2R - 21

GENERAL CORRESPONDENCE

YEAR(S):

~~1995-1994~~

Mid-Continent Region
Production United States

Marathon Oil Company

P.O. Box 552
Midland, TX 79702-0552
Telephone 915/682-1626

February 17, 1995

Mr. William C. Olson
State of New Mexico
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: Helbing Federal #1 (322) Well Site
NW/NW Section 22, T-22-S, R-23-E
Eddy County, New Mexico

Dear Mr. Olson:

This correspondence is to summarize the historical activities, recent work scope, and laboratory results for soils at the Helbing Federal #1, as referenced above. Additionally, the intent of this letter is to respond to your letter dated September 19, 1994. Marathon seeks New Mexico Oil Conservation Division (OCD) approval for no further action at this site.

History

The Helbing Federal #1 was formerly operated by Marathon Oil Company but was reassigned to Chevron U.S.A., Inc. in late 1993. As a condition of the reassignment transaction between Marathon Oil Company and Chevron, Marathon was requested to remediate soils in the vicinity of oilfield equipment located at the site.

In response to Chevron's request, Marathon removed several inches of soil lying on dolomite bedrock at three locations on the Helbing Federal well site. (See Attachment 1 for excavation dimensions and estimated soil volumes.) Excavated hydrocarbon-contaminated soil was transported to the landfarm at Marathon's Indian Basin Gas Plant. Without prior sampling of the remaining soils, biotreatment was administered on January 5, 1994 by Alpha West, Inc. over the bottoms of the three excavated areas. Marathon environmental and safety personnel became involved with the project on January 11, 1994 and collected composite samples of remaining soils lying on bedrock in those three excavations. The analytical results for BTEX (EPA Method 8020) and TPH (EPA Method 418.1) on these composites are contained in Attachment 2, along with sample results of the soils staged at the gas plant landfarm. The TPH results for soil samples from the bottoms of excavated areas 1, 2, and 3 were 420, 27,000, and 4,100 mg/kg, respectively.

On January 26, 1994, a second biotreatment application was administered to in situ soils at the Helbing Federal site. A second sampling of hydrocarbon-contaminated soils staged at the landfarm was conducted on April 7, 1994. Three composite and two grab samples were taken of the 125 cubic-yard pile. Laboratory results for BTEX, TPH, and RCRA metals (EPA Method 6010) are disclosed in Attachment 3.

Responses to OCD Questions

Your September 19, 1994 letter posed several questions to clarify previous correspondence from Marathon. Responses to those questions are supplied below.

> "1. It is not clear whether the sample results for sample #1 represent initial soil samples from the surface or final samples upon completion of excavation of contaminated soils. Please clarify what these sample results represent."
>
> Sample #1 was taken from the bottom of the excavated Area 1 (see Attachment 6), and are "final soil samples" after the overlying contaminated soils had been removed.
>
> "2. Please provide the volume of soils excavated from each area and the final dimensions of each excavated area."
>
> Soil volumes and excavated dimensions are indicated in Attachment 1.
>
> "3. The documents indicate that "two biotreatment applications have been conducted." Please provide information on:
>
> a) The areas or soils that have received biotreatment applications."
>
> All three excavated areas at the Helbing Federal #1 site received the two separate biotreatment applications following excavation. Landfarm-staged soils received no biotreatment application.

"b) The volume and composition of the materials used in the biotreatment applications."

The "recipe" for the biotreatment administered by Alpha West, Inc. is:

4 pounds of bacteria;
4 pounds of nutrient;
720 pounds of biocatalyst; and
65 barrels of fresh water.

If more detail is needed regarding the constituents of any of the above four "ingredients", please contact Alpha West, Inc. directly at (915) 683-5384. Alpha West indicates the mix is proprietary and that they have discussed this information with OCD previously.

"4. MOC proposes landfarming of the soils until the soils are remediated to 3,000 mg/kg of total petroleum hydrocarbons (TPH). Please provide information on how this proposed remediation level was derived."

This level was proposed in Marathon's Groundwater Discharge Plan for the Indian Basin Gas Plant as a reasonable remediation level for soils that would be used in specific areas at the gas plant or in field production locations. The Discharge Plan was approved by OCD on January 3, 1995. Accordingly, soils from the Indian Basin Gas Plant landfarm treated to the 3,000 mg/kg level can be used for one of the following purposes following the soil treatment:

1) secondary containment berms;
2) roadspreading; or,
3) pad dirt on production locations.

Recent Scope of Work

Also in response to your September 19, 1994 letter, additional sampling was conducted on December 7, 1994 of Area 2 located east of the former location of the concrete compressor pad at the Helbing Federal #1 site. The January 1994 samples indicated TPH concentrations of 27,000 mg/kg for Area 2 soils. Since this exceeded OCD's action level of 5,000 mg/kg, it was thought that additional soil treatment might be necessary to reduce hydrocarbon contamination from the soil in this one localized area. To check the progress of in situ bioremediation, nine random soil samples were collected from immediately above bedrock and composited into one sample to determine if TPH levels had decreased since January 1994. A map showing the sample locations and depths from which each sample was taken is provided as Attachment 4. Analysis for

TPH resulted in a level of 1,300 mg/kg for the composite sample (Attachment 5).

Conclusion

The TPH analytical result (1,300 mg/kg) for the composite sample taken December 7, 1994 is below the action level of 5000 mg/kg TPH per the OCD's guidelines. Previous sample results (January 1994) demonstrated that soils in the bottoms of the other two excavated areas were below the OCD action level. As a consequence of these results, Marathon Oil Company requests that no further action be required to remediate soils contaminated by Marathon's operations at this site.

Marathon Oil Company has appreciated your interest and cooperation on this project. I trust that this letter clears up any questions you have had regarding efforts to remediate the hydrocarbon contamination of soils at the Helbing Federal location.

Sincerely,

Jenelle L. Vierzbicki

Jenelle L. Vierzbicki
Environmental and Safety Representative

Attachment 1 - Excavated Soil Volumetric Calculations
Attachment 2 - Laboratory Results, January 1994
Attachment 3 - Laboratory Results, April 1994
Attachment 4 - Map of Sample Sites, December 1994
Attachment 5 - Laboratory Results, December 1994
Attachment 6 - Map of Helbing Federal #1 (322) Well Location

JLV:jlv
hf1st322
529-01 3236:*** mo.

cc: C. K. Curlee
N. R. Garza, Indian Basin Gas Plant
R. J. Menzie, Jr.
Ray Smith, OCD - Artesia Office

Attachment 1 - Excavated Soil Volumetric Measurements

Volume of Area #1 (former separator)

~25 ft along North edge of excavation
~35 ft along East edge of excavation
~1 ft depth over entire excavation

= 875 ft^3
= 32.4 $yards^3$

Volume of Area #2 (former tank battery)

~30 ft along North edge of excavation
~35 ft along East edge of excavation
~1.25 ft depth over entire excavation

= 1312.5 ft^3
= 48.6 $yards^3$

Volume of Area #3 (former stack pack)

~40 ft along North edge of excavation
~30 ft along East edge of excavation
~1 ft depth over entire excavation

= 1200 ft^3
= 44.4 $yards^3$

Total Volume of Soil Removed

Area 1 = 32.4 $yards^3$
Area 2 = 48.6 $yards^3$
Area 3 = 44.4 $yards^3$

= 125.4 $yards^3$ total contaminated soil removed to landfarm

Attachment 2

Analytical Technologies, Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. **401328**

January 19, 1994

Marathon Oil Co.
P.O. Box 552
Midland, TX 79702-0552

Project Name/Number: HELBING FED #1 (322)

Attention: Robert Menzie

On **01/12/94**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **non-aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Letitia Krakowski, Ph.D.
Project Manager

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:jd

Enclosure

Analytical Technologies, Inc.

