN RANCH PROPERTY
LIVERMORE, ALAMEDA COUNTY, CALIFORNIA

WELL NUMBER	SAMPLE COLLECTION DATE	TPH-D (µg/L)	TPH-G (µg/L)	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)	MTBE (µg/L)	PAHs (µg/L)	LEAD (µg/L)
KMW-1 dup.	9/8/1997	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<10	-
	12/28/1998	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<10	7.8
	12/28/1998	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<10	5.9
	3/25/1999	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-
	6/21/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/16/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/16/2002	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-
	1/17/2003	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-
	4/15/2003	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-
	7/21/2003	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-
10/30/2003	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-	
KMW-2	9/8/1997	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<10	-
	12/28/1998	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<10	<5.0
	3/25/1999	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-
	6/21/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/16/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/16/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/17/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/15/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/21/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
KMW-3	9/8/1997	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<10	-
	12/28/1998	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<10	<5.0
	3/25/1999	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-
	6/21/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/16/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/16/2002	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-
	1/17/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/15/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/21/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
KMW-4	9/8/1997	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<10	-
	12/28/1998	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<10	7.5
	3/25/1999	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-
	6/21/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/16/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/16/2002	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-
	1/17/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/15/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/21/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
KMW-5 dup.	9/8/1997	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<10	-
	9/8/1997	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<10	-
	12/28/1998	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<10	8.5
	3/25/1999	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-
	6/21/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/16/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/16/2002	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-
	1/17/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/15/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/21/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
10/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS	
KMW-6 dup.	9/8/1997	3,200, d	13,000, a	250	14	560	490	<150**	140*	-
	12/28/1998	1,800, d	3,200, a	86	3.6	140	90	<50**	130*	15
	3/26/1999	1,700, d,b	7,000, a	160	5.1	270	200	<100**	100*	<5.0
	3/26/1999	1,700, d,b	6,700, a	170	6.5	270	200	<100**	100*	-
	6/21/1999	1,500, d,b	3,800, a	170	<0.5	260	160	<10	200*	<5.0
	9/16/1999	1,900, d	7,100, a	230	9.8	300	210	<120	<10	<5.0
	10/16/2002	1,600, d	4,600, a	100	8.4	190	110	<50	-	-
	10/16/2002	1,900, d	5,100, a	110	10	210	110	<50	-	-
	1/17/2003	2,100, d	5,700, a	87	4.3	170	100	<25	-	-
	1/17/2003	1,900, d	5,800, a	89	6.4	180	100	<25	-	-
	4/15/2003	110, d	390, a	7.4	0.58	8.5	6.1	<5.0	-	-
	4/15/2003	100, d	270, a	4.2	0.51	5.6	3.0	<5.0	-	-
	7/21/2003	1,600, d	4,300, a	89	3.0	130	70	<17	-	-
	7/21/2003	1,500, d	4,600, a	83	5.2	130	72	<25	-	-
	10/30/2003	310, d	700, a	23	1.1	8.0	8.3	<5.0	-	-
	10/30/2003	350, d	750, a	24	1.3	8.5	8.8	<5.0	-	-

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
FRIESMAN RANCH PROPERTY
LIVERMORE, ALAMEDA COUNTY, CALIFORNIA

WELL NUMBER	SAMPLE COLLECTION DATE	TPH-D (µg/L)	TPH-G (µg/L)	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)	MTBE (µg/L)	PAHs (µg/L)	LEAD (µg/L)
KMW-7 dup.	12/28/1998	1,000, d,h	9,100, a,h	23	17	190	700	<70**	110*	38
	3/25/1999	1,200 d,b	4,300, a,h	19	16	56	270	<70**	23*	22
	6/21/1999	1,300, d,b	1,300, a	6.5	<0.5	21	62	<5.0	27*	<5.0
	6/21/1999	1,200, d	2,000, a	6.4	6.7	24	76	<5.0	17*	-
	9/16/1999	1,100, d	950, a	3.3	2	19	33	<10	<10	<10
	10/16/2002	480, d	270, a	1.3	<0.5	4	15	<5.0	-	-
	1/17/2003	610, d	1,100, a	7.8	1.3	24	84	<10	-	-
	4/15/2003	350, d	880, a	7.1	0.69	4.4	52	<5.0	-	-
	7/21/2003	830, n	1,500, e/g, a	2.8	<0.5	8.3	28	<5.0	-	-
	10/30/2003	100, d	150, a	0.54	<0.5	<0.5	<0.5	<5.0	-	-
KMW-8	12/28/1998	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<10	12
	3/25/1999	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-
	6/21/1999	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-
	9/16/2002	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-
	10/16/2002	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-
	1/17/2003	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-
	4/15/2003	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-
	7/21/2003	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-
	10/30/2003	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-
TAP Sample	4/15/2003	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-

