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STAFF RJ

GROUNDWATER MONITORING REPORT

MALIBU PARK SCHOOL
30215 MORNING VIEW DRIVE
MALIBU, CALIFORNIA

JANUARY, 1996

FOR SUBMITTAL TO:

California Regional Water Quality Control Board
Leaking Underground Tank Division
101 Centre Plaza Drive
Monterey Park, CA 91754-2156
LOP File No. I-13216

ON BEHALF OF:

Santa Monica-Malibu School District
1651 Sixteenth Street
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TRG Project Number 4786-SMMS

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TABLE OF CONTENTS

GROUNDWATER MONITORING REPORT

MALIBU PARK SCHOOL
30215 MORNING VIEW DRIVE
MALIBU, CALIFORNIA

TABLES

FIGURES

APPENDICES

GROUNDWATER MONITORING REPORT

MALIBU PARK SCHOOL
30215 MORNING VIEW DRIVE
MALIBU, CALIFORNIA

1.0 INTRODUCTION AND DESCRIPTION OF WORK PERFORMED

This report presents the results of the groundwater monitoring conducted at Malibu Park School located at 30215 Morning View Drive in Malibu, California (Figure 1) on January 16, 1996. The Reynolds Group (TRG) was retained by Vector Three Environmental, Inc., to perform the work. Figure 2 shows the location of the wells.

A PVC bailer was used for well purging and a teflon bailer was used for sample collection. Purged water was stored in labeled 55-gallon DOT-approved barrels and stored on-site pending laboratory analysis. Monitoring and sampling procedures are described in Appendix A. The procedures described in Appendix A refer specifically to sampling of VOC's. Although the focus of this investigation is the release of diesel (a semi-volatile organic compound or SVOC) into the subsurface, our field procedures describe the collection of ground water samples containing volatile organic compounds (VOC's). Nevertheless, the sampling procedure described for VOC's insures the collection of representative groundwater samples with SVOC constituents. Also, VOC's, previously detected in groundwater samples from monitoring wells at this site, are the constituents of primary concern regarding regulatory oversight. Field notes are attached in Appendix B.

Concentrations of benzene, ethylbenzene, and xylenes were detected in monitoring well MW3. Concentrations of benzene and ethylbenzene were detected in monitoring well MW4. MW1, MW2 and the equipment blank were "non-detect" for all constituents analyzed.

2.0 MONITORING/SAMPLING RESULTS

2.1 Groundwater Gradient

The Reynolds Group conducted monitoring and sampling activities at the site on January 16, 1995. Prior to purging and sampling, the depth-to-water in each well was measured using an electronic sounder. The groundwater flow direction and slope were then calculated by determining the elevations of groundwater in each well relative to surveyed top-of-casing elevations. These data are summarized in Table 1 below. The groundwater flow direction and gradient were calculated to be approximately towards the south at a rate of 0.028 feet per foot. The groundwater flow direction with gradient contours is shown in Figure 3.

TABLE 1
SUMMARY OF GROUNDWATER ELEVATION DATA

WELL	DATE	ELEVATION OF TOP OF CASING*	DEPTH TO GROUNDWATER	ELEVATION OF GROUNDWATER SURFACE
MW1	5/5/95	98.83	27.69	71.14
	1/16/96		31.85	66.98
MW2	5/5/95	99.72	28.78	70.94
	1/16/96		32.92	66.80
MW3	5/5/95	98.55	29.22	69.33
	1/16/96		32.83	65.72
MW4	5/5/95	99.29	30.22	69.07
	1/16/96		34.23	65.06

* Elevations are relative to a benchmark of 100.00 feet previously established by Eagle Eye Mapping.

2.2 Groundwater Sampling and Analytical Results

Groundwater samples were collected from wells MW1, MW2, MW3, and MW4. In addition, one "equipment blank" sample, was collected by pouring deionized water through the sampler into a 40 mL VOA vial to insure that cross contamination of groundwater samples was not occurring due to improper decontamination of the sampling equipment. The samples were analyzed for total petroleum hydrocarbons (TPH) according to Method 8015 modified for diesel and for benzene, toluene, ethylbenzene and xylenes (BTEX) according to EPA Method 8020. Samples were analyzed by Chemical and Environmental Laborites, Inc. of Santa Fe Springs, California, a State-certified hazardous waste laboratory #1597. Results from the current and previous monitoring rounds are summarized in Table 2 below. The laboratory report and chain-of-custody documentation are included in Appendix C. No free product was observed in any of the four wells during the field work.

Two 40 mL VOA vials were collected from each well for laboratory analysis. The technical specifications required that two 40 mL VOA vials and one 1 liter narrow neck bottle be used for sample collection. In this case the sample volume collected was adequate for complete laboratory analysis of both EPA Method 8015 modified for diesel and EPA Method 8020. The laboratory used one 40 mL vial of water during the EPA Method 8020 procedure for each well leaving one 40 mL vial of water from each well for the EPA Method 8015 modified for diesel analysis. While the recommended size of the sample container for the EPA method 8015 modified for diesel analysis is 1 liter, the laboratory only requires the use of 30 mL of water for the extraction process. According to Larry Zheng, Ph.D. (C&E Laboratory director) common laboratory procedure uses 30 mL of water from the sample for mixture with 5 mL of solvent for the extraction procedure.

