

Alameda County

JUN 27 2003

Environmental Health

COPY

ARROW RENTALS  
LIVERMORE, CALIFORNIA

SEMIANNUAL GROUNDWATER MONITORING EVENT  
MARCH 2003

Mrs. Rita M. Sullins  
Alameda County

JUN 27 2003

Environmental Health

Hi Eva,

This is the  
latest report.

We've been  
very busy lately  
moving from our home  
in Byron to Livermore

Hope all well with  
you

Rita

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 pre-cleaned 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 µg/L in well W-Es to 49,000 µg/L in well W-1s. TPH-diesel was detected at concentrations ranging from 61 µg/L in well W-Es to 9,800 µg/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 µg/L in well W-3s to 3,400 µg/L in well W-1s. The Maximum Contaminant Level (MCL) for benzene is 1 µg/L. Toluene (up to 880 µg/L), ethylbenzene (up to 1,300 µg/L), and xylenes (up to 7,300 µg/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.

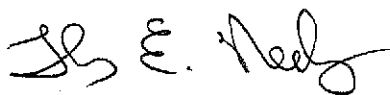
In November 2001, a small amount (0.14 foot) of floating product was measured on the water column in well W-1s. Floating product has not been detected in well W-1s during any prior or subsequent monitoring event. None of the other wells (W-Bs, W-3s, and W-Es) have ever contained measurable floating product.

