TAIT Environmental Management, Inc.
Environmental · Engineering · Compliance

July 28, 2000

Mr. Mort Calvert
Mission Valley Rock Co.
7999 Athenour Way
Sunol, CA 94586

RE: SECOND QUARTER REPORT, JUNE 2000, MISSION VALLEY ROCK COMPANY, 7999 ATHENOUR WAY, SUNOL, CALIFORNIA, 94586

Dear Mr. Calvert:

Tait Environmental Management, Inc. (TEM) is pleased to submit this second quarter 2000 letter report of environmental services conducted at Mission Valley Rock (MVR) located at 7999 Athenour Way in Sunol, California (SITE). The SITE location is shown in Figure 1, SITE Vicinity Map. This report, including field work, figures, tables, and charts, has been prepared by or under the direct supervision of a California registered geologist whose signature and stamp are affixed.

SITE BACKGROUND

In May through June 1996 two (2) diesel Underground Storage Tanks (USTs) and one (1) gasoline UST was removed from the SITE. Tank removal, excavation, and subsequent soil sampling activities are documented in Tank Closure Report, Mission Valley Rock, 7999 Athenour Way, Sunol, CA. 94586 by Tank Protect Engineering of Northern California (TPE) in August 1996.

In June 1998 TPE installed and sampled three (3) monitoring wells at the SITE. Commencing in January 1999 until March 2000 TPE conducted quarterly sampling events at the SITE. Quarterly groundwater sampling at the SITE has indicated levels of petroleum constituents above their respective detection limits. Refer to Figure 2, SITE Plan, for locations of former USTs, structures, and monitoring wells MW-1, MW-2, and MW-3.

In June 2000 TEM was contracted by MVR to perform all future technical environmental activities at the SITE. Work conducted prior to June 2000 is documented by reports on file at offices of the Alameda County Health Care Services Agency and the California Regional Water Quality Control Board, San Francisco Bay Region.

WORK CONDUCTED DURING PRESENT QUARTER

Work conducted by TEM during the present second quarter of 2000 included:

- June 30, 2000 – Removed well caps on all wells to allow depth-to-groundwater to stabilize to atmospheric pressure (if necessary) for groundwater gradient and groundwater elevation determination.

- Measured depth-to-groundwater in monitoring wells MW-1 through MW-3 for evaluation of groundwater flow direction.

- Collected groundwater samples from each well for analysis for total petroleum hydrocarbons as diesel (TPH-D); gasoline (TPH-G); methyl-tert-butyl-ether (MTBE); and, benzene, toluene, ethylbenzene, and xylenes (BTEX).

GROUNDWATER SAMPLING PROCEDURES

On June 30, 2000, groundwater samples were collected from monitoring wells MW-1 through MW-3. Before sampling, each well was hand purged of between 8 and 10 gallons of groundwater (3.3 to 4.4 well volumes) with a dedicated weighted polyethylene disposable bailer. Purge water measurements were taken using a Horiba U10 Multiple Meter Sensor which measures pH, electrical conductivity, temperature, turbidity, and dissolved oxygen. Each well was purged until groundwater parameters stabilized as follows: pH within 0.1, temperature within 1° C, and electrical conductivity within 10%.

Because a dedicated bailer was used for each well sampled, no decontamination was necessary between wells. Gasoline, MTBE and BTEX water samples were collected in properly labeled and sterilized 40-milliliter glass Volatile Organic Analysis (VOA) vials having Teflon-lined screw caps using a Volatile Organic Compound (VOC) control flow bottom emptying device to minimize volatilization. Diesel samples were collected in properly labeled and sterilized amber one-liter glass containers having Teflon-lined screw caps. All samples were immediately stored on ice for later transport to California Environmental Protection Agency (Cal-EPA) Certified Entech Analytical Labs, Inc., located in Sunnyvale, California accompanied by proper chain-of-custody documentation.

All groundwater samples were analyzed for TPH-D by EPA 8015 modified (Extractable) and TPH-G, MTBE, and BTEX by EPA 8015 modified (purgeable) and EPA 8020.

Volume of water purged, calculated well volumes, and field water quality measurements, including dissolved oxygen, are summarized in Appendix A, Record of Water Sampling.

Condition of Well Covers

Observed well cover conditions during the second quarter sampling event were as follows:

- MW-1: Needs a replacement 2-inch casing cap and lock. Surface well cover intact.

- MW-2: Needs a replacement 2-inch casing cap and lock. One (1) of three (3) surface well cover bolts is stripped.

- MW-3: This well is located in the middle of the gravel truck road and receives high traffic of large gross vehicular weight. As such, the surface well cover is destroyed and not present. The 2-inch well cap to exposed to truck traffic. The security box is partially crushed.

As a temporary measure, a 12-inch by 14-inch steel plate (0.25-inch thick) has been placed over the well for protection.

Free Product

Each well was checked for floating product using a Solinst Oil/Water Interface Meter Model #122. Observations were as follows:

- MW-1: **No free product present.** Slight petroleum odor during purging.
- MW-2: **Initial thickness of free product was measured at 0.02 feet (0.25-inch).** Product was absent from the disposable bailer after 6 liters of groundwater were purged (six bailer pulls). Strong petroleum odor during remainder of purging event.
- MW-3: **No free product present.** Very slight petroleum odor during purging.

Disposal of Purge Water

Purge water was contained on-site in DOT approved 55-gallon open-ended drums. Drums were labeled to show material stored, date filled, company name, contact person, and telephone number. Purge water will be stored on-site until drums are filled for later disposable by a certified waste hauler.

GROUNDWATER DEPTH MEASUREMENTS

On June 30, 2000, depth-to-groundwater was measured from top of casing (TOC) in wells MW-1 through MW-3. Measurements were taken to the nearest 0.01-foot using a Solinst Oil/Water Interface Meter Model #122. A minimum of 3 repetitive measurements was made for each level determination to ensure accuracy. If sufficient free product was present, depth-to-groundwater was subtracted from the TOC elevation, measured relative to mean sea level, to calculate the elevation of groundwater level in each well. Table 1 presents groundwater elevation data, including the presence and thickness of free product. Chart 1 pictorially presents historic groundwater elevation measurements above mean sea level for MW-1, MW-2, and MW-3.

LABORATORY ANALYTICAL RESULTS

Analytical results above detection limits are as follows:

- MW-1: TPH-D at 70 micrograms per liter (µg/l), TPH-G at 450 µg/l, MTBE at 7.6 µg/l, benzene at 2.1 µg/l, ethylbenzene at 2.1 µg/l, and xylenes at 1.4 µg/l.
- MW-2: TPH-D at 1,700 µg/l, TPH-G at 270 µg/l, and MTBE at 17 µg/l.
- MW-3: TPH-D at 240 µg/l, TPH-G at 170 µg/l, and MTBE at 100 µg/l.

Analytical results for past and present quarters are summarized in attached Table 2, Summary of Analytical Results, Mission Valley Rock, Sunol, and documented in Appendix B, Certified Laboratory Data Sheets and Chain-of-Custody.

Charts 2A, 2B, and 2C present historic measurements of TPH-D, TPH-G, and MTBE respectively, and present analytical concentrations for MW-1, MW-2, and MW-3.

DATA INTERPRETATION

Figure 3, Groundwater Potentiometric Surface – Figure 3 indicates that groundwater flow direction was to the southeast toward San Antonio Creek, with an average gradient of 0.02 feet per foot (ft./ft.). The figure indicates that MW-3 is downgradient from the location of the former USTs. This is consistent with past quarterly groundwater flow direction and gradient measurements.

Chart 1, Historical Groundwater Elevation, indicates similar declining water elevation trends in all monitoring wells since they were installed in June 1998.

Figure 4, TPH-D Concentrations in Groundwater – Figure 4 indicates the highest concentration of TPH-D at MW-2 (1,700 µg/l). Charts 2A, and Historical TPH-D Concentrations indicate this is consistent with past quarterly analytical results. A thin layer of free product has consistently been present in this well since the inception of quarterly sampling in September 1999 (Table 1).

Figure 5, TPH-G Concentrations in Groundwater – Figure 5 indicates the highest concentration of TPH-G at MW-1 (170 µg/l), upgradient from the former UST locations, but closest to the former gasoline UST location. The lowest TPH-G concentration was recorded in downgradient monitoring well MW-3. Chart 2B, Historical TPH-G Concentrations, indicates this relationship is consistent with past quarterly results beginning with December 1999.

Figure 6, MTBE Concentrations in Groundwater – Figure 6 indicates the highest concentration of MTBE at downgradient MW-3 (100 µg/l), the lowest concentration at upgradient MW-1. Chart 2C, Historical MTBE Concentrations, indicates this relationship is consistent with past quarterly results beginning with December 1999.

Interpretation of Charts 2A, 2B, and 2C would indicate that only TPH-D shows a consistent decline in concentrations in groundwater since monitoring wells were installed in June 1998.

CONCLUSIONS AND RECOMMENDATIONS

The surface steel well cover for MW-3 has been destroyed by vehicular traffic.

Initial thickness of free product in MW-2 was measured at 0.02 feet.

Chemical analysis detected the following analytes above their respective detection limits:

- MW-1: TPH-D at 70 micrograms per liter (µg/l), TPH-G at 450 µg/l, MTBE at 7.6 µg/l, benzene at 2.1 µg/l, ethylbenzene at 2.1 µg/l, and xylenes at 1.4 µg/l.
- MW-2: TPH-D at 1,700 µg/l, TPH-G at 270 µg/l, and MTBE at 17 µg/l.
- MW-3: TPH-D at 240 µg/l, TPH-G at 170 µg/l, and MTBE at 100 µg/l.

Groundwater flow direction was to the southeast toward San Antonio Creek, with an average gradient of 0.02 feet per foot (ft./ft.).

Groundwater elevations have been declining consistently in all monitoring wells since their installation in June 1998.

TPH-D shows a consistent decline in concentrations in groundwater since monitoring wells were installed in June 1998.

TEM recommends the following:

- That all wells continue to be monitored for floating product, sheen and odors.
- Continued quarterly groundwater sampling to evaluate gradient and to monitor contaminant concentrations.
- Resumption of monthly purging of MW-2 for free product which was discontinued in May 1999.

The next sampling event is scheduled for September 2000.