CLIENT : MARATHON OIL CO. DATE RECEIVED: 01/12/94
PROJECT # : (NONE)
PROJECT NAME: HELBING FED #1 (322) REPORT DATE : 01/19/94

ATI I.D.: 401328

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	#1	NON-AQ	01/11/94
02	#2	NON-AQ	01/11/94
03	#3	NON-AQ	01/11/94
04	#4	NON-AQ	01/11/94
05	#5	NON-AQ	01/11/94

----TOTALS----

MATRIX	# SAMPLES
NON-AQ	5

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

CLIENT : MARATHON OIL CO.
PROJECT # : (NONE)
PROJECT NAME: HELBING FED #1 (322)

ATI I.D. : 401328
DATE RECEIVED: 01/12/94
DATE ANALYZED: 01/17/94

PARAMETER	UNITS	01	02	03	04	05
PETROLEUM HYDROCARBONS, IR	MG/KG	420	27000	4100	4800	5700

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : MARATHON OIL CO.
PROJECT # : (NONE) ATI I.D.: 401328
PROJECT NAME: HELBING FED #1 (322)

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC.	% REC
PETROLEUM HYDROCARBONS	MG/KG	011794	<20	<20	NA	160	150	107

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

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

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : BTEX, MTBE (EPA 8020)
CLIENT : MARATHON OIL CO. ATI I.D.: 401328
PROJECT # : (NONE)
PROJECT NAME: HELBING FED #1 (322)

SAMPLE I.D. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	#1	NON-AQ	01/11/94	01/13/94	01/17/94	1
02	#2	NON-AQ	01/11/94	01/13/94	01/15/94	1
03	#3	NON-AQ	01/11/94	01/13/94	01/17/94	1

PARAMETER	UNITS	01	02	03
BENZENE	MG/KG	<0.025	<0.025	<0.025
TOLUENE	MG/KG	<0.025	<0.025	<0.025
ETHYLBENZENE	MG/KG	<0.025	<0.025	0.076
TOTAL XYLENES	MG/KG	0.028	0.074	0.57
METHYL-t-BUTYL ETHER	MG/KG	<0.12	<0.12	<0.12
BROMOFLUOROBENZENE (%)		94	75	96

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : BTEX, MTBE (EPA 8020)
CLIENT : MARATHON OIL CO. ATI I.D.: 401328
PROJECT # : (NONE)
PROJECT NAME: HELBING FED #1 (322)

SAMPLE I.D. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
04	#4	NON-AQ	01/11/94	01/13/94	01/15/94	1
05	#5	NON-AQ	01/11/94	01/13/94	01/17/94	2

PARAMETER	UNITS	04	05
BENZENE	MG/KG	<0.025	<0.025
TOLUENE	MG/KG	<0.025	<0.025
ETHYLBENZENE	MG/KG	0.23	0.079
TOTAL XYLENES	MG/KG	1.3	0.49
METHYL-t-BUTYL ETHER	MG/KG	<0.12	<0.12
BROMOFLUOROBENZENE (%)		115	97

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

REAGENT BLANK

TEST	: BTEX, MTBE (EPA 8020)	ATI I.D.	: 401328
BLANK I.D.	: 011394	DATE EXTRACTED	: 01/13/94
CLIENT	: MARATHON OIL CO.	DATE ANALYZED	: 01/14/94
PROJECT #	: (NONE)	DILUTION FACTOR:	1
PROJECT NAME:	HELBING FED #1 (322)		

PARAMETER	UNITS	
BENZENE	MG/KG	<0.025
TOLUENE	MG/KG	<0.025
ETHYLBENZENE	MG/KG	<0.025
TOTAL XYLENES	MG/KG	<0.025
METHYL-t-BUTYL ETHER	MG/KG	<0.12
BROMOFLUOROBENZENE (%)		100

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

TEST	: BTEX, MTBE (EPA 8020)	ATI I.D.	: 401328
MSMSD #	: 40132703	DATE EXTRACTED	: 01/13/93
CLIENT	: MARATHON OIL CO.	DATE ANALYZED	: 01/14/94
PROJECT #	: (NONE)	SAMPLE MATRIX	: NON-AQ
PROJECT NAME	: HELBING FED #1 (322)	REF. I.D.	: 40132703
		UNITS	: MG/KG

PARAMETERS	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD
BENZENE	<0.025	1.0	1.1	110	1.0	100	10
TOLUENE	<0.025	1.0	0.98	98	0.97	97	1
ETHYL BENZENE	<0.025	1.0	0.98	98	0.98	98	0
TOTAL XYLENES	<0.025	3.0	3.0	100	3.0	100	0
METHYL-t-BUTYL ETHER	<0.12	2.0	2.2	110	2.0	100	10

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

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

Analytical Technologies, Inc., Albuquerque, NM
San Diego • Phoenix • Seattle • Pensacola • Ft. Collins • Portland • Albuquerque

CHAIN OF CUSTODY

DATE: 1-11-94 PAGE 1 OF 1

ATI LAB I.D. 401328

PLEASE FILL THIS FORM IN COMPLETELY. SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT MANAGER: Robert Menzie

COMPANY: Marathon Oil Co.
ADDRESS: Po Box 552
Midland, Tx 79702-0552
PHONE: (915) 682-1626
FAX: (915) 687-8337

BILL TO: Bob Menzie
COMPANY: Marathon Oil Co
ADDRESS: Pc Box 552
Midland, TX 79702-0552

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
#1	1-11-94	14:45	Soil	01
#2	1-11-94	14:50	Soil	02
#3	1-11-94	14:55	Soil	03
#4	1-11-94	14:45	Soil	04
#5	1-11-94	14:50	Soil	05

ANALYSIS REQUEST

	Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	BTXE/~~MTBE~~ (8020)			Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.			Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	Polynuclear Aromatics (610/8310)			SDWA Primary Standards - Arizona	SDWA Secondary Standards - Arizona	SDWA Primary Standards - Federal	SDWA Secondary Standards - Federal			The 13 Priority Pollutant Metals	RCRA Metals by Total Digestion	RCRA Metals by TCLP (1311)		NUMBER CONTAINERS
#1	✓			✓																									1
#2	✓			✓																									1
#3	✓			✓																									1
#4	✓			✓																									1
#5	✓			✓																									1

PROJECT INFORMATION		SAMPLE RECEIPT	
PROJ. NO.:	Helbing Fed #1 (322)	NO. CONTAINERS	5
PROJ. NAME:		CUSTODY SEALS	(Y) N / NA
P.O. NO.:		RECEIVED INTACT	Y
SHIPPED VIA:		RECEIVED COLD	Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒ 2 WEEK

Comments:

SAMPLED & RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: RM Gray Time: 16:12	Signature: Robert J. Menzie Time: 14:00	Signature: Time:
Printed Name: RM Gray Date: 1-11-94	Printed Name: Robert J. Menzie Jr. Date:	Printed Name: Date:
Company: Marathon Phone: (915) 687-8314	Company: Marathon Oil Co.	Company:

RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY: (LAB) 3.
Signature: Time: 16:12	Signature: Time:	Signature: Time: 1400
Printed Name: RJ Menzie Jr. Date: 1-11-94	Printed Name: Date:	Printed Name: Tom DeWitt Date: 1/12/94
Company: Marathon	Company:	Analytical Technologies, Inc.

ATI Labs: San Diego (619) 458-9141 • Phoenix (602) 496-4400 • Seattle (206) 228-8335 • Pensacola (904) 474-1001 • Portland (503) 684-0447 • Albuquerque (505) 344-3777 DISTRIBUTION: White, Canary - ATI • Pink - ORIGINATOR

Attachment 3

Analytical Technologies, Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. **404362**

May 3, 1994

Marathon Oil Company
P.O. Box 552
Midland, TX 79702-0552

Project Name/Number: IBGP-LANDFARM

Attention: Robert Menzie

On **04/13/94**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **non-aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

Due to matrix interferences, EPA method 6010 analyses of samples Landfarm-SE, Landfarm-NE, Landfarm-SW, 140-Pile-3C, and 140-Pile-3G were performed at a 2x dilution. Silver and cadmium analyses of samples Landfarm-NW, 140-Pile-1C, 140-Pile-2C, and 140-Pile-2G were performed at a 5x dilution. Reporting limits have been raised accordingly.

EPA Method 418.1 and 8020 analyses were performed by Analytical Technologies, Inc., Albuquerque, NM.

All other analyses were performed by Analytical Technologies, Inc., 9830 S. 51st Street, Suite B-113, Phoenix, AZ.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Letitia Krakowski, Ph.D.
Project Manager

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:jd

Enclosure

Analytical Technologies, Inc.

