Subsurface Investigation Results, UPS Oakland Center

United Parcel Service
Oakland, CA

September 1996

BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

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engineers & scientists

Transmitted Via U.S. Mail/UPS

September 6, 1996

Ms. Caroline Ehrlich
United Parcel Service
8400 Pardee Drive
Oakland, CA 94621

Re: Subsurface Investigation Results
United Parcel Service
UPS Oakland Center
8400 Pardee Drive, Oakland, California
Project #: 36768.01

Dear Ms. Ehrlich:

At the request of United Parcel Service Oakland Center (UPS), Blasland, Bouck & Lee, Inc., (BBL) has performed a subsurface investigation at the UPS southern fuel station located at 8400 Pardee Drive in Oakland, California. The following sections provide a discussion of background conditions, results, conclusions and recommendations pertaining to the investigation.

Introduction

Previous investigations indicated the presence of diesel in shallow ground water adjacent to the southern fuel system at the UPS facility. Discussions with Barney M. Chan, Alameda County Environmental Health Services (ACEHS) case worker for the site, concurred with BBL that the site would be considered for closure as a low risk site if:

1. the release had stopped and free product was removed or remediated,
2. the site has been adequately characterized,
3. dissolved hydrocarbons are not migrating,
4. no water well, deeper drinking water aquifers, surface water, or sensitive receptors are likely to be impacted, and
5. the site presents no significant risk to human health or the environment.

A work plan for the subsurface investigation consisted of installing 12 temporary well points in the vicinity of the southern fuel system. Ground-water samples were collected from each of the well points for laboratory analysis and/or visual observation. Ground-water samples from six of the locations were submitted for laboratory analysis. Figure 1 depicts the location of the sampling points relative to the UPS building.

Background

The site is situated in a commercial area at the intersection of Pardee Drive and Swan Way. The property is owned by the Port of Oakland and leased by UPS. The facility has two fueling systems, one each on the northern and southern portions of the property; this investigation was limited to the southern fuel system. The investigation also included a portion of property owned by the Port of Oakland adjacent to the southern UPS fuel system. This adjacent property is currently undeveloped.

Geraghty & Miller performed quarterly sampling of the monitoring wells located in the vicinity of the southern fuel system from August 1990 through December 1995. The December 1995 sampling results indicate Total Petroleum Hydrocarbons as diesel (TPHd) were present at concentrations ranging between 2,800 micrograms per liter (ug/l) in monitoring well MW-2 to a concentration of 15,000 ug/l in monitoring well MW-1. Review of the data throughout the five-year monitoring period indicates that TPHd concentrations have fluctuated.

On February 28, 1996, BBL performed a preliminary site assessment, the results of which were summarized in the Work Plan. The preliminary site investigation revealed that the site was a tidal marsh prior to 1968 and the site had been raised above sea level with imported fill by 1968. No structures appeared on the property until 1975. The preliminary site assessment also indicated that the underground storage tanks (USTs) at the southern fueling system site were installed between 1975 and 1985.

A search of regulatory agency files performed as part of the preliminary site assessment, identified four facilities within in the vicinity of the UPS center that have had USTs. During a site walk at the Oakland Center with ACEHS, Mr. Barney Chen indicated that the fifth facility adjacent to the vacant Port of Oakland property had installed monitoring wells as part of a UST investigation.

Field Investigation

A Geoprobe® tool was used to create a 2-inch diameter borehole that extended at least one foot below the water table. The water table at the facility was encountered between 2.6 and 9.5 feet below ground surface. Following removal of the Geoprobe®, a 0.015-inch slotted 3/4-inch diameter PVC casing was placed in the boring to allow collection of a ground-water sample. Ground-water samples were collected using a stainless-steel bailer and each sample was inspected for floating product and hydrocarbon odors. Samples from seven locations were collected in laboratory-supplied containers, stored in a cooler with ice and delivered by BBL personnel to Curtis & Tompkins, Ltd. Analytical Laboratories (C&T) in Berkeley, California, within 24 hours for analysis.

C&T analyzed the ground-water samples for TPHd using EPA Test Method 8015-Modified and for benzene, toluene, ethyl benzene, and xylenes (BTEX) using EPA Test Method 8020. Geoprobe® location TW-4 did not produce a sufficient volume of water to allow analysis of TPHd.

Depth to ground water was measured in each of the three monitoring wells adjacent to the southern fuel system. Approximately 1/4 inch of a black floating product was observed in monitoring well

MW-2. After receiving authorization from UPS, a sample of this floating product was sampled and sent to C&T for analysis on July 16, 1996. Appendix A contains the laboratory analytical reports.

Results

The results of the ground-water analysis are summarized on Table 1. Floating product was only noted in monitoring well MW-2 and minute floating black globules (less than 0.5 millimeters in diameter) at TW-8 and TW-10.

Analysis of ground-water samples collected from TW-6 and TW-7, on the vacant Port of Oakland property adjacent to the south of the UPS facility, indicated that TPHd was present at 330 ug/l and 130 ug/l, respectively. Ground water sampling points TW-4, TW-5, and TW-13, also located on the Port of Oakland property, did not indicate the presence of petroleum hydrocarbons.

Five of the six TPHd results (TW-1, TW-2, TW-6, TW-7 and TW-9) reported by the laboratory were qualified because the samples did not resemble the diesel standard, contained unknown single peaks and/or contained heavier hydrocarbons than the standard. Review of the TPHd chromatograph patterns indicates that only one analysis resembled diesel while the others contained hydrocarbons larger than C-22, the typical upper limit for diesel. The heavy hydrocarbons identified typically fell above C-26, which is indicative of greases, waxes, pitch and other heavy hydrocarbons. These products which have not been used by UPS in any significant quantity to explain the wide spread occurrence of the heavy hydrocarbons.

