



LETTER OF TRANSMITTAL

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DATE 9/13/93 JOB NO.
ATTENTION Ms. Eva Chu
RE: Target

TO: Alameda County Health Agency

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REMARKS One (1) copy of the June 1993 Quarterly Ground Water Report for the former Alameda Service Station A-528 and document showing how the water was disposed of

COPY TO:

C. McLeod (Signature)

**JUNE 1993 QUARTERLY GROUND WATER
MONITORING AND INTERIM
REMEDATION REPORT FOR THE
FORMER ALAMEDA
SERVICE STATION A-528
7608 AMADOR VALLEY BOULEVARD
DUBLIN, CALIFORNIA**

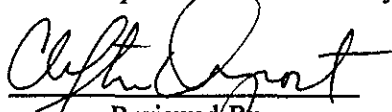
September 13, 1993

Prepared For:
Target Stores
33 South Sixth Street
Minneapolis, Minnesota 55440-1342

Prepared By:
McLaren/Hart Environmental Engineering
1135 Atlantic Avenue
Alameda, California 94501
(510) 521-5200

Project No: 04.0122617.000

The Information Contained Herein Is Submitted in Partial Fulfillment of Contract No. 12625 For the Sole and Exclusive Use of Target Stores and Shall Not Be Disclosed or Furnished to Any Other Entity, Corporation, or Third Party, For Purposes Outside the Specific Scope and Intent of This Contract Without the Express Written Consent of McLaren/Hart.


Reviewed By



**McLarensm
Hart**

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INTRODUCTION

This report presents the June 1993 quarterly ground water monitoring results at the former Alameda Service Station A-578, located at 7608 Amador Valley Boulevard in Dublin, California. This report was prepared in accordance with McLaren/Hart's sampling plan entitled "Proposal to Conduct Quarterly Ground Water Sampling and Interim Remediation at the Target Store T-328 Dublin, California" dated September 10, 1992. The sampling plan followed recommendations presented in the "June 1992 Quarterly Monitoring and Interim Remediation Report" for the site. Recommendations included a schedule of six episodes of interim remediation and four sampling events between September 1992 and June 1993. This work was verbally approved by Ms. Eva Chu of the Alameda County Health Care Services Agency, Department of Environmental Health, Hazardous Materials division.

Based on McLaren/Hart's December 14, 1992 written recommendations for revising the quarterly monitoring program and Ms. Eva Chu's written approval of December 18, 1992, monitoring wells MW-1 and MW-3 were not sampled. Water elevations were collected in all wells.

OBJECTIVES AND SCOPE OF WORK

A site location map is presented as Figure 1 and a site map showing monitoring well locations is included as Figure 2. Quarterly monitoring of site wells is being conducted to monitor the lateral extent of petroleum hydrocarbons in the shallow ground water beneath the site, while ground water removal from MW-6 serves as interim remediation of impacted ground water in the area of the former underground fuel tanks.

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The work associated with the June quarterly monitoring event included: sampling monitoring wells MW-2, MW-4, MW-5, and MW-6 for the presence of gasoline constituents; collecting water elevations from six monitoring wells (MW-1 through MW-6); and extracting 400 gallons of impacted ground water from monitoring well MW-6.

Ground Water Elevations

Ground water surface elevations were measured prior to sampling and pumping activities on June 28, 1993 (Table 1). This data was used to construct the June 1993 ground water contour map (Figure 2). The inferred ground water flow direction is generally toward the east and is apparently influenced by the presence of more permeable materials in the excavation area causing a small ground water mound to form. This flow direction is generally consistent with historic ground water flow directions. Based on the observed contour pattern, MW-2, MW-4 and MW-5 appear to be downgradient of the former excavation area.

The static depth to ground water ranges from 3.79 to 5.52 feet below ground surface or 335.60 to 336.98 feet above mean sea level. The average hydraulic gradient is approximately 0.012 feet/foot. The June water level measurements indicate that ground water levels have decreased in all of the six wells since March 1993, ranging from 0.09 to 0.22 feet, with an average decrease of 0.16 feet. Historic ground water elevation data are presented in Table 2.

Interim Remediation

Ten interim remediation episodes have occurred at MW-6, seven in conjunction with quarterly sampling. The first remediation event occurred on October 17 and 18, 1991, shortly after MW-6 was constructed. The next four episodes took place during quarterly sampling on December 30 and 31, 1991, March 26 and 27, 1992, June 23 and 24, 1992, and September 24 and 25, 1992. Three interim remediation episodes took place between September and December 1992. On both October 29, 1992 and November 30, 1992, 200 gallons of ground water were extracted from MW-6 as part of a monthly interim remediation schedule. The frequency of interim remediation returned to a quarterly schedule in December 1992 when four hundred gallons of ground water were extracted. The most recent interim remediation occurred during June 1993 quarterly sampling when 400 gallons were removed from the well.

Depth to ground water was measured at the six wells during each day of the ten interim remediation episodes, once before pumping started then again just before pumping stopped for the day. As shown on Table 3, the extraction of ground water from MW-6 typically reduces the water level in each of the six wells. The exception to this was during the excessive rainfall in October and December 1992 when water levels rose during interim remediation pumping.

The June 1993 water level measurements reveal that the greatest response during the first day of pumping was at MW-4 and MW-5 (decreases of 0.25 and 0.18 feet, respectively). Measurements collected after the second day of pumping showed that MW-4 (0.24 feet) and MW-3 (0.12 feet) registered the most response.

Monitoring Well Sampling Protocol

Ground water samples were collected at MW-2 and MW-5 on June 28, and at MW-4 and MW-6 on June 29, 1993. Prior to sampling MW-2, MW-4 and MW-5, four casing volumes were purged from each well using a centrifugal pump. During purging, the temperature, pH, electric conductivity, and turbidity were measured after each casing volume was removed. After all parameters had stabilized, with the turbidity below 5 NTU's, sampling was performed using a disposable bailer. At MW-6, in conjunction with the interim remediation, 61 casing volumes were removed prior to sample collection and parameters were collected during the last casing volume. Sampling event data sheets are enclosed as Attachment I.

Ground water samples were stored in a container filled with ice and delivered to MBT Environmental Laboratories, state-certified laboratory located in Rancho Cordova, California. A chain-of-custody record was completed during sampling and accompanied each sample shipment to the laboratory. The samples were submitted for analysis by the California Department of Health Services (DHS) LUFT Manual Method for total petroleum hydrocarbons as gasoline (TPH/G) and for benzene, toluene, ethyl benzene, and xylenes (BTEX) analyses by EPA Method 8020. Trip blanks were included in the shipments to the laboratory to be analyzed for TPH/G and BTEX.

Monitoring Well Sampling Results

Table 4 and Figure 3 present the analytical results of the ground water samples collected during the June 1993 sampling event. For the second consecutive time, benzene and TPH/G concentrations were not detected in a water sample from MW-6, constructed within the excavation at the former fuel tanks. However, ethyl benzene (0.72 ppb) and total

not used for drinking water or other beneficial uses, and the MCL concentrations are presented only for purposes of comparison.

CONCLUSIONS AND RECOMMENDATIONS

The following conclusions are based on data collected to date:

- No free-floating petroleum product was observed in any of the wells.
- The general analytical results from water samples collected at MW-6 continue to show a decrease in concentration levels with each of the last five sampling events. For the second consecutive sampling event neither benzene nor TPH/G were detected at well MW-6. The consistent decrease in concentrations of petroleum constituents imply that the interim remediation at MW-6 appears to be cleaning up ground water in the vicinity of MW-6.
- Interim remediation also appears effective in reducing chemical concentrations in ground water at MW-4.
- The level of benzene (17 ppb) reported in well MW-2 during the June 1993 sampling was higher than recent sampling results (March 1993 was 3.2 ppb) but lower than December 1992 levels (35 ppb).
- As shown on Figure 2, the apparent ground water flow direction at the site is generally to the east, consistent with historic flow directions.

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- Ground water elevations in all six wells decreased an average of 0.16 feet since March 1993.
- Based on historical analytical results from downgradient wells MW-2 and MW-5, chemicals of concern do not appear to be migrating towards MW-5. However, low levels of petroleum constituents are present in ground water at MW-2.
- The interim remediation at MW-6 has removed a total of approximately 3,300 gallons of ground water and appears to be capable of lowering water levels at other wells on-site.

Future work currently planned at the site includes:

- As the June 1993 sampling event represented the completion of the current quarterly sampling program, a new ground water sampling plan and interim remediation schedule will be developed for the site and submitted for agency approval prior to September 1993 sampling.
- The proposed sampling program will continue the frequency of monitoring well sampling and current chemical analyses. Ground water will be extracted from well MW-2 as part of quarterly interim remediation. Due to the improved water _____ at MW-6 ground water will no longer be extracted from this well.

