

TANK PROTECT ENGINEERING

2821 Whipple Road Union City, CA 94587-1233 (510) 429-8088 • (800) 523-8088 FAX (510) 429-8089

September 30, 1994

Mr. Manuel Rodrigues 1662 Clearview Drive San Leandro, CA 94577

Re: Third Quarter Report, 1994, 1009 89th Avenue, Oakland, CA 94621

Dear Mr. Rodrigues:

Tank Protect Engineering of Northern California, Inc. (TPE) is pleased to submit this quarterly letter report of environmental services conducted at the subject site.

BACKGROUND

Work conducted at the site prior to the second quarter, 1994, has been summarized by TPE in a September 21, 1992 <u>TANK CLOSURE REPORT AND WORKPLAN FOR OVEREXCAVATION OF CONTAMINATED SOIL AND INSTALLATION OF GROUNDWATER MONITORING WELLS</u> and a March 2, 1994 <u>PRELIMINARY SITE ASSESSMENT REPORT OF EXCAVATION OF CONTAMINATED SOIL AND INSTALLATION OF GROUNDWATER MONITORING WELLS</u>.

Work performed by TPE during second quarter, 1994:

June 10, 1994 - Collected groundwater samples from wells MW-1 and MW-2 for chemical analysis for total petroleum hydrocarbons as gasoline (TPHG) and for benzene, toluene, ethylbenzene, and xylenes (BTEX). Additionally, analyzed 1 trip blank sample for TPHG and BTEX.

June 13, 1994 - Measured depth-to-groundwater from top of casing (TOC) in wells MW-1 and MW-2, and in Fiesta Beverages wells MW-1, MW-2, and MW-3 for evaluation of groundwater flow direction and gradient.

WORK PERFORMED BY TPE DURING THIRD QUARTER, 1994:

- July 14, 1994 Submitted to the client a <u>SECOND QUARTER</u> REPORT, 1994, 1009 89TH AVENUE, OAKLAND, CA 94621.
- September 7, 1994 A Professional Land Surveyor surveyed the elevation of the TOC of the onsite irrigation well for the purpose of using the well to evaluate groundwater flow direction and gradient beneath the site.
- September 8, 1994 Measured depth-to-groundwater from TOC in wells MW-1, MW-2, and the onsite irrigation well for evaluation of groundwater flow direction and gradient and collected groundwater samples from wells MW-1 and MW-2 for chemical analysis for TPHG and BTEX. Additionally, analyzed 1 trip blank sample for TPHG and BTEX.

Details of the above work are presented below.

Groundwater Gradient

On September 7, 1994, a representative of TPE met at the site with a Professional Land Surveyor to survey the TOC of the onsite irrigation well. The purpose of the survey was to allow for the use of depth to groundwater in the irrigation well to evaluate groundwater flow direction and gradient by triangulation with depth to groundwater in wells MW-1 and MW-2. The shallow construction of the irrigation well suggests it is screened in the same shallow aquifer as wells MW-1 and MW-2.

Previous evaluations of groundwater flow direction and gradient were dependent on groundwater monitoring wells at Fiesta Beverages, located about 350 feet southwest of the site.

On September 8, 1994, depth-to-groundwater was measured from TOC to the nearest 0.01 foot using an electronic Solinst water level meter in wells MW-1, MW-2, and the onsite irrigation well. A minimum of 3 repetitive measurements were made for each level determination to ensure accuracy. Depth-to-groundwater was subtracted from the TOC elevation, measured relative to mean sea level (MSL), to calculate the elevation of the groundwater level in each well (see attached Table 1).

Attached Figure 1 is a groundwater gradient map constructed from the data collected on September 8, 1994. Figure 1 indicates groundwater flow direction was west-southwest with a gradient of about .0064 feet per foot. The groundwater flow direction and gradient are consistent with those determined on February 25, 1994 (see attached Table 2).

Average groundwater elevations, changes in average groundwater elevations, groundwater flow directions, and groundwater gradients are tabulated in attached Table 2.

Groundwater Sampling and Analytical Results

On September 8, 1994, groundwater samples were collected from wells MW-1 and MW-2. Before sampling, each well was purged a minimum of 3 wetted well volumes with a dedicated polyethylene bailer and until the temperature, pH, and electrical conductivity of the purged water stabilized (see attached Records of Water Sampling). Since dedicated bailers were used for each well sampled, no decontamination was necessary between sampling events. After purging was completed, the water samples were collected in laboratory supplied, preserved, clean, sterilized, 40-milliliter glass vials having Teflon-lined screw caps; and labeled to include: date, time, sample location, project number, and sampler name. The samples were immediately stored in an iced-cooler for transport to California Department of Health Services (DHS) certified Trace Analysis Laboratory, Inc. located in Hayward, California accompanied by chain-of-custody documentation. The groundwater samples (MW-1 and MW-2) and a trip blank

sample (MW-3) were analyzed for TPHG by the DHS Method and for BTEX by the Modified United States Environmental Protection Agency (EPA) Method 8020.

Wells MW-1 and MW-2 were checked for floating product using a dedicated, disposable polyethylene bailer. No odor, sheen, or floating product was observed in the wells.

Purge water is stored on site in 55-gallon steel drums labeled to show material stored, known or suspected chemical contaminant, date filled, expected removal date, company name, contact person, and telephone number.

See attached protocols for TPE's sample handling, groundwater monitoring well sampling, and quality assurance and quality control procedures.

All analytical results were nondetectable for wells MW-1 and MW-2 and the trip blank sample.

Analytical results are summarized in attached Table 3 and documented in an attached certified analytical report and chain-of-custody.

DISCUSSION AND RECOMMENDATIONS

All analytical results were nondetectable for wells MW-1 and MW-2 and the trip blank sample.

Based on a west-southwest groundwater flow direction, both wells MW-1 and MW-2 are crossgradient to the locations of the former tanks they are monitoring. Based on the new use of the onsite irrigation well for evaluating groundwater flow direction, TPE recommends continued groundwater sampling and gradient monitoring to establish a trend of groundwater quality, with respect to TPHG and BTEX, and groundwater flow direction.

Pumping of the irrigation well is not recommended to occur within 48 hours prior to sampling, since groundwater gradient and analytical results may be affected.

The next groundwater sampling event is due about December 8, 1994.

An additional copy of this report has been included for your delivery to:

Mr. Barney Chan
Alameda County Health Care Services Agency
Hazardous Materials Program
1131 Harbor Bay Parkway, Room 250
Alameda, California 94502-6577

TPE recommends that this quarterly report be submitted with a signed cover letter from Mr. Manuel Rodrigues.

If you have any questions, please call TPE at (510) 429-8088.

Sincerely,

John V. Mrakovich, Ph.D.

Sr. Registered Geologist

Jeff Farhoomand, M.S.

Civil Engineer



Expiration Date 4/30/96

TABLE 1
GROUNDWATER ELEVATION

Well Name	Date	Elevation TOC ¹ (Feet MSL ²)	Depth-to-Water From TOC	Groundwater Elevation (Feet MSL)
MW-1	02/25/94	19.33	7.77	11.56
	06/13/94		8.85	10.48
*	09/08/94		9.34	9.99
MW-2	02/25/94	19.08	7.52	11.56
	06/13/94		8.63	10.45
	09/08/94		9.06	10.02
MW-3 ³	09/08/94	18.86	8.96	9.90

¹ TOP OF CASING

² MEAN SEA LEVEL

³ ONSITE IRRIGATION WELL

TABLE 2
GROUNDWATER GRADIENT, FLOW DIRECTION,
AND ELEVATION DATA

Date	Average Groundwater Elevation (Feet MSL ¹)	Change in Average Groundwater Elevation	Groundwater Gradient	Groundwater Flow Direction
02/25/94	11.56		.0138	wsw
06/13/94	10.46	-1.10		
09/08/94	9.97	-0.49	.0064	WSW

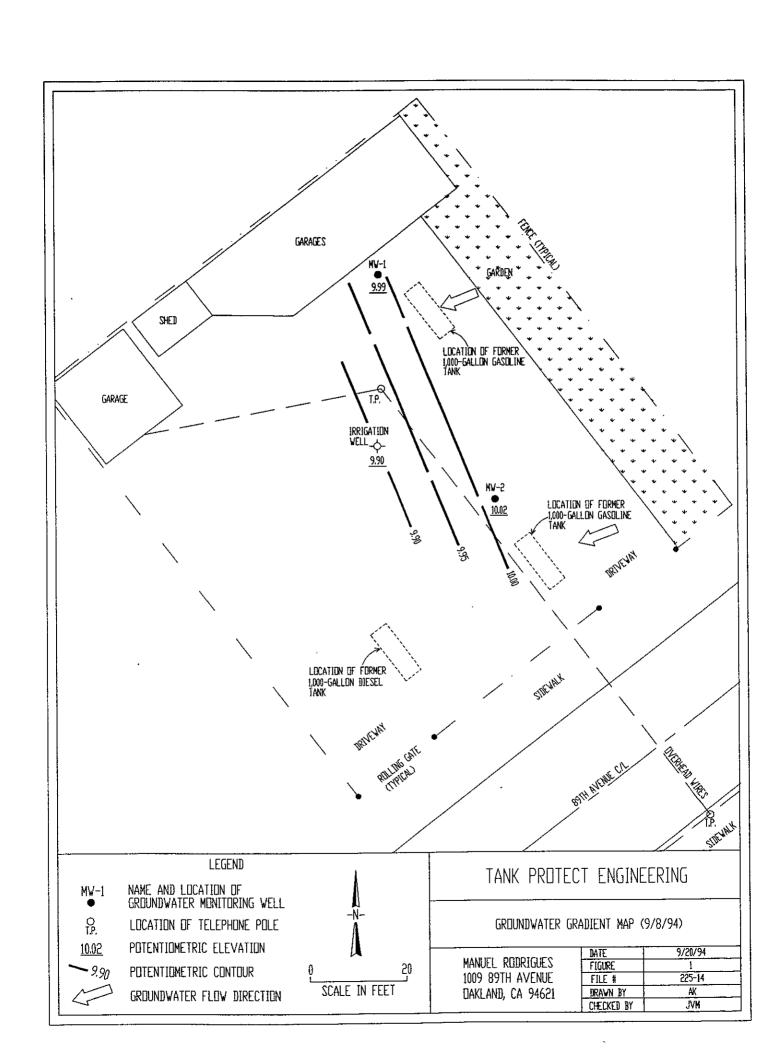
¹ MEAN SEA LEVEL

TABLE 3 SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS (ppb^{l})

Sample ID Name	Date	TPHG	Benzene	Toluene	Ethyl- benzene	Xylenes
MW-1	01/14/94	120	6.9	0.60	2.5	12
	06/10/94	<50	1.2	< 0.50	1.0	<1.5
	09/08/94	<50	< 0.50	< 0.50	< 0.50	<1.5
MW-2	01/14/94	<50	< 0.50	< 0.50	< 0.50	<1.5
	06/10/94	<50	< 0.50	< 0.50	< 0.50	<1.5
	09/08/94	<50	< 0.50	< 0.50	< 0.50	<1.5
MW-3 ²	01/14/94	<50	< 0.50	< 0.50	< 0.50	<1.5
	06/10/94	<50	< 0.50	< 0.50	< 0.50	<1.5
	09/08/94	<50	< 0.50	< 0.50	< 0.50	<1.5

¹ PARTS PER BILLION

² TRIP BLANK



RECORD OF WATER SAMPLING

PROJECT NO.:225 DATE:9-8-94	WELL NO .: Mu-		
PROJECT NAME: Manuel Rodriques	WELL DIAMETER: Z"		
PROJECT LOCATION: 1009 89th Ave.	TOC ELEV:		
SAMPLER: LNH	LOCK NO.:		
ANALYSES: TPHG & BIRL			
WELL DEPTH (from construction detail):			
WELL DEPTH (measured): 24.65 SOFT BOTTOM?: LO	1 Shed		
DEPTH TO WATER: 9,34 TIME: 1448	Sies		
PRESSURE (circle one)?: YES OR NO			
IF YES, WAS PRESSURE (circle one) POSITIVE OR NEGATIVE?	mu-)		
WATER VOLUME IN WELL: 2.3 [2-INCH CASING = 0.16 GAL/FT] [4-INCH CASING = 0.65 GAL/FT] [6-INCH CASING = 1.47 GAL/FT] [1 GAL = 3.78 L]	1452 e 896 DTW Err 21.48 RoH		
	LOCATION MAP		
CALCULATED PURGE VOL. (GAL): 6.9 (L): 26.0 ACTUAL PURGE PURGE METHOD: SAMPLE MET FIELD MEASUREMENTS	E VOL. (GAL):(L):		
Time Depth to Vol Temp pH EC Clarity Turbidity	Remarks		

Time	Depth to Water (FT)	Vol (L)	Temp (Deg. F)	pН	EC	Clarity	Turbidity (NTU)	Remarks
1510		5	74.7	7.36	8800			clear no ador
1515		10	GA.8	İ	4130			cleor
812		15	67.5	750	5990			clear
1522		20	67,0	7.43	5800		-	dear
1526		26	66.6	7.36	5780			obslight
1350	hell sam	oled					31.8	

SIGNATURE:_

WATER	VOL. IN DRUM	-Cyclic 100
NEEL	D NEW DRUM?	<i>yes</i>

RECORD OF WATER SAMPLING

PROJECT	NO.: ZZ 5	DATE:	9-8-4	<u></u>				WELL NO .: Mu-2
PROJECT	NAME: M	Zodri	CHES					WELL DIAMETER: Z
PROJECT	LOCATION:_	1009	89th Au	<u>د</u>				TOC ELEV:
SAMPLER:		4		····	 			LOCK NO.: LOS
	s:TPHO				<u> </u>			
WELL DE	PTH (from con	struction	detail):					
WELL DE	PTH (measured	D: <u>24</u>	22 sof	т вотто	ом?: <u></u>	<u>vo</u>		
DEPTH T	O WATER:	9.	OG TIN	ле: <u>/4</u>	53		Ì	1 Dailune
	E (circle one)?:			_				muz to Driveway
IF YES, W	'AS PRESSURI	E (circle	one): PO	SITIVE (OR NEGA	TIVE?		
			,					1
WATER V	OLUME IN W	VELL:_	Z.4 qc	<u>a/</u>				
[2-INCH C	CASING $= 0.10$	GAL/F	T] [4-I	NCH CA	SING = ().65 GAL/	FT]	
[6-INCH C	CASING = 1.4°	7 GAL/F	T] [1-0	GAL = 3	.78 L]			
								LOCATION MAP
CALCIII	प्राची सम्बद्ध	VOI (GAIN 7.	2 m	フフ	ACTI	IAI. PURGE	VOL. (GAL):(L):
DIDGE N	METHOD:	Poli	GAL):	(1-)				10D: Poly
PURGE N	AEIMOD)) 	ומוזמו		ASUREN		IOD.
				rib	LD ME	ASUKL	ALDI410	. <u> </u>
Time	Depth to	Vol	Temp	pН	EC	Clarity	Turbidity	Remarks
	Water (FT)	(L)	(Deg. F)				(NTU)	
1549		50	70.0	8.12	6240			Clear, no odor
1575		10.	69.0	7.53	5780		<u>*</u>	11
1557		15e	67.3	7.58	530			slight
1602		20	67.1	i	5740			Slight
1606	· · · · · · · · · · · · · · · · · · ·	25	67.4	7.50	5740			slight
1408		27	671	1	SUL			u

well sampled

1015

SIGNATURE:_

WATER VOL. IN DRUM: 40%
NEED NEW DRUM?: 10

SAMPLE HANDLING PROCEDURES

Soil and groundwater samples will be packaged carefully to avoid breakage or contamination, and will be delivered to the laboratory in an iced-cooler. The following sample packaging requirements will be followed.

- . Sample bottle/sleeve lids will not be mixed. All sample lids will stay with the original containers and have custody seals affixed to them.
- . Samples will be secured in coolers to maintain custody, control temperature, and prevent breakage during transportation to the laboratory.
- . A chain-of-custody form will be completed for all samples and accompany the sample cooler to the laboratory.
- . Ice, blue ice, or dry ice (dry ice will be used for preserving soil samples collected for the Alameda County Water District) will be used to cool samples during transport to the laboratory.
- Each sample will be identified by affixing a pressure sensitive, gummed label, or standardized tag on the container(s). This label will contain the site identification, sample identification number, date and time of sample collection, and the collector's initials.
- . Soil samples collected in brass tubes will be preserved by covering the ends with Teflon tape and capped with plastic end-caps. The tubes will be labeled, sealed in quart size bags, and placed in an iced-cooler for transport to the laboratory.

All groundwater sample containers will be precleaned and will be obtained from a State Department of Health Services certified analytical laboratory.

<u>Sample Control/Chain-of-Custody</u>: All field personnel will refer to this workplan to verify the methods to be employed during sample collection. All sample gathering activities will be recorded in the site file; all sample transfers will be documented in the chain-of-custody; samples are to be identified with labels and all sample bottles are to be custody-sealed. All information is to be recorded in waterproof ink. All TPE field personnel are personally responsible for sample collection and the care and custody of collected samples until the samples are transferred or properly dispatched.

The custody record will be completed by the field technician or professional who has been designated by the TPE project manager as being responsible for sample shipment to the appropriate laboratory. The custody record will include, among other things, the following information: site identification, name of person collecting the samples, date and time samples were collected, type of sampling conducted (composite/grab), location of sampling station, number and type of containers used, and signature of the TPE person relinquishing samples to a non-TPE person with the date and time of transfer noted. The relinquishing individual will also put all the specific shipping data on the custody record.

Records will be maintained by a designated TPE field employee for each sample, site identification, sampling locations, station numbers, dates, times, sampler's name, designation of the samples as a grab or composite, notation of the type of sample (e.g. groundwater, soil boring, etc.), preservatives used, on-site measurement data, and other observations or remarks.

GROUNDWATER MONITORING WELL SAMPLING PROCEDURES

Groundwater monitoring wells will not be sampled until at least 24 to 72 hours (according to local regulatory guidelines) after well development. Groundwater samples will be obtained using either a bladder pump, clear Teflon bailer, or dedicated polyethylene bailer. Prior to collecting samples, the sampling equipment will be thoroughly decontaminated to prevent introduction of contaminants into the well and to avoid cross-contamination. Monitoring wells will be sampled after 3 to 10 wetted casing volumes of groundwater have been evacuated and pH, electrical conductivity, and temperature have stabilized as measured with a Hydac Digital Tester. If the well is emptied before 3 to 10 well volumes are removed, the sample will be taken when the water level in the well recovers to 80% of its initial water level or more.

When a water sample is collected, turbidity of the water will be measured and recorded with a digital turbidimeter. Degree of turbidity will be measured and recorded in nephelometric turbidity units (NTU).

TPE will also measure the thickness of any floating product in the monitoring wells using an interface or probe clear Teflon or polyethylene bailer. The floating product will be measured after well development but prior to the collection of groundwater samples. If floating product is present in the well, TPE will recommend to the client that product removal be commenced immediately and reported to the appropriate regulatory agency.

Unless specifically waived or changed by the local, prevailing regulatory agency, water samples shall be handled and preserved according to the latest EPA methods as described in the Federal Register (Volume 44, No. 233, Page 69544, Table 11) for the type of analysis to be performed.

Development and/or purge water will be stored on site in labeled containers. The disposal of the containers and development and/or purge water is the responsibility of the client.

MEASUREMENTS

<u>Purged Water Parameter</u>: During purging, discharged water will be measured for the following parameters.

Parameter Units of Measurement

pH None

Electrical Conductivity Micromhos

Temperature Degrees F or C
Depth to Water Feet/Hundredths

Volume of Water Discharged Gallons
Turbidity NTU

<u>Documentation:</u> All parameter measurements shall be documented in writing on TPE development logs.

QUALITY ASSURANCE AND QUALITY CONTROL PROCEDURES

The overall objectives of the field sampling program include generation of reliable data that will support development of a remedial action plan. Sample quality will be checked by the use of proper sampling, handling, and testing methods. Additional sample quality control methods may include the use of background samples, equipment rinsate samples, and trip and field blanks. Chain-of-custody forms, use of a qualified laboratory, acceptable detection limits, and proper sample preservation and holding times also provide assurance of accurate analytical data.

TPE will follow a QA/QC program in the field to ensure that all samples collected and field measurements taken are representative of actual field and environmental conditions and that data obtained are accurate and reproducible. These activities and laboratory QA/QC procedures are described below.

<u>Field Samples</u>: Additional samples may be taken in the field to evaluate both sampling and analytical methods. Three basic categories of QA/QC samples that may be collected are trip samples, field blanks, and duplicate samples.

Trip blanks are a check for cross-contamination during sample collection, shipment, and in the laboratory. Analytically confirmed organic-free water shall be used for organic parameters and deionized water for metal parameters. Blanks will be prepared by the laboratory supplying the sample containers. The blank shall be numbered, packaged, and sealed in the same manner as the other samples. One trip blank will be used for each sample set of less than 20 samples. At least 5% blanks will be used for sets greater than 20 samples. The trip blank is a water sample that remains with the collected samples during transportation and is analyzed along with the field samples to check for residual contamination. The trip blank is not to be opened by either the sample collectors or the handlers.

The field blank is a water sample that is taken into the field and is opened and exposed at the sampling point to detect contamination from air exposure. The water

sample is poured into appropriate containers to simulate actual sampling conditions. Contamination for air exposure can vary considerably from site to site.

The laboratory will not be informed about the presence of field and trip blanks and a false identifying number will be put on the label. Full documentation of these collection and decoy procedure will be made in the site log book.

Duplicate samples are identical sample pairs (collected in the same place and at the same time), placed in identical containers. For soils, adjacent sample liners will be analyzed. For the purpose of data reporting, one is arbitrarily designated the sample, and the other is designated as a duplicate sample. Both sets of results are reported to give an indication of the precision of sampling and analytical methods.

The laboratory's precision will be assessed without the laboratory's knowledge by labeling one of the duplicates with false identifying information. Data quality will be evaluated on the basis of the duplicate results.

<u>Laboratory OA/OC:</u> Execution of a strict QA/QC program is an essential ingredient in high-quality analytical results. By using accredited laboratory techniques and analytical procedures, estimates of the experimental values can be very close to the actual value of the environmental sample. The experimental value is monitored for its precision and accuracy by performing QC test designed to measure the amount of random and systematic errors and to signal when correction of these errors is needed.

The QA/QC program describes methods for performing QC tests. These methods involve analyzing method blanks, calibration standards, check standards (both independent and EPA-certified standards), duplicates, replicates, and sample spikes. Internal QC also requires adherence to written methods, procedural documentation, and record keeping, and the observance of good laboratory practices.



September 19, 1994

Mr. Jeff Farhoomand Tank Protect Engineering 2821 Whipple Road Union City, California 94587

Dear Mr. Farhoomand:

Trace Analysis Laboratory received three water samples on September 9, 1994 for your Project No. 225-090894, Manuel Rodriquez, 1009 89th Avenue (our custody log number 4741).

These samples were analyzed for Total Petroleum Hydrocarbons as Gasoline and Benzene, Toluene, Ethylbenzene, and Xylenes. Our analytical report and the completed chain of custody form are enclosed for your review.

Trace Analysis Laboratory is certified under the California Environmental Laboratory Accreditation Program. Our certification number is 1199.

If you should have any questions or require additional information, please call me.

Sincerely yours,

Scott T. Ferriman Project Specialist

Soft T. Fenne

Enclosures



LOG NUMBER:
DATE SAMPLED:

4741

DATE RECEIVED: DATE ANALYZED: 09/08/94 09/09/94

DATE REPORTED:

09/14/94 09/19/94

CUSTOMER:

Tank Protect Engineering

REQUESTER:

Jeff Farhoomand

PROJECT:

No. 225-090894, Manuel Rodriquez, 1009 89th Avenue

		Sample Type: Water								
		М	W-1		MW-2	MW-3				
Method and Constituent :	<u>Units</u>	Concen- tration	Reporting Limit	Concen- tration	Reporting <u>Limit</u>	Concen- tration	Reporting Limit			
DHS Method:										
Total Petroleum Hydro- carbons as Gasoline	ug/l	ND	50	ND	50	ND	50			
Modified EPA Method 8020	for:									
Benzene	ug/l	ND	0.50	ND	0.50	ND	0.50			
Toluene	ug/l	ND	0.50	ND	0.50	ND	0.50			
Ethylbenzene	ug/l	ND	0.50	ND	0.50	ND	0.50			
Xylenes	ug/l	ND	1.5	ND	1.5	ND	1.5			

Concentrations reported as ND were not detected at or above the reporting limit.

Trace Analysis Laboratory, Inc.

LOG NUMBER: 4741
DATE SAMPLED: 09/08/94
DATE RECEIVED: 09/09/94
DATE ANALYZED: 09/14/94
DATE REPORTED: 09/19/94
PAGE: Two

Water

			<u>Sample</u>	Type:
Method and Constituent:	<u>Units</u>		d Blank Reporting Limit	
DHS Method:				
Total Petroleum Hydro- carbons as Gasoline	ug/l	ND	50	
Modified EPA Method 8020	for:			
Benzene	ug/l	ND	0.50	
Toluene	ug/l	ND	0.50	
Ethylbenzene	ug/l	ND	0.50	
Xylenes	ug/l	ND	1.5	

QC Summary:

% Recovery: 82

% RPD:

6.5

Concentrations reported as ND were not detected at or above the reporting limit.

Louis W. DuPuis

Quality Assurance/Quality Control Manager

Environmental Management

TANK PROTECT ENGINEERING

2021 WHIPPLE ROAD UNION CITY, CA 94587 (415)429-8088 (800)523-8088 FAX(415)429-8089

4741

LAB:	TAL	
TURNARO	ound: 15 day	
P.O. #:	905	

CHAIN OF CUSTODY

PAGE _/ OF _/

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mw-3	9/8	1600		1			2-40 me	×	*					
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DATE: 9/9/94