- Notes:**
- | | | | |
|-------|---|----|---|
| TPH-D | Total Petroleum Hydrocarbons as Diesel | d | Gasoline range compounds are significant |
| TPH-G | Total Petroleum Hydrocarbons as Gasoline | e | TPH pattern that does not appear to be derived from gasoline (possibly standard solvent/mineral spirit) |
| MTBE | Methyl Tertiary-Butyl Ether | g | strongly aged gasoline or diesel range compounds are significant |
| PAHs | Polycyclic Aromatic Hydrocarbons | h | Lighter than water immiscible sheen is present |
| MCL | Cal/EPA Maximum Contaminant Level | n | standard solvent/mineral spirit |
| µg/L | Micrograms per Liter (approx. equal to parts per billion) | ** | Reporting limit raised due to high presence of TPH-g |
| <0.5 | Not detected at or above the laboratory method reporting limit | - | Not analyzed |
| a | Unmodified or weakly modified gasoline is significant | NS | Not Sampled |
| b | Diesel range compounds are significant; no recognizable pattern | * | Naphthalene only; all other chemicals were <10 micrograms per liter |
- TAP Sample was collected from the water supply well on-site.

TABLE 3
QUALITY ASSURANCE/QUALITY CONTROL SAMPLE RESULTS
FRIESMAN RANCH PROPERTY
LIVERMORE, ALAMEDA COUNTY, CALIFORNIA
July 2003

QA/QC SAMPLE TYPE	SAMPLE ID	SAMPLE COLLECTION DATE	TPH-D (µg/L)	TPH-G (µg/L)	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)	MTBE (µg/L)	PAHs (µg/L)	LEAD (µg/L)
Primary Sample	KMW-6	7/21/2003	310	700	23	1.1	8.0	8.3	<5.0	-	-
Duplicate Sample	KMW-16	7/21/2003	350	750	24	1.3	8.5	8.8	<5.0	-	-
RPD			12.1%	6.9%	4.3%	16.7%	6.1%	5.8%	NC	NC	NC

Notes:

- TPH-D Total Petroleum Hydrocarbons as Diesel
- TPH-G Total Petroleum Hydrocarbons as Gasoline
- MTBE Methyl Tertiary-Butyl Ether
- RPD Relative Percent Difference
- µg/L Micrograms per Liter (approx. equal to parts per billion)
- <0.5 Not detected at or above the laboratory method reporting limit
- NC Not calculable
- Not Analyzed

TABLE 4

**SUMMARY OF BIO-ATTENUATION PARAMETER ANALYTICAL RESULTS
FRIESMAN RANCH PROPERTY
LIVERMORE, ALAMEDA COUNTY, CALIFORNIA**

