- Verify screened intervals
+ which wells to sample
w/ change in GW elevation
- 5 wells SC screened 20-40' bgs
- discontinue PNAs analyses -
'15 '35 B next sample if
PNA not reported in detection

SEMI-ANNUAL GROUNDWATER MONITORING REPORT FOR ARROW RENTALS LIVERMORE, CALIFORNIA

OCTOBER 1999

Prepared for: Don-Sul Inc.
187 North L Street
Livermore, California 94607

Date Prepared: December 3, 1999

By: Environmental Sampling Services
and Aquifer Sciences, Inc.

CRA

ARROW RENTALS

"We Rent Most Everything"

ENVIRONMENTAL PROTECTION
99 DEC 29 PM 3:36

member ARA american rental association

Dear Eva,

Enclosed are the latest reports.

Hope your Christmas was wonderful & have a happy New Year 2000.

Sincerely

Pete

187 NORTH 'L' STREET • LIVERMORE, CALIFORNIA 94550 • **(510) 455-1900**

AQUIFER SCIENCES, INC.

3680-A Mt. Diablo Blvd.
Lafayette, CA 94549
(925) 283-9098

November 19, 1999
971275

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

Subject: Semi-Annual Groundwater Monitoring, October 1999
187 North L Street, Livermore, California

Dear Ms. Sullins:

Groundwater monitoring was conducted in October 1999 at the Arrow Rentals site, located at 187 North L Street in Livermore, California. This report presents the groundwater measurement and sampling procedures, evaluation of hydrogeologic data, and the results of laboratory analyses.

MEASUREMENT AND SAMPLING PROCEDURES

On October 5, 1999, 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 of static groundwater was measured in all four wells (W-1s, W-3s, W-Bs, and W-Es) to the nearest 0.01 foot using an electrical water level recorder. The interface probe was washed using a Liqui-Nox® detergent solution, rinsed with potable water, and rinsed with distilled water. Groundwater elevation data for each well are listed in Table 1. The potentiometric surface corresponding to groundwater elevations measured on October 5, 1999, is shown on Figure 2.

All four wells were purged and sampled after the static water level measurements were recorded. At least three casing volumes of groundwater were removed from each well prior to sampling. Each well was purged using a submersible pump or disposable bailer. Purge water from the monitoring wells was stored in labeled 55-gallon drums, pending the analytical results.

Water quality parameters (pH, specific conductance, temperature, turbidity, color, and odor) were recorded at regular intervals during well purging. Water quality parameters for the three

wells were recorded in the sampling logs. Copies of the well sampling logs are included in Appendix A.

Groundwater samples were collected from each well using new disposable bailers. Groundwater samples were collected in clean bottles supplied by the analytical laboratory, labeled, stored on ice in a cooler, and transported under chain-of-custody protocol within 24 hours of collection to Columbia Analytical Services, a California-certified laboratory located in Santa Clara, California. A travel blank was prepared by the laboratory and accompanied the groundwater samples for quality assurance purposes.

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. The travel blank was analyzed for gasoline by EPA Method 8015 Modified, BTEX by EPA Method 8020, and MTBE by EPA Method 8020 Modified. The sample collected from well W-1s was also analyzed for polynuclear aromatic hydrocarbons (PNAs) by EPA Method 8270.

HYDROGEOLOGIC DATA EVALUATION

Groundwater elevations in the four monitoring wells ranged from 441.47 feet in well W-Es to 446.72 feet in well W-Bs. The groundwater levels measured in October 1999 were approximately 6 feet lower than those measured in April 1999. Based upon measurements recorded on October 5, 1999, groundwater generally flows to the west-southwest under a hydraulic gradient of approximately 0.020 ft/ft (Figure 2).

RESULTS OF LABORATORY ANALYSES

Results of laboratory analyses for groundwater samples collected from the wells in October 1999 are summarized in Table 2. The laboratory report and chain-of-custody documentation are included in Appendix B.

Gasoline was detected in the groundwater samples collected from all four wells at concentrations ranging from 68 to 82,000 µg/L. TPH-diesel was detected in the groundwater samples collected from all four wells at 88 to 60,000 µg/L. Benzene was detected in the samples collected from wells W-1s, W-3s, and W-Bs at concentrations ranging from 290 to 5,500 µg/L. These concentrations exceeded the Maximum Contaminant Level (MCL) of 1 µg/L, established for benzene in drinking water. Toluene (up to 4,500 µg/L), ethylbenzene (up to 2,500 µg/L), and xylenes (up to 14,000 µg/L) were detected in the samples collected from wells W-1s, W-3s, and W-Bs. The concentrations of toluene, ethylbenzene, and xylenes in wells W-1s and W-Bs

exceeded their respective MCLs. MTBE was detected in the sample collected from well W-Es at 4 µg/L. The MCL for MTBE is 5 µg/L. Although MTBE was not detected in the samples collected from wells W-1s and W-Bs, the laboratory detection limits were elevated due to high concentrations of gasoline and BTEX. Gasoline, BTEX, and MTBE were not detected in the travel blank.

The groundwater sample collected from well W-1s contained the highest levels of gasoline, diesel, and BTEX. At the request of Alameda County, the sample from well W-1s was also analyzed for PNAs. Naphthalene was detected in the sample at 510 µg/L. 2-Methylnaphthalene was detected in the sample at 280 µg/L. MCLs have not been established for naphthalene and 2-methylnaphthalene. No other PNAs were detected in the sample collected from well W-1s.

SUMMARY AND CONCLUSIONS

Table 3 presents a summary of the results of laboratory analyses performed on groundwater samples collected from wells at the site since March 1996. High levels of gasoline, diesel, BTEX, and MTBE have been consistently detected in groundwater samples collected from wells W-1s and W-Bs. Low levels of gasoline, diesel, BTEX, and MTBE have also been detected in samples collected from wells W-3s and W-Es. Fluctuations in the concentrations of gasoline, diesel, and BTEX in groundwater samples collected from these wells may be related to seasonal variations in groundwater elevations and the groundwater flow direction. The direction of groundwater flow beneath the site has varied over time from southwest to west-northwest.

RISK ASSESSMENT

At Alameda County's request, we prepared a work plan to conduct a risk assessment for the site. Eva Chu of Alameda County approved the work plan in her letter dated April 26, 1999. The risk assessment will be completed and submitted by January 23, 2000.

