Alameda County

JUN 2 7 2003

Environmente Health



ARROW RENTALS LIVERMORE, CALIFORNIA

SEMIANNUAL GROUNDWATER MONITORING EVENT MARCH 2003

Mrs. Rita M. Sullins
Alameda County

The Eva JUN 2 1 2003

Environment Books

The is, the

Latest report

Weine been

very busy lately

moving from our home
in Byron to Livermore

Hope alls well with

you

Lita

Prepared for: Don Sul, Inc. 187 North L Street Livermore, California 94550

Date Prepared: April 15, 2003

April 11, 2003 971275

Rita Sullins
Don-Sul, Inc.
187 North L Street
Livermore, CA 94550

Subject:

Semiannual Groundwater Monitoring, March 2003

187 North L Street, Livermore, California

Dear Ms. Sullins:

This report presents the results of semiannual groundwater monitoring conducted in March 2003 at the Arrow Rentals site, located at 187 North L Street in Livermore, California. Included are discussions of measurement and sampling procedures, hydrogeologic data, and analytical data.

MEASUREMENT AND SAMPLING PROCEDURES

On March 19, 2003, groundwater monitoring was performed at the site by Environmental . Sampling Services of Martinez, California. The locations of the groundwater monitoring wells are illustrated on Figure 1. Sampling procedures and measurements are described in the field activity report, included in Appendix A.

Prior to sampling, the depth to groundwater was measured in all four wells (W-1s, W-3s, W-Bs, and W-Es) to the nearest 0.01 foot using an oil-water interface probe. The interface probe was washed with a Liqui-Nox[®] detergent solution, rinsed with tap water, and rinsed with distilled water. The depth measurements, groundwater elevation data, and product thicknesses are listed in Table 1. A summary of groundwater elevation and product thickness data is presented in Table 2.

In November 2001, 0.14 foot of floating product was measured in well W-1s. Floating product had not been detected previously in well W-1s, and has not been detected since November 2001. Floating product has not been detected in the other three monitoring wells.

On March 19, 2003, groundwater samples were collected from all four wells (W-1s, W-3s, W-Bs, and W-Es). Prior to sampling, each well was purged using a submersible pump or precleaned disposable bailer to ensure that fresh formation water entered the casing. Each well was purged until at least three casing volumes of water were removed or the well was purged dry twice. The purge water from the monitoring wells was stored in 55-gallon drums.

Water quality parameters (temperature, pH, specific conductance, turbidity, color, and odor) were recorded at regular intervals during well purging. Water quality parameters for the four wells were recorded in the sampling logs. Copies of the sampling logs are included in the Field Activity Report in Appendix A.

Groundwater samples were collected from the wells using a disposable bailer or submersible pump set to the minimum possible pumping rate. Groundwater samples were collected in clean bottles supplied by the analytical laboratory. The bottles were sealed, labeled, stored on ice in a cooler, and transported under chain-of-custody protocol within 24 hours of collection to McCampbell Analytical, a California-certified laboratory in Pacheco, California.

The groundwater samples were analyzed for total petroleum hydrocarbons quantified as gasoline (TPH-gasoline) by EPA Method 8015 Modified; total petroleum hydrocarbons quantified as diesel (TPH-diesel) by EPA Method 8015 Modified with a silica gel cleanup; benzene, toluene, ethylbenzene, xylenes (BTEX) by EPA Method 8020; and methyl tertiary butyl ether (MTBE) by EPA Method 8020 Modified.

HYDROGEOLOGIC DATA EVALUATION

On March 19, 2003, groundwater elevations in the four monitoring wells ranged from 441.80 feet in well W-Es to 446.83 feet in well W-1s. The elevations were used to construct a potentiometric surface map, as shown on Figure 2. The potentiometric surface shows that groundwater flows to the west-southwest. The hydraulic gradient is approximately 0.023 ft/ft.

ANALYTICAL DATA EVALUATION

Analytical data for groundwater samples collected in March 2003 are summarized in Table 3. The laboratory report and chain-of-custody documentation are included in Appendix B.

TPH-gasoline, TPH-diesel, and BTEX were detected in the groundwater samples. TPH-gasoline was detected at concentrations ranging from $86 \,\mu\text{g/L}$ in well W-Es to $49,000 \,\mu\text{g/L}$ in well W-1s. TPH-diesel was detected at concentrations ranging from $61 \,\mu\text{g/L}$ in well W-Es to $9,800 \,\mu\text{g/L}$ in well W-1s. However, the laboratory indicated that a significant amount of the reported diesel in the samples was due to gasoline.

Benzene was detected at concentrations ranging from 920 μ g/L in well W-3s to 3,400 μ g/L in well W-1s. The Maximum Contaminant Level (MCL) for benzene is 1 μ g/L. Toluene (up to 880 μ g/L), ethylbenzene (up to 1,300 μ g/L), and xylenes (up to 7,300 μ g/L) were also detected in the samples. The concentrations of toluene, ethylbenzene, and xylenes in the sample collected from well W-1s exceeded their corresponding MCLs. The concentration of ethylbenzene in the sample collected from well W-Bs exceed the MCL. MTBE was not detected in the samples.

SUMMARY AND CONCLUSIONS

A summary of analytical data for the four groundwater monitoring wells is presented in Table 4. Elevated levels of TPH-gasoline, TPH-diesel, BTEX, and MTBE have been consistently detected in groundwater samples collected from wells W-1s and W-Bs. Lower levels of TPH-gasoline, TPH-diesel, BTEX, and MTBE have also been detected in samples collected from well W-3s and W-Es.

In November 2001, a small amount (0.14 foot) of floating product was measured on the water column in well W-1s. Floating product has not been detected in well W-1s during any prior or subsequent monitoring event. None of the other wells (W-Bs, W-3s, and W-Es) have ever contained measurable floating product.

In March 2003, the direction of groundwater flow beneath the site was west-southwest. Fluctuations in the concentrations of petroleum hydrocarbons may be related to seasonal variations in groundwater elevations and the groundwater flow direction.

Based upon analytical data collected to date, the contaminant plume beneath the site appears to be stable and/or degrading. The concentrations of petroleum hydrocarbons in samples collected from well W-Bs have steadily decreased over time, indicating that the contamination is attenuating naturally. This trend would be expected, since the sources of contamination (e.g., the underground fuel tanks) have been removed.

Please call us if you have any questions concerning this report.