The analysis of floating product found in monitoring well MW-2 indicated that it resembled the standard for diesel.

Conclusions

Results of the subsurface investigation indicate that the horizontal extent of dissolved hydrocarbons in ground-water near the southern fuel system is limited and that the hydrocarbons detected typically do not match a diesel standard. There is no indication that dissolved contamination is migrating from the southern fuel system. A small amount of a free product was observed in monitoring well MW-2 and laboratory analysis of this material indicates that it resembles diesel. The heavier hydrocarbons detected appear to be unrelated to UPS operations. These may be associated with the backfill used to bring the property to the existing grade in the late 1960's. The heavy hydrocarbons detected may also be related to mosquito abatement activities prior to the development of the subject site; historically, mosquito abatement activities in the bay area consisted of spraying hydrocarbon mixtures onto marsh areas to smother mosquito larvae.

Recommendations

BBL recommends that the UPS southern fuel system be closed as a low risk site by ACEHS and remediation be suspended and ground water sampling frequency be reduced or eliminated after removal of floating product from monitoring well MW-2 for the following reasons:

- The site has been adequately characterized to determine that a dissolved hydrocarbon plume has not resulted from a release at the southern fuel system,
- Ongoing free product collection has removed all but a minor amount of product,
- The high specific conductance reported in previous monitoring reports indicates that the ground water has a high total dissolved solids content rendering the water non-potable and has been impacted by imported fill material, and
- The petroleum hydrocarbons associated with the USTs do not present a significant threat to human health or the environment.

If you have any questions or require additional information please contact us at (415) 898-7208.

Sincerely,

BLASLAND, BOUCK & LEE, INC.

Gabriel V. Stivala, R.E.A.
Project Geologist

R. Bruce Scheibach, R.G.
Associate Hydrogeologist

REGISTERED GEOLOGIST
R. BRUCE SCHEIBACH
No. 5062
Exp. 11/96
STATE OF CALIFORNIA

cc: Barney M. Chen, Alameda County
Linda Lyons, United Parcel Service

Table 1

United Parcel Service
8400 Pardee Drive
Oakland, California
Ground Water Analytical Data Summary

	Component	TPH-diesel	B	T	E	X	Other
	Method	M8015	8020	8020	8020	8020	8020
	Units	ppb	ppb	ppb	ppb	ppb	ppb
Sample	**Date**						
TW-1	6/12/96	2,000 YH	ND (1)	12	1.4	7.9	ND (1)
TW-2	6/12/96	11,000 YH	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
TW-4	6/13/96	NA	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
TW-6	6/12/96	330 YZ	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
TW-7	6/12/96	130 Y	NA	NA	NA	NA	NA
TW-8	6/12/96	46,000	ND (1)	ND (1)	3	ND (1)	ND (1)
TW-9	6/12/96	2,300 YHZ	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)

ppb= parts per billion

NA = sample not analyzed for this parameter

ND ( ) = None Detected (detection limit)

B = Benzene

T = Toluene

E= Ethyl Benzene

X = Total Xylenes

Y = Sample exhibits fuel pattern which does not resemble standard

Z = Sample exhibits unknown single peak or peaks

H = Heavier hydrocarbons than indicated standard

SWAN WAY

PARDEE DRIVE

MAIN
U.P.S.
BUILDING

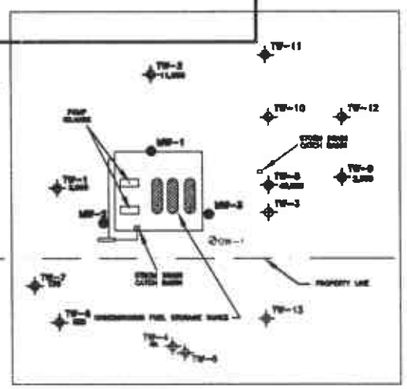
APPROXIMATE DIRECTION OF GROUNDWATER FLOW

BUILDING OUTLINE

SEE DETAIL A

PROPERTY LINE

VACANT PROPERTY
(PORT OF OAKLAND)



LEGEND

TW-1 2,000 — EXISTING GROUND-WATER SAMPLING LOCATION WITH TPHd CONCENTRATION (PPB)