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

Respectfully yours,

Thomas E. Neely, REA
Hydrogeologist

Rebecca A. Sterbentz, RG, CHG, REA
President

Attachments

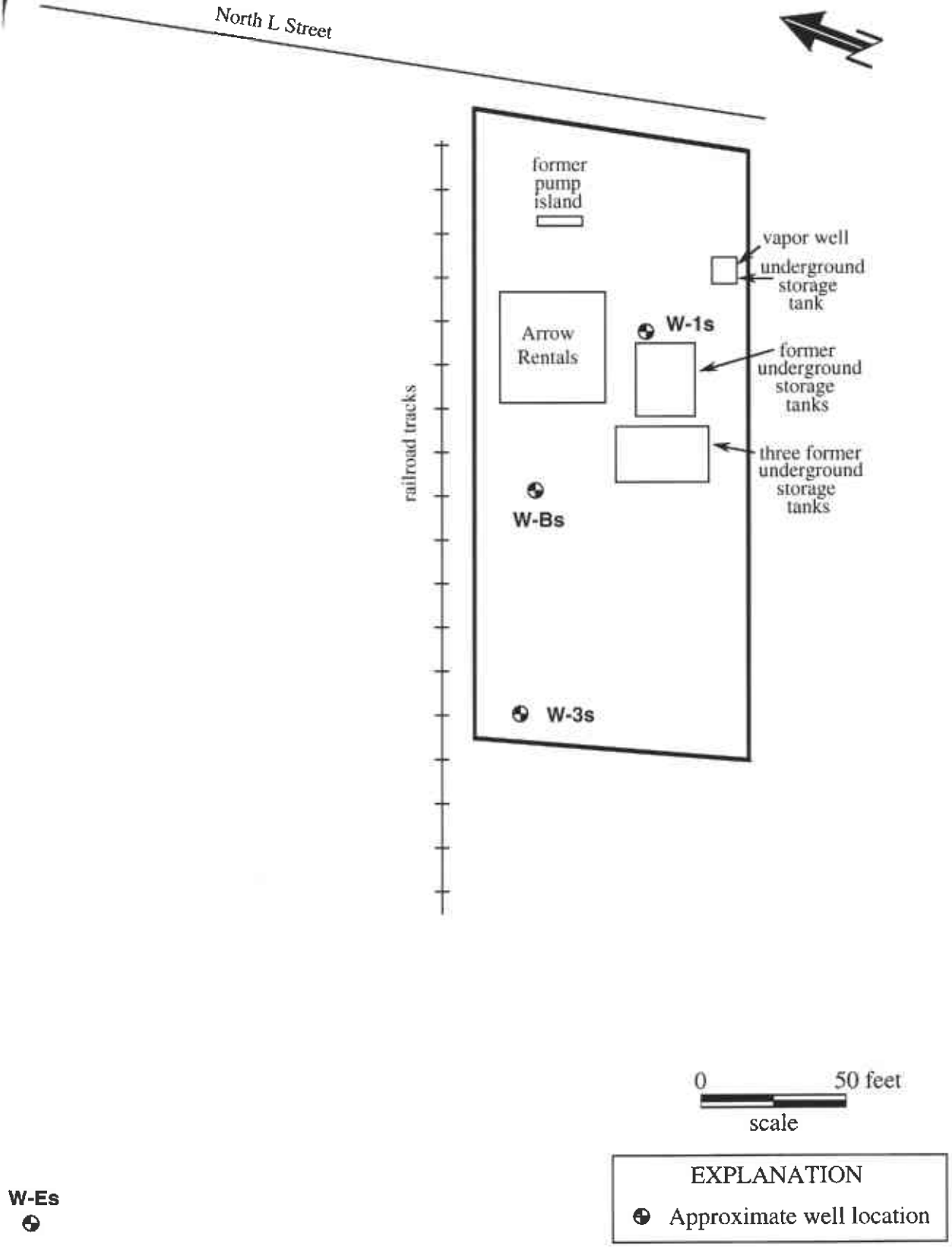

Figure 1. SITE MAP
187 North L Street, Livermore, California

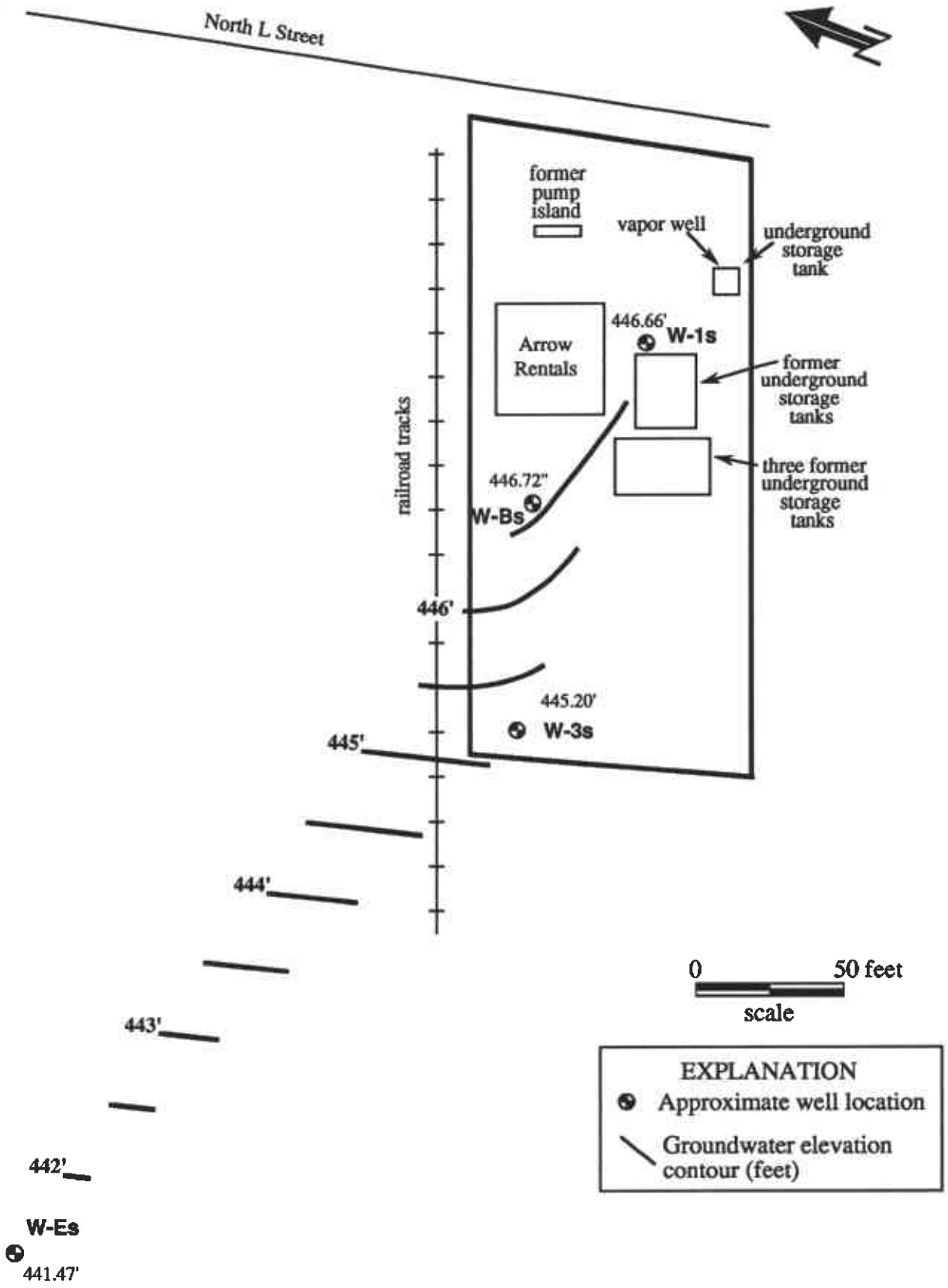

Figure 2. POTENTIOMETRIC SURFACE MAP (10/5/99)
187 North L Street, Livermore, California