Respectfully yours,

Thomas E. Neely, REA Senior Hydrogeologist

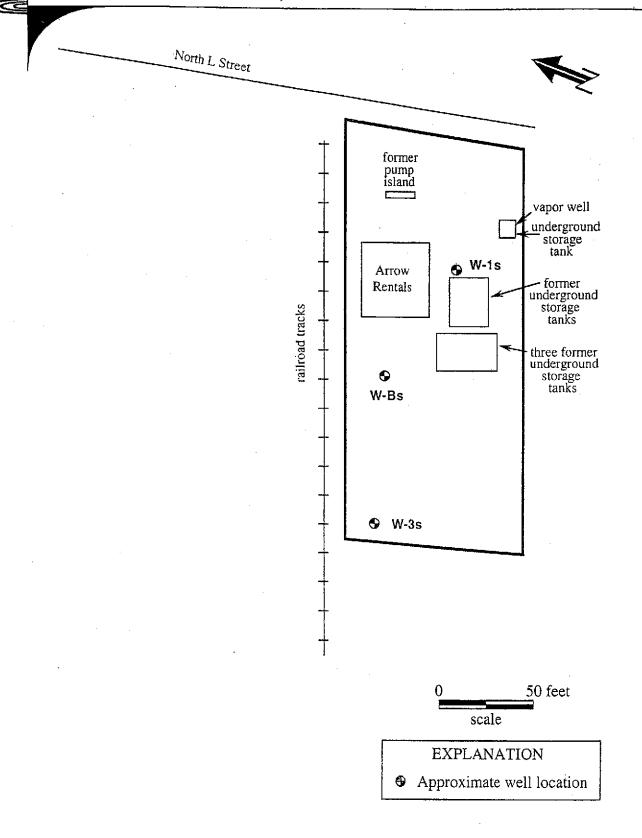
Semoi riyarogeologi

Attachments

Rebecca A. Sterbentz, RG, CHG, REA

REBECCA A. STERBENT.
No. 4119

President



W-Es **⊙**

Figure 1. SITE MAP
187 North L Street, Livermore, California

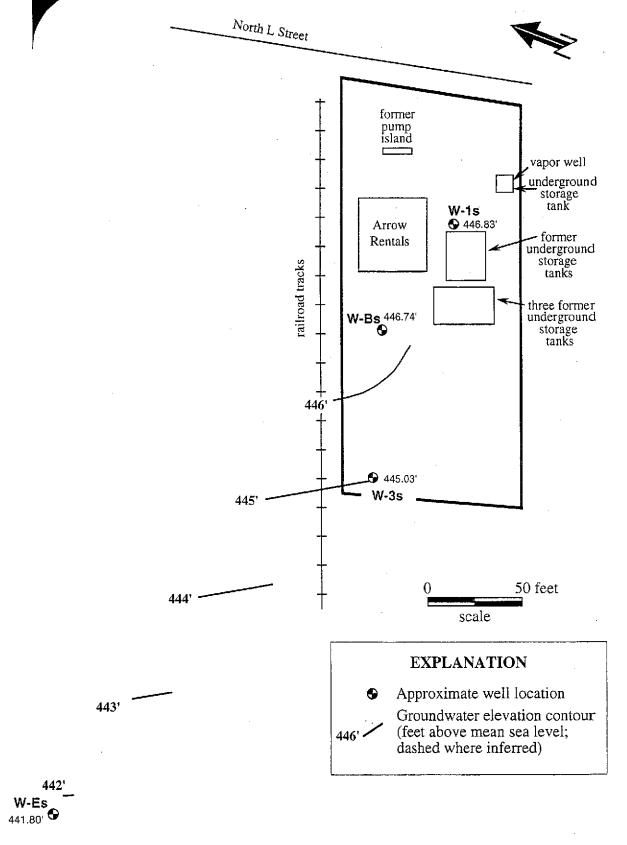


Figure 2. POTENTIOMETRIC SURFACE MAP (3/19/03) 187 North L Street, Livermore, California

Table 1. MONITORING WELL DATA 187 North L Street, Livermore, California March 19, 2003

Well Identification	Top-of-Casing Elevation (feet above MSL)	Depth to Water (feet below TOC)	Groundwater Elevation (feet above MSL)	Product Thickness (feet)
W-1s	479.09	32.26	446.83	0.00
W-3s	476.98	31.95	445.03	0.00
W-Bs	478.82	32.08	446.74	0.00
W-Es	474.66	32.86	441.80	0.00

MSL = mean sea level (elevations based on City of Livermore datum)

TOC = top of well casing

Table 2. CUMULATIVE GROUNDWATER ELEVATION AND PRODUCT THICKNESS DATA 187 North L Street, Livermore, California

	Gro	oundwater I	Elevation D	ata*	<u> </u>	Product Thickness Data									
	Well W-1s	Well W-3s	Well W-Bs	Well W-Es	Well W-1s	Well W-3s	Well W-Bs	Well W-Es							
Date	(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(feet)							
7/15/97	448.68	447.81	449.20	443.20	0.00	0.00	0.00	0.00							
10/29/97	442.64	441.53	442.19	437.98	0.00	0.00	0.00	0.00							
4/27/98	460.48	457.25	459.96	455.39	0.00	0.00	0.00	0.00							
10/23/98	445.11	444.01	445.60	440.16	0.00	0.00	0.00	0.00							
4/9/99	453.14	451.02	452.78	447.25	0.00	0.00	0.00	0.00							
10/5/99	446.66	445.20	446.72	441.47	0.00	0.00	0.00	0.00							
4/5/00	453.12	451.96	453.77	448.04	0.00	0.00	0.00	0.00							
10/26/00	447.91	446.50	448.14	442.43	0.00	0.00	0.00	0.00							
4/18/01	447.80	446.51	446.89	442.63	0.00	0.00	0.00	0.00							
11/13/01	435.69	433.32	443.59	431.05	0.14	0.00	0.00	0.00							
2/15/02	442.46	NM	NM	NM	0.00	NM	NM	NM							
3/15/02	441.32	NM	NM	NM	0.00	NM	NM	NM							
4/16/02	441.79	NM	NM	NM	0.00	NM	NM	NM							
4/30/02	441.80	439.19	441.50	437.09	0.00	0.00	0.00	0.00							
9/30/02	439.17	437.01	439.39	434.50	0.00	0.00	0.00	0.00							
3/19/03	446.83	445.03	446.74	441.80	0.00	0.00	0.00	0.00							

NM = not measured

^{*} All groundwater elevations were surveyed relative to a City of Livermore mean sea level datum.

Table 3. ANALYTICAL DATA FOR GROUNDWATER 187 North L Street, Livermore, California March 19, 2003

Well Identification	TPH- gasoline (µg/L)	TPH- diesel (µg/L)	TPH- motor oil (µg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	2-Methyl- naphthalene (µg/L)
W-1s	49,000*	9,800†,‡	NA	3,400	880	1,300	7,300	< 500	NA	NA
W-3s	5,300*	1,500†	NA	920	24	140	27	< 25	NA	NA
W-Bs	14,000*	3,900†	NA	1,200	77	820	900	< 120	NA	NA
W-Es	86§	61†	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	NA	NA
Travel Blank	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	NA	NA
RL	50	50	250	0.5	0.5	0.5	0.5	5 - 1,200		
MCL	NE	NE	NE	1	150	700	1,750	5	NE	NE

 $\mu g/L = micrograms per liter [parts per billion (ppb)]$

NA = not analyzed

NE = none established

TPH-gasoline = total petroleum hydrocarbons quantified as gasoline

TPH-diesel = total petroleum hydrocarbons quantified as diesel

TPH-motor oil = total petroleum hydrocarbons quantified as motor oil

MTBE = methyl tertiary butyl ether

RL = reporting limit

MCL = Maximum Contaminant Level, July 2002

- * Unmodified or weakly modified gasoline is significant.
- † Gasoline range compounds are significant.
- ‡ Diesel range compounds are significant; no recognizable pattern.
- § Heavier gasoline range compounds are significant (aged gasoline?).

