



Date Remediation Started: \_\_\_\_\_ Date Completed: 9/2/98

Remediation Method: Excavation ☒ Approx. cubic yards 60  
(check all appropriate sections) Landfarmed ☒ Insitu Bioremediation \_\_\_\_\_  
Other \_\_\_\_\_

Remediation Location: Onsite ☒ Offsite \_\_\_\_\_  
(i.e. landfarmed onsite, name and location of offsite facility)

General Description of Remedial Action: Excavation - BEDROCK BOTTOM - RISK ASSESSED.Groundwater Encountered: No ☒ Yes \_\_\_\_\_ Depth \_\_\_\_\_Final Pit: Sample location see Attached Documents

Closure Sampling:  
(if multiple samples, attach sample results and diagram of sample locations and depths)

Sample depth 5' (SOUTH SIDEWALL)

Sample date 8/27/98 Sample time 1200

## Sample Results

Soil: Benzene	(ppm)	<u>0.884</u>	Water: Benzene	(ppb)	_____
Total BTEX	(ppm)	<u>17.970</u>	Toluene	(ppb)	_____
Field Headspace	(ppm)	<u>708</u>	Ethylbenzene	(ppb)	_____
TPH	(ppm)	<u>1,810</u>	Total Xylenes	(ppb)	_____

Groundwater Sample: Yes \_\_\_\_\_ No ☒ (If yes, attach sample results)

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

DATE 9/2/98 PRINTED NAME Jeffrey C. Blagg, P.E. #11607SIGNATURE Jeffrey C. Blagg AND TITLE President

AFTER REVIEW OF THE PIT CLOSURE INFORMATION, PIT CLOSURE IS APPROVED IN ACCORDANCE TO THE JICARILLA APACHE TRIBE PIT CLOSURE ORDINANCE.

APPROVED: YES ☒ NO \_\_\_\_\_ (REASON) \_\_\_\_\_SIGNED: Ken C. M... DATE: 10-1-98

CLIENT: <u>CONOCO</u>	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: <u>C614</u> C.O.C. NO: <u>6192</u>
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PAGE No: 1 of 1

LOCATION: NAME: <u>APACHE</u>	WELL #: <u>5</u>	PIT: <u>COMPR.</u>	DATE STARTED: <u>8/27/98</u>
QUAD/UNIT: <u>E</u> SEC: <u>17</u> TWP: <u>26N</u>	RNG: <u>3W</u>	PM: <u>NM</u> CNTY: <u>RA</u> ST: <u>NM</u>	DATE FINISHED: _____
QTR/FOOTAGE: <u>1520' FNL/800' FWL</u>	CONTRACTOR: <u>JVC</u>	ENVIRONMENTAL SPECIALIST: <u>NV</u>	

EXCAVATION APPROX. 15 FT. x 20 FT. x 10 FT. DEEP. CUBIC YARDAGE: 60  
DISPOSAL FACILITY: ON-SITE REMEDIATION METHOD: LANDFARM  
LAND USE: RANGE LEASE: CONTRACT # 98 FORMATION: DK

FIELD NOTES & REMARKS:	PIT LOCATED APPROXIMATELY <u>39</u> FT. <u>N30E</u> FROM WELLHEAD.
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DEPTH TO GROUNDWATER: 7100' NEAREST WATER SOURCE: >1000' NEAREST SURFACE WATER: >1000'

NMOCB BANKING SCORE: 0 NMOCB TPH CLOSURE STD: 5000 PPM

## SOIL AND EXCAVATION DESCRIPTION:

CHECK ONE :

☒ PIT ABANDONED

☐ STEEL TANK INSTALLED

☐ FIBERGLASS TANK INSTALLED

SIDEWALLS - TOP HALF CONSISTED OF MOD. YELL. ORANGE SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM  
BOTTOM HALF - MED. TO DR. GRAY CLAY, PLASTIC, SLIGHTLY MOIST, STIFF TO VERY STIFF.  
NO APPARENT HC ODOR DETECTED W/IN EXCAVATION, STRONG HC ODOR IN EAST & SOUTH SIDEWALL OUM SAMPLES.