CLOSURE

Two additional copies of this letter report have been included for your delivery to:

- Mr. Scott Seery
  Alameda County Health Care Services Agency
  Environmental Health Services
  1131 Harbor Bay Parkway, Suite 250
  Alameda, CA 94502-6577
- California Regional Water Quality Control Board
  San Francisco Bay Region
  Toxics Cleanup Division
  1515 Clay Street, Suite 1400
  Oakland, CA 94612

TEM recommends that this quarterly letter report be submitted with a cover letter from Mission Valley Rock Company. According to Alameda County Water District (ACWD) groundwater monitoring guidelines, the cover letter must be signed by an authorized representative and state, at a minimum, the following:

> "I declare under penalty of perjury, that the information and/or recommendations contained in the attached report are true and correct."

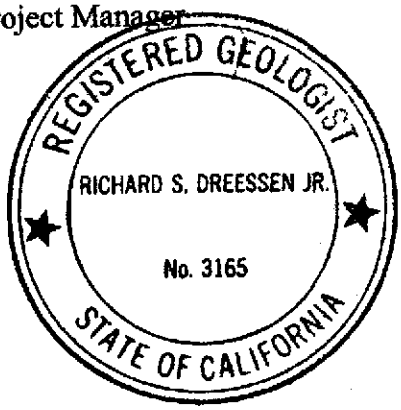
If you have any questions, please call TEM at (925) 899-3473 or by fax at (925) 837-1156.

Very Truly Yours,

TAIT ENVIRONMENTAL MANAGEMENT, INC.

Richard S. Dreessen Jr. R.G.
Project Manager

Ed Batlle
Director



MISSION VALLEY / ROCK COMPANY
ASPHALT COMPANY
READY MIX COMPANY

7999 ATHENOUR WAY SUNOL, CA 94586 (925) 862-2257

August 10, 2000

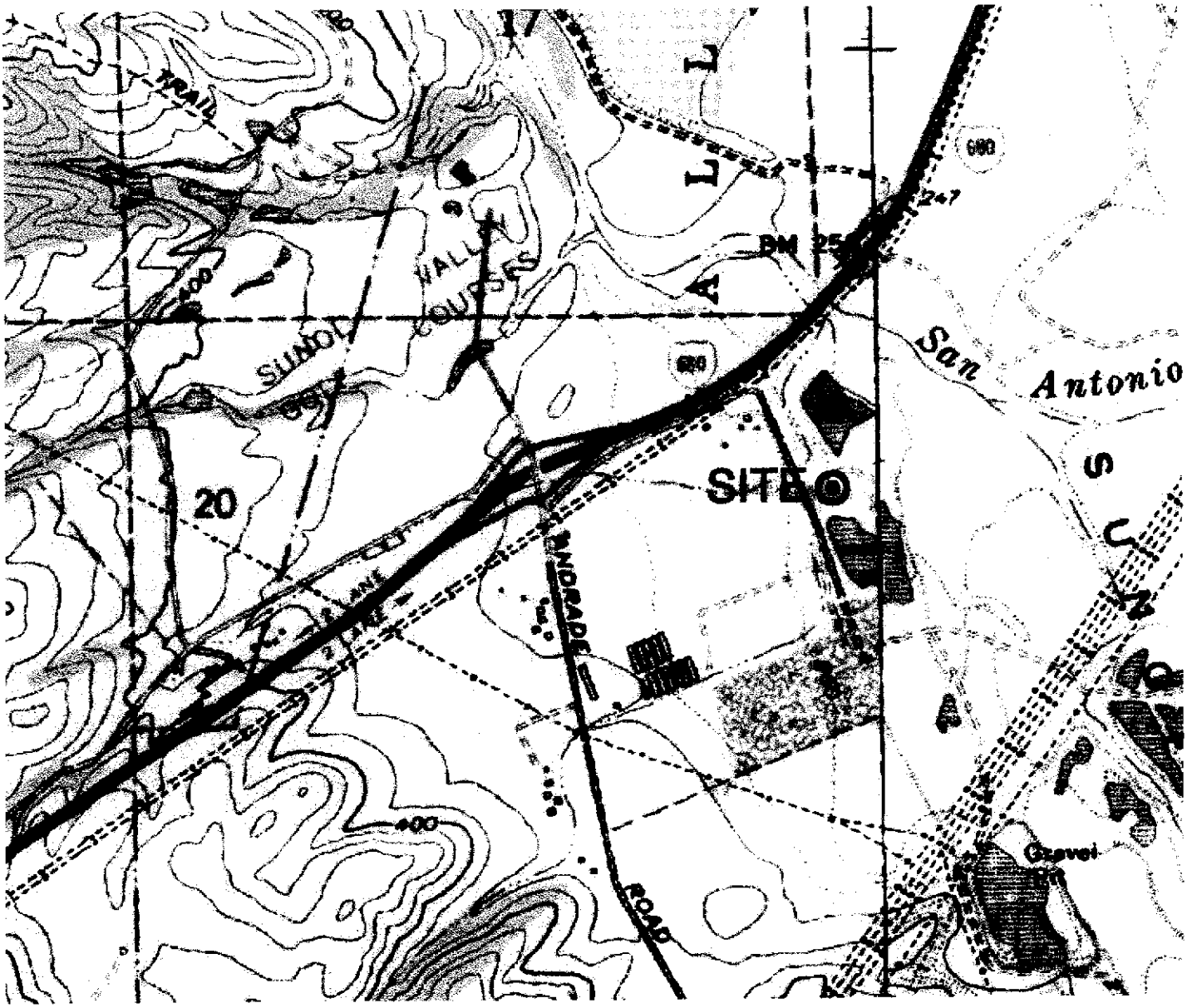
Mr. Scott Seery
Alameda County Health Care Services
1131 Harbor Bay Parkway Suite 250
Alameda, CA 94502-6577

Dear Mr. Seery:

Submitted herewith is the second quarter prepared by Mission Valley Rock Company's consultant, Tait Environmental Management Inc. If you require further information or clarification please direct your correspondence to Richard Dreessen at Tait with a copy to Mission Valley Rock Company at the above address.

Thank You,
MISSION VALLEY ROCK CO.

W.M. Calvert



NORTH

0 .25mi

1" = .25 miles

NOTES:

BASE MAP TAKEN FROM TERRASERVER.COM, UNITED STATES GEOLOGICAL SURVEY, FREEMONT QUADRANGLE, ALAMEDA COUNTY, CALIFORNIA. PRINTED JULY 1, 1989.

ENVIRONMENTAL MANAGEMENT, INC.
701 NORTH PARKCENTER DRIVE
SANTA ANA, CALIFORNIA 92705
(714) 560-8200
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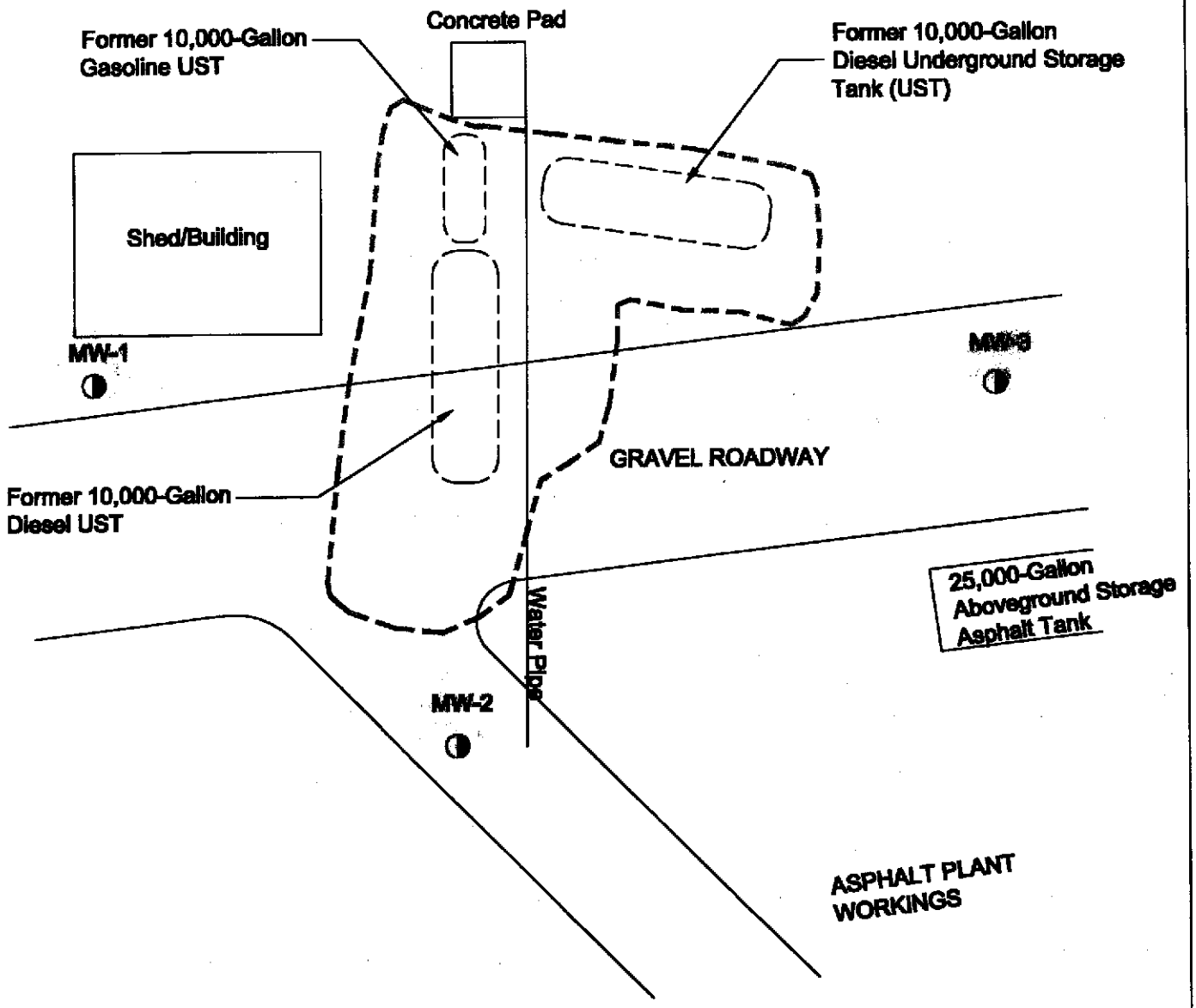
SITE VICINITY MAP

MISSION VALLEY ROCK CO.
7999 ATHENOUR WAY
SUNOL, CALIFORNIA

PROJECT NO. EM-5009	FIGURE 1

M: Tem2\Clients\Mission Valley Rock\Mission Valley Rock – Figure 1



NOTES:

BASE MAP TAKEN FROM TANK PROTECT ENGINEERING

ALL DIMENSIONS AND LOCATIONS ARE APPROXIMATE

EXPLANATION:

MW-2 ◑ GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

– – – – LIMITS OF EXCAVATION

0 20

Scale (1" = 20')

North

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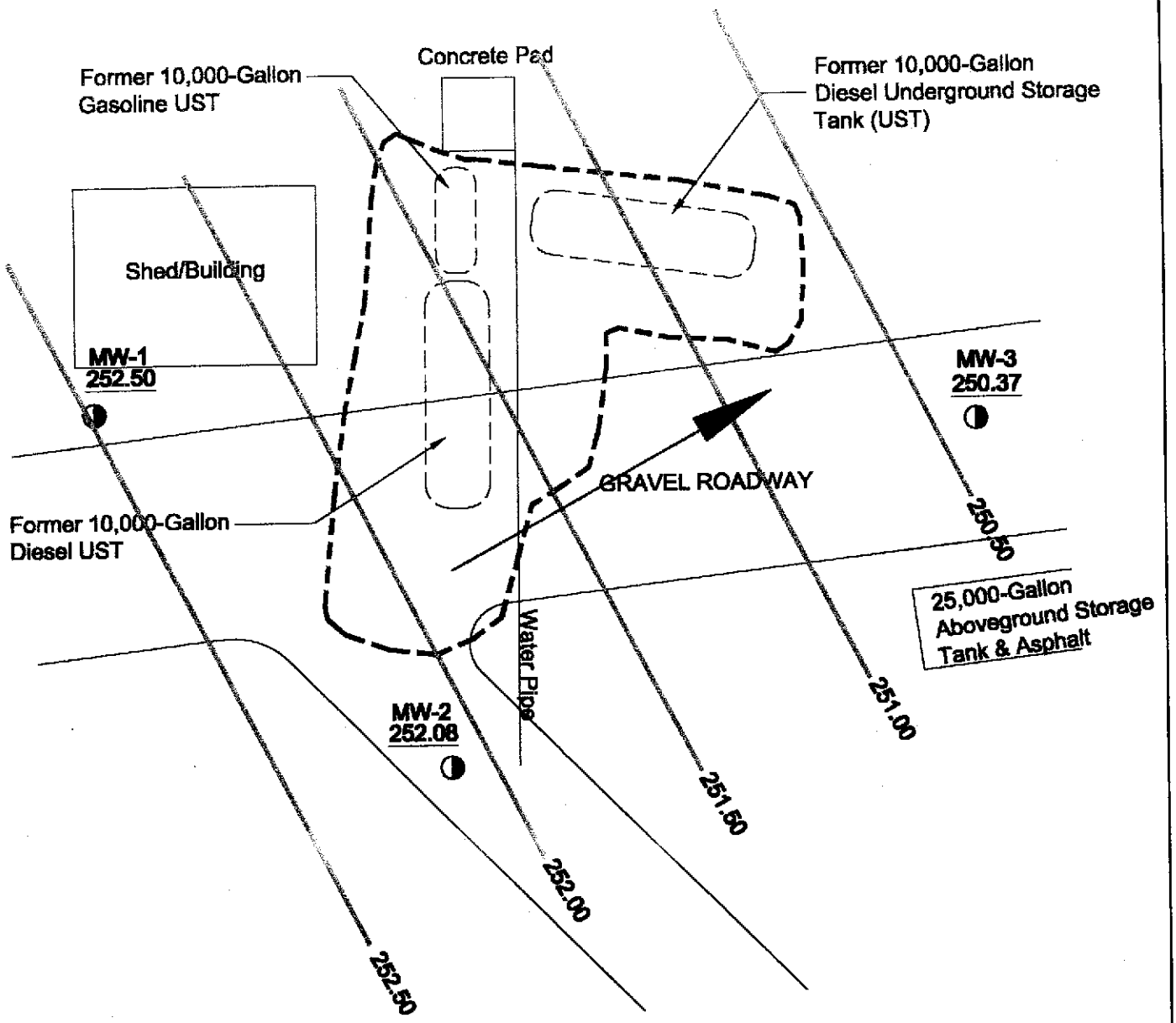
ENVIRONMENTAL MANAGEMENT, INC.

SITE PLAN

MISSION VALLEY ROCK CO.
7999 ATHENOUR WAY
SUNOL, CALIFORNIA

PROJECT NO. EM-5009 | FIGURE 2

M:Tem2\Clients\Mission Valley Rock\Mission Valley Rock - Figure 2



NOTES:

BASE MAP TAKEN FROM TANK PROTECT ENGINEERING

ALL DIMENSIONS AND LOCATIONS ARE APPROXIMATE

EXPLANATION:

MW-2 252.08 ◑ GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION WITH POTENTIOMETRIC ELEVATION IN FEET ABOVE MEAN SEA LEVEL

252.00 —— POTENTIOMETRIC CONTOUR

——► GROUNDWATER FLOW DIRECTION

– – – – LIMITS OF EXCAVATION

0 20

Scale (1" = 20')

North

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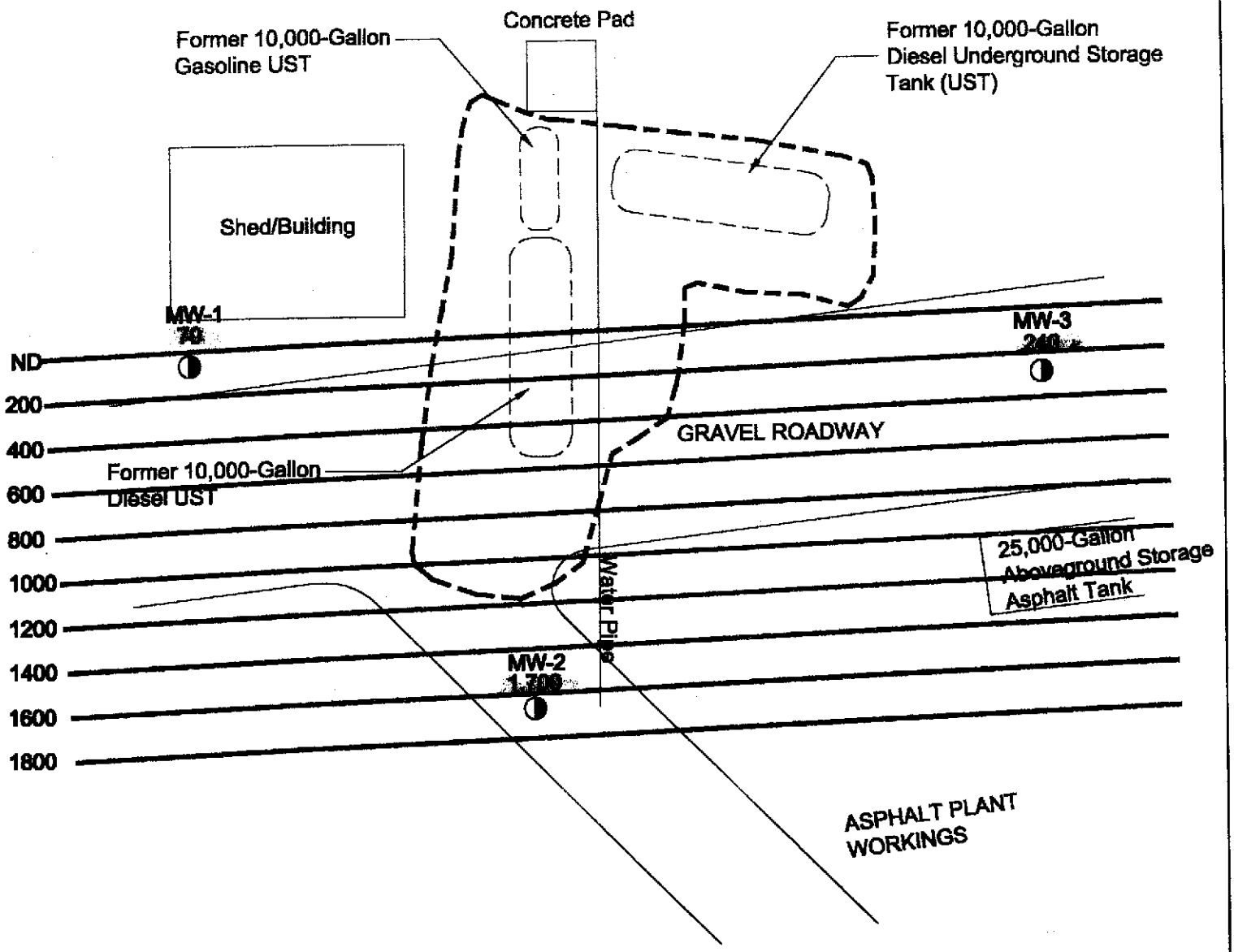
GROUNDWATER POTENTIOMETRIC SURFACE

MISSION VALLEY ROCK CO.
7999 ATHENOUR WAY
SUNOL, CALIFORNIA

PROJECT NO. EM-5009 | FIGURE 3

M:\Tom\2\Sunol\Mission Valley Rock\Mission Valley Rock - Figure 3



NOTES:

BASE MAP TAKEN FROM TANK PROTECT ENGINEERING

ALL DIMENSIONS AND LOCATIONS ARE APPROXIMATE

EXPLANATION:

MW-2 1,700 ◑ GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION WITH TOTAL PETROLEUM HYDROCARBONS AS DIESEL (TPH-D) CONCENTRATIONS IN MICROGRAMS PER LITER (ug/L)

1800 —— TPH-D CONTOURS WITH CONCNETRATIONS IN ug/L

– – – – LIMITS OF EXCAVATION

0 20

Scale (1" = 20')