Table 4. SUMMARY OF ANALYTICAL DATA FOR GROUNDWATER 187 North L Street, Livermore, California

Well Identification	Date Sampled	TPH- gasoline (µg/L)	TPH- diesel (µg/L)	TPH- motor oil (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE (μg/L)	Lead (µg/L)	Naphthalene (µg/L)	2-Methyl- naphthalene (µg/L)
W-1s	3/22/96	6,400	NA	NA	580	470	85	1,100	< 500	NA	NA	NA
. W-1s	11/22/96	170,000	NA	. NA	13,000	18,000	3,500	18,000	< 10,000	NA	NA	NA
W-1s	7/15/97	140,000	38,000*	3,000	12,000	12,000	2,600	16,000	< 800	NA	NA	NA
W-1s	10/29/97	650,000	180,000	1,600	14,000	19,000	7,800	35,000	< 3,000	NA	NA	NA
W-1s	4/27/98	6,700	2,200†	NA	410	250	77	870	< 30	< 5	NA	NA
W-1s	10/23/98	99,000	18,000†	NA	9,800	9,400	1,800	11,000	< 600	NA	NA	NA
W-1s	4/9/99	70,000	24,000	NA	6,500	7,000	1,800	8,900	360	· NA	330	< 50
W-1s	10/5/99	82,000	60,000‡	NA	5,500	4,500	2,500	14,000	< 300	NA	510	280
W-1s	4/5/00	47,000	15,000‡	NA	4,300	2,300	1,500	6,100	170	· NA	330	110
W-1s	10/26/00	50,000	1,200	< 500	3,800	1,800	1,700	7,600	< 50	NA	350	180
W-1s	4/18/01	54,000§	6,800**	NA	5,200	1,800	1,500	7,000	< 330	NA	NA	NA
W -1s	11/13/01	750,000§	NA	NA	9,500	7,800	7,200	33,000	< 2,000	NA	NA	NA
W-1s	4/30/02	66,000§	8,200**	NA	6,000	2,700	2,300	11,000	< 1,200	NA	. NA	NA
W-1s	9/30/02	51,000§	1,200**	< 2500	5,600	1,500	2,000	9,400	< 1,000	NA	NA	NA .
W-1s	3/19/03	49,000§	9,800**,§§	NA	3,400	880	1,300	7,300	< 500	NA	NA	NA
W-3s	3/22/96	100	NA	NA	13	6.9	5.3	14	< 5	NA	NA	NA
W-3s	11/22/96	3,200	NA	NA	270	29.0	63.0	100	< 100	NA.	NA NA	NA NA
W-3s	7/15/97	2,100	340*	740	230	7	33	51	< 20	NA.	NA 1	NA NA
W-3s	10/29/97	2,800	750	88	630	31	71	69	< 30	NA.	NA NA	NA .
W-3s	4/27/98	< 50	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 3	NA	NA	NA .
W-3s	10/23/98	3,800	1,000†	NA	500	28	90	37	35	NA	NA	NA
W-3s	4/9/99	980	430	NΑ	240	4	37	3	< 12	NA	NA	NA
W-3s	10/5/99	1,500	1,000‡,††	NA	290	9.5	53	9.8	< 6	NA	NA	NA NA
W-3s	4/5/00	810	320‡	NA	150	3.0	9.0	5.7	< 5	NA	< 5	< 5
W-3s	10/26/00	310	120	140	83	3.5	6.4	1.2	< 5	NA	NA	NA
W-3s	4/18/01	2,300§	1,600**,‡‡	NA	320	8.0	16	7.0	< 20	NA.	NA	NA
W-3s	11/13/01	NS	NS	NS	NS	NS	NS	NS 1	NS	NS	NS	NS
W-3s	4/30/02	1,400§	490**,‡‡	NA	320	5.5	24	5.0	< 25	NA	NA NA	
W-3s	9/30/02	420§	390‡‡	1,400	68	1.4	3.1	1.1	< 5.0	NA NA	NA NA	NA
W-3s	3/19/03	5,300§	1,500**	NA	920	24	140	27	< 25	NA NA		NA NA
	27.77.00	2,2003	1,500	1471	720	24	170	<i>L1</i>	~ 23	NA ,	NA	NA

Table 4 (continued). SUMMARY OF ANALYTICAL DATA FOR GROUNDWATER 187 North L Street, Livermore, California

Well Identification	Date Sampled	TPH- gasoline (µg/L)	TPH- diesel (µg/L)	TPH- motor oil (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE (μg/L)	Lead (µg/L)	Naphthalene (μg/L)	2-Methyl- naphthalene (µg/L)
W-Bs	3/22/96	61,000	NA	NA	9,800	8,000	2,200	11,000	< 5,000	NA	NA	NA
W-Bs	11/22/96	47,000	NA	NA	5,100	3,100	1,400	7,800	< 2,500	NA	NA	NA
W-Bs	7/15/97	66,000	17,000*	490	7,800	4,900	1,900	10,000	< 600.	NA	NA	NA
W-Bs	10/29/97	44,000	27,000	4,000	6,000	500	1,500	6,400	380	NA	NA	NA
W-Bs	4/27/98	63,000	17,000†	NA	6,100	5,400	1,900	9,100	< 600	NA	NA	NA
W-Bs	10/23/98	48,000	9,600†	NA	6,700	1,200	1,500	6,200	< 300	NA	NA	NA
W-Bs	4/9/99	39,000	12,000	NA	4,100	1,900	1,400	5,600	< 300	NA	NA	NA
W-Bs	10/5/99	38,000	7,300‡	NA	3,800	390	1,600	5,900	< 60	NA	NA	NA .
W-Bs	4/5/00	34,000	9,600‡	NA	3,500	1,200	1,400	4,700	< 150	NA	280	68
W-Bs	10/26/00	23,000	650	< 50	2,500	210	1,100	2,600	150	NA	260	88
W-Bs	4/18/01	20,000§	2,500**	NA	2,400	180	880	1,800	< 20	NA	NA	NA
W-Bs	11/13/01	17,000§	3,600**	NA	2,000	130	1,100	1,700	< 150	NA.	NA	NA
W-Bs	4/30/02	13,000§	2,300**	NA	1,000	38	660	360	< 170	NA	NA	NA
W-Bs	9/30/02	7,100§	1,500**	< 250	940	28	260	93	< 250	NA	NA	NA
W-Bs	3/19/03	14,000§	3,900**	NA	1,200	77	820	900	< 120	NA	NA	NA
W-Es	3/22/96	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5	. NA	NA	NA .
W-Es	11/22/96	280	NA	NA	24	0.6	1.8	2.2	< 5	NA	NA	NA
W-Es	7/15/97	NS	NS	NS	NS	NS	NS	NS	NS	NS	- NS	NS
W-Es	10/29/97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W-Es	4/27/98	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W-Es	10/23/98	82	69†	NA	< 0.5	0.8	< 0.5	0.8	4	NA	NA	NA
W-Es	4/9/99	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W-Es	10/5/99	68	88‡	NA	< 0.5	< 0.5	< 0.5	< 1.0	4	NA	NA	NA
W-Es	4/5/00	NS	NS	NS	NS	NS	NS	NS '	NS	NS	NS	NS
W-Es	10/26/00	110	< 50	< 50	0.7	< 0.5	< 0.5	< 1.0	< 5	NA	NA .	NA
W-Es	4/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W-Es	11/13/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W-Es	4/30/02	NS	NS	NS	NS	NS	NS	NS	NS	. NS	NS	NS
W-Es	9/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W-Es	3/19/03	86***	61**	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	NA	NA	NA