Samples were delivered to the laboratory thirty one hours after their collection. The holding time for samples collected for analysis by EPA Method 8015 modified for diesel and EPA Method 8020 is seven days. The samples were stored in a cooler with blue ice pending their arrival at TRG's office. Upon their arrival at the office, the samples were transferred from the cooler to a refrigerator dedicated to sample preservation. The following day the samples were transferred from the refrigerator to a cooler containing blue ice and delivered to the lab. All of these activities were carried out by the same person under chain of custody procedure.

TABLE 2
SUMMARY OF LABORATORY ANALYSIS RESULTS
(RESULTS IN PPB[1])

WELL	SAMPLING DATE	TPH AS DIESEL[2]	BENZENE[3]	TOLUENE[3]	ETHYL BENZENE[3]	XYLENE[3]
MW1	5/3/95	ND	ND	ND	ND	ND
	1/16/96	ND	ND	ND	ND	ND
MW2	5/3/95	ND	ND	ND	ND	ND
	1/16/96	ND	ND	ND	ND	ND
MW3	5/3/95	1,200	42.9	16.3	6.9	41.5
	1/16/96	ND	57.3	ND	80.1	1.6
MW4	5/3/95	800	3.4	2.5	3.8	16.5
	1/16/96	ND	128.7	ND	69.5	ND
Detection Limit		500	0.3	0.3	0.3	0.5

1) PPB = parts per billion or micrograms per liter.
2) TPH as diesel according to EPA Method 8015 modified for diesel.
3) Benzene, toluene, ethylbenzene, and xylenes (BTEX) analyzed according to EPA Method 8020.
4) ND = compound not detected above specified detection unit.
5) Blank sample was "non-detect" for all constituents.

3.0 CONCLUSIONS

Based on data gathered, we have drawn the following conclusions:

- The groundwater flow direction was found to be towards the south, which is consistent with previous findings;

- Low concentrations of dissolved benzene, ethylbenzene or xylenes were detected in downgradient wells MW3 and MW4.

4.0 LIMITATIONS

This report is based on the information gathered during the course of the work as described in the text. Its validity is based on the available facts, circumstances, and data as of the date of the report and TRG takes no responsibility for any subsequent changes in those facts, circumstances, and data.

If you have any questions regarding the contents of this report, please call Ed Reynolds or Angel Cardoza directly at (714) 730-5397.

Thank you for this opportunity to work for you.

Sincerely,
THE REYNOLDS GROUP
A California Corporation by:

F. Edward Reynolds

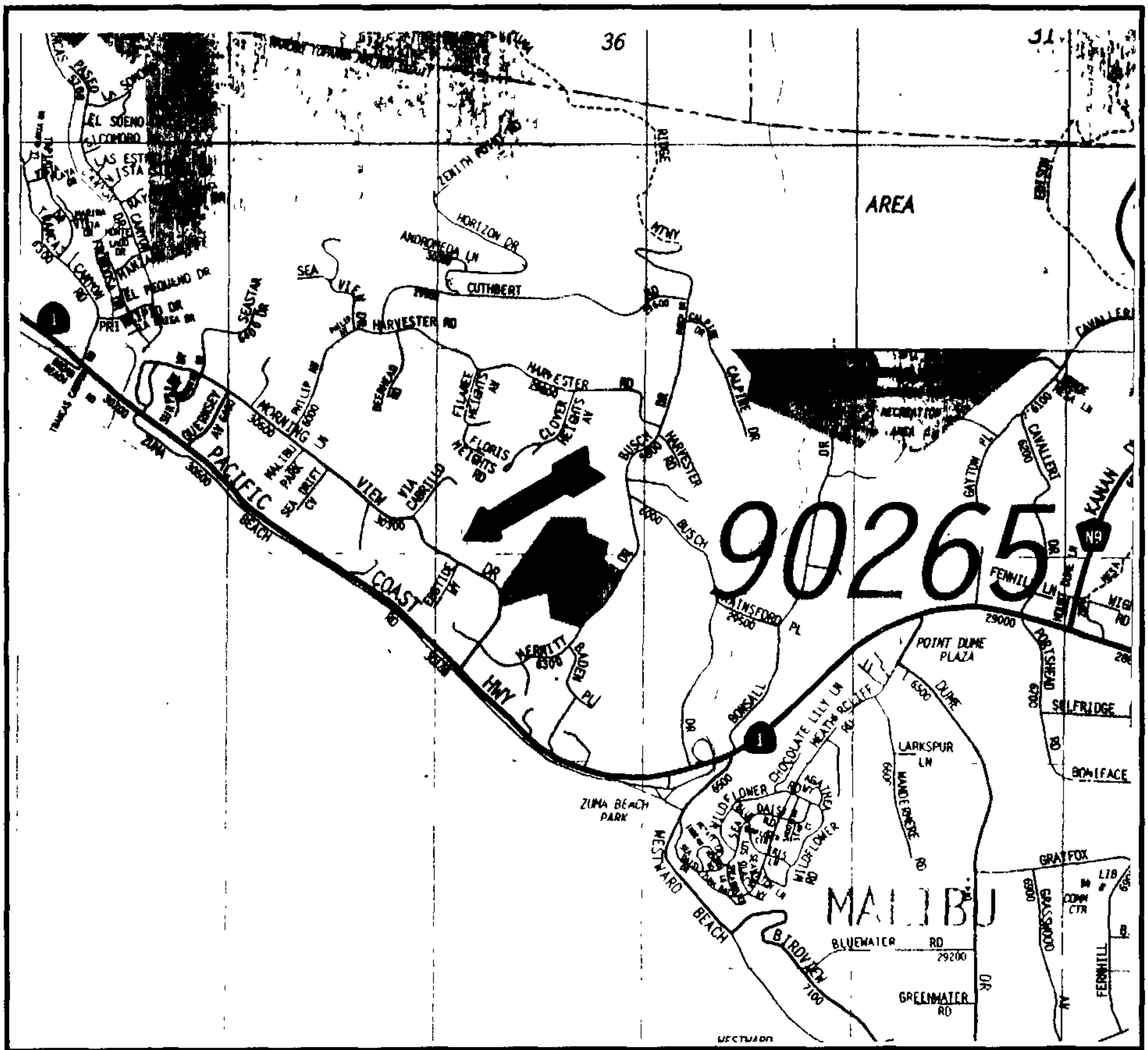
F. Edward Reynolds, Jr., P.E.
California RCE #38677

