



Tetra Tech EM Inc.

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June 8, 2001
Via Federal Express

Mr. Patrick G. Murray
McMorgan & Company
One Bush Street, Suite 800
San Francisco, CA 94104

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5814

JUN 12 2001

Subject: Second Quarter Groundwater Monitoring Report, May 2001
McMorgan & Company
444 Hegenberger Road, ~~Oakland~~ ^{Loop}, California
Tetra Tech's Project No. P1389-05-02

Dear Mr. Murray:

Tetra Tech EM Inc. (Tetra Tech) is pleased to submit to McMorgan & Company this letter report on the results of the second quarter of groundwater monitoring conducted at the subject site (Figures 1 and 2). The work was conducted in accordance with a letter to McMorgan & Company, submitted by the Alameda County Health Care Services Agency (ACHCSA), dated April 3, 2001. The scope of work consisted of the following:

- Measure groundwater levels in the seven wells at the project site
- Purge and subsequent sampling of groundwater from monitoring wells MW-2 through MW-8
- Analyze the groundwater samples for petroleum hydrocarbon constituents
- Prepare report

SITE BACKGROUND

The subject site is located in northwest Alameda County, approximately ¼ mile south of the Interstate 880-Hegenberger Road interchange and approximately 1 mile northeast of the Oakland International Airport. The unpaved site occupies a rectangular-shaped parcel (Assessor's Parcel Number 044-5076-007-02) situated in the northeast corner of the intersection of Hegenberger Road and Hegenberger Loop. The southwest portion of the site was previously occupied by a retail gasoline service station.

The available data indicate that a series of soil and groundwater investigations have been conducted at the site since 1997. A site assessment in April 1997 ("Work Plan for Additional Environmental Investigation" by Tetra Tech, dated July 21, 2000) indicated the presence of petroleum hydrocarbons in soils and groundwater beneath the site. However, concentrations of methyl tertiary butyl ether (MTBE) were not detected at or above the laboratory reporting limits in the soil and grab groundwater samples

collected during the assessment. A subsequent investigation, conducted in July and October 1997, indicated that none of the site's former underground storage tanks (USTs) remained (number of USTs and date of removal are not known). The investigation also confirmed the previous findings of petroleum hydrocarbons being present in soil and groundwater.

A supplemental assessment of soil and groundwater in November 1998 ("Work Plan for Additional Environmental Investigation", Tetra Tech July 21, 2000) resulted in the installation of five, 2-inch-diameter groundwater monitoring wells (MW1, MW-2, MW-3, MW-4, and MW-5), each with perforated casing set between 5 and 20 feet below ground surface (bgs). Laboratory analysis of soil samples collected during the drilling for the wells indicated concentrations of total petroleum hydrocarbons as gasoline (TPH-g) and benzene, toluene, ethylbenzene, and total xylenes (BTEX). The data appeared to indicate that concentrations of petroleum hydrocarbons in soil decreased with depth. Soil samples were not analyzed for MTBE. Analysis of groundwater samples collected from the five wells indicated concentrations of TPH-g in two wells (MW-3 and MW-4) and TPH as diesel (TPH-d) as well as BTEX in four wells (MW-2, MW-3, MW-4, and MW-5). Concentrations of MTBE were not detected at or above the laboratory reporting limit in the samples collected from the five wells.

As reported by E₂C, Inc., in the report "Quarterly Groundwater Monitoring First Quarter 2000," dated May 11, 2000, well MW-1 was destroyed in December 1999 in accordance with ACHCSA guidelines. In addition, well MW-6 was installed in accordance with a ACHCSA request that the portion of the site inferred to be downgradient of the former waste-oil tank be monitored. Well MW-6 was completed with perforations set between 10 and 20 feet bgs. One soil sample was collected at 11 feet bgs from the boring for MW-6. Although a "heavy odor" of suspected fuel was noted for the soil sample, laboratory analysis indicated that concentrations of volatile organic compounds, semivolatile organic compounds, TPH-g, TPH-d, TPH as motor oil (TPH-mo), and BTEX were not detected at or above the respective laboratory reporting limits. In addition, cadmium, chromium, lead, nickel, and zinc were not detected at concentrations at or above their respective regulatory action levels.

On December 12, 2000, Tetra Tech supervised the drilling and installation of off-site groundwater monitoring wells MW-7 and MW-8 (Figure 2) by Weeks Drilling and Pump Company (C57-177681) of Sebastopol, California. The wells were installed and sampled in accordance with Tetra Tech standard operating procedures (SOPs) and the approved July 21, 2000, workplan (mentioned previously) to assess the possible extent of off-site migration of petroleum hydrocarbons. MW-7 and MW-8 were completed with perforations set 5 to 20 feet bgs using 0.01-inch slotted casing.

Quarterly groundwater monitoring began at the subject site in December 1998, after the installation of wells MW-1 through MW-5. Monitoring has included collecting depth-to-groundwater (DTW) measurements and groundwater samples from each of the project site's active wells, now expanded to include off-site wells MW-7 and MW-8. He [REDACTED]
[REDACTED]
[REDACTED] Floating liquid hydrocarbons had not been observed within the site's wells before June 2000 and have not been observed since (Table 1).

GROUNDWATER PURGING AND SAMPLING

On May 7 and 8, 2001, Tetra Tech personnel conducted sampling for the first groundwater monitoring event for 2001 at the subject site. The seven wells were purged and sampled according to Tetra Tech SOPs, including sampling handling, preservation, identification, and chain-of-custody (COC) control.

Before the samples were collected, DTW measurements were made in each well using a Solinst water-level indicator (Table 1). Following the DTW measurements, a minimum of three wetted-casing volumes were purged from each well using a pre-cleaned bailer that was cleaned between wells. The purged water was stored temporarily on site in Department of Transportation (DOT)-approved 55-gallon drums pending the results of laboratory analysis and a decision regarding appropriate disposal. Information regarding the purging and sampling of the seven wells is included on the monitoring well purging forms in Appendix A.

In addition, temperature, pH, and specific conductance of the purged groundwater were measured every two to three gallons for wells MW-2 through MW-8 using a Horiba U-10 water quality meter. Observations, including color, turbidity, and odor of the purged water were noted at each monitoring well (Appendix A). When the measured parameters stabilized to within 10 percent, the wells were allowed to recharge to 80 percent of the initial volume. Groundwater samples were then collected using a new, disposable Poly Vinyl Chloride (PVC) bailer at each well. The samples were dispensed into appropriate containers (40-milliliter glass vials), sealed, labeled, placed in a portable cooler with ice, recorded on COC forms, and submitted to Kiff Analytical LLC of Davis, California, a state-certified analytical laboratory, for analysis of the following constituents:

- TPH-d by U.S. Environmental Protection Agency (EPA) Method 8015-modified
- TPH-g by EPA Method 8015-modified and BTEX by EPA Method 8021B

ANALYTICAL RESULTS

Analysis of the groundwater samples collected from the seven wells indicated that concentrations of TPH-d were detected in the sample collected from wells MW-2 and TPH-g and/or BTEX were detected in the samples collected from wells MW-2, MW-3, MW-4, MW-5, and MW-6. Neither TPH-g nor BTEX were detected in the samples from wells MW-7 and MW-8. The groundwater sample analytical results are summarized in Table 2. Copies of the laboratory analytical reports and COC form are included as Appendix B.

Figures 4 and 5 are isoconcentration maps of benzene and TPH-g, respectively, in groundwater for May 7, 2001, based on the data summarized in Table 2. The maps suggest that benzene and TPH-g have not migrated appreciably since the previous monitoring on December 14, 2000 (Fourth Quarter Groundwater Monitoring Report, December 2000, dated March 9, 2001). However, the analytical data indicate that the concentration of benzene has increased in wells MW-3, MW-4, MW-5, and MW-6, and decreased in well MW-2. In addition TPH-g has increased in wells MW-3, MW-4, MW-5, and decreased in well MW-2.