BOTTOM - LT GRAY BEDROCK (SHALE), VERY HARD, STRONG HC ODOR IN OUM SAMPLE.

BEVILACK  
Bottom

RISK ASSESSED

FIELD 418.1 CALCULATIONS

SCALE



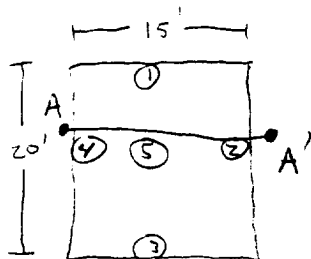
0 FT

FIELD 4181 CALCULATIONS							
TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	ml. FREON	DILUTION	READING	CALC. ppm
1200							

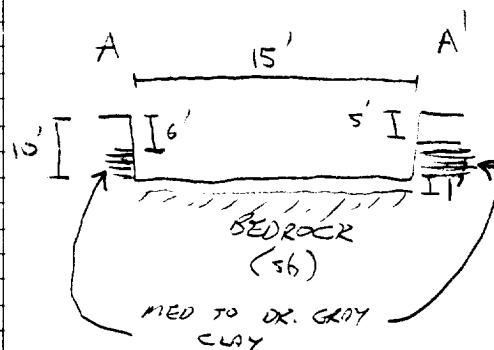
PIT PERIMETER

## OVM RESULTS

## PIT PROFILE



● WELL  
HEAD

[illegible]

TRAVEL NOTES:

CALLOUT: 8/25/98 - MORN.

ONSITE: 8/27/98 - morning.

Well Name:	Apache #5
Well Site location:	Unit E, Sec. 17, T26N, R3W
Pit Type:	Compressor Pit
Producing Formation:	Basin Dakota
Pit Category:	Non Vulnerable
Horizontal Distance to Surface Water:	> 1000 ft.
Vicinity Groundwater Depth:	> 100 ft.

## **RISK ASSESSMENT (non-vulnerable area)**

Pit remediation activities were terminated when trackhoe encountered shale bedrock at 10 feet below grade.

No past or future threat to surface water or groundwater is likely based on the following considerations:

1. Past production fluids were contained locally by a relatively shallow shale bedrock located 10 feet below grade. Groundwater levels located on or close to the well pad are estimated to be at a much greater depth below shale bedrock.
2. Topographic information does not indicate off site lateral fluid migration near the earthen pit.
3. Daily discharge into the earthen pit has been terminated (pit abandoned). Prior discharge into the pit is believed to be under 5 barrels per day.
4. Well site located within the non-vulnerable area and is approximately 0.54 miles northeast of the nearest vulnerable area boundary (Bull Well Canyon wash).

**(Refer to Schmitz Ranch Quadrangle, New Mexico - Rio Arriba County, 7.5 Minute Series (Topographic), 1963, (vulnerable area boundary developed by Mr. William C. Olson, Hydrogeologist, Environmental Bureau, New Mexico Oil Conservation Division).**

Based upon the information given, we conclude that the subsurface lateral impact from the earthen pit is very limited and that the shale bottom creates enough of an impermeable barrier as to subdue impact to groundwater below it (please refer to AMOCO's report "Post Excavation Pit Closure Investigation Summary, July, 1995", with cover letter dated November 30, 1995). CONOCO requests pit closure approval on this location.

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

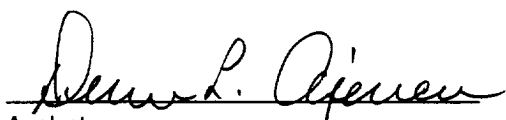
Client:	Blagg / CONOCO	Project #:	04034-10
Sample ID:	3 @ 5'	Date Reported:	09-02-98
Laboratory Number:	D879	Date Sampled:	08-27-98
Chain of Custody No:	6192	Date Received:	08-31-98
Sample Matrix:	Soil	Date Extracted:	08-31-98
Preservative:	Cool	Date Analyzed:	09-01-98
Condition:	Cool and Intact	Analysis Requested:	8015 TPH


Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	750	0.2
Diesel Range (C10 - C28)	1,060	0.1
Total Petroleum Hydrocarbons	1,810	0.2

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: **Apache # 5 Compressor Pit.**