MW-7 — EXISTING GROUND-WATER MONITORING WELLS INSTALLED BY OTHERS

MW-5 — EXISTING GROUND-WATER MONITORING WELLS INSTALLED BY GERAGHTY & MILLER

BUILDING OUTLINE

PPB = PARTS PER BILLION

TPHd = TOTAL PETROLEUM HYDROCARBONS AS DIESEL

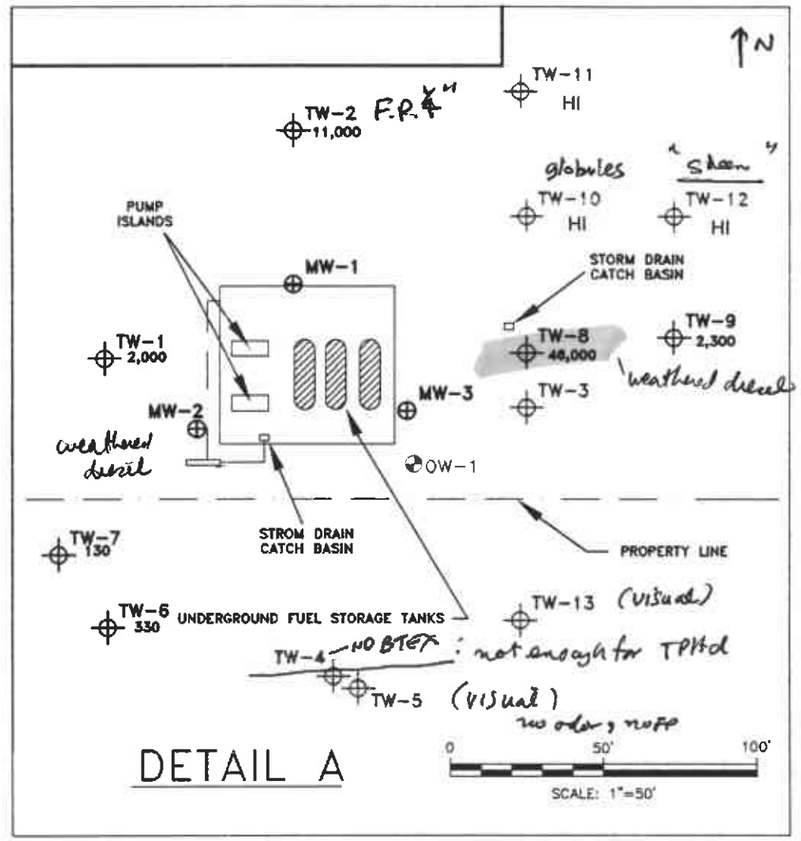
NA = SAMPLE NOT ANALYZED FOR THIS PARAMETER

HI = HYDROCARBONS INDICATED

0 100' 200'
SCALE: 1"=100'

NOTE:

1. SAMPLED 6/12/96 AND 6/13/96.



DETAIL A

UNITED PARCEL SERVICE, INC.
8400 PARDEE DRIVE
OAKLAND, CALIFORNIA

GROUND-WATER SAMPLING LOCATIONS

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 1

L: ON=* OFF=REF
P: STD-PCP/BL
7/3/96 IRV-54-JMS
3876801R/DWSA4PFG1.DWG

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

ANALYTICAL REPORT

Prepared for:

Blasland Bouck & Lee
7599 Redwood Boulevard
Suite 209
Novato, CA 94945

JUL 1 1996
BLASLAND, BOUCK & LEE, INC.
NOVATO, CA

Date: 26-JUN-96
Lab Job Number: 125963
Project ID: 36768.01
Location: UPS

Reviewed by: Damara Moore

Reviewed by: _____

TEH-Tot Ext Hydrocarbons

Client: Blasland Bouck & Lee
Project#: 36768.01
Location: UPS

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125963-001	TW-8	28298	06/12/96	06/19/96	06/25/96	
125963-002	TW-9	28298	06/12/96	06/19/96	06/22/96	
125963-003	TW-1	28298	06/12/96	06/19/96	06/22/96	
125963-004	TW-2	28298	06/12/96	06/19/96	06/22/96	

Matrix: Water

Analyte	Units	125963-001	125963-002	125963-003	125963-004
Diln Fac:		20 TW-8	1 TW-9	1 TW-1	1 TW-2
Diesel C12-C22	ug/L	46000	2300 YHZ	2000 YH	11000 YH
Surrogate					
Hexacosane	%REC	DO	105	88	110

DO: Surrogate diluted out
Y: Sample exhibits fuel pattern which does not resemble standard
Z: Sample exhibits unknown single peak or peaks
H: Heavier hydrocarbons than indicated standard

TEH-Tot Ext Hydrocarbons

Client: Blasland Bouck & Lee
Project#: 36768.01
Location: UPS

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125963-005	TW-6	28298	06/12/96	06/19/96	06/22/96	

Matrix: Water

Analyte	Units	125963-005
Diln Fac:		1
		TW-6
Diesel C12-C22	ug/L	330 YZ
Surrogate		
Hexacosane	%REC	91

Y: Sample exhibits fuel pattern which does not resemble standard
Z: Sample exhibits unknown single peak or peaks

Curtis & Tompkins, Ltd.

Lab #: 125963 BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Blasland Bouck & Lee
Project#: 36768.01
Location: UPS

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 28298
Units: ug/L
Diln Fac: 1

Prep Date: 06/19/96
Analysis Date: 06/22/96

MB Lab ID: QC24706

Analyte	Result	
Diesel C12-C22	<50	
Surrogate	**%Rec**	**Recovery Limits**
Hexacosane	109	60-140

Curtis & Tompkins, Ltd.

Lab #: 125963 BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Blasland Bouck & Lee
Project#: 36768.01
Location: UPS

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
Batch#: 28298
Units: ug/L
Diln Fac: 1

Prep Date: 06/19/96
Analysis Date: 06/22/96

BS Lab ID: QC24708

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	2339	95	60-140
Surrogate	**%Rec**	**Limits**		
Hexacosane	103	60-140		

BSD Lab ID: QC24709

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	2439	99	60-140	4	<35
Surrogate	**%Rec**	**Limits**				
Hexacosane	111	60-140				

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

LABORATORY NUMBER: 125963-001
CLIENT: BLASLAND BOUCK & LEE
PROJECT ID: 36768.01
LOCATION: UPS
SAMPLE ID: TW-8

DATE SAMPLED: 06/12/96
DATE RECEIVED: 06/13/96
DATE ANALYZED: 06/19/96
DATE REPORTED: 06/26/96
BATCH NO: 28267

EPA 8020: Volatile Aromatic Hydrocarbons in Water

COMPOUND	RESULT ug/L	REPORTING LIMIT ug/L
Benzene	ND	1
Toluene	ND	1
Ethyl Benzene	3	1
Total Xylenes	ND	1
Chlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1

ND = Not detected at or above reporting limit.