FIGURE 1
SITE LOCATION MAP
TARGET STORE T-328
DUBLIN, CA.

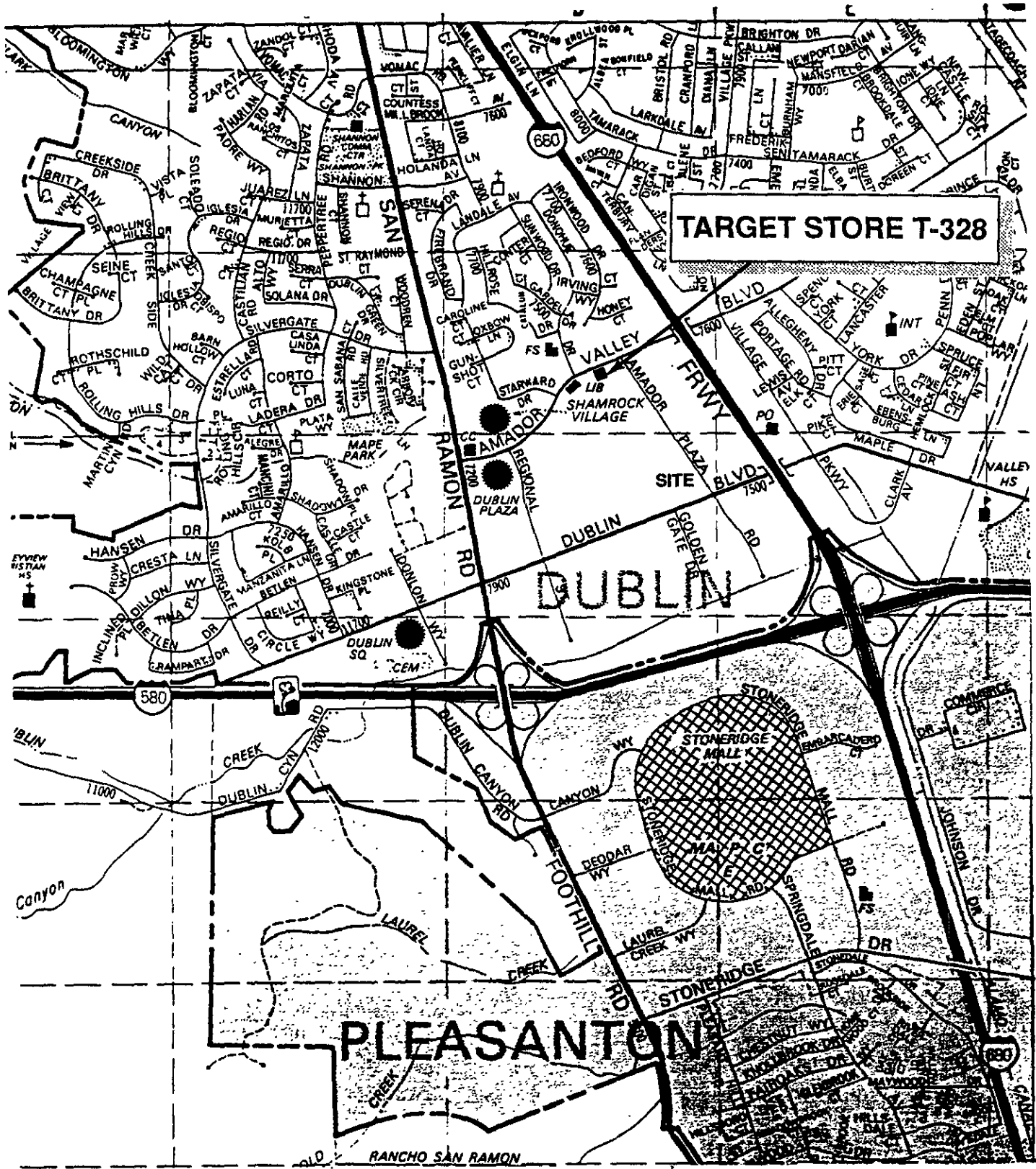
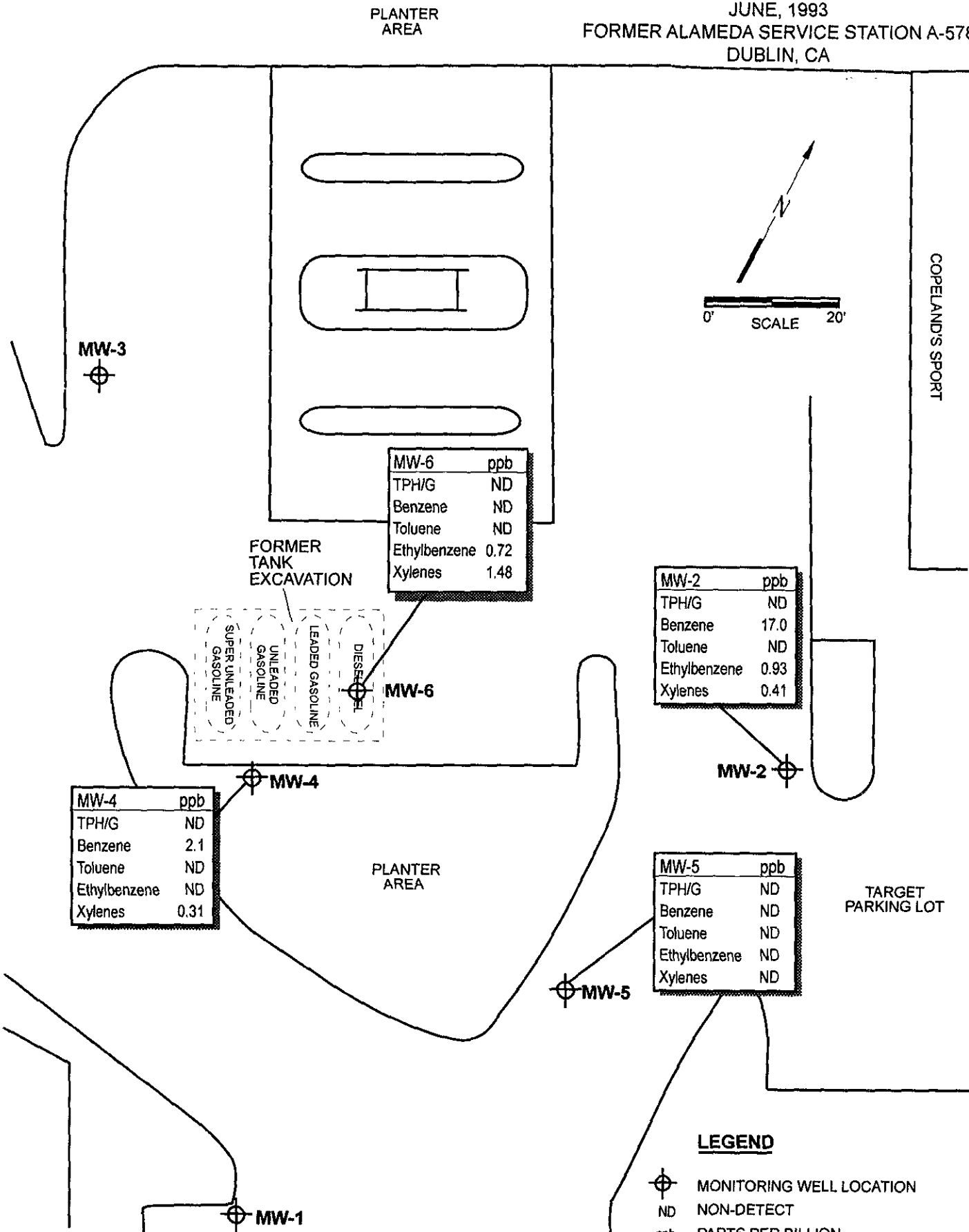


FIGURE 3
 GROUNDWATER MONITORING WELL
 CHEMICAL CONCENTRATIONS
 JUNE, 1993
 FORMER ALAMEDA SERVICE STATION A-578
 DUBLIN, CA