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



Rebecca A. Sterbentz, RG, CHG, REA  
President

Attachments



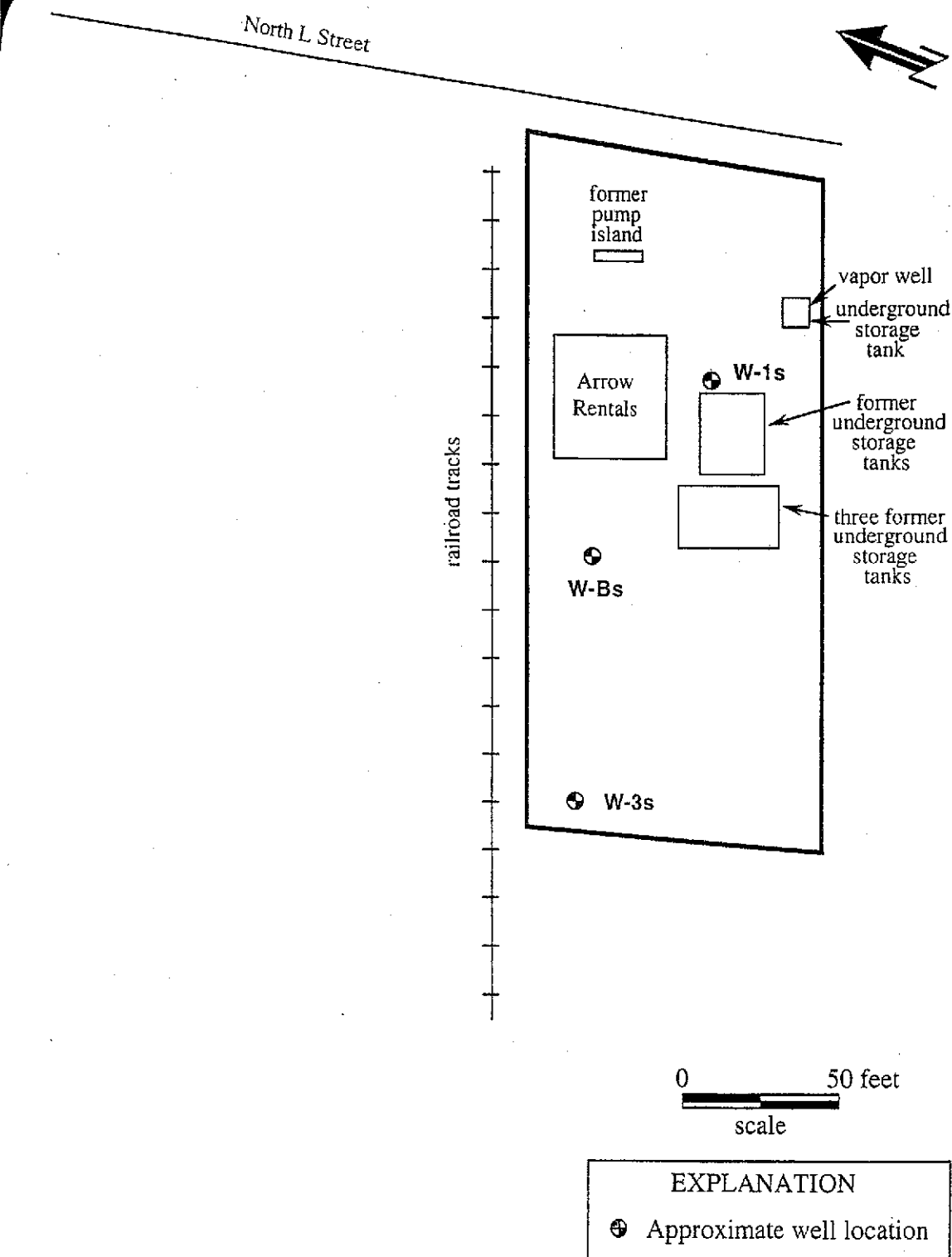


Figure 1. SITE MAP  
187 North L Street, Livermore, California

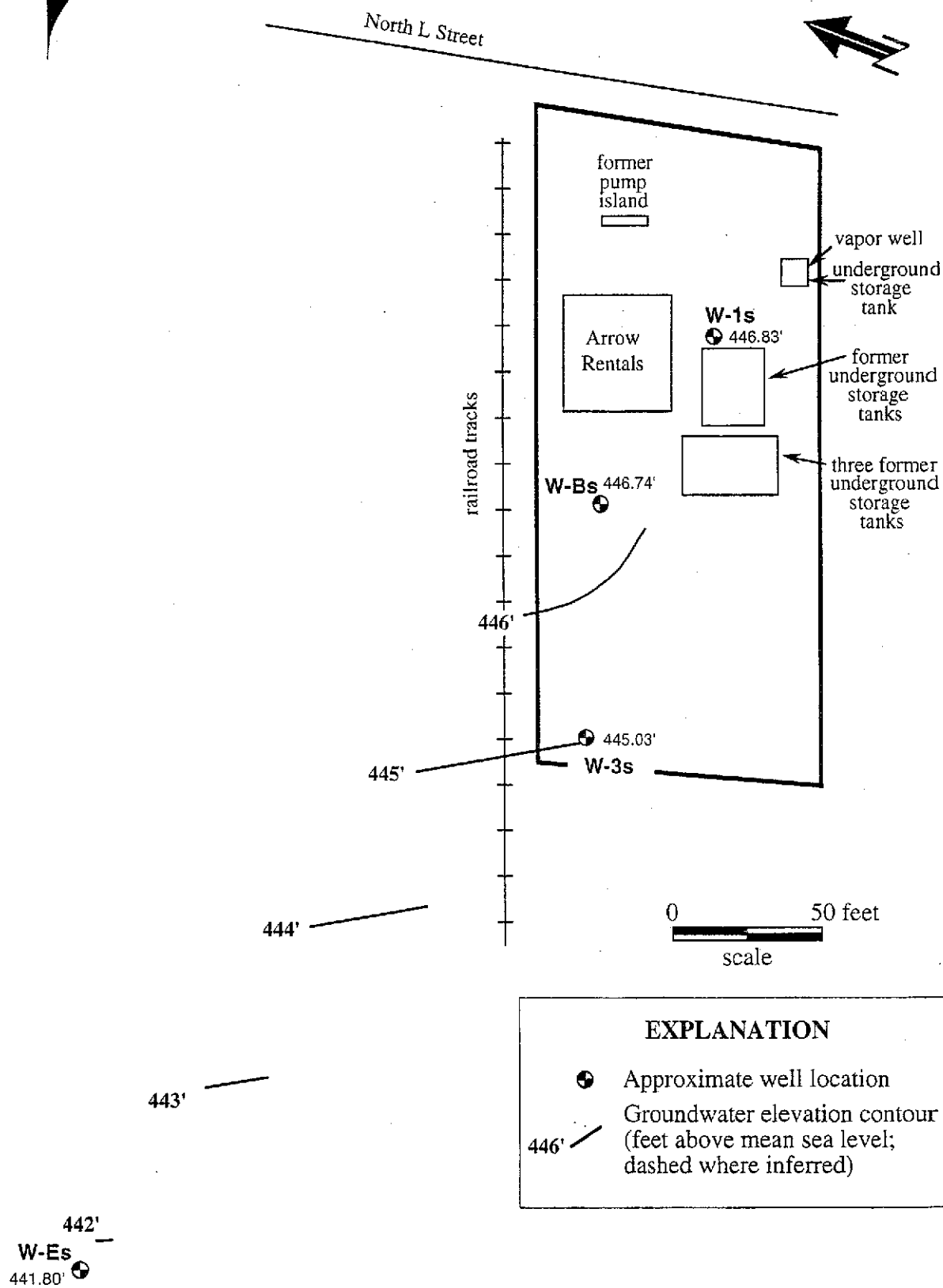


Figure 2. POTENTIOMETRIC SURFACE MAP (3/19/03)  
187 North L Street, Livermore, California

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

Date	Groundwater Elevation Data*				Product Thickness Data			
	Well W-1s (feet)	Well W-3s (feet)	Well W-Bs (feet)	Well W-Es (feet)	Well W-1s (feet)	Well W-3s (feet)	Well W-Bs (feet)	Well W-Es (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

µg/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
W-3s	7/15/97	2,100	340*	740	230	7	33	51	< 20	NA	NA	NA
W-3s	10/29/97	2,800	750	88	630	31	71	69	< 30	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	NA	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
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	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
W-3s	3/19/03	5,300§	1,500**	NA	920	24	140	27	< 25	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

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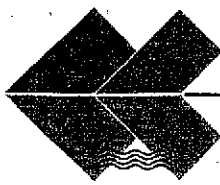
**FIELD ACTIVITY REPORT**

**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***

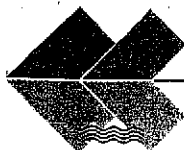