CLIENT	: MARATHON OIL COMPANY	DATE RECEIVED	: 04/13/94
PROJECT #	: (NONE)		
PROJECT NAME	: IBGP-LANDFARM	REPORT DATE	: 05/03/94

ATI ID: 404362

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	LANDFARM-SE	NON-AQ	04/07/94
02	LANDFARM-NE	NON-AQ	04/07/94
03	LANDFARM-NW	NON-AQ	04/07/94
04	LANDFARM-SW	NON-AQ	04/07/94
05	140-PILE-1C	NON-AQ	04/07/94
06	140-PILE-2C	NON-AQ	04/07/94
07	140-PILE-2G	NON-AQ	04/07/94
08	140-PILE-3C	NON-AQ	04/07/94
09	140-PILE-3G	NON-AQ	04/07/94

---TOTALS---

MATRIX	#SAMPLES
NON-AQ	9

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

CLIENT	: MARATHON OIL COMPANY	ATI I.D.	: 404362
PROJECT #	: (NONE)	DATE RECEIVED	: 04/13/94
PROJECT NAME	: IBGP-LANDFARM	DATE ANALYZED	: 04/18/94

PARAMETER	UNITS	01	02	03	04
PETROLEUM HYDROCARBONS, IR	MG/KG	3800	1200	4100	3200

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

CLIENT	: MARATHON OIL COMPANY	ATI I.D.	: 404362
PROJECT #	: (NONE)	DATE RECEIVED	: 04/13/94
PROJECT NAME	: IBGP-LANDFARM	DATE ANALYZED	: 04/18/94

PARAMETER	UNITS	05	06	07	08
PETROLEUM HYDROCARBONS, IR	MG/KG	3800	2800	12000	2500

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

CLIENT	: MARATHON OIL COMPANY	ATI I.D.	: 404362
PROJECT #	: (NONE)	DATE RECEIVED	: 04/13/94
PROJECT NAME	: IBGP-LANDFARM	DATE ANALYZED	: 04/18/94

PARAMETER	UNITS	09
PETROLEUM HYDROCARBONS, IR	MG/KG	1000

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT	: MARATHON OIL COMPANY	ATI I.D.	: 404362
PROJECT #	: (NONE)	SAMPLE MATRIX	: NON-AQ
PROJECT NAME	: IBGP-LANDFARM	UNITS	: MG/KG

PARAMETER	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC.	% REC
PETROLEUM HYDROCARBONS	041794	<20	<20	NA	160	150	107

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

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

Analytical Technologies, Inc.

METALS RESULTS

ATI I.D. : 404362

CLIENT : MARATHON OIL COMPANY
PROJECT # : (NONE)
PROJECT NAME : IBGP-LANDFARM

DATE RECEIVED : 04/13/94
REPORT DATE : 05/03/94

PARAMETER	UNITS	01	02	03	04	05
SILVER (EPA 6010)	MG/KG	<1.0	<1.0	<2.5	<1.0	<2.5
ARSENIC (EPA 6010)	MG/KG	<10	<10	<5*	<10	<5*
BARIUM (EPA 6010)	MG/KG	83.4	77.9	94.7	128	990
CADMIUM (EPA 6010)	MG/KG	<0.6	<0.6	<1.5	<0.6	<1.5
CHROMIUM (EPA 6010)	MG/KG	24.1	31.2	15.0	19.1	10.4
MERCURY (EPA 7471)	MG/KG	<0.1	<0.1	0.1	0.1	0.1
LEAD (EPA 6010)	MG/KG	29	22	11	19	13
SELENIUM (EPA 6010)	MG/KG	<10	<10	<5**	<10	<5**

* Arsenic analysis performed by EPA method 7060.
** Selenium analysis performed by EPA method 7740.

Analytical Technologies, Inc.

METALS RESULTS

ATI I.D. : 404362

CLIENT : MARATHON OIL COMPANY
PROJECT # : (NONE)
PROJECT NAME : IBGP-LANDFARM

DATE RECEIVED : 04/13/94
REPORT DATE : 05/03/94

PARAMETER	UNITS	06	07	08	09
SILVER (EPA 6010)	MG/KG	<2.5	<2.5	<1.0	<1.0
ARSENIC (EPA 6010)	MG/KG	<5*	<5*	<10	<10
BARIUM (EPA 6010)	MG/KG	728	1020	93.5	99.3
CADMIUM (EPA 6010)	MG/KG	<1.5	<1.5	<0.6	<0.6
CHROMIUM (EPA 6010)	MG/KG	7.5	7.1	16.0	15.3
MERCURY (EPA 7471)	MG/KG	0.2	0.4	0.4	0.1
LEAD (EPA 6010)	MG/KG	6	6	25	16
SELENIUM (EPA 6010)	MG/KG	<5**	<5**	<10	<10

* Arsenic analysis performed by EPA method 7060.
** Selenium analysis performed by EPA method 7740.

Analytical Technologies, Inc.

METALS - QUALITY CONTROL

CLIENT : MARATHON OIL COMPANY
PROJECT # : (NONE)
PROJECT NAME : IBGP-LANDFARM

ATI I.D. : 404362

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
SILVER	MG/KG	40436203	<2.5	<2.5	NA	23.4	25.0	94
ARSENIC	MG/KG	40468220	<5	<5	NA	53	50	106
ARSENIC	MG/KG	40436203	<5	<5	NA	53	50	106
BARIUM	MG/KG	40436203	94.7	98.2	4	145	50.0	101
CADMIUM	MG/KG	40436203	<1.5	<1.5	NA	24.9	25.0	100
CHROMIUM	MG/KG	40436203	15.0	16.6	10	61.1	50.0	92
MERCURY	MG/KG	40436204	0.1	0.1	0	2.5	2.5	9.6
MERCURY	MG/KG	40494106	<0.1	<0.1	NA	2.6	2.5	104
LEAD	MG/KG	40468220	13	15	14	62	50	98
LEAD	MG/KG	40436203	11	11	0	51	50	80
SELENIUM	MG/KG	40468220	<5	<5	NA	44	50	88
SELENIUM	MG/KG	40436205	<5	<5	NA	42	50	84

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

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 10$$

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : BTEX (EPA 8020)

CLIENT : MARATHON OIL COMPANY ATI I.D.: 404362

PROJECT # : (NONE)

PROJECT NAME : IBGP-LANDFARM

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	LANDFARM-SE	NON-AQ	04/07/94	04/13/94	04/15/94	1
02	LANDFARM-NE	NON-AQ	04/07/94	04/13/94	04/17/94	1
03	LANDFARM-NW	NON-AQ	04/07/94	04/13/94	04/17/94	1

PARAMETER	UNITS	01	02	03
BENZENE	MG/KG	<0.025	<0.025	<0.025
TOLUENE	MG/KG	<0.025	<0.025	<0.025
ETHYLBENZENE	MG/KG	<0.025	<0.025	<0.025
TOTAL XYLENES	MG/KG	<0.025	<0.025	<0.025
SURROGATE:				
BROMOFLUOROBENZENE (%)		94	80	101

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : BTEX (EPA 8020)

CLIENT : MARATHON OIL COMPANY ATI I.D.: 404362

PROJECT # : (NONE)

PROJECT NAME : IBGP-LANDFARM

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
04	LANDFARM-SW	NON-AQ	04/07/94	04/13/94	04/17/94	1
05	140-PILE-1C	NON-AQ	04/07/94	04/13/94	04/17/94	1
06	140-PILE-2C	NON-AQ	04/07/94	04/13/94	04/17/94	1

PARAMETER	UNITS	04	05	06
BENZENE	MG/KG	<0.025	<0.025	<0.025
TOLUENE	MG/KG	<0.025	<0.025	<0.025
ETHYLBENZENE	MG/KG	<0.025	<0.025	<0.025
TOTAL XYLENES	MG/KG	<0.025	0.031	0.053
SURROGATE:				
BROMOFLUOROBENZENE (%)		87	83	78

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : BTEX (EPA 8020)

CLIENT : MARATHON OIL COMPANY ATI I.D.: 404362

PROJECT # : (NONE)

