

3R - 117

REPORTS

DATE:

Oct. 2, 2000

BLAGG ENGINEERING, INC.

P.O. Box 87, Bloomfield, New Mexico 87413
Phone: (505) 632-1199 Fax: (505) 632-3903

October 2, 2000

Mr. Denny G. Foust -Environmental Geologist
New Mexico Oil Conservation Division - (NMOCD)
1000 Rio Brazos Road
Aztec, New Mexico 87410

RECEIVED

OCT 05 2000

RE: Cross Timbers Oil Co. L.C. Kelly # 5A Spill Cleanup Report
Unit G, SEC. 3, T30N, R12W, San Juan County, New Mexico

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Dear Mr. Foust:

On behalf of Cross Timbers Oil Company (CTOC), Blagg Engineering, Inc. (BEI) respectfully submits the attached data affiliated with the L.C. Kelly # 5A vandalized spill (release amount unknown) reported on August 6, 2000.

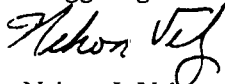
Briefly summarizing the cleanup effort which took place between August 7th and September 6th, 2000; approximately 100 cubic yards of impacted soil was removed (refer to Figure 1) and landfarmed on-site on August 7th, 2000. The excavation perimeter (approximately 13 ft. X 30 ft. X 7 ft.) was arbitrarily and judgmentally sampled upon completion of the excavation activity (refer to Figure 1 for sample locations and result summary). On August 9, 2000, BEI, utilizing an Earthprobe 200 mobile drill rig, attempted to establish vertical extent (BH-1), but encountered auger refusal for the equipment at 31 feet (apparent hard/compact silty sand). Upon review of the laboratory analytical results obtained from the BH-1 advancement, Envirotech, Inc. was then contacted for use of their mobile drill rig (comparable to a CME 61). On September 6, 2000, a second bore hole (BH-2) was advanced and at 55 feet below grade, the vertical extent of contamination appears to have been established (all samples obtained via split spoon). It was then suggested and agreed upon between BEI and NMOCD to remediate the remaining contamination passively; implementing a vertical vent pipe perforated between 5-55 feet below grade (refer to Figure 2).

Lateral extent of contamination appears to be below the NMOCD's closure standards for benzene and total BTEX (benzene, toluene, ethylbenzene, and total xylenes) based on the organic vapor meter (OVM) reading comparisons to that of the sample obtained from TH-1 @ 8 feet on August 7, 2000. However, the total petroleum hydrocarbon (TPH) closure standard (1,000 parts per million or ppm) was never evaluated.

Based upon the attached information given, CTOC is requesting closure based on risk that the remaining soil contamination does not appear to pose a present or future threat to groundwater, health, or the environment.

If you have any questions or comments concerning this report, please contact myself or Jeff Blagg at the address or phone number listed above. Thank you for your cooperation.

Respectfully submitted,
Blagg Engineering, Inc.


Nelson J. Velez
Staff Geologist

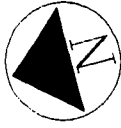
Attachments: Spill Cleanup Report

cc: Bill Olson, Hydrologist, NMOCD, Santa Fe Office, NM
Mark Kelly, Petroleum Engineer - Team Lead, BLM, Farmington, NM (2 copies)
Terry Matthews, Regional Supervisor, Cross Timbers Oil Co., Farmington, NM