North

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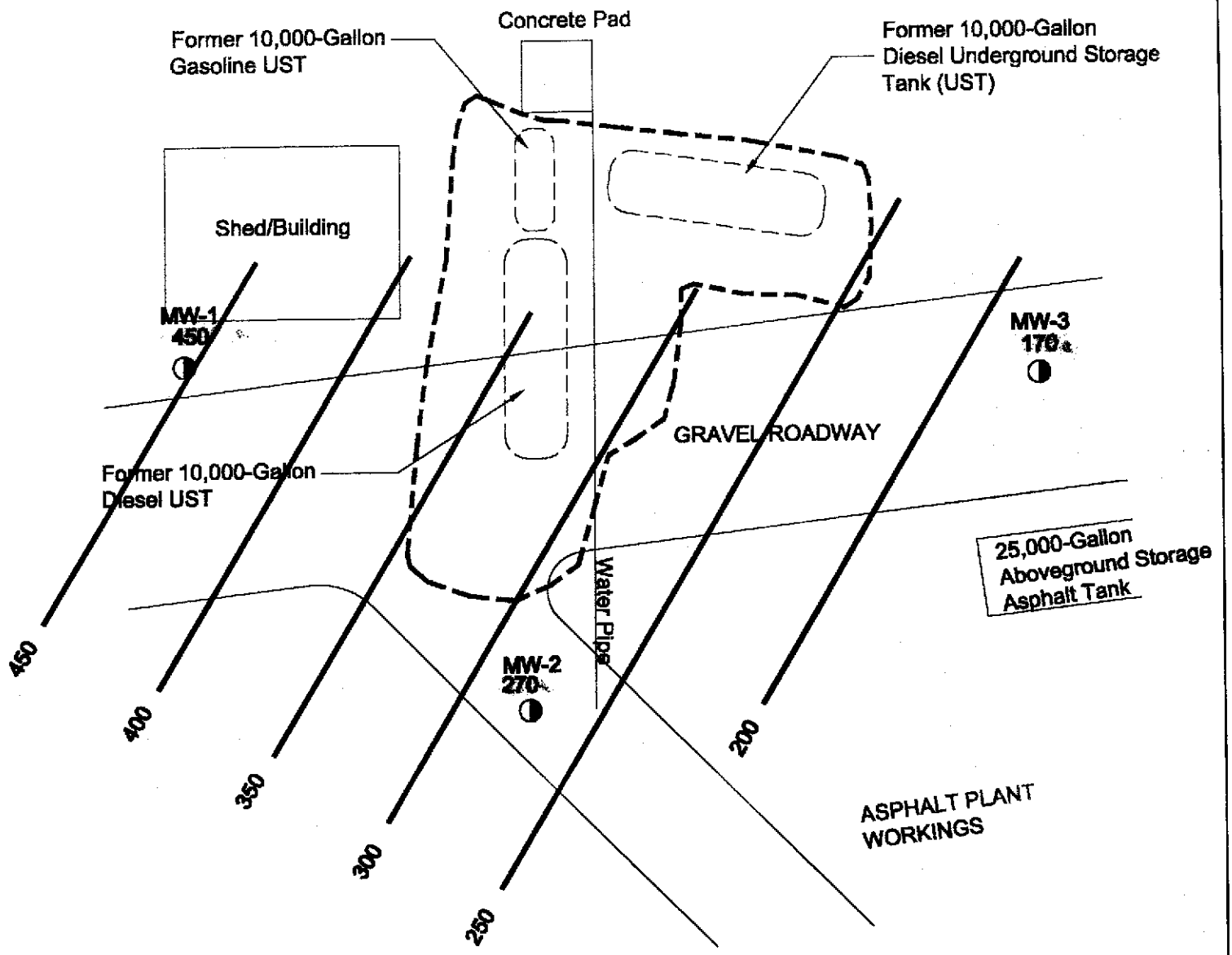
ENVIRONMENTAL MANAGEMENT, INC.

TPH-D CONCENTRATIONS IN GROUNDWATER

MISSION VALLEY ROCK CO.
7999 ATHENOUR WAY
SUNOL, CALIFORNIA

PROJECT NO. EM-5009 | FIGURE 4

M:Tem2\Clients\Mission Valley Rock\Mission Valley Rock - Figure 3



NOTES:

BASE MAP TAKEN FROM TANK PROTECT ENGINEERING

ALL DIMENSIONS AND LOCATIONS ARE APPROXIMATE

EXPLANATION:

MW-2 270 ◑ GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION WITH TOTAL PETROLEUM HYDROCARBONS AS GASOLINE (TPH-G) CONCENTRATIONS IN MICROGRAMS PER LITER (ug/L)

450 —— TPH-G CONTOURS WITH CONCNETRATIONS IN ug/L

– – – – LIMITS OF EXCAVATION

0 20

Scale (1" = 20')

North

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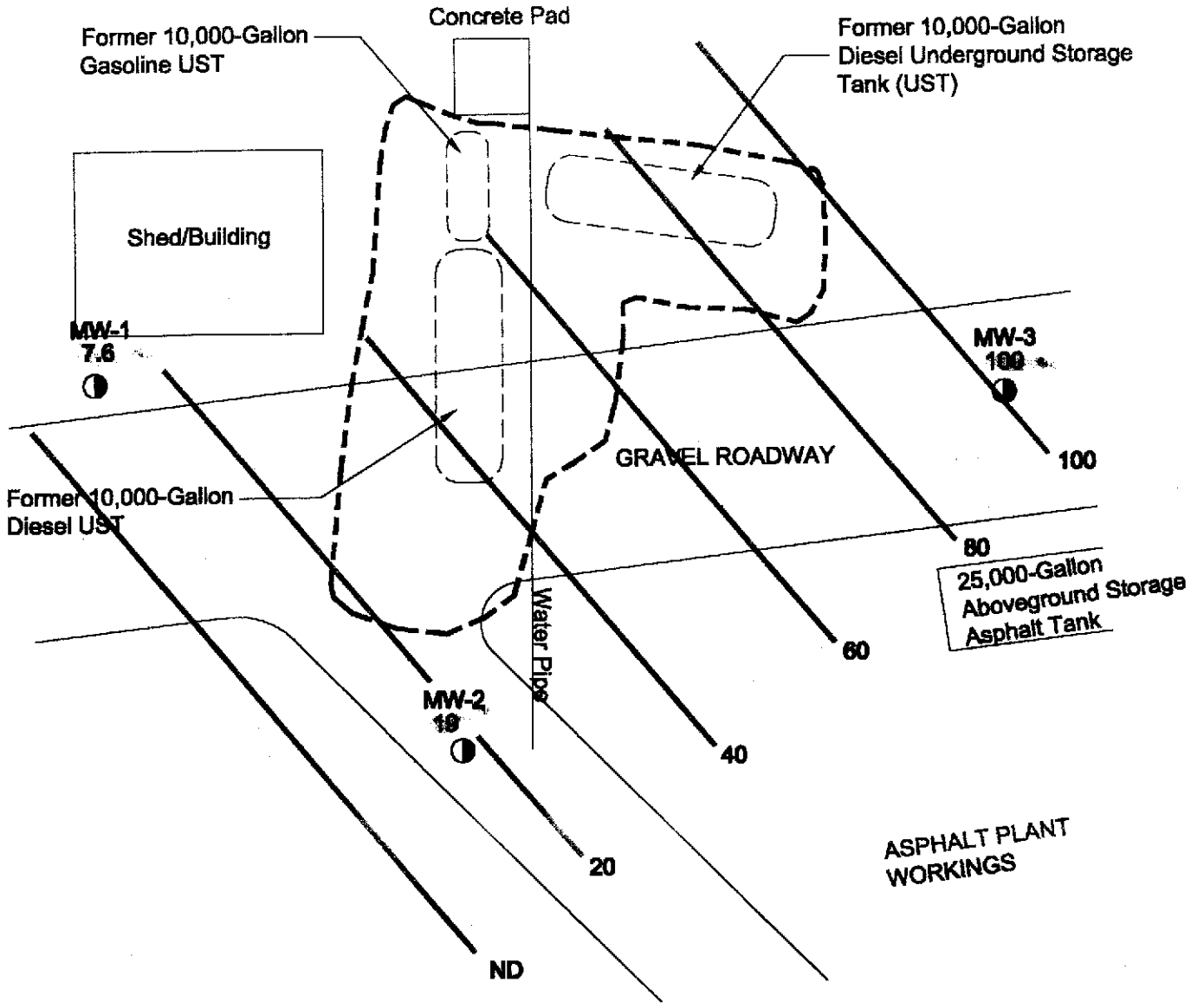
TPH-G CONCENTRATIONS IN GROUNDWATER

MISSION VALLEY ROCK CO.
7999 ATHENOUR WAY
SUNOL, CALIFORNIA

PROJECT NO. EM-5009	FIGURE 5



NOTES:

BASE MAP TAKEN FROM TANK PROTECT ENGINEERING

ALL DIMENSIONS AND LOCATIONS ARE APPROXIMATE

EXPLANATION:

MW-2 / 19 / ◑ — GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION WITH METHYL-TERT-BUTYL ETHER (MTBE) CONCENTRATIONS IN MICROGRAMS PER LITER (ug/L)

300 —— MTBE CONTOURS WITH CONCNETRATIONS IN ug/L

– – – – LIMITS OF EXCAVATION

0 20

Scale (1" = 20')

North

ENVIRONMENTAL MANAGEMENT, INC.
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MTBE CONCENTRATIONS IN GROUNDWATER

MISSION VALLEY ROCK CO.
7999 ATHENOUR WAY
SUNOL, CALIFORNIA

PROJECT NO. EM-5009	FIGURE 6

M:\Tom\2Client\Mission Valley Rock\Mission Valley Rock - Figure 6

TABLE 1
SUMMARY OF GROUNDWATER DATA
MISSION VALLEY ROCK CO.
SUNOL, CALIFORNIA

Well	Date	Depth to Water (feet bgs)	Groundwater Elevation (msl)	Product thickness (feet)
MW-1	Jun-98	-1.32	255.19	0
TOC=256.51' msl	Jan-99	-2.28	254.23	0
Screen: 5'-20' bgs	Mar-99	-1.88	254.63	0
	Jun-99	-3.35	253.16	0
	Sep-99	-3.66	252.86	0
	Dec-99	-2.94	253.57	0
	Mar-00	-2.72	253.79	ODOR
	Jun-00	-4.01	252.50	SLIGHT ODOR

Well	Date	Depth to Water (feet bgs)	Groundwater Elevation (msl)	Product thickness (feet)
MW-2	Jun-98	-1.72	254.98	0.005
TOC=256.70' msl	Jan-99	-2.69	254.01	4.00
Screen: 5'-20' bgs	Mar-99	-2.50	254.20	0
	Jun-99	-4.00	252.70	SHEEN
	Sep-99	-4.54	252.16	0.50
	Dec-99	-3.85	252.85	0.13
	Mar-00	-3.20	253.50	0.03
	Jun-00	-4.62	252.08	0.02

Well	Date	Depth to Water (feet bgs)	Groundwater Elevation (msl)	Product thickness (feet)
MW-3	Jun-98	-2.66	254.06	0
TOC=256.72' msl	Jan-99	-4.47	252.25	SLIGHT ODOR
Screen: 5'-20' bgs	Mar-99	-3.96	252.76	SHEEN
	Jun-99	-5.54	251.18	0
	Sep-99	-6.18	250.54	SHEEN
	Dec-99	-5.52	251.20	ODOR
	Mar-00	-4.61	252.11	ODOR
	Jun-00	-6.35	250.37	VERY SLIGHT ODOR

