DOULOS
Environmental, Inc.

1704 Via Riata, Roseville, CA 95747 Tel: (916) 771-7098, FAX :(916) 771-4584
April 21, 2001

Mr. Scott Seery
Alameda County Health Care Agency
Department of Environmental Health
1131 Harbor Parkway, Room 250
Alameda, California 94502-6577

Subject: *Evaluation of Remediation with Vacuum Truck/Dual Phase Extraction Events*
Beacon Station No. 3720
1088 Marina Boulevard
San Leandro, California
Doulos Project No. 00-3720

Dear Mr. Seery:

Doulos Environmental, Inc. (Doulos), has been authorized by Ultramar, Inc. (Ultramar), to conduct oversight of the remediation activities at the subject site. The remediation activities included the oversight and evaluation of using a vacuum truck for two remedial events and using a Dual Phase Extraction (DPE) mobile unit for three remedial events to address elevated petroleum hydrocarbons in ground water at the subject site. The purpose of these vacuum truck and DPE events is conduct mass removal. The location of the site is presented in Figure 1, and a detailed site map is included as Figure 2. The purpose of this report is to evaluate the effectiveness of the five remedial events.

Vacuum Truck Extraction

The vacuum truck extracts ground water using as 4,800-gallon truck mounted storage tank and a high vacuum blower. This type of mobile unit is designed to extract liquid for industrial processes. A down-hole stinger made of polyvinyl chloride (PVC) is connected to the end of the vacuum trucks suction hose and is inserted into the monitoring wells for the extraction of ground water.

Dual Phased Extraction Test

The DPE technology uses a truck mount high vacuum liquid ring pump, which is connected to an air water separator, knockout drum, and a thermal oxidizer for vapor stream abatement. The liquid ring vacuum pump is capable of generating a vacuum two times the vacuum of a standard soil vapor extraction (SVE) blower. Like the vacuum truck technology, stingers are connected to the DPE vacuum pump suction hose to dewater ground water, but set higher to extract soil vapors. The DPE is equipped with the thermal oxidizer to abate the soil vapor being extracted by the high vacuum DPE process. TRC of San Diego operates the DPE mobile truck.

higher ?

Vacuum Truck /Dual Phase Extraction Performance Data

The vacuum truck extraction events were conducted on October 4 and 17, 2000 and the three DPE events were conducted on November 29, 2000, December 4, 2000 and January 4, 2001. The DPE field data packages generated by TRC are included in Enclosure A. The ground water analytical results from the vacuum truck and DPE events are included in Table 1. The vapor results from the DPE tests are included in Table 2. The performance of the vacuum truck and DPE events is included in Table 3. The DPE vapor calculations are included in Table 4. Copies of the ground water and vapor laboratory analytical reports and chain-of-custody documentation are included in Enclosure B.

The two vacuum truck extraction events and the three DPE events removed approximately 8.11 pound of vapor equivalent gasoline (1.32 gallons of gasoline) from soil and ground water. The combine five extraction events removed approximately 7,100 gallons of petroleum hydrocarbon impacted ground water purge water. During the first two DPE events, the field data indicated measurable vacuums (>0.05 inches of water) were recorded in the observation wells. However, during the January 4, 2001 DPE event, it was determined that the SVE manifold valves were open and allowing short-circuiting. Once the valves on the SVE manifold were closed, there were no measurable vacuums recorded in the observation wells for the rest of the January 4, 2001 DPE event. During the multiple DPE tests, the DPE stinger was inserted approximately 3 to 7 feet into the ground water table.

Dual Phase Extraction Results/Findings/Conclusions

The ground water laboratory analytical results from the two vacuum truck events and the three DPE events indicate the ground water concentration for total petroleum hydrocarbon (TPHg) as gasoline has reduced from 86,000 parts per billion (ppb) to 3,500 ppb. Methyl tertiary butyl ether has decreased from 150,000 ppb to 27,000 ppb. The preliminary evaluation of data collected during the first quarter 2001 quarterly monitoring event (February 27, 2001), indicates the reduce ground water petroleum hydrocarbon concentrations achieved during the final January 4, 2001 DPE event were similar to the ground water analytical results reported during the first quarter 2001 quarterly monitoring event.

The multiple remedial events produced significant reductions in ground water concentrations. For example, the methyl tertiary butyl ether (MTBE) in monitoring well MW-2 was reduced from 91,000 micrograms per liter (µg/L) on October 4, 2000 to 4,800 µg/L on January 4, 2001. This laboratory data indicates a 94.7 % reduction in MTBE ground water concentrations in monitoring well MW-2. Based on the performance of the three DPE events, Doulos recommends that the future DPE events continue to be conducted on monitoring well MW-2 (closest well to tank basin) until the existing ground water system is evaluated and upgraded. Doulos recommends that the future DPE events should be conducted for an extended durations (>12 hrs).

Remarks/Signatures

The interpretations contained in this document represent our professional opinions, and are based in part, on information supplied by the client. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeological and engineering practices at this time and location. Other than this, no warranty is implied or intended.

If you have any questions regarding this project, please contact Richard Munsch at (916) 771-7098.

Sincerely,

DOUGLAS ENVIRONMENTAL, INC.

Richard D. Munsch
Project Manager

RDM (3720 DPE Test Evaluation 3-15-01)

Enclosures

cc: Mr. Joe Aldridge, Ultramar, Inc.
Case Worker – California Regional Water Quality Control Board – San Francisco Bay Region

TABLE 1

VACUUM and DUAL PHASE EXTRACTION
GROUND WATER RESULTS

Beacon Station No. 3720
1088 Marina Boulevard
San Leandro, California

Sample ID	Date Collected	Time	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	TPH as gasoline (µg/L)	MTBE* (µg/L)	Oxygenate Compounds (µg/L)
MW-2-IN	10/04/00	5:58 AM	150	<100	180	390	<10,000	91,000	NA
MW-2-FI	10/04/00	8:50 AM	78	54	420	1,100	8,000	27,000	NA
MW-3-IN	10/04/00	8:40 AM	<200	<200	<200	<200	<20,000	150,000	NA
MW-3-FI	10/04/00	9:20 AM	60	12	54	23	2,600	100,000	NA
MW-2	10/17/00	9:45 AM	160	140	2,200	6,100	86,000	26,000	NA
MW-3	10/17/00	10:20 AM	57	<50	50	<50	5,200	110,000	NA
MW-2-PRE	11/29/00	7:30 AM	62	66	1,000	3,800	19,000	12,000	26[a]; 980[b]
MW-2-POST	11/29/00	2:20 PM	41	5.9	110	240	3,600	16,000	22[a]; 650[b]
MW-3-PRE	11/29/00	9:30 AM	94	<50	77	<50	<5,000	68,000	140[a]; 5,400[b]
MW-3-POST	11/29/00	4:05 PM	<100	<100	<100	<100	<10,000	61,000	120[a]; 4,500[b]
MW-2-PRE	12/04/00	10:35 AM	87	82	1,300	4,400	22,000	7,900	580[b]
MW-2-POST	12/04/00	5:30 PM	51	<20	92	190	3,300	12,000	990[b]
MW-3-PRE	12/04/00	10:35 AM	93	<50	74	<50	<5,000	65,000	96[a]; 6,000[b]
MW-3-POST	12/04/00	7:10 PM	<100	<100	<100	<100	<10,000	47,000	100[a]; 2,700[b]
MW-1	01/04/01	6:00 AM	<0.5	<0.5	<0.5	<0.5	<50	53	NA
MW-2	01/04/01	5:50 AM	<100	<100	1,500	4,200	32,000	4,800	NA
MW-3	01/04/01	5:40 AM	100	<50	120	<100	5,700	36,000	NA
MW-1	01/04/01	2:35 PM	<20	<20	190	330	5,300	11,000	NA
MW-2	01/04/01	12:35 PM	50	<20	57	350	3,500	10,000	NA
MW-3	01/04/01	10:35 AM	<50	<50	<50	52	<5,000	27,000	NA

a = tert-amyl methyl ether
b = tert-butanol

TPH = Total Petroleum Hydrocarbons
µg/L = micrograms per liter
*MTBE = Methyl tertiary butyl ether
Oxygenate Compounds =Diisopropyl ether, ethyl tertiary butyl ether, tert-amyl methyl ether, and tert-butanol by EPA Method 8260.
NA = Not Analyzed
ND = Non Detect
NM = Not Measured
NS = Not Sampled

TABLE 2
DUAL PHASE EXTRACTION VAPOR SYSTEM ANALYTICAL RESULTS

Beacon Station No.3720
1088 Marina Boulevard
San Leandro, California

Sample ID	Date Collected	Time	Benzene (ppmv)	Toluene (ppmv)	Ethyl-benzene (ppmv)	Total Xylenes (ppmv)	TPH as gasoline (ppmv)	MTBE* (ppmv)	Oxygenate Compounds (ppmv)
MW-2 INF	11/29/00	9:00 AM	0.31	1.4	1.4	5.7	70	30	ND
MW-2-EFF	11/29/00	9:00 AM	<0.05	0.31	0.14	0.6	12	<0.05	ND
MW-2-INF	11/29/00	12:30 PM	0.56	2.4	3.5	13	220	43	ND
MW-2-EFF	11/29/00	12:30 PM	<0.05	0.36	0.16	0.7	14	<0.05	ND
MW-3-INF	11/29/00	3:30 PM	0.28	1.3	0.57	3.2	58	97	3.3[a]
MW-3-EFF	11/29/00	3:30 PM	<0.05	0.29	0.13	0.54	11	<0.05	ND
MW-2-INF	12/04/00	3:50 PM	0.59	1.3	4.6	12	450	67	1.3[a]
MW-1	01/04/01	1:30 PM	0.19	0.86	2.2	4.6	220	40	NA
MW-2	01/04/01	11:30 PM	0.52	1.3	4.2	10	420	31	NA
MW-3	01/04/01	9:30 AM	0.60	0.58	1.1	3.3	310	120	NA
SYS-EFF	01/04/01	9:30 AM	<0.05	0.14	0.076	0.31	<5.0	0.13	NA

a = tert-butanol
TPH = Total Petroleum Hydrocarbons
ppmv = parts per million by volume
*MTBE = Methyl tertiary butyl ether
Oxygenate Compounds = Methyl tertiary butyl ether, diisopropyl ether, ethyl tertiary butyl ether, tert-amyl methyl ether, and tert-butanol by EPA Method 8260.
ND = Non Detect
NM = Not Measured