Table 1. GROUNDWATER ELEVATION DATA
187 North L Street, Livermore, California
October 5, 1999

Well Number	Top of Casing Elevation (feet above MSL)	Depth to Water (feet below TOC)	Water Elevation (feet above MSL)
W-1s	479.09	32.43	446.66
W-3s	476.98	31.78	445.20
W-Bs	478.82	32.10	446.72
W-Es	474.66	33.19	441.47

MSL = mean sea level (elevations based on City of Livermore datum)
TOC = top of PVC casing

Table 2. GROUNDWATER ANALYTICAL RESULTS
187 North L Street, Livermore, California
October 5, 1999

Well Number	TPH-gasoline (µg/L)	TPH-diesel (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	82,000	60,000*	5,500	4,500	2,500	14,000	< 300	510	280
W-3s	1,500	1,000*†	290	9.5	53	9.8	< 6	NA	NA
W-Bs	38,000	7,300*	3,800	390	1,600	5,900	< 60	NA	NA
W-Es	68	88*	< 0.5	< 0.5	< 0.5	< 1.0	4	NA	NA
Travel Blank	< 50	NA	< 0.5	< 0.5	< 0.5	< 1.0	< 3	NA	NA
MDL	50-5,000	50-5,000	0.5-50	0.5-50	0.5-50	1.0-100	3-300	50	50
MCL	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
MTBE = methyl tertiary butyl ether
MDL = method detection limit
MCL = Maximum Contaminant Level, January 1999
* The sample contained a lower boiling point mixture of hydrocarbons quantitated as diesel.
† The sample contained a higher boiling point hydrocarbon mixture quantitated as diesel. The chromatogram does not match the typical diesel fingerprint.

Table 3. SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
187 North L Street, Livermore, California

Well Number	Date Sampled	TPH-gasoline (µg/L)	TPH-diesel (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	580	470	85	1,100	< 500	NA	NA	NA
W-1s	11/22/96	170,000	NA	13,000	18,000	3,500	18,000	< 10,000	NA	NA	NA
W-1s	7/15/97	140,000	38,000*†	12,000	12,000	2,600	16,000	< 800	NA	NA	NA
W-1s	10/29/97	650,000	180,000‡	14,000	19,000	7,800	35,000	< 3,000	NA	NA	NA
W-1s	4/27/98	6,700	2,200§	410	250	77	870	< 30	< 5	NA	NA
W-1s	10/23/98	99,000	18,000§	9,800	9,400	1,800	11,000	< 600	NA	NA	NA
W-1s	4/9/99	70,000	24,000	6,500	7,000	1,800	8,900	360	NA	330	ND
W-1s	10/5/99	82,000	60,000***	5,500	4,500	2,500	14,000	< 300	NA	510	280
W-3s	3/22/96	100	NA	13	6.9	5.3	14	< 5	NA	NA	NA
W-3s	11/22/96	3,200	NA	270	29.0	63.0	100	< 100	NA	NA	NA
W-3s	7/15/97	2,100	340**†	230	7	33	51	< 20	NA	NA	NA
W-3s	10/29/97	2,800	750††	630	31	71	69	< 30	NA	NA	NA
W-3s	4/27/98	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 3	NA	NA	NA
W-3s	10/23/98	3,800	1,000§	500	28	90	37	35	NA	NA	NA
W-3s	4/9/99	980	430	240	4	37	3	< 12	NA	NA	NA
W-3s	10/5/99	1,500	1,000*** †††	290	9.5	53	9.8	< 6	NA	NA	NA
W-Bs	3/22/96	61,000	NA	9,800	8,000	2,200	11,000	< 5,000	NA	NA	NA
W-Bs	11/22/96	47,000	NA	5,100	3,100	1,400	7,800	< 2,500	NA	NA	NA
W-Bs	7/15/97	66,000	17,000‡‡†	7,800	4,900	1,900	10,000	< 600	NA	NA	NA
W-Bs	10/29/97	44,000	27,000§§	6,000	500	1,500	6,400	380	NA	NA	NA
W-Bs	4/27/98	63,000	17,000§	6,100	5,400	1,900	9,100	< 600	NA	NA	NA
W-Bs	10/23/98	48,000	9,600§	6,700	1,200	1,500	6,200	< 300	NA	NA	NA
W-Bs	4/9/99	39,000	12,000	4,100	1,900	1,400	5,600	< 300	NA	NA	NA
W-Bs	10/5/99	38,000	7,300***	3,800	390	1,600	5,900	< 60	NA	NA	NA
W-Es	3/22/96	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5	NA	NA	NA
W-Es	11/22/96	280	NA	24	0.6	1.8	2.2	< 5	NA	NA	NA
W-Es	10/23/98	82	69§	< 0.5	0.8	< 0.5	0.8	4	NA	NA	NA

Table 3 (continued). SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
187 North L Street, Livermore, California

Well Number	Date Sampled	TPH-gasoline (µg/L)	TPH-diesel (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-Es	10/5/99	68	88***	< 0.5	< 0.5	< 0.5	< 1.0	4	NA	NA	NA
Travel Blank	7/15/97	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 3	NA	NA	NA
Travel Blank	10/29/97	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 3	NA	NA	NA
Travel Blank	4/27/98	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 3	NA	NA	NA
Travel Blank	10/23/98	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 3	NA	NA	NA
Travel Blank	4/9/99	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 3	NA	NA	NA
Travel Blank	10/5/99	< 50	NA	< 0.5	< 0.5	< 0.5	< 1.0	< 3	NA	NA	NA
MCL		NE	NE	1	150	700	1,750	5	50	NE	NE
AL		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
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, January 1999
AL = Action Level, January 1999
* Sample contained heavy oil at 3,000 µg/L
† The method blank contained heavy oil at 120 µg/L
‡ Sample contained heavy oil at 1,600 µg/L
§ The chromatogram does not match the typical diesel pattern
** Sample contained heavy oil at 740 µg/L
†† Sample contained heavy oil at 88 µg/L
‡‡ Sample contained heavy oil at 490 µg/L
§§ Sample contained heavy oil at 4,000 µg/L
*** The sample contained a lower boiling point mixture of hydrocarbons quantitated as diesel.
††† The sample contained a higher boiling point hydrocarbon mixture quantitated as diesel. The chromatogram does not match the typical diesel fingerprint.