FIELD ACTIVITY REPORT

ARROW RENTALS LIVERMORE, CALIFORNIA

SEMI-ANNUAL GROUNDWATER MONITORING EVENT MARCH 2003

Prepared for: Don Sul, Inc. 187 North L Street Livermore, California 94550

Date Prepared: March 28, 2003



FIELD ACTIVITY REPORT

SEMI-ANNUAL GROUNDWATER MONITORING EVENT ARROW RENTALS LIVERMORE, CALIFORNIA

ESS Personnel: Jacqueline Lee and Steve Penman

Date of Activities: March 19, 2003

Decontamination Procedures

Prior to use, all downhole equipment was cleaned with a solution of Liqui-Nox® laboratory-grade detergent and potable water, rinsed with potable water, followed by a final rinse with distilled water.

Depth to Groundwater Level Measurements

Depth to groundwater level measurements for all four monitoring wells were measured and recorded prior to any purging activities. All readings were performed with an Oil/Water Interface meter. Each depth to groundwater level measurement was referenced to the north rim at the top of PVC well casing (Table 1). Three successive readings that agreed to within one-hundredth of a foot determined depth to groundwater.

The presence of floating product was not detected in the four monitoring wells.

Field Equipment Calibration

All field instrumentation was calibrated in accordance with the instruments' calibration procedures prior to use. The pH meter was calibrated using three pH buffer standard solutions: 4, 7, and 10. The Specific Conductivity/Temperature meter is factory calibrated and runs through a self-test when the meter is activated. The turbidity meter was calibrated against a 0.02 NTUs standard.

Field measurements included: pH, Specific Conductance (uS), Turbidity (NTUs), and Temperature (°C). Physical characteristic such as color and odor were also noted.

Well Purging and Sampling Methods

As part of standard purging protocol, a minimum removal of three casing volumes and stabilization of water quality parameters is required prior to sampling unless a well is purged dry. If the well goes dry, it is allowed to recover twice, prior to sampling.

Two Grundfos® Redi-Flow submersible pumps and new tubing were used for well purging at monitoring wells: W-1s, W-3s, and W-Bs.



Monitoring wells, W-1s and W-Bs, were purged dry once and allowed to recover for approximately one hour. Thereafter, an equivalent of 3.05 and 3.88 casing volumes were removed, respectively. Each monitoring well was sampled with the submersible pump set at the slowest flow rate.

Monitoring well W-3s was purged dry twice and approximately 2.38 casing volumes were removed. The well was sampled with a new disposable PVC bailer after 80% recovery.

Due to the low volume requirement for three casing volumes (5.6 gallons), monitoring well W-Es was purged and sampled with a new disposable PVC bailer.

Laboratory, Analysis, Sample Containers & Preservation

McCampbell Analytical Inc. of Pacheco, California supplied the trip blank, sample containers and performed all required analyses. All monitoring wells were sampled for the following analyses: EPA Method 8015M/8020 (TPH-Gasoline/BTEX, and MTBE) and TPH as Diesel with Silica Gel Cleanup. The laboratory supplied pre-preserved and non-preserved sample containers according to analysis.

Each TPH-Gasoline, BTEX, and MTBE sample set was contained in two 40-ml clear glass containers preserved with hydrochloric acid.

Each Diesel sample was contained in a non-preserved, 1-liter amber glass container.

Sample Handling

Sample labels were completed with waterproof ink and affixed to sample containers prior to sample collection.

During decanting, all 40-ml sample containers were slightly tilted to avoid aeration or degassing. Each container was filled until there was a meniscus at the top. After capping, the container was inverted and tapped lightly to check for air bubbles. The absence of air bubbles indicated a successful seal. Non-preserved sample containers were filled to the neck of the sample container.

Sample handling was conducted under strict chain of custody procedures. All sample containers were wiped dry, sealed in Ziploc® bags, and placed in a chilled cooler for storage and shipment to the laboratory. ESS relinquished all samples to McCampbell Analytical Inc. on March 19, 2003.

QA/QC

One trip blank container was submitted for TPH-Gasoline, BTEX and MTBE analysis. The trip blank was re-labeled and remained in the sample cooler throughout the sampling event.

No other QA/QC samples were required nor requested.



Storage of Wastewater

Approximately 220 gallons of wastewater was generated during this sampling event and are stored in four labeled 55-gallon drums. ESS will arrange for proper disposal following confirmation of chemical analysis.

Jacqueline Lee

President

Enclosure

Table 1: Summary of Groundwater Monitoring and Sampling Water Sample Log Sheets
Copy of Chain of Custody

Table 4 (continued). SUMMARY OF ANALYTICAL DATA FOR GROUNDWATER 187 North L Street, Livermore, California

Well Identification	Date Sampled	TPH- gasoline (µg/L)	TPH- diesel (µg/L)	TPH- motor oil (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Lead (µg/L)	Naphthalene (µg/L)	2-Methyl- naphthalene (µg/L)
Travel Blank	3/20/96	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5	NA	NA	NA
Travel Blank	11/22/96	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5	NA	NA NA	NA NA
Travel Blank	7/15/97	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 3	NA	NA.	NA.
Travel Blank	10/29/97	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 3	NA	NA.	NA NA
Travel Blank	4/27/98	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 3	NA	NA.	NA NA
Travel Blank	10/23/98	< 50	NA	NA ·	< 0.5	< 0.5	< 0.5	< 0.5	< 3	NA	NA NA	NA NA
Travel Blank	4/9/99	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 3	NA	NA.	NA NA
Travel Blank	10/5/99	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 1.0	< 3	NA	NA.	NA NA
Travel Blank	4/5/00	< 50	NA	NA	1.8	< 0.5	< 0.5	< 1.0	< 5	NA	NA	NA NA
Travel Blank	10/26/00	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 1.0	< 5	NA	NA	NA.
Travel Blank	4/18/01	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	NA	NA.	NA NA
Travel Blank	11/13/01	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	NA	NA	NA NA
Travel Blank	4/29/02	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5	NA	NA	NA.
Travel Blank	3/19/03	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	NA	NA	NA
												1171
MCL		NE	NE	NE	1	150	700	1,750	5	50	NE	NE
AL	i	NE	NE	NE	NE	NE	NE	NE	35 .	15	NE	NE