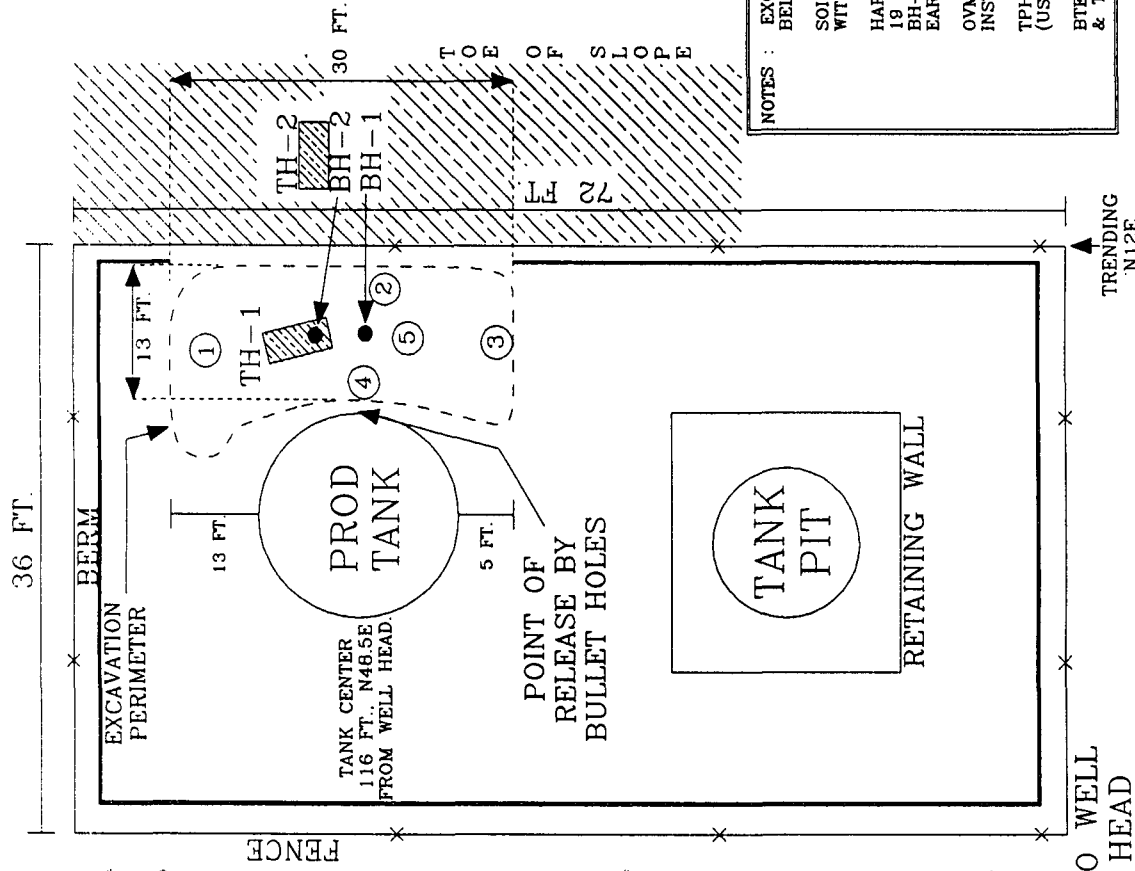
NJV/njv

LCK-SA.CVL

SCHEMATIC
NOT TO
SCALE



TO JOHNSON
ARROYO (DRY)
APPROX. 185
LATERAL FT.



NOTES : EXCAVATION DEPTH @ APPROX. 7 FT.
BELOW GRADE.

SOIL MOSTLY MOD. YELL. BROWN SAND
WITH NO DISCOLORATION OBSERVED.

HARD SILTY SAND ENCOUNTERED APPROX.
19 FT. BELOW GRADE IN BH-1.

BH-1 DRILLED WITH BLAGG ENGINEERING
EARTHPROBE 200.

OVN = ORGANIC VAPOR METER (FIELD
INSTRUMENT).

TPH = TOTAL PETROLEUM HYDROCARBONS
(USEPA METHOD 8015)

BTEX = BENZENE, TOLUENE, ETHYLBENZENE,
& TOTAL XYLENES (USEPA METHOD 8021).

OVM CALJB. =
53.1 ppm
(relative to
52.0 ppm) @
6:37 am on
6/6/00

SAMP	PT. ID	OWM READING (ppm)
1	@ 7 FT.	196
2	@ 4 FT.	227
3	@ 4 FT.	362
4	@ 4 FT.	237
5	@ 4 FT.	221
TH-1	@ 8 FT.	1038
TH-2	@ 7 FT.	1154

AUG. 9, 2000	
SAMP. PT. ID	OVM READING (ppm)
BH-1 @ 20 FT.	134
BH-1 @ 22 FT.	132
BH-1 @ 28 FT.	148
BH-1 @ 31 FT.	143

OVM CALIB. =
53.4 ppm
(relative to
52.0 ppm) @
8:20 am on
9/6/00.