Surrogate Recovery	
Bromobenzene	101 %

LABORATORY NUMBER: 125963-002
CLIENT: BLASLAND BOUCK & LEE
PROJECT ID: 36768.01
LOCATION: UPS
SAMPLE ID: TW-9

DATE SAMPLED: 06/12/96
DATE RECEIVED: 06/13/96
DATE ANALYZED: 06/19/96
DATE REPORTED: 06/26/96
BATCH NO: 28267

EPA 8020: Volatile Aromatic Hydrocarbons in Water

COMPOUND	RESULT ug/L	REPORTING LIMIT ug/L
Benzene	ND	1
Toluene	ND	1
Ethyl Benzene	ND	1
Total Xylenes	ND	1
Chlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1

ND = Not detected at or above reporting limit.

Surrogate Recovery	
Bromobenzene	101 %

LABORATORY NUMBER: 125963-003
CLIENT: BLASLAND BOUCK & LEE
PROJECT ID: 36768.01
LOCATION: UPS
SAMPLE ID: TW-1

DATE SAMPLED: 06/12/96
DATE RECEIVED: 06/13/96
DATE ANALYZED: 06/19/96
DATE REPORTED: 06/26/96
BATCH NO: 28267

EPA 8020: Volatile Aromatic Hydrocarbons in Water

COMPOUND	RESULT ug/L	REPORTING LIMIT ug/L
Benzene	ND	1
Toluene	12	1
Ethyl Benzene	1.4	1
Total Xylenes	7.9	1
Chlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1

ND = Not detected at or above reporting limit.

Surrogate Recovery	
Bromobenzene	100 %

LABORATORY NUMBER: 125963-004
CLIENT: BLASLAND BOUCK & LEE
PROJECT ID: 36768.01
LOCATION: UPS
SAMPLE ID: TW-2

DATE SAMPLED: 06/12/96
DATE RECEIVED: 06/13/96
DATE ANALYZED: 06/19/96
DATE REPORTED: 06/26/96
BATCH NO: 28267

EPA 8020: Volatile Aromatic Hydrocarbons in Water

COMPOUND	RESULT ug/L	REPORTING LIMIT ug/L
Benzene	ND	1
Toluene	ND	1
Ethyl Benzene	ND	1
Total Xylenes	ND	1
Chlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1

ND = Not detected at or above reporting limit.

Surrogate Recovery	
Bromobenzene	101 %

LABORATORY NUMBER: 125963-005
CLIENT: BLASLAND BOUCK & LEE
PROJECT ID: 36768.01
LOCATION: UPS
SAMPLE ID: TW-6

DATE SAMPLED: 06/12/96
DATE RECEIVED: 06/13/96
DATE ANALYZED: 06/19/96
DATE REPORTED: 06/26/96
BATCH NO: 28267

EPA 8020: Volatile Aromatic Hydrocarbons in Water

COMPOUND	RESULT ug/L	REPORTING LIMIT ug/L
Benzene	ND	1
Toluene	ND	1
Ethyl Benzene	ND	1
Total Xylenes	ND	1
Chlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1

ND = Not detected at or above reporting limit.

Surrogate Recovery	
Bromobenzene	101 %

LABORATORY NUMBER: 125963-MB
CLIENT: BLASLAND BOUCK & LEE
PROJECT ID: 36768.01
LOCATION: UPS
SAMPLE ID: METHOD BLANK

DATE ANALYZED: 06/19/96
DATE REPORTED: 06/26/96
BATCH NO: 28267

EPA 8020: Volatile Aromatic Hydrocarbons in Water

COMPOUND	RESULT ug/L	REPORTING LIMIT ug/L
Benzene	ND	1
Toluene	ND	1
Ethyl Benzene	ND	1
Total Xylenes	ND	1
Chlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1

ND = Not detected at or above reporting limit.

Surrogate Recovery	
Bromobenzene	105 %

Curtis & Tompkins, Ltd
8020 BS/BSD Report

Date Analyzed: 18-JUN-96
Spike File: 170X010
Spike Dup File: 170X011
Analyst: AMP

Matrix: WATER
Batch No: 28267

	Instrdg	SpikeAmt	%Rec	Limits
BS RESULTS				
Benzene	20.2709	20	101%	88-118%
Toluene	20.408	20	102%	85-119%
Chlorobenzene	20.2851	20	101%	90-115%
Surrogate Recoveries				
Bromobenzene	100.5685	100	101%	81-124%
BSD RESULTS				
Benzene	20.6273	20	103%	88-118%
Toluene	20.5551	20	103%	85-119%
Chlorobenzene	19.6233	20	98%	90-115%
Surrogate Recoveries				
Bromobenzene	105.6603	100	106%	81-124%

RPD DATA		
Benzene	2%	<14%
Toluene	1%	<14%
Chlorobenzene	3%	<13%

Column: Rtx 502.2
Results within Specifications - PASS

125963

CHAIN OF CUSTODY FORM

Page 1 of 1

Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

C&T LOGIN # _____

Sampler: Gabe Stivala

Project No: 36768.01
Project Name: UPS
Project P.O.: ———
Turnaround Time: Standard

Report To: Joe Como
Company: Blasland Bouck & Lee
Telephone: (415) 898 7208
Fax: 415 898 7212