GROUNDWATER FLOW

Based on the interpretation shown on Figure 5, the inferred direction of groundwater flow beneath the subject site is primarily to the northwest under a shallow gradient of about 0.0014 foot per foot (ft/ft) when measured from wells MW-2 to MW-3 and about 0.0025 ft/ft when measured from wells MW-3 to MW-7. However, the direction of flow appears to vary across the project site, including a component toward the southeast away from wells MW-5 and MW-2. The data from the previous groundwater monitoring were interpreted as indicating that groundwater flowed primarily toward the north (Table 3).

CONCLUSIONS

The analysis of groundwater samples from the two off-site wells indicate that petroleum hydrocarbons emanating from the subject site have not migrated to the locations of these wells, across Hegenberger Loop or Hegenberger Road.

The results of the second quarter groundwater monitoring at the subject site also indicate the following:

- A plume of hydrocarbons, including TPH-d, TPH-g and BTEX, remains beneath the west corner of the site.
- The plume continues to impact wells MW-2, MW-3, MW-4, MW-5, and MW-6. However, the impact to MW-6 appears limited to benzene.

- The concentration of benzene has increased in wells MW-3, MW-4, MW-5, and MW-6 and decreased in well MW-2.
- The concentration of TPH-g has increased in wells MW-3, MW-4, and MW-6 and decreased in well MW-2.

RECOMMENDATIONS

Based on the cumulative results of groundwater monitoring at the subject site, Tetra Tech recommends the following:

- Quarterly groundwater monitoring of the seven wells should continue.
- The monitoring should include testing for TPH-g, TPH-d, and BTEX.

This report is based on available information and was prepared in accordance with currently accepted geologic, hydrogeologic, and engineering practices. No other warranty is implied or intended. This report has been prepared for the sole use of McMorgan & Company and applies only to the subject site. Use of this report by third parties shall be at their sole risk. This report was prepared under the direct supervision of the California Registered Geologist whose signature appears below.

We appreciate the opportunity to provide McMorgan & Company geologic, engineering, and environmental consulting services and trust that this letter report meets your needs. If you have any questions or concerns, please call Mr. Walter Kim at (916) 853-4505 or Mr. Doug Sheeks at (916) 853-4515.

Sincerely,

TETRA TECH EM INC.

Walter H. Kim

for:
Robert Schumann
Staff Geologist

Douglas I. Sheeks
Douglas I. Sheeks, R.G.
Senior Geologist
CRG No. 5211



cc: B. M. Chan, Alameda County Health Care Services Agency
W. H. Kim, Tetra Tech

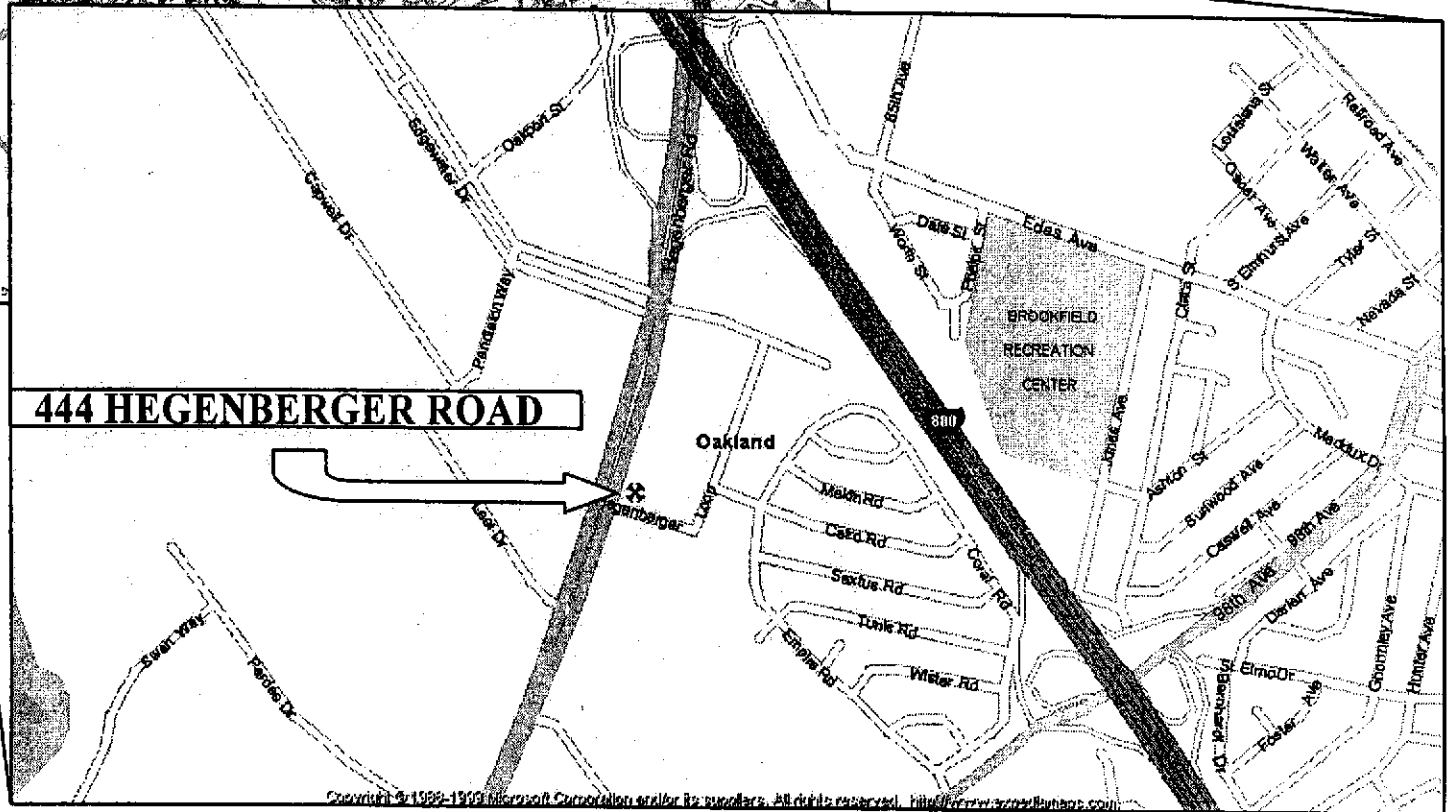
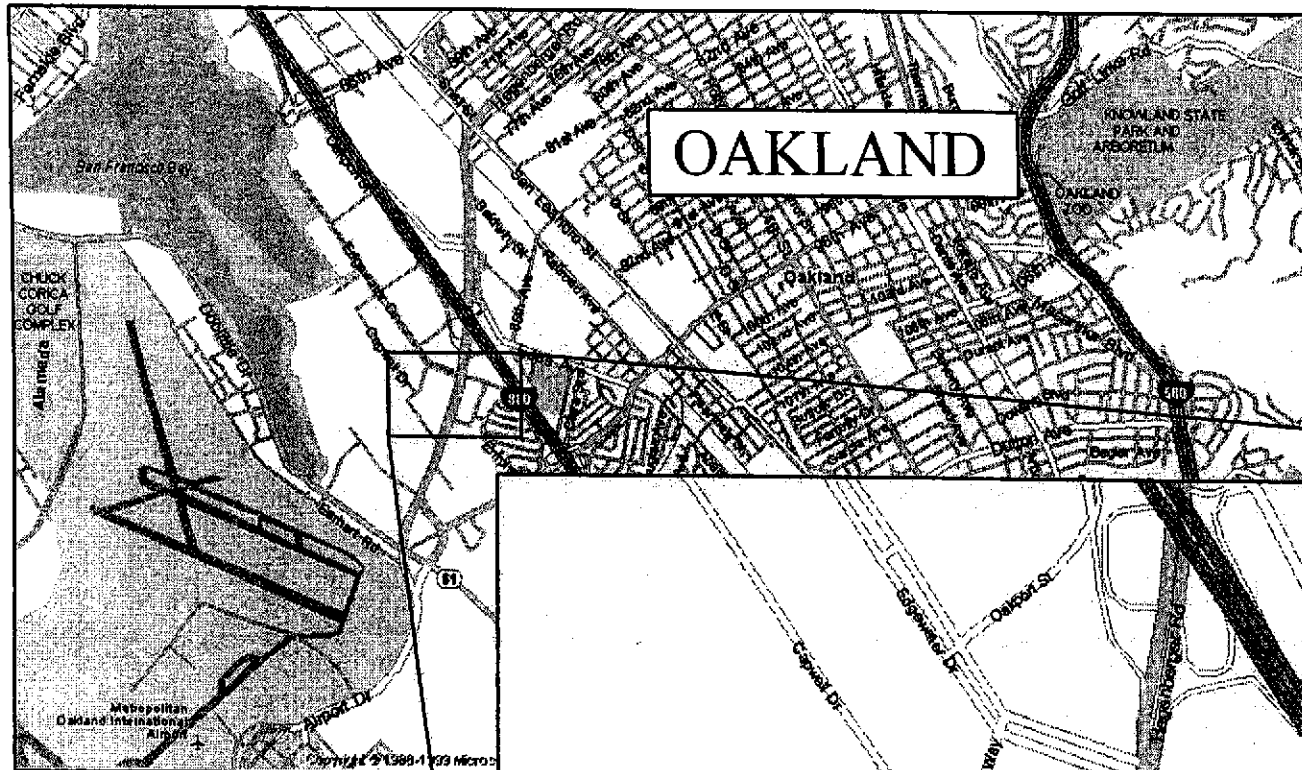