SAMP. PT. ID	OVM READING (ppm)
BH-2 @ 35 FT.	118.2
BH-2 @ 45 FT.	99.5
BH-2 @ 50 FT.	123.3
BH-2 @ 55 FT.	99.5

LABORATORY RESULTS			
SAMP. PT. ID	TPH (ppm)	BENZENE (ppb)	TOTAL BTEX (ppb)
TH-1 @ 8 FT.	3,820	1,190	6,250
BH-1 @ 22 FT.	10,600	-	-
BH-1 @ 31 FT.	2,050	-	-
BH-2 @ 55 FT.	244	-	-
STATE REGULATIONS		1,000	10,000
		OVM 100 ppm	

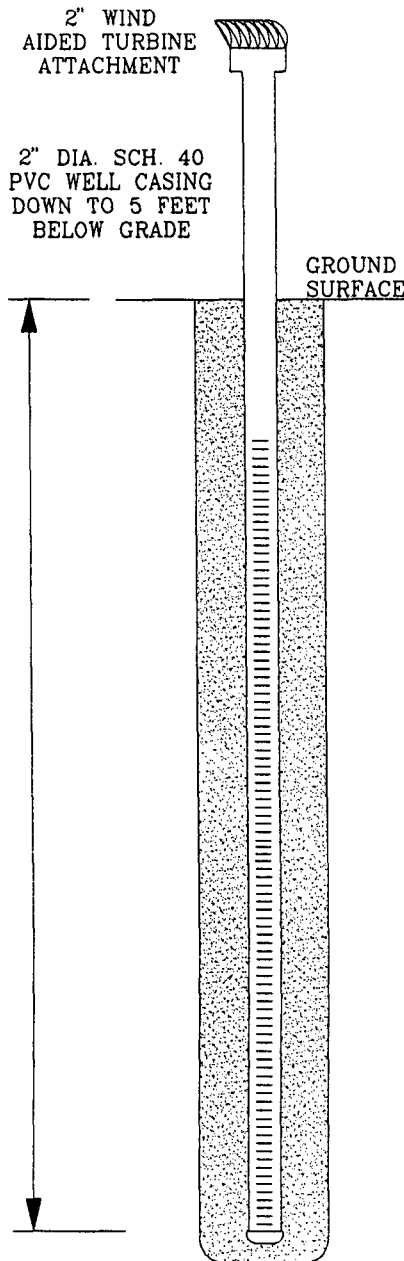
CROSS TIMBERS OIL COMPANY
L.C. KELLY #5A
SW/4 NE/4 SEC. 3, T30N, R12W
SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.
CONSULTING PETROLEUM / RECLAMATION SERVICES
P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413
PHONE: (505) 632-1199

PROJECT: SPILL CLEANUP
DRAWN BY: NJV
FILENAME: KELLY5AR.SKD
REVISED: 9/26/00

SITE
MAP
08/00

FIGURE 2



0.01 INCH SLOTTED
SCREEN SCH 40
WITH POINTED
END CAP FROM
5-55 FEET BELOW
GRADE

ANNULAR COMPLETED
WITH SOIL REMOVED
WITH HOLLOW STEM
AUGER

TOTAL DEPTH = 55.00 FT.
FROM GROUND SURFACE

CROSS TIMBERS OIL COMPANY

L.C. KELLY # 5A

PASSIVE VENT PIPE CONSTRUCTION & COMPLETION

INSTALLED WITH MOBILE DRILL RIG

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE (505) 632 1199

VENT PIPING SCHEMATIC

DRAFTED BY: NJV

DATE: SEPT. '00

FILENAME: ION PVP.SKD

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

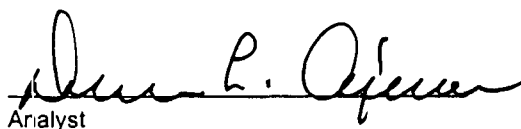
Client:	Blagg / Cross Timbers	Project #:	403410
Sample ID:	TH 1 @ 8'	Date Reported:	08-07-00
Laboratory Number:	H864	Date Sampled:	08-07-00
Chain of Custody No:	7330	Date Received:	08-07-00
Sample Matrix:	Soil	Date Extracted:	08-07-00
Preservative:	Cool	Date Analyzed:	08-07-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