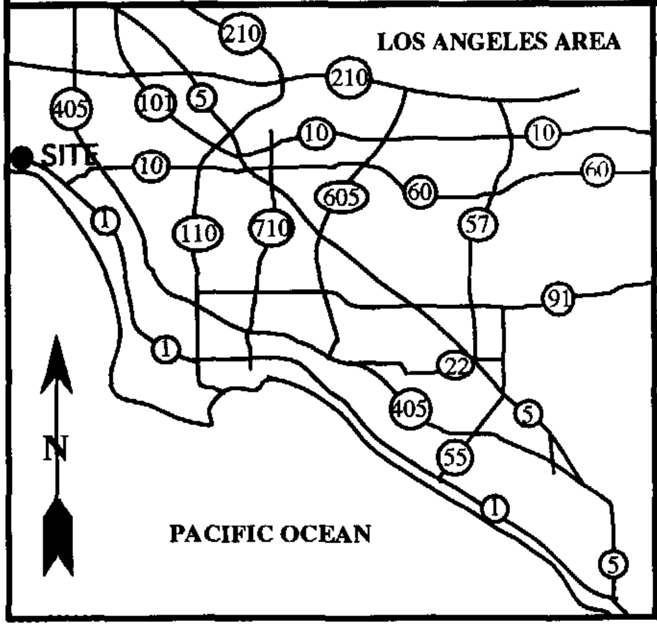
Angel Cardoza, Jr.
Environmental Engineer

F. EDWARD REYNOLDS, JR.
38677
March 31, 1997
CIVIL

FIGURE 1

SITE LOCATION MAP





ADAPTED FROM 1993 LA/ORANGE COUNTY THOMAS BROTHERS GUIDE, PAGES 627 & 667.