FIGURE 1
444 HEGENBERGER ROAD
OAKLAND, CALIFORNIA



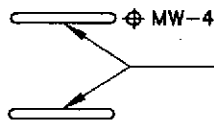
MW-8

HEGENBERGER ROAD

MW-7

HEGENBERGER LOOP

MW-3



FORMER PUMP ISLANDS

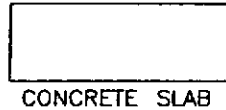
MW-2

MW-6



CONCRETE SLAB

MW-5



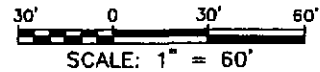
CONCRETE SLAB

FORMER WASTE OIL TANK



MW-1
(DESTROYED 12/27/99)

GATE



LEGEND

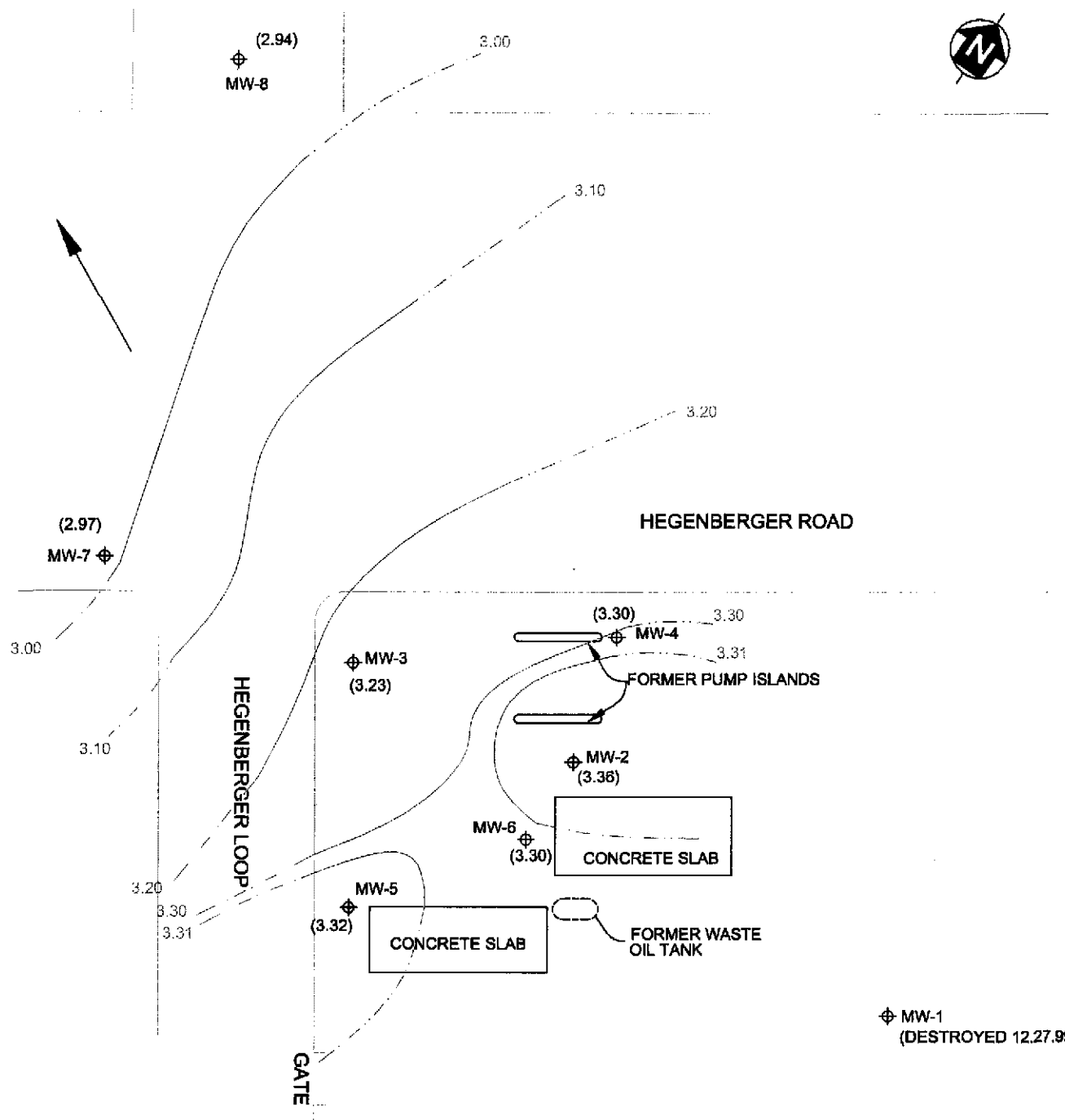
MW-5 GROUNDWATER MONITORING WELL LOCATION

NOTE: ALL LOCATIONS ARE APPROXIMATE

444 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

FIGURE 2
SITE MAP

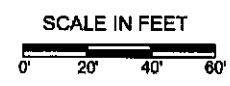
Tetra Tech EM Inc.



EXPLANATION

- GROUNDWATER MONITORING WELL LOCATION
- GROUNDWATER CONTOUR, CONTOUR INTERVAL = 0.1 FOOT (DASHED WHERE INFERRED, QUERIED WHERE UNKNOWN)
- GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)
- INFERRED GROUNDWATER FLOW DIRECTION