Table 3
Vacuum and Dual Phase Extraction Performance Data

Beacon Station No. 3720
1088 Marina Boulevard
San Leandro, California

Test Date	Average Flow Rate (cfm)[a]	Average Vacuum ("Hg)[b]	Average (TPHg & MTBE) Vapor (ppmv)[c]	Average (TPHg & MTBE) Aqueous (ppb)[d]	Pounds of Vapor Equivalent (TPHg &MTBE) (lbs)[e]	Gallons Per Minute (gpm)[f]	Total Gallons Removed (gallons)	Pounds of Aqueous (TPHg&MTBE) (lbs)[e]	Total Pound of Gasoline	Total Gallons of Gasoline
10/4/00	NA	NA	NA	102,150	NA	6.25	1,500	1.28	1.28	0.21
10/17/00	NA	NA	NA	113,600	NA	5.00	1,200	1.14	1.14	0.19
11/29/00	38.0	21.5	173	48,650	0.8	3.75	1,800	0.73	1.53	0.25
12/04/01	35.8	22.0	517	43,050	2.1	3.33	1,600	0.57	2.67	0.43
01/04/01	29.1	23.2	380	23,392	1.3	2.08	1,000	0.20	1.49	0.24
Totals					4.2		7,100	3.92	8.11	1.32

NA = Not Applicable

a = cubic feet minute
b = inches of mercury
c = parts per minute
d = parts per million
e = pounds
f = gallons per minute

TABLE 4

Dual Phase Extraction Vapor Calculation Data

Beacon Station No. 3720
1088 Marina Boulevard
San Leandro, California

Date	Inlet Flow Rate (ft^3/min)	Stack Flow Rate (ft^3/min)	SVE Average TPH&MTBE Influent (ppmv)	SVE TPH&MTBE Extraction Rate (lbs/day)	Cumulative Volume of Processed Air (cubic feet)	**Cumulative TPH & MTBE Extraction (lbs)**	Total Hours Operated	Change in Hours of Operation
11/29/00	38.0	38.0	173	2.268	1.82 E+04	**0.8**	8	8
12/04/00	35.8	35.8	517	6.385	1.72 E+04	**2.9**	16	8
01/04/01	29.1	29.1	380	3.815	1.40 E+04	**4.2**	24	8

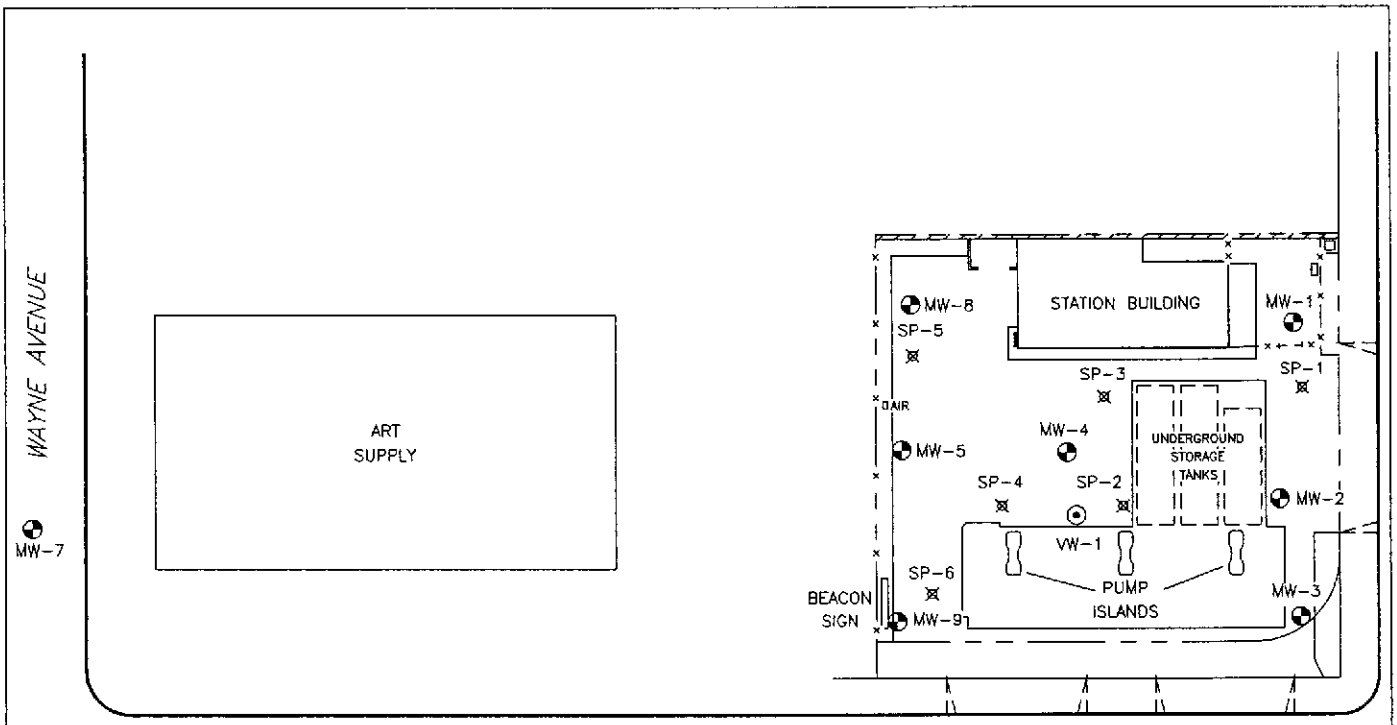
TPH = Total petroleum hydrocarbons.
ppmv = Parts per million by volume.

GENERAL NOTES:
BASE MAP FROM U.S.G.S.
SAN LEANDRO, CA
7.5 MINUTE TOPOGRAPHIC
PHOTOREVISED 1980

FIGURE 1
SITE TOPOGRAPHIC MAP
BEACON STATION NO 3720
1088 MARINA BOULEVARD
SAN LEANDRO, CA.

PROJECT NO. 00-3720	DRAWN BY M.L. 12/18/00
FILE NO. 00-3720-1A	PREPARED BY RDM
REVISION NO. 1	REVIEWED BY

DOULOS
Environmental, Inc.



LEGEND:

— - - —	PROPERTY LINE
—x—x—	FENCE
MW-1	MONITORING WELL LOCATION
VW-1	VAPOR EXTRACTION WELL LOCATION
SP-1	AIR SPARGING WELL LOCATION

NOTES:

1. BASE MAP ADAPTED FROM FUGRO FIGURE DATED 10/24/95 SITE DIMENSIONS AND FACILTY LOCATIONS NOT VERIFIED.
2. MONITORING WELLS MW-6 AND MW-7 ARE OFF-SITE.

FIGURE 2

SITE MAP

BEACON STATION NO. 3720

1088 MARINA BOULEVARD

SAN LEANDRO, CA.

PROJECT NO. 00-3720	DRAWN BY M.L. 12/18/00
FILE NO. 00-3720-6	PREPARED BY rdm
REVISION NO. 6	REVIEWED BY

DOULOS Environmental, Inc.

ALTON GEOSCIENCE
Irvine, California 92618
(714) 753-0101, Fax (714) 753-0111

MOBILE TREATMENT SYSTEM DAILY PROJECT LOG

Site: BEACON 720 — Project/Task No.: 60048101
Address: 1088 MARINA BLVD — Project Manager: Alex Chua
City: SAN LEANDRO — Date: 11-29-00

Alton Employee	Start Time	Finish Time	Total Hours
ALEX CHUA			

Alton Internal Equipment/Vehicles		
Item	Item ID #	Hrs/Miles
MTS - Alton (8/24 hrs)		
MTS - Stealth (8/24 hrs)	0929	225 Miles
Truck (miles)		
Treatment Trailer (miles/gallons)		
Traffic Control Board (days)		
1,000-gallon Tank (days)		

MOSS BAY to SAN LEANDRO

Outside Equipment Rental	
Item	Hours

Subcontractors	
Company	Hours

Materials	
Item	Quantity
Tedlar Bags (BAGS FROM LAB KIFF)	6
VOC's	8

Other

Monitoring Wells Utilized: MW-2, MW-3
Minimum and Maximum Total Vapor Concentrations (ppmv): 110 → 420
Concentrations decrease, increase, remain the same during operations? —
Minimum and Maximum Total Vapor Flow (cfm): 25 → 46
Minimum and Maximum Vacuum (in. Hg): 21.1 → 22.3
Total Water Recovered (gallons): Tank Ruptured — Product (approx. gallons)? —
Minimum and Maximum Operating Outlet Temperature Range (deg. F.): 1457 → 1734
Significant Changes Compared to Previous Events: —

Monitoring Wells Utilized for Radius of Influence (ROI) Monitoring: MW-1, MW-2, MW-3
General ROI Description (~~minor~~, moderate, extensive):
Groundwater Drawdown at Each Well:

Notes (equipment problems, required parts, etc.):

Dual-Phase Vacuum Extraction Field Sheet

Project No.: 60046101
Task No.:
Technician: D. RAMUSH

Client:
Site: BEACON 720
Date: 11-22-00

	Cumulative Wells and System Operation	Extraction Well # 1	Extraction Well # 2	Extraction Well # 3	Extraction Well # 4
Well ID:		MW-2	MW-3		
DTW (ft):		13.45	13.34		
Depth to FP (ft):		N/T	N/T		
Screen Int. (ft):		10→30'	10→30'		
Casing Diam. (in):		2"	2"		
DO (mg/L):					

Time	Total Well Flow Rate (cfm)	Total Well Inf. Conc. (ppmv)	Total Well Vacuum (in. of Hg)	System Flowrate (cfm)	System Inf. Conc (ppm)	System Temp (deg. F)	System Eff. Conc. (ppmv)	Extraction wells open:	Extraction Well # 1: Flow Rate (cfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)	Extraction Well # 2: Flow Rate (cfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)	Extraction Well # 3: Flow Rate (cfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)	Extraction Well # 4: Flow Rate (cfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)
8:00			21.5	46	110	1457		1				13'												
8:30			22.3	37	120	1499	0					15'												
9:00			21.6	37	120	1546						↓												
9:30			21.5	37	120	1578	0					15'												
10:00			21.6	37	160	1604						16'												
10:30			21.5	37	170	1604	0					↓												
11:00			21.4	37	180	1648																		
11:30			21.1	37	190	1651	0																	
12:00			21.2	37	190	1658																		
12:30			21.1	37	200	1651	0	1				↓												
1:00			21.4	37	200	1667						16'												
1:30			22	25	370	1732	0					20'												
2:00			22.3	32	420	1734		↓				25'												
2:30			21.2	46	160	1637	0	2								16'								
3:00			21.4	42	140	1580										↓								
3:30			21.5	42	140	1581	0	↓								16'								
4:00			21.3	42	120	1579		2																