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FEET

APPROXIMATE SCALE

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FIGURE 1
SITE LOCATION MAP

30215 MORNING VIEW DRIVE
MALIBU, CALIFORNIA

JANUARY 1996

FIGURE 2

PLOT PLAN WITH WELL LOCATIONS

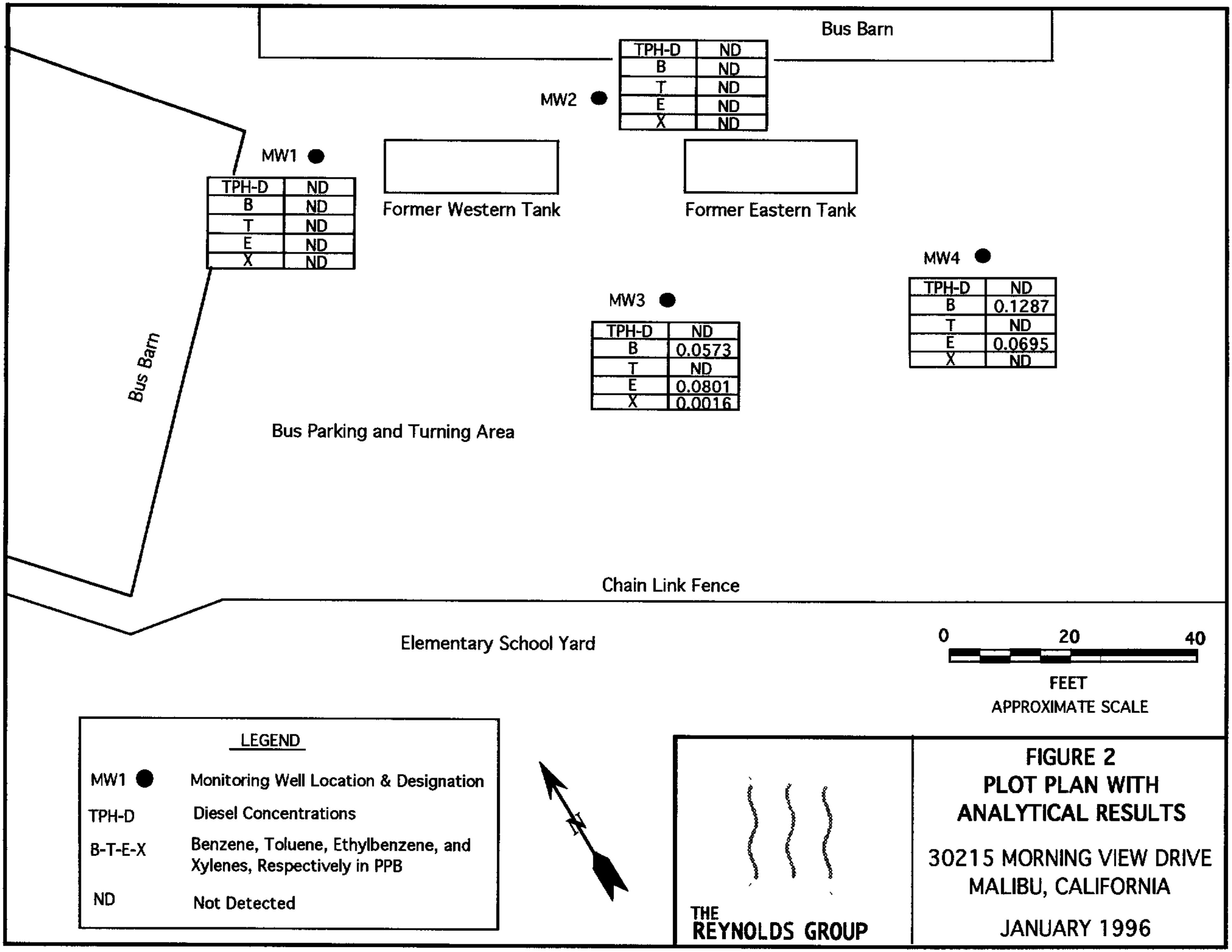

FIGURE 2
PLOT PLAN WITH ANALYTICAL RESULTS

30215 MORNING VIEW DRIVE
MALIBU, CALIFORNIA

JANUARY 1996

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MW1

TPH-D	ND
B	ND
T	ND
E	ND
X	ND

MW2

TPH-D	ND
B	ND
T	ND
E	ND
X	ND

MW3

TPH-D	ND
B	0.0573
T	ND
E	0.0801
X	0.0016

MW4

TPH-D	ND
B	0.1287
T	ND
E	0.0695
X	ND

LEGEND

MW1 ●	Monitoring Well Location & Designation
TPH-D	Diesel Concentrations
B-T-E-X	Benzene, Toluene, Ethylbenzene, and Xylenes, Respectively in PPB
ND	Not Detected