TOC = Top of Casing surveyed above mean seal level.
bgs = Below Ground Surface
msl = Mean Sea Level

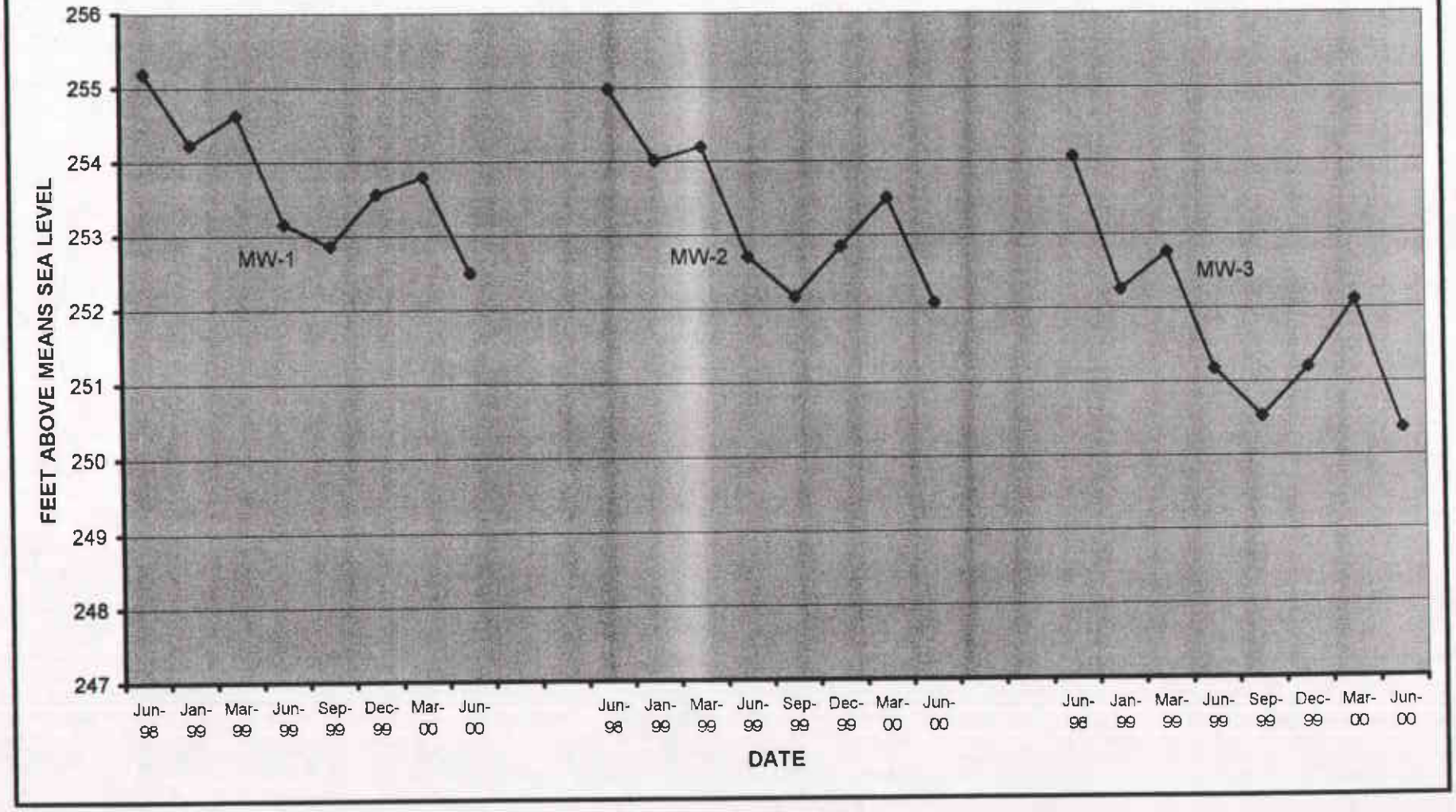
TABLE 2
SUMMARY OF ANALYTICAL RESULTS
MISSION VALLEY ROCK CO.
SUNOL, CALIFORNIA

WELL	DATE	TPHD	TPHG	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes	BTEX SUM
MW-1	Jun-98	<50	3100	110	19	2.3	91	48	160.3
	Oct-98	<50	2300	<0.5	3.1	4.2	5	15	27.3
	Dec-98	350	<50	<0.5	12	7.5	20	6.2	45.7
	Mar-99	190	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0
	Jun-99	210	1800	<0.5	1.2	0.9	1.5	4.6	8.2
	Sep-99	62	180	<0.5	<0.5	<0.5	<0.5	<0.5	0
	Dec-99	290	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0
	Mar-00	86	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0
	Jun-00	70	450	7.6	2.1	<0.5	2.1	1.4	5.6
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MW-3	Jun-98	12000	300	150	0.8	<0.5	<0.5	<0.5	0.8
	Oct-98	6400	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0
	Dec-98	5600	<100	110	1.6	1.4	<1	<1	3
	Mar-99	150	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0
	Jun-99	620	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0
	Sep-99	1500	230	89	<0.5	<0.5	<0.5	<0.5	0
	Dec-99	58	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0
	Mar-00	94	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0
	Jun-00	240	170	100	<0.5	0.52	<0.5	<0.5	0.52

ug/l

TPH-D = Total Petroleum Hydrocarbons as Diesel. EPA Method 8015M (Extractable).
TPH-G = Total Petroleum Hydrocarbons as Gasoline. EPA Method 8015M (Purgeable).
MTBE = Methyl-tert-Butyl Ether. EPA Method 8020.
BTEX = Benzene, Toluene, Ethyl Benzene, Xylenes. EPA Method 8020.
< = Not Detected at or above Detection Reporting Limit.

CHART 1
HISTORICAL GROUNDWATER ELEVATION
MISSION VALLEY ROCK, SUNOL



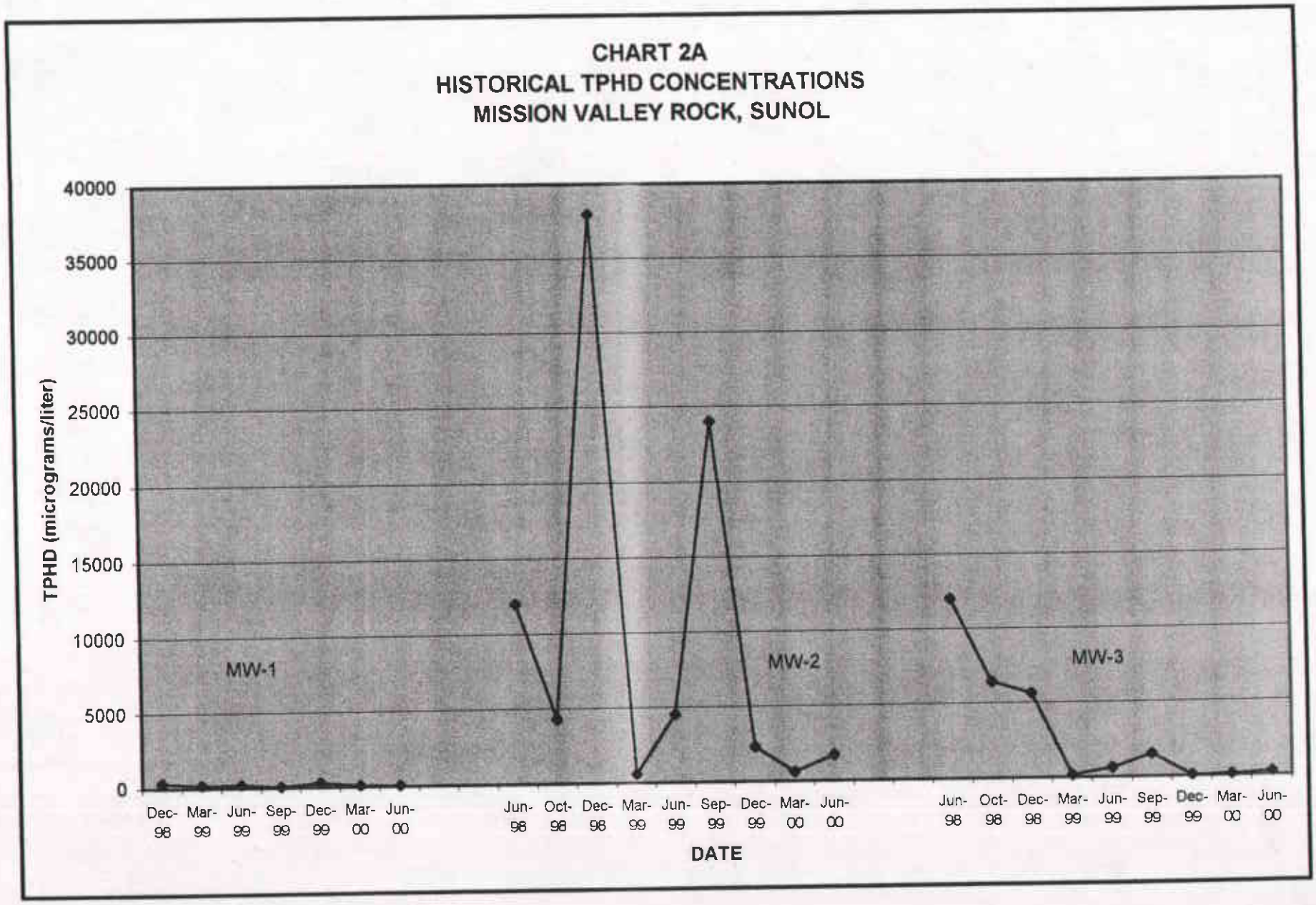
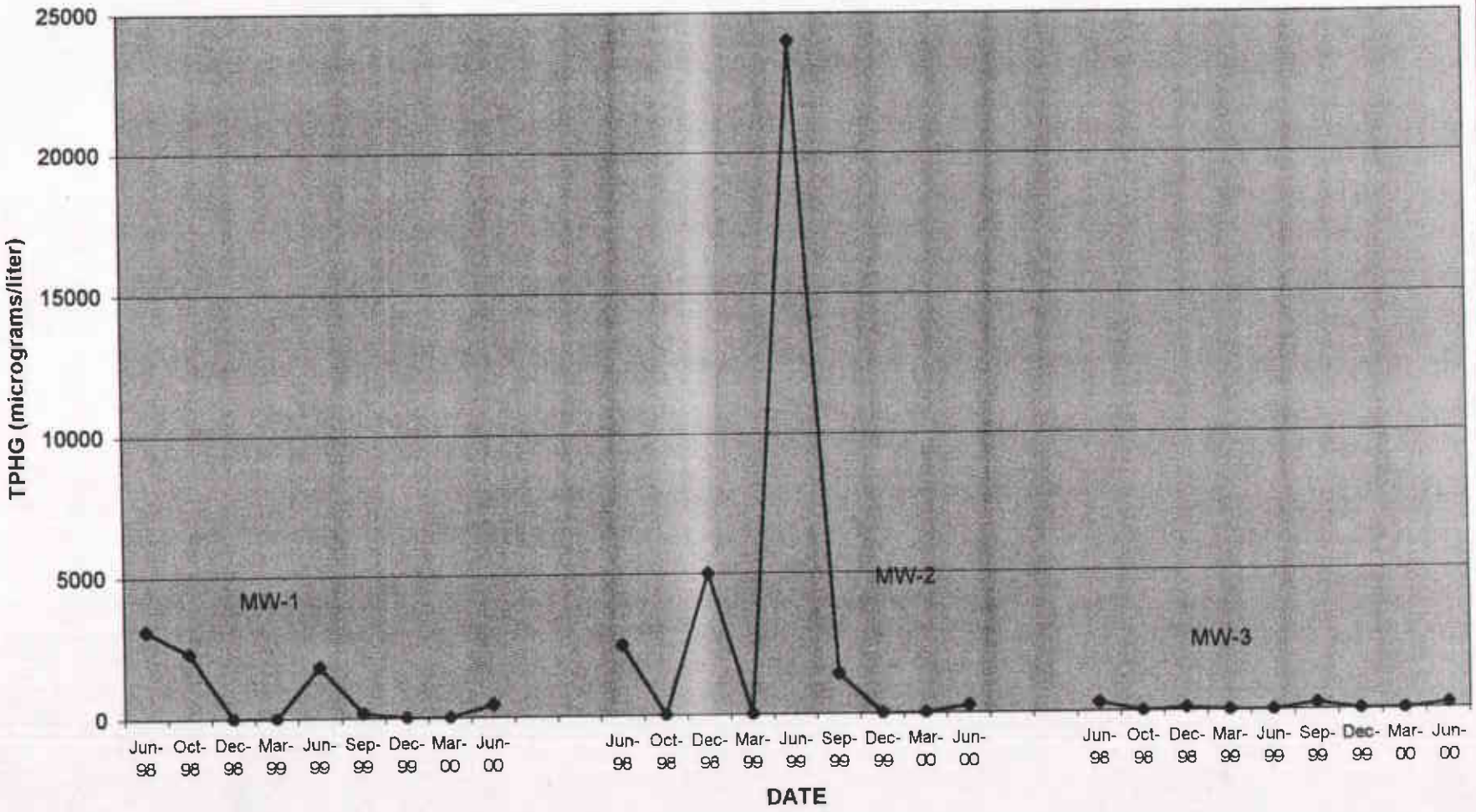