MW-6	ppb
TPH/G	ND
Benzene	ND
Toluene	ND
Ethylbenzene	0.72
Xylenes	1.48

MW-2	ppb
TPH/G	ND
Benzene	17.0
Toluene	ND
Ethylbenzene	0.93
Xylenes	0.41

MW-4	ppb
TPH/G	ND
Benzene	2.1
Toluene	ND
Ethylbenzene	ND
Xylenes	0.31

MW-5	ppb
TPH/G	ND
Benzene	ND
Toluene	ND
Ethylbenzene	ND
Xylenes	ND

LEGEND

- ⊕ MONITORING WELL LOCATION
- ND NON-DETECT
- ppb PARTS PER BILLION
- TPH/G TOTAL PETROLEUM HYDROCARBONS AS GASOLINE

TABLE 2
SUMMARY OF GROUND WATER ELEVATION DATA
FORMER ALAMEDA SERVICE STATION A-578
DUBLIN, CALIFORNIA

WELL ID.	TOP OF CASING ELEVATION (MSL)*	DATE MEASURED	DEPTH TO WATER (ft)	WATER ELEVATIONS (MSL)	CHANGE SINCE LAST READING (ft)
MW-1	340.20 335.30-320.30 *	2/28/91	5.00	335.20	
		6/14/91	5.53	334.67	-0.59
		9/26/91	5.97	334.23	-0.38
		12/30/91	5.50	334.70	0.47
		3/26/92	4.65	335.55	0.85
		6/23/92	4.92	335.28	-0.27
		9/24/92	5.10	335.10	-0.18
		12/29/92	4.89	335.31	0.21
		3/24/93	3.57	336.63 ^o	1.32
		6/28/93	3.79	336.41 ^o	-0.22
MW-2	340.27 335.52-320.52	2/28/91	5.46	334.81	
		6/14/91	5.90	334.37	-0.44
		9/26/91	6.54	333.73	-0.64
		12/30/91	5.83	334.44	0.71
		3/27/92	5.35	334.92	0.48
		6/23/92	5.69	334.58	-0.34
		9/24/92	5.70	334.57	-0.01
		12/29/92	5.52	334.75	0.18
		3/24/93	4.48	335.79	1.04
		6/28/93	4.67	335.60	-0.19
MW-3	341.00 336.67-321.67	2/28/91	5.61	335.39	
		6/14/91	5.40	335.60	0.21
		9/26/91	6.29	334.71	-0.89
		12/30/91	5.75	335.25	0.54
		3/26/92	4.58	336.42	1.17
		6/23/92	5.27	335.73	-0.69
		9/24/92	5.47	335.53	-0.20
		12/29/92	5.08	335.92	0.39
		3/24/93	3.83	337.17 ^o	1.25
		6/28/93	4.02	336.98	-0.19
MW-4	342.11 337.31-322.31	2/28/91	7.01	335.10	
		6/14/91	7.01	335.10	0.00
		9/26/91	7.81	334.30	-0.80
		12/30/91	7.17	334.94	0.64
		3/27/92	6.44	335.67	0.73
		6/23/92	6.70	335.41	-0.26
		9/24/92	6.84	335.27	-0.14
		12/29/92	6.59	335.52	0.25
		3/24/93	5.38	336.73	1.21
		6/28/93	5.52	336.59	-0.14
MW-5	340.09 335.52-320.52	6/14/91	5.81	334.28	
		9/26/91	5.92	334.17	-0.11
		12/30/91	5.52	334.57	0.40
		3/26/92	4.80	335.29	0.72
		6/23/92	5.23	334.86	-0.43
		9/24/92	5.07	335.02	0.16
		12/29/92	5.04	335.05	0.03
		3/24/93	3.99	336.10 ^o	1.05
		6/28/93	4.11	335.98	-0.12
		MW-6	340.81 336.63-326.63	9/26/91	6.45
12/30/91	5.71			335.10	0.74
3/27/92	5.03			335.78	0.68
6/23/92	5.38			335.43	-0.35
9/24/92	5.57			335.24	-0.19
12/29/92	5.22			335.59	0.35
3/24/93	3.86			336.95	1.36
6/28/93	3.95			336.86	-0.09

* MSL = Mean Sea Level

screen interval (MSL)

^o = above screen interval

TABLE 3

CHANGE IN GROUND WATER ELEVATION AT MONITORING WELLS
DURING INTERIM REMEDIATION AT MW-6
FORMER ALAMEDA SERVICE STATION A-578
DUBLIN, CALIFORNIA
(continued)

DATE	TIME	MW-1		MW-2		MW-3		MW-4		MW-5		MW-6	
		Depth	Change	Depth	Change	Depth	Change	Depth	Change	Depth	Change	Depth	Change
10-17-91	1000	6.19	---	6.74	---	6.40	---	7.96	---	6.28	---	6.65	---
	1600	6.24	-0.05	6.80	-0.06	6.59	-0.19	8.10	-0.14	6.45	-0.17	11.26	-4.61
10-18-91	0900	6.24	-0.05	6.82	-0.08	6.55	-0.15	8.04	-0.08	6.40	-0.12	6.72	-0.07
	1600	6.28	-0.09	6.84	-0.10	6.64	-0.24	8.13	-0.17	6.48	-0.20	12.80	-6.15
12-30-91	0800	5.50	---	5.83	---	5.75	---	7.17	---	5.52	---	5.72	---
12-31-91	1500	5.69	-0.19	6.00	-0.17	5.83	-0.08	7.29	-0.12	5.68	-0.16	7.36	-1.65
3/26/92	1000	4.65	---	5.35	---	4.58	---	6.44	---	4.80	---	5.03	---
	1500	4.82	-0.17	5.43	-0.08	5.01	-0.43	6.70	-0.26	5.15	-0.35	12.72	-7.69
3/27/92	0845	4.74	-0.09	5.41	-0.06	4.95	-0.37	6.52	-0.08	5.01	-0.21	5.10	-0.07
	1400	4.80	-0.15	5.48	-0.13	5.04	-0.46	6.72	-0.28	6.11	-1.31	13.12	-8.07
6/23/92	0930	4.92	---	5.69	---	5.27	---	6.70	---	5.23	---	5.38	---
	1830	5.04	-0.12	5.82	-0.13	5.38	-0.11	6.95	-0.25	5.39	-0.16	13.70	-8.32
6/24/92	0900	5.04	-0.12	5.76	-0.07	5.33	-0.06	6.84	-0.14	5.34	-0.11	5.48	-0.10
	1130	5.09	-0.17	5.79	-0.10	5.38	-0.11	6.95	-0.25	5.39	-0.16	9.77	-4.39
9/24/92	0845	5.10	---	5.70	---	5.47	---	6.84	---	5.07	---	5.57	---
	1530	5.33	-0.23	5.91	-0.21	5.68	-0.21	7.16	-0.32	5.50	-0.43	13.50	-7.93

TABLE 3

CHANGE IN GROUND WATER ELEVATION AT MONITORING WELLS
DURING INTERIM REMEDIATION AT MW-6
FORMER ALAMEDA SERVICE STATION A-578
DUBLIN, CALIFORNIA
(continued)

DATE	TIME	MW-1		MW-2		MW-3		MW-4		MW-5		MW-6	
		Depth	Change	Depth	Change	Depth	Change	Depth	Change	Depth	Change	Depth	Change
9/25/92	0705	5.35	-0.25	5.98	-0.28	5.69	-0.22	7.14	-0.30	5.53	-0.46	5.79	-0.22
	1005	5.42	-0.32	6.07	-0.37	5.76	-0.29	7.64	-0.80	5.66	-0.59	13.50	-7.93
10/29/92	1030	5.95	---	6.77	---	6.46	---	8.00	---	6.34	---	6.65	---
	1556	6.03	-0.08	6.64	0.13	6.47	-0.01	7.94	-0.06	6.21	0.13	13.16	-6.51
11/20/92	0820	6.06	---	6.85	---	6.47	---	8.04	---	6.42	---	6.73	---
	1325	6.22	-0.16	6.88	-0.03	6.67	-0.20	8.12	-0.08	6.48	-0.06	13.85	-7.12
12/29/92	1150	4.89	---	5.52	---	5.08	---	6.59	---	5.04	---	5.22	---
	1605	4.89	0.00	5.57	-0.05	5.08	0.00	6.71	-0.12	5.09	-0.05	12.25	-7.03
12/30/92	0935	4.66	0.23	5.26	0.26	4.82	0.26	6.33	0.26	4.83	0.21	4.81	0.41
	1420	4.72	0.17	5.31	0.21	4.92	0.16	6.54	0.05	4.93	0.11	13.90	-8.68
3/24/93	0912	3.57	---	4.48	---	3.83	---	5.38	---	3.99	---	3.86	---
	1340	3.64	-0.07	4.63	-0.15	3.97	-0.14	5.63	-0.25	4.13	-0.14	9.98	-6.12
3/25/93	0918	3.53	0.04	4.46	0.02	3.77	0.06	5.35	0.03	3.97	0.02	3.79	0.07
	1130	3.62	-0.05	4.53	-0.05	3.93	-0.10	5.60	-0.22	4.10	-0.11	10.36	-6.50

TABLE 3

**CHANGE IN GROUND WATER ELEVATION AT MONITORING WELLS
DURING INTERIM REMEDIATION AT MW-6
FORMER ALAMEDA SERVICE STATION A-578
DUBLIN, CALIFORNIA
(continued)**

DATE	TIME	MW-1		MW-2		MW-3		MW-4		MW-5		MW-6	
		Depth	Change	Depth	Change	Depth	Change	Depth	Change	Depth	Change	Depth	Change
06-28-93	1120	3.79	---	4.67	---	4.02	---	5.52	---	4.11	---	3.95	---
	1541	3.90	-0.11	4.82	-0.15	4.18	-0.16	5.77	-0.25	4.29	-0.18	8.05	-4.10
06-29-93	1032	3.77	0.02	4.59	0.08	3.99	0.03	5.50	0.02	4.04	0.07	3.87	0.08
	1347	3.85	-0.06	4.70	-0.03	4.14	-0.12	5.76	-0.24	4.19	-0.08	11.26	-7.31

*NOTE: Changes in water elevation are measured from the initial depth to ground water on 10/17/91, 12/30/91, 3/26/92, 6/23/92, 9/24/92, 10/29/92, 11/20/92, 12/29/92, 3/24/93 and 6/28/93.
Ground water was pumped from MW-6 at approximately 9.6 gpm during June 1993.