Environmental
Sampling Services

FIELD ACTIVITY REPORT
FOR SEMI-ANNUAL GROUNDWATER MONITORING EVENT
ARROW RENTALS,
LIVERMORE, CALIFORNIA

ESS Personnel: Jacki Lee and Stephen Penman
Activity Date: October 5, 1999

Decontamination Procedures

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.

Water Level Measurements

A total of four (4) monitoring wells were measured for static water level. All readings were performed with Solinst® electrical water level indicator (Table 1). Water level measurements were referenced to the surveyor's mark (a black mark on the top of well casing).

Field Equipment Calibration

All field measurements were performed in accordance with the instruments' operating and calibration procedures. Field measurements included: pH, specific conductance, turbidity, and temperature.

Field Activities

Friday, October 5, 1999: Well evacuation and monitoring of groundwater quality parameters for three (3) monitoring wells were performed. A minimum removal of three casing volumes and stabilization of water quality parameters were required prior to sampling. All wells were sampled for the following analyses: EPA Method 8015M (TPH (Gasoline)/BTEX, and MTBE) and TPH (Diesel). Monitoring well, W-1s, which reported the highest amount of diesel, was sampled for PNAs.

All wells were sampled with disposable bailers. Columbia Analytical Laboratories supplied all sample containers and packing material and performed all required analyses. All samples were properly preserved according to analysis.

Environmental
Sampling Services

QA/QC

Trip blanks for EPA Method 8015M were supplied and remained in the cooler containing all sample containers. No other QA/QC samples were required nor requested.

All work was performed under satisfactory workmanship and according to the Alameda County Health and Care Services' directive, dated October 8, 1997 and March 15, 1999.

Jacqueline Lee
President

Attachment
Table 1
Water Sample Log Sheets
Chain of Custody

Environmental
Sampling Services

TABLE 1: SUMMARY OF
WATER LEVEL MEASUREMENTS
ARROW RENTALS
LIVERMORE, CALIFORNIA

WELL IDENTIFICATION	DEPTH TO GROUNDWATER (ft., TOC) (Measured October 5, 1999)	WELL DEPTH (ft., TOC)
W-1s	32.43	44.64
W-Bs	32.10	44.47
W-3s	31.78	44.76
W-Es	33.19	44.32

TOC = Top of Casing

Environmental Sampling Services

WATER QUALITY SAMPLE LOG SHEET	WELL IDENTIFICATION: **W-Es** DATE: 10/5/99

Project Name: Arrow Rentals - Livermore, CA — Project Task: Semi-Annual Groundwater Monitoring

Well Description: .75" (2") 3" 4" 5" 6" — Well Type: (PVC) Stainless Steel Other: _____

Is Well Secured? (Yes) / No Bolt Size 15/16" — Type of lock / Lock number: Master

Observations / Comments: _____

Purge Method: Teflon / (PVC Disposable Bailer) Peristaltic Pump GrundFos Redi-flow 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: _____

Sampling Method: Disp. Teflon Bailer (Disp. PVC Bailer) GrundFos Redi-flow Pump Other: _____

pH Meter Serial No.: 217254 / (330089) — Spec. Cond. Meter Serial No.: 96H0203AB (AE)

Date/Time Calibrated: 10/5 @ 10:05 (4) (7) (10) @ 25°C — Spec.Cond. Meter Calibration: (Self Test) Other: _____

Method to Measure Water Level: Solinst Serial No.: ESS #1 — P.I.D. Reading: NA ppm @ Well Head

Water Level at Start (DTW): 33.19 — Water Level Prior To Sampling: 36.5 ↑

TD = 44.32 - 33.19 (DTW) = 11.13 (ft.of water) x "K" = 1.8 (Gals./CV) x 3 (No. of CV) = 5.4 (Gals.)

"k" = .023(.75" well) ("K"= 0.163(2" well) "K" = 0.653(4" well) "K" = 1.02(5" well) "K" = 1.46(6" well)

FIELD WATER QUALITY PARAMETERS

Date	Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance mS (uS)	Turbidity	Color	Comments
10/5/99	10:30	1.0	7.28	20.1	850	203	Lt. Brown	Fine Sands
	10:32	2.0	7.25	19.9	815	1247	"	"
	10:35	3.0	7.27	19.8	805	748	"	"
	10:37	4.0	7.27	19.7	800	344	"	"
	10:40	5.0	7.30	19.6	798	414	"	"
	10:43	6.0	7.32	20.1	784	560	"	"
	10:46	7.0	7.34	19.7	768	472	"	"
	10:49	8.0	7.33	19.7	768	439	"	"
	10:58	After Sampling	7.39	20.4	771	402	"	"

Total Discharge: 8.5 gallons — Casing Volumes Removed: 4.72

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

Date/Time Sampled: 10/5/99 @ 10:50 — Analysis/No. of Bottles: EPA 8015M-TPHg/BTEX, MTBE (8-40ml-VOCs w/HCl), TPHd (2, 1 Liter Glass Ambers, Non-Preserved).

QA/QC: None @ ——— as an Equipment Blank Blind Duplicate MS/MSD Field Blank

Comments: _____

Sampled By: Jacki Lee / Stephen Penman Signature(s): _____

PMB 102 • 6680 Alhambra Ave. • Martinez, CA 94553-6105 • (925) 372-8108 • Fax: (925) 372-6705
www.envsampling.com

Environmental Sampling Services

WATER QUALITY SAMPLE LOG SHEET	WELL IDENTIFICATION: **W-3s** DATE: 10/5/99

Project Name: Arrow Rentals - Livermore, CA Project Task: Semi-Annual Groundwater Monitoring

Well Description: .75" 2" 3" (4") 5" 6" Well Type: (PVC) Stainless Steel Other: _____

Is Well Secured? Yes / No Bolt Size 15/16" Type of lock / Lock number: None

Observations / Comments: Bolt sheared off on well monument Lid.

Purge Method: Teflon / (PVC Disposable Bailer) Peristaltic Pump GrundFos Redi-flow 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: _____

Sampling Method: Disp. Teflon Bailer (Disp. PVC Bailer) GrundFos Redi-flow Pump Other: _____

pH Meter Serial No.: 217254 / (330089) Spec. Cond. Meter Serial No.: 96H0203AB / (AE)

Date/Time Calibrated: 10/5 @ 10:05 (7) (0) @ 25°C Spec.Cond. Meter Calibration: (Self Test) Other: _____

Method to Measure Water Level: Solinst Serial No.: ESS#1 P.I.D. Reading: NA ppm @ Well Head

Water Level at Start (DTW): 31.78 Water Level Prior To Sampling: 32.29↑

TD = 44.76 - 31.78 (DTW) = 12.98 (ft.of water) x "K" = 8.93 (Gals./CV) x 3 (No. of CV) = 25.1 (Gals.)