 $\mu g/L = micrograms per liter [parts per billion (ppb)]$

NA = not analyzed

NE = none established

NS = not sampled

TPH-gasoline = total petroleum hydrocarbons quantified as gasoline

TPH-diesel = total petroleum hydrocarbons quantified as diesel

MTBE = methyl tertiary butyl ether

MCL = Maximum Contaminant Level, July 2002

AL = Action Level, July 2002

- * The method blank contained heavy oil at 120 µg/L.
- † The chromatogram does not match the typical diesel pattern.
- ‡ The sample contained a lower boiling point mixture of hydrocarbons quantitated as diesel.
- § Unmodified or weakly modified gasoline is significant.
- ** Gasoline range compounds are significant.
- †† The sample contained a higher boiling point hydrocarbon mixture quantitated as diesel.
- ‡‡ Oil range compounds are significant.
- §§ Diesel range compounds are significant; no recognizable pattern.
- *** Heavier gasoline range compounds are significant (aged gasoline?).

APPENDIX A

FIELD ACTIVITY REPORT



Table 1: Summary of March 2003 Semi-Annual Groundwater Monitoring Event Site Location: Arrow Rentals, Livermore, Calfornia

	Groundwater		•		· _
Well I.D.	Level Measurement (ft.)	Time of Measurement	Sample Date	Sample Time	QA/QC
W-ls	32.26	10:10	3/19/2003	14:13	None
W-3s	31.95	10:02	3/19/2003	14:39	None
W-Bs	32.08	10:01	3/19/2003	12:38	None
W-Es	32.86	10:25	3/19/2003	15:00	None



WATER	QUALIT	Y SAMPLE L	OG SH	EET	WELL IDEN	(FICATION)	ON W-1s	DATE 3/19/03						
Project N	Project Name: Arrow Rentals - Livermore, CA Project Task: Semi-Annual Groundwater Monitoring aboratory: McCampbell Analytical, Inc. Weather Conditions: Sensy, Arros, con linearies													
_					Weather Cond	itions: <u>\$</u>	may, chos	cool breeze						
Well Des	cription:	2" 3" 4" 5"	(6) Oth	ег	Well Type: P	VC Stai	nless Steel	Other:						
ls Well S	ecured?	(es) No Bolt	Size: <u>15</u>	/16"	Type of Lock	/ Lock nu	mber: <u>Mast</u> e	er/Unknown Number						
Observati	ions / Cor	nments:				<u> </u>								
Purge Me	thod: Te	fion/PVC Disp	osable E	ailer Cen	hifugal Pump (Grundtos	Pump Othe	er:						
Pump Lin	es: NA (New/ Cleaned	Dedic	ated	Bailer Line: N	A New/	Cleaned / D	edicated						
Method o	f Cleanin	g Pump: NA	Alconox	Ciqui-nóx	Tap Water D	Rinse O	ther:							
Method o	f Cleanin	g Bailer: 🕼	Alconox	Liqui-nox	Tap Water D	Rinse O	ther:							
Sampling	Method:	Disp. Teflon E	Bailer D	isp. PVC	Bailer GrundF	os Redi-f	ow Pump	Peristaltic Pump						
pH Meter	Serial No	o.: 217254 /	(33008	2	Spec. Cond. M	leter Seri	al No.: 96H	0203AB/ AE						
								f Test Other:						
Method to	Measure	e Water Level:	Solinst	Serial No.	: % Ind.	_ P.I.D. R	eading: <u>N</u>	IA ppm @ Well Head						
Water Le	vel at Sta	irt (DTW): <u>3 2</u>	<u> 240</u>	<i>10:10</i> \	Water Level Pr	ior To Sar	npling:	34.37						
2					18.0 (Gals./C									
"K"= ().163(2" w	ell) "K" = 0.65	3(4" wel) "K" = 1.	02(5" well) VK	" = 1.46(6"	well)	= 2.61(8" well)						
			FIELD '	WATER Q	UALITY PARA	METERS								
	Specific Specific Comments													
Date														
3/19/03	12:08	ĮĐ	6.67	20.8	1166	23.6	Yellowy's)						
1	12:13	20	6.59	20.5	1123	12.0	**	Pump stoppede Bange 23 gallons/switches						
							Yellow/	to second pomp.						
	12:56	30		20.7	1020	চ্য	greenish.	48						
	(3:02	40	6.71		(003	48	,	Dry @ 40 gallons						
	H:08	90	6.48	20.5	961	32.3								
				1										
		- · · · · · · · · · · · · · · · · · · ·												
Total Dis	charge:	55 G	illons	<u> </u>	Casing Volum	es Remo	ved: 3.8	5						
				65 Gallon				ystem Other:						
E .	-				s: <u>TPH-Gas/E</u>									
		ca Gel Cleanup			<u> </u>	1 1 1 1 1 1 1 1 1		101111111111111111111111111111111111111						
1		e Containers:			Preservativex	None H	CD							
				-				olit Field Blank						
ì			•		-		_							
September 1														
Sampled	By: (Jack	i Lee Stepher	n Penma	Casey	Wheable Rec	orded by:	KIL							