NOTE: ALL LOCATIONS ARE APPROXIMATE



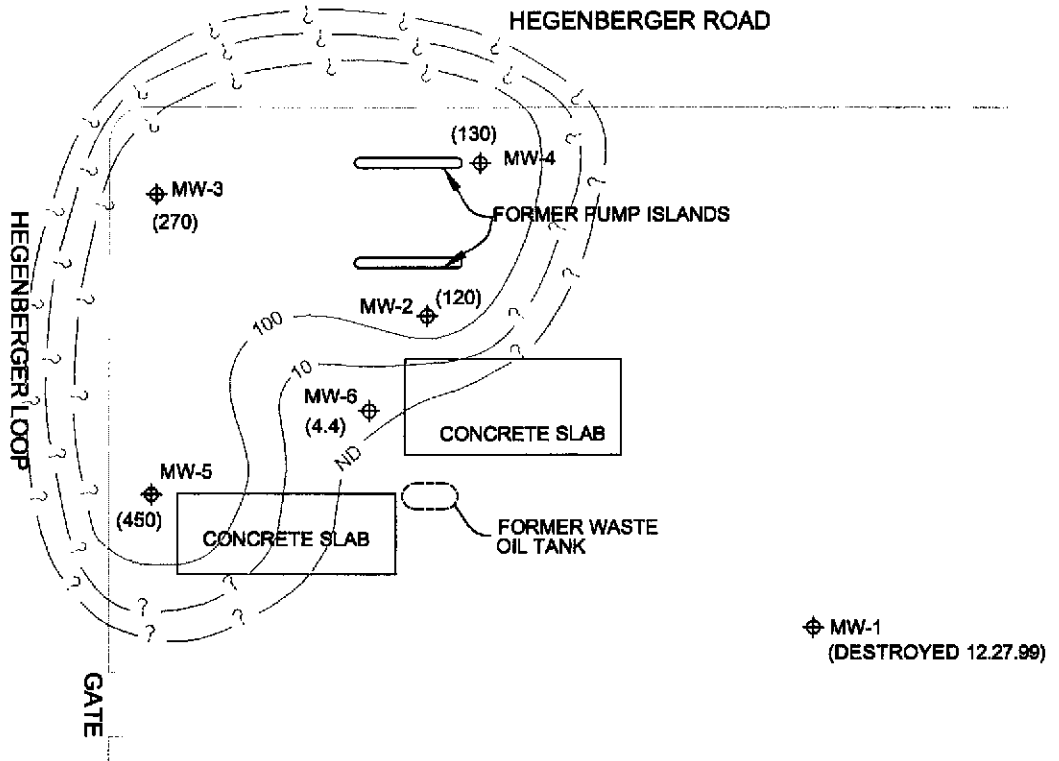
POTENTIOMETRIC SURFACE MAP MAY 7, 2001
444 HEGENBERGER ROAD OAKLAND, CALIFORNIA
FIGURE 3

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⊕ ND (0.5)
MW-8



MW-7 ⊕ ND (0.5)



EXPLANATION

- ⊕ MW-5 GROUNDWATER MONITORING WELL LOCATION
- ISOCONCENTRATION CONTOUR (QUERIED WHERE UNKNOWN)
- (450) DETECTED CONCENTRATION OF BENZENE (IN MICROGRAMS PER LITER)
- ND (0.5) NOT DETECTED AT OR ABOVE INDICATED LABORATORY REPORTING LIMIT

NOTE: ALL LOCATIONS ARE APPROXIMATE

ISOCONCENTRATION CONTOUR
MAP OF BENZENE IN GROUNDWATER
MAY 7, 2001

444 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

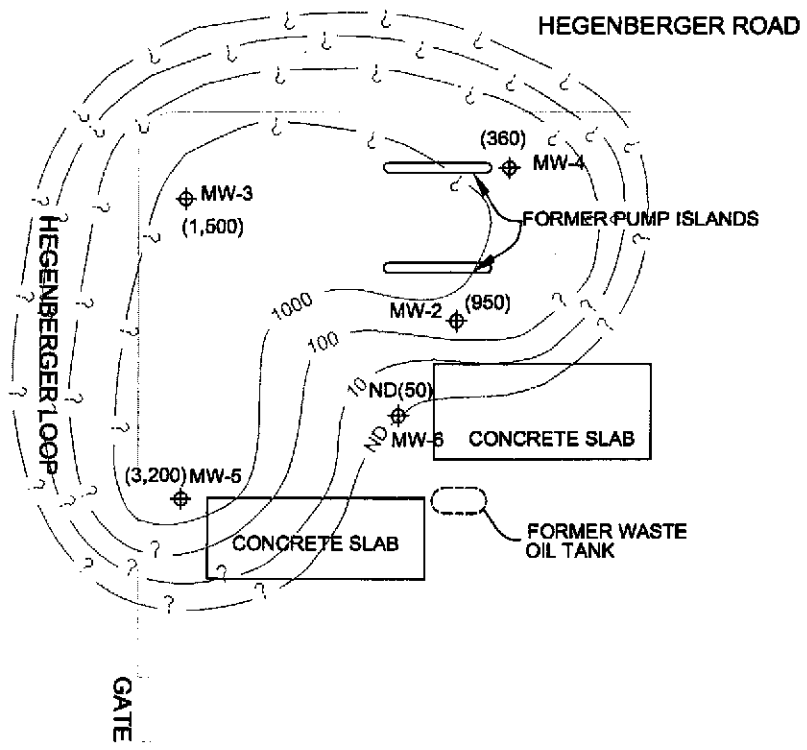
FIGURE 4

Tt Tetra Tech EM Inc.

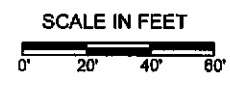


⊕ ND (50)
MW-8

MW-7 ⊕ ND (50)



⊕ MW-1
(DESTROYED 12.27.99)



EXPLANATION

- ⊕ MW-5 GROUNDWATER MONITORING WELL LOCATION
- ISOCONCENTRATION CONTOUR (QUERIED WHERE UNKNOWN)
- (3200) DETECTED CONCENTRATION OF TOTAL PETROLEUM AS GASOLINE (IN MICROGRAMS PER LITER)
- ND (50) NOT DETECTED AT OR ABOVE INDICATED LABORATORY REPORTING LIMIT

NOTE: ALL LOCATIONS ARE APPROXIMATE

ISOCONCENTRATION CONTOUR MAP OF
TOTAL PETROLEUM HYDROCARBONS AS
GASOLINE IN GROUNDWATER
MAY 7, 2001

444 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

FIGURE 5

Tt Tetra Tech EM Inc.

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TABLE 1

WELL DATA
444 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

(Page 1 of 2)

WELL I.D.	DATE	INSTALLED WELL DEPTH (feet bgs)	SCREEN INTERVAL (feet bgs)	WELL DEPTH (feet BTOC)	TOC ELEVATION (feet)	DEPTH TO GROUNDWATER (feet BTOC)	GROUNDWATER ELEVATION (feet)	COMMENTS	
MW-1	12/02/98	20'	5' - 20'	19.60	100.74*	2.90	97.84	hard bottom	
	03/08/99			19.35		3.43	97.31	soft bottom	
	07/01/99			19.53		3.81	96.93		
	08/18/99			19.53		3.62	97.12		
	09/15/99			19.30		3.69	97.05		
	12/27/99			19.45		3.81	96.93	well destroyed	
MW-2	12/02/98	20'	5' - 20'	19.79	102.44*	4.61	97.83	soft bottom	
	03/08/99			19.32		5.16	97.28	soft bottom	
	07/01/99			19.43		5.91	96.53		
	08/18/99			19.43		5.53	96.91		
	09/15/99			19.43		5.55	96.89		
	12/27/99			19.52		5.55	96.89		
	03/29/00			19.57		5.44	97.00		
	06/09/00			?		?	?	NM -- FLH	
	12/14/00			19.50		9.05**	5.00	4.05	Resurveyed
	05/07/01			19.30			5.69	3.36	
MW-3	12/02/98	20'	5' - 20'	19.85	102.00*	4.24	97.76	soft bottom	
	03/08/99			19.24		4.90	97.10	soft bottom	
	07/01/99			19.54		5.35	96.65		
	08/18/99			19.54		5.21	96.79		
	09/15/99			19.56		5.26	96.74		
	12/27/99			19.60		5.42	96.58		
	03/24/00			19.63		5.81	96.19		
	06/09/00			19.59		5.43	96.57		
	12/14/00			16.55		8.60**	4.85	3.75	Resurveyed
	05/07/01			16.32			5.37	3.23	
MW-4	12/02/98	20'	5' - 20'	19.15	100.00*	2.20	97.80	soft bottom	
	03/08/99			19.44		2.80	97.20	hard bottom	
	07/01/99			19.48		5.23	94.77		
	08/18/99			19.48		5.00	95.00		
	09/15/99			19.42		4.99	95.01		
	12/27/99			19.58		5.23	94.77		
	03/24/00			19.63		5.39	94.61		
	06/09/00			19.67		5.24	94.76		
	12/14/00			19.55		8.50**	4.60	3.90	Resurveyed
	05/07/01			19.31			5.20	3.30	