FIGURE 3

PLOT PLAN WITH GROUNDWATER CONTOURS AND FLOW DIRECTION

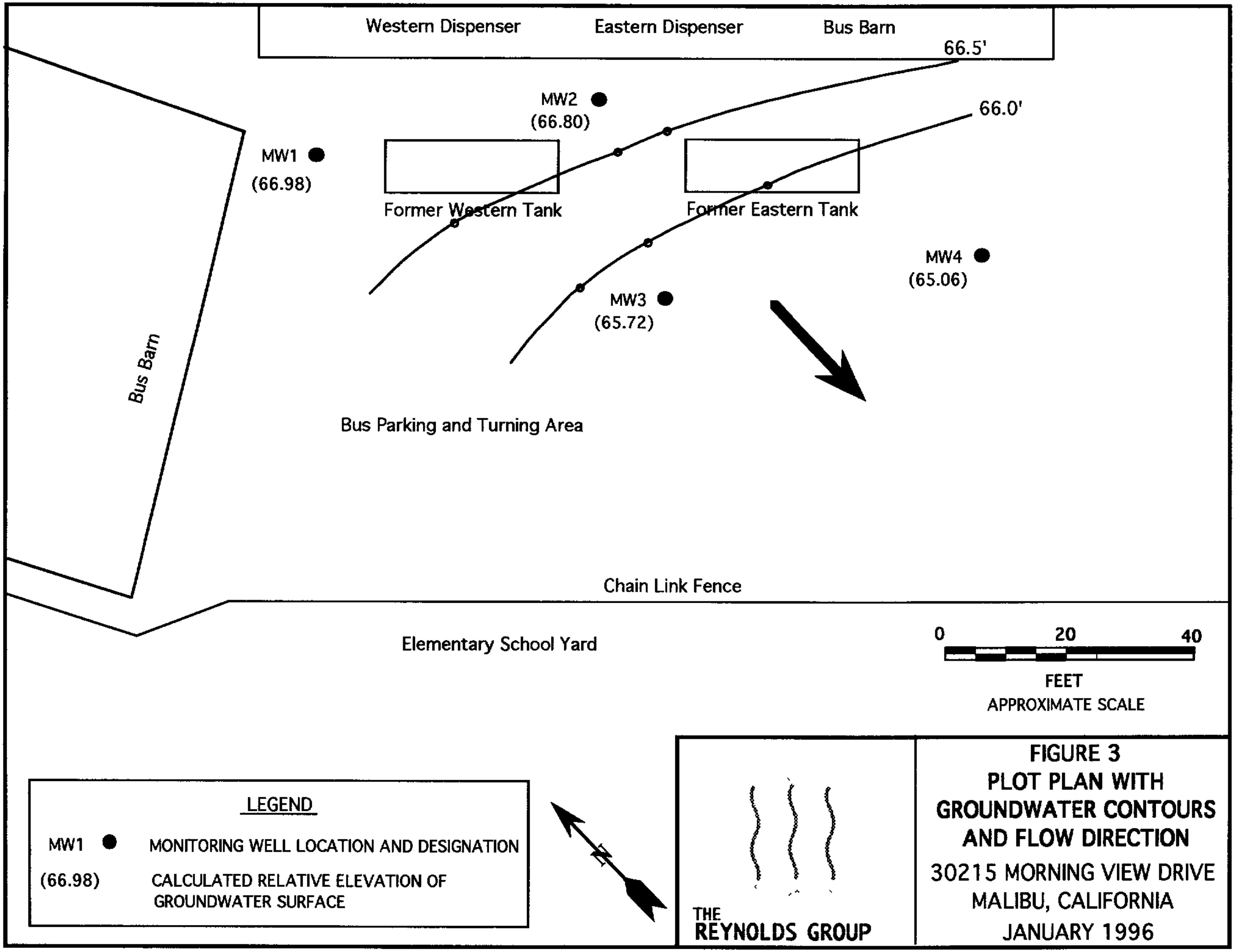

FIGURE 3
PLOT PLAN WITH
GROUNDWATER CONTOURS
AND FLOW DIRECTION
30215 MORNING VIEW DRIVE
MALIBU, CALIFORNIA
JANUARY 1996

APPENDIX A

GROUNDWATER SAMPLING AND ANALYSIS PROCEDURES

GROUNDWATER SAMPLING AND ANALYSIS PROCEDURES

TRG's sampling and analysis procedures for water-quality monitoring are designed to provide consistent and reproducible results and ensure that the objectives of the monitoring program are met.

The following publication was used as guidelines for developing these procedures:

* RCRA Groundwater Monitoring Technical Enforcement Guidance Document (OSWER 950.1, September 1986)

Sample Collection

Sample collection procedures include equipment cleaning, well purging, and water-level, floating-hydrocarbon thickness, and total well-depth measuring.

Equipment Cleaning

All well sampling equipment is washed both before and after each sampling event with a solution of Alconox and water, rinsed with tap water, and then rinsed again with de-ionized water.

Water-level, Floating Hydrocarbon, and Total Well-Depth Measurements

Water levels, floating-hydrocarbon thickness, and total well depth are measured before wells are purged and sampled. An electric sounder, a bottom-filling, clear Teflon bailer, or an oil-water interface probe are used to make these measurements. The electric sounder is a transistorized instrument with reel-mounted, two-conductor, coaxial cable which connects the control panel to the sensor. The cable is stamped in 1-foot increments. The sensor is lowered into the well and, as it makes contact with the water, which acts as an electrolyte, a low-current circuit is completed.

The current is amplified and fed into an indicator light and an audible buzzer, which produces a signal as the sensor touches the water. A sensitivity control compensates for highly saline or conductive water. The sounder is decontaminated after each use with a three bucket rinse consisting of Alconox and water and two buckets of deionized-water rinse. The clear bailer is lowered to a point just below the liquid level, retrieved, and inspected for floating hydrocarbon. If a clear bailer is to be reused, it is thoroughly cleaned between wells by the above method, or by steam cleaning.

Alternatively, an oil-water interface sonic probe can be used to measure floating-hydrocarbon thickness. The probe emits a continuous tone when immersed in a non conductive fluid, such as oil or gasoline, and an intermittent tone when immersed in a conductive fluid, such as water. Fluid levels are recorded relative to which tone is emitted. The sonic interface probe is decontaminated after each use in the same manner as the electric sounder.

Fluid measurements are recorded to the nearest 0.01 feet in a field log-book and on the well gauging form. The groundwater elevation at the monitoring wells is calculated by subtracting the measured depth to water from the surveyed top-of-casing elevation. When possible, depth to water from the surveyed top-of-casing elevation. When possible, depth to water is measured in all wells on the same day. Water levels are converted to elevations above mean sea level (MSL) and contoured on a groundwater map. Total well depth, recorded to the nearest 0.5 foot, is measured by means of an electric sounder which is lowered to the bottom of a well. Alternatively, the total depth can be measured by lowering a precleaned tape with a stainless steel plumb bob. This need only be done quarterly and the device must be cleaned by the above method between wells. This measurement is used for calculating purge volumes and determining the degree to which silt may have obstructed the well screen.

Well Purging

Before a monitoring well is sampled, it is purged of standing water in the casing and gravel pack by one of several devices: a bladder pump, a pneumatic displacement pump, a centrifugal pump, a vacuum truck, or a PVC or Teflon bailer. Where bailers are used for purging, the bailers should be precleaned with a triple washing procedures at a minimum.

When bailers are used, a dedicated cloth rope and gloves are to be used for the purge bailer. The rope should not contact the ground during the purging event. An ample number of purge bailers should be used to eliminate reuse of any bailer during that day.

The amount of water purged in most wells will be at least three casing volumes, although some wells are expected to be evacuated due to dryness before this amount has been removed. These low-yield monitoring wells are allowed to recharge until the volume of water is sufficient for sampling, but not longer than 24 hours. If insufficient water has recharged after 24 hours, a monitoring well is recorded as dry for the sampling event.

Field measurements are recorded at no more than 5 gallon intervals on a water sample, field data sheet and kept in a waterproof logbook. Data sheets are reviewed by the sampling coordinator or known to be of low volume, then the field measurements will be recorded at less than 5 gallon intervals. For high yield wells, the parameters can be recorded at larger intervals, but a minimum of four sets of measurements will be recorded for each well.

The pH, specific conductance, and the temperature meter are calibrated daily before field activities are begun and are recorded on a field meter log form. Meter calibration is checked daily during field activities to verify performances.