  
Analyst

  
Review

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / CONOCO	Project #:	04034-10
Sample ID:	3 @ 5'	Date Reported:	09-01-98
Laboratory Number:	D879	Date Sampled:	08-27-98
Chain of Custody:	6192	Date Received:	08-31-98
Sample Matrix:	Soil	Date Analyzed:	09-01-98
Preservative:	Cool	Date Extracted:	08-31-98
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	884	8.8
Toluene	5,900	8.4
Ethylbenzene	3,170	7.6
p,m-Xylene	5,960	10.8
o-Xylene	2,060	5.2
Total BTEX	17,970	

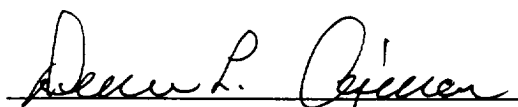
ND - Parameter not detected at the stated detection limit.

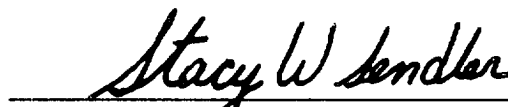
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	96 %
	Bromofluorobenzene	96 %

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: Apache # 5 Compressor Pit..

  
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:	09-01-TPH QA/QC	Date Reported:	09-02-98
Laboratory Number:	D875	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	09-01-98
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF	C-Cal RF	% Difference	Accept. Range
Gasoline Range C5 - C10	04-28-98	3.5389E-002	3.5353E-002	0.10%	0 - 15%
Diesel Range C10 - C28	04-28-98	5.6888E-002	5.6860E-002	0.05%	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

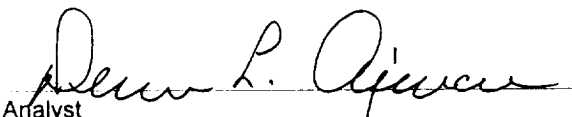
Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	605	600	0.8%	0 - 30%
Diesel Range C10 - C28	738	732	0.8%	0 - 30%

Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	605	250	853	100%	75 - 125%
Diesel Range C10 - C28	738	250	986	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 D875 - D880.

  
Analyst

  
Review



# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	09-01-BTEX QA/QC	Date Reported:	09-01-98
Laboratory Number:	D875	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	09-01-98
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	4.5253E-003	4.5344E-003	0.2%	ND	0.2
Toluene	3.7550E-003	3.7663E-003	0.3%	ND	0.2
Ethylbenzene	2.0718E-003	2.0839E-003	0.6%	ND	0.2
p,m-Xylene	2.0890E-003	2.1037E-003	0.7%	ND	0.2
o-Xylene	1.6391E-003	1.6457E-003	0.4%	ND	0.1

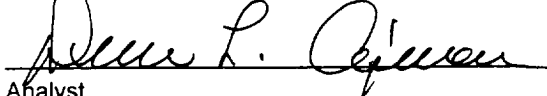
Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff	Accept Range	Detect. Limit
Benzene	81.4	82.4	1.2%	0 - 30%	8.8
Toluene	873	879	0.7%	0 - 30%	8.4
Ethylbenzene	359	362	0.8%	0 - 30%	7.6
p,m-Xylene	4,850	4,890	1.6%	0 - 30%	10.8
o-Xylene	655	665	1.4%	0 - 30%	5.2

Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	81.4	50.0	131	100%	39 - 150
Toluene	873	50.0	922	100%	46 - 148
Ethylbenzene	359	50.0	409	100%	32 - 160
p,m-Xylene	4,850	100	4,850	100%	46 - 148
o-Xylene	655	50.0	705	100%	46 - 148

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 D875 - D880.