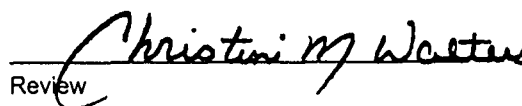
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	3,590	0.2
Diesel Range (C10 - C28)	228	0.1
Total Petroleum Hydrocarbons	3,820	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: L. C. Kelly # 5A Tank Spill.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

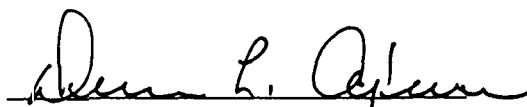
Client:	Blagg / Cross Timbers	Project #:	403410
Sample ID:	BH - 1 @ 22'	Date Reported:	08-09-00
Laboratory Number:	H880	Date Sampled:	08-09-00
Chain of Custody No:	7477	Date Received:	08-09-00
Sample Matrix:	Soil	Date Extracted:	08-09-00
Preservative:	Cool	Date Analyzed:	08-09-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	10,260	0.2
Diesel Range (C10 - C28)	333	0.1
Total Petroleum Hydrocarbons	10,600	0.1

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: L. C. Kelly # 5A Tank Spill.


Analyst


Reviewer

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

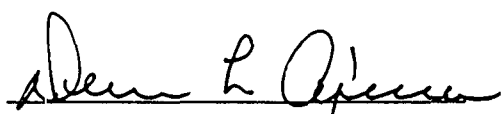
Client:	Blagg / Cross Timbers	Project #:	403410
Sample ID:	BH - 1 @ 31'	Date Reported:	08-10-00
Laboratory Number:	H882	Date Sampled:	08-09-00
Chain of Custody No:	7489	Date Received:	08-10-00
Sample Matrix:	Soil	Date Extracted:	08-10-00
Preservative:	Cool	Date Analyzed:	08-10-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

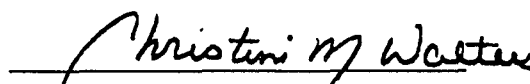
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	1,980	0.2
Diesel Range (C10 - C28)	67.0	0.1
Total Petroleum Hydrocarbons	2,050	0.1

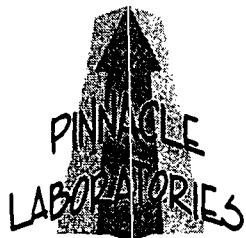
ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: L. C. Kelly # 5A Tank Spill.


Analyst


Review



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8015 MODIFIED (DIRECT INJECT)
CLIENT : ENVIROTECH, INC.
PROJECT # : 403410
PROJECT NAME : BLAGG/CROSS TIMBERS

PINNACLE I.D.: 009030

SAMPLE	DATE	DATE	DATE	DIL.
ID. #	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	09/06/00	09/07/00	09/11/00	1

PARAMETER	DET. LIMIT	UNITS	BH2 @ 55/18081
FUEL HYDROCARBONS, C6-C10	10	MG/KG	230
FUEL HYDROCARBONS, C10-C22	10	MG/KG	14
FUEL HYDROCARBONS, C22-C36	10	MG/KG	< 10
CALCULATED SUM:			244

SURROGATE:
O-TERPHENYL (%) 103
SURROGATE LIMITS (66 - 151)

CHEMIST NOTES:
N/A

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / Cross Timbers	Project #:	403410
Sample ID:	TH 1 @ 8'	Date Reported:	08-07-00
Laboratory Number:	H864	Date Sampled:	08-07-00
Chain of Custody:	7330	Date Received:	08-07-00
Sample Matrix:	Soil	Date Analyzed:	08-07-00
Preservative:	Cool	Date Extracted:	08-07-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	1,190	1.8
Toluene	976	1.7
Ethylbenzene	1,160	1.5
p,m-Xylene	1,230	2.2
o-Xylene	1,690	1.0
Total BTEX	6,250	

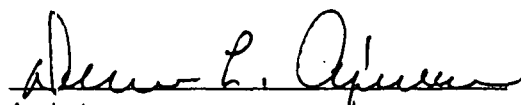
ND - Parameter not detected at the stated detection limit.