CHART 2A
HISTORICAL TPHD CONCENTRATIONS
MISSION VALLEY ROCK, SUNOL
TPHD (micrograms/liter)
40000
35000
30000
25000
20000
15000
10000
5000
0
MW-1
MW-2
MW-3
Dec-98
Mar-99
Jun-99
Sep-99
Dec-99
Mar-00
Jun-00
Jun-98
Oct-98
DATE

CHART 2B
HISTORICAL TPHG CONCENTRATIONS
MISSION VALLEY ROCK, SUNOL



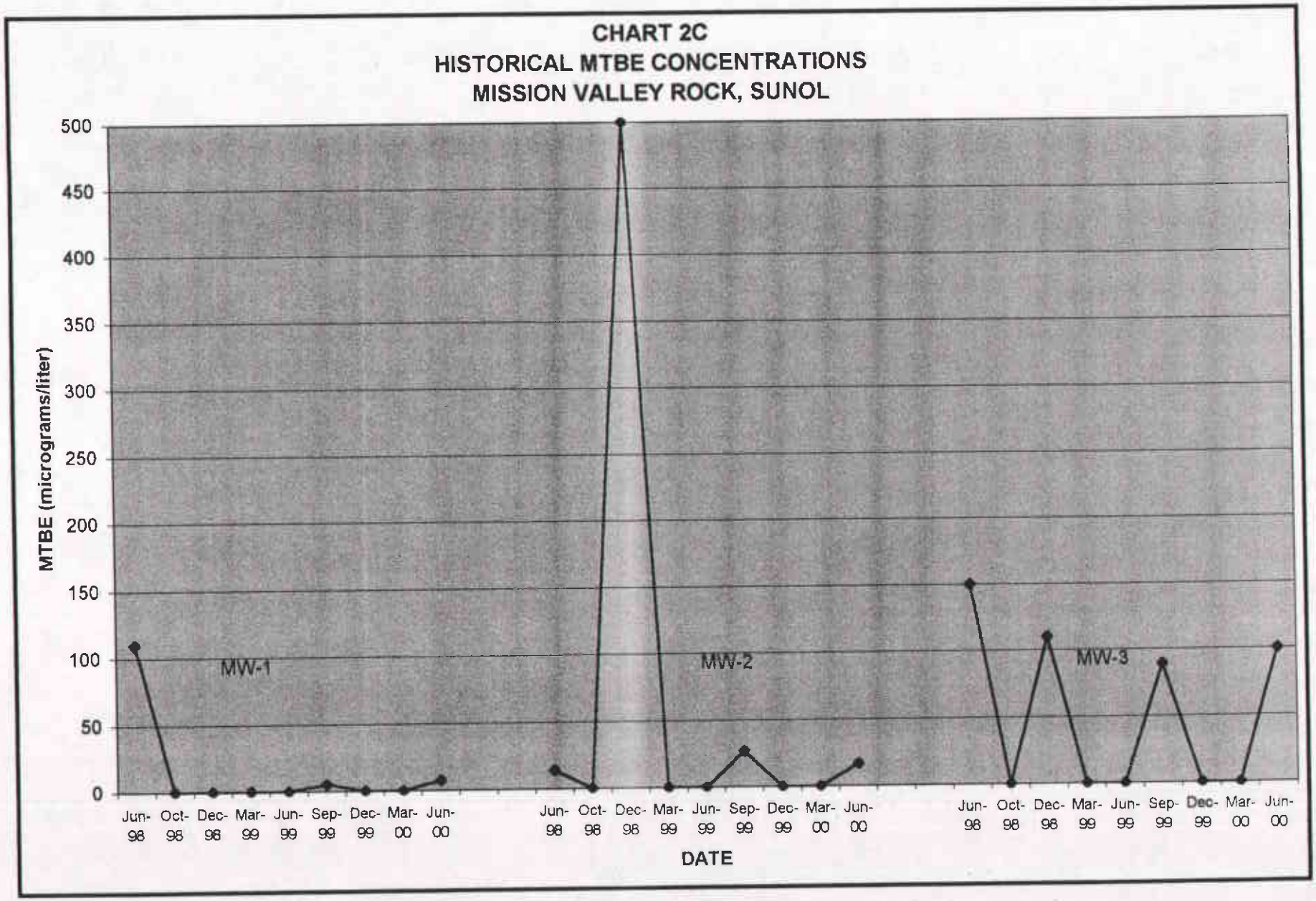


CHART 2C
HISTORICAL MTBE CONCENTRATIONS
MISSION VALLEY ROCK, SUNOL
MTBE (micrograms/liter)
500
450
400
350
300
250
200
150
100
50
0
MW-1
MW-2
MW-3
Jun-98
Oct-98
Dec-98
Mar-99
Jun-99
Sep-99
Dec-99
Mar-00
Jun-00
DATE

APPENDIX A
WELL SAMPLING FORMS

RECORD OF WATER SAMPLING

OJECT NO.: 5009 DATE: 6/30/00 WELL NO.: MW-1

PROJECT NAME: Mission Valley Rock WELL DIAMETER: 2"

PROJECT LOCATION: Sunol, CA TOC ELEV: —

SAMPLER: R S D LOCK NO.: —

ANALYSES: TPHD, TPHG, MBTEX

WELL DEPTH (from construction detail): —

WELL DEPTH (measured): 16.32 (4-00) SOFT BOTTOM?: —

DEPTH TO WATER: 14.01 TIME: 0834

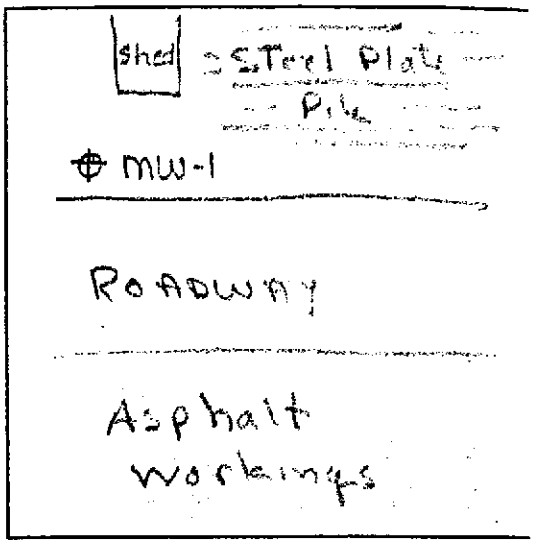
PRESSURE (circle one)?: YES OR ~~NO~~

IF YES, WAS PRESSURE (circle one): POSITIVE OR NEGATIVE?

