Denny E. Foust
DEPUTY OIL & GAS INSPECTOR
DEC 3 0 1997
Approved

Meter Number:93178
Location Name:CRAWFORD GAS COM B #1E
Location:TN-29 RG-12
SC-24 UL-J
4 - Fee
NMOCD Zone:OUTSIDE
Hazard Ranking Score:00

RATIONALE FOR RISK-BASED CLOSURE OF PRODUCTION PITS LOCATED OUTSIDE OF THE VULNERABLE ZONE IN THE SAN JUAN BASIN

This production pit location was ranked according to the criteria in the New Mexico Oil Conservation Division's Unlined Surface Impoundment Closure Guidelines and received a ranking score of zero. The estimated depth to groundwater is greater than 100-feet beneath ground surface (bgs), the pit is not in a well head protection area, and there are no surface water bodies within 1,000 horizontal feet of the pit location.

The primary source, discharge to the pit has been removed. There has been no discharge to the pits for at least 4 years and the pits have been closed for at least one year.

Each pit was backfilled with clean soil and graded in a manner to divert precipitation away from the excavated area. Minimal infiltration of rainfall is expected. Any rainfall that does infiltrate the ground surface must migrate through clean backfill before reaching the residual hydrocarbons.

There is no source material at the ground surface, so direct contact of hydrocarbons with livestock and the populous is not likely.

In general, outside of the vulnerable area and alluvial valleys, bedrock material is generally encountered within 20 feet of the ground surface. Bedrock material in the San Juan Basin consists of interbedded sandstones, shales and clays. According to Freeze and Cherry, 1979, the hydraulic conductivity of the bedrock material are as follows:

Sandstone	10^{-9} to 10^{-13} cm/sec
Shale	10^{-12} to 10^{-16} cm/sec
Clay	10^{-12} to 10^{-15} cm/sec

Based on this information, the residual hydrocarbons should not migrate to groundwater.

Natural process (bioremediation) are degrading the residual hydrocarbon to carbon dioxide and water and will continue until the source is gone, therefore minimizing any impact to the environment.

Based on the above information, it is highly unlikely that any source material will impact groundwater or ever find an exposure pathway to affect human health and therefore El Paso Field Services Company (EPFS) requests closure of this pit location.

FIELD PIT SITE ASSESSMENT FORM

EL PASO FIELD SERVICES

GENERAL

Meter: 93178 Location: CRAWFOED GAS COM B #1E

Operator #: 0203 Operator Name: AMOCO P/L District: KUTZ

Coordinates: Letter: J Section 24 Township: 29 Range: 12

Or Latitude _____ Longitude _____

Pit Type: Dehydrator X Location Drip: ___ Line Drip: ___ Other: _____

Site Visit Date: 3·18·94 Run: 02 02

SITE ASSESSMENT

NMOCD Zone: (From NMOCD Maps)
Inside Vulnerable Zone ☒
Outside ☐

Land Type:
BLM ☐
State ☐
Fee ☒
Indian _____

Depth to Groundwater
Less Than 50 Feet (20 points) ☐
50 Ft to 99 Ft (10 points) ☐
Greater Than 100 Ft (0 points) ☒

Wellhead Protection Area :
Is it less than 1000 ft from wells, springs, or other sources of fresh water extraction? , or ; Is it less than 200 ft from a private domestic water source? ☐ YES (20 points) ☒ NO (0 points)

Horizontal Distance to Surface Water Body
Less Than 200 Ft (20 points) ☐
200 Ft to 1000 Ft (10 points) ☐
Greater Than 1000 Ft (0 points) ☒
Name of Surface Water Body _____
(Surface Water Body : Perennial Rivers,Major Wash,Streams,Creeks, Irrigation Canals,Ditches,Lakes,Ponds)

TOTAL HAZARD RANKING SCORE: 0 **POINTS**

REMARKS

Remarks : 2 PITS ON LOCATION. WILL CLOSE ONLY 1 OF THEM. PIT DRY.