WELL NUMBER	SAMPLE DATE	FIELD MEASUREMENT					LABORATORY MEASUREMENT						
		DISSOLVED OXYGEN (mg/L)	REDOX POTENTIAL (mV)	TEMPERATURE (°C)	pH	TURBIDITY (NTU)	ALKALINITY (mg/L)	BOD (mg/L)	COD (mg/L)	FERROUS IRON, (Fe II) (mg/L)	NITRATE (mg/L)	SULFATE (mg/L)	TOC (mg/L)
KMW-1	10/16/02	0.53	110.0	18.1	8.1	NM	328	NM	NM	<0.05	<1.0	84	2.4
	01/17/03	0.85	155	16.0	7.2	1.9	310	<2.0	<20	<0.05	<1.0	8.2	NM
	04/15/03	0.56	55	18.1	6.73	1.70	384	<2.0	<20	0.071	1.8	78	NM
	07/21/03	24*	4.7	16.3	6.85	119.0	377	<2.0	<20	0.16	<1.0	79	NM
	10/30/03	0.31	108	17.1	6.61	ND	351	<2.0	<20	<0.05	<1.0	84	NM
KMW-2	10/16/02	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	01/17/03	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	04/15/03	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	07/21/03	Dry	Dry	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	10/30/03	Dry	Dry	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
KMW-3	10/16/02	0.42	70.0	17.5	8.4	NM	274	NM	NM	<0.05	<1.0	100	2.6
	01/17/03	NM	NM	NM	NM	NM	NM	NM	NM	<0.05	NM	NM	NM
	04/15/03	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	07/21/03	3.5*	245	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	10/30/03	0.33	-80	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
KMW-4	10/16/02	0.46	110.0	16.5	8	NM	288	NM	NM	<0.05	<1.0	91	2.2
	01/17/03	NM	NM	NM	NM	NM	NM	NM	NM	<0.05	NM	NM	NM
	04/15/03	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	07/21/03	4.5*	204	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	10/30/03	0.69	-40	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
KMW-5	10/16/02	0.61	125.0	16.4	8.1	NM	381	NM	NM	<0.05	<1.0	92	2.2
	01/17/03	NM	NM	NM	NM	NM	NM	NM	NM	<0.05	NM	NM	NM
	04/15/03	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	07/21/03	3.4*	146	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	10/30/03	Dry	Dry	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
KMW-6	10/16/02	0.31	<-100	18.9	7.9	NM	397	NM	NM	2.49	<1.0	3.6	5.2
	01/17/03	NM	<-100	21.1	6.8	13.3	530	16	<20	2.49	<1.0	<1.0	NM
	04/15/03	NM	<-100	19.3	6.06	9.4	526	6.4	<20	2.4	<1.0	12	NM
	07/21/03	4.4*	-61	20.5	6.66	174.0	517	3.2	<20	0.17	<1.0	3.3	NM
	10/30/03	0.29	-90	20.9	6.82	0.9	481	1.7	<20	1.4	<1.0	3.9	NM
KMW-7	10/16/02	1.08	-75.0	17.4	7.9	NM	382	NM	NM	<0.05	<1.0	66	3.1
	01/17/03	0.47	-50	18.7	6.9	38.3	480	NM	NM	<0.05	<1.0	7.0	NM
	04/15/03	0.51	145	17.7	6.12	5.1	577	NM	NM	<0.05	15	97	NM
	07/21/03	4.7*	-64	19	6.98	151.0	440	NM	NM	0.16	<1.0	99	NM
	10/30/03	0.00	-88	18.5	7.03	ND	391	NM	NM	<0.05	<1.0	53	NM
KMW-8	10/16/02	0.38	25.0	16.9	8.2	NM	341	NM	NM	<0.05	2.2	77	1.8
	01/17/03	0.67	115	18.0	7.0	4.1	380	NM	NM	<0.05	<1.0	8.9	NM
	04/15/03	0.51	120	16.2	6.5	11.8	425	NM	NM	<0.05	2.4	81	NM
	07/21/03	3.9*	165	18.7	7.06	200.0	450	NM	NM	0.18	<1.0	110	NM
	10/30/03	0.33	-37	17.2	7.18	ND	424	NM	NM	<0.05	1.6	110	NM

Notes: mV = millivolts
mg/L = milligrams per liter
°C = degrees Celsius
pH = Hydrogen ion index
NTU = Nephelometric Turbidity Units
< = not detected above listed detection limit for the method
NM = not measured

BOD = Biological Oxygen Demand
COD = Chemical Oxygen Demand
TOC = Total Organic Carbon
Well KMW-5 was nearly dry, and DO and ORP could not be measured accurately.
* = DO measurements from 7/21/03 were not made using a down-hole probe, and therefore may be inaccurate.
ND = NTUs were not detected above zero.