Notes:
- INF/EFF tedlar Sample @ 9:00 AM
- INF/EFF tedlar Samples @ 12:30
- INF/EFF tedlar Samples @ 3:30 pm
- * Baker tank here @ 9:10 AM
- * CAL. on Horiba 7:55 AM (UNIT 0924)
- Water Sample on MW-2 (7:30 pre)
- Water Sample on MW-3 (9:30 pre)
- Water Sample on MW-2 (2:20 post)
- Water Sample on MW-3 (4:15 post)
- Richard - Told me leave MW-2 @ 20' @ 1:00 - did
- Suck from MW-2 (6 Hours)
- MW-3 (2 Hours)
- Baker water 12:30 16" 560 gal
- 2:05 29"
- 4:25 36"
- RAIN, RAIN, RAIN
- From: Richard move Stinger down 3FT below water

VAPOR EXTRACTION TEST

Form #162 - Effective Date: 2-13-92

Project No. 60048101
Task No. _____
Start Time. 8:00 AM

Site: BEACON 720
Date: 11-29-00
Stop Time. _____

	Extraction Well		Observation Wells				
Well I.D.	8:00 → 2:05 MW-2 / 2:05 → 4:00 MW-3		MW-1	MW-3	MW-1	MW-2	
Distance (feet)			40'	30'	70'	30'	
Casing Dia. (inches)	2"	2"	2"	2"	2"	2"	
Screen Interval (ft)			? 10'→30'	10'→30'	10'→30'?	10'→30'	
Time (min)	Flow Rate (cfm)	HC Conc. (ppm)	Vacuum (inch H20)				
7:55 0:00			X O ?	X O ?			
8:00 0:05			0.24	0.03			
8:30 0:10			0.40	0.03			
9:30 0:15			0.39	0.03			
10:30 0:20			0.30	0.02			
11:30 0:25			0.30	0.02			
12:30 0:30			0.30	0.01			
1:30 0:35*			0.19	0.02			
2:09 0:40			0.19	0.02			
2:15 0:45					0.57	0.45	
2:45 0:50					0.60	0.49	
3:15 0:55					0.62	0.49	
3:45 1:00					0.63	0.50	
1:10							
1:20							
1:30							
1:40							
1:50							
2:00							
2:30							
3:00							
3:30							
4:00							
4:30							
5:00							
6:00							
7:00							
8:00							
9:00							
10:00							
12:00							
14:00							
16:00							
18:00							
20:00							
25:00							
30:00							
40:00							
50:00							
60:00							
70:00							
80:00							
90:00							
100:00							

* (7:45) ON-site system was ON — now it's off

ALTON GEOSCIENCE

25A Technology Drive, Suite 100
Irvine, California 92618
(949) 753-0101, Fax (949) 753-0111

MOBILE TREATMENT SYSTEM DAILY PROJECT LOG

Site: Bexon 720 — Project/Task No.: 6904818.1
Address: 1088 MARINA st — Project Manager: Alex Cha
City: SAN LEANDRO — Date: 12-4-00

Alton Employee	Start Time	Finish Time	Total Hours
DYAMUNA + mob tim	10:50	650	

Alton Internal Equipment/Vehicles		
Item	Item ID #	Hrs/Miles
MTS 918/934 - (8/24/120 hrs)		
MTS 924 - (8/24/120 hrs)	0924	8/80
MTS 930 - (8/24/120 hrs)		
Truck (miles)		
Treatment Trailer (miles/gallons)		
Traffic Control Board (days)		
1,000-gallon Tank (days)		

SAN Leandro + Windsor

Outside Equipment Rental	
Item	Hours

Subcontractors	
Company	Hours

Materials	
Item	Quantity
Tedlar Bags for VOCs	8
OUR BAG	

Other

Monitoring Wells Utilized: MW-2 & MW-3
Minimum and Maximum Total Vapor Concentrations (ppmv): 60 → 450
Concentrations decrease, increase, remain the same during operations? —
Minimum and Maximum Total Vapor Flow (cfm): 25 → 42
Minimum and Maximum Vacuum (in. Hg): 21.4 → 23
Total Water Recovered (gallons): 151 Product (approx. gallons)? —
Minimum and Maximum Operating Outlet Temperature Range (deg. F.): 1452 → 1669
Significant Changes Compared to Previous Events: —

Monitoring Wells Utilized for Radius of Influence (ROI) Monitoring: MW-2, MW-3, MW-1
General ROI Description (~~minor~~, moderate, extensive): minor
Groundwater Drawdown at Each Well: —

Notes (equipment problems, required parts, etc.):

Mtsbill

Dual-Phase Vacuum Extraction Field Sheet

Project No.: 60048101
Task No.:
Technician: D[illegible]

Client: [illegible] Envir.
Site: Beacon 720
Date: 12-4-00

	Cumulative Wells and System Operation	Extraction Well # 1	Extraction Well # 2	Extraction Well # 3	Extraction Well # 4
Well ID:		MW-2	MW-3		
DTW (ft):		13.55	13.42		
Depth to FP (ft):		N/T	N/T		
Screen Int. (ft):	Start [illegible]	10' → 30'	10' → 30'		
Casing Diam. (in):		2"	2"		
DO (mg/L):					

Time	Total Well Flow Rate (cfm)	Total Well Inf. Conc. (ppmv)	Total Well Vacuum (in. of Hg)	System Flowrate (cfm)	System Inf. Conc (ppm)	System Temp (deg. F)	System Eff. Conc. (ppmv)	Extraction wells open:	EW1 Flow Rate (cfm)	EW1 HC Conc. (ppmv)	EW1 Vacuum (in. of Hg)	EW1 Stinger Depth (ft)	EW2 Flow Rate (cfm)	EW2 HC Conc. (ppmv)	EW2 Vacuum (in. of Hg)	EW2 Stinger Depth (ft)	EW3 Flow Rate (cfm)	EW3 HC Conc. (ppmv)	EW3 Vacuum (in. of Hg)	EW3 Stinger Depth (ft)	EW4 Flow Rate (cfm)	EW4 HC Conc. (ppmv)	EW4 Vacuum (in. of Hg)	EW4 Stinger Depth (ft)
10:50			23	42	70	1467		1				14'												
11:20			22	42	60	1452	0	↓				↓												
11:50			22.1	42	60	1453						14'												
12:20			22.5	37	110	1454	0					16'												
12:50			21.7	37	150	1470						↓												
1:20			21.7	37	150	1498	0																	
1:50			21.5	40	150	1515						16'												
2:20			22.6	32	250	1602	0					20'												
2:50			22.1	32	380	1625						↓												
3:20			22.5	25	380	1658	0																	
3:50			22	32	410	1669																		
4:20			22.1	32	430	1500	0	↓				↓												
4:50			22.2	32	450	1478		1				20'												
5:20			22	37	160	1592	0	2								16'								
5:50			21.7	37	110	1577		↓								↓								
6:20			21.4	37	120	1590	0	↓								↓								
6:50			21.5	37	110	1589		2								16'								

Notes:
System off in cage
(Pre) Samples @ 10:35
Shut down — Gas Station fuel drop 11:55 → 12:15
Tedlar bag on MW-2 @ 3:50 pm
(Post) Sample on MW-2 5:30 pm

(Post) MW-3 @ 7:10pm Water in Baker
10:50 → 2:50 17" 595 gal
2:50 → 4:50 18" 630
4:50 → 6:50 10" 350
Total for today 45" 1575

Total 149" Baker Tank

ALTON GEOSCIENCE

25A Technology Drive, Suite 100
Irvine, California 92618
(949) 753-0101, Fax (949) 753-0111

MOBILE TREATMENT SYSTEM DAILY PROJECT LOG

Site: ULTRAMAR/BEACON 720 Project/Task No.: 600481
Address: _____ Project Manager: ALEX CHUM
City: SAN LEANDRO Date: 1/4/01

Alton Employee	Start Time	Finish Time	Total Hours
DAVID YEAK			

Alton Internal Equipment/Vehicles		
Item	Item ID #	Hrs/Miles
MTS 918/934 - (8/24/120 hrs)		
MTS 924 - (8/24/120 hrs)		8
MTS 930 - (8/24/120 hrs)		
Truck (miles)		
Treatment Trailer (miles/gallons)		
Traffic Control Board (days)		
1,000-gallon Tank (days)		

Outside Equipment Rental	
Item	Hours
N/A	

Subcontractors	
Company	Hours
N/A	

Materials	
Item	Quantity
N/A	

Other
N/A

Monitoring Wells Utilized: MW-1, 2, 3
Minimum and Maximum Total Vapor Concentrations (ppmv): MIN 60 MAX 330
Concentrations decrease, increase, remain the same during operations? _____
Minimum and Maximum Total Vapor Flow (cfm): MIN 16 MAX 36
Minimum and Maximum Vacuum (in. Hg): MIN 22.5 MAX 25
Total Water Recovered (gallons): 1,000 (RM) Product (approx. gallons)? _____
Minimum and Maximum Operating Outlet Temperature Range (deg. F.): _____
Significant Changes Compared to Previous Events: _____

Monitoring Wells Utilized for Radius of Influence (ROI) Monitoring: _____
General ROI Description (minor, moderate, extensive): _____
Groundwater Drawdown at Each Well: _____

Notes (equipment problems, required parts, etc.):

VAPOR EXTRACTION TEST

Form #162 - Effective Date: 2-13-92

Project No. 600456.1.1 Site: Beacon 720

Task No. _____ Date: 12-4-00

Start Time. 10:50 Stop Time. _____

	Extraction Well		Observation Wells				
Well I.D.	MW-2 10:50→4:50	MW-3 4:50→6:50	MW-1	MW-3	MW-2		
Distance (feet)							
Casing Dia. (inches)	2"	2"	2"	2"	2"		
Screen Interval (ft)							

Time (min)	Flow Rate (cfm)	HC Conc. (ppm)	Vacuum (inch H20)				
10:50 0:00							
11:00 0:05			0.54	0.59			
12:00 0:10			0.50	0.49			
1:00 0:15			0.34	0.33			
2:00 0:20			0.26	0.34			
3:00 0:25			0.16	0.14			
4:00 0:30			0.14	0.12			
5:00 0:35			0.53	X	0.43		
5:30 0:40			0.55		0.47		
6:00 0:45			0.53		0.43		
6:30 0:50			0.52		0.43		
0:55							
1:00							
1:10							
1:20							
1:30							
1:40							
1:50							
2:00							
2:30							
3:00							
3:30							
4:00							
4:30							
5:00							
6:00							
7:00							
8:00							
9:00							
10:00							
12:00							
14:00							
16:00							
18:00							
20:00							
25:00							
30:00							
40:00							
50:00							
60:00							
70:00							
80:00							
90:00							
100:00							