Well Sampling

A Teflon bailer, bladder pump, or disposable bailer is the only acceptable equipment for well sampling. When samples are collected for volatile organic compound (VOC) analysis with a bladder pump, the pump flow is regulated to approximately 100 milliliters per minute to minimize pump-effluent turbulence and aeration. A separate Teflon sampling bailer can be used for each well if precleaned. In this case, the sampling personnel are is to use dedicated rope and gloves for each well. After purging and allowing the well to recovery, the Teflon sampling bailer is lowered into the water and retrieved to be poured out three times before filling the sample containers. This normalizing process is essential to all sampling events. Samples for VOC analysis are preserved in 40 milliliter glass bottles (or larger), which are fitted with Teflon-lined septa. The bottles are filled complete to force out air and to aid in forming a positive meniscus. Bottles are capped with convex Teflon septa to seal out air, and are inverted and tapped to verify that no air bubbles remain. Containers holding samples to be analyzed for other constituents are filled, filtered as required, and capped.

When required, an appropriate field-filtration technique is used to determine dissolved concentrations of metals. When a Teflon bailer is used, the contents are emptied into a pressure transfer vessel. A disposable 0.45-micron acrylic copolymer filter is threaded onto the transfer vessel at the discharge point and the vessel is sealed. The vessel is pressurized with a hand pump and the filtrate directed into appropriate containers. Each filter is used once and discharged.

When a bladder pump is used to collect samples for dissolved constituents, a sample is filtered through a disposable 0.450-micron acrylic copolymer filter attached directly to the pump effluent line with a pressure fitting. As the pump cycles, the effluent is pressured through the filter and directed into an appropriate container. Each filter is used once and discarded.

When a submersible or turbine pump is dedicated to a well, samples are collected either instream or from sampling ports on the system. In this case, a sampling procedure will be developed on a site-specific basis.

Sample Preservation and Handling

Procedures for handling and preserving samples are consistent with the guidelines referenced in the Introduction. Sample containers vary depending on the type of analysis required (e.g., volatile organics, hydrocarbons, or dissolved metals) and are non reactive with a given chemical.

Depending on the analysis to be run and the time between sampling and analysis events, sample containers may need to be pre-acidified with HCl, H_2SO_4, or HNO_3. A discussion with the project manager and laboratory are important prior to well sampling. For example, samples to be analyzed for alkalinity are never acidified and are collected in 500 mL precleaned plastic containers.

Sample Handling

Sample containers are labeled immediately after sample collection, and are kept on cold packs which are replaced daily until the containers are received at the laboratory. As a sample is collected, it is logged on the chain-of-custody record that accompanies samples to the laboratory.

In many cases, preplanning will allow sample container to be pre-labeled with all pertinent information except time of sampling. This, along with filling in the time on the chain-of-custody, need to be done at the time of sampling and the pre-labeling allows more time for measuring and recording the water quality parameters such as pH, temperature and conductivity.

Samples are transferred from the site to the laboratory by the sampling team. Laboratory personnel assign a different number to each sample container and the number is recorded on the chain-of-custody record and used to identify the sample on all subsequent internal chain-of-custody and analytical records. Within 24 hours of sample receipt, samples are routinely transported from TRG to laboratories performing the selected analyses. TRG's laboratory manager ensures that the holding times for requested analyses are not exceeded.

Sample Documentation

The procedures for sample handling provide chain-of-custody control from collection through storage. Sample documentation includes the following:

- Field logbooks for documenting sampling activities in the filed
- Labels for identifying individual samples
- Chain-of-custody records for documenting possession and transfer of samples
- Laboratory analysis requests for documenting analyses to be performed

Field Data Sheets

In the field, the sampler records the following information on the water sample field data sheet for each sample:

- Project number
- Client name
- Location
- Sampler's name
- Date and time
- Well accessibility and integrity
- Pertinent well data (e.g., casing diameter, depth to water, well depth)
- Calculated and actual purge volumes
- Purging equipment
- Sampling equipment
- Appearance of each sample (e.g., color, turbidity, sediment)
- Results of field analyses (temperature, pH, specific conductance)
- General comments

The field logbooks are signed by the sampler.

Labels

Sample labels contain the following information:

- Project number
- Sample number (i.e., well designation)

* Sampler's initials

* Date and time of collection

* Type of preservative used (if any)

Sampling and Analysis Chain-of-Custody Record

The sampling and analysis chain-of-custody record, initiated at the time of sampling, includes the well number, sample type, analytical request, date of sampling, the name of the sampler, and other information deemed pertinent. The sampler signs his name and records the data and time on the record sheet when transferring the samples to another person. Custody transfers are recorded for every sample; for example, if samples are split and sent to more than one laboratory, a record sheet accompanies each sample. The number of custodians in the chain of possession if kept to a minimum. A copy of the sampling and analysis chain-of-custody record is returned to TRG with the analytical results.

Groundwater Sampling and Analysis Request

The Groundwater Sampling and Analysis Request or the purchase order that accompanies samples to the laboratory serves as official communication of the particular analysis(es) required for each sample and is evidence that the chain of custody is complete.

At a minimum, the groundwater sampling and analysis request includes the following:

* Date submitted

* Specific analytical parameters

* Well number

* Sample source

Analytical Methods

Samples collected as part of the proposed monitoring programs are analyzed by accepted analytical procedures. The following publications are our primary references:

* Methods for Chemical Analysis of Water and Wastes
(EPA-0600/4-79-020, Revised March 1983)

* Methods for Organic Chemical Analysis of Municipal and Industrial Waste water
(EPA-600/4-82-057, July 1982)

* Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods
(EPA SW-846, 3rd Edition, November 1986)

* Leaking Underground Fuel Tank (LUFT) Manual, State Water Resources Control Board, State of California Leaking Underground Fuel Tank Task Force, May 1988.