TABLE 4
6/93 ANALYTICAL RESULTS OF GROUND WATER SAMPLES (ppb)
FORMER ALAMEDA SERVICE STATION, A-578
DUBLIN, CALIFORNIA

<u>WELL DESIGNATION</u>	<u>DATE</u>	<u>TPH/G</u>	<u>TPH/D</u>	<u>BENZENE</u>	<u>TOLUENE</u>	<u>ETHYL BENZENE</u>	<u>TOTAL XYLENES</u>
MW-1	2/91	<50	<500	<0.5	<0.5	<0.5	<0.5
	6/91	<50	---	<0.5	<0.5	<0.5	<0.5
	9/91	<50	---	<0.5	<0.5	<0.5	<0.5
	12/91	<50	---	<0.5	<0.5	<0.5	<0.5
	3/92	<50	---	<0.3	<0.3	<0.3	<0.3
	6/92	<50	---	<0.3	<0.3	<0.3	<0.3
	9/92	<50	---	<0.3	<0.3	<0.3	<0.3
	MW-2	2/91	50	<500	2.0	0.8	1.1
6/91		51	---	6.6	<0.5	1.1	1.33
9/91		<50	---	5.0	<0.5	0.64	<0.5
12/91		<50	---	6.1	<0.5	<0.5	<0.5
3/92		<50	---	3.6	<0.5	<0.5	<0.5
6/92		<50	---	9.5	<0.3	<0.3	<0.3
9/92		<50	---	1.3	<0.3	<0.3	<0.3
12/92		150	---	35 ^b	0.81	4.0	3.2
3/93		<50	---	3.2	<0.3	<0.3	0.86
6/93		<50	---	17.0	<0.3	0.93	0.41
MW-3	2/91	<50	<500	<0.5	<0.5	<0.5	<0.5
	6/91	<50	---	<0.5	<0.5	<0.5	<0.5
	9/91	<50	---	<0.5	<0.5	<0.5	<0.5
	12/91	<50	---	<0.5	<0.5	<0.5	<0.5
	3/92	<50	---	<0.3	<0.3	<0.3	<0.3
	6/92	<50	---	<0.3	<0.3	<0.3	<0.3
	9/92	<50	---	<0.3	<0.3	<0.3	<0.3
	MW-4	2/91	6,000	<500	680	<20	160
6/91		6,100	---	680	<25	150	<25
9/91		<50	---	100	<0.5	45	8.1
12/91		180	---	6.4	<1.0	16	25.8
3/92		560	---	120	6.0	5.0	<0.5
6/92		<50	---	<0.3	<0.3	<0.3	<0.3
9/92		<50	---	<0.3	<0.3	<0.3	<0.3
12/92		<50	---	0.92	<0.3	<0.3	<0.3
3/93		<50	---	4.3	<0.3	0.98	<0.3
6/93		<50	---	2.1	<0.3	<0.3	0.31

TABLE 4

6/93 ANALYTICAL RESULTS OF GROUND WATER SAMPLES (ppb)
 FORMER ALAMEDA SERVICE STATION, A-578
 DUBLIN, CALIFORNIA
 (Continued)

<u>WELL DESIGNATION</u>	<u>DATE</u>	<u>TPH/G</u>	<u>TPH/D</u>	<u>BENZENE</u>	<u>TOLUENE</u>	<u>ETHYL BENZENE</u>	<u>TOTAL XYLENES</u>
MW-5	6/91	<50	---	<0.5	<0.5	<0.5	<0.5
	9/91	<50	---	<0.5	<0.5	<0.5	<0.5
	12/91	<50	---	<0.5	<0.5	<0.5	<0.5
	3/92	<50	---	<0.3	<0.3	<0.3	<0.3
	6/92	<50	---	<0.3	<0.3	<0.3	<0.3
	9/92	<50	---	<0.3	<0.3	<0.3	<0.3
	12/92	<50	---	<0.3	<0.3	<0.3	<0.3
	3/93	<50	---	<0.3	<0.3	<0.3	<0.3
	6/93	<50	---	<0.3	<0.3	<0.3	<0.3
MW-6	9/91	2,300	---	760	11	360	236
	10/91	1,900	---	230	<5	140	12.1
	12/91	2,500	<500	360	<50 ^a	260	<50 ^a
	3/92	2,600	<500	400	<50 ^a	280	<50 ^a
	6/92	1,500	---	220	<3 ^b	190	<3 ^b
	9/92	<480 ^b	---	28	<3 ^b	120	<3 ^b
	12/92	250	---	16 ^b	<0.3	33 ^b	16.4
	3/93	<50	<500	<0.3	<0.3	0.37	0.88
	6/93	<50	---	<0.3	<0.3	0.72	1.48

a = The analysis was run at a 1:100 dilution to bring target analytes within linear working range of the GC.

b = The analysis was run at a 1:10 dilutions to bring target analytes within linear working range of the GC.

--- = Not analyzed.

ATTACHMENT I
SAMPLING EVENT DATA SHEETS

PROJECT: TARGET Dublin EVENT: Quarterly SAMPLER: D. WATTS

NO.	WELL OR LOCATION	DATE		TIME		MEASUREMENT	CODE	COMMENTS
		MO	DAY	HR	MIN			
1	h7W-1	6	28	11	20	3.79	SWL	Vault Box Floor
2	h7W-3			11	22	4.02		
3	h7W-5			11	24	4.11		
4	h7W-2			11	25	4.67		
5	h7W-4			11	26	5.52		
6	h7W-6			11	27	3.95		
7	MW-1			15	41	3.90		
8	MW-3			15	43	4.18		
9	MW-5			15	45	4.29		
10	h7W-2			15	47	4.82		
11	MW-4			15	49	5.77		
12	h7W-6	∇	∇	15	50	8.05	∇	(PURGING)
13								
14								
15								
16								
17								
18								
19								
20								

CODES:

- *SWL - Static Water Level (Feet)
- *IWL - Instant Water Level; Non-Static (Feet)
- *OIL - Oil Level (Feet)
- *OWI - Oil/Water interface (Feet)
- *MTD - Measured Total Depth (Feet)
- FLO - Flow Rate (Gallons/Minute)
- CUM - Cumulative (Gallons)
- HRS - Total (Hours)
- PSI - Pressure (psi)²
- pH - 1 to 14
- Ec - Conductivity (µm HOS)
- TMP - Temperature (°C)
- TRB - Turbidity (NTU)
- _____ (Additional Code)

*All levels are depth from inner casing - describe any other reference points in comments column; when in doubt, describe reference point.

Note in comments column if well is not: properly labeled, locked, or able to be locked. Describe corrective action. Note flooding of vault box, odor, access problems.

*Negative pressure (Vacuum) psi = approx $-(1/2 \times \text{mmHg})$

PROJECT: TARGET Dublin EVENT: Quarterly SAMPLER: D. WATTS

NO.	WELL OR LOCATION	DATE		TIME		MEASUREMENT	CODE	COMMENTS
		MO	DA	YR	HR			
1	177W-1	6	29	93	10	32	3.77	SWL
2	177W-3				10	33	3.99	
3	177W-5				10	34	4.04	
4	177W-2				10	36	4.59	
5	177W-4				10	37	5.50	
6	177W-6				10	38	3.87	
7	177W-1				13	47	3.85	
8	177W-3				13	49	4.14	
9	177W-5				13	51	4.19	
10	177W-2				13	53	4.70	
11	177W-4				13	55	5.76	
12	177W-6	∇	∇	∇	13	56	11.26.	∇ (Bubbling)
13								
14								
15								
16								
17								
18								
19								
20								

CODES:

*SWL - Static Water Level (Feet)
 *IWL - Instant Water Level; Non-Static (Feet)
 *OIL - Oil Level (Feet)
 *OWI - Oil/Water Interface (Feet)
 *MTD - Measured Total Depth (Feet)
 FLO - Flow Rate (Gallons/Minute)
 CUM - Cumulative (Gallons)

HRS - Total (Hours)
 PSI - Pressure (psi)²
 pH - 1 to 14
 Ec - Conductivity (µm HOS)
 TMP - Temperature (°C)
 TRB - Turbidity (NTU)
 _____ (Additional Code)

*All levels are depth from inner casing - describe any other reference points in comments column; when in doubt, describe reference point.