All field instrumentation was calibrated in accordance with the instruments' calibration procedures prior to use. The pH meter was calibrated using three pH buffer standard solutions: 4, 7, and 10. The Specific Conductivity/Temperature meter is factory calibrated and runs through a self-test when the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

McC Campbell 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.

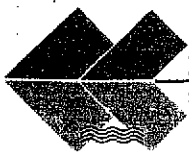
During decanting, all 40-ml sample containers were slightly tilted to avoid aeration or degassing. Each container was filled until there was a meniscus at the top. After capping, the container was inverted and tapped lightly to check for air bubbles. The absence of air bubbles indicated a successful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



**Environmental  
Sampling Services**

***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
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
Travel Blank	4/27/98	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 3	NA	NA	NA
Travel Blank	10/23/98	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 3	NA	NA	NA
Travel Blank	4/9/99	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 3	NA	NA	NA
Travel Blank	10/5/99	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 1.0	< 3	NA	NA	NA
Travel Blank	4/5/00	< 50	NA	NA	1.8	< 0.5	< 0.5	< 1.0	< 5	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
Travel Blank	11/13/01	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	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
MCL		NE	NE	NE	1	150	700	1,750	5	50	NE	NE
AL		NE	NE	NE	NE	NE	NE	NE	35	15	NE	NE