Dual-Phase Vacuum Extraction Field Sheet

Project No.: 600481
Task No.:
Technician: DY

Client: ULTRAMAR
Site: BURGOON 720
Date: 1/4/01

	Cumulative Wells and System Operation	Extraction Well # 1	Extraction Well # 2	Extraction Well # 3	Extraction Well # 4
Well ID:		MW-3	MW-2	MW-1	
DTW (ft):		13.59	13.71	13.88	
Depth to FP (ft):		N/T	N/T	N/T	
Screen Int. (ft):					
Casing Diam. (in):					
DO (mg/L):					

Time	Total Well Flow Rate (cfm)	Total Well Inf. Conc. (ppmv)	Total Well Vacuum (in. of Hg)	System Flowrate (cfm)	System Inf. Conc (ppm)	System Temp (deg. F)	System Eff. Conc. (ppmv)	Extraction wells open:	Flow Rate (cfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)	Flow Rate (cfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)	Flow Rate (cfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)	Flow Rate (cfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)
6:30			25	16	70	1471		#1				14'		/										
7:00			24	25	70	1475																		
7:30			23.5	31	70	1458																		
8:00			22.5	36	60	1492																		
8:30			23	31	90	1517						17'												
9:00			22.5	31	90	1543																		
9:30			24	25	310	1649	0																	
10:00			24	25	250	1674																		
10:30			24	25	270	1674										17'								
10:35			23.4	31	190	1642		#2																
11:00			22.5	36	300	1621																		
11:30			22.5	36	330	1632																		
12:00			22.3	31	320	1630																		
12:30			22.3	31	330	1628														17'				
12:35			23.5	25	80	1634		#3																
1:00			23.2	25	140	1640																		
1:30			23	31	160	1645																		
2:00			23	31	190	1642																		
2:30			23	31	180	1643																		

Notes: 6:30A-10:30A TEST MW-3, 10:30A-12:30P TEST MW-2, 12:30P-2:30P TEST MW-1, 9:30A READINGS TAKEN BETWEEN 6:30A-9:00A TAKEN WITH SOME MANIFOLD OPEN, 9:30-2:30 READINGS MANIFOLD IS CLOSED

VAPOR EXTRACTION TEST

Form #162 - Effective Date: 2-13-92

Project No. 600481 Site: BEACON 720

Task No. _____ Date: 1/4/01

Start Time. _____ Stop Time. _____

	Extraction Well	Observation Wells				
Well I.D.	MW-3 6:30-10:30A	MW-1	MW-2			
Distance (feet)	MW-2 10:35-12:30		MW-3			
Casing Dia. (inches)	MW-1 12:35-2:30	MW-2				
Screen Interval (ft)						

Time (min)	Flow Rate (cfm)	HC Conc. (ppm)	Vacuum (inch H20)				
0:00 7:00			-.54	.37			
0:05 7:30			-.55	.38			
0:10 8:00			-.55	.38			
0:15 8:30			-.50	.33			
0:20 9:00			-.50	.33			
0:25 9:30			0	0			
0:30 10:00			0	0			
0:35 10:30			0	0			
0:40 11:00			0	0			
0:45 11:30			0	0			
0:50 12:00			0	0			
0:55 12:30			0	0			
1:00 1:00			0	0			
1:10 1:30			0	0			
1:20 2:00			0	0			
1:30							
1:40							
1:50							
2:00							
2:30							
3:00							
3:30							
4:00							
4:30							
5:00							
6:00							
7:00							
8:00							
9:00							
10:00							
12:00							
14:00							
16:00							
18:00							
20:00							
25:00							
30:00							
40:00							
50:00							
60:00							
70:00							
80:00							
90:00							
100:00							

7:00A TO 9:00A READINGS TAKEN WITH SVE SYSTEM MANIFOLD OPEN. ALL OTHER READINGS TAKEN WITH MANIFOLD CLOSED

KIFF ANALYTICAL LLC

Report Number : 17974
Date : 10/6/00

Richard Munsch
Doulos Environmental
1704 Via Riata
Roseville, CA 95747

Subject : 4 Water Samples
Project Name : Beacon 3720
Project Number : UO-3720-0002

Dear Mr. Munsch,

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

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 17974
Date : 10/6/00

Project Name : **Beacon 3720**
Project Number : **UO-3720-0002**

Sample : **MW-2-IN** Matrix : Water Lab Number : 17974-01
Sample Date :10/4/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**150**	100	ug/L	EPA 8260B	10/5/00
Toluene	**< 100**	100	ug/L	EPA 8260B	10/5/00
Ethylbenzene	**180**	100	ug/L	EPA 8260B	10/5/00
Total Xylenes	**390**	100	ug/L	EPA 8260B	10/5/00
Methyl-t-butyl ether	**91000**	1000	ug/L	EPA 8260B	10/5/00
TPH as Gasoline	**< 10000**	10000	ug/L	EPA 8260B	10/5/00
Toluene - d8 (Surr)	104		% Recovery	EPA 8260B	10/5/00
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	10/5/00

Sample : **MW-2-FI** Matrix : Water Lab Number : 17974-02
Sample Date :10/4/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**78**	50	ug/L	EPA 8260B	10/5/00
Toluene	**54**	50	ug/L	EPA 8260B	10/5/00
Ethylbenzene	**420**	50	ug/L	EPA 8260B	10/5/00
Total Xylenes	**1100**	50	ug/L	EPA 8260B	10/5/00
Methyl-t-butyl ether	**27000**	500	ug/L	EPA 8260B	10/5/00
TPH as Gasoline	**8000**	5000	ug/L	EPA 8260B	10/5/00
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	10/5/00
4-Bromofluorobenzene (Surr)	98.2		% Recovery	EPA 8260B	10/5/00

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 17974
Date : 10/6/00

Project Name : **Beacon 3720**
Project Number : **UO-3720-0002**

Sample : **MW-3-IN** Matrix : Water Lab Number : 17974-03
Sample Date :10/4/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 200**	200	ug/L	EPA 8260B	10/5/00
Toluene	**< 200**	200	ug/L	EPA 8260B	10/5/00
Ethylbenzene	**< 200**	200	ug/L	EPA 8260B	10/5/00
Total Xylenes	**< 200**	200	ug/L	EPA 8260B	10/5/00
Methyl-t-butyl ether	**150000**	2000	ug/L	EPA 8260B	10/5/00
TPH as Gasoline	**< 20000**	20000	ug/L	EPA 8260B	10/5/00
Toluene - d8 (Surr)	104		% Recovery	EPA 8260B	10/5/00
4-Bromofluorobenzene (Surr)	97.8		% Recovery	EPA 8260B	10/5/00

Sample : **MW-3-FI** Matrix : Water Lab Number : 17974-04
Sample Date :10/4/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**60**	2.0	ug/L	EPA 8260B	10/5/00
Toluene	**12**	2.0	ug/L	EPA 8260B	10/5/00
Ethylbenzene	**54**	2.0	ug/L	EPA 8260B	10/5/00
Total Xylenes	**23**	2.0	ug/L	EPA 8260B	10/5/00
Methyl-t-butyl ether	**100000**	2000	ug/L	EPA 8260B	10/5/00
TPH as Gasoline	**2600**	200	ug/L	EPA 8260B	10/5/00
Toluene - d8 (Surr)	97.0		% Recovery	EPA 8260B	10/5/00
4-Bromofluorobenzene (Surr)	96.3		% Recovery	EPA 8260B	10/5/00

Approved By: Joel Kiff

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

Ultramar Inc.
CHAIN OF CUSTODY REPORT

BEACON
17974

Beacon Station No.	Sampler (Print Name)			ANALYSES					Date	Form No.
3720	Richard Munsch								10/5/00	1 of 1
Project No.	Sampler (Signature)									
UO-3720-0002										
Project Location	Affiliation									
San Leandro	Dublos									
Sample No./Identification	Date	Time	Lab No.	BTEX (8015)	TPH (gasoline)	TPH (diesel)	MTBE 8260 8020		No. of Containers	REMARKS
MW-2-IN	10/4	5:58	-01	X	X		X		3	Standard 24hr.
MW-2-FI	10/4	8:50	-02	X	X		X		3	
MW-3-IN	10/4	8:40	-03	X	X		X		3	
MW-3-FI	10/4	9:20	-04	X	X		X		3	

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
Dublos	10/4	15:20			
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
			Mary Benzinger/Kiff Analytical	10/4/00 10/5/00	15:20

Report To: Richard Munsch/Dublos

Bill to: ULTRAMAR INC.
525 West Third Street
Hanford, CA 93230
Attention: Joe Aldridge

WHITE: Return to Client with Report YELLOW: Laboratory Copy PINK: Originator Copy

32-6003 1/00

KIFF ANALYTICAL LLC

Report Number : 18094
Date : 10/24/2000

Richard Munsch
Doulos Environmental
1704 Via Riata
Roseville, CA 95747

Subject : 2 Water Samples
Project Name : San Leandro CA
Project Number : 00-3720
P.O. Number : 3720

Dear Mr. Munsch,

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

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 18094
Date : 10/24/2000

Project Name : **San Leandro CA**
Project Number : **00-3720**

Sample : **MW-2** Matrix : Water Lab Number : 18094-01
Sample Date :10/17/2000

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**160**	20	ug/L	EPA 8260B	10/19/2000
Toluene	**140**	20	ug/L	EPA 8260B	10/19/2000
Ethylbenzene	**2200**	20	ug/L	EPA 8260B	10/19/2000
Total Xylenes	**6100**	20	ug/L	EPA 8260B	10/19/2000
Methyl-t-butyl ether (MTBE)	**26000**	50	ug/L	EPA 8260B	10/21/2000
TPH as Gasoline	**86000**	2000	ug/L	EPA 8260B	10/19/2000
Toluene - d8 (Surr)	94.8		% Recovery	EPA 8260B	10/19/2000
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	10/19/2000

Sample : **MW-3** Matrix : Water Lab Number : 18094-02
Sample Date :10/17/2000

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**57**	50	ug/L	EPA 8260B	10/19/2000
Toluene	**< 50**	50	ug/L	EPA 8260B	10/19/2000
Ethylbenzene	**50**	50	ug/L	EPA 8260B	10/19/2000
Total Xylenes	**< 50**	50	ug/L	EPA 8260B	10/19/2000
Methyl-t-butyl ether (MTBE)	**110000**	200	ug/L	EPA 8260B	10/21/2000
TPH as Gasoline	**5200**	5000	ug/L	EPA 8260B	10/19/2000
Toluene - d8 (Surr)	94.8		% Recovery	EPA 8260B	10/19/2000
4-Bromofluorobenzene (Surr)	99.1		% Recovery	EPA 8260B	10/19/2000