		TY SAMPLE			WELL IDEN	ITIFICAT	10N W-3s	DATE 3/19/03						
		rrow Rentals - I						dwater Monitoring						
Laborat	ory: <u>McCa</u>	ampbeli <u>Analyt</u>	ical, Inc.	·	Weather Con	ditions: 4	Jaza mel	t-NeuPa A						
Well De	scription:	2" 3" 4" 5"	' 6" Ot	her:	Well Type:(PVC) Sta	inless Stee	i Other						
is Well	Secured?	Yes / No Bolt	Size: <u>1</u>	<u>5/16"</u>	Type of Lock									
Observa	ations / Co	mments:												
					ntrifugal Pump	Grundfos	Pump Off	lar						
Pump L	ines: NA (New Cleaned	d ∕Qedic	ated	Bailer Line: 🖔	W New	Cleaned / t	Dedicated						
Method	of Cleanin	ig Pump: NA	Alconox	(Liqui-nox	Tap Water D	Rinse)(Wher							
Method	of Cleanin	ig Bailer:(NA)	Alconox	Liqui-nox	Tap Water D	Rinse C	ther Well	Water Rinze						
Samplin	g Method:	Disp. Teflon	Bailer (Disp. PVC	Balled Grundi	Fos Redid	flour Dumn	Peristaltic Pump						
bu Mere	er Senai Ne	0. 217254 /	′€33008	9 }	Spec Cond N	Meter Seri	al No Coal	TUSUS VEN VE						
Date/Tir	ne Calibra	ted: 17960 ::	30 (DX) /	10 0 @ 25°C	Spec Cond. M	fleter Colif	rotion. Sol	FToot Other						
Method	to Measur	e Water Level	Solinst	Serial No	9/W Tand		Jianvii. <u>Oo</u> Jaadina - K	VA ppm @ Well Head						
Water L	evel at Sta	art (DTW): 📚	31.95	@10:02 \	Materiavel Dr	F.I.W. IN	ceaumyr	VA ppm @ vveii Head						
Water Level at Start (DTW): 33.956/0:02 Water Level Prior To Sampling: 31.05 TD = 44.76 -31.95 (DTW) = 12.81 (ft.of water) x "K" = 8.4 (Gats./CV) x 3 (No. of CV) = 25.2 (Gais.)														
"K"= 0.163(2" well) ("K" = 0.653(4" well) "K" = 1.02(5" well) "K" = 1.46(6" well) "K" = 2.61(8" well)														
FIELD WATER QUALITY PARAMETERS														
FIELD WATER QUALITY PARAMETERS														
Date	Date Time Discharge pH Temp. Conductance Turbidity Color Comments													
	"""	(Gallons)	h.,	(°C)	mS (uS)	(NTUS)	Color	Comments						
3 19/03	10:38	5	7.18	19.7	858	16.6	Lt tan	n e al -						
1	10:40	10	7.05	20.2	901	4.2	clear	Pet. oder						
	11:33	15						Dry @ 11 gallons Slight Pet. Odor						
_ _			6.63	20.1	928	2.8	clear	and tell area						
	11:38	20	6. 8 0	20.3	923	1.9	44	Dry @ 20 gallons						

<u> </u>			.											
Total Dis	charge:	<i>2</i> 0 Ga	llons		Casing Volume	ac Barroy		·^						
				55 Gallon I	Drum(s) Poly	Task T	eu: <u>e</u>							
Date/Tim	ie Sample	d. 3/19/2 @	14:39	Analysis	TPH-Gas/B		eatment 5)	stem Other:						
TPH-Die	sel w/Silic	a Gel Cleanup	/EDA 90	_ Analysis.	. <u>. I PH-Gas/D</u>	IEX, MID	E (EPA 80	15M/8020);						
		Containers:	3											
				-t	Preservative<	None HC								
arrowe. ; Commen	40115 @ _	a: -= 34,51	s an Equ	ipmem Bia	ank Duplicate	: MS/MS	D Lab Spl	it Field Blank						
JVI 1111 1411	10. <u>00/0</u>	Z JT.JI												
Sampled	By: Jacki	Lee (Stephen	Penmar	DCasev Vi	Vheable Reco	rded by:	12016							
_					. 1000		100							



WATER QUALITY SAMPLE LOG SHEET WELL IDENTIFICATION W-Bs DATE 3/19/03 Project Name: Arrow Rentals - Livermore, CA Project Task: Semi-Annual Groundwater Monitoring														
				بالمراب المراب										
•		npbell Analytic			Weather Cond									
		2" 3" 4" 5"(Well Type:	VO Stair	niess Stee	el Other:						
		es / No Bolt	_		Type of Lock	/ Lock nur	nber. <u>Mas</u>	ster/Unknown Number						
Observati	ons / Con	nments:						·						
Purge Me	thod: Tet	flon/PVC Dispo	osable B	ailer Centri	ifugal Pump 🥥	rundfos F	umpOth	er:						
Pump Lin	es: NA 🕻	Vew / Cleaned	Dedica	teo	Bailer Line: N	A New /	Cleaned /	Dedicated						
Method of	f Cleaning	Pump: NA	Alconox (Liqui-nox :	Tap Water DI	Rinse Ot	ner:							
Method of	f Cleaning	Bailer: NA)	Alconox	Liqui-nox T	Tap Water DI	Rinse Otl	ner: Well	water Rines The						
Sampling	Method:	Disp. Teflon E	Bailer D					Peristaltic Pump						
		o.: 217254 /			•			H0203AB / AE						
Date/Tim	e Calibrat	ed: <mark>3/19@ 10:3</mark>	0471	0 @ 25°C	Spec.Cond. M	eter Calib	ration:(Si	elf Test) Other:						
Method to Measure Water Level: Solinst Serial No.:														
Water Level at Start (DTW): 32.08 e 10:01 Water Level Prior To Sampling: 35.78														
TD = 44.47 -32.09 (DTW) = 12.39 (ft.of water) x "K" = 19.0 (Gals./CV) x 3 (No. of CV) = 54.2 (Gals.)														
"K"= 0.163(2" well) "K" = 0.653(4" well) "K" = 1.02(5" well) ("K" = 1.46(6" well) "k" = 2.61(8" well)														
FIELD WATER QUALITY PARAMETERS														
	Specific Specific													
Date	Time	Discharge	рН	Temp.			Color	Comments						
-1 +		(Gallons)		(°C)	mS (uS)	(NTU's)								
3/19/03	10:58		6.92	19.60	541	3.1	clear sught	slight Pet, Odor						
	11:05	20	6.81	19.3	530	5.4	Lt tan	**						
and the state of t	11:11	30	6.70	20.1	552	9.8	ā	44						
	11:18	40	4.61	2D.	573	17.8	4	Dry@ 43 gallons						
	13:22	5 0	6.73	219.7	650	6.1	44							
	12:25	60	6.65	19.8	647	5.1	d ¢							
	12:37	70	673	19.9	641	7.2	54	- ¢						
	14-57	<u> </u>	6.43	1 1-1	621	7-2								
<u> </u>	<u></u>					1								
Total Dis	charge: _	70 G	allons		Casing Volum									
								System Other:						
Date/Tin	ne Sampl	ed: <u>3/19/03</u> @	12:38	_ Analysis	: <u>, TPH-Gas/B</u>	TEX. MTB	E (EPA 8	015M/8020);						
TPH-Diesel w/Silica Gel Cleanup (EPA 8015M)														
		e Containers:		- _	Preservative:	None_F	ICD							
ï				uipment Bla	ank Duplicate	e MS/MS	D Lab S	plit Field Blank						
Commer	Comments:													
Sampler	BvC.lack	Lee Stenhe	n Penma	d Casev V	Vheable Reco	orded by://								