TABLE 1

WELL DATA
444 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

(Page 2 of 2)

WELL I.D.	DATE	INSTALLED WELL DEPTH (feet bgs)	SCREEN INTERVAL (feet bgs)	WELL DEPTH (feet BTOC)	TOC ELEVATION (feet)	DEPTH TO GROUNDWATER (feet BTOC)	GROUNDWATER ELEVATION (feet)	COMMENTS
MW-5	12/02/98	20'	5' - 20'	19.72	102.22*	4.59	97.63	soft bottom
	03/08/99			19.72		5.20	97.02	
	07/01/99			19.61		5.59	96.63	Resurveyed
	08/18/99			19.61		5.37	96.85	
	09/15/99			19.55		5.55	96.67	
	12/27/99			19.54		5.48	96.74	
	03/24/00			19.57		6.02	96.20	
	06/09/00			19.52		5.59	96.63	
	12/14/00			19.75	8.84**	5.10	3.74	
	05/07/01			19.46		5.52	3.32	
MW-6	03/24/00	20'	10' - 20'	18.39	102.58*	5.49	97.09	Resurveyed
	06/09/00			18.44		5.87	96.71	
	12/14/00			14.25	9.19**	5.13	4.06	
	05/07/01			15.71		5.89	3.30	
MW-7	12/14/00	20'	5' - 20'	18.75	8.10**	3.48	4.62	
	05/07/01			18.03		5.13	2.97	
MW-8	12/14/00	20'	5' - 20'	20.15	8.68**	5.10	3.58	
	05/07/01			20.31		5.74	2.94	

Notes:

bgs = Below ground surface

TOC = Top of casing

BTOC = Below top of casing

NM = Not measured

FLH = Floating product

* = Elevation relative to arbitrary benchmark of 100 feet established at MW-4

** = Elevation relative to established City of Oakland benchmark (feet above mean sea level)

TABLE 2

GROUNDWATER ANALYTICAL DATA
444 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

(Page 1 of 2)

WELL I.D.	DATE	TPH-d	TPH-g	BENZENE	TOLUENE	ETHYLBENZENE	TOTAL XYLENES	FUEL ADDITIVES	
MW-1	12/02/98(a)	ND(50)	ND(50)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	---	
	03/08/99	190	ND(50)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	---	
	07/01/99	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	---	
	09/15/99	ND(50)	3100	ND(0.5)	9.6	7.8	12	---	
	12/27/99	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	---	
	12/27/99	WELL DESTROYED							
MW-2	12/02/98(a)	99	ND(50)	4.6	0.85	0.57	5	---	
	03/08/99	210	180	200(a)	0.74	1.3	2.3	---	
	07/01/99	ND(50)	1,100	190	13	33	36	---	
	09/15/99	100*	990	330	9.7	11	19	---	
	12/27/99	ND(50)	1,000	260	7.2	1.3	10	---	
	03/29/00	31,000	1,900	110	4.8	9.5	12	---	
	06/09/00	NOT SAMPLED: WELL CONTAINED FLOATING HYDROCARBONS							
	12/14/00	470	1600	450	18	61	26	ND(2/20)	
	05/08/01	300	950	120	5.8	8.5	32	---	
	MW-3	12/02/98(a)	300	970	160	6.5	16	9	---
03/08/99		1,400	2,600	1,800(b)	30(c)	67(c)	26(c)	---	
07/01/99		150*	3,000	1	ND(0.5)	32	36	---	
09/15/99		110*	1,100	350	8.3	5.4	10	---	
12/27/99		70	560	170	2.1	7.6	3.1	---	
03/24/00		1,000	8,400	4,100	71	190	75	---	
06/09/00		320	2,700	1,100	17	18	ND(10)	---	
14/14/00		ND(100)	710	140	2.2	3.3	1.2	ND(0.5/5)	
05/08/01	ND(400)	1,500	270	7.9	11	5.6	---		
MW-4	12/02/98(a)	620	ND(50)	1.1	0.37	<0.3	2	---	
	03/08/99	ND(50)	1,300	1,900(b)	9.4	1.2	11	---	
	07/01/99	ND(50)	610**	120	ND(0.5)	<0.5	<0.5	---	
	09/15/99	59*	830	320	6.5	1.7	<2.0	---	
	12/27/99	ND(50)	55	5.8	ND(0.5)	<0.5	<0.5	---	
	03/24/00	77	430	240	3.3	0.98	1.5	---	
	06/09/00	ND(50)	220	91	0.93	ND(0.5)	ND(0.5)	---	
	14/14/00	ND(50)	96	15	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	
05/07/01	ND(100)	380	130	2.5	1.7	2.5	---		

TABLE 2

**GROUNDWATER ANALYTICAL DATA
444 HEGENBERGER ROAD
OAKLAND, CALIFORNIA**

(Page 2 of 2)

WELL I.D.	DATE	TPH-d	TPH-g	BENZENE	TOLUENE	ETHYLBENZENE	TOTAL XYLENES	FUEL ADDITIVES
MW-5	12/02/98(a)	620	ND(50)	1.1	0.37	ND(0.3)	2	---
	03/08/99	ND(50)	58	23	0.31	ND(0.3)	1.8	---
	07/01/99	64*	1,900	160	10	13	22	---
	09/15/99	ND(50)	410	64	2.1	1.3	2.7	---
	12/27/99	ND(50)	130	15	0.73	ND(0.5)	ND(0.5)	---
	03/24/00	460	2,500	560	57	18	87	---
	06/09/00	140	2,600	770	63	15	71	---
	12/14/00	ND(50)	220	17	0.63	1.7	1.1	ND(0.5/5)
	05/07/01	ND(200)	3,200	450	44	54	66	---
MW-6	03/24/00	470	2,400	430	16	340	73	---
	06/09/00	ND(50)	540	190	1.2	3.7	4.5	---
	12/14/00	ND(50)	ND(50)	0.51	ND(0.5)	ND(0.5)	0.94	ND(0.5/5)
	05/07/01	ND(50)	ND(50)	4.4	ND(0.5)	ND(0.5)	ND(0.5)	---
MW-7	12/14/00	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5/5)
	05/07/01	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	---
MW-8	12/14/00	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	0.52 MTBE***
	05/07/01	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	---
MCLs		NE	NE	1	100	680	1750	MTBE - 5 ALL OTHER FUEL ADDITIVES - NE

Notes:

All results are reported in micrograms per Liter

Bold values exceed MCLs

(a) Reporting limit for this monitoring event are elevated 10 times due to matrix interference.

(b) Reporting limit is elevated 100 times due to matrix interference.

(c) Reporting limit is elevated 5 times due to matrix interference.

* Analytical results within quantitation range for diesel; however, chromatographic pattern not typical of fuel

** Analytical results within quantitation range for gasoline; however, chromatographic pattern not typical of fuel

*** Remaining fuel additives were not detected at or above respective laboratory reporting limits

--- Not available/not analyzed

MCL Maximum Contaminant Levels per State Office of Drinking Water Standards

ND Not detected at or above indicated laboratory reporting limit

NE No MCL or Action Level has been established.