Note in comments column if well is not: properly labeled, locked, or able to be locked. Describe corrective action. Note flooding of vault box, odor, access problems.

*Negative pressure (Vacuum) psi = approx $-(1/2 \times \text{mmHg})$

SAMPLING EVENT DATA SHEET

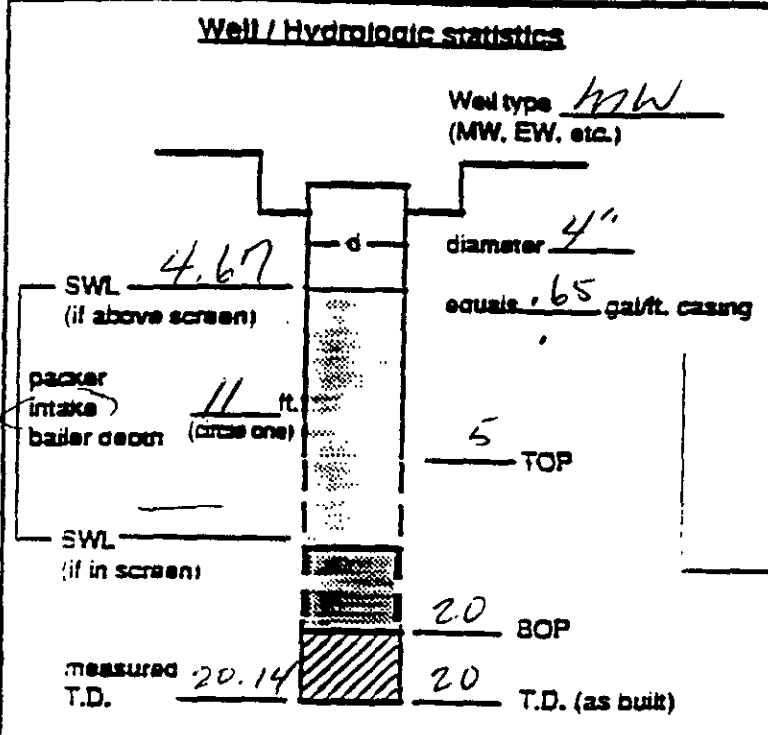
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McLaren

WELL OR LOCATION M7W-2

PROJECT TARGET PUBLIX EVENT Quarterly SAMPLER D. WATTS DATE 6/28/93



Action	Time	Pump rate	IWL (low vick)
Start pump / Begin	1430	1.25 gpm	
	1438	2 gpm	5.68
	1443	2 gpm	8.29
	1448	2 gpm	9.31
	1453	2 gpm	9.95
Stop	1454		9.95
Sampled	1500		7.40
(Final IWL)	1510		4.90

Purge calculation

.65 gal/ft. * 15.47 ft. = 10 gals 3.3 = 40 gals.

SWL to BOP or packer to BOP one volume purge volume- 3 casings

Head purge calculation (Airlift only)

gal/ft. ft. gals. packer to SWL

Equipment Used / Sampling Method / Description of Event:
CENTRIFUGAL PUMP @ DISPOSABLE BAILER.
USED MEASURED T.D. FOR PURGE CALCULATION.

Actual gallons purged	<u>41</u>
Actual volumes purged	<u>41</u>
Well yield (see below)	<u>⊕ HY/My</u>
COC #	<u>DD234</u>
Sample I.D.	<u>236756-59</u>
Analysis	<u>TPH-6/LuBT</u> <u>BTEX/LuBT</u>
Lab	<u>MBT</u>

Additional comments:
50% RECOVERY: 12.40
80% RECOVERY: 7.76 SAMPLE TURBIDITY: 2.91

Gallons purged *	TEMP °C (°F) (circle one)	EC (µs / cm)	PH	TURBIDITY (NTU)
1. 10	70.9	1320	7.10	3.41
2. 20	71.9	1380	7.11	3.40
3. 30	70.5	1390	7.15	6.88
4. 40	70.4	1350	7.08	4.81
5.				

* Take measurement at approximately each casing volume purged.

⊕ HY - Minimal W.L. drop

MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump.

LY - Able to purge 3 volumes by returning later or next day.

VLY - Minimal recharge - unable to purge 3 volumes.

SAMPLING EVENT DATA SHEET

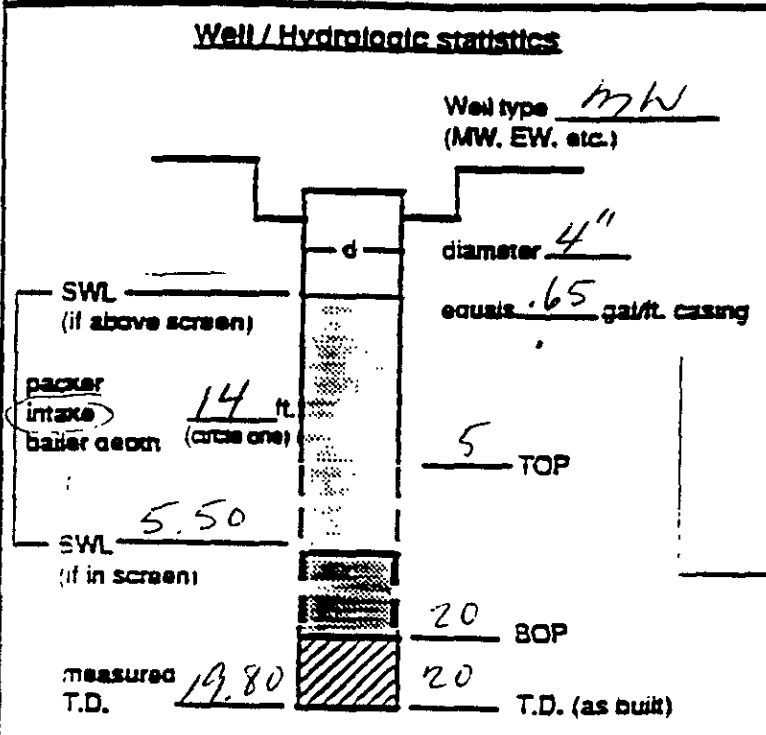
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McLaren

WELL OR LOCATION MW-4

PROJECT TARGET PUMP EVENT Quarterly SAMPLER D. WATTS DATE 6/29/93



Action	Time	Pump rate	IWL (low yield)
Start pump / Begin	1127	2 GPM	
	1132	2 GPM	10.02
	1137	2 GPM	11.60
	1142	2 GPM	12.42
	1146	2 GPM	13.00
Stop	1147		13.00
Sampled	1158		7.65
(Final IWL)	1210		5.92
Purge calculation			
.65 gal/ft. * 14.50 ft. = 9.5 gals * 2 = 38 gals.			
SWL to BOP or packer to BOP one volume purge volume = 3 casings			
Head purge calculation (Air lift only)			
gal/ft. ft. gals. packer to SWL			

Equipment Used / Sampling Method / Description of Event:
CENTRIFUGAL PUMP @ DISPOSABLE BATTER.
USED DESIGN T.D. FOR PURGE CALCULATION.

Actual gallons purged	<u>38</u>
Actual volumes purged	<u>4</u>
Well yield (see below)	<u>MY</u>
COC #	<u>00238</u>
Sample I.D.	<u>236760-63</u>
Analysis	<u>TPAB (uM/l) + STex (uM/l)</u>
Lab	<u>MBT</u>

Additional comments:
50% RECOVERY: 12.95
70% RECOVERY: 8.40 SAMPLE TURBIDITY: 2.18

Gallons purged *	TEMP °C (°F) (circle one)	EC (us / cm)	PH	TURBIDITY (NTU)
1. 10	72.5	1090	7.07	4.53
2. 20	74.1	1040	7.05	4.08
3. 30	74.3	1020	7.17	3.91
4. 38	74.1	1010	7.17	4.09
5.				

* Take measurements at approximately each casing volume purged.

⊕ HY - Minimal W.L. drop

MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump.

LY - Able to purge 3 volumes by returning later or next day.

VLY - Minimal recharge - unable to purge 3 volumes.