µg/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, California**

Well I.D.	Groundwater Level Measurement (ft.)	Time of Measurement	Sample Date	Sample Time	QA/QC
W-1s	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



**PMB 102 • 6680 Alhambra Ave. • Martinez, CA 94553-6105 • (925) 372-8108 • Fax: (925) 372-6705**  
**[www.environments.com](http://www.environments.com)**

**Environmental  
Sampling Services**

**WATER QUALITY SAMPLE LOG SHEET**

**WELL IDENTIFICATION W-3s DATE 3/19/03**

Project Name: Arrow Rentals - Livermore, CA

Project Task: Semi-Annual Groundwater Monitoring

Laboratory: McC Campbell Analytical, Inc.

Weather Conditions: Hazy and warm

Well Description: 2" 3" 4" 5" 6" Other: \_\_\_\_\_

Well Type: PVC Stainless Steel Other: \_\_\_\_\_

Is Well Secured? Yes / No Bolt Size: 15/16"

Type of Lock / Lock number: No lock

Observations / Comments: \_\_\_\_\_

Purge Method: Teflon/PVC Disposable Bailer Centrifugal Pump Grundfos Pump Other: \_\_\_\_\_

Pump Lines: NA New Cleaned / Dedicated Bailer Line: NA New / Cleaned / Dedicated

Method of Cleaning Pump: NA Alconox Liqui-nox Tap Water DI Rinse Other: \_\_\_\_\_

Method of Cleaning Bailer: NA Alconox Liqui-nox Tap Water DI Rinse Other: Well Water Rinse

Sampling Method: Disp. Teflon Bailer Disp. PVC Bailer GrundFos Redi-flow Pump Peristaltic Pump

pH Meter Serial No.: 217254 / 330089

Spec. Cond. Meter Serial No.: 96H0203AB / AE

Date/Time Calibrated: 3/19/03 @ 10:30 @ 25°C Spec. Cond. Meter Calibration: Self Test Other: \_\_\_\_\_

Method to Measure Water Level: Solinst Serial No.: 7W Ind. P.I.D. Reading: NA ppm @ Well Head

Water Level at Start (DTW): 31.95 @ 10:02 Water Level Prior To Sampling: 31.05

TD = 44.76 - 31.95 (DTW) = 12.81 (ft. of water) x "K" = 8.4 (Gals./CV) x 3 (No. of CV) = 25.2 (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**

Date	Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance mS ( <u>uS</u> )	Turbidity (NTUg)	Color	Comments
<u>3/19/03</u>	<u>10:38</u>	<u>5</u>	<u>7.18</u>	<u>19.7</u>	<u>858</u>	<u>16.6</u>	<u>lt tan</u>	<u>Pet. odor</u>
	<u>10:40</u>	<u>10</u>	<u>7.05</u>	<u>20.2</u>	<u>901</u>	<u>4.2</u>	<u>clear</u>	<u>Dry @ 11 gallons</u>
	<u>11:33</u>	<u>15</u>	<u>6.63</u>	<u>20.1</u>	<u>928</u>	<u>2.8</u>	<u>clear</u>	<u>slight Pet. Odor</u>
	<u>11:38</u>	<u>20</u>	<u>6.80</u>	<u>20.3</u>	<u>923</u>	<u>1.9</u>	<u>"</u>	<u>Dry @ 20 gallons</u>

Total Discharge: 20 Gallons

Casing Volumes Removed: 2.38

Method of disposal of discharged water: 55 Gallon Drum(s) Poly Tank Treatment System Other: \_\_\_\_\_

Date/Time Sampled: 3/19/03 @ 14:39 Analysis: TPH-Gas/BTEX, MTBE (EPA 8015M/8020);

TPH-Diesel w/Silica Gel Cleanup (EPA 8015M)

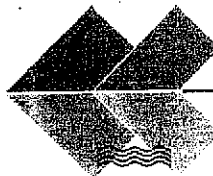
Number of Sample Containers: 3

Preservative: None HCl

QA/QC: None @ \_\_\_\_\_ as an Equipment Blank Duplicate MS/MSD Lab Split Field Blank