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

720 Olive Drive, Suite D
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4803

Lab No. 18094 Page ____ of ____

Chain-of-Custody Record and Analysis Request

Project Manager: Richard Munsch
Phone No.: (916) 771-7098
Company/Address: Douhs
FAX No.: (916) 771-4581
Project Number: 00-3720
P.O. No.: 3720
Email Address: ☒ .pdf ☐ .xls ☐ .doc ☐ other
Project Name/Location: San Leandro CA
Sampler Signature: [signature]

Sample Designation	Sampling Date	Sampling Time	Container (Type/Amount) 40 ml VOA	SLEEVE	Method Preserved HCl	HNO_3	ICE	NONE	Matrix WATER/SOIL
MW-2	10/17	9:45	2		X				X
MW-3	10/17	10:20	2		X				X

Analysis Request

BTEX (8021B)	BTEX/TPH Gas/MTBE (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)	TAT: 12 hr/24 hr/48 hr/72 hr/1 wk
	X												
	X												

For Lab Use Only: 12 hr = Results by 9 a.m. of the next bus. day; 24 hr = Results by 5 p.m. of the next bus. day; 48 hr = Results by 5 p.m. of the 2nd bus. day; 72 hr = Results by 5 p.m. of the 3rd bus. day; 1 wk = Results by 5 p.m. of the 5th bus. day

-01
-02

	Date	Time	
Relinquished by: [signature]	10/17	16:18	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date 10/18/17	Time 16:18	Received by Laboratory: Michelle Woodcock / Kiff Analytical

Remarks: STAT

Bill to: Ultramar Inc / Joe Aldridge

Distribution: White - Lab, Yellow - File, Pink - Originator

COC fm8 (5/00)

KIFF ANALYTICAL LLC

Report Number : 18094
Date : 10/24/2000

Richard Munsch
Doulos Environmental
1704 Via Riata
Roseville, CA 95747

Subject : 2 Water Samples
Project Name : San Leandro CA
Project Number : 00-3720
P.O. Number : 3720

Dear Mr. Munsch,

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

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 18094
Date : 10/24/2000

Project Name : **San Leandro CA**
Project Number : **00-3720**

Sample : **MW-2** Matrix : Water Lab Number : 18094-01
Sample Date :10/17/2000

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**160**	20	ug/L	EPA 8260B	10/19/2000
Toluene	**140**	20	ug/L	EPA 8260B	10/19/2000
Ethylbenzene	**2200**	20	ug/L	EPA 8260B	10/19/2000
Total Xylenes	**6100**	20	ug/L	EPA 8260B	10/19/2000
Methyl-t-butyl ether (MTBE)	**26000**	50	ug/L	EPA 8260B	10/21/2000
TPH as Gasoline	**86000**	2000	ug/L	EPA 8260B	10/19/2000
Toluene - d8 (Surr)	94.8		% Recovery	EPA 8260B	10/19/2000
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	10/19/2000

Sample : **MW-3** Matrix : Water Lab Number : 18094-02
Sample Date :10/17/2000

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**57**	50	ug/L	EPA 8260B	10/19/2000
Toluene	**< 50**	50	ug/L	EPA 8260B	10/19/2000
Ethylbenzene	**50**	50	ug/L	EPA 8260B	10/19/2000
Total Xylenes	**< 50**	50	ug/L	EPA 8260B	10/19/2000
Methyl-t-butyl ether (MTBE)	**110000**	200	ug/L	EPA 8260B	10/21/2000
TPH as Gasoline	**5200**	5000	ug/L	EPA 8260B	10/19/2000
Toluene - d8 (Surr)	94.8		% Recovery	EPA 8260B	10/19/2000
4-Bromofluorobenzene (Surr)	99.1		% Recovery	EPA 8260B	10/19/2000

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

720 Olive Drive, Suite D
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4803

Lab No. 18094 Page ____ of ____

Chain-of-Custody Record and Analysis Request

Project Manager: Richard Munsch	Phone No.: (916) 771-7098
Company/Address: Dunbar	FAX No.: (916) 771-4584
Project Number: 00-3720 / P.O. No.: 3720	Email Address: ☒ .pdf ☐ .xls ☐ .doc ☐ other
Project Name/Location: San Leandro CA	Sampler Signature:

Sample Designation	Sampling Date	Sampling Time	Container (Type/Amount) 40 ml VOA	SLEEVE	Method Preserved HCl	HNO_3	ICE	NONE	Matrix WATER/SOIL
MW-2	10/17	9:45	2		X				X
MW-3	10/17	10:20	2		X				X

Analysis Request

BTEX (8021B)	BTEX/TPH Gas/MTBE (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)	TAT 12 hr/24 hr/48 hr/72 hr/1 wk	For Lab Use Only
	X													-01
	X													-02

TAT: 12 hr = Results by 9 a.m. of the next bus. day; 24 hr = Results by 5 p.m. of the next bus. day; 48 hr = Results by 5 p.m. of the 2nd bus. day; 72 hr = Results by 5 p.m. of the 3rd bus. day; 1 wk = Results by 5 p.m. of the 5th bus. day

	Date	Time	
Relinquished by:	10/17	16:18	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date 10/17/00	Time 1618	Received by Laboratory: Michelle Woodward / Kiff Analytical

Remarks: STAT

Bill to: Ultramar Inc. / Joe Aldridge

Distribution: White - Lab, Yellow - File, Pink - Originator

COC.fm8 (5/00)

KIFF ANALYTICAL LLC

Report Number : 18472
Date : 12/17/00

Alex Chua
TRC Alton Geoscience
9471 Ridgehaven Ct., Suite E
San Diego, CA 92123

Subject : 4 Water Samples and 6 Air Samples
Project Name : BEACON 720
Project Number : 60048101

Dear Mr. Chua,

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

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 18472

Date : 12/17/00

Project Name : **BEACON 720**

Project Number : **60048101**

Sample : **MW-2-INF. BEACON 720** Matrix : Air Lab Number : 18472-01

Sample Date :11/29/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.31**	0.20	Molar ppm	EPA 8260B	11/30/00
Toluene	**1.4**	0.20	Molar ppm	EPA 8260B	11/30/00
Ethylbenzene	**1.4**	0.20	Molar ppm	EPA 8260B	11/30/00
Total Xylenes	**5.7**	0.20	Molar ppm	EPA 8260B	11/30/00
Methyl-t-butyl ether (MTBE)	**30**	0.20	Molar ppm	EPA 8260B	11/30/00
Diisopropyl ether (DIPE)	**< 0.20**	0.20	Molar ppm	EPA 8260B	11/30/00
Ethyl-t-butyl ether (ETBE)	**< 0.20**	0.20	Molar ppm	EPA 8260B	11/30/00
Tert-amyl methyl ether (TAME)	**< 0.20**	0.20	Molar ppm	EPA 8260B	11/30/00
Tert-Butanol	**< 2.0**	2.0	Molar ppm	EPA 8260B	11/30/00
TPH as Gasoline	**70**	20	Molar ppm	EPA 8260B	11/30/00
Dibromofluoromethane (Surr)	95.2		% Recovery	EPA 8260B	11/30/00
Toluene - d8 (Surr)	98.7		% Recovery	EPA 8260B	11/30/00

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 18472

Date : 12/17/00

Project Name : **BEACON 720**

Project Number : **60048101**

Sample : **MW-2-EFF, BEACON 720** Matrix : Air Lab Number : 18472-02

Sample Date :11/29/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.050**	0.050	Molar ppm	EPA 8260B	11/30/00
Toluene	**0.31**	0.050	Molar ppm	EPA 8260B	11/30/00
Ethylbenzene	**0.14**	0.050	Molar ppm	EPA 8260B	11/30/00
Total Xylenes	**0.60**	0.050	Molar ppm	EPA 8260B	11/30/00
Methyl-t-butyl ether (MTBE)	**< 0.050**	0.050	Molar ppm	EPA 8260B	11/30/00
Diisopropyl ether (DIPE)	**< 0.050**	0.050	Molar ppm	EPA 8260B	11/30/00
Ethyl-t-butyl ether (ETBE)	**< 0.050**	0.050	Molar ppm	EPA 8260B	11/30/00
Tert-amyl methyl ether (TAME)	**< 0.050**	0.050	Molar ppm	EPA 8260B	11/30/00
Tert-Butanol	**< 0.50**	0.50	Molar ppm	EPA 8260B	11/30/00
TPH as Gasoline	**12**	5.0	Molar ppm	EPA 8260B	11/30/00
Dibromofluoromethane (Surr)	96.0		% Recovery	EPA 8260B	11/30/00
Toluene - d8 (Surr)	99.0		% Recovery	EPA 8260B	11/30/00

Approved By: Joel Kiff

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KIFF ANALYTICAL LLC

Report Number : 18472
Date : 12/17/00

Project Name : **BEACON 720**
Project Number : **60048101**

Sample : **MW-2-INF. BEACON 720** Matrix : Air Lab Number : 18472-03
Sample Date :11/29/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.56**	0.10	Molar ppm	EPA 8260B	11/30/00
Toluene	**2.4**	0.10	Molar ppm	EPA 8260B	11/30/00
Ethylbenzene	**3.5**	0.10	Molar ppm	EPA 8260B	11/30/00
Total Xylenes	**13**	0.10	Molar ppm	EPA 8260B	11/30/00
Methyl-t-butyl ether (MTBE)	**43**	0.10	Molar ppm	EPA 8260B	11/30/00
Diisopropyl ether (DIPE)	**< 0.10**	0.10	Molar ppm	EPA 8260B	11/30/00
Ethyl-t-butyl ether (ETBE)	**< 0.10**	0.10	Molar ppm	EPA 8260B	11/30/00
Tert-amyl methyl ether (TAME)	**< 0.10**	0.10	Molar ppm	EPA 8260B	11/30/00
Tert-Butanol	**< 1.0**	1.0	Molar ppm	EPA 8260B	11/30/00
TPH as Gasoline	**220**	10	Molar ppm	EPA 8260B	11/30/00
Dibromofluoromethane (Surr)	95.3		% Recovery	EPA 8260B	11/30/00
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	11/30/00