SAMPLING EVENT DATA SHEET

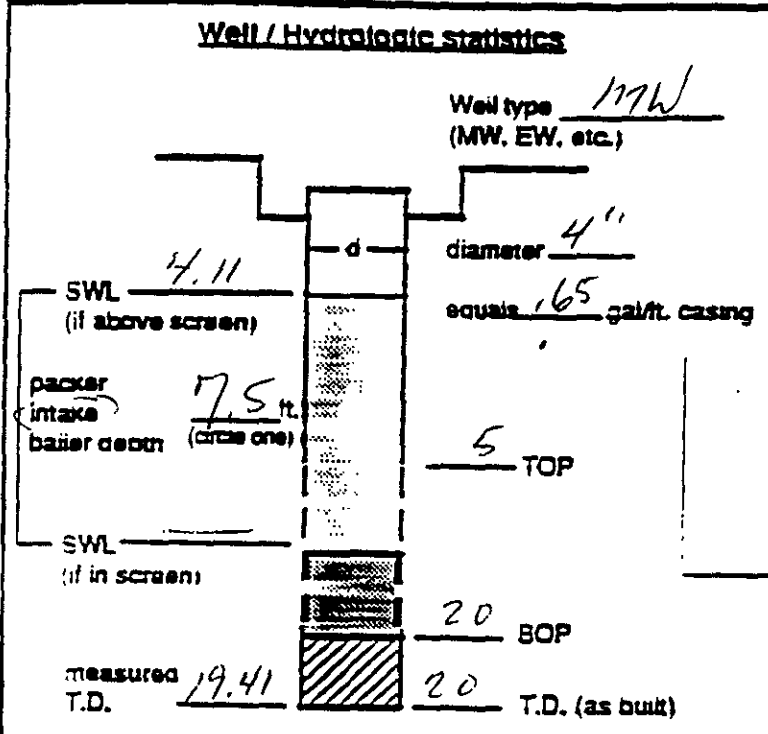
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McLaren

WELL OR LOCATION MW-5

PROJECT Truett Dublin EVENT Quarterly SAMPLER D. Watts DATE 6/28/93



Action	Time	Pump rate	IWL (low view)
Start pump / Begin	<u>1248</u>	<u>1 GPM</u>	
	<u>1258</u>	<u>1 GPM</u>	<u>6.33</u>
	<u>1309</u>	<u>1 GPM</u>	<u>6.25</u>
	<u>1319</u>	<u>1 GPM</u>	<u>6.23</u>
	<u>1330</u>	<u>1 GPM</u>	<u>6.26</u>
Stop	<u>1330</u>		<u>6.26</u>
Sampled	<u>1340</u>		
(Final IWL)	<u>1345</u>		<u>4.35</u>
Purge calculation			
<u>.65</u> gal/ft. \cdot <u>15.89</u> ft. = <u>10.5</u> gals \times <u>3</u> = <u>42</u> gals.			
SWL to BOP or packer to BOP		one volume	purge volume - 3 casings
Head purge calculation (Airlift only)			
gal/ft.:	ft.:	gals.:	
packer to SWL:			

Equipment Used / Sampling Method / Description of Event:
Centrifugal pump w/ DISASSEMBLE DAILET.
USED DESIGN T.D. FOR BURKE CALCULATION.

Actual gallons purged	<u>42</u>
Actual volumes purged	<u>4</u>
Well yield (see below)	<u>HY</u>
COC #	<u>10238</u>
Sample I.D.	Analysis Lab
<u>237198</u>	<u>TPH-6/LuFT</u> <u>MBT</u>
<u>237199</u>	<u>BTEX/LuFT</u>
<u>237200</u>	<u>(TR)</u> <u>BLK</u>
<u>236751</u>	<u>↓</u>
<u>236752-55</u>	<u>↓ (MW-5)</u> <u>↓</u>

Additional comments:

50% RECOVERY: 12.05

40% RECOVERY: 7.28 SAMPLE TURBIDITY: 0.81

Gallons purged	TEMP °C (°F) (circle one)	EC (us / cm)	PH	TURBIDITY (NTU)
<u>1. 10</u>	<u>72.8</u>	<u>1680</u>	<u>7.37</u>	<u>4.64</u>
<u>2. 21</u>	<u>73.0</u>	<u>1370</u>	<u>7.38</u>	<u>6.03</u>
<u>3. 31</u>	<u>74.1</u>	<u>1470</u>	<u>7.21</u>	<u>3.45</u>
<u>4. 42</u>	<u>74.4</u>	<u>1410</u>	<u>7.10</u>	<u>1.89</u>
<u>5.</u>				

* Take measurement at approximately each casing volume purged.

⊕ HY - Minimal W.L. drop

MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump.

LY - Able to purge 3 volumes by returning later or next day.

VLY - Minimal recharge - unable to purge 3 volumes.

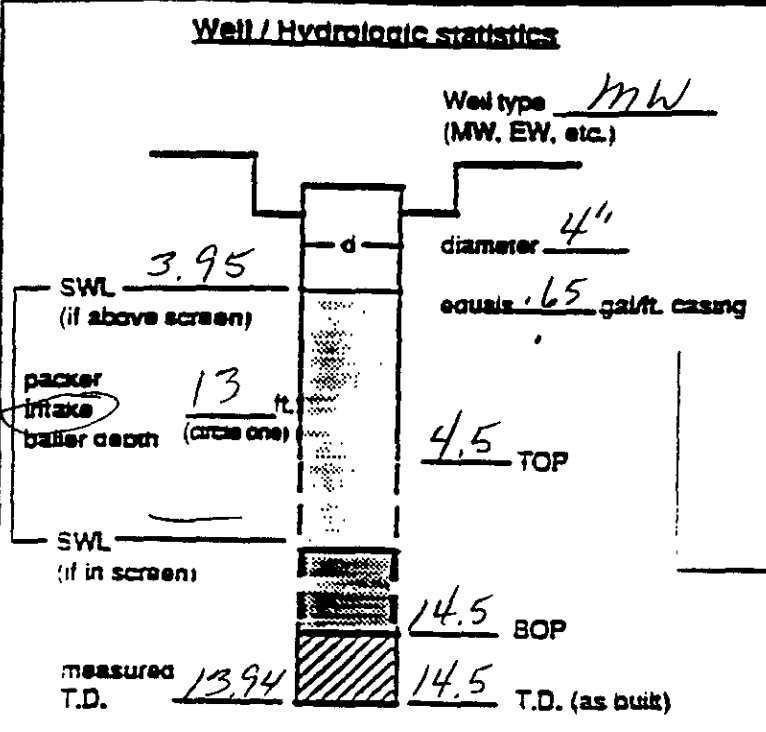
SAMPLING EVENT DATA SHEET

(fill out completely)



WELL OR LOCATION MW-6

PROJECT TARGET DUBLIN EVENT Quarterly SAMPLER D. WATTS DATE 6/28/93



Action	Time	Pump rate	IWL (low visk)
Start pump / Begin	1150	.85 gpm	
STOP	1610	↓	9.63
RE-START (6/29/93)	1045	.98 gpm	3.87
Stop	1402	↓	11.26
Sampled	1415		4.27
(Final IWL)	1426		4.19
Purge calculation			
$.65 \text{ gal/ft.} \cdot 11.55 \text{ ft.} = 7.51 \text{ gals} \cdot 3 = 22.53 \text{ gals.}$			
SWL to BOP or packer to BOP one volume purge volume- 3 casings			
Head purge calculation (Airlift only)			
gal/ft. : _____ ft. : _____ gals. : _____			
packer to SWL : _____			

Equipment Used / Sampling Method / Description of Event:
CENTRIFUGAL PUMP @ DISPOSABLE BAILER.
USED DESIGN T.D. FOR PURGE CALCULATION.

Actual gallons purged	<u>420</u>
Actual volumes purged	<u>61.31</u>
Well yield (see below)	<u>MY</u>

COC #	<u>00238</u>
Sample I.D.	<u>236764-67</u>
Analysis	<u>TPH-5/LUKT</u> <u>PTPX/LUKT</u>
Lab	<u>MBST</u>

TEMP. ELEVATED ON ASPHALT (SHALLOW SWL)

Additional comments: SLIGHT PETROLEUM ODOR.

50% RECOVERY: 9.22

81% RECOVERY: 6.06 SAMPLE TURBIDITY: 10.15

Gallons purged	TEMP °C (°F) (circle one)	EC (us / cm)	PH	TURBIDITY (NTU)
1. <u>SAMPLE</u>	<u>83.8</u>	<u>460</u>	<u>7.38</u>	<u>10.15</u>
2.				
3.				
4.				
5.				

* Take measurements at approximately each casing volume purged.

⊕ HY - Minimal W.L. drop MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump. LY - Able to purge 3 volumes by returning later or next day. VLY - Minimal recharge - unable to purge 3 volumes.