The laboratories performing the analyses are certified by the California Department of Health Services (DHS) for hazardous waste testing.

Quality Control

Quality assurance measures confirm the integrity of field and laboratory data generated during the monitoring program. Procedures for assessing data quality are discussed in this section. Field and laboratory quality assurance data are evaluated in the technical reports.

Field Quality Assurance

Field quality assurance for each monitoring event includes the documentation of field instruments calibration and collection and analysis of trip blanks, field blanks, and duplicate samples. Split samples may also be included in the monitoring program.

Trip, Field and Equipment Blanks

Trip, field and equipment blanks are used to detect contamination introduced through sampling or cleaning procedures, external field conditions, sample transportation, container preparation, sample storage, and the analytical process.

Trip blanks are prepared at the same time and location as the sample containers for a given sampling event. Trip blanks accompany the containers to and from that event, but are never opened or exposed to the air. One trip blank for volatile organic parameters is typically included for each sampling event.

Field blanks are prepared in the same manner as trip blanks, but are exposed to the ambient atmosphere at a specific monitoring point during sample collection for the purpose of determining the influence of external field conditions on sample integrity. One field blank for volatile organic parameters is typically included for each day of sampling.

An equipment blank for dedicated bailers is used to check the cleaning process and eliminate a potential variable of contamination. In the case of a dishwasher load of clean bailers to be used at a particular site on a particular day, an equipment blank is prepared by choosing a Teflon sampling bailer out of the dishwasher as representative of the set of bailers washed. This randomly chosen bailer is assembled with latex gloves and filled with deionized water which is poured out three times, after which an equipment blank for volatile organic parameters is prepared by filling two 40-mL VOA vials with deionized water from the chosen bailer.

The equipment blank is carried in the cooler to the field and run along with the field blank. The trip blank can be held at the lab and only run if compounds are detected in the equipment blank. Otherwise, the equipment blank can also serve as the trip blank.

Duplicate Samples

Duplicate samples are collected so that field precision can be documented. For each sampling event, a specified percentage (typically 5 percent) of monitoring well samples is collected in duplicate. Where possible, field duplicates are collected at sampling points known or suspected to contain constituents of interest. Duplicates are packed and shipped blind to the laboratory to be analyzed with the samples from that particular event (i.e., duplicates have no special markings indicting that they are quality control samples).

Laboratory Quality Assurance

Laboratory quality assurance includes procedures required under the DHS Hazardous Waste Testing Program Quality assurance procedures in the Precision Environmental QA manual include the reporting of surrogate recoveries, matrix spike recoveries, and matrix spike duplicates (or duplicate) results.

Method blanks are analyzed daily for the purpose of assessing the effect of the laboratory environment on analytical results, and are performed for each constituent analyzed.

Samples to be analyzed for organic constituents contain surrogate spike compounds. Surrogate recoveries are used to determine whether analytical instruments are operating within limits. Surrogate recoveries are compared with control limits established and updated by the laboratory on the basis of its historical operation.

Matrix spikes are analyzed at a frequency of approximately 10 percent. Matrix spike results, are evaluated to determine whether the sample matrix is interfering with the laboratory analysis, and provide a measure of the accuracy of the analytical data. matrix spike recoveries are compared with control limits established and updated by the laboratory on the basis of its historical operation.

Laboratory duplicates are analyzed at a frequency of approximately 10 percent. Spike duplicates results are evaluated to determine the reproducibility (precision) of the analytical method. Reproducibility values are compared with control limits established and updated by the laboratory on the basis of its historical operation.

Laboratory QC data included with the analytical results are method blanks, surrogate spike recoveries (for organic parameters only), matrix spike recoveries, and matrix spike duplicates.

APPENDIX B

FIELD NOTES

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WATER SAMPLING LOG

Project No. ______ **Date** 1/16/96

Site Location ______

Well No. MW1 > **Sampling Personnel** Angel / Damien

Weather ______ **Time of Sampling** ______

EVACUATION DATA

Total Sounded Depth of Well Below MP 47' 4" **Water-Level Elevation** ______

Depth to Water Below MP 31' 10" 1/4" 31.85 47.333 31.854

Water Column in Well 15.47 **Diameter of Casing** 4"

Gallons per Foot .65

Gallons in Well 10.05 **Gallons Pumped/Bailed Prior to Sampling** 30.16 gal

Evacuation Method ______

Controller Readout (Hz) ______

Sampling Method and Material ______

Constituents Sampled	Container Description From Lab ______ or ______	Preservative

Time	Cum. Vol. Purged	Ph	Temp.	Cond.	Comments
9:00		8.55	64.2	15.65	

Remarks Turbidity >200 NTU

WELL CASING VOLUMES

GAL/FT	1¼" = 0.077	2" = 0.16	3" = 0.37	4" = 0.65
	1½" = 0.10	2½" = 0.24	3½" = 0.50	6" = 1.46

[redacted]

[redacted]