"k" = .023(.75" well) "K"= 0.163(2" well) ("K" = 0.653(4" well)) "K" = 1.02(5" well) "K" = 1.46(6" well)

FIELD WATER QUALITY PARAMETERS

Date	Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance mS (uS)	Turbidity	Color	Comments
10/5/99	11:27	4.0	7.12	20.7	859	41.4	Clear	Oily sheen on water. suspended organic material
	11:34	8.0	7.10	19.9	857	43.2	"	"
	11:43	12.0	7.11	20.1	875	39.6	"	"
	11:48	16.0	7.11	19.9	860	36.1	"	"
	11:55	20.0	7.14	20.0	877	30.5	"	"
	12:02	24.0	7.12	19.9	871	30.9	"	"
	12:06	26.0	7.10	19.7	864	29.5	"	"
								"
↓	12:12	After Sampling	7.12	20.5	890	32.6	clear	"

Total Discharge: 26.0 gallons Casing Volumes Removed: 3.08

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

Date/Time Sampled: 10/5/99 @ 12:08 Analysis/No. of Bottles: EPA 8015M-TPHg/BTEX, MTBE (8-40ml-VOCs w/HCl), TPHd (2, 1 Liter Glass Ambers, Non-Preserved).

QA/QC: None @ _____ as an Equipment Blank Blind Duplicate MS/MSD Field Blank

Comments: _____

Sampled By: Jacki Lee / Stephen Penman Signature(s): _____

PMB 102 • 6680 Alhambra Ave. • Martinez, CA 94553-6105 • (925) 372-8108 • Fax: (925) 372-6705
www.envsampling.com

Environmental Sampling Services

WATER QUALITY SAMPLE LOG SHEET	WELL IDENTIFICATION: **W-Bs** DATE: 10/5/99

Project Name: Arrow Rentals - Livermore, CA Project Task: Semi-Annual Groundwater Monitoring

Well Description: .75" 2" 3" 4" 5" (6") Well Type: (PVC) Stainless Steel Other: _____

Is Well Secured? (Yes) No Bolt Size _____ Type of lock / Lock number: _____

Observations / Comments: _____

Purge Method: Teflon / PVC Disposable Bailer Peristaltic Pump (GrundFos Redi-flow) 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: _____

Sampling Method: Disp. Teflon Bailer (Disp. PVC Bailer) GrundFos Redi-flow Pump Other: _____

pH Meter Serial No.: 217254 / (330089) Spec. Cond. Meter Serial No.: 96H0203AB (AE)

Date/Time Calibrated: 10/5 @ 10:00 (4) (7) (10) @ 25°C Spec.Cond. Meter Calibration: (Self Test) Other: _____

Method to Measure Water Level: Solinst Serial No.: ESS #1 P.I.D. Reading: NA ppm @ Well Head

Water Level at Start (DTW): 32.10 Water Level Prior To Sampling: 34.40↑

TD = 44.47 - 32.10 (DTW) = 12.37 (ft.of water) x "K" = 18.1 (Gals./CV) x 3 (No. of CV) = 54.3 (Gals.)

"k" = .023(.75" well) "K"= 0.163(2" well) "K" = 0.653(4" well) "K" = 1.02(5" well) ("K" = 1.46(6" well)

FIELD WATER QUALITY PARAMETERS

Date	Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance mS uS	Turbidity	Color	Comments
10/5/99	12:34	10	6.99	21.0	955 µS	20.9	none	Pet. odor
↓	12:36	20	6.90	20.2	887	15.5	"	"
	12:41	30	6.94	20.6	889	39.2	cloudy	"
	12:44	40	6.92	20.4	907	>1000	lt gray	Pet. odor Dry @ 42 gals.
	14:10	50	6.93	20.0	889	29.2	cloudy	Pet. Odor
↓	14:12	55	6.90	20.2	884	20.3	"	Pet. Odor
10/5/99	14:25	After Sampling	6.97	20.1	878	600	lt gray/cldy.	

Total Discharge: 55 gallons Casing Volumes Removed: 3.03

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

Date/Time Sampled: 10/5/99 @ 14:20 Analysis/No. of Bottles: EPA 8015M-TPHg/BTEX, MTBE (3-40ml-VOCs w/HCl), TPHd (2, 1 Liter Glass Ambers, Non-Preserved).

QA/QC: NONE @ ——— as an Equipment Blank Blind Duplicate MS/MSD Field Blank

Comments: _____

Sampled By: Jacki Lee / Stephen Penman Signature(s): _____

PMB 102 • 6680 Alhambra Ave. • Martinez, CA 94553-6105 • (925) 372-8108 • Fax: (925) 372-6705
www.envsampling.com

Environmental Sampling Services

WATER QUALITY SAMPLE LOG SHEET	WELL IDENTIFICATION: **W-1s** DATE: 10/5/99

Project Name: Arrow Rentals - Livermore, CA — Project Task: Semi-Annual Groundwater Monitoring

Well Description: .75" 2" 3" 4" 5" (6") — Well Type: (PVC) Stainless Steel Other: _____

Is Well Secured? Yes / No Bolt Size 15/16" — Type of lock / Lock number: Master Lock

Observations / Comments: _____

Purge Method: Teflon / PVC Disposable Bailer Peristaltic Pump (GrundFos Redi-flow) 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: _____

Sampling Method: Disp. Teflon Bailer (Disp. PVC Bailer) GrundFos Redi-flow Pump Other: _____

pH Meter Serial No.: 217254 / (330089) — Spec. Cond. Meter Serial No.: 96H0203AB (AE)

Date/Time Calibrated: 10/5 10:05 (4) (7) (10) @ 25°C — Spec.Cond. Meter Calibration: (Self Test) Other: _____

Method to Measure Water Level: Solinst Serial No.: E33221 — P.I.D. Reading: NA ppm @ Well Head

Water Level at Start (DTW): 32.43 — Water Level Prior To Sampling: 38.95↑

TD = 44.64 - 32.43 (DTW) = 12.21 (ft.of water) x "K" = 17.8 (Gals./CV) x 3 (No. of CV) = 53.4 (Gals.)

"k" = .023(.75" well) "K"= 0.163(2" well) "K" = 0.653(4" well) "K" = 1.02(5" well) ("K" = 1.46(6" well))

FIELD WATER QUALITY PARAMETERS

Date	Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance mS uS	Turbidity	Color	Comments
10/5/99	12:58	10	6.96	21.2	943	4.7	none	Pet. Odor
	13:01	20	7.01	20.7	914	14.0	none	"
	13:05	30	6.94	21.0	919	68.0	lt gray	" Dry @ 31.5 g.
	14:02	40	6.93	21.0	948	48.2	lt gray/cldy	Pet. Odor
	14:04	50	6.86	20.6	927	71000	lt gray	Pet. Odor Dry @ 50g.
↓	14:52	54	6.93	20.9	927	70.4	"	"
10/5/99	15:05	After Sampling	6.91	20.7	911			

Total Discharge: 54 gallons — Casing Volumes Removed: 3.0

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

Date/Time Sampled: 10/5/99 @ 15:00 — Analysis/No. of Bottles: EPA 8015M-TPHg/BTEX, MTBE (3-40ml-VOCs w/HCl), TPHd (2, 1 Liter Glass Ambers, Non-Preserved); 1-1Lamber N/P - PNA