WATER	QUALIT	Y SAMPLE L	.OG SH	EET	WELL IDENTIFICATION W-Es DATE 3/19/03									
Project Name: <u>Arrow Rentals - Livermore, CA</u> Project Task: <u>Semi-Annual Groundwater Monitoring</u> Laboratory: <u>McCampbell Analytical, Inc.</u> Weather Conditions: <u>Breezy, hazy, inc. cloud cours.</u>														
Laborator	y: <u>McCa</u>	<u>mpbell Analyti</u>	cal, Inc.	Weather	Conditions: 🔓	reezu.	vazy, inc	claud cours						
					Well Type (P									
is Well S	ecured 🔾	(es)No Bolt	Size <u> </u>	5/16	Type of Lock	/ Lock nui	mber: <u>Mas</u>	ter-Unknown Key code						
Observati	ions / Cor	nments:						*						
					irifugal Pump									
Pump Lin	es:(NA) i	New / Cleaned	/ Dedica	ated	Bailer Line: N	A New	Cleaned / D	edicated						
Method o	f Cleanin	g Pump: (A)	Alconox	Liqui-nox	Tap Water D	Rinse O	ther:	<u> </u>						
Method o	f Cleaning	g Bailer: NA)	Xonox	Liqui-nox	Tap Water D	Rinse O	ther:	<u></u>						
Sampling	Method:	Disp. Teflon B	Bailer 🧲	sp. PVC	Bailed GrundF	os Redi-fi	low Pump	Peristaltic Pump						
pH Meter	Serial No	o.: 2 17254 /	(330089	Ď	Spec. Cond. A	Aeter Seri	al No.: (96)	0203AB) AE						
ī .)			f Test Other:						
Method to	Measure	e Water Level:	Solinst	Serial No.	: % Ind.	_ P.I.D. R	eading: <u>N</u>	iA ppm @ Well Head						
K .					Nater Level Pr									
TD = <u>44.3</u>	2 - 32.86	(DTW) = 11.46	(ft.of wa	ater) x "K" =	[1.9] (Gals./C	4) <u>E</u> x (V	lo. of CV) = ,	<u>S.6</u> (Gals.)						
CK = C).163(2" w	ell)	3(4" well) "K" = 1.	02(5" well) "K	" = 1.46(6"	well) "k" =	= 2.61(8" well)						
			FIELD \	NATER Q	UALITY PARA	METERS	and the second second second second							
	Date Time Discharge oH Temp Conductance Turbidity Color Comments													
Date	pate Time Discharge pH Temp. Conductance Turbidity Color Comments													
4/ i	(Gallons) (°C) mS (uS) (NTU's)													
19/19/03	J 니: 4 구	1.0	7.15	20.4	906	/ 09		······································						
	14:50	2.0	7.35	19,9	561	400	ě2							
- /	14:52	3.0	7.38	20.3	927	25/	n g	ر المنظمة على والمستند والأنسيس وي وسيدون ويستندم المناسم والمناسم والمستند ويود <u>والمناطعة والمنا</u>						
	14:54	4.0	₹.₩0	20.7	940	252.	.							
	14:56	5,0	7,39	19.9	প 30	305	£+							
	14:59	6.0	7.43	19.9	897	465	e+							
				*										
V														
	chame:	6.0 G	llone		Casing Volum	se Pamo	red: 3	7.3						
E				55 Gallon				ystem Other:						
b	=	• • •	_	-	s: , TPH-Gas/E	_								
ž.		ca Gel Cleanup				7 Las Pt. 173 1 2	22 (S.) P. 00	1.01811.002.0).						
1					Preservative	None H	c)							
Number of Sample Containers: 3 Preservative: None HCD QA/QC: None @ as an Equipment Blank Duplicate MS/MSD Lab Split Field Blank														
3				•										
Sampled	By: <u>Jeck</u>	i Lee XStepher	n Penma	m≽Casey '	Wheable Rec	orded by(FAL.							

турбану, ту- 8- тападамдандан байын тү- 4- тападамдан байдан түүдө ча	McCAMPBELL ANALYTICAL INC. 110 2° AVENUE SOUTH, #D7 PACHECO, CA 94553-5560 Telephone: (925) 798-1620 Fax: (925) 798-1622						—	T-,	rui	RN	Al	30	CF UN	A D	IIV	() 31	Fi'	Cl	ıs,			V I	RE	()() ()()		Đ	S	Janda 1						
Telephor	ie: (925) 798	3-1620		TORINGE CO		Fax	: (9	35)	798	162	**								d?						US No	H		HR				. •	A HR	5 D A1
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Project Location	ALLEGAW !	wer on	one, ca	1930		10 K 1/2 H			. 19		19 1 N			8	Silica	() 25	SHS (020		7			8			5				ı			
Sampler Signatur	e: 1		rp.	- 1-			بر سر سامه ه در سامه مواهد				* .*			1803/e	30		carb		8 / 2		C			EPA 623 1 8570			109/					1		
	\mathcal{O}	SAM	PLING		52		M/	/TF	ИX	,	ME RES	FH()() 		<u> </u>	% (S)	ydro		Ath		E.	8260		(Lb/	-		39.7							
SAMPLE ID (Field Point Name)	LOCATION	Date	Time	Containers	Type Containers	Water	Soil	i de la companya de l	Sludge			ONI		JPH as G	TPH as Diesel (8015)	Total Perroleum O	Fotal Petroleum Hydrocarbons (418 1)	EPA 601 / 8016	BTEX ONLY (EPA 602 / 8020)	EPA 602/8080	EPA 608 / 8080 PCB's ONLY	A 624 / 8240 / 8260	A 625 / 8270	PAH's / PNA, 3 lm	CAM-17 Metals	LUFT 5 Membs	Lead (7240/7421/239.2/6010)	2014						
				¥1.	ha		9	<,;	(3)		Lapin Saide)repet heree	Ç	ä	È	٦	12	ᇤ	<u>a</u>	ā	面	Y d'E	EPA	₹.	S	3	2	2						
TRIP Blank		3/19/02			Voca:	K			I	34	, R			X,					~							-				anterior and an annual section and an annual section and an annual section and an annual section and an annual		-	****	
W-Bs		1/19/03	12:38	3	VOR	1				ı	, y				χ				- -	1													~~··	
W-13		719/03	14:13	13	l'in	L-x			1	1	¥			K					}									··· -		•				
W-35		3/11/03	14:39	3	V0/13 	1		1		ŀ	K	i		35	x				· [~-		İ							
w-Es		3/19/03	/5:00	3	ion,	X		4			75	1		.X.	i										· j									
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APPENDIX B

LABORATORY REPORT

AND

CHAIN-OF-CUSTODY DOCUMENTATION

McCampbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5500
Telephone: 925-798-1620 Fax: 925-798-1620
Environmental Sampling Services

Client Project Programmentals

Date Sampled: 03/19/03

Date Received: 03/19/03

Client Contact: Jacki Lee

Date Extracted: 03/22/03

Client P.O.:

Date Analyzed: 03/22/03

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Analytical methods: SW8021B/8015Cm Work Order: 0303326 Lab ID Client 1D Matrix TPH(g) MTBE Benzene Toluene Ethylbenzene DF Xylenes % SS 001A W Trip Blank ND ND ND ND ND ND í 94.8 002A W-Bs 14,000,a ND<120 1200 77 820 900 25 98.5 W-15 ٧ 49,000,2 ND<500 3400 880 1300 7300 100 94.8 W 064A W-39 5300,a ND<25 920 24 140 27 5 H 005A W-Es W 86,6 ND NĐ ND ND ND) 93.6 ŧ