PROJECT NAME : IBGP-LANDFARM

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
07	140-PILE-2G	NON-AQ	04/07/94	04/13/94	04/17/94	1
08	140-PILE-3C	NON-AQ	04/07/94	04/13/94	04/17/94	1
09	140-PILE-3G	NON-AQ	04/07/94	04/13/94	04/17/94	1

PARAMETER	UNITS	07	08	09
BENZENE	MG/KG	<0.025	<0.025	<0.025
TOLUENE	MG/KG	<0.025	0.091	<0.025
ETHYLBENZENE	MG/KG	<0.025	<0.025	<0.025
TOTAL XYLENES	MG/KG	0.1	0.18	<0.025
SURROGATE:				
BROMOFLUOROBENZENE (%)		80	79	88

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

REAGENT BLANK

TEST	: BTEX (EPA 8020)	ATI I.D.	: 404362
BLANK I.D.	: 041394	MATRIX	: NON-AQ
CLIENT	: MARATHON OIL COMPANY	DATE EXTRACTED	: 04/13/94
PROJECT #	: (NONE)	DATE ANALYZED	: 04/15/94
PROJECT NAME	: IBGP-LANDFARM	DILUTION FACTOR	: 1

PARAMETER	UNITS	
BENZENE	MG/KG	<0.025
TOLUENE	MG/KG	<0.025
ETHYLBENZENE	MG/KG	<0.025
TOTAL XYLENES	MG/KG	<0.025
SURROGATE:		
BROMOFLUOROBENZENE (%)		95

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

TEST	: BTEX (EPA 8020)		
MSMSD #	: 40436201	ATI I.D.	: 404362
CLIENT	: MARATHON OIL COMPANY	DATE EXTRACTED	: 04/13/94
PROJECT #	: (NONE)	DATE ANALYZED	: 04/15/94
PROJECT NAME	: IBGP-LANDFARM	SAMPLE MATRIX	: NON-AQ
REF. I.D.	: 40436201	UNITS	: MG/KG

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD
BENZENE	<0.025	1.0	0.89	89	0.88	88	1
TOLUENE	<0.025	1.0	0.91	91	0.89	89	2
ETHYLBENZENE	<0.025	1.0	0.93	93	0.93	93	0
TOTAL XYLENES	<0.025	3.0	2.7	90	2.7	90	0

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

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

Analytical Technologies, Inc., Albuquerque, NM
San Diego • Phoenix • Seattle • Pensacola • Ft. Collins • Portland • Albuquerque

CHAIN OF CUSTODY

DATE: 4-7-94 PAGE 1 OF 1

ATI LAB I.D. 4104320

PLEASE FILL THIS FORM IN COMPLETELY. SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT MANAGER: Robert J. Menzie, Jr.

COMPANY: Marathon Oil Company
ADDRESS: P.O. Box 552
Midland, TX 79702-0552
PHONE: (915) 687-8312
FAX: (915) 687-8337

BILL TO: Robert J. Menzie, Jr.
COMPANY: Marathon Oil Company
ADDRESS: P.O. Box 552
Midland, TX 79702-0552

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Petroleum Hydrocarbons (418.1)	Diesel (MOD 8015) Gas/Diesel	Gasoline/BTXE/MTBE (MOD 8015/8020)	BTXE/BTEX (8020)	Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	Polynuclear Aromatics (610/8310)	SDWA Primary Standards - Arizona	SDWA Secondary Standards - Arizona	SDWA Primary Standards - Federal	SDWA Secondary Standards - Federal	The 13 Priority Pollutant Metals	RCRA Metals by Total Digestion	RCRA Metals by TCLP (1311)	NUMBER OF CONTAINERS
LANDFARM-SE	4-7-94	10:50a	SOIL	01	✓			✓														✓		1
LANDFARM-NE		10:53a		02	✓			✓														✓		1
LANDFARM-NW		10:58a		03	✓			✓														✓		1
LANDFARM-SW		11:00a		04	✓			✓														✓		1
140-PILE-1C		11:16a		05	✓			✓														✓		1
140-PILE-2C		11:18a		06	✓			✓														✓		1
140-PILE-2G		11:19a		07	✓			✓														✓		1
140-PILE-3C		11:23a		08	✓			✓														✓		1
140-PILE-3G	↓	11:25a	↓	09	✓			✓														✓		1

PROJECT INFORMATION		SAMPLE RECEIPT	
PROJ. NO.:		NO. CONTAINERS	9
PROJ. NAME:	IBGP-Landfarm	CUSTODY SEALS	Y / N (NA)
P.O. NO.:		RECEIVED INTACT	Y
SHIPPED VIA:	Greyhound	RECEIVED COLD	Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒ 2 WEEK

Comments:

SAMPLED & RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: RM Gray Time: 1:31	Signature: Time:	Signature: Time:
Printed Name: RM Gray Date: 4-8-94	Printed Name: Date:	Printed Name: Date:
Company: MOC Phone: 915 687-834	Company:	Company:

RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY: (LAB) 3.
Signature: Time:	Signature: Time:	Signature: Time: 1400
Printed Name: Date:	Printed Name: Date:	Printed Name: Date:
Company:	Company:	Analytical Technologies, Inc.

ATI Labs: San Diego (619) 458-9141 • Phoenix (602) 496-4400 • Seattle (206) 228-8335 • Pensacola (904) 474-1001 • Portland (503) 684-0447 • Albuquerque (505) 344-3777 DISTRIBUTION: White, Canary - ATI • Pink - ORIGINATOR

AnalyticalTechnologies,Inc. Albuquerque, NM

Chain of Custody

DATE 4/8/94 PAGE 1 OF 1

NETWORK PROJECT MANAGER: BETH PROFFITT

COMPANY: **Analytical Technologies, Inc.**
ADDRESS: 2709-D Pan American Freeway, NE
Albuquerque, NM 87107

CLIENT PROJECT MANAGER: Joe Ik

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)	632/632 MOD	619/619 MOD	610/8310	RCRA Metals by Total Digestion	8240 (TCLP 1311) ZHE	Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)	NACE	ASBESTOS	BOD	TOTAL COLIFORM	FECAL COLIFORM	GROSS ALPHA/BETA	RADIUM 226/228	AIR - O2, CO2, METHANE	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
404362-1	4/7/94	1050	non-aq	1									X													1
-2		1053		2									X													1
-3		1058		3									X													1
-4		1100		4									X													1
-5		1116		5									X													1
-6		1118		6									X													1
-7		1119		7									X													1
-8		1123		8									X													1
-9		1125		9									X													1

PROJECT INFORMATION

PROJECT NUMBER: 404362
PROJECT NAME: MOC
QC LEVEL: (STD) IV
QC REQUIRED: MS MSD BLANK
TAT: (STANDARD) RUSH!