(SP3190) 03/16/94

ORIGINAL PIT LOCATION

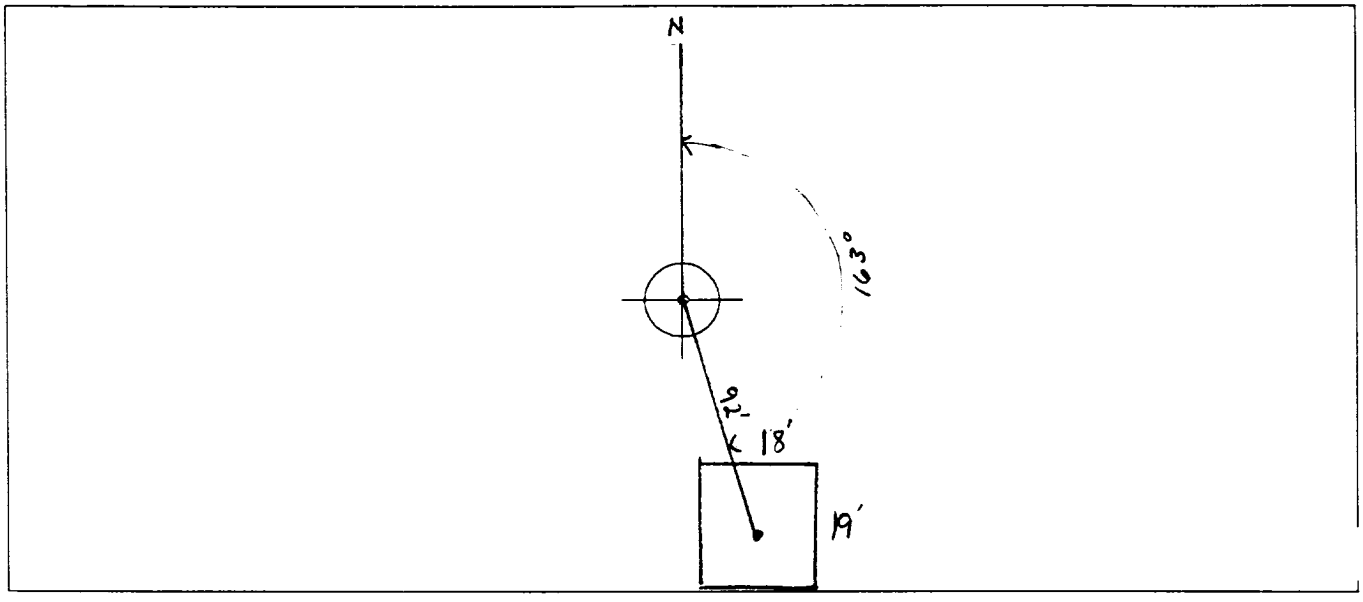
ORIGINAL PIT LOCATION

Original Pit : a) Degrees from North 163° Footage to Wellhead 92'

b) Degrees from North _____ Footage to Dogleg _____

Dogleg Name _____

c) Length : 19' Width : 18' Depth : 4'



REMARKS

Remarks :

STARTED TAKING PICTURES AT 10:18 A.M.

END PUMP

Completed By:

Robert Thompson
Signature

3.18.94
Date

FIELD PIT SITE ASSESSMENT FORM

GENERAL

Meter: 93178 Location: CRAWFORD GAS Com B #1E

Operator #: _____ Operator Name: _____ P/L District: _____

Coordinates: Letter: ___ Section ___ Township: ___ Range: ___

Or Latitude _____ Longitude _____

Pit Type: Dehydrator ___ Location Drip: ___ Line Drip: ___ Other: _____

Site Assessment Date: _____ Area: 02 Run: 02

SITE ASSESSMENT

NMOCD Zone: (From NMOCD Maps)

Inside ☐ (1)

Outside ☒ (2)

Land Type:

BLM ☐ (1)

State ☐ (2)

Fee ☐ (3)

Indian _____

Depth to Groundwater

Less Than 50 Feet (20 points) ☐ (1)