APPENDIX A
FIELD MONITORING NOTES



WELL SAMPLING RECORD

SCS ENGINEERS

Environmental Consultants

WELL No. KMW-1

6850 Regional St., Suite 240
Dublin, CA 94568-2920

Ph: (925) 829-0661
Fax: (925) 829-5493

www.scsengineers.com

PROJECT INFORMATION

PROJECT NAME	Friesman Ranch	WEATHER/TEMP	Sunny 60°
JOB NUMBER	1203087.00	SITE CONDITIONS	
PERSONNEL	ech & tms		

MONITORING WELL DATA

DATE/TIME	10/30/2003	GALLONS/FOOT	_____
WELL DIAMETER	4"	ONE WELL VOLUME	_____
DEPTH TO WATER	13.85'	THREE WELL VOLUMES	_____
DEPTH OF WELL	23.40	REFERENCE POINT	_____
WATER HEIGHT		80% RECHARGE LEVEL	_____
SHEEN	YES NO	FREE PRODUCT	YES <u> </u> NO <u> </u>

PURGING DATA

DATE	10/30/03	PURGE END	_____
PURGE START	1209	PURGED VOL (GAL)	_____
PURGING RATE		PURGING DEPTH	_____
TUBING (TYPE)			
EQUIPMENT/METHOD			

TIME	VOL (gal)	pH	EC (mS/cm)	TEMP (C)	TURB (NTUs)	DO	ORP	COMMENT
1210	174	5.89	1.73	17.2	-10.0		269	no odor
1212	700	6.23	1.64	17.2	-8.0		195	
1213	1000	6.41	1.61	17.2	<-10.0		150	
1215	1200	6.54	1.62	17.1	<-10.0		114	
1217	1500	6.61	1.62	17.1	<-10.0		108	

OTHER COMMENTS:

SAMPLING INFORMATION

PUMP (TYPE) _____ BAILER (TYPE) _____

SAMPLE ID	CONTAINER	TIME	ANALYSIS/COMMENTS
KMW-1	1 x 500 ml	1220	Alkalinity
	1 x 500 ml		BOD
	1 x 500 ml		300.1 nitrate, Fe, sulfate
	3 NOAs w/ H ₂ SO ₄		COD
	3 NOAs HCl		VOCs
	2 L glass		TPH-d

WELL SAMPLING RECORD

SCS ENGINEERS

Environmental Consultants

WELL No. KMW-6

6850 Regional St., Suite 240
Dublin, CA 94568-2920

Ph: (925) 829-0661
Fax: (925) 829-5493

www.scsengineers.com

PROJECT INFORMATION

PROJECT NAME	Friesman Ranch	WEATHER/TEMP	
JOB NUMBER	1203087.00	SITE CONDITIONS	
PERSONNEL	ech & tms		

MONITORING WELL DATA

DATE/TIME	10/30/2003	GALLONS/FOOT	
WELL DIAMETER	4"	ONE WELL VOLUME	
DEPTH TO WATER	15.85	THREE WELL VOLUMES	
DEPTH OF WELL	23.40	REFERENCE POINT	
WATER HEIGHT		80% RECHARGE LEVEL	
SHEEN	YES NO	FREE PRODUCT	YES NO

PURGING DATA

DATE	10-30-03	PURGE END	
PURGE START	1430	PURGED VOL (GAL)	
PURGING RATE		PURGING DEPTH	
TUBING (TYPE)			
EQUIPMENT/METHOD			

TIME	VOL (ml)	pH	EC (mS/cm)	TEMP (C)	TURB (NTUs)	DO	ORP	COMMENT
1432	175	6.85	1.74	20.5	1.3		-87	fuel-like odor
	550	6.82	1.74	20.9	0.9		-90	

OTHER COMMENTS:

SAMPLING INFORMATION

PUMP (TYPE) _____ BAILER (TYPE) _____

SAMPLE ID	CONTAINER	TIME	ANALYSIS/COMMENTS
KMW-6	500 ml		
KMW-16	500 ml		
	500 ml		
	3 VOA's H2SO4		
	3 VOA HCl		
	2L glass		

PVP

WELL SAMPLING RECORD

SCS ENGINEERS

Environmental Consultants

WELL No. KMW-7

6850 Regional St., Suite 240
Dublin, CA 94568-2920

Ph: (925) 829-0661
Fax: (925) 829-5493

www.scsengineers.com

PROJECT INFORMATION

PROJECT NAME	Friesman Ranch	WEATHER/TEMP	Sunny 60
JOB NUMBER	1203087.00	SITE CONDITIONS	
PERSONNEL	ech & tms		