DUE DATE: 4/25/94
RUSH SURCHARGE:
CLIENT DISCOUNT: 10 %

W.O. #LK 664

SAMPLE RECEIPT

TOTAL NUMBER OF CONTAINERS	9
CHAIN OF CUSTODY SEALS	N
INTACT?	Y
RECEIVED GOOD COND./COLD	Y
LAB NUMBER	404362

SAMPLES SENT TO:
SAN DIEGO
FT. COLLINS
RENTON
PENSACOLA
PHOENIX X
BARRINGER
FIBERQUANT

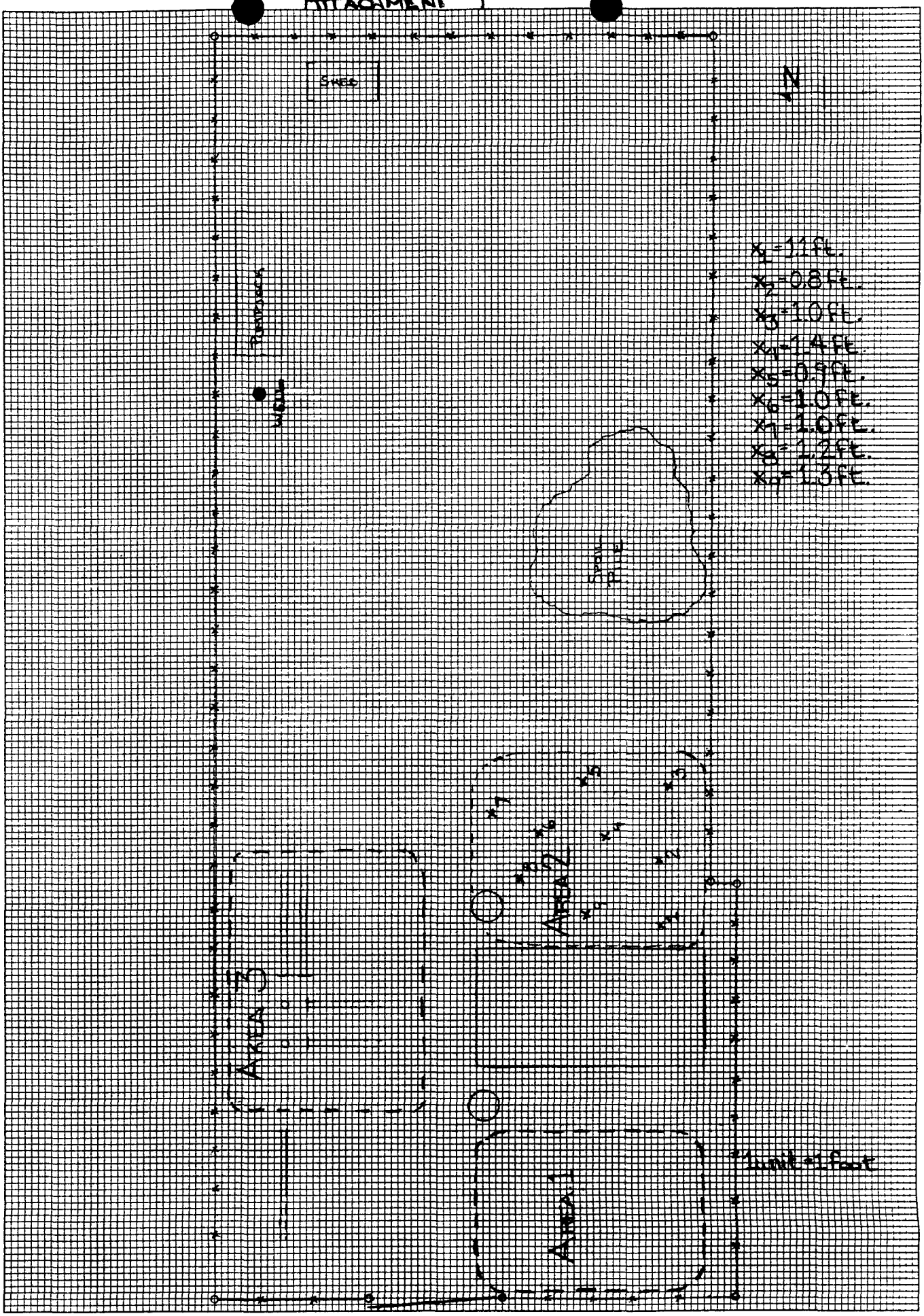
RELINQUISHED BY: 1.
Signature: [signature] Time: 1730
Printed Name: Terri Dettre Date: 4/13/94
Analytical Technologies, Inc.
Albuquerque

RECEIVED BY: (LAB) 1.
Signature: Time:
Printed Name: Date:
Company:

RELINQUISHED BY: 2.
Signature: Time:
Printed Name: Date
Company:

RECEIVED BY: (LAB) 2.
Signature: Roselle Vidal Time: 954
Printed Name: Roselle Vidal Date: 4/14/94
Company: ATI

ATTACHMENT 4



Attachment 5

Analytical Technologies, Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. **412338**

December 15, 1994

Marathon Oil Company
125 W. Missouri St.
Midland, TX 79701

Project Name/Number: HELBING FED #1 (322)

Attention: Jenelle Vierzbicki

On **12/09/94**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **non-aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

Per client request, samples #1-#9 were composited into sample #10. 418.1 results are reported for this composite.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Letitia Krakowski, Ph.D.
Project Manager

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:jt

Enclosure

MCR

DEC 2 1994

Environmental & Safety

Analytical Technologies, Inc.

CLIENT	: MARATHON OIL COMPANY	DATE RECEIVED	: 12/09/94
PROJECT #	: (NONE)		
PROJECT NAME	: HELBING FED #1 (322)	REPORT DATE	: 12/15/94

ATI ID: 412338

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	#1	NON-AQ	12/07/94
02	#2	NON-AQ	12/07/94
03	#3	NON-AQ	12/07/94
04	#4	NON-AQ	12/07/94
05	#5	NON-AQ	12/08/94
06	#6	NON-AQ	12/08/94
07	#7	NON-AQ	12/08/94
08	#8	NON-AQ	12/08/94
09	#9	NON-AQ	12/08/94
10	COMPOSITE #1-#9	NON-AQ	NA

---TOTALS---

MATRIX	#SAMPLES
NON-AQ	10

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

CLIENT	: MARATHON OIL COMPANY	ATI I.D.	: 412338
PROJECT #	: (NONE)	DATE RECEIVED	: 12/09/94
PROJECT NAME	: HELBING FED #1 (322)	DATE ANALYZED	: 12/13/94

PARAMETER	UNITS	10
PETROLEUM HYDROCARBONS, IR	MG/KG	1300

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT	: MARATHON OIL COMPANY	ATI I.D.	: 412338
PROJECT #	: (NONE)	SAMPLE MATRIX	: NON-AQ
PROJECT NAME	: HELBING FED #1 (322)	UNITS	: MG/KG

PARAMETER	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC.	% REC
PETROLEUM HYDROCARBONS	121294#1	<20	<20	NA	160	140	114

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

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

Analytical Technologies, Inc., Albuquerque, NM
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CHAIN OF CUSTODY

DATE: 12-8-94 PAGE 1 OF 1

ATI LAB I.D. 412338

PLEASE FILL THIS FORM IN COMPLETELY. SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT MANAGER: Jenelle Vierzbicki

COMPANY: Marathon Oil Company
ADDRESS: 125 W. Missouri St
Midland, TX 79701
PHONE: 915-687-8306
FAX: 915-687-8337

BILL TO:
COMPANY: Same
ADDRESS:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	BTXE/MTBE (8020)	Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	Polynuclear Aromatics (610/8310)	SDWA Primary Standards - Arizona	SDWA Secondary Standards - Arizona	SDWA Primary Standards - Federal	SDWA Secondary Standards - Federal	The 13 Priority Pollutant Metals	RCRA Metals by Total Digestion	RCRA Metals by TCLP (1311)	NUMBER OF CONTAINERS
#1	12-7-94	1:10P	Soil	01	✓																			2
#2		1:55P		02	✓																			2
#3		2:35P		03	✓																			2
#4		3:25P		04	✓																			2
#5	12-8-94	1:30P		05	✓																			2
#6		1:20P		06	✓																			2
#7		1:35P		07	✓																			2
#8		1:40P		08	✓																			2
#9		1:45P		09	✓																			2

PROJECT INFORMATION		SAMPLE RECEIPT	
PROJ. NO.:		NO. CONTAINERS	18
PROJ. NAME:	Helbing Fed #1 (322)	CUSTODY SEALS	(Y) N / NA
P.O. NO.:		RECEIVED INTACT	Y
SHIPPED VIA:	Greyhound	RECEIVED COLD	Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒ 2 WEEK