TPH-d Total petroleum hydrocarbons as diesel

TPH-g Total petroleum hydrocarbons as gasoline

Fuel Additives include methyl tertiary butyl ether (MTBE), di-isopropyl ether, ethyl tertiary butyl ether, tertiary amyl methyl ether, and tertiary butyl alcohol

TABLE 3

SUMMARY OF HISTORICAL GROUNDWATER FLOW CONDITIONS
 444 HEGENBERGER ROAD
 OAKLAND, CALIFORNIA

(Page 1 of 2)

DATE	WELL ID	GROUNDWATER ELEVATION (feet)	GROUNDWATER FLOW DIRECTION	GROUNDWATER GRADIENT (feet/feet)
12/02/98	MW-1	97.84	W	0.00091
	MW-2	97.83		
	MW-3	97.76		
	MW-4	97.80		
	MW-5	97.63		
03/08/99	MW-1	97.31	SW	0.00086
	MW-2	97.28		
	MW-3	97.10		
	MW-4	97.20		
	MW-5	97.02		
07/01/99	MW-1	96.93	SW	0.0011
	MW-2	96.53		
	MW-3	96.65		
	MW-4	94.77		
	MW-5	96.63		
08/18/99	MW-1	97.12	W	0.0013
	MW-2	96.91		
	MW-3	96.79		
	MW-4	95.00		
	MW-5	96.85		
09/15/99	MW-1	97.05	N*	0.04089*
	MW-2	96.89		
	MW-3	96.74	W	0.00125**
	MW-4	95.01		
	MW-5	96.67		
12/27/99	MW-1	96.93	W**	0.0010**
	MW-2	96.89		
	MW-3	96.58	N*	0.0489*
	MW-4	94.77		
	MW-5	96.74		

TABLE 3

SUMMARY OF HISTORICAL GROUNDWATER FLOW CONDITIONS
 444 HEGENBERGER ROAD
 OAKLAND, CALIFORNIA

(Page 2 of 2)

DATE	WELL ID	GROUNDWATER ELEVATION (feet)	GROUNDWATER FLOW DIRECTION	GROUNDWATER GRADIENT (feet/feet)
03/24/00	MW-2	97.00***	NW	0.0469 (from MW-2 to MW-4)
	MW-3	96.19		
	MW-4	94.61	WSW	0.0131 (from MW-6 to area of MW-5)
	MW-5	96.20		
	MW-6	97.09		
06/09/00	MW-2	NM	N	0.03 (average) (at MW-2, -3 & -4; from MW-6 to MW-4)
	MW-3	96.57		
	MW-4	94.76	SSW	0.0011 (average) (from MW-6 to area of MW-5)
	MW-5	96.63		
	MW-6	96.71		
12/14/00	MW-2	4.05	N	0.003 (from MW-2 to MW-4)
	MW-3	3.75		
	MW-4	3.90		
	MW-5	3.74	N	0.006 (from MW-7 to MW-8)
	MW-6	4.06		
	MW-7	4.62		
	MW-8	3.58		
05/07/01	MW-2	3.36	NW	0.0014
	MW-3	3.23		
	MW-4	3.30		
	MW-5	3.32	NW	0.0025 (from MW-3 to MW-7)
	MW-6	3.30		
	MW-7	2.97		
	MW-8	2.94		

Notes:

- * Flow component between Wells MW-2 and MW-4
- ** Flow component between Wells MW-2, MW-3, and MW-5
- *** Measurement taken 3/29/00

Well MW-1 destroyed 12/27/99

Well MW-6 installed 3/20/00

APPENDIX A
MONITORING WELL PURGING FORMS



Tetra Tech EM, Inc.
 10670 White Rock Road, #100
 Rancho Cordova, CA 95670
 916.852.8300
 916.853.4550 fax

HYDROLOGIC DATA SHEET - PURGING DATA

Project Name: Mamorgan Date: 5-8-01
 Project Address: 444 Hegenberger Rd Project No: P1389.05.02
 Personnel: R. Schumann, D. Gratton Signature: [Signature]

Well ID:	<u>mw-2</u>		
Total Well Depth:	<u>19.30</u>	Circle One:	Conversions
Depth to Liquid Surface:	<u>5.61</u>	<u>2"φ</u>	A. <u>0.163 gal./ft.</u>
Length of Liquid Column:	<u>13.69</u>	<u>4"φ</u>	B. <u>0.653 gal./ft.</u>
Conversion Factor:	<u>0.163</u>		
Total Volume in Well:	<u>2.23 gal</u>	3 Volumes =	<u>6.69 gal</u>

Time	Depth	Temp.	Conductiv.	pH	Turbidity	D.O. (mg/l)
<u>12:45</u>	<u>5.61</u>	<u>22.7</u>	<u>1.04</u>	<u>7.14</u>	<u>91</u>	<u>11.30</u>
<u>12:54</u>	<u>5.59</u>	<u>20.6</u>	<u>1.09</u>	<u>7.01</u>	<u>200</u>	<u>13.28</u>
<u>13:04</u>	<u>5.57</u>	<u>20.5</u>	<u>1.10</u>	<u>6.84</u>	<u>117</u>	<u>13.23</u>
<u>13:13</u>	<u>5.57</u>	<u>20.1</u>	<u>1.03</u>	<u>6.80</u>	<u>165</u>	<u>13.49</u>
<u>14:00</u>	<u>5.47</u>	<u>Collected</u>	<u>Sample</u>	<u>—————</u>	<u>—————</u>	<u>—————</u>



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HYDROLOGIC DATA SHEET - PURGING DATA

Project Name: Memorgan Date: 5-8-01
 Project Address: 444 Hegenberger Rd Project No: DL389.05.02
 Personnel: R. Schumann, D. Gratton Signature: [Signature]

Well ID:	<u>mw-3</u>		
Total Well Depth:	<u>16.32</u>	Circle One:	Conversions
Depth to Liquid Surface:	<u>5.41</u>	<u>2"φ</u>	A. 0.163 gal./ft.
Length of Liquid Column:	<u>10.91</u>	4"φ	B. 0.653 gal./ft.
Conversion Factor:	<u>0.163</u>		
Total Volume in Well:	<u>1.78 gal</u>	3 Volumes =	<u>5.33 gal</u>

Time	Depth	Temp.	Conductiv.	pH	Turbidity	D.O. (mg/L)
11:50	5.41	20.0	1.11	7.03	1.50	11.61
12:00	5.37	20.0	0.910	6.96	8.90	13.13
12:08	5.35	20.1	0.910	6.96	500	13.11
12:20	5.34	20.3	0.834	7.03	84	13.12
13:30	5.16	Collected	Samples			



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HYDROLOGIC DATA SHEET - PURGING DATA

Project Name: McMorgan Date: 5-7-01
 Project Address: 444 Hegenberger Rd Project No: P1389.05.02
 Personnel: R Schumann, D. Gratton Signature: [Signature]

Well ID:	<u>mw-4</u>		
Total Well Depth:	<u>19.31</u>	Circle One:	Conversions
Depth to Liquid Surface:	<u>5.20</u>	<u>2"φ</u>	A. <u>0.163 gal./ft.</u>
Length of Liquid Column:	<u>14.11</u>	<u>4"φ</u>	B. <u>0.653 gal./ft.</u>
Conversion Factor:	<u>0.163</u>		
Total Volume in Well:	<u>2.3gal</u>	3 Volumes =	<u>6.9gal</u>

Time	Depth	Temp.	Conductiv.	pH	Turbidity	D.O. (mg/L)
4:10	4.96	-	-	-	-	-
4:20	4.99	20.3	1.12	7.05	-	12.35
4:28	5.00	20.2	0.850	6.96	-	12.65
4:40	5.01	20.2	0.881	7.05	-	12.70
4:47	5.02	19.9	0.868	6.96	-	12.59
5:40	5.00	Collected	samples			



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HYDROLOGIC DATA SHEET - PURGING DATA

Project Name: Memorgan Date: 5-7-01
 Project Address: 444 Hogenberger rd. Project No: P1389.05.02
 Personnel: R. Schumann, D. Gratton Signature: [Signature]

Well ID: <u>mw-5</u>	
Total Well Depth: <u>19.46</u>	Circle One: <u>Conversions</u>
Depth to Liquid Surface: <u>5.52</u>	<u>2"φ</u> A. <u>0.163 gal./ft.</u>
Length of Liquid Column: <u>13.94</u>	<u>4"φ</u> B. <u>0.653 gal./ft.</u>
Conversion Factor: <u>0.163</u>	
Total Volume in Well: <u>2.27 gal</u>	3 Volumes = <u>6.81 gal</u>

Time	Depth	Temp.	Conductiv.	pH	Turbidity	0.0 (ms/l)
5:00	5.37	-	-	-	-	-
5:10	5.40	20.1	1.09	6.82	444	11.66
5:14	5.41	19.8	0.929	6.70	684	11.35
5:23	5.41	20.4	0.846	6.60	91	11.19
5:50	5.45	collected	samples			