MONITORING WELL DATA

DATE/TIME	10/30/2003	GALLONS/FOOT	_____
WELL DIAMETER	4"	ONE WELL VOLUME	_____
DEPTH TO WATER	14.19	THREE WELL VOLUMES	_____
DEPTH OF WELL	23.50	REFERENCE POINT	_____
WATER HEIGHT	_____	80% RECHARGE LEVEL	_____
SHEEN	YES NO	FREE PRODUCT	YES NO

PURGING DATA

DATE	10-30-03	PURGE END	_____
PURGE START	1337	PURGED VOL (GAL)	_____
PURGING RATE	_____	PURGING DEPTH	_____
TUBING (TYPE)	_____		
EQUIPMENT/METHOD	_____		

TIME	VOL (gal)	pH	EC (mS/cm)	TEMP (C)	TURB (NTUs)	DO	ORP	COMMENT
1338	175	7.06	1.64	18.5	-8.2		-88	fuel-like odor
1340	600	7.03	1.64	18.5	<-10.0		-88	fuel-like odor

OTHER COMMENTS:

SAMPLING INFORMATION

PUMP (TYPE) _____ BAILER (TYPE) _____

SAMPLE ID	CONTAINER	TIME	ANALYSIS/COMMENTS
KMW-7	500 ml	1345	Alkalinity
	500 ml		300.1 nit, Fe, sulf
	3 VOA HCL		VOC 80K/8021
	1 L glass		TPH-d

2

WELL SAMPLING RECORD

SCS ENGINEERS

Environmental Consultants

WELL No. KMW-8

6850 Regional St., Suite 240
Dublin, CA 94568-2920

Ph: (925) 829-0661
Fax: (925) 829-5493
www.scsengineers.com

PROJECT INFORMATION

PROJECT NAME Friesman Ranch
JOB NUMBER 1203087.00
PERSONNEL ech & tms

WEATHER/TEMP _____
SITE CONDITIONS Sunny 60°

MONITORING WELL DATA

DATE/TIME 10/30/2003
WELL DIAMETER 4"
DEPTH TO WATER 15.23
DEPTH OF WELL 23.65
WATER HEIGHT _____
SHEEN YES NO

GALLONS/FOOT _____
ONE WELL VOLUME _____
THREE WELL VOLUMES _____
REFERENCE POINT _____
80% RECHARGE LEVEL _____
FREE PRODUCT YES NO

PURGING DATA

DATE 10-30-03
PURGE START 1253
PURGING RATE _____
TUBING (TYPE) _____
EQUIPMENT/METHOD _____

PURGE END 1300
PURGED VOL (GAL) _____
PURGING DEPTH _____

TIME	VOL (ml)	pH	EC (ms/cm)	TEMP (C)	TURB (NTUs)	DO	ORP	COMMENT
1256	175	7.12	1.78	17.2	4.3		-35	no odor
1258	400	7.18	1.80	17.2	1.6		-37	no odor

OTHER COMMENTS:

SAMPLING INFORMATION

PUMP (TYPE) _____

BAILER (TYPE) _____

SAMPLE ID	CONTAINER	TIME	ANALYSIS/COMMENTS
KMW-8	1 x 500 ml	1300	Alkalinity
	500 ml		300.1 nit, Fe, Sulf
	3 NOAs HCl		VOC 8015/8021
	1 L glass		TPH-d

no 100 BOD

10-30-03 Freeman Groundwater 129

8:00 Ted + I met @ office, loaded, OSH

9:30 arrived on-site
opened all wells.

water levels

well	Time	depth to H ₂ O	DO (mg/L)
KMW-1	11:03	13.85	0.29 0.31
-2	10:45	DRY	(3.70) ***
-3	10:21	13.19	0.33 ORP: 40
-4	10:26	15.40	0.69 ORP: 40
-5	10:29	16.02 16.02	(5.00) * 16' 2" bottom
-6	10:18	15.85	0.29
-7	10:55	14.19	0.00
-8	10:40	15.23	0.33

* very little water here, so DO reading may not be accurate. Bailer will retrieve water, so no ORP measurement