Reporting Limit for Df: =1; W 50 5.0 0.5 0.5 0.5 0.5 $\mu g/L$ ND means not detected at or S NA NA NA NA NA above the reporting limit NA mg/Kg water and vapor samples are reported in µg/L, soil and sludge samples in mg/kg, wipe samples in µg/wipe, and TCLP extracts in µg/L.

cluttered chromatogram; sample peak coclutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; c) TPH pattern that does not appear to be derived from gasoline (stoddard solvent/mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; l) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas), m) no recognizable pattern.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

McCa	mpbell Analytic	al Inc.	U10 2nd Avenue South, #D7, Pacheco, CA 94553 Felophose: 925-798-1620 Fax: 925-798-16 lang://www.mccampbell.com/fi-mail.main/emocamp	22	
Environmental	Sampling Services	Client Pro	ject ID: Arrow Rentals Date Sampled: 03/19/03		
6680 Alhambra	Ave. #102		Date Received: 03/19/03	<u> </u>	
National Ca Od	ECT	Client Cor	ntact: Jacki Lee Date Extracted: 03/19/03		· · · · · · · · · · · · · · · · · · ·
Matinez, CA 94	-333	Client P.O	Date Analyzed: 03/21/03	-03/22/	03
Extraction method: SW		(C10-C23)	Extractable Hydrocarbons with Silica Gel Clean-Up* Analytical methods: SW8015C Wo	ork Order:	0303326
Lab ID	Client tD	Matrix	TPH(d)	DF	% \$S
0303326-002B	W-Bs	w	J,000£	1	107
0303326-003B	W-1s	w	9800,d,b	1	102
0303326-004B	W-3s	w	1500 ₅ đ	 	94.6
0303326-005B	W-Es	w	61,d		93.0
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Keponing 1	imit for DF =1;	W	SÚ		/4
ND means n	of detected at or	s	NA		g/L Ja

* water and vapor samples are reported in µg/L, wipe samples in ug/wipe, soil/solid/sludge samples in mg/kg; product/oil/non-aqueous liquid samples in mg/L, and all TCLP / STLC / SPLP extracts in µg/L

cluttered chromatogram resulting in coefuted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than -2 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel nil; n) stockdard solvent / mineral spirit.

DHS Certification No. 1644

above the reporting limit



Angela Rydolius, Lab Manager

NA

WorkOrder: 0303326

80

80

120

120

N/A

N/A

Xylenes

%SS:

30

100

QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

EPA Method: SW802	1B/8015Cm	Extraction:	SW5030B	3	BatchID: (e ID: N/A				
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance	Criteria (%)
Compound	pg/L	μg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(gas)	N/A	60	N/A	N/A	N/A	120	109	9.55	80	120
мтве	N/A	10	N/A	N/A	N/A	86.4	95.1	9.59	80	120
Benzene	N/A	10	N/A	N/A	N/A	92.3	104	11.5	80	120
Toluene	N/A	10	N/A	N/A	N/A	87.7	93.3	6.12	80	120
Ethylbenzene	N/A	10	N/A	N/A	N/A	96.5	104	7.37	80	120

N/A

N/A

N/A

N/A

92.7

102

96.7

97.8

4.23

4.31

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

N/A

N/A

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not anough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / (MS + MSD) * 2.

^{*} MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone: 925-798-1620 Fax: 925-798-1622
http://www.mccampbelf.com E-mail: main@mccampbelf.com

QC SUMMARY REPORT FOR SW8015C

Matrix: W

WorkOrder: 0303326

EPA Method: SW8015C	. E	xtraction:	SW35100	3	Batch(D:	6221	Spiked Sample ID: N/A									
Compound	Sample	Spiked	MS*	MSD.	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance	Criteria (%)						
Compound	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High						
TPH(d)	N/A	7500	N/A	N/A	N/A	114	111	2.25	70	130						
%\$S:	. N/A	100	N/A	N/A	N/A	102	99.3	2.45	70	130						

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / (MS + MSD) * 2.

" MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

j

110 Second Avenue South, #D7 Pacheco, CA 94553-5560 (925) 798-1620

WorkOrder: 0303326

Client:

Environmental Sampling Services 6880 Alhambra Ave. #102 Matinez. CA 94553 TEL:

FAX: ProjectNo:

PO:

Arrow Rentals

Date Received:

3/19/03

Date Printed

3/19/03

	and the second s	and the second s				, .	Requeste	d Tests		
Sample ID	ClientSamplD	Matrix	Collection Date	Hold	SW8015C	8021B/8015				·
0303326-001	Trip Blank	Water	3/19/03 10:00:00 AM			A				
0303326-002	W-Bs	Waler	3/19/03 12:38:00 PM		В	A				
0303326-003	W-1s	Water	3/19/03 2:13:00 PM	,	В	A			,	
0303326-004	. W-3s	Water	3/19/03 2:39:00 PM		Ð	. A				
D303326-005	W-Es	Water	3/19/03 3:00:00 PM		8	A			· · restroyed for	,,,

Prepared by: Melissa Valles

Comments:

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

Tulophouse (925) 798-1620 Fux: (925) 798-1622							CHAI TURN AROUND T EDF Required?							AIN OF TIME			CUST Q RUSH No			Ę	Y I		C (€),			Standor S.D.A.Y						
Report To: Jacobany: Environment Company: Environment Company: Environment Company:	Alham Alham inez, ca 8109	Sam ora 9455	pling Avent 3-6185	e, *	11: 102 11:	372	L 67						WOZU - BOLYVATIBE	a	KF/H&F)			Ana		s Re	equ		EPA 625 / 8270 / 8310			(6010)			Ot	her	,	Com	nents
SAMPLE ID (Field Point Name)	LOCATION		PLING	# Containers	Type Containers	1	NAT	96	PI		HODERVE	<u>a</u>		1PH as Diesel (8015)	Total Petroleum Oil &	Total Petroleum Hydrocarbons (418 1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8480	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8216	EPA 625 / 8270	χ.	CAM-17 Metals	LUFT 5 Metals	Load (7241x7421x239.2/66110)	RCI						
TRIP Blank W-Bs W-Is W-3s W-ES		3/19/03 3/19/03 7/19/03 3/19/03	12:38 14:13 14:39	3	VOA: VOA: I-LLI VOA: I-LLI VOA: I-LLI VOA:	X			X X	X X X	1	,		y K																			
Relinquished By:)	Date:	Time: 1708		lived B	La Send Vine							GO		C							A	PPE	tor	RL	TIO	N_	OAS	0	&G	ME	TALS	ОТНЕК
Relinquished By:		Date:	Time:	Rece	ived B	y;	<u> </u>	,		···-			HE	CAD	LO	RIN	AT	BSEI ED L	T N	AB.	<u> </u>			TAI RSE			IN I	AB					

Mil lath