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 18472

Date : 12/17/00

Project Name : **BEACON 720**

Project Number : **60048101**

Sample : **MW-2-EFF. BEACON 720** Matrix : Air Lab Number : 18472-04

Sample Date :11/29/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.050**	0.050	Molar ppm	EPA 8260B	11/29/00
Toluene	**0.36**	0.050	Molar ppm	EPA 8260B	11/29/00
Ethylbenzene	**0.16**	0.050	Molar ppm	EPA 8260B	11/29/00
Total Xylenes	**0.70**	0.050	Molar ppm	EPA 8260B	11/29/00
Methyl-t-butyl ether (MTBE)	**< 0.050**	0.050	Molar ppm	EPA 8260B	11/29/00
Diisopropyl ether (DIPE)	**< 0.050**	0.050	Molar ppm	EPA 8260B	11/29/00
Ethyl-t-butyl ether (ETBE)	**< 0.050**	0.050	Molar ppm	EPA 8260B	11/29/00
Tert-amyl methyl ether (TAME)	**< 0.050**	0.050	Molar ppm	EPA 8260B	11/29/00
Tert-Butanol	**< 0.50**	0.50	Molar ppm	EPA 8260B	11/29/00
TPH as Gasoline	**14**	5.0	Molar ppm	EPA 8260B	11/29/00
Dibromofluoromethane (Surr)	96.7		% Recovery	EPA 8260B	11/29/00
Toluene - d8 (Surr)	99.4		% Recovery	EPA 8260B	11/29/00

Approved By: Joel Kiff

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KIFF ANALYTICAL LLC

Report Number : 18472
Date : 12/17/00

Project Name : **BEACON 720**
Project Number : **60048101**

Sample : **MW-3-INF. BEACON 720** Matrix : Air Lab Number : 18472-05
Sample Date :11/29/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.28**	0.20	Molar ppm	EPA 8260B	11/30/00
Toluene	**1.3**	0.20	Molar ppm	EPA 8260B	11/30/00
Ethylbenzene	**0.57**	0.20	Molar ppm	EPA 8260B	11/30/00
Total Xylenes	**3.2**	0.20	Molar ppm	EPA 8260B	11/30/00
Methyl-t-butyl ether (MTBE)	**97**	0.20	Molar ppm	EPA 8260B	11/30/00
Diisopropyl ether (DIPE)	**< 0.20**	0.20	Molar ppm	EPA 8260B	11/30/00
Ethyl-t-butyl ether (ETBE)	**< 0.20**	0.20	Molar ppm	EPA 8260B	11/30/00
Tert-amyl methyl ether (TAME)	**< 0.20**	0.20	Molar ppm	EPA 8260B	11/30/00
Tert-Butanol	**3.3**	2.0	Molar ppm	EPA 8260B	11/30/00
TPH as Gasoline	**58**	20	Molar ppm	EPA 8260B	11/30/00
Dibromofluoromethane (Surr)	95.6		% Recovery	EPA 8260B	11/30/00
Toluene - d8 (Surr)	99.3		% Recovery	EPA 8260B	11/30/00

Approved By: Joel Kiff

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KIFF ANALYTICAL LLC

Report Number : 18472
Date : 12/17/00

Project Name : **BEACON 720**
Project Number : **60048101**

Sample : **MW-3-EFF. BEACON 720** Matrix : Air Lab Number : 18472-06

Sample Date :11/29/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.050**	0.050	Molar ppm	EPA 8260B	11/30/00
Toluene	**0.29**	0.050	Molar ppm	EPA 8260B	11/30/00
Ethylbenzene	**0.13**	0.050	Molar ppm	EPA 8260B	11/30/00
Total Xylenes	**0.54**	0.050	Molar ppm	EPA 8260B	11/30/00
Methyl-t-butyl ether (MTBE)	**< 0.050**	0.050	Molar ppm	EPA 8260B	11/30/00
Diisopropyl ether (DIPE)	**< 0.050**	0.050	Molar ppm	EPA 8260B	11/30/00
Ethyl-t-butyl ether (ETBE)	**< 0.050**	0.050	Molar ppm	EPA 8260B	11/30/00
Tert-amyl methyl ether (TAME)	**< 0.050**	0.050	Molar ppm	EPA 8260B	11/30/00
Tert-Butanol	**< 0.50**	0.50	Molar ppm	EPA 8260B	11/30/00
TPH as Gasoline	**11**	5.0	Molar ppm	EPA 8260B	11/30/00
Dibromofluoromethane (Surr)	98.1		% Recovery	EPA 8260B	11/30/00
Toluene - d8 (Surr)	98.7		% Recovery	EPA 8260B	11/30/00

Approved By: Joel Kiff

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KIFF ANALYTICAL LLC

Report Number : 18472
Date : 12/17/00

Project Name : **BEACON 720**
Project Number : **60048101**

Sample : **MW-2 PRE BEACON 720** Matrix : Water Lab Number : 18472-07
Sample Date :11/29/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**62**	20	ug/L	EPA 8260B	12/10/00
Toluene	**66**	20	ug/L	EPA 8260B	12/10/00
Ethylbenzene	**1000**	20	ug/L	EPA 8260B	12/10/00
Total Xylenes	**3800**	20	ug/L	EPA 8260B	12/10/00
Methyl-t-butyl ether (MTBE)	**12000**	20	ug/L	EPA 8260B	12/10/00
Diisopropyl ether (DIPE)	**< 20**	20	ug/L	EPA 8260B	12/10/00
Ethyl-t-butyl ether (ETBE)	**< 20**	20	ug/L	EPA 8260B	12/10/00
Tert-amyl methyl ether (TAME)	**26**	20	ug/L	EPA 8260B	12/10/00
Tert-Butanol	**980**	200	ug/L	EPA 8260B	12/10/00
TPH as Gasoline	**19000**	2000	ug/L	EPA 8260B	12/10/00
Toluene - d8 (Surr)	98.8		% Recovery	EPA 8260B	12/10/00
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	12/10/00

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 18472
Date : 12/17/00

Project Name : **BEACON 720**
Project Number : **60048101**

Sample : **MW-3 PRE BEACON 720** Matrix : Water Lab Number : 18472-08
Sample Date :11/29/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**94**	50	ug/L	EPA 8260B	12/10/00
Toluene	**< 50**	50	ug/L	EPA 8260B	12/10/00
Ethylbenzene	**77**	50	ug/L	EPA 8260B	12/10/00
Total Xylenes	**< 50**	50	ug/L	EPA 8260B	12/10/00
Methyl-t-butyl ether (MTBE)	**68000**	200	ug/L	EPA 8260B	12/12/00
Diisopropyl ether (DIPE)	**< 50**	50	ug/L	EPA 8260B	12/10/00
Ethyl-t-butyl ether (ETBE)	**< 50**	50	ug/L	EPA 8260B	12/10/00
Tert-amyl methyl ether (TAME)	**140**	50	ug/L	EPA 8260B	12/10/00
Tert-Butanol	**5400**	500	ug/L	EPA 8260B	12/10/00
TPH as Gasoline	**< 5000**	5000	ug/L	EPA 8260B	12/10/00
Toluene - d8 (Surr)	97.8		% Recovery	EPA 8260B	12/10/00
4-Bromofluorobenzene (Surr)	98.4		% Recovery	EPA 8260B	12/10/00

Approved By: Joel Kiff

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KIFF ANALYTICAL LLC

Report Number : 18472
Date : 12/17/00

Project Name : **BEACON 720**
Project Number : **60048101**

Sample : **MW-2 POST BEACON 720** Matrix : Water Lab Number : 18472-09
Sample Date :11/29/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**41**	0.50	ug/L	EPA 8260B	12/10/00
Toluene	**5.9**	0.50	ug/L	EPA 8260B	12/10/00
Ethylbenzene	**110**	0.50	ug/L	EPA 8260B	12/10/00
Total Xylenes	**240**	0.50	ug/L	EPA 8260B	12/10/00
Methyl-t-butyl ether (MTBE)	**16000**	50	ug/L	EPA 8260B	12/12/00
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/10/00
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/10/00
Tert-amyl methyl ether (TAME)	**22**	0.50	ug/L	EPA 8260B	12/10/00
Tert-Butanol	**650**	5.0	ug/L	EPA 8260B	12/10/00
TPH as Gasoline	**3600**	50	ug/L	EPA 8260B	12/10/00
Toluene - d8 (Surr)	91.0		% Recovery	EPA 8260B	12/10/00
4-Bromofluorobenzene (Surr)	99.5		% Recovery	EPA 8260B	12/10/00

Approved By: Joel Kiff

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KIFF ANALYTICAL LLC

Report Number : 18472
Date : 12/17/00

Project Name : **BEACON 720**
Project Number : **60048101**

Sample : **MW-3 POST BEACON 720** Matrix : Water Lab Number : 18472-10
Sample Date :11/29/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 100**	100	ug/L	EPA 8260B	12/10/00
Toluene	**< 100**	100	ug/L	EPA 8260B	12/10/00
Ethylbenzene	**< 100**	100	ug/L	EPA 8260B	12/10/00
Total Xylenes	**< 100**	100	ug/L	EPA 8260B	12/10/00
Methyl-t-butyl ether (MTBE)	**61000**	100	ug/L	EPA 8260B	12/10/00
Diisopropyl ether (DIPE)	**< 100**	100	ug/L	EPA 8260B	12/10/00
Ethyl-t-butyl ether (ETBE)	**< 100**	100	ug/L	EPA 8260B	12/10/00
Tert-amyl methyl ether (TAME)	**120**	100	ug/L	EPA 8260B	12/10/00
Tert-Butanol	**4500**	1000	ug/L	EPA 8260B	12/10/00
TPH as Gasoline	**< 10000**	10000	ug/L	EPA 8260B	12/10/00
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	12/10/00
4-Bromofluorobenzene (Surr)	98.7		% Recovery	EPA 8260B	12/10/00

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

720 Olive Drive, Suite D
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4803

Lab No. 18472 Page 2 of 2

Chain-of-Custody Record and Analysis Request

Project Manager: ALEX CHUA	Phone No.: 949) 753-0101
Company/Address: TRC / 21 A TECH. DRIVE	FAX No.: 753-0111
Project Number: 60048101	P.O. No.:
Project Name/Location: BEACON 720 / SAN LEANDRO CALIF.	Email Address: ☐.pdf ☐.xls ☐.doc ☐other
	Sampler Signature:

Sample Designation	Sampling Date	Sampling Time	Container (Type/Amount) 40 ml VOA	SLEEVE	Tedlar			Method Preserved HCl	HNO_3	ICE	NONE		Matrix WATER/SOIL	AIR	BTEX (8021B)	BTEX/TPH Gas/MTBE (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)				TAT 12 hr/24 hr/48 hr/72 hr/1 wk	For Lab Use Only
MW-2 INF. BEACON 720	11-29-00	9:00 AM			X									X						X											1wk	-01
MW-2 EFF	11-29-00	9:00 AM			X									X						X												-02
MW-2 INF.	11-29-00	12:30			X									X						X												-03
MW-2 EFF.	11-29-00	12:30			X									X						X												-04
MW-3 INF.	11-29-00	3:30 PM			X									X						X												-05
MW-3 EFF.	11-29-00	3:30 PM			X									X						X												-06
MW-2 PRE	11-29-00	7:30 AM	X					X		X			X							X												-07
MW-3 PRE	11-29-00	9:30 AM	X					X		X			X							X												-08
MW-2 POST	11-29-00	2:20 PM	X					X		X			X							X												-09
MW-3 POST BEACON 720	11-29-00	4:05 PM	X					X		X			X							X											1wk	-10

Relinquished by:	Date: 11-29-00	Time: 4:15 PM	Received by:	Remarks:
Relinquished by:	Date:	Time:	Received by:	
Relinquished by:	Date: 112900	Time: 1618	Received by Laboratory: Scott Adams / KIFF ANALYTICAL	Bill to:

Distribution: White - Lab, Yellow - File, Pink - Originator

COC.fh8 (5/00)

KIFF ANALYTICAL LLC

Report Number : 18575
Date : 01/02/2001

Alex Chua
TRC Alton Geoscience
9471 Ridgehaven Ct., Suite E
San Diego, CA 92123

Subject : 4 Water Samples and 1 Air Sample
Project Name : BEACON 720
Project Number : 60048101

Dear Mr. Chua,

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

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 18575
Date : 01/02/2001

Project Name : **BEACON 720**
Project Number : **60048101**

Sample : **MW-2-PRE** Matrix : Water Lab Number : 18575-01
Sample Date :12/04/2000

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**87**	20	ug/L	EPA 8260B	12/18/2000
Toluene	**82**	20	ug/L	EPA 8260B	12/18/2000
Ethylbenzene	**1300**	20	ug/L	EPA 8260B	12/18/2000
Total Xylenes	**4400**	20	ug/L	EPA 8260B	12/18/2000
Methyl-t-butyl ether (MTBE)	**7900**	20	ug/L	EPA 8260B	12/18/2000
Diisopropyl ether (DIPE)	**< 20**	20	ug/L	EPA 8260B	12/18/2000
Ethyl-t-butyl ether (ETBE)	**< 20**	20	ug/L	EPA 8260B	12/18/2000
Tert-amyl methyl ether (TAME)	**< 20**	20	ug/L	EPA 8260B	12/18/2000
Tert-Butanol	**580**	200	ug/L	EPA 8260B	12/18/2000
TPH as Gasoline	**22000**	2000	ug/L	EPA 8260B	12/18/2000
Toluene - d8 (Surr)	99.3		% Recovery	EPA 8260B	12/18/2000
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	12/18/2000

Approved By: Joel Kiff

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KIFF ANALYTICAL LLC

Report Number : 18575
Date : 01/02/2001

Project Name : **BEACON 720**
Project Number : **60048101**

Sample : **MW-3-PRE** Matrix : Water Lab Number : 18575-02
Sample Date :12/04/2000

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**93**	50	ug/L	EPA 8260B	12/15/2000
Toluene	**< 50**	50	ug/L	EPA 8260B	12/15/2000
Ethylbenzene	**74**	50	ug/L	EPA 8260B	12/15/2000
Total Xylenes	**< 50**	50	ug/L	EPA 8260B	12/15/2000
Methyl-t-butyl ether (MTBE)	**65000**	200	ug/L	EPA 8260B	12/16/2000
Diisopropyl ether (DIPE)	**< 50**	50	ug/L	EPA 8260B	12/15/2000
Ethyl-t-butyl ether (ETBE)	**< 50**	50	ug/L	EPA 8260B	12/15/2000
Tert-amyl methyl ether (TAME)	**96**	50	ug/L	EPA 8260B	12/15/2000
Tert-Butanol	**6000**	500	ug/L	EPA 8260B	12/15/2000
TPH as Gasoline	**< 5000**	5000	ug/L	EPA 8260B	12/15/2000
Toluene - d8 (Surr)	98.8		% Recovery	EPA 8260B	12/15/2000
4-Bromofluorobenzene (Surr)	97.4		% Recovery	EPA 8260B	12/15/2000

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 18575
Date : 01/02/2001

Project Name : **BEACON 720**
Project Number : **60048101**

Sample : **MW-2-POST** Matrix : Water Lab Number : 18575-03
Sample Date :12/04/2000

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**51**	20	ug/L	EPA 8260B	12/15/2000
Toluene	**< 20**	20	ug/L	EPA 8260B	12/15/2000
Ethylbenzene	**92**	20	ug/L	EPA 8260B	12/15/2000
Total Xylenes	**190**	20	ug/L	EPA 8260B	12/15/2000
Methyl-t-butyl ether (MTBE)	**12000**	20	ug/L	EPA 8260B	12/15/2000
Diisopropyl ether (DIPE)	**< 20**	20	ug/L	EPA 8260B	12/15/2000
Ethyl-t-butyl ether (ETBE)	**< 20**	20	ug/L	EPA 8260B	12/15/2000
Tert-amyl methyl ether (TAME)	**< 20**	20	ug/L	EPA 8260B	12/15/2000
Tert-Butanol	**990**	200	ug/L	EPA 8260B	12/15/2000
TPH as Gasoline	**3300**	2000	ug/L	EPA 8260B	12/15/2000
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	12/15/2000
4-Bromofluorobenzene (Surr)	97.9		% Recovery	EPA 8260B	12/15/2000

Approved By: Joel Kiff

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KIFF ANALYTICAL LLC

Report Number : 18575
Date : 01/02/2001

Project Name : **BEACON 720**
Project Number : **60048101**

Sample : **MW-3-POST** Matrix : Water Lab Number : 18575-04
Sample Date :12/04/2000

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 100**	100	ug/L	EPA 8260B	12/16/2000
Toluene	**< 100**	100	ug/L	EPA 8260B	12/16/2000
Ethylbenzene	**< 100**	100	ug/L	EPA 8260B	12/16/2000
Total Xylenes	**< 100**	100	ug/L	EPA 8260B	12/16/2000
Methyl-t-butyl ether (MTBE)	**47000**	100	ug/L	EPA 8260B	12/16/2000
Diisopropyl ether (DIPE)	**< 100**	100	ug/L	EPA 8260B	12/16/2000
Ethyl-t-butyl ether (ETBE)	**< 100**	100	ug/L	EPA 8260B	12/16/2000
Tert-amyl methyl ether (TAME)	**100**	100	ug/L	EPA 8260B	12/16/2000
Tert-Butanol	**2700**	1000	ug/L	EPA 8260B	12/16/2000
TPH as Gasoline	**< 10000**	10000	ug/L	EPA 8260B	12/16/2000
Toluene - d8 (Surr)	97.9		% Recovery	EPA 8260B	12/16/2000
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	12/16/2000

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 18575
Date : 01/02/2001

Project Name : **BEACON 720**
Project Number : **60048101**

Sample : **MW-2-INF** Matrix : Air Lab Number : 18575-05
Sample Date :12/04/2000

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.59**	0.10	Molar ppm	EPA 8260B	12/07/2000
Toluene	**1.3**	0.10	Molar ppm	EPA 8260B	12/07/2000
Ethylbenzene	**4.6**	0.10	Molar ppm	EPA 8260B	12/07/2000
Total Xylenes	**12**	0.10	Molar ppm	EPA 8260B	12/07/2000
TPH as Gasoline	**450**	10	Molar ppm	EPA 8260B	12/07/2000
Methyl-t-butyl ether (MTBE)	**67**	0.20	Molar ppm	EPA 8260B	12/07/2000
Diisopropyl ether (DIPE)	**< 0.10**	0.10	Molar ppm	EPA 8260B	12/07/2000
Ethyl-t-butyl ether (ETBE)	**< 0.10**	0.10	Molar ppm	EPA 8260B	12/07/2000
Tert-amyl methyl ether (TAME)	**< 0.10**	0.10	Molar ppm	EPA 8260B	12/07/2000
Tert-Butanol	**1.3**	1.0	Molar ppm	EPA 8260B	12/07/2000
Toluene - d8 (Surr)	94.6		% Recovery	EPA 8260B	12/07/2000
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	12/07/2000

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

720 Olive Drive, Suite D
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4803

Lab No. 18575 Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Manager: Alex Chuk
Phone No.: (949) 753-0101
Company/Address: THE 21 TECH DRIVE IRVINE, CA
FAX No.: 753-0111
Project Number: 60048101
P.O. No.:
Email Address:
☐ .pdf ☐ .xls ☐ .doc ☐ other
Project Name/Location: BEACON 720 1088 MARVILD SAN LEANDRO
Sampler Signature:

Sample Designation	Sampling Date	Sampling Time	Container (Type/Amount): 40 ml VOA	SLEEVE	Tedlar			Method Preserved: HCl	HNO_3	ICE	NONE		Matrix: WATER/SOIL	Air	BTEX (8021B)	BTEX/TPH Gas/MTBE (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)				TAT: 12 hr/24 hr/48 hr/72 hr/1 wk	For Lab Use Only
MW-2-PRE	12-4-00	10:35 AM	X					X		X			X							X											1wk	-01
MW-3-PRE	12-4-00	10:35 AM	X					X		X			X							X												-02
MW-2-POST	12-4-00	5:30 PM	X					X		X			X							X												-03
MW-3-POST	12-4-00	7:10 PM	X					X		X			X							X												-04
MW-2-INF	12-4-00	3:50			X									X						X											1wk	-05

Relinquished by:	Date	Time	Received by:
	12-5-00		
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	120700	0853	Martin Lee / KIFF ANALYTICAL

Remarks: Samples arrived on ice via Fed Ex @ 0847 MIS, 120100, 0857
Thermometer # 017 was used to take temp of temp blank. Recorded temperature was 1.9°C MIS, 120700, 0912

Bill to:

Distribution: White - Lab, Yellow - File, Pink - Originator

COC.fh8 (5/00)

KIFF ANALYTICAL LLC

Report Number : 18879
Date : 01/18/2001

Alex Chua
TRC Alton Geoscience
9471 Ridgehaven Ct., Suite E
San Diego, CA 92123

Subject : 6 Water Samples and 4 Air Samples
Project Name : BEACON 720
Project Number : 600481
P.O. Number : 3720-57