*** Same as above. Total depth = 13.84'

8:00
9:30

Order 1, 8, 7, 6

KMW-1 and 6 - COD + BOD

APPENDIX B
CHAIN-OF-CUSTODY RECORDS AND CERTIFIED ANALYTICAL
LABORATORY REPORTS



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mcccampbell.com E-mail: main@mcccampbell.com

SCS Engineers 6601 Koll Center Park Way, Suite 140 Pleasanton, CA 94566	Client Project ID: #01203087.00; Friesman Ranch	Date Sampled: 10/30/03
	Client Contact: Jim Lehrman	Date Received: 10/30/03
	Client P.O.:	Date Reported: 11/05/03
		Date Completed: 11/05/03

WorkOrder: 0310512

November 05, 2003

Dear Jim:

Enclosed are:

- 1). the results of 6 analyzed samples from your #01203087.00; Friesman Ranch project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions please contact me. McC Campbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

RECEIVED

NOV 17 2003

SCS ENGINEERS



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
 Telephone : 925-798-1620 Fax : 925-798-1622
 http://www.mcccampbell.com E-mail: main@mcccampbell.com

QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0310512

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 9161		Spiked Sample ID: 0310498-011A				
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex) [£]	ND	60	110	116	5.42	102	103	0.891	70	130
MTBE	ND	10	113	112	1.31	82.2	81.9	0.439	70	130
Benzene	ND	10	108	106	1.19	89.8	87.5	2.58	70	130
Toluenc	ND	10	105	105	0	102	98.4	3.60	70	130
Ethylbenzene	ND	10	115	117	1.79	110	104	5.09	70	130
Xylenes	ND	30	107	107	0	110	107	3.08	70	130
%SS:	ND	100	107	107	0	101	99.9	0.949	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

$$\% \text{ Recovery} = 100 * (\text{MS-Sample}) / (\text{Amount Spiked}); \text{RPD} = 100 * (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) * 2.$$

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
 Telephone : 925-798-1620 Fax : 925-798-1622
 http://www.mcccampbell.com E-mail: main@mcccampbell.com

QC SUMMARY REPORT FOR SW8015C

Matrix: W

WorkOrder: 0310512

EPA Method: SW8015C		Extraction: SW3510C			BatchID: 9131		Spiked Sample ID: N/A			
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(d)	N/A	7500	N/A	N/A	N/A	94.1	94.3	0.172	70	130
%SS:	N/A	100	N/A	N/A	N/A	99.1	99.2	0.170	70	130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = $100 * (MS - Sample) / (Amount Spiked)$; RPD = $100 * (MS - MSD) / (MS + MSD) * 2$.

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
 Telephone : 925-798-1620 Fax : 925-798-1622
 http://www.mcccampbell.com E-mail: main@mcccampbell.com

QC SUMMARY REPORT FOR E200.7

Matrix: W

WorkOrder: 0310512

EPA Method: E200.7		Extraction: E200.7		BatchID: 9256			Spiked Sample ID: N/A			
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/L	mg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Iron	N/A	1	N/A	N/A	N/A	103	105	2.69	70	130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = $100 * (MS - Sample) / (Amount\ Spiked)$; RPD = $100 * (MS - MSD) / (MS + MSD) * 2$.

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not applicable to this method.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
 Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR E300.1

Matrix: W

WorkOrder: 0310512

EPA Method: E300.1		Extraction: E300.1			BatchID: 9133		Spiked Sample ID: N/A			
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/L	mg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Sulfate	N/A	1000	N/A	N/A	N/A	110	110	0	85	115
%SS:	N/A	100	N/A	N/A	N/A	107	92.9	13.8	90	115

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
 NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = $100 * (MS - Sample) / (Amount Spiked)$; RPD = $100 * (MS - MSD) / (MS + MSD) * 2$.