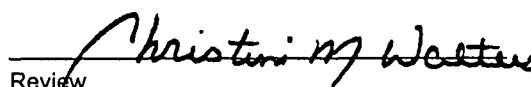
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: L. C. Kelly # 5A Tank Spill.


Analyst


Review

7330

[illegible]

7477

[illegible]

7489

[illegible]

7484

[illegible]

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	08-07-TPH QA/QC	Date Reported:	08-07-00
Laboratory Number:	H854	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	08-07-00
Condition:	N/A	Analysis Requested:	TPH

	1-Cal Date	1-Cal RF	2-Cal RF	% Difference	Accept Range
Gasoline Range C5 - C10	08-03-00	2.1477E-002	2.1455E-002	0.10%	0 - 15%
Diesel Range C10 - C28	08-03-00	1.7996E-002	1.7960E-002	0.20%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

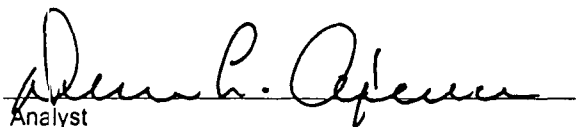
Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept Range
Gasoline Range C5 - C10	1,350	1,340	0.7%	0 - 30%
Diesel Range C10 - C28	2,860	2,860	0.0%	0 - 30%

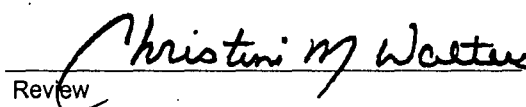
Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept Range
Gasoline Range C5 - C10	1,350	250	1,600	100%	75 - 125%
Diesel Range C10 - C28	2,860	250	3,110	100%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for samples H854 - H859 and H861 - H864.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	08-09-TPH QA/QC	Date Reported:	08-09-00
Laboratory Number:	H874	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	08-09-00
Condition:	N/A	Analysis Requested:	TPH

	Cal Date	Cal RE	Cal RE	% Difference	Accept Range
Gasoline Range C5 - C10	08-03-00	2.1477E-002	2.1455E-002	0.10%	0 - 15%
Diesel Range C10 - C28	08-03-00	1.7996E-002	1.7960E-002	0.20%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

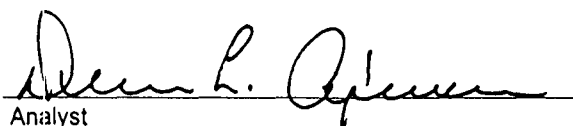
Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept Range
Gasoline Range C5 - C10	690	688	0.4%	0 - 30%
Diesel Range C10 - C28	46.0	45.9	0.2%	0 - 30%

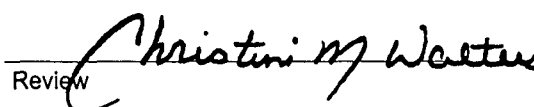
Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept Range
Gasoline Range C5 - C10	690	250	939	100%	75 - 125%
Diesel Range C10 - C28	46.0	250	295	100%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for samples H 874 - H878 and H880.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	08-10-TPH QA/QC	Date Reported:	08-10-00
Laboratory Number:	H882	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	08-10-00
Condition:	N/A	Analysis Requested:	TPH

	Cal Date	Cal RF	Cal RF	% Difference	Accept Range
Gasoline Range C5 - C10	08-03-00	2.1477E-002	2.1455E-002	0.10%	0 - 15%
Diesel Range C10 - C28	08-03-00	1.7996E-002	1.7960E-002	0.20%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

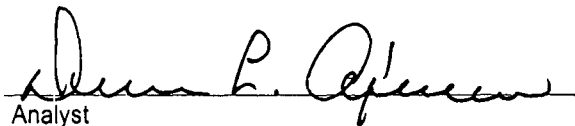
Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept Range
Gasoline Range C5 - C10	1,980	1,970	0.5%	0 - 30%
Diesel Range C10 - C28	67.0	66.8	0.3%	0 - 30%

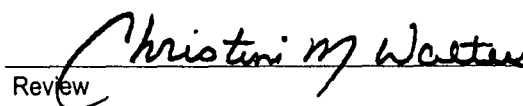
Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept Range
Gasoline Range C5 - C10	1,980	250	2,220	100%	75 - 125%
Diesel Range C10 - C28	67.0	250	316	100%	75 - 125%

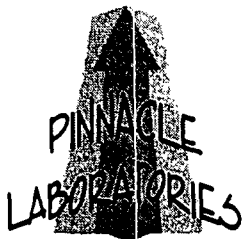
ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for samples H882 - H885.