QA/QC: NONE @ ——— as an Equipment Blank Blind Duplicate MS/MSD Field Blank

Comments: _____

Sampled By: Jacki Lee / Stephen Penman Signature(s): _____

PMB 102 • 6680 Alhambra Ave. • Martinez, CA 94553-6105 • (925) 372-8108 • Fax: (925) 372-6705
www.envsampling.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REPORT FORM

Columbia Analytical Services, Inc.
2059 Junction Avenue • San Jose, CA 95131 • (408) 437-2400 • FAX (408) 437-9356

SERVICE REQUEST NO. _____ P.O.# _____ PAGE 1 OF 1

PROJECT NAME Arrow Rentals #

PROJECT MGR. Stephen Penman / Jacki Lee

COMPANY Environmental Sampling Services

ADDRESS PMB 102 6680 Alhambra Avenue

Martinez CA 94553-6105 PHONE (925) 372-8108

FAX (925) 372-6705

SAMPLER'S SIGNATURE

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	PRESERVATIVE	HCl	HCl	HCl	NP	NP	NP	HCl	HCl	HNO_3	NP	H_2SO_4	H_2SO_4	H_2SO_4	NaOH	NP	REMARKS
						Volatile Organics GC/MS 624/8240/8260	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐	TPH as Gas/BTEX MTBE DHS LUFT / 8020	TPH as Diesel/HBHC DHS LUFT	Base/Neu/Acid Organics GC/MS 625/8270	Pesticides / PCBs 608/8080	TRPH - 418.1	Oil and Grease Method	Metals (total or dissolved) List Below	pH, Cond, Cl, SO_4, F, TDS, TSS Alk, NO_3, NO_2 (circle)	NH_3-N, COD, Total-P, TKN, NO_3 / NO_2 (circle)	Total Organic Carbon TOC	Total Phenols	Cyanide	FNA			
Trip Blank	10/5/99	10:15		Water	2			X														
W-ES	10/5/99	10:50		Water	5			X	X													
W-3S	10/5/99	12:08		Water	5			X	X													
W-BS	10/5/99	14:20		Water	5			X	X													
W-1S	10/5/99	15:00		Water	5			X	X										X			

RELINQUISHED BY:
Signature: Jacki Lee
Printed Name: Jacki Lee
Firm: Environmental Sampling Svcs.
Date/Time: 10/5/99 16:00

RECEIVED BY:
Signature:
Printed Name:
Firm: CAS
Date/Time: 10/6/99 16:00

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
___ 1 day ___ 2 day ___ 3 day
___ 5 day ___ Other
X Standard (10 working days)
Results Due _____

REPORT REQUIREMENTS
X I. Routine Report
___ II. Report (includes MS, MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ MDLs/PQLs/Trace #
___ Electronic Data Deliverables

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time
Shipped Via/Tracking #

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

SAMPLE RECEIPT: Condition _____ Custody Seals _____

SPECIAL INSTRUCTIONS/COMMENTS: Perform Silica Gel Clean-Up prior to reanalysis of TPHd samples.

Circle which metals are to be analyzed:

Metals: Al Sb Ba Be B Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Ag Na Sn V Zn
As Pb Se Tl Hg

Storage:

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

APPENDIX B

LABORATORY REPORT

AND

CHAIN-OF-CUSTODY DOCUMENTATION

Columbia Analytical Services INC.
An Employee-Owned Company

October 15, 1999 Service Request No.: S9903077

Ms. Jackie Lee
Environmental Sampling Services
6680 Alhambra Ave., #22
Martinez, CA 94553

RE: Arrow Rentals

Dear Ms. Lee:

Enclosed are the results of the sample(s) submitted to our laboratory on October 5, 1999. All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply to the sample(s) analyzed. Columbia Analytical Services is not responsible for use of less than the complete report. Signature of this CAS Analytical Report confirms that pages 2 through 14, following, have been thoroughly reviewed and approved for release.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 2352, expiration: January 31, 2001).

If you have any questions, please call me at (408) 748-9700.

Respectfully submitted,

Columbia Analytical Services, Inc.

Bernadette Troncales

Bernadette Troncales
Project Chemist

COLUMBIA ANALYTICAL SERVICES, Inc.
Acronyms

A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U. S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl tert-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	Not Detected at or above the method reporting/detection limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	Standard Methods for the Examination of Water and Wastewater, 18th Ed., 1992
STLC	Solubility Threshold Limit Concentration
SW	Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Ed., 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level. The concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Environmental Sampling Services
Project: Arrow Rentals
Sample Matrix: Water

Service Request: S9903077
Date Collected: 10/05/99
Date Received: 10/05/99

Polynuclear Aromatic Hydrocarbons

Sample Name: W-1S
Lab Code: S9903077-005
Test Notes: C1

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Naphthalene	EPA 3510C	8270C	5	10	10/06/99	10/07/99	510	
Acenaphthylene	EPA 3510C	8270C	5	10	10/06/99	10/07/99	<50	
Acenaphthene	EPA 3510C	8270C	5	10	10/06/99	10/07/99	<50	
Fluorene	EPA 3510C	8270C	5	10	10/06/99	10/07/99	<50	
Phenanthrene	EPA 3510C	8270C	5	10	10/06/99	10/07/99	<50	
Anthracene	EPA 3510C	8270C	5	10	10/06/99	10/07/99	<50	
Fluoranthene	EPA 3510C	8270C	5	10	10/06/99	10/07/99	<50	
Pyrene	EPA 3510C	8270C	5	10	10/06/99	10/07/99	<50	
Benz(a)anthracene	EPA 3510C	8270C	5	10	10/06/99	10/07/99	<50	
Chrysene	EPA 3510C	8270C	5	10	10/06/99	10/07/99	<50	
Benzo(b)fluoranthene	EPA 3510C	8270C	5	10	10/06/99	10/07/99	<50	
Benzo(k)fluoranthene	EPA 3510C	8270C	5	10	10/06/99	10/07/99	<50	
Benzo(a)pyrene	EPA 3510C	8270C	5	10	10/06/99	10/07/99	<50	
Indeno(1,2,3-cd)pyrene	EPA 3510C	8270C	5	10	10/06/99	10/07/99	<50	
Dibenz(a,h)anthracene	EPA 3510C	8270C	5	10	10/06/99	10/07/99	<50	
Benzo(g,h,i)perylene	EPA 3510C	8270C	5	10	10/06/99	10/07/99	<50	
2-Methylnaphthalene	EPA 3510C	8270C	5	10	10/06/99	10/07/99	280	

C1 The MRL was elevated due to high analyte concentration requiring sample dilution.