WATER VOLUME IN WELL: 1.97

[2-INCH CASING = 0.16 GAL/FT] [4-INCH CASING = 0.65 GAL/FT]

[6-INCH CASING = 1.47 GAL/FT] [1 GAL = 3.78 L]



LOCATION MAP

CALCULATED PURGE VOL. (GAL): 5.9 (L): ACTUAL PURGE VOL. (GAL): 8 (L):

PURGE METHOD: Bail by hand SAMPLE METHOD: Disposable Bailer

FIELD MEASUREMENTS

Time	Depth to Water (FT)	Vol (L)	Temp C (Deg. F)	pH	EC	Clarity	Turbidity (NTU)	Remarks
0855	—	—	19.4	3.91	1,03		185	No Odor, Sheen DO = 8.57
0900		2	18.6	3.94	0.99		145	Slight Odor DO = 1.59
0905	-	4	18.5	3.99	.887		185	✓ DO = 7.80
0909		6	18.1	3.97	.881		321	✓ DO = 1.63
0913		8	18.1	3.98	.883		476	✓ DO = 3.64
			SAMPLED	@		1041		

WATER VOL. IN DRUM: Full

NEED NEW DRUM?: Yes

SIGNATURE:

RECORD OF WATER SAMPLING

OJECT NO.: 5009 DATE: 6/30/00

WELL NO.: MW-2

PROJECT NAME: Mission Valley Rock

WELL DIAMETER: 2"

PROJECT LOCATION: Sunol, CA

TOC ELEV: -

SAMPLER: R & D

LOCK NO.: -

ANALYSES: Tphd, Tphg, mBTEX

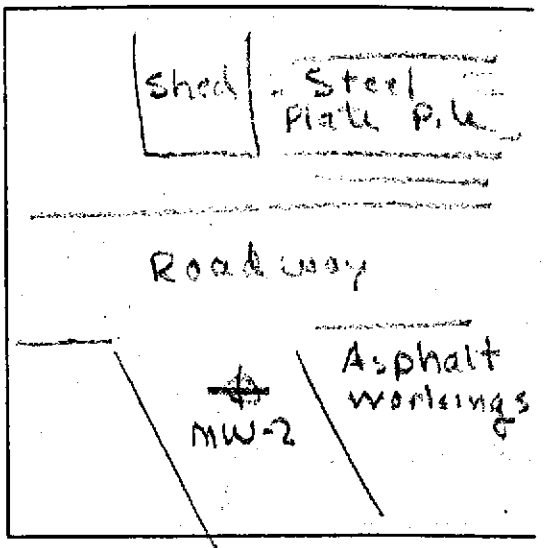
WELL DEPTH (from construction detail): -

WELL DEPTH (measured): 19.58 (4-00) SOFT BOTTOM?: -

DEPTH TO WATER: Product 4.6', Water @ 4.62' TIME: 0840

PRESSURE (circle one)?: YES OR ~~NO~~

IF YES, WAS PRESSURE (circle one): POSITIVE OR NEGATIVE?



LOCATION MAP

WATER VOLUME IN WELL: 3.04

[2-INCH CASING = 0.16 GAL/FT] [4-INCH CASING = 0.65 GAL/FT]

[6-INCH CASING = 1.47 GAL/FT] [1 GAL = 3.78 L]

CALCULATED PURGE VOL. (GAL): 9.1 (L): ACTUAL PURGE VOL. (GAL): 10 (L):

PURGE METHOD: Handbail SAMPLE METHOD: Disposable Bailer

FIELD MEASUREMENTS

Time	Depth to Water (FT)	Vol (L)	Temp (Deg. F)	pH	EC	Clarity	Turbidity (NTU)	Remarks
0954	-	2	20.0	4.04	1.20		37	~~Free Product~~ DO=0.64
1001	-	4	19.8	4.03	1.26		347	Prod. bailed out DO=0.99
1006		6	20.3	4.02	1.27		401	~~STRONG ODOR~~ DO=0.91
1011		8	20.2	4.02	1.34		372	✓ DO=1.08
1016		10	20.2	4.02	1.29		776	✓ DO=1.15
			SAMPLED	AT	1032			

WATER VOL. IN DRUM: Full

NEED NEW DRUM?: Yes

SIGNATURE:

RECORD OF WATER SAMPLING

OJECT NO.: 5009 DATE: 6/30/00

WELL NO.: MW-3

PROJECT NAME: Mission Valley Rock

WELL DIAMETER: 2"

PROJECT LOCATION: Sunol

TOC ELEV:

SAMPLER: R S D

LOCK NO.:

ANALYSES: Tphd, Tphg, MBTEX

WELL DEPTH (from construction detail): —

WELL DEPTH (measured): 17.8 (4-00) SOFT BOTTOM?:

DEPTH TO WATER: 6.35 TIME: 0836

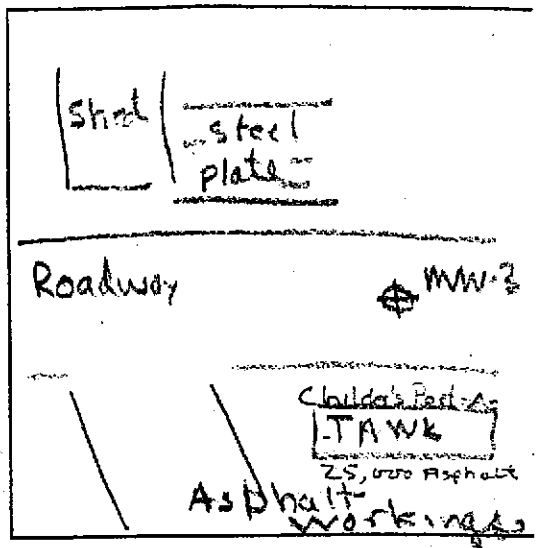
PRESSURE (circle one)?: YES OR ~~NO~~

IF YES, WAS PRESSURE (circle one): POSITIVE OR NEGATIVE?

WATER VOLUME IN WELL: 1.8

[2-INCH CASING = 0.16 GAL/FT] [4-INCH CASING = 0.65 GAL/FT]

[6-INCH CASING = 1.47 GAL/FT] [1 GAL = 3.78 L]



LOCATION MAP

CALCULATED PURGE VOL. (GAL): 5-5 (L): ACTUAL PURGE VOL. (GAL): 8 (L):

PURGE METHOD: Hand bail SAMPLE METHOD: disposable bailer

FIELD MEASUREMENTS

Time	Depth to Water (FT)	Vol (L)	Temp C. (Deg. F)	pH	EC	Clarity	Turbidity (NTU)	Remarks
0919	—	0	19.6	4.01	.838		17	No ODOR DO = 2.82
0924		2	19.4	3.96	.839		350	✓ DO = 1.32
0928		4	19.4	3.95	.842		457	Very Slight Odor DO = 1.20
0933		6	19.5	3.97	.834		925	✓ DO = 1.45
0937		8	19.6	3.95	.838		999	✓ DO = 1.09
			SAMPLED @ 1047					

WATER VOL. IN DRUM: Full

NEED NEW DRUM?: Yes

SIGNATURE:

APPENDIX B
LABORATORY DATA SHEETS AND CHAIN-OF-CUSTODY

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

July 11, 2000

Rick Dreessen
TAIT Environmental Management
275 Paraiso Drive
Danville, CA 94526

Order: 21238
Project Name: MISSION VALLEY ROCK
Project Number:
Project Notes:

Date Collected: 6/30/00
Date Received: 6/30/00
P.O. Number:

On June 30, 2000, samples were received under documentented chain of custody. Results for the following analyses are attached:

Matrix	Test	Method
Liquid	Gas/BTEX/MTBE	EPA 8015 MOD. (Purgeable)
		EPA 8020
	TPH as Diesel	EPA 8015 MOD. (Extractable)

Chemical analysis of these samples has been completed. Summaries of the data are contained on the following pages. USEPA protocols for sample storage and preservation were followed.

Entech Analytical Labs, Inc. is certified by the State of California (#2346). If you have any questions regarding procedures or results, please call me at 408-735-1550.

Sincerely,

Michelle L. Anderson
Lab Director

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

TAIT Environmental Management
275 Paraiso Drive
Danville, CA 94526
Attn: Rick Dreessen

Date: 7/11/00
Date Received: 6/30/00
Project Name: MISSION VALLEY ROCK
Project Number:
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 21238 **Lab Sample ID:** 21238-001 **Client Sample ID:** MW-1
Sample Time: 10:41 AM **Sample Date:** 6/30/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	70	x	1	50	50	µg/L	7/7/00	7/8/00	DW000701	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits (%)
Hexacosane	97	65 - 135

Order ID: 21238 **Lab Sample ID:** 21238-002 **Client Sample ID:** MW-2
Sample Time: 10:32 AM **Sample Date:** 6/30/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	1700		1	50	50	µg/L	7/7/00	7/8/00	DW000701	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits (%)
Hexacosane	98	65 - 135

Order ID: 21238 **Lab Sample ID:** 21238-003 **Client Sample ID:** MW-3
Sample Time: 10:47 AM **Sample Date:** 6/30/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	240		1	50	50	µg/L	7/7/00	7/8/00	DW000701	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits (%)
Hexacosane	93	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

TAIT Environmental Management
275 Paraiso Drive
Danville, CA 94526
Attn: Rick Dreessen

Date: 7/11/00
Date Received: 6/30/00
Project Name: MISSION VALLEY ROCK
Project Number:
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 21238 **Lab Sample ID:** 21238-001 **Client Sample ID:** MW-1

Sample Time: 10:41 AM **Sample Date:** 6/30/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	2.1		1	0.5	0.5	µg/L	N/A	7/6/00	WGC1000705	EPA 8020
Toluene	ND		1	0.5	0.5	µg/L	N/A	7/6/00	WGC1000705	EPA 8020
Ethyl Benzene	2.1		1	0.5	0.5	µg/L	N/A	7/6/00	WGC1000705	EPA 8020
Xylenes, Total	1.4		1	0.5	0.5	µg/L	N/A	7/6/00	WGC1000705	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	107	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	7.6		1	5	5	µg/L	N/A	7/6/00	WGC1000705	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	107	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	450		1	50	50	µg/L	N/A	7/6/00	WGC1000705	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	98	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

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TAIT Environmental Management
275 Paraiso Drive
Danville, CA 94526
Attn: Rick Dreessen

Date: 7/11/00
Date Received: 6/30/00
Project Name: MISSION VALLEY ROCK
Project Number:
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 21238 **Lab Sample ID:** 21238-002 **Client Sample ID:** MW-2

Sample Time: 10:32 AM **Sample Date:** 6/30/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		1	0.5	0.5	µg/L	N/A	7/7/00	WGC2000707	EPA 8020
Toluene	ND		1	0.5	0.5	µg/L	N/A	7/7/00	WGC2000707	EPA 8020
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	7/7/00	WGC2000707	EPA 8020
Xylenes, Total	ND		1	0.5	0.5	µg/L	N/A	7/7/00	WGC2000707	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	100	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	17		1	5	5	µg/L	N/A	7/7/00	WGC2000707	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	100	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	270	x	1	50	50	µg/L	N/A	7/7/00	WGC2000707	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	110	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

TAIT Environmental Management
275 Paraiso Drive
Danville, CA 94526
Attn: Rick Dreessen

Date: 7/11/00
Date Received: 6/30/00
Project Name: MISSION VALLEY ROCK
Project Number:
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 21238 **Lab Sample ID:** 21238-003 **Client Sample ID:** MW-3