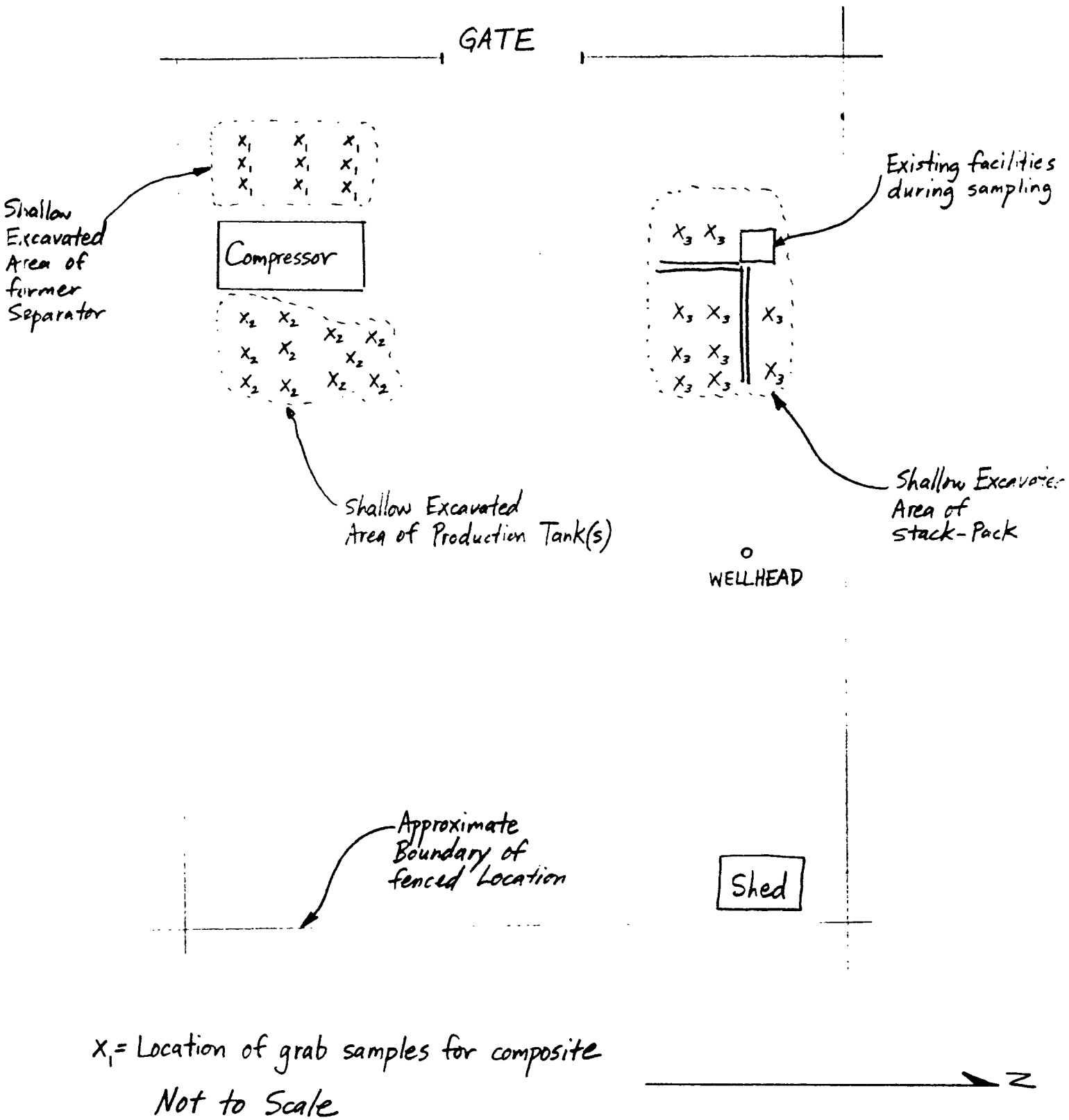
Comments: Composite the samples (1 of each set of 2) for a single composite sample of the soils.

SAMPLED & RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Robert J. Menzie Jr. Time: 4:00 PM	Signature: Time:	Signature: Time:
Printed Name: R.J. Menzie Jr. Date: 12-8-94	Printed Name: Date:	Printed Name: Date:
Company: Marathon Oil Phone: 915-687-8312	Company:	Company:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY: (LAB) 3.**
Signature: Time:	Signature: Time:	Signature: Time: 1355
Printed Name: Date:	Printed Name: Date:	Printed Name: Dianne Luttrell Date: 12/9/94
Company:	Company:	Analytical Technologies, Inc.

ATI Labs: San Diego (619) 458-9141 • Phoenix (602) 496-4400 • Seattle (206) 228-8335 • Pensacola (904) 474-1001 • Portland (503) 684-0447 • Albuquerque (505) 344-3777 DISTRIBUTION: White, Canary - ATI • Pink - ORIGINATOR

Map of Helbig Federal #1 (322) Well Location

Attachment 6



X_1 = Location of grab samples for composite

Not to Scale

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

DRUG FREE

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

September 19, 1994

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

CERTIFIED MAIL
RETURN RECEIPT NO. P-111-334-171

Ms. J.L. Vierzbicki
Environmental & Safety Representative
Marathon Oil Company
P.O. Box 552
Midland, Texas 79702

RE: REMEDIAL ACTIONS
HELBING FEDERAL #1 WELL SITE
EDDY COUNTY, NEW MEXICO

Dear Ms. Vierzbicki:

The New Mexico Oil Conservation Division (OCD) is in the process of reviewing Marathon Oil Company's (MOC) July 18, 1994 "HELBING FEDERAL #1 REMEDIATION PLAN" and July 29, 1994 "HELBING FEDERAL #1 REMEDIATION PLAN". These documents contain information related to the remediation of contaminated soils at MOC's Helbing Federal #1 well site located in Unit D, Section 22, T22S, R23E NMPM, Eddy County, New Mexico.

The OCD has the following comments, questions and requests for information regarding the above referenced documents:

1. It is not clear whether the sample results for sample #1 represent initial soil samples from the surface or final samples upon completion of excavation of contaminated soils. Please clarify what these sample results represent.

2. Please provide the volume of soils excavated from each area and the final dimensions of each excavated area.

3. The documents indicate that "two biotreatment applications have been conducted". Please provide information on:

   a. The areas or soils that have received biotreatment applications.

   b. The volume and composition of the materials used in the biotreatment applications.

4. MOC proposes landfarming of the soils until the soils are remediated to 3,000 mg/kg of total petroleum hydrocarbons (TPH). Please provide information on how this proposed remediation level was derived.

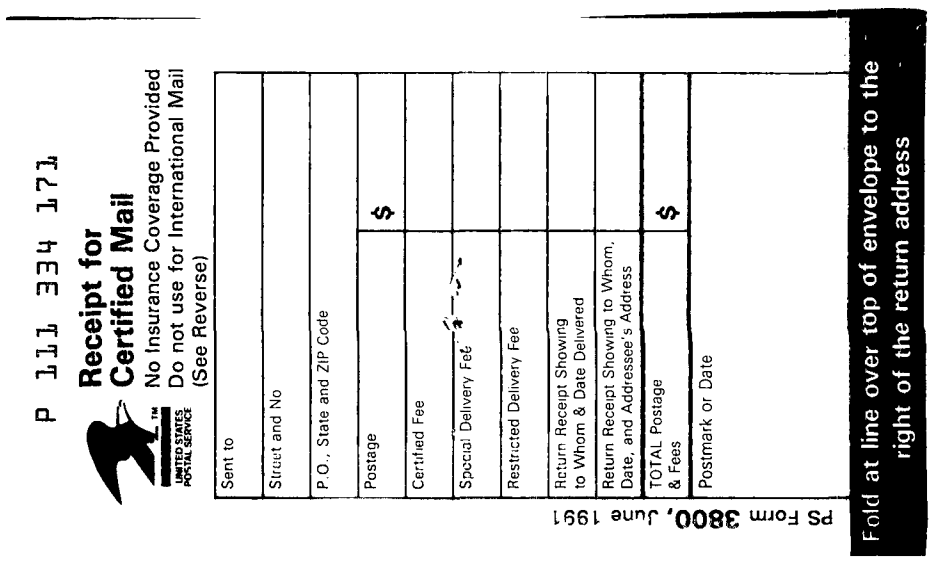
5. Based upon the information provided, the final sample results from the separator area and stack-pack/separator area are below the recommended remediation levels as contained in OCD's August 13, 1993 "GUIDELINES FOR REMEDIATION OF LEAKS, SPILLS AND RELEASES" and the remedial actions for these areas are acceptable. However, the sample results for the area east of the compressor (ie. sample #2) show the soil TPH concentrations to be greatly in excess of of the recommended remediation levels. Therefore, the OCD requests that MOC provide a work plan to determine the vertical extent of contamination in the area east of the compressor.

Submission of this information will allow the OCD to complete a review of the above referenced documents.