  
Analyst

  
Review

CA614

**JICARILLA APACHE TRIBE  
ENVIRONMENTAL PROTECTION OFFICE  
P.O. BOX 507  
DULCE, NEW MEXICO 87528**

SUBMIT 1 COPY TO  
NATURAL RESOURCE DEPT  
AND OIL & GAS ADMINISTRATION

**ON-SITE SOIL REMEDIATION REPORT**

Operator: <u>Conoco, Inc.</u> Telephone: <u>(505) 324-5884</u>	
Address: <u>3315 Bloomfield Hwy., Farmington, NM 87401</u>	
Facility or Well Name: <u>APACHE # 5</u>	
Location: Unit or Qtr/Qtr Sec <u>E</u> Sec <u>17</u> T <u>26N</u> R <u>3W</u> County <u>RIO ARIZONA</u>	
Land Type: <u>RANGE</u>	
Date Remediation Started: <u>8/27/98</u> Date Completed: <u>4/15/99</u>	
Remediation Method: Landfarmed <input checked="" type="checkbox"/> Approx. cubic yards <u>60</u>	
Composted <input type="checkbox"/>	
Other <input type="checkbox"/>	
Depth To Groundwater: (pts.) <u>0</u>	<b>Final Closure Sampling:</b> Sampling Date: <u>4/13/99</u> Time: <u>1025</u> Sample Results: Field Headspace (ppm) <u>65.3</u> TPH (ppm) <u>4,420</u> Method <u>8015</u> Other <input type="checkbox"/>
Distance to an Ephemeral Stream (pts.) <u>0</u>	
Distance to Nearest Lake, Playa, or Watering Pond (pts.) <u>0</u>	
Wellhead Protection Area: (pts.) <u>0</u>	
Distance To Surface Water: (pts.) <u>0</u>	
RANKING SCORE (TOTAL POINTS): <u>0</u>	
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF	
DATE <u>4/15/99</u> PRINTED NAME <u>Jeffrey C. Blagg, P.E. #11607</u>	
SIGNATURE <u>Jeffrey C. Blagg</u> AND TITLE <u>President</u>	
AFTER REVIEW OF THE SOIL REMEDIATION INFORMATION, ON-SITE REMEDIATION IS APPROVED IN ACCORDANCE TO THE JICARILLA APACHE TRIBE PIT CLOSURE ORDINANCE	
APPROVED: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> (REASON) <u>no Backfill</u>	
SIGNED: <u>K. C. M...</u> DATE: <u>6-3-99</u>	

CLIENT: <u>CONOCO</u>	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: <u>CAG14</u> C.O.C. NO: <u>6639</u>
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# FIELD REPORT: LANDFARM/COMPOST PILE CLOSURE VERIFICATION

LOCATION NAME: <u>APACHE</u>	WELL #: <u>5</u>	PITS: <u>COMPR.</u>	DATE STARTED: <u>4/13/99</u>
QUAD/UNIT: <u>E</u>	SEC: <u>17</u>	TWP: <u>26N</u> RNG: <u>3W</u> PM: <u>NM</u> CNTY: <u>RA</u> ST: <u>NM</u>	DATE FINISHED: _____
STR/FEETAGE: <u>SW/4</u> <u>NW/4</u>	CONTRACTOR: <u>TVC</u>	ENVIRONMENTAL SPECIALIST: <u>NV</u>	

## SOIL REMEDIATION:

REMEDICATION SYSTEM: LANDFARM

APPROX. CUBIC YARDAGE: 60

LAND USE: RANGE

LIFT DEPTH (ft): 1.5-2

## FIELD NOTES & REMARKS:

DEPTH TO GROUNDWATER: >100' NEAREST WATER SOURCE: >1000' NEAREST SURFACE WATER: >1000'  
 NMOC BANKING SCORE: 0 NMOC TPH CLOSURE STD: 5000 PPM 8/27/98