Approved By: _____ Date: 10/15/99

1S2p/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Environmental Sampling Services	**Service Request:**	S9903077
Project:	Arrow Rentals	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Polynuclear Aromatic Hydrocarbons

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	S991006-WB1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Naphthalene	EPA 3510C	8270C	5	1	10/06/99	10/07/99	ND	
Acenaphthylene	EPA 3510C	8270C	5	1	10/06/99	10/07/99	ND	
Acenaphthene	EPA 3510C	8270C	5	1	10/06/99	10/07/99	ND	
Fluorene	EPA 3510C	8270C	5	1	10/06/99	10/07/99	ND	
Phenanthrene	EPA 3510C	8270C	5	1	10/06/99	10/07/99	ND	
Anthracene	EPA 3510C	8270C	5	1	10/06/99	10/07/99	ND	
Fluoranthene	EPA 3510C	8270C	5	1	10/06/99	10/07/99	ND	
Pyrene	EPA 3510C	8270C	5	1	10/06/99	10/07/99	ND	
Benz(a)anthracene	EPA 3510C	8270C	5	1	10/06/99	10/07/99	ND	
Chrysene	EPA 3510C	8270C	5	1	10/06/99	10/07/99	ND	
Benzo(b)fluoranthene	EPA 3510C	8270C	5	1	10/06/99	10/07/99	ND	
Benzo(k)fluoranthene	EPA 3510C	8270C	5	1	10/06/99	10/07/99	ND	
Benzo(a)pyrene	EPA 3510C	8270C	5	1	10/06/99	10/07/99	ND	
Indeno(1,2,3-cd)pyrene	EPA 3510C	8270C	5	1	10/06/99	10/07/99	ND	
Dibenz(a,h)anthracene	EPA 3510C	8270C	5	1	10/06/99	10/07/99	ND	
Benzo(g,h,i)perylene	EPA 3510C	8270C	5	1	10/06/99	10/07/99	ND	
2-Methylnaphthalene	EPA 3510C	8270C	5	1	10/06/99	10/07/99	ND	

Approved By: _____ Date: 10/15/99

1S2p/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Environmental Sampling Services
Project: Arrow Rentals
Sample Matrix: Water

Service Request: S9903077
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: NA

Surrogate Recovery Summary
Polynuclear Aromatic Hydrocarbons

Prep Method: EPA 3510C
Analysis Method: 8270C

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery 2FPHL	PHL	NBZ	2FBPH	246TBPHL	TPH
W-1S	S9903077-005		NA	NA	65	55	NA	48
Method Blank	S991006-WB1		NA	NA	79	82	NA	94
CAS Acceptance Limits:			21-100	10-94	35-114	43-116	10-123	33-141

2FPHL	2-Fluorophenol
PHL	Phenol-D6
NBZ	Nitrobenzene-D5
2FBPH	2-Fluorobiphenyl
246TBPHL	2,4,6-Tribromophenol
TPH	Terphenyl-D14

Approved By: _____ Date: 10/15/99

SUR6/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Environmental Sampling Services	**Service Request:**	S9903077
Project:	Arrow Rentals	**Date Collected:**	10/5/99
Sample Matrix:	Water	**Date Received:**	10/5/99

TPH as Diesel

Prep Method:	EPA 3510	Units:	ug/L (ppb)
Analysis Method:	CA/LUFT	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
W-ES	S9903077-002	50	1	10/07/99	10/14/99	88	D4
W-3S	S9903077-003	50	1	10/07/99	10/14/99	1000	D4 & D2
W-BS	S9903077-004	50	1	10/07/99	10/14/99	7300	D4
W-1S	S9903077-005	50	100	10/07/99	10/14/99	60000	D4
Method Blank	S991007-WB1	50	1	10/07/99	10/13/99	ND	

D2 The sample contains a higher boiling point hydrocarbon mixture quantitated diesel. The chromatogram does not match the typical diesel fingerprint.

D4 The sample contains a lower boiling point mixture of hydrocarbons and quantitated as diesel.

Approved By: _____ Date: 10/15/99

1A/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Environmental Sampling Services	**Service Request:**	S9903077
Project:	Arrow Rentals	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Extracted:	NA
		Date Analyzed:	NA

Surrogate Recovery Summary
TPH as Diesel

Prep Method:	EPA 3510	Units:	PERCENT
Analysis Method:	CA/LUFT	Basis:	NA

Sample Name	Lab Code	Test Notes	Percent Recovery p-Terphenyl
W-ES	S9903077-002		69
W-3S	S9903077-003		58
W-BS	S9903077-004		68
W-1S	S9903077-005		63
Method Blank	S991007-WB1		69

CAS Acceptance Limits: 41-140

Approved By: _____ Date: 10/15/99

SUR1/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Environmental Sampling Services	**Service Request:**	S9903077
Project:	Arrow Rentals	**Date Collected:**	10/05/99
Sample Matrix:	Water	**Date Received:**	10/05/99

BTEX, MTBE and TPH as Gasoline

Sample Name:	Trip Blank	Units:	ug/L (ppb)
Lab Code:	S9903077-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	1	NA	10/14/99	ND	
Benzene	EPA 5030	8021B	0.5	1	NA	10/14/99	ND	
Toluene	EPA 5030	8021B	0.5	1	NA	10/14/99	ND	
Ethylbenzene	EPA 5030	8021B	0.5	1	NA	10/14/99	ND	
Xylenes, Total	EPA 5030	8021B	1.0	1	NA	10/14/99	ND	
Methyl *tert* -Butyl Ether	EPA 5030	8021B	3	1	NA	10/14/99	ND	

Approved By: _____ Date: 10/15/99

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Environmental Sampling Services	**Service Request:**	S9903077
Project:	Arrow Rentals	**Date Collected:**	10/05/99
Sample Matrix:	Water	**Date Received:**	10/05/99

BTEX, MTBE and TPH as Gasoline

Sample Name:	W-ES	Units:	ug/L (ppb)
Lab Code:	S9903077-002	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	1	NA	10/14/99	68	
Benzene	EPA 5030	8021B	0.5	1	NA	10/14/99	ND	
Toluene	EPA 5030	8021B	0.5	1	NA	10/14/99	ND	
Ethylbenzene	EPA 5030	8021B	0.5	1	NA	10/14/99	ND	
Xylenes, Total	EPA 5030	8021B	1.0	1	NA	10/14/99	ND	
Methyl *tert*-Butyl Ether	EPA 5030	8021B	3	1	NA	10/14/99	4	

Approved By: _____ Date: 10/15/99

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Environmental Sampling Services	**Service Request:**	S9903077
Project:	Arrow Rentals	**Date Collected:**	10/05/99
Sample Matrix:	Water	**Date Received:**	10/05/99

BTEX, MTBE and TPH as Gasoline

Sample Name:	W-3S	Units:	ug/L (ppb)
Lab Code:	S9903077-003	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	2	NA	10/14/99	1500	
Benzene	EPA 5030	8021B	0.5	2	NA	10/14/99	290	
Toluene	EPA 5030	8021B	0.5	2	NA	10/14/99	9.5	
Ethylbenzene	EPA 5030	8021B	0.5	2	NA	10/14/99	53	
Xylenes, Total	EPA 5030	8021B	1.0	2	NA	10/14/99	9.8	
Methyl *tert*-Butyl Ether	EPA 5030	8021B	3	2	NA	10/14/99	<6	C1

C1 The MRL was elevated due to high analyte concentration requiring sample dilution.