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not applicable to this method.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

CERTIFICATE OF ANALYSIS

Report # P304-05

Date: 11/04/03

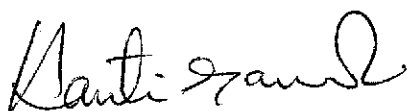
McCampbell Analytical
110 2nd Ave. South #D7
Pacheco CA 94553

Project: #01203087.00; Friesman Ranch
PO# 0310512

Date Rec'd: 10/31/03
Date Started: 11/03/03
Date Completed: 11/03/03

Date Sampled: 10/30/03
Time:
Sampler:

Sample ID	Lab ID	RL	Method	Analyte	Results	Units
KMW-1	P309659	20	SM2320B	Total Alkalinity as CaCO ₃	351	mg/L
		20	410.4	Chemical Oxygen Demand	ND	mg/L
KMW-6	P309660	20	SM2320B	Total Alkalinity as CaCO ₃	481	mg/L
		20	410.4	Chemical Oxygen Demand	ND	mg/L
KMW-7	P309661	20	SM2320B	Total Alkalinity as CaCO ₃	391	mg/L
KMW-8	P309662	20	SM2320B	Total Alkalinity as CaCO ₃	424	mg/L
KMW-16	P309663	20	SM2320B	Total Alkalinity as CaCO ₃	481	mg/L



Kanti Gandhi
Chemist



Donna Keller
Laboratory Director

Certification # 1157

GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

CERTIFICATE OF ANALYSIS

Report # P304-05

Date: 11/11/03

McC Campbell Analytical
110 2nd Ave. South #D7
Pacheco CA 94553

Project: #01203087.00; Friesman Ranch

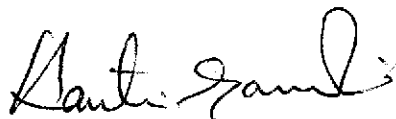
Date Rec'd: 10/31/03
Date Started: 10/31/03
Date Completed: 11/05/03

PO# 0310512

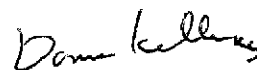
Date Sampled: 10/30/03
Time:
Sampler:

Sample ID	Lab ID	RL	Method	Analyte	Results	Units
KMW-1	P309659	2.0	SM5210B	B.O.D	ND	mg/L

KMW-6	P309660	2.0	SM5210B	B.O.D	1.7	mg/L
-------	---------	-----	---------	-------	-----	------



Kanti Gandhi
Chemist



Donna Keller
Laboratory Director

Certification # 1157

GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351

Phone (209) 572-0900

Fax (209) 572-0916

Report# P304-05

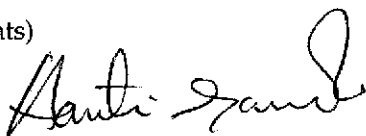
QC REPORT

McC Campbell Analytical
110 2nd Ave. South #D7
Pacheco

CA 94553

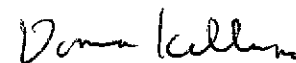
Analyte	Method	Batch #	Dates Analyzed	Orig.	Dupl.	MS	MSD	LCS		Comments
						%Rec	%Rec	RPD	%Rec Blank	
Total Alkalinity as CaCO ₃	SM2320B	I07197	11/03/03			108.4	106.6		ND	*
Chemical Oxygen Demand	410.4	I07199	11/03/03			100.8	100.8	100.0	ND	

* LCS/LCSD (see comments)



Kanti Gandhi
Chemist

Certification # 1157



Donna Keller
Laboratory Director



GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report# P304-05

QC REPORT

McC Campbell Analytical
110 2nd Ave. South #D7
Pacheco CA 94553

Analyte	Method	Batch #	Dates Analyzed	Orig.	Dupl.	MS %Rec	MSD %Rec	LCS RPD %Rec	Blank	Comments
3.O.D	SM5210B	B00617	10/31/03-11/05/03	203	220			8.0	ND	

* LCS/LCSD (see comments)



Kanti Gandhi
Chemist

Certification # 1157



Donna Keller
Laboratory Director

McC Campbell Analytical Inc.