Sample Time: 10:47 AM **Sample Date:** 6/30/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		1	0.5	0.5	µg/L	N/A	7/7/00	WGC2000707	EPA 8020
Toluene	0.52		1	0.5	0.5	µg/L	N/A	7/7/00	WGC2000707	EPA 8020
Ethyl Benzene	ND		1	0.5	0.5	µg/L	N/A	7/7/00	WGC2000707	EPA 8020
Xylenes, Total	ND		1	0.5	0.5	µg/L	N/A	7/7/00	WGC2000707	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	101	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	100		1	5	5	µg/L	N/A	7/7/00	WGC2000707	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	101	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	170		1	50	50	µg/L	N/A	7/7/00	WGC2000707	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	113	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 2346

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STANDARD LAB QUALIFIERS (FLAGS)

All Entech lab reports now reference standard lab qualifiers. These qualifiers are noted in the adjacent column to the analytical result and are adapted from the U.S. EPA CLP program. The current qualifier list is as follows:

Qualifier (Flag)	Description
U	Compound was analyzed for but not detected
J	Estimated value for tentatively identified compounds or if result is below PQL but above MDL
N	Presumptive evidence of a compound (for Tentatively Identified Compounds)
B	Analyte is found in the associated Method Blank
E	Compounds whose concentrations exceed the upper level of the calibration range
D	Multiple dilutions reported for analysis; discrepancies between analytes may be due to dilution
X	Results within quantitation range; chromatographic pattern not typical of fuel

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography
Laboratory Control Spikes

QC Batch #: DW000701
Matrix: Liquid
Units: µg/L

Date analyzed: 07/06/00
Date extracted: 07/05/00
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/L	SA µg/L	SR µg/L	SP µg/L	SP %R	SPD µg/L	SPD %R	RPD	QC LIMITS RPD	QC LIMITS %R
Diesel	8015M	<50.0	1000	ND	985	99	1004	100	1.8	25	62-119
Hexocosane(S.S.)				79%	79%		78%				65-135

Definition of Terms:

- na: Not Analyzed in QC batch
- MB: Method Blank
- SA: Spike Added
- SR: Sample Result
- RPD(%): Duplicate Analysis - Relative Percent Difference
- SP: Spike Result
- SP (%R) Spike % Recovery
- SPD: Spike Duplicate Result
- SPD (%R) Spike Duplicate % Recovery
- NC: Not Calculated

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography
Laboratory Control Sample

QC Batch #: WGC1000705
Matrix: Liquid
Units: µg/Liter

Date Analyzed: 07/05/00
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/Liter	SA µg/Liter	SR µg/Liter	SP µg/Liter	SP % R	SPD µg/Liter	SPD %R	RPD	QC LIMITS RPD	QC LIMITS %R
Benzene	8020	<0.50	4.5	ND	4.9	**107**	4.8	**105**	1.8	25	73-125
Toluene	8020	<0.50	27.0	ND	32	**118**	32	**119**	0.3	25	84-112
Ethyl Benzene	8020	<0.50	5.5	ND	6.5	**117**	6.5	**118**	0.5	25	77-115
Xylenes	8020	<0.50	33.0	ND	37	**111**	37	**111**	0.6	25	87-121
Gasoline	8015	<50.0	471	ND	558	**118**	560	**119**	0.3	25	74-122
aaa-TFT(S.S.)-PID	8020			102%	98%		98%				65-135
aaa-TFT(S.S.)-FID	8015			102%	102%		101%				65-135

Definition of Terms:

na: Not Analyzed in QC batch
MB: Method Blank
SA: Spike Added
SR: Sample Result
RPD(%): Duplicate Analysis - Relative Percent Difference
SP: Spike Result
SP (%R): Spike % Recovery
SPD: Spike Duplicate Result
SPD (%R): Spike % Recovery
nc: Not Calculated

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography
Laboratory Control Sample

QC Batch #: WGBG2000707
Matrix: Water
Units: µg/Liter

Date Analyzed: 07/07/00
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/Liter	SA µg/Liter	SR µg/Liter	SP µg/Liter	SP % R	SPD µg/Liter	SPD %R	RPD	QC LIMITS RPD	QC LIMITS %R
Benzene	8020	<0.50	4.3	ND	4.7	**109**	4.6	**107**	1.5	25	67-115
Toluene	8020	<0.50	28.0	ND	31	**109**	30	**108**	1.5	25	82-122
Ethyl Benzene	8020	<0.50	7.5	ND	7.1	**95**	7.0	**94**	1.5	25	77-114
Xylenes	8020	<0.50	31.3	ND	37	**118**	26	**83**	34.5	25	86-126
Gasoline	8015	<50.0	484	ND	524	**108**	520	**107**	0.9	25	74-122
aaa-TFT(S.S.)-PID	8020			112%	105%		105%				65-135
aaa-TFT(S.S.)-FID	8015			101%	101%		101%				65-135

Definition of Terms:

- na: Not Analyzed in QC batch
- MB: Method Blank
- SA: Spike Added
- SR: Sample Result
- RPD(%): Duplicate Analysis - Relative Percent Difference
- SP: Spike Result
- SP (%R): Spike % Recovery
- SPD: Spike Duplicate Result
- SPD (%R): Spike % Recovery
- nc: Not Calculated

Rick Dreessen

~~PRIORITY ENVIRONMENTAL~~ LABS

TAIT ENVIRONMENTAC

~~1764 Houret Ct. Milpit. CA 95035 Tel: 408-946-9636 Fax: 408-946-9653~~

(925) 899-3473 FAX (925) 837-1156

00 JUN 30 16:46

Chain of Custody

DATE: 06/30/00 PAGE: 1 OF: 1

PROJECT MGR.: Rick Dreessen
COMPANY: TAIT Environmental Mgmt.
ADDRESS: 275 PARAISO DRIVE
DANVILLE CA 94526
PHONE: 925-899-3473 FAX: 925-837-1156
SIGNATURE: Richard Dreessen

SAMPLE ID	DATE	TIME	MATRIX	TPH-Gasoline (EPA 5030.8015)	TPH-Gasoline(5030.8015) w/BTEX(EPA 602.8020)	TPH-Diesel (EPA 3510/3550.8015)	PURGEABLE AROMATICS BTEX (EPA 602.8070)	TOTAL OIL & GREASE (EPA 5520 C,D&F)	PESTICIDES/PCB (EPA 608.3080)	TOTAL RECOVERABL HYDROCARBONS (EPA 418.1)	CHLORINATED HYDROCARBONS (EPA 601.8010)	MTBE									NUMBER OF CONTAINERS
MW-1	6/30/00	1041	H_2O			X											21238-001				1
MW-1		1041			X							X									3
MW-2		1032				X													002		1
MW-2		1032			X							X									3
MW-3		1047				X													003		1
MW-3		1047			X							X									3

PROJECT INFORMATION
PROJECT NAME: MISSION VALLEY ROC
PROJECT NUMBER: —

SAMPLE RECEIPT
TOTAL # OF CONTAINERS: 12
RECD. GOOD COND./COLD:

INSTRUCTIONS & COMMENTS:

RELINQUISHED BY: 1	RECEIVED BY: 1	RELINQUISHED BY: 2	RECEIVED BY: 2
SIGNATURE: RS Dreessen for R. Dreessen	SIGNATURE:	SIGNATURE:	SIGNATURE:
Date: 6/30/00 Time: 3	Date: 6/30 Time:	Date: 6/30 Time: 4	Date: 6/30/00 Time: 1648
COMPANY: TEM	COMPANY:	COMPANY:	COMPANY: Entech

APPENDIX C
QUALITY ASSURANCE
AND
QUALITY CONTROL PROCEDURES

QUALITY ASSURANCE AND QUALITY CONTROL PROCEDURES

The overall objectives of the field-sampling program include generation of reliable data that will support development of a remedial action plan. Sample quality will be checked by the use of proper sampling, handling, and testing methods. Additional sample quality control methods may include the use of background samples, equipment rinsate samples, and trip and field blanks. Chain-of-custody forms, use of a state-certified laboratory, acceptable detection limits and proper sample preservation and holding times also provide assurance of accurate analytical data.

TEM will follow a quality assurance and quality control (QA/QC) program in the field to ensure that all samples collected and field measurements taken are representative of actual field and environmental conditions and that data obtained are accurate and reproducible. These activities and laboratory QA/QC procedures are described below.

Field Samples: Additional samples may be taken in the filed to evaluate both sampling and analytical methods. Three basic categories of QA/QC samples that may be collected are trip blanks, field blanks, and duplicate blanks.

Trip Blanks: Trip blanks are a check for cross-contamination during sample collection, shipment, and laboratory analysis. Thy are water samples that remain with the collected samples during transportation and are analyzed along with the field samples to check for residual contamination. Analytically confirmed organic-free water will be used for organic parameters and deionized water for metal parameters. The laboratory supplying the sample containers will prepare blanks. The blanks will be numbered, packaged and sealed in the same manner as the other samples. One trip blank will be used for each sample set of less than 20 samples. At least 5% blanks will be used for sets greater than 20 samples. The trip blank is not to be opened by field personnel.

Field Blanks: The field blank is a water sample that is taken into the field and is opened and exposed at the sampling point to detect contamination from air exposure. The water sample is poured into appropriate containers to simulate actual sampling conditions. Contamination due to air exposure can vary considerable from site to site.

The laboratory will not be informed about the presence of trip and field blanks, and false identifying numbers will be put on the labels. Full documentation of these collecting and decoy procedures will be made in the site logbook.

Duplicate Samples: Duplicate samples are identical sample pairs (collected in the same place and at the same time), and placed in identical containers. For soils, adjacent sample liners will be analyzed. For the purpose of data reporting, one is arbitrarily designated the sample, and the other is designated as a duplicate sample. Both sets of results are reported to give an indication of the precision of sampling and analytical methods.

The laboratory' precision will be assessed without the laboratory's knowledge by labeling one of the duplicates with false inditifying information. Data quality will by evaluated on the basis of the duplicate results.

Laboratory QA/QC

Execution of a strict QA/QC program is an essential ingredient in high-quality analytical results. By using accredited laboratory techniques and analytical procedures, estimates of the experimental values can be very close to the actual value of the environmental sample. The experimental value is monitored for its precision and accuracy by performing QC tests designed to measure the amount of random and systematic errors and to signal when correction of these errors in needed.

The QA/QC program describes methods for performing QC tests. These methods involve analyzing method blanks, calibration standards, check standards (both independent and the United States Environmental Protection Agency-certified standards), duplicates, replicates, and sample spikes. Internal QC also requires adherence to written methods procedural documentation and to the observance of good laboratory practices.