Dear Mr. Chua,

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

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 18879
Date : 01/18/2001

Project Name : **BEACON 720**
Project Number : **600481**

Sample : **MW-1 (6:00A)** Matrix : Water Lab Number : 18879-01
Sample Date :01/04/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	01/14/2001
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	01/14/2001
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	01/14/2001
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	01/14/2001
Methyl-t-butyl ether	**53**	5.0	ug/L	EPA 8260B	01/14/2001
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	01/14/2001
Toluene - d8 (Surr)	95.8		% Recovery	EPA 8260B	01/14/2001
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	01/14/2001

Sample : **MW-2 (5:50A)** Matrix : Water Lab Number : 18879-02
Sample Date :01/04/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 100**	100	ug/L	EPA 8260B	01/13/2001
Toluene	**< 100**	100	ug/L	EPA 8260B	01/13/2001
Ethylbenzene	**1500**	5.0	ug/L	EPA 8260B	01/15/2001
Total Xylenes	**4200**	100	ug/L	EPA 8260B	01/13/2001
Methyl-t-butyl ether	**4800**	1000	ug/L	EPA 8260B	01/13/2001
TPH as Gasoline	**32000**	500	ug/L	EPA 8260B	01/15/2001
Toluene - d8 (Surr)	97.2		% Recovery	EPA 8260B	01/15/2001
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	01/15/2001

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 18879
Date : 01/18/2001

Project Name : **BEACON 720**
Project Number : **600481**

Sample : **MW-3 (5:40A)** Matrix : Water Lab Number : 18879-03
Sample Date :01/04/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**100**	50	ug/L	EPA 8260B	01/15/2001
Toluene	**< 50**	50	ug/L	EPA 8260B	01/15/2001
Ethylbenzene	**120**	50	ug/L	EPA 8260B	01/15/2001
Total Xylenes	**< 100**	100	ug/L	EPA 8260B	01/13/2001
Methyl-t-butyl ether	**36000**	1000	ug/L	EPA 8260B	01/13/2001
TPH as Gasoline	**5700**	5000	ug/L	EPA 8260B	01/15/2001
Toluene - d8 (Surr)	98.1		% Recovery	EPA 8260B	01/15/2001
4-Bromofluorobenzene (Surr)	97.1		% Recovery	EPA 8260B	01/15/2001

Sample : **MW-1 (2:35P)** Matrix : Water Lab Number : 18879-04
Sample Date :01/04/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 20**	20	ug/L	EPA 8260B	01/13/2001
Toluene	**< 20**	20	ug/L	EPA 8260B	01/13/2001
Ethylbenzene	**190**	20	ug/L	EPA 8260B	01/13/2001
Total Xylenes	**330**	20	ug/L	EPA 8260B	01/13/2001
Methyl-t-butyl ether	**11000**	200	ug/L	EPA 8260B	01/13/2001
TPH as Gasoline	**5300**	2000	ug/L	EPA 8260B	01/13/2001
Toluene - d8 (Surr)	98.6		% Recovery	EPA 8260B	01/13/2001
4-Bromofluorobenzene (Surr)	105		% Recovery	EPA 8260B	01/13/2001

Joel Kiff

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 18879
Date : 01/18/2001

Project Name : **BEACON 720**
Project Number : **600481**

Sample : **MW-2 (12:35P)** Matrix : Water Lab Number : 18879-05
Sample Date :01/04/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**50**	20	ug/L	EPA 8260B	01/14/2001
Toluene	**< 20**	20	ug/L	EPA 8260B	01/14/2001
Ethylbenzene	**57**	20	ug/L	EPA 8260B	01/14/2001
Total Xylenes	**350**	20	ug/L	EPA 8260B	01/14/2001
Methyl-t-butyl ether	**10000**	200	ug/L	EPA 8260B	01/14/2001
TPH as Gasoline	**3500**	2000	ug/L	EPA 8260B	01/14/2001
Toluene - d8 (Surr)	97.3		% Recovery	EPA 8260B	01/14/2001
4-Bromofluorobenzene (Surr)	105		% Recovery	EPA 8260B	01/14/2001

Sample : **MW-3 (10:35A)** Matrix : Water Lab Number : 18879-06
Sample Date :01/04/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 50**	50	ug/L	EPA 8260B	01/14/2001
Toluene	**< 50**	50	ug/L	EPA 8260B	01/14/2001
Ethylbenzene	**< 50**	50	ug/L	EPA 8260B	01/14/2001
Total Xylenes	**52**	50	ug/L	EPA 8260B	01/14/2001
Methyl-t-butyl ether	**27000**	500	ug/L	EPA 8260B	01/14/2001
TPH as Gasoline	**< 5000**	5000	ug/L	EPA 8260B	01/14/2001
Toluene - d8 (Surr)	97.3		% Recovery	EPA 8260B	01/14/2001
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	01/14/2001

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 18879
Date : 01/18/2001

Project Name : **BEACON 720**
Project Number : **600481**

Sample : **MW-1** Matrix : Air Lab Number : 18879-07
Sample Date :01/04/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.19**	0.10	Molar ppm	EPA 8260B	01/05/2001
Toluene	**0.86**	0.10	Molar ppm	EPA 8260B	01/05/2001
Ethylbenzene	**2.2**	0.10	Molar ppm	EPA 8260B	01/05/2001
Total Xylenes	**4.6**	0.10	Molar ppm	EPA 8260B	01/05/2001
Methyl-t-butyl ether	**40**	0.20	Molar ppm	EPA 8260B	01/05/2001
TPH as Gasoline	**220**	10	Molar ppm	EPA 8260B	01/05/2001
Toluene - d8 (Surr)	97.5		% Recovery	EPA 8260B	01/05/2001
4-Bromofluorobenzene (Surr)	97.3		% Recovery	EPA 8260B	01/05/2001

Sample : **MW-2** Matrix : Air Lab Number : 18879-08
Sample Date :01/04/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.52**	0.10	Molar ppm	EPA 8260B	01/05/2001
Toluene	**1.3**	0.10	Molar ppm	EPA 8260B	01/05/2001
Ethylbenzene	**4.2**	0.10	Molar ppm	EPA 8260B	01/05/2001
Total Xylenes	**10**	0.10	Molar ppm	EPA 8260B	01/05/2001
Methyl-t-butyl ether	**31**	0.20	Molar ppm	EPA 8260B	01/05/2001
TPH as Gasoline	**420**	10	Molar ppm	EPA 8260B	01/05/2001
Toluene - d8 (Surr)	91.8		% Recovery	EPA 8260B	01/05/2001
4-Bromofluorobenzene (Surr)	96.9		% Recovery	EPA 8260B	01/05/2001

Joel Kiff

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 18879
Date : 01/18/2001

Project Name : **BEACON 720**
Project Number : **600481**

Sample : **MW-3** Matrix : Air Lab Number : 18879-09
Sample Date :01/04/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.60**	0.10	Molar ppm	EPA 8260B	01/05/2001
Toluene	**0.58**	0.10	Molar ppm	EPA 8260B	01/05/2001
Ethylbenzene	**1.1**	0.10	Molar ppm	EPA 8260B	01/05/2001
Total Xylenes	**3.3**	0.10	Molar ppm	EPA 8260B	01/05/2001
Methyl-t-butyl ether	**120**	2.0	Molar ppm	EPA 8260B	01/06/2001
TPH as Gasoline	**310**	10	Molar ppm	EPA 8260B	01/05/2001
Toluene - d8 (Surr)	94.3		% Recovery	EPA 8260B	01/05/2001
4-Bromofluorobenzene (Surr)	97.0		% Recovery	EPA 8260B	01/05/2001

Sample : **SYSTEM EFFLUENT** Matrix : Air Lab Number : 18879-10
Sample Date :01/04/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.050**	0.050	Molar ppm	EPA 8260B	01/05/2001
Toluene	**0.14**	0.050	Molar ppm	EPA 8260B	01/05/2001
Ethylbenzene	**0.076**	0.050	Molar ppm	EPA 8260B	01/05/2001
Total Xylenes	**0.31**	0.050	Molar ppm	EPA 8260B	01/05/2001
Methyl-t-butyl ether	**0.13**	0.10	Molar ppm	EPA 8260B	01/05/2001
TPH as Gasoline	**< 5.0**	5.0	Molar ppm	EPA 8260B	01/05/2001
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	01/05/2001
4-Bromofluorobenzene (Surr)	106		% Recovery	EPA 8260B	01/05/2001

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

720 Olive Drive, Suite D
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4803

Lab No. 18879 Page ____ of ____

Chain-of-Custody Record and Analysis Request

Project Manager: Kathy/Allen VanAntwerp	Phone No.: 800-282-0682
Company/Address: 9471 Ridgehaven Ct. TRC San Diego, CA. 92123	FAX No.:
Project Number: 600481 P.O. No.: 3720-57	Email Address: ☐.pdf ☐.xls ☐.doc ☐other
Project Name/Location: Beacon 720 San Leandro CA.	Sampler Signature:

Sample Designation	Sampling Date	Sampling Time	Container (Type/Amount) 40 ml VOA	SLEEVE	Tedlar	Method Preserved HCl	HNO_3	ICE	NONE	Matrix WATER/SOIL	VAPOR	BTEX (8021B)	BTEX/TPH Gas/MTBE (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)	TAT 12 hr/24 hr/48 hr/72 hr/1 wk	For Lab Use Only
MW-1	1/4/01	6:00AM	2			X		X		W			X													-01
MW-2		5:50AM	2			X		X		W			X													-02
MW-3		5:40AM	2			X		X		W			X													-03
MW-1		2:35PM	2			X		X		W			X													-04
MW-2		12:35PM	2			X		X		W			X													-05
MW-3		10:35AM	2			X		X		W			X													-06
MW-1		1:30PM	1						X		V		X													-07
MW-2		11:30AM	1						X		V		X													-08
MW-3		9:30AM	1						X		V		X													-09
SYSTEM EFFLUENT		9:30AM	1						X		V		X													-10

TAT: 12 hr/24 hr/48 hr/72 hr/1 wk — 1 — 1 — 1 — 1 — Normal

For Lab Use Only: 12 hr = Results by 8 a.m. of the next bus. day; 24 hr = Results by 5 p.m. of the next bus. day; 48 hr = Results by 5 p.m. of the 2nd bus. day; 72 hr = Results by 6 p.m. of the 3rd bus. day; 1 wk = Results by 5 p.m. of the 5th bus. day

	Date	Time		
Relinquished by:	1/4/01	2:35P	Received by:	Remarks:
Relinquished by:	Date	Time	Received by:	
Relinquished by:	Date 01040	Time 1435	Received by Laboratory: John Cuttle / Kiff Analytical	Bill to:

Distribution: White - Lab, Yellow - File, Pink - Originator

COC.fh8 (5/00)