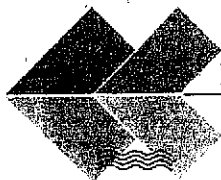
Comments: 80% = 34.51

Sampled By: Jacki Lee Stephen Penman Casey Wheable Recorded by: [Signature]



# Environmental Sampling Services

WATER QUALITY SAMPLE LOG SHEET				WELL IDENTIFICATION W-Bs		DATE <u>3/19/03</u>		
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>Sunny, hi cirrus</u>				
Well Description: 2" 3" 4" 5" <u>6"</u> Other: _____				Well Type: <u>(PVC)</u> Stainless Steel Other: _____				
Is Well Secured? Yes / No Bolt Size: <u>15/16"</u>				Type of Lock / Lock number: <u>Master/Unknown Number</u>				
Observations / Comments: _____								
Purge Method: Teflon/PVC Disposable Bailer Centrifugal Pump <u>(Grundfos Pump)</u> Other: _____								
Pump Lines: NA <u>(New)</u> / Cleaned <u>(Dedicated)</u> Bailer Line: NA <u>(New)</u> / Cleaned / Dedicated								
Method of Cleaning Pump: NA Alconox <u>(Liqui-nox Tap Water DI Rinse)</u> Other: _____								
Method of Cleaning Bailer: <u>(NA)</u> Alconox Liqui-nox Tap Water DI Rinse Other: <u>well water Rinse</u>								
Sampling Method: Disp. Teflon Bailer Disp. PVC Bailer <u>(Grundfos Redi-flow Pump)</u> Peristaltic Pump								
pH Meter Serial No.: <u>217254 / 330089</u>				Spec. Cond. Meter Serial No.: <u>(96H0203AB) / AE</u>				
Date/Time Calibrated: <u>3/19 @ 10:30 (4 7 10 @ 25°C)</u>				Spec. Cond. Meter Calibration: <u>(Self Test)</u> Other: _____				
Method to Measure Water Level: Solinst Serial No.: <u>9/W Ind.</u> P.I.D. Reading: <u>NA</u> ppm @ Well Head								
Water Level at Start (DTW): <u>32.08 @ 10:01</u> Water Level Prior To Sampling: <u>35.78</u>								
TD = <u>44.47</u> - <u>32.09</u> (DTW) = <u>12.39</u> (ft. of water) x "K" = <u>18.0</u> (Gals./CV) x <u>3</u> (No. of CV) = <u>54.2</u> (Gals.) "K" = 0.163(2" well) "K" = 0.653(4" well) "K" = 1.02(5" well) <u>"K" = 1.46(6" well)</u> "K" = 2.61(8" well)								
FIELD WATER QUALITY PARAMETERS								
Date	Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance mS ( <u>uS</u> )	Turbidity (NTU's)	Color	Comments
<u>3/19/03</u>	<u>10:58</u>	<u>10</u>	<u>6.92</u>	<u>19.6</u>	<u>541</u>	<u>3.1</u>	<u>clear</u>	<u>slight Pet. Odor</u>
	<u>11:05</u>	<u>20</u>	<u>6.81</u>	<u>19.3</u>	<u>530</u>	<u>5.4</u>	<u>slight yellow</u>	<u>"</u>
	<u>11:11</u>	<u>30</u>	<u>6.70</u>	<u>20.1</u>	<u>552</u>	<u>9.8</u>	<u>"</u>	<u>"</u>
	<u>11:18</u>	<u>40</u>	<u>6.61</u>	<u>20.1</u>	<u>573</u>	<u>17.8</u>	<u>"</u>	<u>Dry @ 43 gallons</u>
	<u>12:22</u>	<u>50</u>	<u>6.73</u>	<u>19.7</u>	<u>650</u>	<u>6.1</u>	<u>"</u>	
	<u>12:25</u>	<u>60</u>	<u>6.65</u>	<u>19.8</u>	<u>647</u>	<u>5.1</u>	<u>"</u>	
	<u>12:37</u>	<u>70</u>	<u>6.73</u>	<u>19.9</u>	<u>634</u>	<u>7.2</u>	<u>"</u>	
Total Discharge: <u>70</u> Gallons Casing Volumes Removed: <u>3.89</u> Method of disposal of discharged water: <u>55 Gallon Drum(s)</u> Poly Tank Treatment System Other: _____ Date/Time Sampled: <u>3/19/03 @ 12:38</u> Analysis: <u>TPH-Gas/BTEX, MTBE (EPA 8015M/8020);</u> <u>TPH-Diesel w/Silica Gel Cleanup (EPA 8015M)</u> Number of Sample Containers: <u>9 + 3</u> Preservative: <u>(None HCl)</u> QA/QC: <u>None @</u> _____ as an Equipment Blank Duplicate MS/MSD Lab Split Field Blank Comments: _____ Sampled By: <u>Jacki Lee, Stephen Penmad, Casey Wheable</u> Recorded by: <u>[Signature]</u>								