Analyst


Review



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

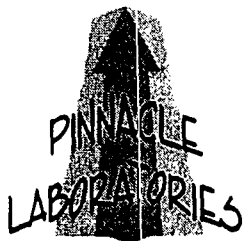
GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8015 MODIFIED (DIRECT INJECT)		
BLANK I.D.	: 090700	PINNACLE I.D.	: 009030
CLIENT	: ENVIROTECH, INC.	DATE EXTRACTED	: 09/07/00
PROJECT #	: 403410	DATE ANALYZED	: 09/08/00
PROJECT NAME	: BLAGG/CROSS TIMBERS	SAMPLE MATRIX	: NON-AQ

PARAMETER	UNITS	
FUEL HYDROCARBONS, C6-C10	MG/KG	< 10
FUEL HYDROCARBONS, C10-C22	MG/KG	< 10
FUEL HYDROCARBONS, C22-C36	MG/KG	< 10

SURROGATE:
O-TERPHENYL (%) 101
SURROGATE LIMITS (80 - 151)

CHEMIST NOTES:
N/A



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

TEST : EPA 8015 MODIFIED (DIRECT INJECT)
MSMSD # : 009035-03
CLIENT : ENVIROTECH, INC.
PROJECT # : 403410
PROJECT NAME : BLAGG/CROSS TIMBERS

PINNACLE I.D. : 009030
DATE EXTRACTED : 09/07/00
DATE ANALYZED : 09/09/00
SAMPLE MATRIX : NON-AQ
UNITS : MG/KG

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
FUEL HYDROCARBONS	86	200	283	99	324	119	14	(56 - 148)	20

CHEMIST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	08-07-BTEX QA/QC	Date Reported:	08-07-00
Laboratory Number:	H854	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	08-07-00
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF	C-Cal RF	%Diff	Blank Conc	Detect Limit
			Accept Range 0 - 15%		
Benzene	6.1654E-002	6.1802E-002	0.2%	ND	0.2
Toluene	8.4151E-002	8.4303E-002	0.2%	ND	0.2
Ethylbenzene	1.0764E-001	1.0787E-001	0.2%	ND	0.2
p,m-Xylene	1.2081E-001	1.2111E-001	0.3%	ND	0.2
o-Xylene	1.1294E-001	1.1313E-001	0.2%	ND	0.1

Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff	Accept Range	Detect Limit
Benzene	210	209	0.5%	0 - 30%	1.8
Toluene	1,120	1,100	1.8%	0 - 30%	1.7
Ethylbenzene	808	801	0.9%	0 - 30%	1.5
p,m-Xylene	2,560	2,540	0.8%	0 - 30%	2.2
o-Xylene	1,370	1,370	0.0%	0 - 30%	1.0

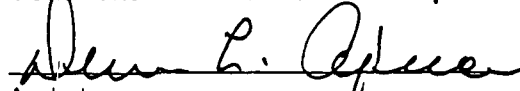
Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	210	50.0	260	100%	39 - 150
Toluene	1,120	50.0	1,170	100%	46 - 148
Ethylbenzene	808	50.0	856	100%	32 - 160
p,m-Xylene	2,560	100	2,650	100%	46 - 148
o-Xylene	1,370	50.0	1,420	100%	46 - 148

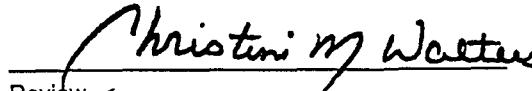
* - Administrative range set to 80 - 120%.

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for samples H854 - H856, H859 and H861 - H864.


Analyst


Review