

SIGNED: Mark Detterman

BLYMYER ENGINEERS, INC. 1829 Clement Avenue Alameda, California 94501-1396 (510) 521-3773 FAX: (510) 865-2594	ENVINCIPENTAL DATE February 26, 1997 BELJOD NO. 88288.1 OFFEB 28 PM ATTENTION: Mr. Mike Rogers SUBJECT: G.I. Trucking Facility San Leandro, California STID 1373					
G.I. Trucking Company c/o ABF Freight System, Inc.						
3801 Old Greenwood Road						
Fort Smith, AR 72903						
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1 2/26/97 Fir	Final Copy; First Semi-Annual Groundwater Monitoring Event 1997					
Gra	oundwater Monitoring and Free Product Recovery					

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FROTEOTIE BEI Job No. 88288

1373

Mr. Mike Rogers G.I. Trucking Company c/o ABF Freight System, Inc. 3801 Old Greenwood Road P.O. Box 10048 Fort Smith, AR 72917-0048

Subject:

First Semi-Annual Groundwater Monitoring Event of 1997

and Free Product Recovery

G.I. Trucking Facility 1750 Adams Avenue San Leandro, California

STID 1373

Dear Mr. Rogers:

This letter documents free product recovery and the first semi-annual groundwater monitoring event of 1997 at the subject site (Figures 1 and 2).

1.0 Introduction

1.1 Background

Blymyer Engineers, Inc., was retained by Milne Truck Lines in July 1986 to conduct precision testing and to install a monitoring system for three 12,000-gallon diesel, one 12,000-gallon gasoline, and one 800-gallon waste oil underground storage tanks (USTs) at the site, which is currently occupied by G.I. Trucking Company. All of the USTs were constructed of fiberglass. During precision testing, which required that the USTs be filled to capacity with product, all of the USTs tested tight except for the waste oil UST. The waste oil UST was uncovered to identify the source of the leak and to attempt to repair the UST. It was observed by a representative of the UST manufacturing company that the bottom of the waste oil UST was ruptured and damaged beyond repair. In December 1986, when the waste oil UST was removed, it was observed that the pea gravel and native soil surrounding the UST contained waste oil and there was approximately 3 inches of waste oil on the groundwater surface.

Groundwater and waste oil were removed from the waste oil UST basin during two pumping events, leaving only a sheen on groundwater. Approximately 45 cubic yards of contaminated pea gravel and native soil were removed and disposed of. It was noted that once the contaminated soil was removed, diesel fuel flowed into the excavation from the direction of the diesel USTs. The diesel fuel was removed via pumping on two occasions, leaving a sheen on groundwater.



The excavation was subsequently filled to just below grade surface (bgs) with pea gravel and resurfaced. A 12-inch-diameter free product recovery well with a passive skimmer, previously designated MW-1 and currently designated RW-1, was installed in the center of the former waste oil UST basin to recover any diesel fuel that accumulated after backfilling the excavation.

Four monitoring wells with total depths of approximately 25 feet bgs were also installed in the vicinity of the UST system to assess the extent of soil and groundwater contamination associated with the diesel USTs. The native soil consisted predominantly of sandy clay or clayey sand and silty clay. The soil samples collected from the soil bores contained petroleum hydrocarbon concentrations ranging from 71 to 210 parts per million, quantified using EPA Method 3550. No concentrations of Total Oil and Grease, by an unspecified analytical method, were detected in groundwater samples collected from the four monitoring wells.

The diesel USTs were re-tested in April 1987 during which all three USTs were certified as tight. Based on the test results, it was assumed by Blymyer Engineers that the diesel fuel removed from the excavation did not result from a UST leak, but that a damaged product line may have been the source. Any released diesel fuel was likely contained in the relatively higher permeability pea gravel.

Quarterly groundwater monitoring of the monitoring wells, presently designated MW-2 through MW-5, began in Fourth Quarter 1988. Since monitoring began, only groundwater samples collected from monitoring wells MW-2 and MW-3 have contained detectable concentrations of the analytes. Therefore, groundwater sample analysis for monitoring wells MW-4 and MW-5 was discontinued after Third Quarter 1995 in accordance with the Alameda County Health Care Services Agency's (ACHCSA's) letter dated August 14, 1995. Low concentrations of Total Petroleum Hydrocarbons (TPH) as diesel have been detected in groundwater samples collected from monitoring well MW-2 since Fourth Quarter 1994 and TPH as diesel has consistently been detected in groundwater samples collected from monitoring well MW-3 since First Quarter 1990. Low concentrations of toluene, below California Department of Health Services and Environmental Protection Agency Maximum Contaminant Level (MCLs), have been detected in a groundwater sample collected from monitoring well MW-2 during First Quarter 1995 and in a groundwater sample collected from monitoring well MW-3 during Third Quarter 1994. Groundwater flow direction has historically ranged between south and southeast.

Free product ranging in thickness from less than 0.2 feet to a sheen has been measured on groundwater in well RW-1 since quarterly monitoring began, and approximately 1.18 gallons of free product has been recovered from well RW-1 since recovery activities began in November 1993.

Mr. Mike Rogers February 26, 1997 Page 3



During Second Quarter 1995, additional analyses of the waste oil suite were performed in accordance with the request of the ACHCSA. Although the waste oil released from the former waste oil UST was removed, the ACHCSA requested that the waste oil suite of analyses be performed for confirmation. Analysis of TPH as motor oil was also performed to provide additional groundwater contaminant data. The analytical results, which were either non-detectable or below MCLs, indicated that diesel fuel, not waste oil, was the cause of groundwater contamination at the site.

Based on the data accumulated since 1988, Blymyer Engineers requested site closure from the ACHCSA in April 1995, considering the recent changes in the regulatory climate regarding plume definition and necessary closure conditions. In its letter dated July 27, 1995, the ACHCSA granted a reduced sampling frequency and discontinuation of the waste oil suite analyses. Blymyer Engineers inquired whether TPH as gasoline analysis was to be continued, because the status was not discussed in the ACHCSA letter. The ACHCSA stated that the need for the analysis would be evaluated, but that minimally, analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) and TPH as diesel should be performed. The ACHCSA also stated that the concentrations of toluene, the "unstabilized" TPH as diesel concentrations, and the presence of free product, although minimal, needed to be addressed before closure could be granted.

Blymyer Engineers discussed these issues with the ACHCSA in August and November 1995. Because the toluene concentration units were misread as milligrams per liter (mg/L), instead of micrograms per liter (µg/L), the ACHCSA thought the toluene concentrations detected in groundwater collected from monitoring well MW-3 exceeded MCLs. Therefore, the ACHCSA's primary concern was that a sheen or product layer still existed in recovery well RW-1 and its secondary concern was that the TPH as diesel concentrations were the highest during First Quarter 1995. Blymyer Engineers and ACHCSA agreed that if an additional recovery well was installed in the backfill, downgradient of the southwest corner of the diesel UST basin (the inferred source), free product recovery would be expedited and the TPH as diesel concentrations in groundwater would likely decrease. In the meantime, the ACHCSA requested that semi-annual groundwater monitoring and quarterly free product recovery be continued. In February 1996, Blymyer Engineers notified the ACHCSA that installation of an additional recovery well was under consideration while groundwater monitoring and free product recovery was ongoing. At that time, the ACHCSA confirmed that analysis of TPH as gasoline was no longer necessary based on the existing data.

On June 6, 1996, Blymyer Engineers installed a second free product recovery well, RW-2, in the southwestern corner of the UST complex. On June 7, 1996, and June 10, 1996, Blymyer Engineers visited the site to determine if free product was appearing in well RW-2. A thin layer of relatively fresh free product was observed in both recovery wells, along with a darker product layer, on June 10, 1996. On June 11, 1996, Blymyer Engineers visited the site to further



investigate the situation and encountered an increased thickness of fresh product in the recovery wells. On June 12, 1996, the discovery of an apparent release was verbally reported to the ACHCSA.

As discussed in the Blymyer Engineers letter entitled *Unauthorized Release*, dated July 16, 1996, the source of the release appears to have been localized in the westernmost fuel pump manway. Specifically, gaskets in the fuel pump appear to have been the source of the leak. According to site personnel the fuel pump has been repaired and placed back in service. An unknown volume of diesel product was released from this point. Based on an approximate assumed UST excavation area of 60 feet by 30 feet, 75% occupied by the existing USTs, an initial 0.25-foot thickness of clear free product, an assumed porosity of 30% for the pea gravel backfill, and a relatively flat gradient, an estimate for the release volume of approximately 250 gallons was calculated. In November 1996, during ongoing product recovery operations, site personnel verbally reported a total inventory loss of approximately 165 gallons.

Blymyer Engineers has evaluated the use of passive free product skimmers at the site and, due to the low recovery rate by the passive skimmers, a Flexible Axial Peristaltic (FAP) pump was installed in RW-1 on August 8, 1996. The low recovery rate in the passive skimmers is likely related to the relatively higher viscosity of diesel in comparison to gasoline, and to potential biofouling of the skimmers by the older product.

Native soils surrounding the UST excavation consist of multiple layers of silty clay, clayey silt, and clayey fine sand. The hydraulic conductivity appears to be relatively low, based upon the trapping of older free product within the UST excavation years after the initial release and the low dissolved concentrations of TPH as diesel and BTEX in groundwater downgradient of the UST complex years after the initial release.

2.0 Data Collection

2.1 Groundwater Sample Collection

Groundwater samples were collected from monitoring wells MW-2 and MW-3 (Figure 2) on February 6, 1997. The groundwater samples were collected in accordance with the Blymyer Engineers' Standard Operating Procedure No. 3, previously forwarded. The groundwater depth measurements and details of the monitoring well purging and sampling are presented on the Well Purging and Sampling Data sheets included as Attachment A. Historic and recent measurements of groundwater depth are presented in Table I. All purge and decontamination water was stored in Department of Transportation-approved, 55-gallon drums for future disposal.



2.2 Groundwater Sample Analytical Methods

The groundwater samples were submitted to LEGEND Analytical Services (LEGEND), a California-certified laboratory, on a standard 10-day turnaround time for analysis of BTEX by EPA Method 8020 and TPH as diesel by modified EPA Method 8015. Tables II, III, and IV summarize the current and all previous analytical results for groundwater samples collected from the monitoring wells. The laboratory analytical report for the current sampling event is included as Attachment B.

2.3 Free Product Recovery

The existing EZY® passive skimmer, installed in recovery well RW-1, was on a monthly operation and maintenance schedule, overseen by on-site personnel, until August 1994. Since then, and until recently, the skimmer had been maintained quarterly by Blymyer Engineers, either in concurrence with groundwater monitoring in the first and third quarters of the year or independently of groundwater monitoring in the second and fourth quarters of the year. The groundwater depth, the thickness of any pooled product, and the volume of recovered product were measured on each site visit. Since discovery of the fresh product in the UST basin in June 1996, Blymyer Engineers purchased a second skimmer for placement in well RW-2. After difficulties in free product recovery were encountered, a FAP pump was installed in recovery well RW-1, while the newer passive skimmer remained in well RW-2. Upon discovery of the fresh product, Blymyer Engineers made daily or weekly visits to either hand bail, to empty the skimmers, or to monitor the FAP pump operation. Due to decreased product thickness in well RW-1 in September 1996 difficulties in free product recovery were encountered. Consequently, the FAP pump was removed and reinstalled in well RW-2, and the newer passive skimmer was removed and reinstalled in well RW-1. On November 20, 1996, the FAP pump had reached the limits of operation and was subsequently removed from RW-2. Soak-eze® absorbent socks were installed in well RW-1 and the newer EZY® passive skimmer was installed in well RW-2 in order to obtain the residual product from each well. Inspection and change out, if required, of these recovery systems is currently conducted approximately every two weeks, although no measurable free product was encountered in either recovery well on the date of groundwater monitoring, nor was there significant product absorbed onto the Soak-eze® absorbent socks. Table I presents historic and current groundwater and product depth measurements. Table V contains a summary of the free product volume recovered during past events and the approximate cumulative volume of free product removed to date.



3.0 Discussion of Data

3.1 Groundwater Sample Analytical Results

Concentrations of TPH as diesel were detected in the groundwater samples collected from monitoring wells MW-2 and MW-3 (Table III) this quarter. The TPH as diesel concentration detected in the groundwater sample collected from both monitoring wells increased slightly from the last monitoring event. Of importance again is the detection of 0.05 mg/L TPH as diesel in the method blank. Subtraction of the portion of TPH as diesel attributed to laboratory contamination from the total result would cause the TPH as diesel concentration in well MW-2 to be very close to the method detection limit. In addition the laboratory reported that the concentration of TPH as diesel was indicative of a heavier hydrocarbon than diesel. BTEX were not detected in the groundwater samples collected from either monitoring well (Table II) eight months after discovery of the more recent release. It is important to note that although TPH as diesel concentrations have increased since the last monitoring period, the increases do not appear to be atypical for the range of analytical concentrations which existed prior to the discovery of the most recent release. Well MW-2 is approximately 2 feet downgradient from the edge of the waste oil UST excavation and BTEX do not appear to be have escaped the UST basin.

3.2 Recovered Free Product Data

In November 1995, approximately 0.25 gallons of free product were recovered from the skimmer, and in February 1996, there was no measurable free product to be recovered. An increasing volume of product was removed beginning in June 1996 (Table V). Until the more recent release, the cumulative volume of free product removed since recovery began had only amounted to approximately 1.18 gallons. As of the date of monitoring (February 6, 1997) nearly 178 gallons of product have been recovered at the site. There was no measurable thickness of free product in either well RW-1 or well RW-2 on February 6, 1997. This compares reasonably to the reported inventory loss of approximately 165 gallons per site personnel.

3.2 Groundwater Flow Direction and Gradient

Blymyer Engineers contoured groundwater elevations for the four monitoring wells outside of the UST complex this monitoring event to depict the general groundwater gradient at the site. Based on the depth-to-groundwater measurements in these wells during this monitoring event, the groundwater flow direction in the vicinity of the UST basin was toward the southeast at a gradient of approximately 0.010 feet per foot. A not unexpected higher groundwater level exists within the UST complex. If included in the groundwater contour map, this higher level would indicate a localized high, with somewhat outward radial flow, centered on the southern area of the UST complex, and dropping most rapidly to the southeast.

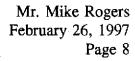


4.0 Recommendations

- Free product recovery attempts should continue. Operational visits will be scheduled at decreasing, but appropriate, intervals.
- Semi-annual groundwater monitoring should be continued to further assess trends in
 contaminant concentrations in groundwater at the site. Analysis of total dissolved solids
 (TDS) to assess the quality of groundwater and analyses of specific inorganic constituents
 and soil characteristics to assess whether natural attenuation of contamination in the
 aquifer is occurring could be performed.

5.0 Limitations

Services performed by Blymyer Engineers have been provided in accordance with generally accepted professional practices for the nature and conditions of the work completed in the same or similar localities, at the time the work was performed. The scope of work for the project was conducted within the limitations prescribed by the client, G.I. Trucking Company. This report is not meant to represent a legal opinion. No other warranty, expressed or implied, is made. This report was prepared for the sole use of the client.





The next groundwater monitoring event is scheduled for August 1997. Please call Mark Detterman at (510) 521-3773 with any questions or comments.

Sincerely,

Blymyer Engineers, Inc.

Mark Detterman, C.B.G. 1788

Senior Geologist

Michael S. Lewis

Vice President, Technical Services

Enclosures:

Table I: Groundwater Depth Measurements

Table II: Summary of Groundwater Sample Analytical Results; Benzene, Toluene,

Ethylbenzene, and Total Xylenes

Table III: Summary of Groundwater Sample Analytical Results; TPH as Diesel

Table IV: Summary of Groundwater Sample Analytical Results; TPH as Gasoline,

TPH as Motor Oil, TRPH, HVOCs, SVOCs, and Metals

Table V: Free Product Recovery Measurements, Recovery Well RW-1

Figure 1: Site Location Map

Figure 2: Site Plan and Groundwater Elevation Contours, February 6, 1997

Attachment A: Well Purging and Sampling Data Sheets, dated February 6, 1997

Attachment B: Laboratory Analytical Report, LEGEND Analytical Services, dated

February 13, 1997

cc: Mr. Dale Klettke, Alameda County Health Care Services Agency

Mr. Eddy So, San Francisco Bay Regional Water Quality Control Board

Mr. Mike Bakaldin, San Leandro Fire Department

Mr. Stan Lovell, G.I. Trucking Company

Mr. Tom McGuire, G.I. Trucking Company

Table I. Groundwater Depth Measurements BEI Job No. 88288.001, G.I. Trucking Facility, 1750 Adams Avenue, San Leandro, Califo

	BI	I Job No. 8				epth Measur 50 Adams A		Leandro, Ca	lifornia			
Date Measured	RW- TOC Elevati		TOC E	W-2 Elevation 0.24*	TOC Eleva	MW-3 TOC Elevation 100.22* TOC Elevation 100.18b		MW-4 TOC Elevation 99.48 ^a TOC Elevation 99.46 ^{ad}		MW-5 TOC Elevation 99.60°		-2 veyed
	Depth to Water/Free Product	Water Surface Elevation	Depth to Water	Water Surface Elevation	Depth to Water	Water Surface Elevation	Depth to Water	Water Surface Elevation	Depth to Water	Water Surface Elevation	Depth to Water/Free Product	Water Surface Elevation
November 15, 1988	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	N/A	N/A
February 16, 1989	6.03/5.83	N/A	6.13	94.11	6.00	94.22	5.92	93.56	5.42	94.18	N/A	N/A
May 19, 1989	6.31/6.11	N/A	6.24	94.00	6.20	94.02	5.25	94.23	5.53	94.07	N/A	N/A
August 22, 1989	6.72/6.54	N/A	6.68	93.56	6.60	93.62	6.76	92.72	5.94	93.66	N/A	N/A
November 21, 1989	6.51	93.49	6.64	93.60	6.55	93.67	5.72	93.76	5.91	93.69	N/A	N/A
February 23, 1990	5.74	94.26	6.04	94.20	5.83	94.39	4.92	94.56	5.69	93.91	N/A	N/A
May 23, 1990	6.34/6.19	N/A	6.40	93.84	6.38	93.84	5.39	94.09	5.92	93.68	N/A	N/A
August 27, 1990	6.27	93.73	6.70	93.54	6.67	93.55	5.66	93.82	6.17	93.43	N/A	N/A
December 3, 1990	6.49	93.51	6.83	93.41	6.75	93.47	5.95	93.53	6.05	93.55	N/A	N/A
March 13, 1991	4.94	95.06	5.64	94.60	5.42	94.80	4.39	95.09	5.01	94.59	N/A	N/A
May 29, 1991	9.46	90.54	6.31	93.93	6.28	93.94	5.27	94.21	5.57	94.03	N/A	N/A
August 28, 1991	6.31/6.22	N/A	6.68	93.56	6.62	93.60	5.70	93.78	5.90	93.7	N/A	N/A
December 9, 1991	6.49/6.29	N/A	6.69	93.55	6.65	93.57	5.78	93.78	5.99	93.61	N/A	N/A
February 18, 1992	4.19/4.09	N/A	4.96	95.28	4.73	95.49	3.60	95.88	4.45	95.15	N/A	N/A
May 15, 1992	5.72/5.55	N/A	6.07	94.17	5.99	94.23	5.03	94.45	5.33	94.27	N/A	N/A
August 13, 1992	6.12/5.93	N/A	6.42	93.82	6.32	93.90	5.40	94.08	5.62	93.98	N/A	N/A
December 3, 1992	5.65/5.55	N/A	6.25	93.99	6.23	93.99	5.14	94.34	5.58	94.02	N/A	N/A
March 25, 1993	4.60	95.40	5.40	94.84	5.27	94.95	4.14	95.34	4.34	95.26	N/A	N/A
May 21, 1993	5.56/5.47	N/A	6.04	94.20	5.97	94.25	4.95	94.53	5.28	94.32	N/A	N/A
August 17, 1993	6.07/5.94	N/A	6.42	93.82	6.59	93.63	5.40	94.08	5.61	93.99	N/A	N/A
December 13, 1993	NM°	NM°	6.09	94.15	6.33	93.89	5.08	94.40	5.38	94.22	N/A	N/A
February 24, 1994	4.97	95.63	5.57	94.67	5.76	94.46	4.38	95.10	4.90	94.70	N/A	N/A.
May 11, 1994	5.20	94.80	5.94	94.30	5.84	94.34	4.85	94.63	5.23	94.37	N/A	N/A
August 23, 1994	6.06/5.98	N/A	6.44	93.80	6.38	93.80	5.47	94.01	5.70	93.90	N/A	N/A
November 29, 1994	5.98	94.02	5.82	94.42	5.76	94.42	4.76	94.72	5.12	94.48	N/A	N/A
February 15, 1995	4.93	95.07	5.68	95.56	5.60	95.58	NM	NM	NM	NM	N/A	N/A
May 18, 1995	4.99	95.01	NM	NM	NM	NM	NM	NM	NM	NM	N/A	N/A
August 16, 1995	6.46	93.54	6.19	94.05	6.11	94.07	5.16	94.32	5.47	94.13	N/A	N/A
November 16, 1995	5.21	94.79	NM	NM	NM	NM	NM	NM	NM	NM	N/A	N/A

B)	EI Job No. 88						Leandro, Ca	lifornia			
RW-1* TOC Elevation 100.00*				TOC Eleva	tion 100.22a	MW-4 TOC Elevation 99.48* TOC Elevation 99.46*		MW-5 TOC Elevation 99.60°		RW-2 Not Surveyed	
Depth to Water/Free Product	Water Surface Elevation	Depth to Water	Water Surface Elevation	Depth to Water	Water Surface Elevation	Depth to Water	Water Surface Elevation	Depth to Water	Water Surface Elevation	Depth to Water/Free Product	Water Surface Elevation
4.68	95.32	5.62	94.62	5.48	94.70	4.40	95.08	4.90	94.70	N/A	N/A
6.05/5.70	N/A	6.22	94.02	6.16	94.02	5.27	94.19	5.50	94.10	6.02/5.71	N/A
4.40	95.60	5.5	94.74	5.36	94.82	4.26	95.2	4.80	94.80	4.41	N/A
	RW-TOC Elevati Depth to Water/Free Product 4.68 6.05/5.70	RW-1* TOC Elevation 100.00* Depth to Water Water/Free Surface Product Elevation 4.68 95.32 6.05/5.70 N/A	RW-1* MN TOC Elevation 100.00* TOC E 100	RW-1* MW-2 TOC Elevation 100.00* Depth to Water Water/Free Product Elevation Elevation 4.68 95.32 5.62 94.62 6.05/5.70 N/A 6.22 94.02	RW-1* MW-2 TOC Elevation 100.00* ToC Elevation 100.24* ToC Elevation ToC Elevation Elevation Elevation 4.68 95.32 5.62 94.62 5.48 6.05/5.70 N/A 6.22 94.02 6.16	RW-1*	RW-1*	RW-1*	RW-1*	RW-1*	RW-1*

Notes: TOC Top of casing

a

b =

c =

Based on an arbitrary datum
Resurveyed elevation, May 11, 1994
Not measured due to equipment malfunction
TOC mark lost; Resurveyed elevation, August 16, 1996 d =

N/A Not applicable NM Not measured =

Formerly designated as well MW-1 * =

Table II, Summary of Groundwater Sample Analytical Results Benzene, Toluene, Ethylbenzene, and Total Xylenes, Modified EPA Method 8020 (ng/L) BEI Job No. 88288.001, G.L. Trucking Facility, 1750 Adams Avenue, San Leandro, California								
Date Sampled	RW-1*	MW-2	MW-3	MW-4	MW-5	RW-2		
November 15, 1988 to May 21, 1993		N	ot Analyzed					
August 17, 1993	0.13 feet free product	<0.5	<0.5	<0.5	<0.5	N/A		
December 13, 1993	heavy product sheen	<0.5	<0.5	<0.5	<0.5	N/A		
February 24, 1994	heavy product sheen	<0.5	<0.5	<0.5	<0.5	N/A		
May 11, 1994	heavy product sheen	<0.5	<0.5	<0.5	<0.5	N/A		
August 23, 1994	0.08 feet free product	<0.5	0.6ª	<0.5	<0.5	N/A		
November 29, 1994	heavy product sheen	<0.5	<0.5	NA	NA	N/A		
February 15, 1995	heavy product sheen	1.2*	ND	NA	NA	N/A		
August 16, 1995	heavy product sheen	<0.5	<0.5	NA	NA	N/A		
February 15, 1996	heavy product sheen	<0.5	<0.5	NA	NA	N/A		
August 5, 1996	0.35 feet free product	<0.5	<0.5	NA	NA	NA		
February 6, 1997	light sheen	<0.5	<0.5	NA	NA	NA		

Notes: $\mu g/L$ = Micrograms per liter

< x = Detected concentration less than respective detection limit of x.

a = Detected concentration of toluene.

N/A = Not applicable NA = Not analyzed

ND = None of analytes detected above the detection limit; see individual laboratory report for

respective detection limits.

* = Formerly designated as well MW-1

Table III, Summary of Groundwater Sample Analytical Results TPH as Diesel, Modified EPA Method 8015 (mg/L) BEI Job No. 88288.001, G.L. Trucking Facility, 1750 Adams Avenue, San Leandro, California

Date Sampled	RW-1*	MW-2	MW-3	MW-4	MW-5	RW-2
November 15, 1988	0.22 feet free product	<0.20	<0.20	<0.20	<0.20	N/A
February 16, 1989	0.20 feet free product	<0.09	<0.09	<0.09	<0.09	N/A
May 19, 1989	0.20 feet free product	<0.08	<0.08	<0.08	<0.08	N/A
August 22, 1989	0.18 feet free product	<0.03	<0.03	<0.03	<0.03	N/A
November 21, 1989	product sheen	<0.03	<0.03	<0.03	<0.03	N/A
February 23, 1990	product sheen	< 0.05	0.34	<0.05	<0.05	N/A
May 23, 1990	0.15 feet free product	<0.05	0.64	< 0.05	<0.05	N/A
August 27, 1990	product sheen	< 0.05	0.41	<0.05	<0.05	N/A
December 3, 1990	product sheen	< 0.05	<0.05	< 0.05	<0.05	N/A
March 13, 1991	product sheen	<0.05	1.3	<0.05	<0.05	N/A
May 29, 1991	product sheen	< 0.05	0.54	<0.05	<0.05	N/A
August 28, 1991	0.09 feet free product	< 0.05	0.24	<0.05	<0.05	N/A
December 9, 1991	0.20 feet free product	<0.05	0.20	<0.05	<0.05	N/A
February 18, 1992	0.09 feet free product	<0.05	0.89	<0.05	<0.05	N/A
May 15, 1992	0.17 feet free product	< 0.05	0.38	<0.05	<0.05	N/A
August 13, 1992	0.19 feet free product	< 0.05	0.20	< 0.05	<0.05	N/A
December 3, 1992	0.10 feet free product	< 0.05	<0.05	<0.05	<0.05	N/A
March 25, 1993	product sheen	< 0.05	1.6	<0.05	< 0.05	N/A
May 21, 1993	0.09 feet free product	< 0.05	0.72	<0.05	<0.05	N/A
August 17, 1993	0.13 feet free product	<0.05	0.48	< 0.05	<0.05	N/A
December 13, 1993	heavy product sheen	<0.05	0.19	<0.05	<0.05	N/A
February 24, 1994	heavy product sheen	<0.05	0.38	<0.05	<0.05	N/A
May 11, 1994	heavy product sheen	<0.05	0.58	< 0.05	< 0.05	N/A
August 23, 1994	0.08 feet free product	<0.05	0.45°	<0.05	<0.05	N/A
November 29, 1994	heavy product sheen	0.09	0.96ª	NA	NA	N/A
February 15, 1995	heavy product sheen	0.1°	1.7ª	NA	NA	N/A
August 16, 1995 ^b	heavy product sheen	0.063°	1.1°	NA	NA	N/A
February 15, 1996	heavy product sheen	0.079	1.3	NA	NA	N/A
August 5, 1996	0.35 feet free product	0.10 ^d	1.0 ^d	NA	NA	NA
February 6, 1997	light sheen	0.14 ^d	2.4 ^d	NA	NA	NA

Table III, Summary of Groundwater Sample Analytical Results, continued

Notes: TPH Total Petroleum Hydrocarbons mg/L Milligrams per liter = Detected concentration less than respective detection limit of x. <x = NA Not analyzed = N/A Not applicable = Laboratory reports that positive result appears to be due to the presence of a heavier a = hydrocarbon than diesel. b Beginning this sampling event results are converted to mg/L, originally reported in µg/L. = Laboratory reports that an unidentified hydrocarbon, heavier than the diesel standard, was С = present between the carbon range of C9 to C24. Laboratory reports a hydrocarbon heavier than the diesel standard was present, and that d = the method blank contained 0.05 mg/L TPH as diesel. Formerly designated as well MW-1 =

Date Sampled Date Sampled Modified EPA Method 8015 TPH as gasoline (mg/L) TPH as motor oil* (mg/L) Modified EPA (mg/L) Method 8015 TPH as gasoline (mg/L) Method 8015 TPH as motor oil* (mg/L) Method 8015 Method 8015 TPH as motor oil* (mg/L) Method 8015 Method 8015 TPH as motor oil* (mg/L) Method 8015 Method 8015			e IV, Summary Gasoline, TPH a 1.001, G.I. Truck	s Motor Oil, Ti	RPH, HVOCs.	SVOCs, and N	fetals	
to August 23, 1994 November 29, 1994* NA		Date Sampled	Method 8015 TPH as gasoline	Method 8015 TPH as motor oil*	418.1 TRPH	601 HVOCs	8270 SVOCs	Methods 6010 and 7421 Metals ^b
February 15, 1995	RW-1**		NA	NA	NA	NA	NA	NA
MW-2 January 15, 1988 to August 23, 1994 NA		November 29, 1994 ^e	NA	NA	NA	NA	NA	NA
MW-2 January 15, 1988 to August 23, 1994 NA ND ND ND ^d February 15, 1995 <0.05		February 15, 1995°	NA	NA	NA	NA	NA	NA
November 29, 1994 <0.05 NA		August 16, 1995°	NA	NA	NA	NA	NA	NA
November 29, 1994 <0.05 NA								
February 15, 1995 <0.05 <0.5 <5.0 ND ND 0.002 Pb*	MW-2		NA	NA	NA	NA	NA	NA
August 16, 1995 ^t NA		November 29, 1994	<0.05	NA	NA	ND	ND	ND ⁴
MW-3 January 15, 1988 to August 23, 1994 NA		February 15, 1995	<0.05	<0.5	<5.0	ND	ND	0.002 Pb°
to August 23, 1994 November 29, 1994		August 16, 1995 ^t	NA	NA	NA	NA	NA	NA
to August 23, 1994 November 29, 1994								
February 15, 1995 <0.05 <0.5 <5.0 ND ND 0.004 Pb* 0.16 Zn*	MW-3		NA	NA	NA	NA	NA	NA
0.16 Zn*		November 29, 1994	<0.05	NA	NA	ND	ND	ND⁴
August 16, 1995 NA NA NA NA NA		February 15, 1995	<0.05	<0.5	<5.0	ND	ND	
		August 16, 1995	NA	NA	NA	NA	NA	NA

Mataa	

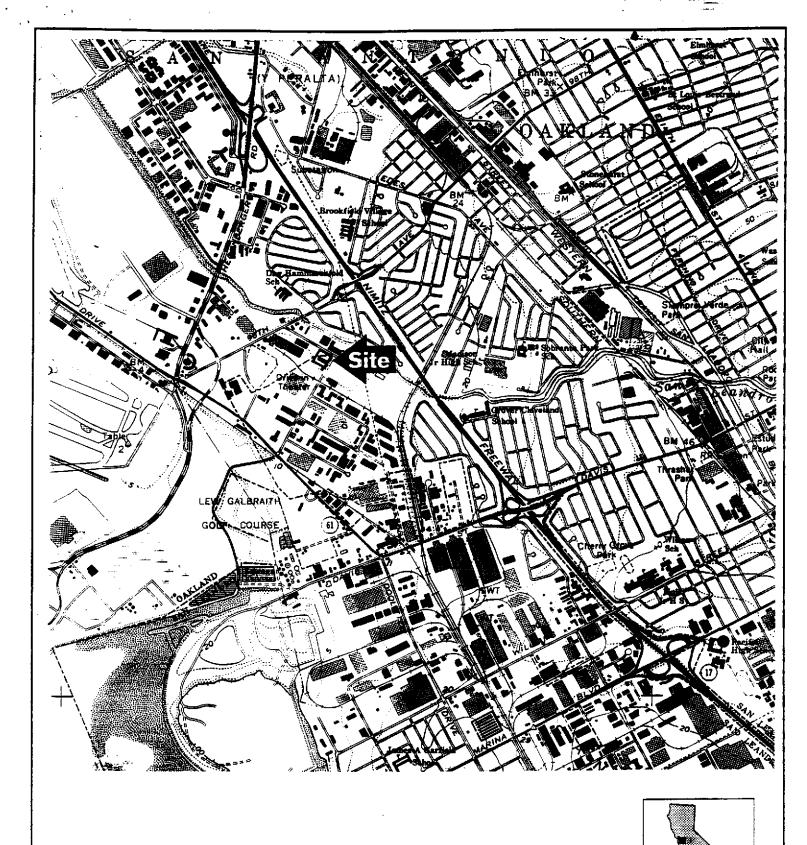
*	=	Groundwater samples from monitoring wells MW-4 and MW-5 were not collected for analysis
TPH	=	Total Petroleum Hydrocarbons
HVOCs	: =	Halogenated Volatile Organic Compounds
SVOCs	= .	Semi-volatile Organic Compounds
mg/L	=	Milligrams per liter
μg/L	=	Micrograms per liter
a	=	TPH as motor oil analysis performed First Quarter 1995 only to provide additional groundwater chemistry
		data.
b	=	Metals analytical test includes: cadmium (Cd), chromium (Cr), lead (Pb), nickel (Ni), zinc (Zn).
c	=	Not analyzed due to presence of free product or product sheen in monitoring well.
d	=	Groundwater sample filtered and preserved before submittal to laboratory.
e	=	Detected analyte(s) and concentration(s) listed; see individual laboratory report for respective detection
		limit(s).
f	=	Analysis of groundwater samples for TPH as gasoline, TRPH, HVOCs, SVOCs, and metals was
		discontinued beginning this monitoring event.
NA	=	Not analyzed
ND	=	None of analytes detected above the detection limit; see individual laboratory report for respective
		detection limits.

Formerly designated as well MW-1

	Jeasurements, Recovery Well RW-1 1750 Adams Avenue, San Leandro, California
Date Recovered	Volume Recovered (gallons)
November 1988 to October 1993	No recovery performed
November 1993	0.125
December 1993	0.25
January 1994	0.05
February 1994	<0.05
March 1994	<0.05
April 1994	<0.05
May 1994	<0.05
June 1994	<0.025
July 1994	<0.025
August 1994	0.1
November 1994	0.1
February 1995	<0.025
May 1995	<0.025
August 1995	No measurable product to recover
November 1995	0.25
February 1996	No measurable product to recover
June 1996	1.1
July 1996 ^b	3.75
August 1996	121
September 1996	30
October 1996	23
November 1996	Soak-eze* installed/trace in passive skimmer
December 1996	Soak-eze® installed/trace in passive skimmer
January 1997	Soak-eze [®] installed/0.1 gallon in passive skimmer
February 1 to 6, 1997	Soak-eze® installed/trace in passive skimmer
Cumulative Volume Recovered (approximate)	177.85

Notes: a = Frequency of recovery activities decreased from monthly to quarterly after this recovery event.

b = Frequency of recovery activities increased after this recovery event.



UNITED STATES GEOLOGICAL SURVEY 7.5' QUAD. "SAN LEANDRO, CA". ED. 1959, PHOTOREVISED 1980.

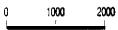
QUADRANGLE LOCATION

BLYMYER ENGINEERS, INC.

BEI JOB NO. 88**288**

DATE

9/19/95



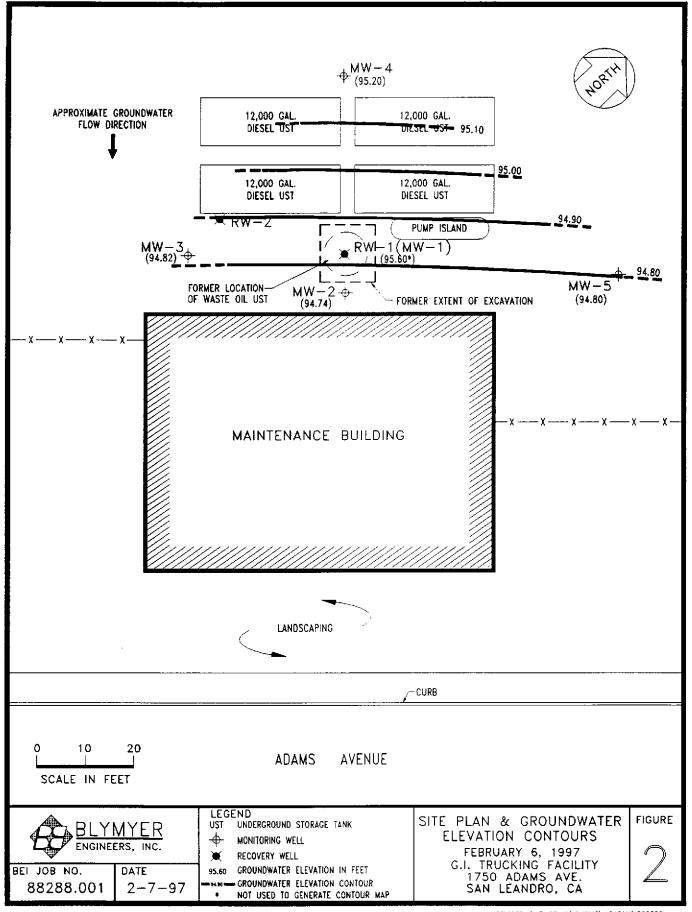
SCALE IN FEET



SITE LOCATION MAP

G.I. TRUCKING FACILITY 1750 ADAMS AVE. SAN LEANDRO, CA

FIGURE



Attachment A

Well Purging and Sampling Data Sheets dated February 6, 1997

Date	2/6/97	Project Number	88288.1	Project Name	G.I. Trucking
Well Number	RW-1	Boring Diameter	N/A	Casing Diameter	12*

Column of Liquid in Well	Volume to be Remo	ved
Depth to product N/A	Gallons per foot of casing	= N/A
Depth to water 4.40 ft.	Column of water	× N/A
Total depth of well N/A	Volume of casing	= N/A
Column of water N/A	No. of volumes to remove	× 0
	Total volume to remove	= 0

Method of measuring liquid	Oil/water interface probe
Method of purging well	N/A
Method of decontamination	Liqui-nox and distilled water

		Physical appearance of water (clarity, color, particulates, odor)	
Initlal	N/A		
During			
Finai			*

Field Analysis	Initial	Du	ring	Final	
Time	-	-	-	_	
Temperature (*F)	-	-	-	-	
Conductivity (μ/cm)	-	-	-	-	
На	-	-	-	-	
Method of measurement N/A	1				
Total volume purged 0					
Comments Gauged for depth to water and presence of free product only. Not purged or sampled.					

Sample Number	Amount of Sample
N/A	-
<i>n</i> ,	

Signed/Sampler	Stent WML	Date	2/6/97	
Signed/Reviewer	Maken	Date	2/7/97	
		-		

Date	2/6/97	Project Number	88288.1	Project Name	G.I. Trucking
Well Number	RW-2	Boring Diameter	N/A	Casing Dlameter	4"

Column of tiquid in Well	Valume to be Remov	/ed
Depth to product N/A	Gallons per foot of casing	= N/A
Depth to water 4.41 ft.	Column of water	x N/A
Total depth of well N/A	Volume of casing	= N/A
Column of water N/A	No. of volumes to remove	x 0
	Tatal volume to remove	= 0

Method of measuring liquid	Oil/water interface probe
Method of purging well	N/A
Method of decontamination	Liqui-nox and distilled water

		Physical appearance of water (clarity, color, particulates, odor)	
Initial	N/A		
During			
Final			

Field Analysis	Initial	Di	uring	Final	
Time	-	-	-	-	
Temperature (°F)	-	-	-	-	
Conductivity (µ/cm)	-	-	-	_	
На	<u>-</u>	-	-	-	
Method of measurement N	/A				
Total volume purged 0					
Comments Gauged for de	epth to water and pr	esence of free pro	oduct only. Not pur	ged or sampled.	

Sample Number	Amount of Sample
N/A	-

Signed/Sampler	Style Whe	Date 2/6/47	
Signed/Reviewer	Males 15	Date 2/7/9-7	

Date	2/6/97	Project Number	88288.1	Project Name	G.I. Trucking
Well Number	MW-2	Boring Diameter	N/A	Casing Diameter	2"

Column of Liquid in Well	Volume to be Re	Volume to be Removed		
Depth to product N/A	Gallons per foot of casing = 0.17			
Depth to water 5.50 ft.	Column of water	x 17.75 ft.		
Total depth of well 23.25 ft.	Volume of casing	= 3.02 gal.		
Column of water 17.75 ft.	No. of volumes to remove	x 3		
	Totat volume to remove	= 9.06 gai.		

Method of measuring liquid	Oil/water interface probe	
Method of purging well	Disposable polyethylene bailer	
Method of decontamination	Liqui-nox and distilled water	

	Physical appearance of water (clarity, color, particulates, odor)
initial	Clear, no odor
During	Slightly silty, tan color, no odor
Final	Slightly silty, tan color, no odor

Field Analysis	Initial	Du	ring	Final	
Time	11:22	11:29	11:36	11:43	
Temperature (°F)	61.0	64.0	63.1	63.6	
Conductivity (µ/cm)	749	766	761	767	
На	7.67	7.56	7.58	7.57	
Method of measurement	Hydac meter				
Total volume purged	9.75 gal.				
Comments	Sampled with disposable polyethylene bailer				

Sample Number	Amount of Sample
MW-2	3-40ml VOAs w/ HCI
	2-1L amber bottles

Signed/Sampler	Stept WM un	Date	2/6/97	
Signed/Reviewer	Make 134	Date	2/1/97	

Date	2/6/97	Project Number	88288.1	Project Name	G.I. Trucking
Well Number	MW-3	Boring Diameter	N/A	Casing Diameter	2"

Column of Liquid in Well	Volume to be Re	moved
Depth to product N/A	Gallons per foot of casing	= 0.17 gal/ft.
Depth to water 5.36 ft.	Column of water	x 17.39 ft.
Total depth of well 22.75 ft.	Volume of casing	= 2.96 gal.
Column of water 17.39 ft.	No, of volumes to remove	x 3
	Total volume to remove	= 8.88 gai.

Method of measuring liquid	Oil/water interface probe			
Method of purging well	Disposable polyethylene bailer			
Method of decontamination	Liqui-nox and distilled water			

	Physical appearance of water (clarity, color, particulates, odor)
Initial	Clear, no odor
During	Slightly sitty, tan color, no odor
Final	Silty, tan color, no odor

Field Analysis	Initial	Du	Final				
Time	12:17	12:23	12:29	12:36			
Temperature (°F)	63.4	62.9	63.3	63.6			
Conductivity (µ/cm)	752	759	838	880			
На	7.39	7.41	7.37	7.48			
Method of measurement	Method of measurement Hydac meter						
Total volume purged	9.0 gal.						
Comments	Sampled with disposable polyethylene bailer						

Sample Number	Amount of Sample
MW-3	3-40ml VOAs w/ HCl
	2-1£ amber bottles
4.4	

Signed/Sampler	Alenh W Mla	Date 2/6/97	
Signed/Reviewer	Maker	Date 2/7/97	

Date	2/6/97	Project Number	88288.1	Project Name	G.I. Trucking
Well Number	MW-4	Boring Diameter	N/A	Casing Dlameter	2"

Volume to be Remov	/ed
Gallons per foot of casing	= N/A
Column of water	× N/A
Volume of casing	= N/A
No. of volumes to remove	x 0
Total volume to remove	= 0
	Gallons per foot of casing Column of water Volume of casing No. of volumes to remove

Method of measuring liquid	Oil/water interface probe
Method of purging well	N/A
Method of decontamination	Liqui-nox and distilled water

Physical appearance of water (clarity, color, particulates, odor)						
Initial	N/A					
During						
Final						

Field Analysis	Initial		Final	
Time	-	-	•	-
Temperature (°F)	-	-	-	-
Conductivity (µ/cm)	-		-	-
рН		_	-	-
Method of measurement N/A	A			
Total volume purged 0				
Comments Gauged for de	pth to water and pr	esence of free pr	oduct only. Not pur	ged or sampled.

Sample Number	Amount of Sample
N/A	-

Signed/Sampler	S	M	WMhr	Date	21	6	97
Signed/Reviewer	\mathcal{M}	akely		Date	2/	7/9°7	7
	7	1	7			-	

Date	2/6/97	Project Number	88288.1	Project Name	G.I. Trucking
Well Number	MW-5	Boring Diameter	N/A	Casing Diameter	2"

Column of Liquid in Well	Volume to be Remov	/ed
Depth to product N/A	Gallons per foot of casing	= N/A
Depth to water 4.80 ft.	Column of water	x N/A
Total depth of well N/A	Volume of casing	= N/A
Column of water N/A	No. of volumes to remove	× 0
	Total volume to remove	= 0

Method of measuring liquid	Oil/water interface probe
Method of purging well	N/A
Method of decontamination	Liqui-nox and distilled water

		Physical appearance of water (clarity, color, particulates, odor)	
Initial	N/A		
During			
Final			

Field Analysis	Initial		Final						
Time	_	_	-						
Temperature (°F)	-	-	-	-					
Conductivity (µ/cm)	-	-	-	_					
рH	-	-	-	-					
Method of measurement N/A				· · · · · · · · · · · · · · · · · · ·					
Total volume purged 0									
Comments Gauged for depth to water and presence of free product only. Not purged or sampled.									

Sample Number	Amount of Sample
N/A	-
4	

Signed/Sampler	tenta Mhu	Date	2/8/97	
Signed/Reviewer $$	12 July 2	Date	2/7/97	
			• /	

Attachment B

Laboratory Analytical Report, LEGEND Analytical Services dated February 13, 1997

LEGEND

Analytical Services

3636 N. Laughlin Road, Suite 110 Santa Rosa, California 95403 707.541.2313 707.541.2333 fax

Mark Detterman Blymyer Engineers, Inc 1829 Clement Ave Alameda, CA 94501 Date: 02/13/1997

LEGEND Client Acct. No: 49500

LEGEND Job No: 97.00282 Received: 02/07/1997



Client Reference Information

GI Trucking/Job No. 88288.1

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety. Please refer to the enclosed "Key to Result Flags" for definition of terms. Should you have questions regarding procedures or results, please feel free to call me at (707) 541-2313.

Submitted by:

Quality Assurance Officer

Enclosure(s)

Client Name: Blymyer Engineers, Inc Date: 02/13

LEGEND Job No: 97.00282

Date: 02/13/1997

Page: 2

Ref: GI Trucking/Job No. 88288.1

SAMPLE DESCRIPTION: MW-2

Date Taken: 02/06/1997 Time Taken: 12:00 LEGEND Sample No: 272163

LEGEND Sample No: 272163		1	Reporting	ſ		Date	Date	Run Batch
Parameter	Results	Flags	Limit	Units	Method	Extracted	Analyzed	No.
8020 (GC, Liquid)								
DILUTION FACTOR*	1						02/07/1997	3799
Benzene	NĐ		0.50	ug/L	8020		02/07/1997	3799
Toluene	ND		0.50	u g/L	8020		02/07/1997	3799
Ethylbenzene	ND		0.50	ug/L	8020		02/07/1997	3799
Xylenes (Total)	ND		0.50	ug/L	8020		02/07/1997	3799
SURROGATE RESULTS							02/07/1997	3799
Bromofluorobenzene (SURR)	102			% Rec.	8020		02/07/199 7	3799
M8015 (EXT., Liquid)						02/11/1997		
DILUTION FACTOR*	1						02/12/1997	1300
as Diesel	0.14	DH.B-O	0.050	mg/L	3510		02/12/1997	1300
SURROGATE RESULTS							02/12/1997	1300
Ortho-terphenyl (SURR)	101			% Rec.	3510		02/12/1997	1300

Client Name: Blymyer Engineers, Inc Date: 02/13 Date: 02/13/1997

Page: 3

LEGEND Job No: 97.00282

Ref: GI Trucking/Job No. 88288.1

SAMPLE DESCRIPTION: MW-3

Date Taken: 02/06/1997 Time Taken: 13:05

LEGEND Sample No: 272164								Run
		1	Reporting	•		Date	Date	Batch
Parameter	Results	Flags	Limit	Units	Method	Extracted	Analyzed	No.
8020 (GC, Liquid)								
DILUTION FACTOR*	1						02/07/1997	3799
Benzene	ND		0.50	ug/L	8020		02/07/1997	3799
Toluene	NĎ		0.50	ug/L	8020		02/07/1997	3799
Ethylbenzene	ND		0.50	ug/L	8020		02/07/1997	3799
Xylenes (Total)	ND		0.50	ug/L	8020		02/07/1997	3799
SURROGATE RESULTS							02/07/1997	3799
Bromofluorobenzene (SURR)	100			% Rec.	8020		02/07/1997	3799
M8015 (EXT., Liquid)						02/11/1997		
DILUTION FACTOR*	1						02/12/1997	1300
as Diesel	2.4	DH,B-O	0.050	mg/L	3510		02/12/1997	1300
SURROGATE RESULTS							02/12/1997	1300
Ortho-terphenyl (SURR)	127			% Rec.	3510		02/12/1997	1300

 Client Name:
 Blymyer Engineers, Inc
 Date:
 02/13/1997

 Client Acct:
 49500
 ELAP Cert:
 2193

 LEGEND Job No:
 97.00282
 Page:
 4

Ref: GI Trucking/Job No. 88288.1

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV Standard % Recovery	CCV Standard Amount Found	CCV Standard Amount Expected	Flags	Unit <u>s</u>	Date Analyzed	Analyst Initials	Run Batch Number
8020 (GC, Liquid)								
Benzene	111.9	22.37	20.0		ug/L	02/07/1997	¢jy	3799
Toluene	99.2	19.83	20.0		ug/L	02/07/1997	¢ју	3799
Ethylbenzene	95.0	19.00	20.0		ug/L	02/07/1997	сју	3799
Xylenes (Total)	94.6	56.74	60.0		ug/L	02/07/1997	сју	3799
Bromofluorobenzene (SURR)	108.0	108	100		% Rec.	02/07/1997	cjy	3799
M8015 (EXT., Liquid)					-	/ /- 000		1300
as Diesel	106.6	1066	1000		mg/L	02/12/1997		
Ortho-terphenyl (SURR)	105.0	105	100		% Rec.	02/12/1997	van	1300

Client Name: Blymyer Engineers, Inc

Client Acct: 49500 LEGEND Job No: 97.00282 Date: 02/13/1997

ELAP Cert: 2193 Page: 5

Ref: GI Trucking/Job No. 88288.1

METHOD BLANK REPORT

Parameter	Method Blank Amount Found	Reporting Limit	Flags	Units	Date Analyzed	Analyst Initials	Run Batch Number
8020 (GC, Liquid)							
Benzene	ND	0.50		ug/L	02/07/1997	сју	3799
Toluene	ND	0.50		ug/L	02/07/1997	Сjу	3799
Ethylbenzene	ND	0.50		ug/L	02/07/1997	сју	3799
•	ND	0.50		ug/L	02/07/1997	сју	3799
Xylenes (Total) Bromofluorobenzene (SURR)	107			% Rec.	02/07/1997	cjy	3799
M8015 (EXT., Liquid)							1300
as Diesel	0.05	0.050		mg/L	02/12/1997	vah	
Ortho-terphenyl (SURR)	114			% Rec.	02/12/1997	vah	1300

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

 Client Name:
 Blymyer Engineers, Inc
 Date:
 02/13/

 Client Acct:
 49500
 ELAP Cert:
 2193

 LEGEND Job No:
 97.00282
 Page:
 6

Date: 02/13/1997

Ref: GI Trucking/Job No. 88288.1

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matríx Spike % Rec.	Matrix Spike Dup % Rec.	RPD	Spike Amount	Sample Conc.	Matrix Spike	Dup.	Flags	Units_	Date Ana <u>ly</u> zed	Run Batch	Sample Spiked
												272144
8020 (GC, Liquid)				4 75	1.1	16.28	15.96		ug/L	02/07/1997	3799	272144
Benzene	111.2	104.4	6.3	4.75	11	10.20			•		2020	272144
Toluene	100.7	99.0	1.6	38.59	1.6	40.47	39.82		ug/L	02/07/1997	3799	
Bromofluorobenzene (SURR)	111.0	110.0	0.9	100	100	111	110		% Rec.	02/07/1997	3799	272144
	111.0	220.0	•									272163
MB015 (EXT., Liquid)								^		00 (10 (1007	1300	272163
as Diesel	106.3	101.0	5.1	1.92	0.14	2.18	2.08	DH,B-O	mg/r	02/12/1997	1200	
Ortho-terphenyl (SURR)	115.0	111.0	3.5	100	101	115	111		% Rec.	02/12/1997	1300	272163

Client Name: Blymyer Engineers, Inc

Client Acct: 49500 LEGEND Job No: 97.00282 Date: 02/13/1997

ELAP Cert: 2193 Page: 7

Ref: GI Trucking/Job No. 88288.1

LABORATORY CONTROL SAMPLE REPORT

Parameter	LCS % Rec.	DUP LCS % Rec.	RPD	LCS Amount Found	DUP LCS Amount Found	LCS Amount Exp.	Flags_	Units	Date Analyzed	Analyst Initials	Run Batch
M8015 (EXT., Liquid) as Diesel Ortho-terphenyl (SURR)	95.0 108.0			0.95 108		1.00		mg/L % Rec.	02/12/1997 02/12/1997	vah vah	1300 1300

KEY TO RESULT FLAGS

```
: RPD between sample duplicates exceeds 30%.
     : RPD between sample duplicates or MS/MSD exceeds 20%.
*M
     : Correlation coefficient for the Method of Standard Additions is less than 0.995.
     : Sample result is less than reported value.
B-I : Value is between Method Detection Limit and Reporting Limit.
    : Analyte found in blank and sample.
    : The result confirmed by secondary column or GC/MS analysis.
C
    : Cr+6 not analyzed; Total Chromium concentration below Cr+6 regulatory level.
CNA
COMP : Sample composited by equal volume prior to analysis.
     : Parameter cannot be analyzed for in a preserved sample.
    : Due to the sample matrix, constant weight could not be achieved.
CWT
     : The result has an atypical pattern for Diesel analysis.
D-
     : The result for Diesel is an unknown hydrocarbon which consists of a single peak.
D1
     : ND for hydrocarbons, non-discrete baseline rise detected.
DB
    : The result appears to be a heavier hydrocarbon than Diesel.
DH
    : The result appears to be a lighter hydrocarbon than Diesel.
DL
    : Elevated Reporting Limit due to Matrix.
    : Surrogate diluted out of range.
    : The result for Diesel is an unknown hydrocarbon which consists of several peaks.
    : Compound quantitated at a 2X dilution factor.
FA
     : Compound quantitated at a 5X dilution factor.
FΒ
     : Compound quantitated at a 10% dilution factor.
FC
     : Compound quantitated at a 20% dilution factor.
FD
     : Compound quantitated at a 50% dilution factor.
FĖ
     : Compound quantitated at a 100% dilution factor.
\mathbf{F}\mathbf{F}
     : Compound quantitated at a 200% dilution factor.
FG
     : Compound quantitated at a 500X dilution factor.
FH
     : Compound quantitated at a 1000X dilution factor.
FI
     : Compound quantitated at a greater than 1000x dilution factor.
FJ
     : Compound quantitated at a 25% dilution factor.
FΚ
     : Compound quantitated at a 250% dilution factor.
     : The result has an atypical pattern for Gasoline.
G-
     : The result for Gasoline is an unknown hydrocarbon which consists of a single peak.
G1
     : The result appears to be a heavier hydrocarbon than Gasoline.
GH
     : The result appears to be a lighter hydrocarbon than Gasoline.
GL
     : The result for Gasoline is an unknown hydrocarbon which consists of several peaks.
GΧ
     : Analysis performed outside of the method specified holding time.
{\tt HT}
     : Confirmation analyzed outside of the method specified holding time.
HTC
     : Prep procedure performed outside of the method specified holding time.
HTP
     : Received after holding time expired, analyzed ASAP after receipt.
HTR
     : Peaks detected within the quantitation range do not match standard used.
НX
J
     ; Value is estimated.
     : Matrix Interference Suspected.
ΜI
    : Value determined by Method of Standard Additions.
MSA* : Value obtained by Method of Standard Additions; Correlation coefficient is <0.995.
NII : Sample spikes outside of QC limits; matrix interference suspected.
     : Sample concentration is greater than 4X the spiked value; the spiked value is
NI2
       considered insignificant.
     : Matrix Spike values exceed established QC limits, post digestion spike is in
NI3
       control.
    : MS/MSD outside of control limits, serial dilution within control.
NI4
      : There is >40% difference between primary and confirmation analysis.
 Р
      : pH of sample > 2; sample analyzed past 7 days.
 P7
     : Refer to subcontract laboratory report for QC data.
      : Matrix interference confirmed by repeat analysis.
 S2
    : Thiocyanate not analyzed separately; total value is below the Reporting Limit for
 SCN
        Free Cyanide.
     : Conc. of the total analyte ND; therefore this analyte is ND also.
 TND
 UMDL : Undetected at the Method Detection Limit.
 UTD : Unable to perform requested analysis.
 FORM, FLAGS
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Rev. 01/24/97

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