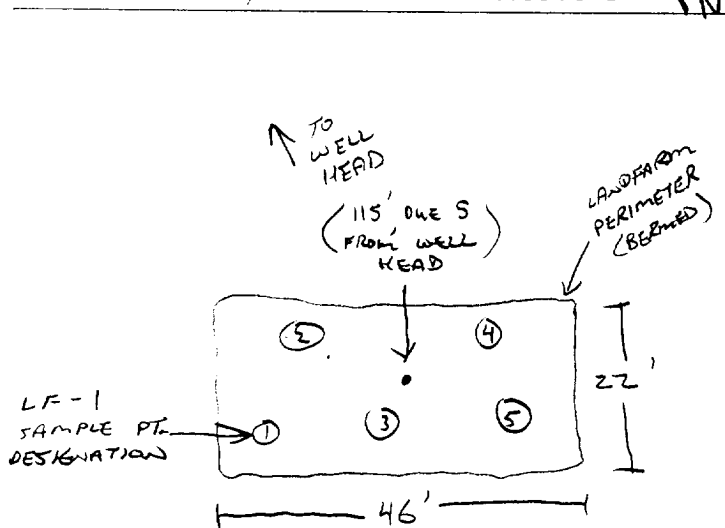
SOIL MOSTLY DK. YELL. BROWN SILTY SAND TO CLAY, NON COHESIVE TO SLIGHTLY PLASTIC, SLIGHTLY MOIST TO MOIST, FIRM, MED. GRAY TO BLACK DISCOLORATION OBSERVED @ ALL SAMPLING PTS. SAMPLING DEPTHS RANGE FROM 6-18 INCHES, PARAFFIN ODOOR APPARENTLY ASSOCIATED W/ DISCOLORED PORTION, COLLECTED 5 PT. COMPOSITE SAMPLE FOR LAB ANALYSIS.

CLOSED

## FIELD 418.1 CALCULATIONS

SAMP. TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm

## SKETCH/SAMPLE LOCATIONS



## OVM RESULTS

## LAB SAMPLES

SAMPLE ID	FIELD HEADSPACE PID (ppm)	SAMPLE ID	ANALYSIS	TIME	RESULTS
LF-1	65.3	LF-1	TPH (8015)	1025	4,420

## SCALE



## TRAVEL NOTES:

CALLOUT: NA

ONSITE: 4/13/99

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

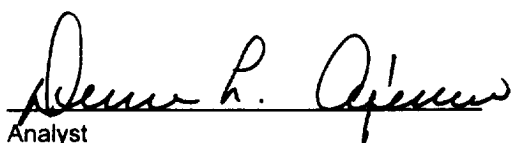
Client:	Blagg / CONOCO	Project #:	403410
Sample ID:	LF - 1	Date Reported:	04-15-99
Laboratory Number:	F018	Date Sampled:	04-13-99
Chain of Custody No:	6639	Date Received:	04-13-99
Sample Matrix:	Soil	Date Extracted:	04-14-99
Preservative:	Cool	Date Analyzed:	04-15-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

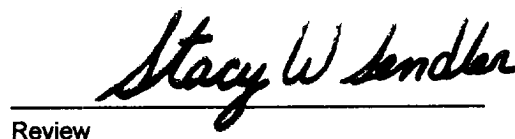
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	264	0.2
Diesel Range (C10 - C28)	4,150	0.1
Total Petroleum Hydrocarbons	4,420	0.2

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: Apache #5 Landfarm. 5 Pt. Composite.

  
Analyst

  
Review

## 6639

[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:	04-15-TPH QA/QC	Date Reported:	04-15-99
Laboratory Number:	F017	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	04-15-99
Condition:	N/A	Analysis Requested:	TPH

	Sample Date	Sample Result	Cal Result	% Difference	Accept Range
Gasoline Range C5 - C10	03-15-99	7.6679E-002	7.6541E-002	0.18%	0 - 15%
Diesel Range C10 - C28	03-15-99	7.2197E-002	7.2081E-002	0.16%	0 - 15%

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

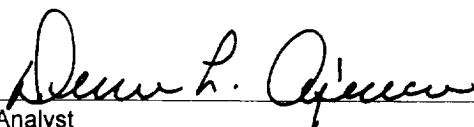
Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept Range
Gasoline Range C5 - C10	0.7	0.7	0.0%	0 - 30%
Diesel Range C10 - C28	ND	ND	0.0%	0 - 30%

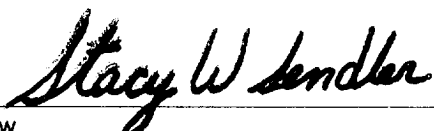
Spike Conc. (mg/Kg)	Sample	Spike Conc.	Spike Result	% Recovery	Accept Range
Gasoline Range C5 - C10	0.7	250	250	100%	75 - 125%
Diesel Range C10 - C28	ND	250	250	100%	75 - 125%

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 F017 - F022.

  
Analyst

  
Review