# Environmental Sampling Services

WATER QUALITY SAMPLE LOG SHEET				WELL IDENTIFICATION W-ES DATE <u>3/19/03</u>				
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 cover</u>				
Well Description: <u>2" 3" 4" 5" 6" Other:</u>				Well Type: <u>PVC</u> Stainless Steel Other: <u></u>				
Is Well Secured? <u>Yes</u> / No Bolt Size <u>15/16"</u>				Type of Lock / Lock number: <u>Master - Unknown key code</u>				
Observations / Comments: <u></u>								
Purge Method: Teflon <u>PVC Disposable Bailer</u> Centrifugal Pump Grundfos Pump Other: <u></u>								
Pump Lines: <u>NA</u> New / Cleaned / Dedicated Bailer Line: <u>NA</u> <u>New</u> Cleaned / Dedicated								
Method of Cleaning Pump: <u>NA</u> Alconox Liqui-nox Tap Water DI Rinse Other: <u></u>								
Method of Cleaning Bailer: <u>NA</u> Alconox Liqui-nox Tap Water DI Rinse Other: <u></u>								
Sampling Method: Disp. Teflon Bailer <u>Disp. PVC Bailer</u> Grundfos Redi-flow Pump Peristaltic Pump								
pH Meter Serial No.: <u>217254 / 330089</u>				Spec. Cond. Meter Serial No.: <u>96H0203AB</u> AE				
Date/Time Calibrated: <u>3/19 @ 10:30</u> 4 7 10 @ 25°C Spec. Cond. Meter Calibration: <u>Self Test</u> Other: <u></u>								
Method to Measure Water Level: Solinst Serial No.: <u>% Ind.</u> P.I.D. Reading: <u>NA</u> ppm @ Well Head								
Water Level at Start (DTW): <u>32.86 @ 10:25</u> Water Level Prior To Sampling: <u>33.98</u>								
$TD = 44.32 - 32.86 (DTW) = 11.46$ (ft. of water) x "K" = <u>1.8</u> (Gals./CV) x <u>3</u> (No. of CV) = <u>5.60</u> (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								
Date	Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance mS (uS)	Turbidity (NTU's)	Color	Comments
<u>3/19/03</u>	<u>14:47</u>	<u>1.0</u>	<u>7.15</u>	<u>20.4</u>	<u>906</u>	<u>109</u>	<u>cloudy 14-ton</u>	
	<u>14:50</u>	<u>2.0</u>	<u>7.35</u>	<u>19.9</u>	<u>881</u>	<u>403</u>	<u>"</u>	
	<u>14:52</u>	<u>3.0</u>	<u>7.38</u>	<u>20.3</u>	<u>927</u>	<u>251</u>	<u>"</u>	
	<u>14:54</u>	<u>4.0</u>	<u>7.40</u>	<u>20.2</u>	<u>940</u>	<u>252</u>	<u>"</u>	
	<u>14:56</u>	<u>5.0</u>	<u>7.39</u>	<u>19.9</u>	<u>930</u>	<u>305</u>	<u>"</u>	
	<u>14:59</u>	<u>6.0</u>	<u>7.43</u>	<u>19.9</u>	<u>897</u>	<u>465</u>	<u>"</u>	
Total Discharge: <u>6.0</u> Gallons Casing Volumes Removed: <u>3.33</u> Method of disposal of discharged water: <u>55 Gallon Drum(s)</u> Poly Tank Treatment System Other: <u></u> Date/Time Sampled: <u>3/19/03 @ 15:00</u> Analysis: <u>TPH-Gas/BTEX, MTBE (EPA 8015M/8020).</u> <u>TPH-Diesel w/Silica Gel Cleanup (EPA 8015M)</u> Number of Sample Containers: <u>3</u> Preservative: <u>None HCl</u> QA/QC: <u>None @</u> as an Equipment Blank Duplicate MS/MSD Lab Split Field Blank Comments: <u></u>								
Sampled By: <u>Jacki Lee (Stephen Penman) Casey Wheable</u> Recorded by: <u>[Signature]</u>								