Analyses: 8020 8020 and 8015 (TPH-d)

Lab Number	Sample ID.	Sampling Date Time	Matrix: Soil	Water	Waste	# of Containers	Preservative: HCl	H_2SO_4	HNO_3	ICE	Field Notes	8020	8020 and 8015 (TPH-d)
	TW-8	6/12/96 1300				2	X			X		X	X
	TW-9	6/12/96 1410				2	X			X		X	X
	TW-1	6/12/96 0942				2	X			X		X	X
	TW-2	6/12/96 1000				2	X			X		X	X
	TW-6	6/12/96 1130				2	X			X		X	X
	TW-8	6/13/96 1300				1				X			
	TW-9	6/12/96 1410				1				X			
	TW-1	6/13/96 0942				1				X			
	TW-2	6/12/96 1000				1				X			
	TW-6	6/13/96 1130				1				X			
	TW-7	6/12 1247				3				X	* Hold - Jaw 6/13/96		

Notes:

* This sample submitted as well not on C-O-C - logged on label - Jaw 6/13/96

RELINQUISHED BY:

6/13/96 1500 DATE/TIME

DATE/TIME

DATE/TIME

RECEIVED BY:

6/13/96 1500 DATE/TIME

DATE/TIME

DATE/TIME

Signature on this form constitutes a firm Purchase Order for the services requested above

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Blasland Bouck & Lee
7599 Redwood Boulevard
Suite 209
Novato, CA 94945

Date: 02-JUL-96
Lab Job Number: 125969
Project ID: 36768.01
Location: UPS

Reviewed by: Damaris Moore

Reviewed by: _____

TEH-Tot Ext Hydrocarbons

Client: Blasland Bouck & Lee
Project#: 36768.01
Location: UPS

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125969-001	TW-7	28327	06/12/96	06/20/96	06/27/96	

Matrix: Water

Analyte	Units	125969-001	
Diln Fac:		1	
Diesel C12-C22	ug/L	130	Y
Surrogate			
Hexacosane	%REC	80	

Y: Sample exhibits fuel pattern which does not resemble standard

Lab #: 125969 BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Blasland Bouck & Lee
Project#: 36768.01
Location: UPS

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 28327
Units: ug/L
Diln Fac: 1

Prep Date: 06/20/96
Analysis Date: 06/27/96

MB Lab ID: QC24820

Analyte	Result	
Diesel C12-C22	<50	
Surrogate	**%Rec**	**Recovery Limits**
Hexacosane	76	60-140

Lab #: 125969 BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Blasland Bouck & Lee
Project#: 36768.01
Location: UPS

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
Batch#: 28327
Units: ug/L
Diln Fac: 1

Prep Date: 06/20/96
Analysis Date: 06/27/96

BS Lab ID: QC24821

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	1659	67	60-140
Surrogate	%Rec	Limits		
Hexacosane	81	60-140		

BSD Lab ID: QC24822

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	1710	69	60-140	3	<35
Surrogate	%Rec	Limits				
Hexacosane	76	60-140				

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

CURTIS & TOMPKINS, LTD. BERKELEY LOGIN CHANGE FORM

Reason for change: ✓ Client Request: By: Gabe Date/Time: 6/14 9:15 Initials: DLM
_____ Login Review

Current Lab ID	Previous Lab ID	Client ID	Matrix	Add/Cancel	Analysis	Duedate
125969-1	125963-6	TW-7	Water	+	TEH	6/26

Curtis & Tompkins, Ltd.

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Blasland Bouck & Lee
7599 Redwood Boulevard
Suite 209
Novato, CA 94945

Date: 26-JUN-96
Lab Job Number: 125970
Project ID: 36768.01
Location: UPS

Reviewed by: Damara Moore

Reviewed by:

LABORATORY NUMBER: 125970-001
CLIENT: BLASLAND BOUCK & LEE
PROJECT ID: 36768.01
LOCATION: UPS
SAMPLE ID: TW-4

DATE SAMPLED: 06/13/96
DATE RECEIVED: 06/13/96
DATE ANALYZED: 06/19/96
DATE REPORTED: 06/26/96
BATCH NO: 28267

EPA 8020: Volatile Aromatic Hydrocarbons in Water

COMPOUND	RESULT ug/L	REPORTING LIMIT ug/L
Benzene	ND	1
Toluene	ND	1
Ethyl Benzene	ND	1
Total Xylenes	ND	1
Chlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1

ND = Not detected at or above reporting limit.

Surrogate Recovery	
Bromobenzene	107 %

LABORATORY NUMBER: 125970-MB
CLIENT: BLASLAND BOUCK & LEE
PROJECT ID: 36768.01
LOCATION: UPS
SAMPLE ID: METHOD BLANK

DATE ANALYZED: 06/18/96
DATE REPORTED: 06/26/96
BATCH NO: 28267

EPA 8020: Volatile Aromatic Hydrocarbons in Water

COMPOUND	RESULT ug/L	REPORTI LIMIT ug/L
Benzene	ND	1
Toluene	ND	1
Ethyl Benzene	ND	1
Total Xylenes	ND	1
Chlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1

ND = Not detected at or above reporting limit.