ATTACHMENT II
ANALYTICAL DATA SHEETS
AND
CHAIN-OF-CUSTODY

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and
 Total Petroleum Hydrocarbons Gasoline by LUFT
 Preparation Method: EPA 5030

Project Name: Target Dublin

Project Number: 04.0122617.000

Sample Description: Trip Blank

Lab Project-ID Number: 7759-001

Sample Number: 237199

Date Sampled: 06/28/93

Date Received: 07/01/93

Date Analyzed: 07/07/93

<u>ANALYTE</u>	<u>CONCENTRATION</u> ug/L (ppb)	<u>REPORTING LIMIT</u> ug/L (ppb)
Benzene	BRL	0.30
Toluene	BRL	0.30
Ethylbenzene	BRL	0.30
1,2-Xylene	BRL	0.30
1,3-Xylene	BRL	0.30
1,4-Xylene	BRL	0.30
Total Petroleum Hydrocarbons - Gasoline	BRL	50

<u>Surrogates</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
a,a,a-Trifluorotoluene (PID)	87	80 - 120
a,a,a-Trifluorotoluene (FID)	88	80 - 120

Comments:

Approved By: *Nancy McDonald* for: Nancy McDonald, Quality Control Chemist Date: 7/9/93

The cover letter and attachments are integral parts of this report.

052493btxtphgw



VOLATILE AROMATIC COMPOUNDS

**Analytical Method: Modified EPA 8020 (BTEX) and
Total Petroleum Hydrocarbons Gasoline by LUFT
Preparation Method: EPA 5030**

Project Name: Target Dublin

Project Number: 04.0122617.000

Sample Description: MW-2

Lab Project-ID Number: 7759-003

Sample Number: 236759

Date Sampled: 06/28/93

Date Received: 07/01/93

Date Analyzed: 07/06/93

<u>ANALYTE</u>	<u>CONCENTRATION</u> ug/L (ppb)	<u>REPORTING LIMIT</u> ug/L (ppb)
Benzene	17	3.0 (b)
Toluene	BRL	0.30
Ethylbenzene	0.93	0.30
1,2-Xylene	BRL	0.30
1,3-Xylene	BRL	0.30
1,4-Xylene	0.41	0.30
Total Petroleum Hydrocarbons - Gasoline	BRL	50

<u>Surrogates</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
a,a,a-Trifluorotoluene (PID)	79 (a)	80 - 120
a,a,a-Trifluorotoluene (FID)	81	80 - 120

Comments: (a) Sample surrogate recovery is beyond acceptance limits. All other quality control is acceptable. (c)
 (b) The data is reported from a different analytical run on 07/07/93 at a 10 fold dilution to obtain a result within linear range.
 (c) Revised 07/29/93.

Approved By: Nancy McDonald Date: 7.29.93
 Nancy McDonald, Quality Control Chemist

The cover letter and attachments are integral parts of this report.

052493btxtphgw



VOLATILE AROMATIC COMPOUNDS

**Analytical Method: Modified EPA 8020 (BTEX) and
Total Petroleum Hydrocarbons Gasoline by LUFT
Preparation Method: EPA 5030**

Project Name: Target Dublin

Project Number: 04.0122617.000

Sample Description: MW-4

Lab Project-ID Number: 7759-004

Sample Number: 236763

Date Sampled: 06/29/93

Date Received: 07/01/93

Date Analyzed: 07/06/93

<u>ANALYTE</u>	<u>CONCENTRATION</u> ug/L (ppb)	<u>REPORTING LIMIT</u> ug/L (ppb)
Benzene	2.1	0.30
Toluene	BRL	0.30
Ethylbenzene	BRL	0.30
1,2-Xylene	BRL	0.30
1,3-Xylene	BRL	0.30
1,4-Xylene	0.31	0.30
Total Petroleum Hydrocarbons - Gasoline	BRL	50

<u>Surrogates</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
a,a,a-Trifluorotoluene (PID)	106	80 - 120
a,a,a-Trifluorotoluene (FID)	129 (a)	80 - 120

Comments: (a) Sample surrogate recovery is beyond acceptance limits. All other quality control is acceptable.

Non-target analytes are present on the chromatograph.

Approved By: *Nancy McDonald* for: Nancy McDonald, Quality Control Chemist Date: 7/9/93

The cover letter and attachments are integral parts of this report.

052493btxtphgw



VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and
 Total Petroleum Hydrocarbons Gasoline by LUFT
 Preparation Method: EPA 5030

Project Name: Target Dublin

Project Number: 04.0122617.000

Sample Description: MW-5

Lab Project-ID Number: 7759-002

Sample Number: 236755

Date Sampled: 06/28/93

Date Received: 07/01/93

Date Analyzed: 07/06/93

<u>ANALYTE</u>	<u>CONCENTRATION</u> ug/L (ppb)	<u>REPORTING LIMIT</u> ug/L (ppb)
Benzene	BRL	0.30
Toluene	BRL	0.30
Ethylbenzene	BRL	0.30
1,2-Xylene	BRL	0.30
1,3-Xylene	BRL	0.30
1,4-Xylene	BRL	0.30
Total Petroleum Hydrocarbons - Gasoline	BRL	50

<u>Surrogates</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
a,a,a-Trifluorotoluene (PID)	77 {a}	80 - 120
a,a,a-Trifluorotoluene (FID)	79 {a}	80 - 120

Comments: (a) Sample surrogate recovery is beyond acceptance limits. All other quality control is acceptable. (b)
 (b) Revised 07/29/93.

Approved By: UM
 Nancy McDonald, Quality Control Chemist

Date: 7-29-93

The cover letter and attachments are integral parts of this report.

052493btxtphgw



VOLATILE AROMATIC COMPOUNDS

**Analytical Method: Modified EPA 8020 (BTEX) and
Total Petroleum Hydrocarbons Gasoline by LUFT
Preparation Method: EPA 5030**

Project Name: Target Dublin

Project Number: 04.0122617.000

Sample Description: MW-6

Lab Project-ID Number: 7759-005

Sample Number: 236767

Date Sampled: 06/29/93

Date Received: 07/01/93

Date Analyzed: 07/06/93

<u>ANALYTE</u>	<u>CONCENTRATION</u> ug/L (ppb)	<u>REPORTING LIMIT</u> ug/L (ppb)
Benzene	BRL	0.30
Toluene	BRL	0.30
Ethylbenzene	0.72	0.30
1,2-Xylene	BRL	0.30
1,3-Xylene	0.61	0.30
1,4-Xylene	0.87	0.30
Total Petroleum Hydrocarbons - Gasoline	BRL	50

<u>Surrogates</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
a,a,a-Trifluorotoluene (PID)	91	80 - 120
a,a,a-Trifluorotoluene (FID)	95	80 - 120

Comments: Non-target analytes are present on the chromatograph.

Approved By: *Nancy McDonald* Date: 7/9/93
Nancy McDonald, Quality Control Chemist

The cover letter and attachments are integral parts of this report.

052493btxtphgw



QUALITY CONTROL DEFINITIONS

METHOD BLANK RESULTS: A method blank (MB) is a laboratory generated sample free of any contamination. The method blank assesses the degree to which the laboratory operations and procedures cause false-positive analytical results for your samples.

LABORATORY CONTROL SPIKES

The LCS Program:

The laboratory control spike is a well-characterized matrix (organic pure type II water for water samples and contamination-free sand for soil samples) which is spiked with certain target parameters, and analyzed in duplicate at approximately 5% of the sample load, in order to assure the accuracy and precision of the analytical method.

Control limits for accuracy and precision are different for different methods and may vary with the different sample matrices. They are based on laboratory average historical data and EPA limits which are approved by the Quality Assurance Department.

(DC2-CN7759)

MBT Environmental
Laboratories



Master Builders Technology



QUALITY CONTROL REPORT

METHOD BLANK

Method: Mod. EPA 8020 (BTEX) & TPH/G
Units: ug/L (ppb)

Date Analyzed: 07/06/93

<u>Analyte</u>	<u>Reporting Limit</u>	<u>Concentration</u>
Benzene	0.30	BRL
Toluene	0.30	BRL
Ethylbenzene	0.30	BRL
1,2-Xylene	0.30	BRL
1,3-Xylene	0.30	BRL
1,4-Xylene	0.30	BRL
Total Petroleum Hydrocarbons - Gasoline	50	BRL

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptance Limits</u>
a,a,a-Trifluorotoluene (PID)	93	80 - 120
a,a,a-Trifluorotoluene (FID)	91	80 - 120



QUALITY CONTROL REPORT

METHOD BLANK

Method: Mod. EPA 8020 (BTEX) & TPH/G
Units: ug/L (ppb)

Date Analyzed: 07/07/93

<u>Analyte</u>	<u>Reporting Limit</u>	<u>Concentration</u>
Benzene	0.30	BRL
Toluene	0.30	BRL
Ethylbenzene	0.30	BRL
1,2-Xylene	0.30	BRL
1,3-Xylene	0.30	BRL
1,4-Xylene	0.30	BRL
Total Petroleum Hydrocarbons - Gasoline	50	BRL