# McCAMPBELL ANALYTICAL INC.

110 2<sup>ND</sup> AVENUE SOUTH, RD7

PACIFIC CO, CA 94553-5560

Telephone: (925) 798-1620

Fax: (925) 798-1622

## CHAIN OF CUSTODY RECORD

TURN AROUND TIME

☐ RUSH

☐ 24 HR

☐ 48 HR

☐ 72 HR

☒ 5 DAY

EDF Required? Yes ☐ No ☒

Report To: Jacqueline Lee Bill To: Accts Payable

Company: Environmental Sampling Services

6680 Alhambra Avenue, #102

Martinez, CA 94553-6105 Mail:

Tele: (925) 372-8109

Fax: (925) 372-6705

Project #: N/A

Project Name: Arrow Rentals

Project Location: Arrow Livermore, CA

Sampler Signature: [Signature]

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED			
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other
TRIP Blank		3/19/03	10:00	1	VOAS	X					X	X		
W-Bs		3/19/03	12:38	3	VOAS	X					X	X		
W-1s		3/19/03	14:13	3	VOAS	X					X	X		
W-3s		3/19/03	14:39	3	VOAS	X					X	X		
W-ES		3/19/03	15:00	3	VOAS	X					X	X		

BTX & TPH as Gas ☐ BTX & TPH as Gas ☒ 8015/8020 - 8015/8020

TPH as Diesel (8015) ☒ Gilco Gel Cleanup

Total Petroleum Oil & Grease (5520 E&F/B&H)

Total Petroleum Hydrocarbons (4181)

EPA 601 / 8010

BTX ONLY (EPA 602 / 8020)

EPA 608 / 8080

EPA 608 / 8080 PCB'S ONLY

EPA 624 / 8240 / 8260

EPA 625 / 8270

PAH's / PNA's by EPA 625 / 8270 - 8310

CAM-17 Metals

LUFT'S Metals

Lead (7240/7421/239.2/6010)

RCI

ICE/°  
GOOD CONDITION  
HEAD SPACE ABSENT  
DECHLORINATED IN LAB

PRESERVATION  
APPROPRIATE  
CONTAINERS  
PRESERVED IN LAB

VOAS C&G METALS OTHER

Relinquished By: [Signature] Date: 3/19/03 Time: 1700 Received By: [Signature]

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_

APPENDIX B

LABORATORY REPORT

AND

CHAIN-OF-CUSTODY DOCUMENTATION



DHS Certification No. 1644

~~Angela Rydehus, Lab Manager~~

[illegible]

DHS Certification No. 1644

Angela Rydelius, Lab Manager



## QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0303326

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 6230		Spiked Sample ID: N/A				
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/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
MTBE	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
Xylenes	N/A	30	N/A	N/A	N/A	92.7	96.7	4.23	80	120
%SS:	N/A	100	N/A	N/A	N/A	102	97.8	4.31	80	120
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.