* Slight Gasoline odor detected during purging/sampling



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 916.853.4550 fax

HYDROLOGIC DATA SHEET - PURGING DATA

Project Name: Memorgan Date: 5-7-01
 Project Address: 444 Hegenberger Rd. Project No: P1389.05.02
 Personnel: R. Schumann, O. Gratton Signature: [Signature]

Well ID:	<u>mw-6</u>		
Total Well Depth:	<u>15.71</u>	Circle One:	Conversions
Depth to Liquid Surface:	<u>5.89</u>	<u>2"φ</u>	A. <u>0.163 gal./ft.</u>
Length of Liquid Column:	<u>9.82</u>	<u>4"φ</u>	B. <u>0.653 gal./ft.</u>
Conversion Factor:	<u>0.163</u>		
Total Volume in Well:	<u>1.60 gal</u>	3 Volumes =	<u>4.80 gal</u>

Time	Depth	Temp.	Conductiv.	pH	Turbidity	0.0 (msl)
3:13	5.55	-	-	-	-	-
3:20	5.60	22.2	1.75	7.05	-	12.50
3:30	5.60	20.5	1.16	6.87	-	13.03
3:39	5.60	20.5	1.07	6.74	-	11.97
3:47	5.60	20.3	1.02	6.55	-	11.30
3:58	Collected	Samples	—————→			



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HYDROLOGIC DATA SHEET - PURGING DATA

Project Name: Memorgan Date: 5-7-01
 Project Address: 444 Hegenberger Rd Project No: P1389-05-02
 Personnel: R. Schumann, D. Gratton Signature: [Signature]

Well ID:	<u>mw-7</u>		
Total Well Depth:	<u>18.03</u>	Circle One:	Conversions
Depth to Liquid Surface:	<u>5.13</u>	<u>2"φ</u>	A. 0.163 gal./ft.
Length of Liquid Column:	<u>12.9</u>	<u>4"φ</u>	B. 0.653 gal./ft.
Conversion Factor:	<u>0.163</u>		
Total Volume in Well:	<u>2.10 gal</u>	3 Volumes =	<u>6.30 gal</u>

Time	Depth	Temp.	Conductiv.	pH	Turbidity	D.O. (mg/l)
<u>1:24</u>	<u>4.72</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
<u>1:33</u>	<u>4.80</u>	<u>21.0</u>	<u>2.40</u>	<u>7.26</u>	<u>-</u>	<u>11.98</u>
<u>1:40</u>	<u>4.80</u>	<u>20.9</u>	<u>1.74</u>	<u>6.97</u>	<u>-</u>	<u>11.20</u>
<u>1:50</u>	<u>4.85</u>	<u>20.7</u>	<u>1.52</u>	<u>7.05</u>	<u>-</u>	<u>11.55</u>
<u>2:00</u>	<u>Collected</u>	<u>Samples</u>				<u>→</u>



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HYDROLOGIC DATA SHEET - PURGING DATA

Project Name: McMorgan Date: 5-7-01
 Project Address: 444 Hegenberger rd. Project No: P1389.05.02
 Personnel: R. Schumann, O. Gratton Signature: [Signature]

Well ID: <u>mw-8</u>	
Total Well Depth: <u>20.31</u>	Circle One: Conversions
Depth to Liquid Surface: <u>5.74</u>	<u>2"φ</u> A. 0.163 gal./ft.
Length of Liquid Column: <u>14.57</u>	<u>4"φ</u> B. 0.653 gal./ft.
Conversion Factor: <u>0.163</u>	
Total Volume in Well: <u>2.37 gal</u>	3 Volumes = <u>7.11 gal</u>

Time	Depth	Temp.	Conductiv.	pH	Turbidity	D.O. (mg/l)
11:52	5.57	19.8	3.02	6.80	-	11.69
12:20	5.54	20.0	2.67	6.98	-	11.21
12:33	5.53	20.1	2.41	7.07	-	11.58
12:40	5.49	19.6	2.25	6.86	-	11.22
12:45	5.46	Collected	Samples			7

APPENDIX B
LABORATORY ANALYTICAL REPORTS
AND
CHAIN-OF-CUSTODY FORMS



Report Number : 20236

Date : 5/22/01

Walter Kim
Tetra Tech EM Inc.
10670 White Rock Road, Suite 100
Rancho Cordova, CA 95670

Subject : 7 Water Samples
Project Name : McMORGAN & CO.
Project Number : P1389.05.02

Dear Mr. Kim,

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

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,



Joel Kiff



Report Number : 20236

Date : 5/22/01

Subject : 7 Water Samples
Project Name : McMORGAN & CO.
Project Number : P1389.05.02

Case Narrative

The Method Reporting Limit for TPH as Diesel has been increased due to interference from Gasoline-Range Hydrocarbons for the following samples:

MW-4-W050701
MW-5-W050701
MW-3-W050701

Approved By:  _____
Joel Kiff



Report Number : 20236

Date : 5/22/01

Project Name : **McMORGAN & CO.**

Project Number : **P1389.05.02**

Sample : **MW-2-W050701**

Matrix : Water

Lab Number : 20236-07

Sample Date :5/8/01

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	120	0.50	ug/L	EPA 8260B	5/16/01
Toluene	5.8	0.50	ug/L	EPA 8260B	5/16/01
Ethylbenzene	8.5	0.50	ug/L	EPA 8260B	5/16/01
Total Xylenes	32	0.50	ug/L	EPA 8260B	5/16/01
TPH as Gasoline	950	50	ug/L	EPA 8260B	5/16/01
Toluene - d8 (Surr)	98.8		% Recovery	EPA 8260B	5/16/01
4-Bromofluorobenzene (Surr)	110		% Recovery	EPA 8260B	5/16/01
TPH as Diesel	300	50	ug/L	M EPA 8015	5/21/01

Approved By:  Joel Kiff



Report Number : 20236

Date : 5/22/01

Project Name : **McMORGAN & CO.**

Project Number : **P1389.05.02**

Sample : **MW-3-W050701**

Matrix : Water

Lab Number : 20236-06

Sample Date :5/8/01

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	270	1.0	ug/L	EPA 8260B	5/17/01
Toluene	7.9	0.50	ug/L	EPA 8260B	5/15/01
Ethylbenzene	11	0.50	ug/L	EPA 8260B	5/15/01
Total Xylenes	5.6	0.50	ug/L	EPA 8260B	5/15/01
TPH as Gasoline	1500	50	ug/L	EPA 8260B	5/15/01
Toluene - d8 (Surr)	96.6		% Recovery	EPA 8260B	5/15/01
4-Bromofluorobenzene (Surr)	113		% Recovery	EPA 8260B	5/15/01
TPH as Diesel	< 400	400	ug/L	M EPA 8015	5/22/01

Approved By:  Joel Kiff



Report Number : 20236

Date : 5/22/01

Project Name : **McMORGAN & CO.**

Project Number : **P1389.05.02**

Sample : **MW-4-W050701**

Matrix : Water

Lab Number : 20236-04

Sample Date :5/7/01

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	130	0.50	ug/L	EPA 8260B	5/16/01
Toluene	2.5	0.50	ug/L	EPA 8260B	5/15/01
Ethylbenzene	1.7	0.50	ug/L	EPA 8260B	5/15/01
Total Xylenes	2.5	0.50	ug/L	EPA 8260B	5/15/01
TPH as Gasoline	380	50	ug/L	EPA 8260B	5/15/01
Toluene - d8 (Surr)	99.0		% Recovery	EPA 8260B	5/15/01
4-Bromofluorobenzene (Surr)	99.3		% Recovery	EPA 8260B	5/15/01
TPH as Diesel	< 100	100	ug/L	M EPA 8015	5/22/01