Surrogate Recovery	
Bromobenzene	105 %

Curtis & Tompkins, Ltd
8010 BS/BSD Report

Date Analyzed: 18-JUN-96
Spike File: 170W010
Spike Dup File: 170W011
Analyst: AMP

Matrix: WATER
Batch No: 28267

	Instrdg	SpikeAmt	%Rec	Limits
BS RESULTS				
1,1-Dichloroethene	20.2936	20	101%	68-134%
Trichloroethene	20.9725	20	105%	85-141%
Chlorobenzene	18.9176	20	95%	69-135%
Surrogate Recoveries				
Bromobenzene	94.7391	100	95%	85-119%
BSD RESULTS				
1,1-Dichloroethene	22.6514	20	113%	68-134%
Trichloroethene	23.4152	20	117%	85-141%
Chlorobenzene	19.9393	20	100%	69-135%
Surrogate Recoveries				
Bromobenzene	93.6877	100	94%	85-119%

RPD DATA		
1,1-Dichloroethene	11%	<14%
Trichloroethene	11%	<14%
Chlorobenzene	5%	<13%

Column: Rtx 502.2
Results within Specifications - PASS

125470

CHAIN OF CUSTODY FORM

Page 1 of 1

Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

C&T LOGIN # _____

Sampler: Gabe Stivala

Project No: 36768.01

Report To: Joe Como

Project Name: UPS - Oakland

Company: BBL

Project P.O.:

Telephone: 415 898 7208

Turnaround Time: Standard

Fax: 415 898 7212

Lab Number	Sample ID.	Sampling Date Time	Matrix: Soil	Matrix: Water	Matrix: Waste	# of Containers	Preservative: HCl	Preservative: H_2SO_4	Preservative: HNO_3	Preservative: ICE	Field Notes	Analyses: 8020
For Lab Use	TW-4	6/13/96 1725	X			2	X			X		X

Notes:

RELINQUISHED BY:

6/13/96 1340 DATE/TIME

DATE/TIME

DATE/TIME

RECEIVED BY:

6/13/96 DATE/TIME

DATE/TIME

DATE/TIME

Signature on this form constitutes a firm Purchase Order for the services requested above.

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Blasland Bouck & Lee
7599 Redwood Boulevard
Suite 209
Novato, CA 94945

Date: 30-JUL-96
Lab Job Number: 126285
Project ID: 36768.01
Location: UPS

Reviewed by: Damara Moore

Reviewed by:

Curtis & Tompkins, Ltd.

Laboratory Number: **126285**
Client: **Blasland Bouck & Lee**
Project#: **36768.01**

Sample Date: **07/16/96**
Receipt Date: **07/16/96**

FINGERPRINT - TEH

Client Sample I.D	Curtis & Tompkins I.D
MW-2 (FP)	126285-001

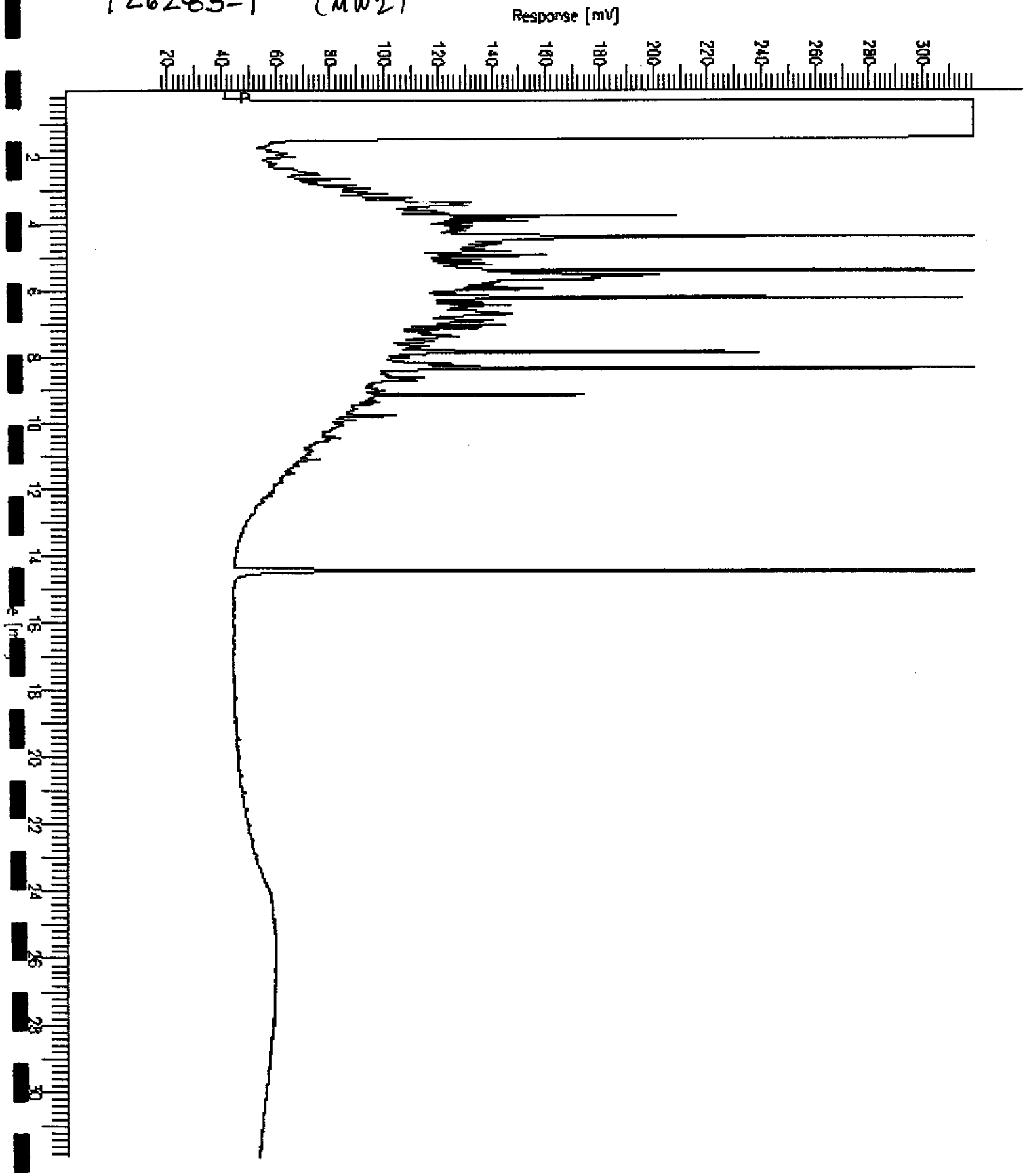
On July 23, 1996, the above sample was analyzed by EPA 8015 modified. It resembles the diesel standard. Enclosed you will find sample 126285-001's chromatogram, and the chromatograms for other standards, including diesel.