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptance Limits</u>
a,a,a-Trifluorotoluene (PID)	96	80 - 120
a,a,a-Trifluorotoluene (FID)	94	80 - 120



QUALITY CONTROL REPORT

**Laboratory Control Sample/Laboratory Control Sample Duplicate
Method 8020**

LP#: 7759

Analyst: TL

Spike Sample ID: LCS/LCSDW - 42

Date Of Analysis: 06/30/93

Spike ID Code: W-1-733

Column: DB Wax

Surrogate ID Code: W-1-740

Instrument #: 6

Matrix: Water Units: ug/L

EPA METHOD	COMPOUNDS	(a)	(b)	(c)	(d)	(e)	(f)	(g)	ACCEPTANCE LIMITS	
		SAMPLE CONC.	SPIKE CONC.	SAMPLE + SPIKE CONC.	SPIKE REC.%	SAMPLE DUP. + SPIKE CONC.	SPIKE DUP. REC. %	RPD%	% REC.	RPD
8020	Chlorobenzene	0	4.00	4.72	118	4.16	104	13	80 - 120	≤20
8020	Benzene	0	4.00	4.32	108	3.86	96	11	80 - 120	≤20
8020	Ethyl Benzene	0	4.00	4.43	111	3.81	95	15	80 - 120	≤20

$$\text{Spike Recovery} = d = ((c-a)/b) \times 100$$

$$\text{Spike Duplicate Recovery} = f = ((e-a)/b) \times 100$$

$$\text{Relative Percent Difference} = g = (|c-e|)/((c+e) \times .5) \times 100$$

EPA METHOD	SURROGATE COMPOUNDS	DET.	(h)	(i)	(j)	(k)	(l)	ACCEPTANCE LIMITS	
			SUR. SPIKE CONC.	SAMPLE + SUR. SPIKE CONC.	SUR. REC. %	SAMPLE DUP. + SUR. SPIKE CONC.	SUR. DUP. RECOVERY %	% REC.	
8020	a,a,a,-Trifluorotoluene	PID	4.00	3.45	86	3.47	87	80 - 120	

$$\text{Surrogate \% Recovery} = j = (i/h) \times 100$$

$$\text{Surrogate Dup \% Recovery} = l = (k/h) \times 100$$



ABBREVIATIONS USED IN THIS REPORT

BRL	Below Reporting Limit
MB	Method Blank
MS	Matrix Spike
MSD	Matrix Spike Duplicate
LCS	Laboratory Control Spike
LCSD	Laboratory Control Spike Duplicate
RPD	Relative Percent Difference
NS	Not Specified
NA	Not Applicable

COMMENTS

Test methods may include minor modifications of published EPA methods (e.g., reporting limits or parameter lists). Reporting limits are adjusted to reflect dilution of the sample when appropriate. Solids and waste are analyzed with no correction made for moisture content.

The reporting limits for BTEX meet those specified in the California LUFT Manual.

(DC2-CN7759)

MBT Environmental
Laboratories



Master Builders Technics



**MBT Environmental
Laboratories**

3083 Gold Canal Drive
Rancho Cordova
CA 95670
Phone 916/852-6600
Fax 916/852-7292



Master Builders Technologies

Date: July 9, 1993
LP #: 7759

Campbell McLeod
McLaren/Hart Environmental Engineering
1135 Atlantic Avenue
Alameda, CA 94501

Dear Mr. McLeod:

Enclosed are the laboratory results for the five samples submitted by you to the MBT Environmental Laboratories on July 1, 1993, for the project *Target Dublin*.

The analyses you requested are:

EPA 8020 (BTEX) and TPH/G (5 - Water)

The report consists of the following sections:

1. A copy of the Chain-of-Custody
2. Quality Control Definitions and Report
3. Abbreviations and Comments
4. Analytical results

Unless otherwise instructed by you, samples will be disposed of two weeks from the date of this letter.

Thank you for choosing MBT Environmental Laboratories. We are looking forward to serving you in the future. Should you have any questions concerning this analytical report or the analytical methods employed, please do not hesitate to call.

Sincerely,

Shakoora Azimi
Laboratory Director, Principal Scientist





MBT Environmental Laboratories
 3083 Gold Canal Drive
 Rancho Cordova
 CA 95670
 Phone 916/852-6600
 Fax 916/852-7292

CHAIN OF CUSTODY RECORD 00238

SEE SIDE 2 FOR COMPLETE INSTRUCTIONS

Ship To: MBT ENV. LABS
 Address: 3083 GOLD CANAL DR.
RANCHO CORDOVA, CA 95670

Project Name: TARGET DUBLIN
 Project Number: 04.0122617.000
 Project Location: (State) CA

FOR LABORATORY USE ONLY

Laboratory Project #: 7759
 Storage Refrigerator ID: 8
 Storage Freezer ID: _____

- Common Analytical Methods
- 413 1
 - 413 2 Long Method
 - 413 2 Short Method
 - 418 1 Long Method
 - 418 1 Short Method
 - 420 1
 - 502.2
 - 503E
 - 503 1
 - 524 2
 - 601
 - 602
 - 604
 - 608
 - 610
 - 624
 - 625
 - 8010
 - 8015
 - 8015 Mod
 - 8020
 - 8021
 - 8040
 - 8080
 - 8100
 - 8150
 - 8240
 - 8270
 - 8310
 - Acidity
 - Alkalinity
 - BTEX
 - Chloride
 - CLP (see Side 2)
 - COD
 - Color
 - Conductivity
 - Corrosivity
 - Cyanide
 - Flashpoint
 - Fluoride
 - General Mineral
 - Hex. Chromium
 - Ion Balance
 - Metals (write specific metal & method #)
 - Metals 6010*
 - Metals PP*
 - Metals Title 22
 - TTL Level
 - STLC Level (see Side 2)
 - Nitrate
 - Nitrite
 - Odor
 - Org Lead
 - Org Mercury
 - Percent Moisture
 - Percent Solid
 - Perchlorate
 - pH
 - Phosphates
 - Phosphorus
 - Sulfate
 - Sulfides
 - TCLP:
 - VOA
 - Semivoa
 - Metals
 - Pesticide
 - TDS
 - Total Hardness
 - Total Solids
 - TPH D
 - TPH G
 - TSS
 - Turbidity

Sampler Name: D. Watts Signature: D. Watts PPE Worn in Field: D
 Relinquished By: D. Watts Date/Time: 6/30/93 1100 Received By or Method of Shipment/shipment I.D.: _____ Date/Time: _____
 Relinquished By: Express IT Date/Time: _____ Received By or Method of Shipment/shipment I.D.: Express IT Date/Time: 6/30/93 1100
 Relinquished By: _____ Date/Time: _____ Received By or Method of Shipment/shipment I.D.: _____ Date/Time: 7-1-93 0800

Sample Disposal (check one)
 Laboratory Standard
 Other

Level of QC (see Side 2)
 1 2 3 4 5 6A
 6B 6C 6D 6E 7

Write in Analysis Method →

ANALYSES REQUESTED

Write in Analysis Method	TPH-6/LuFT	BTEX/LuFT																			
	X	X																			

SAMPLE INFORMATION

FOR LABORATORY USE ONLY Lab ID	Sample ID Number	Date	Time	Description		Container(s)		Matrix Type	Pres. Type	TAT	TPH-6/LuFT	BTEX/LuFT										
				Locator	Depth	#	Type															
1 7759-001	237198	6/29/93	12A	Trip Blank	N/A	1	V	17-20	17 Cl	4	X	X										
2 7759-001	237199			(SPARE)							X	X										
3 7759-001	237200										X	X										
4 7759-001	236751										X	X										
5 7759-002	236752-55		1340	MW-5		4					X	X										
6 7759-003	236756-59		1500	MW-2		4					X	X										
7 7759-004	236760-63	6/29/93	1158	MW-4		4					X	X										
8 7759-005	236764-67		1415	MW-6		4					X	X										
9																						
10																						

Special Instructions/Comments:
(PLEASE RETURN COOLERS ASAP)

Container Types: A=1 Liter Amber TAT (Analytical Turn Around Time)
 B=Brass Tube C=Cassette 1 = 24 hours 2 = 48 hours
 G=Glass Jar P=Polyethylene 3 = 1 week 4 = 2 weeks
 O=Other V=Voia Vial 0 = Other

FOR LABORATORY USE ONLY Sample Condition Upon Receipt: TEMP. LOG, SAMPLES DO NOT
237198 HAS AIR BUBBLE.

SEND DOCUMENTATION AND RESULTS TO (Check one):
 Project Manager/Office: C. McLeod / ALMAYON
 Client Name: _____
 Company: _____
 Address: _____
 Phone: _____ FAX: _____