REYNOLDS GROUP

WATER SAMPLING LOG

Project No. ______________________ **Date** __________

Site Location ______________________

Well No. MW2 **Sampling Personnel** __________

Weather __________ **Time of Sampling** __________

EVACUATION DATA

Total Sounded Depth of Well Below MP 49' **Water-Level Elevation** __________

Depth to Water Below MP 32' 11.0" 32.92

Water Column in Well 16.1 **Diameter of Casing** 4"

Gallons per Foot .65

Gallons in Well 10.5 **Gallons Pumped/Bailed Prior to Sampling** 31.4 gal

Evacuation Method __________

Controller Readout (Hz) __________

Sampling Method and Material __________

Constituents Sampled	**Container Description From Lab ______ or ______**	**Preservative**

Time	Cum. Vol. Purged	Ph	Temp.	Cond.	Comments
		8.5	70.0	22.10	

Remarks Turbidity > 200 NTU

WELL CASING VOLUMES

GAL/FT

1¼" = [illegible]
1½" = [illegible]
2" = 0.16
2½" = 0.24
3" = 0.37
3½" = 0.50
4" = 0.65
6" = 1.46

[redacted]

REYNOLDS GROUP

WATER SAMPLING LOG

Project No. ____ **Date** ____

Site Location ____

Well No. MW3 **Sampling Personnel** ____

Weather ____ **Time of Sampling** ____

EVACUATION DATA

Total Sounded Depth of Well Below MP 48' Water-Level Elevation ____

Depth to Water Below MP 32' 10.0" 32.83

Water Column in Well 15.2 Diameter of Casing 4"

Gallons per Foot .65

Gallons in Well 9.88 Gallons Pumped/Bailed Prior to Sampling 29.64

Evacuation Method PVC Bailer

Controller Readout (Hz) ____

Sampling Method and Material ____

Constituents Sampled	Container Description From Lab ____ or ____	Preservative

Time	Cum. Vol. Purged	Ph	Temp.	Cond.	Comments
		7.66	69.1	23.21	

Remarks Turbidity = 176 NTU

WELL CASING VOLUMES

GAL/FT [illegible] 0.077 [illegible] 0.10 [illegible] = 0.16 [illegible] 3" = 0.37 3½" = 0.50 4" = 0.65 6" = 1.46

[redacted]
REYNOLDS GROUP

WATER SAMPLING LOG

Project No. ______ **Date** ______

Site Location ______

Well No. MW4 **Sampling Personnel** ______

Weather ______ **Time of Sampling** ______

EVACUATION DATA

Total Sounded Depth of Well Below MP 39' **Water-Level Elevation** ______

Depth to Water Below MP 34' 2 3/4" 34.23

Water Column in Well 4.77 **Diameter of Casing** 4"

Gallons per Foot .65

Gallons in Well 3.1 **Gallons Pumped/Bailed Prior to Sampling** 9.3

Evacuation Method ______

Controller Readout (Hz) ______

Sampling Method and Material ______

Constituents Sampled	Container Description From Lab ____ or ____	Preservative

Time	Cum. Vol. Purged	Ph	Temp.	Cond.	Comments

Remarks Turbidity 78 NTU

WELL CASING VOLUMES

GAL/FT
1¼" = 0.077
1½" = [illegible]
2" = 0.16
2½" = 0.24
3" = 0.37
3½" = 0.50
4" = 0.65
6" = 1.46

APPENDIX C

LABORATORY REPORT AND CHAIN OF CUSTODY DOCUMENTATION

CHEMICAL & ENVIRONMENTAL LABORATORIES, INC.

ANALYTICAL REPORT

---M8015(D)/BTEX---

Client Name:	Vector III	**Date Sampled:**	01-16-96
Project Manager:	Don Hollenbeck	**Date Analyzed:**	01-17-96
Project Name:	Malibu School District	**Date Reported:**	01-19-96

Sample Identification		Result (mg/L or ppm)				
C&E ID	Sample ID	Diesel	Benzene	Toluene	Ethylbenzene	Xylenes
60117B-1	MW-1	ND	ND	ND	ND	ND
60117B-2	MW-2	ND	ND	ND	ND	ND
60117B-3	MW-3	ND	0.0573	ND	0.0601	0.0016
60117B-4	MW-4	ND	0.1287	ND	0.0695	ND
60117B-5	Blank	ND	ND	ND	ND	ND
Detection Limit:		0.5	0.0003	0.0003	0.0003	0.0006

ND = Not detected at the indicated detection limit.

CHEMICAL & ENVIRONMENTAL LABORATORIES, INC.

CHAIN OF CUSTODY RECORD

60117 B

Client: Vector Three	Site Address: Malibu, CA [illegible]
Project No/Name: Malibu School District	
Project Manager: Don Hollenbeck	Sampled By: Angel Cardoza, Jr
Tel: (909) Fax:	Date 1/17/96 Page 1 of [illegible]

	SAMPLE ID	DATE	TIME	TYPE	CONTAINER TYPE	ANALYSES REQUIRED
1	MW1	1/16/96	10:00	Water	40mL VOA Vial	8015 diesel / 8020 BTEX
2	MW2	↓	↓	↓	↓	↓
3	MW3	↓	↓	↓	↓	↓
4	MW4	↓	↓	↓	↓	↓
5	Blank	↓	11:00	↓	↓	↓

Remarks:

Relinquished By:	Date	Time	Received By:	Date	Time
	1/17/96	4:30pm		1/17/96	4:30 pm
Relinquished By:	Date	Time	Received By:	Date	Time