50 Ft to 99 Ft (10 points) ☐ (2)

Greater Than 100 Ft (0 points) ☐ (3)

Wellhead Protection Area :

Is it less than 1000 ft from wells, springs, or other sources of fresh water extraction? , or ; Is it less than 200 ft from a private domestic water source? ☐ (1) YES (20 points) ☐ (2) NO (0 points)

Horizontal Distance to Surface Water Body

Less Than 200 Ft (20 points) ☐ (1)

200 Ft to 1000 Ft (10 points) ☐ (2)

Greater Than 1000 Ft (0 points) ☐ (3)

Name of Surface Water Body _____

(Surface Water Body : Perennial Rivers, Major Wash, Streams, Creeks, Irrigation Canals, Ditches, Lakes, Ponds)

Distance to Nearest Ephemeral Stream ☐ (1) < 100' (Navajo Pits Only)

☐ (2) > 100'

TOTAL HAZARD RANKING SCORE: _____ POINTS

REMARKS

Remarks : _____

FIELD PIT REMEDIATION/CLOSURE FORM

GENERAL

Meter: 93178 Location: Crawford Gas Com B #1E

Coordinates: Letter: J Section 24 Township: 29 Range: 12

Or Latitude _____ Longitude _____

Date Started : 4-15-94 Area: 02 Run: 02

FIELD OBSERVATIONS

Sample Number(s): 940689 1VW 940690 2VW 940691 3VW _____

Sample Depth: 12' Feet

Final PID Reading 299 PID Reading Depth 12' Feet

Groundwater Encountered Yes ☐ (1) No ☒ (2) Approximate Depth 12' Feet

CLOSURE

Remediation Method :

Excavation ☒ (1) Approx. Cubic Yards 80

Onsite Bioremediation ☐ (2)

Backfill Pit Without Excavation ☐ (3)

Soil Disposition:

Envirotech ☐ (1) ☒ (3) Tierra

Other Facility ☐ (2) Name: _____

Pit Closure Date: 4-15-94 Pit Closed By: BEZ

REMARKS

Remarks : Did not hit contamination until @ 11' dirt turned dark Green. [redacted] Completed excavation at 10:30. Pulled composite at 10:35. Drew Sample out of Sandstone at 12'. Completed Back filling at 12:00

Signature of Specialist: Dale Wilson

(SP3191) 04/07/94

El Paso Natural Gas Company

changed to outside WO2

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT - Soil

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	VW1	940689
MTR CODE | SITE NAME:	MTR 93178	N/A
SAMPLE DATE | TIME (Hrs):	4/15/94	1035
SAMPLED BY:	N/A	
DATE OF TPH EXT. | ANAL.:	4/21/94	4/21/94
DATE OF BTEX EXT. | ANAL.:	4/22/94	4/22/94
TYPE | DESCRIPTION:	VC	COARSE SAND

REMARKS: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	M(g)	V(ml)
BENZENE	1.94	MG/KG	20		2.08	20
TOLUENE	18.4	MG/KG	20		2.08	20
ETHYL BENZENE	2.47	MG/KG	20		2.08	20
TOTAL XYLENES	24.0	MG/KG	20		2.08	20
TOTAL BTEX	46.8	MG/KG				
TPH (418.1)	235	MG/KG	1		2.02	28
HEADSPACE PID	299	PPM				
PERCENT SOLIDS	93	%				

-- TPH is by EPA Method 418.1 and BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 103.8 % for this sample All QA/QC was acceptable.