110 Second Avenue South, #D7
 Pacheco, CA 94553-5560
 (925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0310512

Client:

SCS Engineers
 6601 Koll Center Park Way, Suite 140
 Pleasanton, CA 94566

TEL: (925) 426-0080
 FAX: (925) 426-0707
 ProjectNo: #01203087.00; Friesman Ranch
 PO:

Date Received: 10/30/03
Date Printed: 10/30/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests			
					Alkalinity	BOD	COD	E200_7
0310512-001	KMW-1	Water	10/30/03	<input type="checkbox"/>	D	D	D	C
0310512-002	KMW-6	Water	10/30/03	<input type="checkbox"/>	D	D	D	C
0310512-003	KMW-7	Water	10/30/03	<input type="checkbox"/>	D			C
0310512-004	KMW-8	Water	10/30/03	<input type="checkbox"/>	D			C
0310512-005	KMW-16	Water	10/30/03	<input type="checkbox"/>	D			C
0310512-006	Trip Blank	Water	10/30/03	<input type="checkbox"/>				

Prepared by: Melissa Valles

Comments:

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

McC Campbell Analytical Inc.



110 Second Avenue South, #D7
 Pacheco, CA 94553-5560
 (925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0310512

Client:

SCS Engineers
 6601 Koll Center Park Way, Suite 140
 Pleasanton, CA 94566

TEL: (925) 426-0080
 FAX: (925) 426-0707
 ProjectNo: #01203087.00; Friesman Ranch
 PO:

Date Received: 10/30/03
 Date Printed: 10/30/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests		
					E300_1	SW8015C	SW8021B/8015Cm
0310512-001	KMW-1	Water	10/30/03	<input type="checkbox"/>	C	B	A
0310512-002	KMW-6	Water	10/30/03	<input type="checkbox"/>	C	B	A
0310512-003	KMW-7	Water	10/30/03	<input type="checkbox"/>	C	B	A
0310512-004	KMW-8	Water	10/30/03	<input type="checkbox"/>	C	B	A
0310512-005	KMW-16	Water	10/30/03	<input type="checkbox"/>	C	B	A
0310512-006	Trip Blank	Water	10/30/03	<input type="checkbox"/>			A

Prepared by: Melissa Valles

Comments:

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

CHAIN OF CUSTODY RECORD

0310512

SCS ENGINEERS Environmental Consultants

6601 Koll Center Parkway
Suite 140
Pleasanton, CA 94566

925 426-0080
FAX 925 426-0707
www.scsengineers.com

TOTAL NUMBER OF SAMPLES: 6

PAGE 1 OF 2

TURNAROUND TIME REQUIRED: Standard
5-Day 3-Day Immediate Other

ANALYSES REQUESTED

LAB USE ONLY

PROJECT NUMBER: 01203087.00

PROJECT MANAGER: J. Lehrman

PROJECT NAME: Fresman Ranch

W.O./S.O. #:

PROJECT LOCATION: Livermore CA

SAMPLER NAME AND SIGNATURE: Emily Harris - Ted Sison

I.D. NUMBER	SAMPLE DESIGNATION	SAMPLE MATRIX	DATE/TIME COLLECTED	CONTAINER SIZE/TYPE	SAMPLE PRESERVATIVE	SPECIAL INSTRUCTIONS/COMMENTS	TPH g/BTEX/MTBE (80ISM)	TPH g (80ISM)	300.1 nitrate, Fe, sulfate	Alkalinity	BOD	COD
✓	KMW-1	H2O	10-30-03	3VOA	HCl		X					
					1.500ml	none			X			
					500ml	none				X		
					500ml	none		X				
					500ml 3VOA	H2SO4						X
✓	KMW-6			1 Lamber	none		X	X				
				3VOA	HCl		X					
				500ml	none				X			
				500ml	none					X		
				500ml	none			X				
				3VOA	H2SO4							X
✓	KMW-7			1 Lamber	none		X	X				
				3VOA	HCl		X					
				500ml	none				X			
				500ml	none			X				

NOTES: Please filter and preserve Fe samples upon arrival.
Invoice children's Hospital directly.

ICBP: GOOD CONDITION
 HEAD SPACE ABSENT
 DECHLORINATED IN LAB

SAMPLE CONDITION UPON RECEIPT:
 APPROPRIATE CONTAINERS
 PRESERVED IN LAB

VOAS | O&G | METALS | OTHER

RELINQUISHED BY: [Signature] DATE: 10-30-03 RECEIVED BY: [Signature] DATE: _____
 COMPANY: SCS TIME: 4:30 COMPANY: MAZ TIME: _____

1/2 2/10/2