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

xc: OCD Artesia Office



Mid-Continent Region
Production United States

Marathon Oil Company
P.O. Box 552
Midland, Texas 79702
Telephone 915/682-1626

July 29, 1994

Mr. Roger C. Anderson
State of New Mexico
Oil Conservation Division
P. O. Box 2088
Land Office Building
Santa Fe, NM 87504-2088

Re: HELBING FEDERAL #1 REMEDIATION PLAN

Dear Mr. Anderson:

Enclosed please find laboratory analyses and a sample location map for the Helbing Federal #1 (Site 322) location as requested by Mr. William Olson during a meeting at the wellsite on July 20, 1994.

The analytical report indicates that five samples were submitted. Samples #1, #2, and #3 were taken at the Helbing Federal location, and samples #4 and #5 were taken from the 140 cubic yards of soil removed and transported to the Indian Basin Gas Plant landfarm staging area.

Sample #1 was collected from an area on the southwest corner of the location previously occupied by a separator. A single composite sample consisting of nine surface grab samples was collected from a three by three grid. Sample #2 was collected from an area just east of the compressor site on the southern side of the location. Production tanks were located here and removed prior to sampling. A single composite sample consisting of eleven surface grab samples was taken from the shallow irregular excavation. Sample #3 was collected around a stack-pack and separator in the northwest corner of the site. A single composite sample consisting of ten surface grab samples were taken from the excavated area.

Samples #4 and #5 were from the 140 cubic yard soil pile in the staging area at the Indian Basin Gas Plant. Samples #4 and #5 are each composites of 10 grab samples from the eastern and western halves of the pile, respectively.

Marathon appreciates your further consideration of this matter.

Yours truly,

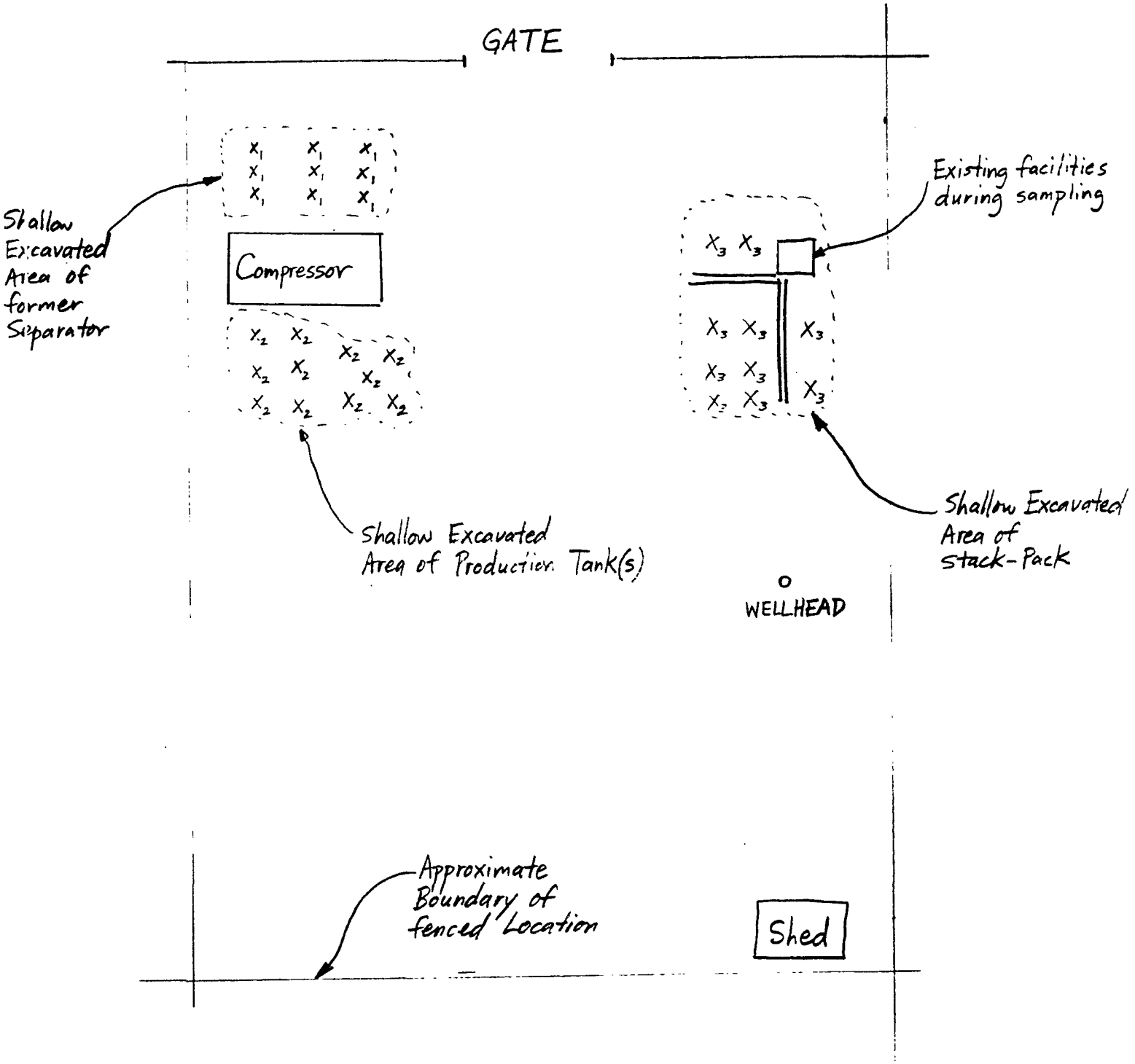
J. L. Vierzbicki

J. L. Vierzbicki
Environmental & Safety Representative

Attachments

cc: Mr. William Olson
R. J. Menzie, Jr.
C. K. Curlee
N. R. Garza

Map of Helbig Federal #1 (322) Well Location



X_1 = Location of grab samples for composite

Not to Scale

N

Analytical Technologies, Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. **401328**

January 19, 1994

Marathon Oil Co.
P.O. Box 552
Midland, TX 79702-0552

Project Name/Number: HELBING FED #1 (322)

Attention: Robert Menzie

On **01/12/94**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **non-aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Letitia Krakowski, Ph.D.
Project Manager

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:jd

Enclosure

Analytical Technologies, Inc.

CLIENT : MARATHON OIL CO. DATE RECEIVED: 01/12/94
PROJECT # : (NONE)
PROJECT NAME: HELBING FED #1 (322) REPORT DATE : 01/19/94

ATI I.D.: 401328

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	#1	NON-AQ	01/11/94
02	#2	NON-AQ	01/11/94
03	#3	NON-AQ	01/11/94
04	#4	NON-AQ	01/11/94
05	#5	NON-AQ	01/11/94

----TOTALS----

MATRIX	# SAMPLES
NON-AQ	5

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

CLIENT : MARATHON OIL CO.
PROJECT # : (NONE)
PROJECT NAME: HELBING FED #1 (322)

ATI I.D. : 401328
DATE RECEIVED: 01/12/94
DATE ANALYZED: 01/17/94

PARAMETER	UNITS	01	02	03	04	05
PETROLEUM HYDROCARBONS, IR	MG/KG	420	27000	4100	4800	5700

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : MARATHON OIL CO.
PROJECT # : (NONE) ATI I.D.: 401328
PROJECT NAME: HELBING FED #1 (322)

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC.	% REC
PETROLEUM HYDROCARBONS	MG/KG	011794	<20	<20	NA	160	150	107

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

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

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : BTEX, MTBE (EPA 8020)
CLIENT : MARATHON OIL CO. ATI I.D.: 401328
PROJECT # : (NONE)
PROJECT NAME: HELBING FED #1 (322)

SAMPLE I.D. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	#1	NON-AQ	01/11/94	01/13/94	01/17/94	1
02	#2	NON-AQ	01/11/94	01/13/94	01/15/94	1
03	#3	NON-AQ	01/11/94	01/13/94	01/17/94	1

PARAMETER	UNITS	01	02	03
BENZENE	MG/KG	<0.025	<0.025	<0.025
TOLUENE	MG/KG	<0.025	<0.025	<0.025
ETHYLBENZENE	MG/KG	<0.025	<0.025	0.076
TOTAL XYLENES	MG/KG	0.028	0.074	0.57
METHYL-t-BUTYL ETHER	MG/KG	<0.12	<0.12	<0.12
BROMOFLUOROBENZENE (%)		94	75	96