Narrative:

DF = Dilution Factor Used

Approved By: _____ Date: 5/17/94

2.08

File : 94068903.D01 MTR 93178 STACY SENDLER
Run : 01 Queue : SOILEXTR Set Number : 1 Type : Sample
Path : C:\CHROM
Collection : 15:41:06 Apr 22 1994 Meth(A): BETX [14:49:13 Apr 22 1994]
Integration: 15:41:06 Apr 22 1994 Meth(A): BETX [14:49:13 Apr 22 1994]
Report : 16:07:17 Apr 22 1994 Meth(A): BETX [14:49:13 Apr 22 1994]

Sample Amt : 1.00000e+0 Dilution: 1.00000e+1

$$mg/kg = \frac{0.005L \times Result\ ug/L}{2.08\,g} = Result \times 0.00240$$

EXTERNAL STANDARD (AREA)

RT	Area	BC	ExpRT	RF		ug/L	Name
[illegible]	[illegible]	T		0.00000e+0		[illegible].0000	Unknown
[illegible].980	[illegible]	T		0.00000e+0		0.0000	Unknown
[illegible].?13	[illegible]1951	T		0.00000e+0		0.0000	Unknown
[illegible]	[illegible]	T	[illegible]	[illegible]421e-?	10.08	201.6690	Benzene
[illegible]	[illegible]	T		[illegible]		[illegible]	Unknown
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[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]
[illegible]	[illegible]			[illegible]		0.0000	Unknown
[illegible]	[illegible]	T		[illegible]		[illegible]	Unknown
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[illegible]	[illegible]	T	[illegible]	[illegible]	96.1	1921.5875	Toluene
[illegible]	[illegible]	T		0.00000e+0		0.0000	Unknown
[illegible]	[illegible]	T		0.00000e+0		0.0000	Unknown
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[illegible]	[illegible]	T	[illegible]	[illegible]	12.9	~~[illegible]~~ x20	Ethylbenzene
[illegible]	[illegible]		[illegible]	[illegible]	120.8	[illegible].0770 x20	[illegible]ene
[illegible]	[illegible]	T		0.00000e+0		0.0000	Unknown
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[illegible]	[illegible]		[illegible]	[illegible]	103.8	~~[illegible]~~	BFB
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22.062	[illegible]41	T		0.00000e+0		0.0000	Unknown
22.?31	747004	T		0.00000e+0		0.0000	Unknown
[illegible]	[illegible]	T		0.00000e+0		0.0000	Unknown
22.311	79734	T		0.00000e+0		0.0000	Unknown
22.408	391429	T		0.00000e+0		0.0000	Unknown
22.450	731773	T		0.00000e+0		0.0000	Unknown
22.532	337504	T		0.00000e+0		0.0000	Unknown
22.588	159671	T		0.00000e+0		0.0000	Unknown
22.665	309430	T		0.00000e+0		0.0000	Unknown
22.713	226682	T		0.00000e+0		0.0000	Unknown
22.810	119281	T		0.00000e+0		0.0000	Unknown

Benzene: 0.484 mg/kg × 4 = 1.94

Toluene: 4.61 mg/kg × 4 = 18.4

Ethylbenzene: 257; 0.617 mg/kg × 4 = 2.47

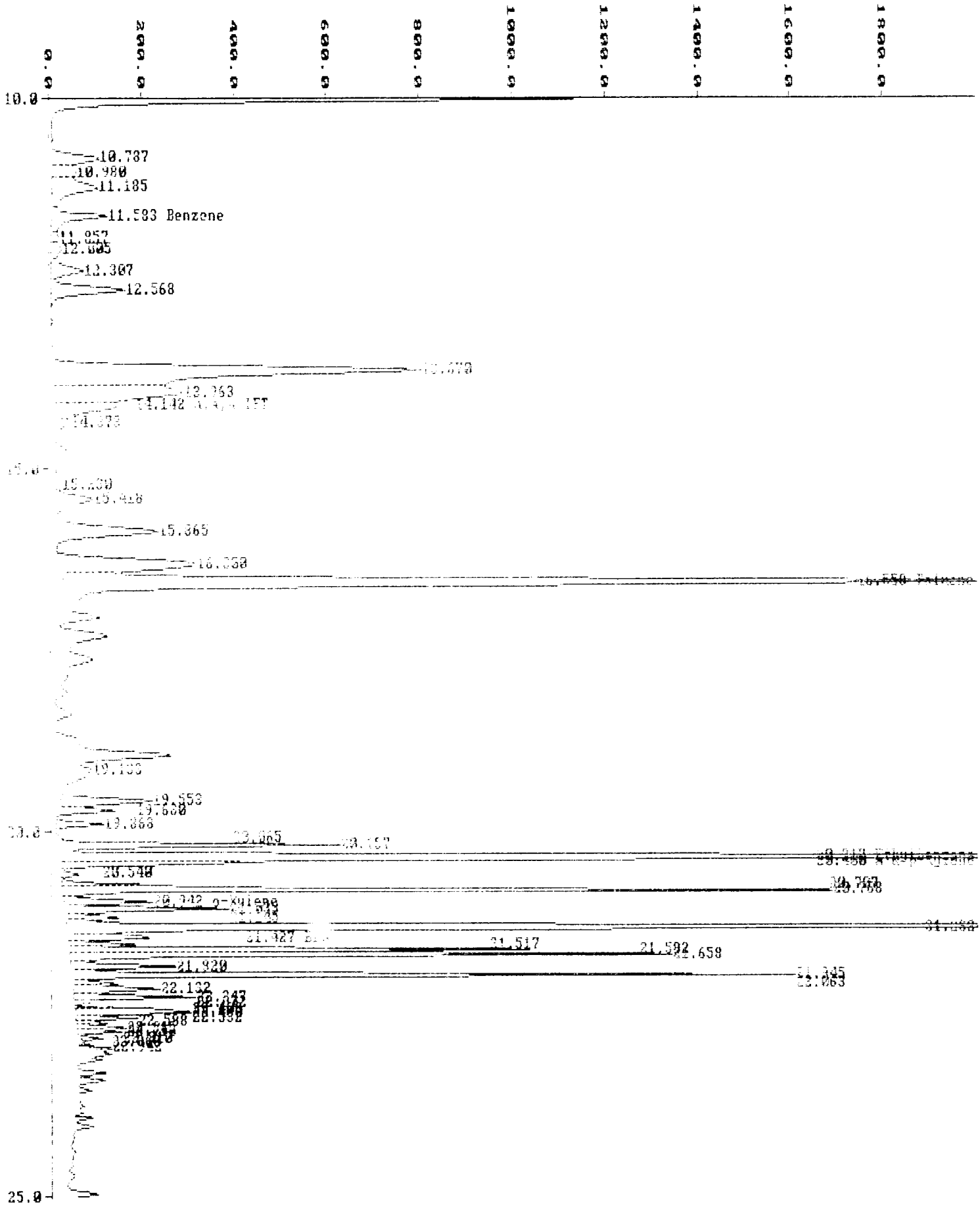
[illegible]ene: 2418 → 5.80

0.208

Tx 6.005 mg/kg × 4 = 24.0

DS
4/23/94

(94068903.D01) mV



File : 94068903.D02 MTR 93178 STACY SENDLER
Run : 01 Queue : SOILEXTR Set Number : 1 Type : Sample
Path : C:\CHROM
Collection : 15:41:06 Apr 22 1994 Meth(B): BETX [11:29:28 Apr 22 1994]
Integration: 15:41:06 Apr 22 1994 Meth(B): BETX [11:29:28 Apr 22 1994]
Report : 16:07:36 Apr 22 1994 Meth(B): BETX [11:29:28 Apr 22 1994]

Sample Amt : 1.00000e+0 Dilution: 1.00000e+1

EXTERNAL STANDARD (AREA)

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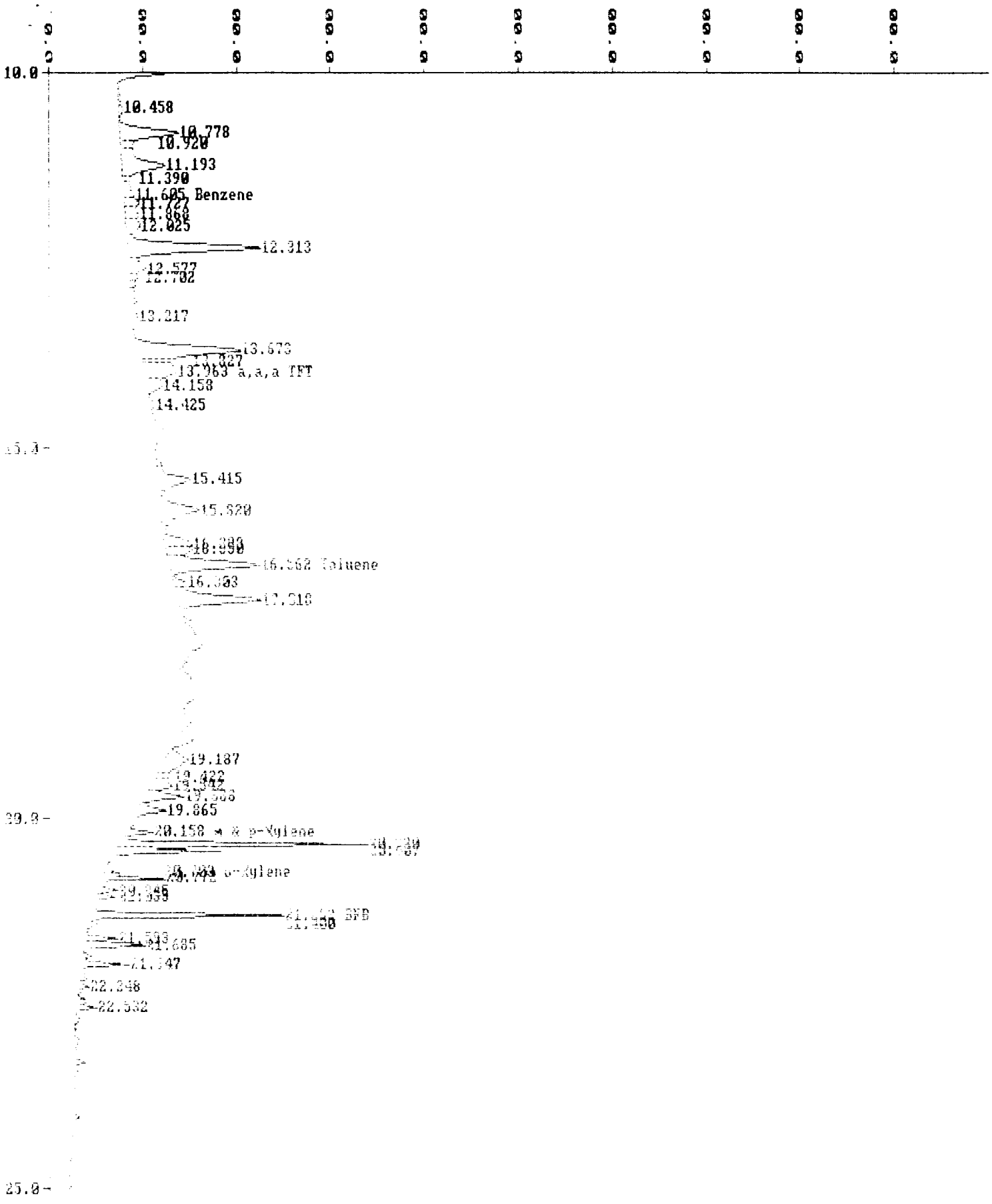
(94068903.D02) mV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12.577
12.702
13.217
13.673
13.963 a,a,a TFT
14.158
14.425
15.415
15.520
16.362 Toluene
17.318
19.187
19.865
20.158 m & p-Xylene
o-Xylene
BFB
25.0

****

Test Method for
Oil and Grease and Petroleum Hydrocarbons
in Water and Soil

Perkin-Elmer Model 1600 FT-IR
Analysis Report

****

1/04/21 09:57

Sample identification
40689

Initial mass of sample, g
[illegible]

Volume of sample after extraction,
[illegible]

Petroleum hydrocarbons, ppm
[illegible]

Avg. absorbance of hydrocarbons (2927 cm-1)
[illegible]