## QC SUMMARY REPORT FOR SW8015C

Matrix: W

WorkOrder: 0303326

EPA Method: SW8015C		Extraction: SW3510C		BatchID: 6221		Spiked Sample ID: N/A				
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	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
%SS:	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.

**McC Campbell Analytical Inc.**

110 Second Avenue South, #107  
Pacheco, CA 94553-5560  
(925) 798-1020

**CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

WorkOrder: 0303326

**Client:**

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

**TEL:****FAX:**

ProjectNo: Arrow Rentals

**PO:**

Date Received: 3/19/03

Date Printed: 3/19/03

						Requested Tests	
Sample ID	ClientSampleID	Matrix	Collection Date	Hold	SW8015C	8021B/8015	
0303326-001	Trip Blank	Water	3/19/03 10:00:00 AM			A	
0303326-002	W-Bs	Water	3/19/03 12:38:00 PM		B	A	
0303326-003	W-1s	Water	3/19/03 2:13:00 PM		B	A	
0303326-004	W-3s	Water	3/19/03 2:39:00 PM		B	A	
0303326-005	W-Es	Water	3/19/03 3:00:00 PM		B	A	

Prepared by: Melissa Valles

**Comments:**

NOTE: Samples are discarded 90 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

255

0305324

**McCAMPBELL ANALYTICAL INC.**  
 118 2<sup>nd</sup> AVENUE SOUTH, #D7  
 PACHECO, CA 94553-3560  
 Telephone: (925) 798-1620 Fax: (925) 798-1622

Report To: Jacqueline Lee Bill To: Accts Payable  
 Company: Environmental Sampling Services  
6680 Alhambra Avenue, #102  
Martinez, CA 94553-6185 Mail:  
 Tele: (925) 372-8109 Fax: (925) 372-6705  
 Project #: N/A Project Name: Arrow Rentals  
 Project Location: Arrow Livermore, CA  
 Sampler Signature: [Signature]

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED			
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other
✓ Trip Blank		3/19/03	10:00	1	VOAS	X					X	X		
W-Bs		3/19/03	12:38	3	VOAS	X					X	X		
W-1s		3/19/03	14:13	3	VOAS	X					X	X		
W-3s		3/19/03	14:39	3	VOAS	X					X	X		
W-ES		3/19/03	15:00	3	VOAS	X					X	X		

Relinquished By: [Signature] Date: 3/19/03 Time: 1700 Received By: [Signature]  
 Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_  
 Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_

**CHAIN OF CUSTODY RECORD** standard ☒

**TURN AROUND TIME** ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY

EDF Required? Yes ☐ No ☒

Analysis Request	Other	Comments
BTEX & TPH as Gas (8010) / 8013/8100 TPH as Diesel (8015) w/ Silica Gel Cleanup Total Petroleum Oil & Grease (5310 E&W/PAH) Total Petroleum Hydrocarbons (418) EPA 601 / 8010 BTEX ONLY (EPA 602 / 8020) EPA 608 / 8080 EPA 608 / 8080 PCB's ONLY EPA 624 / 8240 / 8260 EPA 625 / 8270 PAH's / PNA's by EPA 625 / 8270 / 8310 CAM-17 Metals LUFT's Metals Lead (7240/7421/7239 2/6010) RC1		

ICE/R	GOOD CONDITION	HEAD SPACE ABSENT	DECHLORINATED IN LAB	PRESERVATION APPROPRIATE	CONTAINERS PRESERVED IN LAB
✓	✓	✓	✓	✓	✓

VOAS ☒ O&G ☒ METALS ☒ OTHER ☒