Approved By: Joel Kiff



Report Number : 20236

Date : 5/22/01

Project Name : **McMORGAN & CO.**

Project Number : **P1389.05.02**

Sample : **MW-5-W050701**

Matrix : Water

Lab Number : 20236-05

Sample Date :5/7/01

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	450	2.5	ug/L	EPA 8260B	5/16/01
Toluene	44	0.50	ug/L	EPA 8260B	5/15/01
Ethylbenzene	54	0.50	ug/L	EPA 8260B	5/15/01
Total Xylenes	66	0.50	ug/L	EPA 8260B	5/15/01
TPH as Gasoline	3200	250	ug/L	EPA 8260B	5/16/01
Toluene - d8 (Surr)	98.9		% Recovery	EPA 8260B	5/15/01
4-Bromofluorobenzene (Surr)	99.9		% Recovery	EPA 8260B	5/15/01
TPH as Diesel	< 200	200	ug/L	M EPA 8015	5/22/01

Approved By:  Joel Kiff



Report Number : 20236

Date : 5/22/01

Project Name : **McMORGAN & CO.**

Project Number : **P1389.05.02**

Sample : **MW-6-W050701**

Matrix : Water

Lab Number : 20236-03

Sample Date :5/7/01

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	4.4	0.50	ug/L	EPA 8260B	5/16/01
Toluene	< 0.50	0.50	ug/L	EPA 8260B	5/16/01
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	5/16/01
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	5/16/01
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	5/16/01
Toluene - d8 (Surr)	99.9		% Recovery	EPA 8260B	5/16/01
4-Bromofluorobenzene (Surr)	109		% Recovery	EPA 8260B	5/16/01
TPH as Diesel	< 50	50	ug/L	M EPA 8015	5/18/01

Approved By:  Joel Kiff



Report Number : 20236

Date : 5/22/01

Project Name : **McMORGAN & CO.**

Project Number : **P1389.05.02**

Sample : **MW-7-W050701**

Matrix : Water

Lab Number : 20236-02

Sample Date :5/7/01

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	5/15/01
Toluene	< 0.50	0.50	ug/L	EPA 8260B	5/15/01
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	5/15/01
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	5/15/01
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	5/15/01
Toluene - d8 (Surr)	98.1		% Recovery	EPA 8260B	5/15/01
4-Bromofluorobenzene (Surr)	94.2		% Recovery	EPA 8260B	5/15/01
TPH as Diesel	< 50	50	ug/L	M EPA 8015	5/18/01

Approved By:  Joel Kiff



Report Number : 20236

Date : 5/22/01

Project Name : **McMORGAN & CO.**

Project Number : **P1389.05.02**

Sample : **MW-8-W050701**

Matrix : Water

Lab Number : 20236-01

Sample Date :5/7/01

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	5/15/01
Toluene	< 0.50	0.50	ug/L	EPA 8260B	5/15/01
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	5/15/01
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	5/15/01
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	5/15/01
Toluene - d8 (Surr)	99.2		% Recovery	EPA 8260B	5/15/01
4-Bromofluorobenzene (Surr)	108		% Recovery	EPA 8260B	5/15/01
TPH as Diesel	< 50	50	ug/L	M EPA 8015	5/18/01

Approved By:  Joel Kiff

Report Number : 20236

Date : 05/22/01

Project Name : **McMORGAN & CO.**

Project Number : **P1389.05.02**

20236 Quality Control Data - Method Blank

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel	< 50	50	ug/L	M EPA 8015	05/21/01

Approved By:  Joel Kiff

Report Number : 20236

Date : 05/22/01

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **McMORGAN & CO.**

Project Number : **P1389.05.02**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Spike Recovery Data														
TPH as Diesel	Blank	<50	1000	1000	838	995	ug/L	M EPA 8015	05/21/01	83.8	99.5	17.1	70-130	25

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Approved By: Joel Kiff

Report Number : 20236

Date : 05/22/01

Project Name : **McMORGAN & CO.**

Project Number : **P1389.05.02**

20236 Quality Control Data - Method Blank

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/19/01
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/19/01
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/19/01
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/19/01
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/19/01
Toluene - d8 (Surr)	99.6		% Recovery	EPA 8260B	05/19/01
4-Bromofluorobenzene (Surr)	99.0		% Recovery	EPA 8260B	05/19/01

Approved By:  Joel Kiff

Report Number : 20236

Date : 05/22/01

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : McMORGAN & CO.

Project Number : P1389.05.02

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Spike Recovery Data														
Benzene	20236-04	1.8	47.3	47.9	15.3	15.5	ug/L	EPA 8260B	05/17/01	99.8	98.6	1.25	70-130	25
Toluene	20236-04	2.4	47.3	47.9	49.6	49.6	ug/L	EPA 8260B	05/17/01	99.8	98.6	1.25	70-130	25
Tert-Butanol	20236-04	5.8	47.3	47.9	56.5	58.3	ug/L	EPA 8260B	05/17/01	107	109	2.26	70-130	25
Methyl-t-Butyl Ether	20236-04	0.75	47.3	47.9	40.4	41.0	ug/L	EPA 8260B	05/17/01	83.6	83.9	0.380	70-130	25

Pass Recov

Joel Kiff

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 20236

Date : 05/22/01

QC Report : Laboratory Control Sample (LCS)

Project Name : **McMORGAN & CO.**

Project Number : **P1389.05.02**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	19.7	ug/L	EPA 8260B	05/15/01	98.2	70-130
Toluene	19.7	ug/L	EPA 8260B	05/15/01	94.9	70-130
Tert-Butanol	98.3	ug/L	EPA 8260B	05/15/01	104	70-130
Methyl-t-Butyl Ether	19.7	ug/L	EPA 8260B	05/15/01	82.2	70-130

KIFF ANALYTICAL, LLC

Approved By:  _____
Joel Kiff

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 Lab: 530.297.4800
 Fax: 530.297.4803

Lab No. 20236 Page 1 of 1

Project Manager: WALTER KIM
 Company/Address: 10670 WHITE ROCK RD. STE 100
 Project Number: P1389.05.02 P.O. No.:
 Project Name/Location: McMORGAN + CO.

Phone No.: 916-853-4500
 FAX No.: 916-852-0307
 Email Address: .pdf .xls .doc other
 Sampler Signature: [Signature]

Chain-of-Custody Record and Analysis Request

Sample Designation	Sampling		Container (Type/Amount)				Method Preserved				Matrix	Analysis Request										TAT	For Lab Use Only						
	Date	Time	40 ml VOA SLEEVE				HCl	HNO ₃	ICE	NONE		WATER/SOIL	BTEX (8021B)	BTEX/TPH Gas/M8015 (8021B/M8015)	TPH as Diesel (M8015)	TPH as Motor Oil (M8015)	TPH Gas/BTEX/MTBE (8260B)	5 Oxygenates/TPH Gas/BTEX (8260B)	7 Oxygenates/TPH Gas/BTEX (8260B)	5 Oxygenates (8260B)	7 Oxygenates (8260B)			Lead Scav. (1,2 DCA & 1,2 EDB - 8260B)	EPA 8260B (Full List)	Volatile Halocarbons (EPA 8260B)	Lead (7421/239.2)	TOTAL (X) W.E.T. (X)	
MW-8-W050701	5/7/01	12:45	5				X				W	X	X															1 wk	-01
MW-7-W050701	5/7/01	2:00	5				X				W	X	X														1 wk	-02	
MW-6-W050701	5/7/01	3:58	5				X				W	X	X														1 wk	-03	
MW-4-W050701	5/7/01	5:40	5				X				W	X	X														1 wk	-04	
MW-5-W050701	5/7/01	5:50	5				X				W	X	X														1 wk	-05	
MW-3-W050701	5/8/01	1:30	5				X				W	X	X														1 wk	-06	
MW-2-W050701	5/8/01	2:00	5				X				W	X	X														1 wk	-07	

Relinquished by: [Signature] Date: 5/8/01 Time: 5:45 Received by: [Signature] Remarks:

Relinquished by: [Signature] Date: 5/8/01 Time: 1745 Received by Laboratory: Michelle Woodworth / Kiff Analytical Bill to: