

June 1, 1995

Ms. Jennifer Eberle
Hazardous materials Specialist
Hazardous Materials Division
Alameda County Health
Care Services Agency
1131 Harbor bay Parkway
Alameda, CA 94502-6577

SUBJECT: GROUNDWATER MONITORING AND SAMPLING REPORT,

TRANSBAY CONTAINER TERMINAL (TBCT), 707 FERRY

STREET, OAKLAND, CALIFORNIA

Dear Ms. Eberle:

Enclosed, you will find a copy of the Report of Groundwater Monitoring and Sampling for Transbay Container Terminal (TBCT), 707 Ferry Street, Oakland, California.

Please call me at 272-1118 if you have any questions or comments. Thank you for your assistance on this project.

Sincerely,

Susa Gates

Associate Environmental Scientist

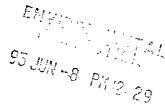
SG\jb

Enclosure

Rich Hiett, San Francisco Regional Water Quality Control Board, 2101 Webster Street, Suite 500, Oakland, CA 94612 Neil Werner (Environmental Department)

John DeGeorge (Alisto)

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GROUNDWATER MONITORING AND SAMPLING REPORT

Port of Oakland Berth 25 707 Ferry Street Oakland, California

Project No. 10-255-01-001

Prepared for:

Port of Oakland 530 Water Street Oakland, California

Prepared by:

Alisto Engineering Group 1777 Oakland Boulevard, Suite 200 Walnut Creek, California

May 16, 1995

John DeGeorge

Geologist

Al Sevilla, P.E.

USull

Principal



GROUNDWATER MONITORING AND SAMPLING REPORT

Port of Oakland Berth 25 707 Ferry Street Oakland, California

Project No. 10-255-01-001

May 16, 1995

INTRODUCTION

This report presents the results and findings of the February 22, 1995 groundwater monitoring and sampling conducted by Alisto Engineering Group at the Port of Oakland, Berth 25, 707 Ferry Street, Oakland, California. A site vicinity map is shown in Figure 1.

FIELD PROCEDURES

Field activities were performed in accordance with the procedures and guidelines of Alameda County Health Care Services Agency and the California Regional Water Quality Control Board, San Francisco Bay Region.

Before purging and sampling, the groundwater level in each well was measured from a permanent mark on top of the casing to the nearest 0.01 foot using an electronic sounder. The depth to groundwater and top of casing elevation data were used to calculate the groundwater elevation in each well in reference to mean lower low water. The survey data and groundwater elevation measurements collected to date are presented in Table 1.

Before sample collection, each well was purged of 3 casing volumes while recording field readings of pH, temperature, and electrical conductivity. Groundwater samples were collected for laboratory analysis by lowering a bottom-fill, disposable bailer to just below the water level in each well. The samples were transferred from the bailer into laboratory-supplied containers. The field procedures for groundwater monitoring well sampling and the water sampling field survey forms are presented in Appendix A.

SAMPLING AND ANALYTICAL RESULTS

The groundwater samples were analyzed by Clayton Environmental Consultants, Inc., a state-certified laboratory, for the following:

- Total petroleum hydrocarbons as diesel (TPH-D) using EPA Method 8015 (modified)
- Total petroleum hydrocarbons as motor oil (TPH-MO) using EPA Method 8015 (modified)

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- Benzene, toluene, ethylbenzene, and total xylenes using EPA Method 8020
- Total dissolved solids (TDS) using EPA Method 160.1

The results of monitoring and laboratory analysis of the groundwater samples for this and previous events are summarized in Table 1. The potentiometric groundwater elevations as interpreted from the results of this monitoring event are shown in Figure 2. The field procedures for chain of custody documentation and the laboratory report and chain of custody record are presented in Appendix B.

SUMMARY OF FINDINGS

The findings of the February 22, 1995 groundwater monitoring and sampling event are summarized as follows:

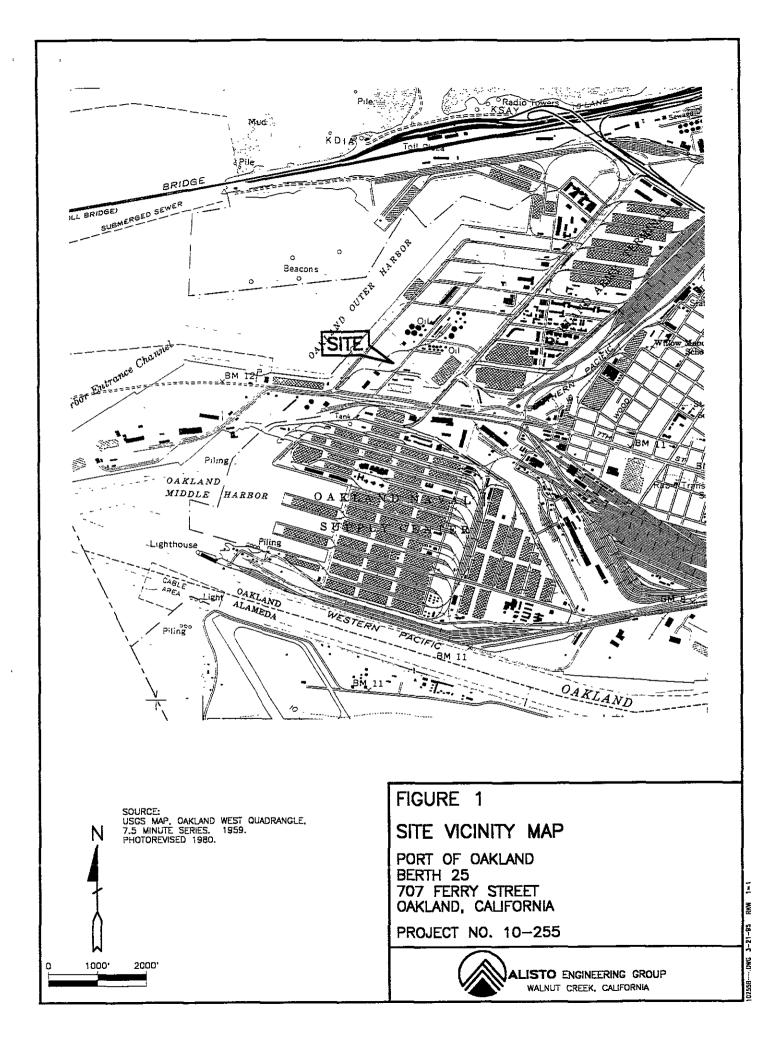
- Free product or sheen was not observed in Monitoring Well MW-1.
- Depth to groundwater in MW-1 was measured at 9.66 feet below the top of the well casing.
- TPH-D and TPH-MO were detected at concentrations of 990 and 120 micrograms per liter in the sample collected from Monitoring Well MW-1. Benzene, toluene, ethylbenzene, and total xylenes were not detected above the reported detection limit in this sample.
- TDS was detected at a concentration of 1100 milligrams per liter in MW-1.

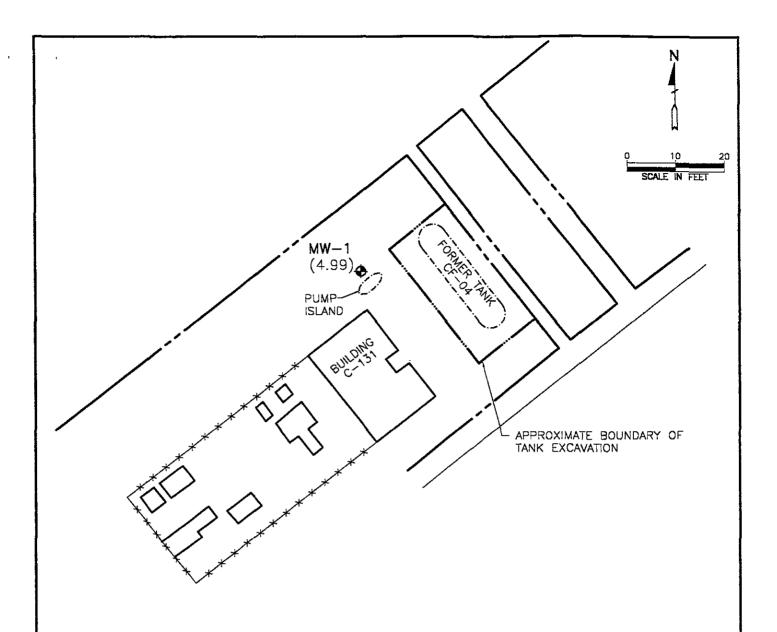


TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING AND SAMPLING PORT OF OAKLAND, BERTH 25 707 FERRY STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-255

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (feet)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (b) (feet)	TPH-D (ug/l)	TPH-MO (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	TDS (mg/l)	LAB
MW-1 MW-1 QC-1 (c) QC-2 (d)	06/09/94 02/22/95 02/22/95 02/22/95	14.65 14.65 14.65	9.88 9.66	4.77 4.99 	410 990	120	ND<0.50 ND<0.4 ND<0.4 ND<0.4	ND<0.50 ND<0.3 ND<0.3 ND<0.3	ND<0.50 ND<0.3 ND<0.3	ND<0.50 ND<0.4 ND<0.4 ND<0.4	1900 1100 	D&M CEC CEC
ABBREVIA	TIONS:			NOTES:				<u> </u>				
TPH-D TPH-MO B T		hydrocarbons as o hydrocarbons as n		(a)	relative to		r low water (3	to the neare 3.2 feet belov	st 0.01 foot v mean sea le	evel,		
E X TDS	Ethylbenzene Total xylenes Total dissolved :	eolide		(b)	Groundw low wate		ns expressed	d in feet abov	e mean lowe	r		
ug/l mg/l	Micrograms per Milligrams per lit	liter ter		(c)	Blind dup							
ND D&M CEC	D&M Laboratori	ove reported detec		(d)	Travel bl	ank.						





LEGEND

◆ GROUNDWATER MONITORING WELL

(4.99) GROUNDWATER ELEVATION IN FEET ABOVE MEAN LOWER LOW WATER

FIGURE 2

POTENTIOMETRIC GROUNDWATER ELEVATION MAP

FEBRUARY 22, 1995

PORT OF OAKLAND BERTH 25 707 FERRY STREET OAKLAND, CALIFORNIA

PROJECT NO. 10-255



APPENDIX A

FIELD PROCEDURES FOR GROUNDWATER MONITORING WELL SAMPLING AND WATER SAMPLING FIELD SURVEY FORMS

FIELD PROCEDURES FOR GROUNDWATER MONITORING WELL SAMPLING

Groundwater Level Measurement

Before commencing groundwater sampling, the groundwater level in each well was measured from a marked survey reference point at the top of the well casing. Groundwater in each well was monitored for free-floating product or sheen. The depth to groundwater was measured to an accuracy of 0.01 foot from the top of the PVC well casing using an electronic sounder.

Groundwater Monitoring Well Sampling

To ensure that the groundwater samples were representative of the aquifer, the wells were purged of 3 well casing volumes before sample collection. This purging was accomplished using a clean bailer or pump.

The groundwater samples were collected using a disposable bailer, and then transferred into laboratory-supplied containers. Care was taken to avoid turbulence when transferring the water samples, and all volatile analysis vials were filled so that no air bubbles were trapped. The sampling technician wore nitrile gloves at all times during purging and well sampling. The samples were labeled with the well number, site identification, date and time of sample collection, and sampler's initials, and transported in an iced cooler maintained at 4 degrees Centigrade to Clayton Environmental Consultants, a state-certified laboratory, following preservation and chain of custody protocol.

ALISTO

Field Report / Sampling Data Sheet

ENGINEERING	3	Ø .	Ground	water Samp	ling	Date:	2/2	2/45	Project N	o. 10 - 1	<u> 252 -</u>	01.001
GROUP				4	,	Day:	MTW		Facility N			
	ND BLVD, STE	200		Barometric pr	es. NA		Temp.	61°E	Address	707 F	erry!	it. DAKKENd
	EEK CA 94596		95-1650	FAX 295-182	23		SAMPLE				<u> </u>	
Well ID	SAMPLE #	WATER,	time		SAMPLE	#	WATER/	time	Well	ID	SAMPLE	WATER / tlme
MW-1	,,	9.66/	1635									
,												
				FIELD INST	DUMENT (^ A I ID	PATION	DATA				
TURBIDI MET	TER METER /	5.0 N	TU STAI	7.00 / NDARD_ 0,000 /	10.00 OTHER	4IT	ие <u> 1640</u> 	TEMF	PERATURE	COMPENS	ATED (Ý	N
Well ID		Diam	Confloak	Depth to prod.	Irldescence	Gal.	Time	Temp *F	рН	E.C.	D.O.	O EPA 601
	Depth to Water	12"	OLL	l l	YN	1	1643	1661	7.07	1.54		20 XAND/BTEX_/*
	1 7.66 ater Level = x V 5 - 5.66 -	Vell Vol. F	actor ≔		PurgeVol.	7.5	1646	65.2	7.12	1.56		O TPH Diesel // O TOG 5520
	OSurface Pump OI								1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<u>,</u>		Time/Sample
Comments:	Ostifiaco i ultipi Oi	Diep. rade	OVVIIONA	g Droft, Danat (a)								1655
Well ID	Depth to Water	Diam	Cap/Lock	Depth to prod.	Iridescence	Gal.	Time	Temp *F	рН	E.C.	D.O.	O EPA 601
	1			1	Y N							O TPH-G/BTEX
Total Depth - W	ater Level = x V	Vell Vol. F	actor =	x#vol. to Purge=	PurgeVol.							O TPH Diesel
												O TOG 5520
Purge Method:	OSurface Pump Of	Disp.Tube	OWinch (ODisp. Bailer(s)	OSys Port							Time/ Sample
Comments:												
Well ID	Depth to Water	Diam	Cap/Lock	Depth to prod.	Irldescence	Gal.	Time	Temp *F	рН	E.C.	D.O.	O EPA 601
					YN							O TPH-G/BTEX
Total Depth - W	ater Level≕ x V	Vell Vol. F	actor =	x#vol. to Purge ≔	PurgeVol.					·····		O TPH Diesel
												O TOG 5520
Purge Method:	OSurface Pump O	Dlep.Tubo	OWinch (ODisp. Bailer(e)	OSys Port					······································		Time /Sample
Comments:								<u> </u>	<u> </u>		<u> </u>	
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APPENDIX B

FIELD PROCEDURES FOR CHAIN OF CUSTODY DOCUMENTATION, LABORATORY REPORT, AND CHAIN OF CUSTODY RECORD

FIELD PROCEDURES FOR CHAIN OF CUSTODY DOCUMENTATION

All samples were handled in accordance with the California Department of Health Services guidelines. Samples were labeled in the field and immediately stored in coolers and preserved with blue ice for transport to a state-certified laboratory for analysis.

A chain of custody record accompanied the samples, and included the site and sample identification, date and time of collection, analysis requested, and the name and signature of the sampling technician. When transferring possession of the samples, the transferee signed and dated the chain of custody record.

1252 Quarry Lane P.O. Box 9019 Pleasanton, CA 94566 (510) 426-2600 Fax (510) 426-0106



March 10, 1995

Mr. Brady Nagle ALISTO ENGINEERING GROUP 1777 Oakland Blvd. #200 Walnut Creek, CA 94596

> Client Ref.: 10-255-01-001 Clayton Project No.: 95022.93

Dear Mr. Nagle:

Attached is our analytical laboratory report for the samples received on February 24, 1995. Also enclosed is a copy of the Chain-of-Custody record acknowledging receipt of these samples.

Please note that any unused portion of the samples will be discarded after April 9, 1995, unless you have requested otherwise.

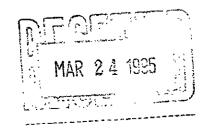
We appreciate the opportunity to assist you. If you have any questions concerning this report, please contact Suzanne Haus, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Harriotte A. Hurley, CIH Director, Laboratory Services San Francisco Regional Office

HAH/caa

Attachments





Page 2 of 7

Analytical Results for

Alisto Engineering Group Client Reference: 10-255-01-001

Clayton Project No. 95022.93

Sample Identification: MW-1

Lab Number: 9502293-01A

Sample Matrix/Media:

Preparation Method: Method Reference:

WATER

EPA 5030 EPA 8020 Date Sampled:

Date Received:

02/24/95 03/07/95

02/22/95 ~

Date Prepared: Date Analyzed:

03/07/95

Analyst:

NAN

incende reference.	020	Anaryse.	147774
Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX			
Benzene	71-43-2	ND /	0.4
Ethylbenzene	100-41-4	ND /	0.3
Toluene	108-88-3 95-47-6	ND ,/	0.3
o-Xylene p,m-Xylenes	95-47-6	ND √ ND	0.4 0.4
p,m Ayrenes	- -	ND	0.4
<u>Surrogates</u>		Recovery (%)	QC Limits (%)
1,4-Difluorobenzene	540-36-3	97	50 - 150

ND: Not detected at or above limit of detection Information not available or not applicable

Page 3 of 7

Analytical Results

for

Alisto Engineering Group

Client Reference: 10-255-01-001 Clayton Project No. 95022.93

Sample Identification: QC-1

Lab Number:

9502293-02A

Sample Matrix/Media:

WATER

Preparation Method: Method Reference:

EPA 5030 EPA 8020 Date Sampled:

02/22/95

Date Received:

02/24/95

Date Prepared: Date Analyzed:

03/07/95

03/07/95

Analyst:

NAN

Analyte	Concentration CAS # (ug/L)		Method Detection Limit (ug/L)
BTEX			
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes	71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND	0.4 0.3 0.3 0.4 0.4
Surrogates		Recovery (%)	QC Limits (%)
1,4-Difluorobenzene	540-36-3	98	50 - 150

Not detected at or above limit of detection ND: --: Information not available or not applicable



Page 4 of 7

Analytical Results

for

Alisto Engineering Group Client Reference: 10-255-01-001 Clayton Project No. 95022.93

Sample Identification: QC-2 / TB # 0013195 Lab Number:

9502293-03A

Sample Matrix/Media: Preparation Method:

Method Reference:

WATER EPA 5030 EPA 8020

Date Sampled:

02/22/95 Date Received: 02/24/95 Date Prepared: 03/07/95 Date Analyzed: 03/07/95

Analyst:

NAN

			Method
Analyte	CAS #	Concentration (ug/L)	Detection Limit (ug/L)
BTEX	-		
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes		ND	0.4
<u>Surrogates</u>		Recovery (%)	OC Limits (왕)
1,4-Difluorobenzene	540-36-3	98	50 - 150

ND: Not detected at or above limit of detection --: Information not available or not applicable



Page 5 of 7

Analytical Results for

Alisto Engineering Group

Client Reference: 10-255-01-001 Clayton Project No. 95022.93

Sample Identification: METHOD BLANK

9502293-04A

Lab Number: Sample Matrix/Media:

WATER

Preparation Method: Method Reference:

EPA 5030

EPA 8020

Date Sampled:

Date Received:

Date Prepared: 03/07/95

Date Analyzed: 03/07/95

Analyst:

NAN

Analyte	Concentra CAS # (ug/			
<u> BTEX</u>				
Benzene	71-43-2	ND	0.4	
Ethylbenzene	100-41-4	ND	0.3	
Toluene	108-88-3	ND	0.3	
o-Xylene	95-47-6	ND	0.4	
p,m-Xylenes		$\mathbf{N} D$	0.4	
Surrogates		Recovery (%)	QC Limits (%)	
1,4-Difluorobenzene	540-36-3	99	50 - 150	

ND: Not detected at or above limit of detection Information not available or not applicable



Page 6 of 7

Analytical Results for

Alisto Engineering Group

Client Reference: 10-255-01-001 Clayton Project No. 95022.93

Sample Identification: See Below

Lab Number:

9502293

Sample Matrix/Media:

WATER

Extraction Method:

EPA 3510

Method Reference:

EPA 8015 (Modified)

Date	Received:	02/24/95
Date	Extracted:	02/28/95
Date	Analyzed:	03/02/95

Lab Number	Sample Identification	Date Sampled	TPH-D (ug/b)	Method Detection Limit (ug/L)
-01 -04	MW-1 METHOD BLANK	02/22/95	1100 V a	50 50

ND: Not detected at or above limit of detection

--: Information not available or not applicable

TPH-D = Extractable petroleum hydrocarbons from C10 to C42 quantitated as diesel.

a Sample does not match the typical diesel pattern. Sample appears to be oil.



Page 7 of 7

Analytical Results for

Alisto Engineering Group

Client Reference: 10-255-01-001 Clayton Project No. 95022.93

Sample Identification: See Below

Lab Number:

9502293

Sample Matrix/Media: Method Reference:

WATER

EPA 160.1

Date Received: 02/24/95 Date Analyzed: 02/28/95

Lab Number	Sample Identification	Date Total Sampled	Dissolved Solids (mg/L)	Method Detection Limit (mg/L)
-01 -04	MW-1	02/22/95	1100	10
-04	METHOD BLANK	- -	<10	10

ND: Not detected at or above limit of detection Information not available or not applicable



REQUEST FOR LABORATORY **ANALYTICAL SERVICES**

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Please return completed form and samples to one of the	e Clavton Envi	ironmental	Consultants, Inc	c. labs	listed b	elow:						- 1.					

22345 Roethel Drive Raritan Center Novi, MI 48375

(810) 344-1770

160 Fieldcrest Ave. Edison, NJ 08837 (908) 225-6040

400 Chastain Center Blvd., N.W. Suite 490

Kennesaw, GA 30144 (404) 499-7500

1252 Quarry Lane Pleasanton, CA 94566 (510) 426-2657

DISTRIBUTION:

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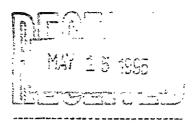
- Clayton Laboratory WHITE YELLOW - Clayton Accounting

PINK - Client Retains 1252 Quarry Lane P.O. Box 9019 Pleasanton, CA 94566 (510) 426-2600 Fax (510) 426-0106



May 15, 1995

Mr. John DeGeorge ALISTO ENGINEERING GROUP 1575 Treat Blvd., Suite 201 Walnut Creek, CA 94588



ADDITIONAL REPORT Client Ref.: 10-255-01-001 Clayton Project No.: 95022.93

Dear Mr. DeGeorge:

Attached is our additional analytical laboratory report for the samples received on February 24, 1995 and originally reported on March 10, 1995. As requested on April 26, 1995, we have quantitated Sample MW-1 as TPH-Diesel and TPH-Oil. The diesel chromatogram for this sample is also attached.

We appreciate the opportunity to assist you. If you have any questions concerning this report, please contact Suzanne Haus, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Harriotte A. Hurley, CIH

Director, Laboratory Services San Francisco Regional Office

HAH/caa

Attachments

Page 2 of 3

Analytical Results for

Alisto Engineering Group

Client Reference: 10-255-01-001 Clayton Project No. 95022.93

Sample Identification: See Below

Date Received: 02/24/95

Lab Number:

9502293

Date Extracted: 02/28/95

Sample Matrix/Media:

WATER

Date Analyzed: 03/02/95

Extraction Method: EPA 3510 Method Reference:

EPA 8015 (Modified)

Lab Number	Sample Identification	Date Sampled	TPH-D (ug/L)	Method Detection Limit (ug/L)
-01	MW-1	02/22/95	990 ND	50
-04	METHOD BLANK			50

ND: Not detected at or above limit of detection --: Information not available or not applicable

TPH-D = Extractable petroleum hydrocarbons from C10 to C20 quantitated as diesel.

Page 3 of 3

Analytical Results for

Alisto Engineering Group

Client Reference: 10-255-01-001 Clayton Project No. 95022.93

Sample Identification: See Below

Date Received: 02/24/95

Lab Number:

9502293

Date Extracted: 02/28/95

Sample Matrix/Media:

WATER

Date Analyzed: 03/02/95

Extraction Method: Method Reference:

EPA 3510

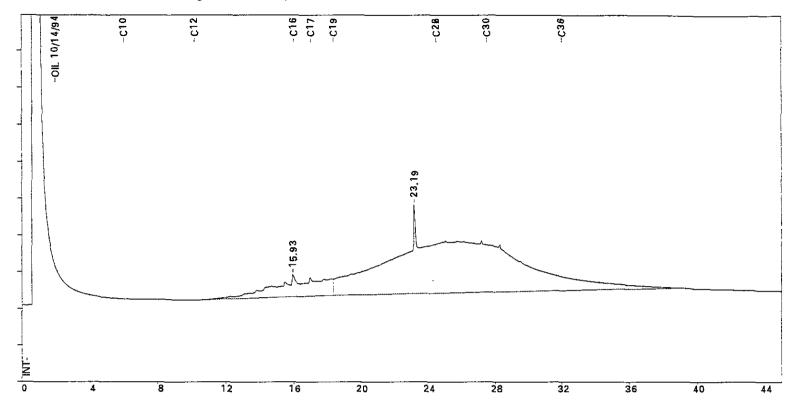
EPA 8015 (Modified)

Lab Number	Sample Identification	Date Sampled	TPH-O (ug/L)	Method Detection Limit (ug/L)
-01	MW - 1	02/22/95	120 🗸	200
-04	METHOD BLANK	- - '	ND	200

ND: Not detected at or above limit of detection --: Information not available or not applicable

TPH-O = Extractable petroleum hydrocarbons from C20 to C42 quantitated as motor oil.

0.0 to 45.0 min. Low Y=-50.0 High Y=300.0 mv Span=350.0



Clayton Environmental Consultants, Pleasanton, California

Sample Name: 9502293-01C (MW-1)

Date: 03-02-1995 23:38:00

Dilution Factor: 1

Operator: FK

Sample Weight: 1055

Instrument:02883 FRONT (Y)
EXTERNAL STD Calibrated

Area Rejected: 100

Data File: M:\CP\GC-1\Y02C.11R Cycle# 11

Method File: !!M:\CP\GC-1\YOIL\$.MET..ver# -32. 01/10/95 15:43:44

Calibr File: !!M:\CP\GC-1\YOIL\$.CAL..ver# -5 .

Analysis: TPH EXT TEMP 80C(6')10C/M 300C(17') 2UL

Miscl.

Ret time Amount Peak Peak Peak Ref Amount -

 Pk#
 (min)
 Peak Name
 PPM
 Area
 Type
 Height
 Pk
 /Area

 1
 15.925
 0.1239
 3715869
 BB
 21148
 0.3335E-07

 2
 23.190
 0.9931
 29776446
 BB
 85884
 0.3335E-07

Total Area = 3.349231E+07; Instrument Actual Amount = 1178.502 PPM

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS = 1.117063mg/kg (ppm)

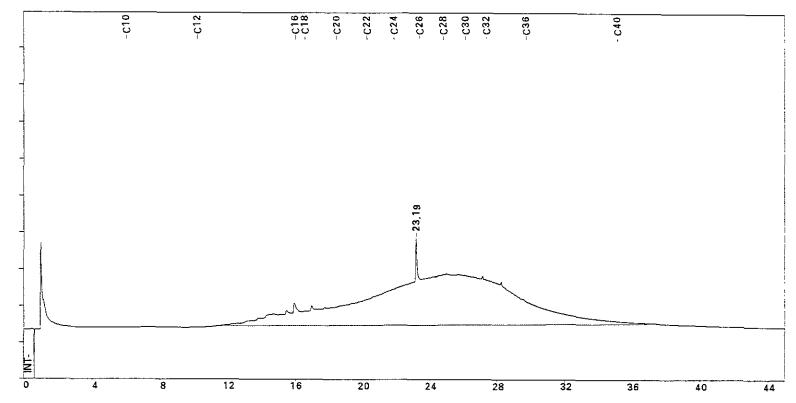
OR 1117.063 ug/L (ppb)

File: M:\CP\GC-1\Y02C.11R

File=M:\CP\GC-1\Y02C\$.11R Date printed=03-03-1995 Time= 14:55:19

Sample Name=9502293-01C

0.0 to 45.0 min. Low Y=-50.0 High Y=320.0 mv Span=370.0



Clayton Environmental Consultants, Pleasanton, California

Printed: 03-03-1995_14:55:26

Sample Name: 9502293-01C (MW-1)

Date: 03-02-1995 23:38:00

Dilution Factor: 1 Operator: FK

Sample Weight: 1055

Area Rejected: 100 Instrument: 02883 FRONT (Y)
EXTERNAL_STD Calibrated

Data File: M:\CP\GC-1\Y02C\$.11R Cycle# 11

Method File: !M:\CP\GC~1\YD2.MET..ver# -2 . 11/25/94 16:50:20

Calibr File: !M:\CP\GC-1\YDIESEL\$.CAL..ver# -8 .
Analysis: TPH EXT TEMP 80C(6') 10C/M 310C(17') 2UL

Miscl.

 Ret time
 Amount
 Peak
 Peak
 Peak
 Ref
 Amount

 Pk#
 (min)
 Peak
 Name
 PPM
 Area
 Type
 Height Pk
 /Area

 1
 23.190
 1.0755
 34181776
 BB
 89146
 0.3146E-07

Total Area = 3.418178E+07; Instrument Actual Amount = 1134.605 PPM

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS = 1.075455mg/kg (ppm)

OR 1075.455 ug/L (ppb)

File: M:\CP\GC-1\Y02C\$.11R