Approved By: _____ Date: 10/15/99

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Environmental Sampling Services	**Service Request:**	S9903077
Project:	Arrow Rentals	**Date Collected:**	10/05/99
Sample Matrix:	Water	**Date Received:**	10/05/99

BTEX, MTBE and TPH as Gasoline

Sample Name:	W-BS	Units:	ug/L (ppb)
Lab Code:	S9903077-004	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	100	NA	10/14/99	38000	
Benzene	EPA 5030	8021B	0.5	100	NA	10/14/99	3800	
Toluene	EPA 5030	8021B	0.5	100	NA	10/14/99	390	
Ethylbenzene	EPA 5030	8021B	0.5	100	NA	10/14/99	1600	
Xylenes, Total	EPA 5030	8021B	1.0	100	NA	10/14/99	5900	
Methyl *tert* -Butyl Ether	EPA 5030	8021B	3	20	NA	10/14/99	<60	C1

C1 The MRL was elevated due to high analyte concentration requiring sample dilution.

Approved By: _____ Date: 10/15/99

lS22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Environmental Sampling Services	**Service Request:**	S9903077
Project:	Arrow Rentals	**Date Collected:**	10/05/99
Sample Matrix:	Water	**Date Received:**	10/05/99

BTEX, MTBE and TPH as Gasoline

Sample Name:	W-1S	Units:	ug/L (ppb)
Lab Code:	S9903077-005	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	100	NA	10/14/99	82000	
Benzene	EPA 5030	8021B	0.5	100	NA	10/14/99	5500	
Toluene	EPA 5030	8021B	0.5	100	NA	10/14/99	4500	
Ethylbenzene	EPA 5030	8021B	0.5	100	NA	10/14/99	2500	
Xylenes, Total	EPA 5030	8021B	1.0	100	NA	10/14/99	14000	
Methyl *tert* -Butyl Ether	EPA 5030	8021B	3	100	NA	10/14/99	<300	C1

C1 The MRL was elevated due to high analyte concentration requiring sample dilution.

Approved By: _____ Date: 10/15/99

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Environmental Sampling Services	**Service Request:**	S9903077
Project:	Arrow Rentals	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

BTEX, MTBE and TPH as Gasoline

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	S991014-WB3	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	1	NA	10/14/99	ND	
Benzene	EPA 5030	8021B	0.5	1	NA	10/14/99	ND	
Toluene	EPA 5030	8021B	0.5	1	NA	10/14/99	ND	
Ethylbenzene	EPA 5030	8021B	0.5	1	NA	10/14/99	ND	
Xylenes, Total	EPA 5030	8021B	1.0	1	NA	10/14/99	ND	
Methyl *tert*-Butyl Ether	EPA 5030	8021B	3	1	NA	10/14/99	ND	

Approved By: _____ Date: 10/15/99

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Environmental Sampling Services
Project: Arrow Rentals
Sample Matrix: Water

Service Request: S9903077
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: NA

Surrogate Recovery Summary
BTEX, MTBE and TPH as Gasoline

Prep Method: EPA 5030
Analysis Method: 8021B CA/LUFT

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery	
			4-Bromofluorobenzene	a,a,a-Trifluorotoluene
Trip Blank	S9903077-001		93	101
W-ES	S9903077-002		94	102
W-3S	S9903077-003		82	136
W-BS	S9903077-004		90	112
W-1S	S9903077-005		90	114
Method Blank	S991014-WB3		96	101

CAS Acceptance Limits: 69-116 72-139

Approved By: _____ Date: 10/15/99

SUR2/020397p

CHAIN OF CUSTODY/LABORATORY ANALYSIS REPORT FORM

Columbia Analytical Services Inc.
2059 Junction Avenue • San Jose, CA 95131 • (408) 437-2400 • FAX (408) 437-9356

SERVICE REQUEST NO. 599O3077 P.O.# _____ PAGE 1 OF 1

PROJECT NAME Arrow Rentals #
PROJECT MGR. Stephen Perman / Jacki Lee
COMPANY Environmental Sampling Services
ADDRESS PMB 102 6680 Alhambra Avenue
Martinez, CA 94553-6105 PHONE (925) 372-8108
FAX (925) 372-6705
SAMPLER'S SIGNATURE

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	PRESERVATIVE	HCl	HCl	HCl	NP	NP	NP	HCl	HCl	HNO_3	NP	H_2SO_4	H_2SO_4	H_2SO_4	NaOH	NP			REMARKS
						Volatile Organics GC/MS 624/8240/8260	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐	TPH as Gas/BTEX MTBE ☐ DHS LUFT / 8020	TPH as Diesel/HBHC DHS LUFT	Base/Neu/Acid Organics GC/MS 625/8270	Pesticides / PCBs 608/8080	TRPH - 418.1	Oil and Grease Method	Metals (total or dissolved) List Below	pH, Cond, Cl, SO_4, F, TDS, TSS Alk, NO_3, NO_2 (circle)	NH_3-N, COD, Total-P, TKN, NO_3 / NO_2 (circle)	Total Organic Carbon TOC	Total Phenols	Cyanide	PNA				
Trip Blank	10/5/99	10:15	(1)	Water	2			X																
W-ES	10/5/99	10:50	(2)	Water	5			X	X															
W-3S	10/5/99	12:08	(3)	Water	5			X	X															
W-BS	10/5/99	14:20	(4)	Water	5			X	X															
W-1S	10/5/99	15:00	(5)	Water	5			X	X												X			

RELINQUISHED BY:
Signature
Jacki Lee
Printed Name
Environmental Sampling Svcs.
Firm
10/5/99 16:00
Date/Time

RECEIVED BY:
Signature
Brian Folk
Printed Name
CAS
Firm
10/5/99 16:00
Date/Time

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

Shipped Via/Tracking #

TURNAROUND REQUIREMENTS
___ 1 day ___ 2 day ___ 3 day
___ 5 day ___ Other
X Standard (10 working days)
Results Due 10/19/99

REPORT REQUIREMENTS
X I. Routine Report
___ II. Report (includes MS. MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ MDLs/PQLs/Trace #
___ Electronic Data Deliverables

SAMPLE RECEIPT: Condition _____ Custody Seals _____

SPECIAL INSTRUCTIONS/COMMENTS: Perform Silica Gel Clean-Up prior to ~~extr~~analysis of TPHd samples.

Circle which metals are to be analyzed:

Metals: Al Sb Ba Be B Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Ag Na Sn V Zn As Pb Se Tl Hg

R11/D3-U

Storage: R8/D1

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

400-5