GC15 Channel A TEH

Sample Name : F,126285-001
FileName : C:\GC15\CHB\204B015.RAW
Method : BTEHJ.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 17 mV

Sample #: Page 1 of 1
Date : 7/24/96 01:32 PM
Time of Injection: 7/23/96 01:07 AM
Low Point : 16.50 mV High Point : 318.87 mV
Plot Scale: 302.4 mV

126285-1 (MW2)

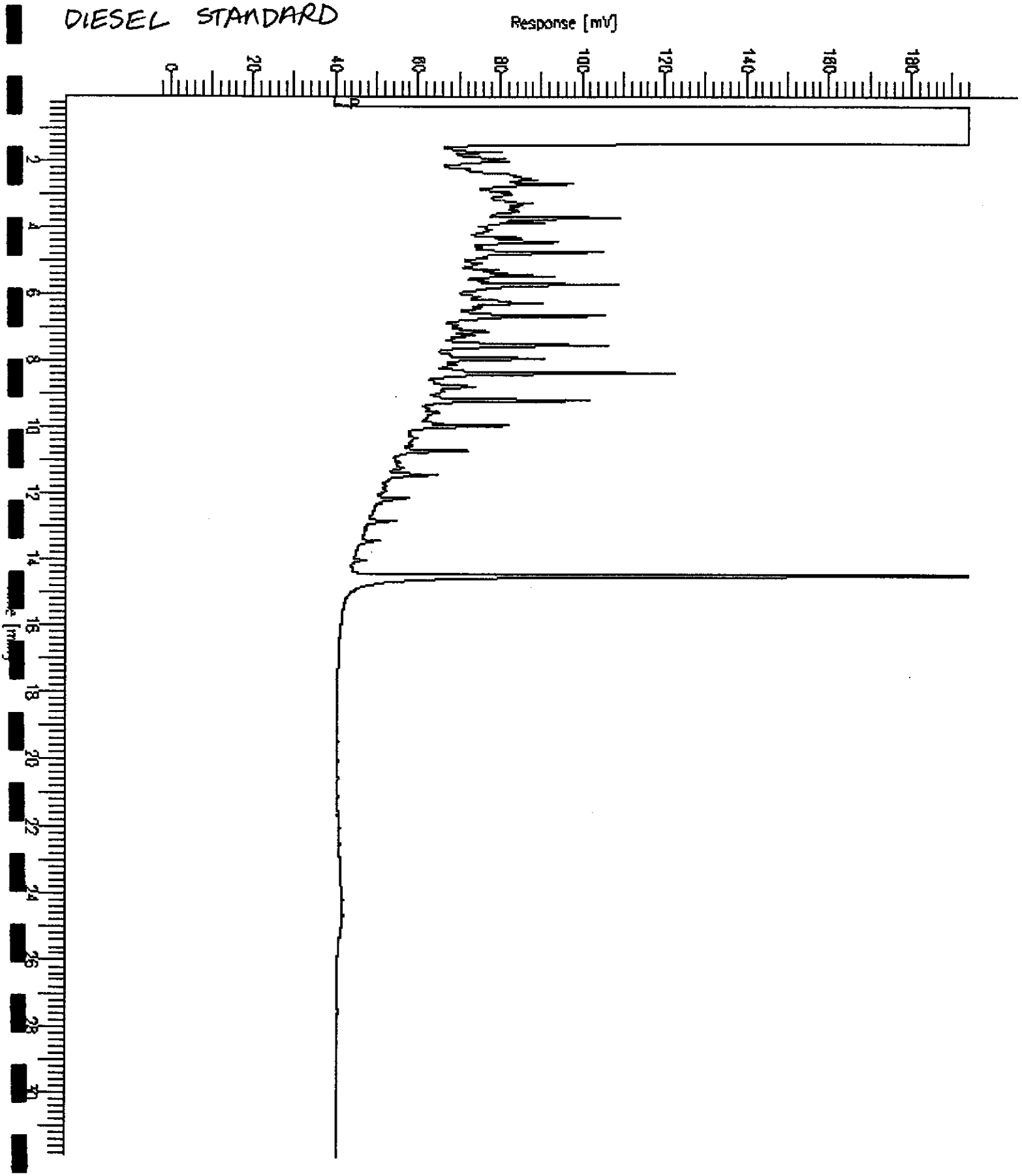


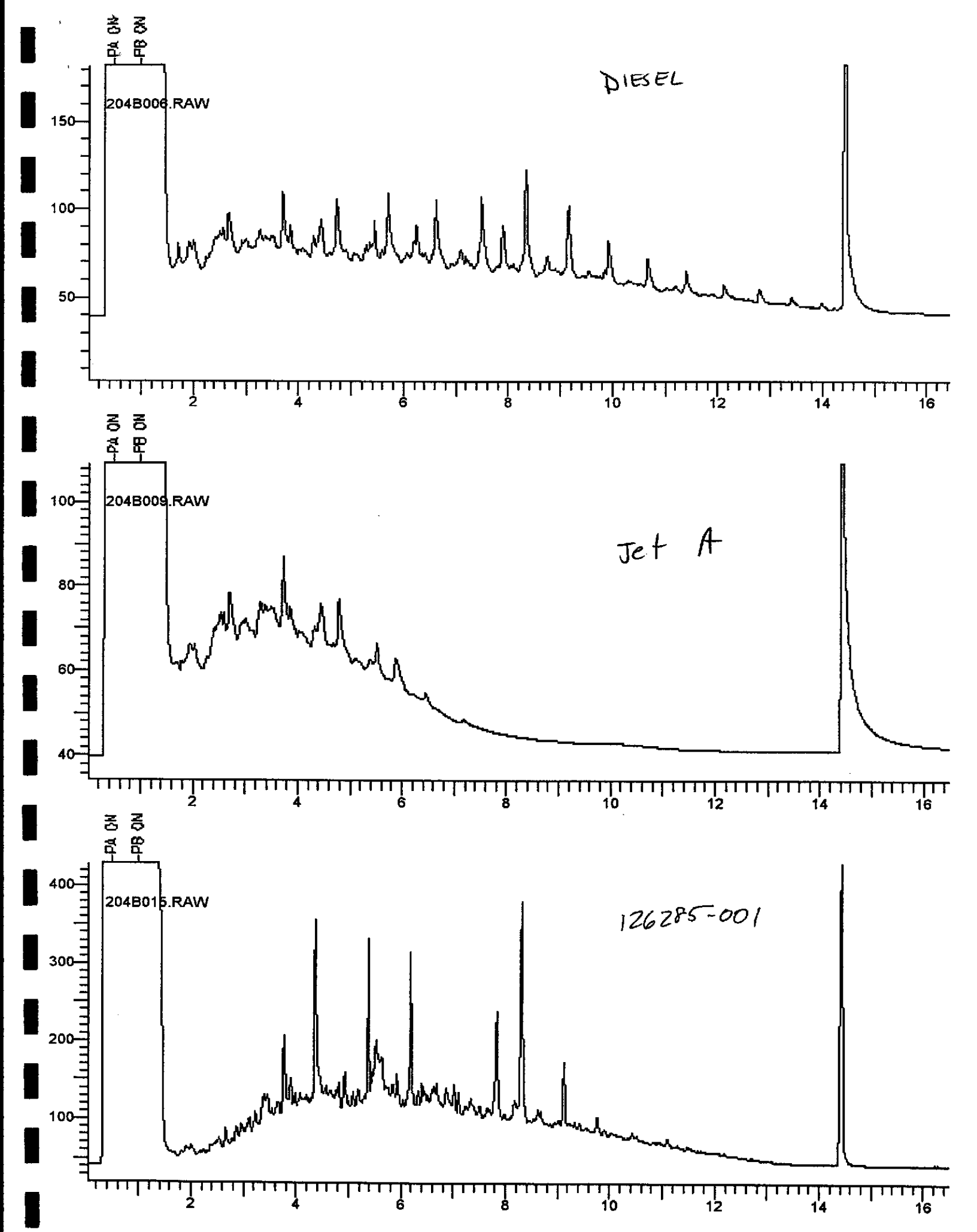
GC15 Channel A TEH

Sample Name : CCV,96WS2709,DSL
FileName : C:\GC15\CHB\204B006.RAW
Method : BTEHJ.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: -3 mV

Sample #: 500MG/L Page 1 of 1
Date : 7/28/96 12:45 PM
Time of Injection: 7/22/96 02:13 PM
Low Point : -3.16 mV High Point : 194.05 mV
Plot Scale: 197.2 mV

DIESEL STANDARD




PA ON
PB ON
204B006.RAW
DIESEL
150
100
50
2
4
6
8
10
12
14
16
PA ON
PB ON
204B009.RAW
Jet A
100
80
60
40
2
4
6
8
10
12
14
16
PA ON
PB ON
204B015.RAW
126285-001
400
300
200
100
2
4
6
8
10
12
14
16

CHAIN OF CUSTODY FORM

Page 1 of 1

Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

C&T LOGIN # 26285

Sampler: G V S

Project No: 36768.01
Project Name: UPS
Project P.O.:
Turnaround Time: STANDARD

Report To: R.B. Scheibach
Company: BBL
Telephone: 415 898 7208
Fax: 898 7212

Lab Number	Sample ID.	Sampling Date Time	Matrix: Soil	Matrix: Water	Matrix: Waste	# of Containers	Preservative: HCl	Preservative: H_2SO_4	Preservative: HNO_3	Preservative: ICE	Field Notes	Analyses: TPHD 8015 + Fingerprint	Analyses: TEH Fingerprint
	MW-2 (FP)	7-16-96/1050	X			1				X	Free Product Sample	X	X

Notes:

RELINQUISHED BY:
7-16-96/11:32 DATE/TIME
DATE/TIME
DATE/TIME

RECEIVED BY:
DATE/TIME
DATE/TIME
D. Moore 7/16/96 DATE/TIME

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