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : BTEX, MTBE (EPA 8020)
CLIENT : MARATHON OIL CO. ATI I.D.: 401328
PROJECT # : (NONE)
PROJECT NAME: HELBING FED #1 (322)

SAMPLE I.D. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
04	#4	NON-AQ	01/11/94	01/13/94	01/15/94	1
05	#5	NON-AQ	01/11/94	01/13/94	01/17/94	2

PARAMETER	UNITS	04	05
BENZENE	MG/KG	<0.025	<0.025
TOLUENE	MG/KG	<0.025	<0.025
ETHYLBENZENE	MG/KG	0.23	0.079
TOTAL XYLENES	MG/KG	1.3	0.49
METHYL-t-BUTYL ETHER	MG/KG	<0.12	<0.12
BROMOFLUOROBENZENE (%)		115	97

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

REAGENT BLANK

TEST	: BTEX, MTBE (EPA 8020)	ATI I.D.	: 401328
BLANK I.D.	: 011394	DATE EXTRACTED	: 01/13/94
CLIENT	: MARATHON OIL CO.	DATE ANALYZED	: 01/14/94
PROJECT #	: (NONE)	DILUTION FACTOR:	1
PROJECT NAME:	HELBING FED #1 (322)		

PARAMETER	UNITS	
BENZENE	MG/KG	<0.025
TOLUENE	MG/KG	<0.025
ETHYLBENZENE	MG/KG	<0.025
TOTAL XYLENES	MG/KG	<0.025
METHYL-t-BUTYL ETHER	MG/KG	<0.12
BROMOFLUOROBENZENE (%)		100

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

TEST	: BTEX, MTBE (EPA 8020)	ATI I.D.	: 401328
MSMSD #	: 40132703	DATE EXTRACTED	: 01/13/93
CLIENT	: MARATHON OIL CO.	DATE ANALYZED	: 01/14/94
PROJECT #	: (NONE)	SAMPLE MATRIX	: NON-AQ
PROJECT NAME	: HELBING FED #1 (322)	REF. I.D.	: 40132703
		UNITS	: MG/KG

PARAMETERS	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD
BENZENE	<0.025	1.0	1.1	110	1.0	100	10
TOLUENE	<0.025	1.0	0.98	98	0.97	97	1
ETHYL BENZENE	<0.025	1.0	0.98	98	0.98	98	0
TOTAL XYLENES	<0.025	3.0	3.0	100	3.0	100	0
METHYL-t-BUTYL ETHER	<0.12	2.0	2.2	110	2.0	100	10

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

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

AnalyticalTechnologies,Inc., Albuquerque, NM
San Diego • Phoenix • Seattle • Pensacola • Ft. Collins • Portland • Albuquerque

CHAIN OF CUSTODY

DATE: 1-11-94 PAGE 1 OF 1

ATI LAB I.D. 401328

PLEASE FILL THIS FORM IN COMPLETELY. SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT MANAGER: Robert Menzie

COMPANY: Marathon Oil Co
ADDRESS: PO Box 552
Midland, TX 79702-0552
PHONE: (915) 682-1626
FAX: (915) 687-8337

BILL TO: Bob Menzie
COMPANY: Marathon Oil Co
ADDRESS: PO Box 552
Midland, TX 79702-0552

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	BTXE/MTBE (8020)	Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	Polynuclear Aromatics (610/8310)	SDWA Primary Standards - Arizona	SDWA Secondary Standards - Arizona	SDWA Primary Standards - Federal	SDWA Secondary Standards - Federal	The 13 Priority Pollutant Metals	RCRA Metals by Total Digestion	RCRA Metals by TCLP (1311)	NUMB. OF CONTAINERS
#1	1-11-94	14:45	Soil	01	✓			✓																1
#2	1-11-94	14:50	Soil	02	✓			✓																1
#3	1-11-94	14:55	Soil	03	✓			✓																1
#4	1-11-94	14:45	Soil	04	✓			✓																1
#5	1-11-94	14:50	Soil	05	✓			✓																1

PROJECT INFORMATION

PROJ. NO.: Helbing Fed #1 (322)
PROJ. NAME:
P.O. NO.:
SHIPPED VIA:

SAMPLE RECEIPT

NO. CONTAINERS: 5
CUSTODY SEALS: (Y) N / NA
RECEIVED INTACT: Y
RECEIVED COLD: Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒ 2 WEEK

Comments:

SAMPLED & RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY:
Signature: Time: 16:12	Signature: Time: 14:00	Signature: Time:
Printed Name: Date: RM Gray 1-11-94	Printed Name: Date: Robert J. Menzie Jr.	Printed Name: Date:
Company: Phone: Marathon (915) 687-8314	Company: Marathon Oil Co.	Company:

RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY:(LAB) 3.
Signature: Time: 16:12	Signature: Time:	Signature: Time: 1400
Printed Name: Date: RJ Menzie Jr. 1-11-94	Printed Name: Date:	Printed Name: Date: Lori Dettre 1/12/94
Company: Marathon	Company:	Analytical Technologies, Inc.

Mid-Continent Region
Production United States

Marathon Oil Company

P.O. Box 552
Midland, Texas 79702
Telephone 915/682-1626

July 18, 1994

Mr. Roger C. Anderson
State of New Mexico
Oil Conservation Division
P. O. Box 2088
Land Office Building
Santa Fe, NM 87504-2088

RE: HELBING FEDERAL #1 REMEDIATION PLAN

Dear Mr. Anderson:

This correspondence discusses the historical activities related to the Helbing Federal #1 (Lease 322) well site, Section 22, T-22-S, R-23-E, Eddy County, New Mexico, formerly operated by Marathon Oil Company. Additionally, an intent of this letter is to seek approval for further action regarding the soils of this location.

In December 1993, Chevron, U.S.A. Inc. indicated to Marathon Oil Company that the location was to undergo environmental assessment as part of a reassignment of that well and its operating rights to Chevron. Chevron specifically requested remediation of soils at the site located in the vicinity of existing equipment.

Approximately 140 cubic yards of soil had been removed from three areas at the lease location and transported to the staging area of Marathon's Indian Basin Gas Plant landfarm during December or early January. Biotreatment of surface soils remaining in place at the Helbing Federal #1 was conducted by Alpha West, Inc. in early January. On January 10, 1994, Marathon and Chevron environmental representatives met at the lease location to discuss Marathon's responsibilities in relinquishing the lease operatorship and witnessed evidence of prior activities at that time. Later consultation with Alpha West, Inc. revealed that soil samples were not collected prior to the initial application. Consequently, Marathon collected soil samples at the lease location and analyzed them for BTEX (EPA Method 8020) and TRPH (EPA Method 418.1). Results ranged from 420 ppm to 27,000 mg/kg. BTEX concentrations were non detect below OCD spill and leak guideline limits. A second biotreatment application was administered in late January. Further sampling of landfarm-staged soils in April for TRPH, BTEX, and total metals indicated that only TRPH remained above limits and ranged from 1,200 to 4,100 mg/kg.

Marathon Oil Company proposes that no further action be required for surface soils on the Helbing Federal #1 location which is now operated by Chevron USA, Inc. Two biotreatment applications have been conducted and no additional treatment is necessary. In addition, depth to shallow groundwater in this area is approximately 178 feet below the Helbing Federal #1 location as indicated by a nearby shallow water supply well in Section 16, T22S, R23E. Depth to water in this well in 1952 (Hendrickson and Jones, 1952, Plate 4; Geology and Groundwater Resources of Eddy County, New Mexico, New Mexico Bureau of Mines & Mineral Resources Ground-water Report 3) was 98 feet below grade and depth to shallow groundwater has probably increased since that time. The difference in surface elevation between the well and the location pad, as indicated on the attached Martha Creek 7.5-minute quadrangle, is approximately 80 feet.

Marathon proposes treatment in the landfarm of the 140 cubic yards of excavated soil currently being stored in the staging area. Marathon proposes a 3,000 mg/kg soil cleanup level as measured by EPA Method 418.1 for these soils. After the soils have been treated to below the 3,000 mg/kg cleanup level, Marathon proposes to use these soils for construction and repair of secondary containment berms or filling-in depressions on the gas plant property owned by Marathon Oil Company.

Marathon desires to begin treatment of soils held in the staging area as soon as OCD approval of this workplan is received.

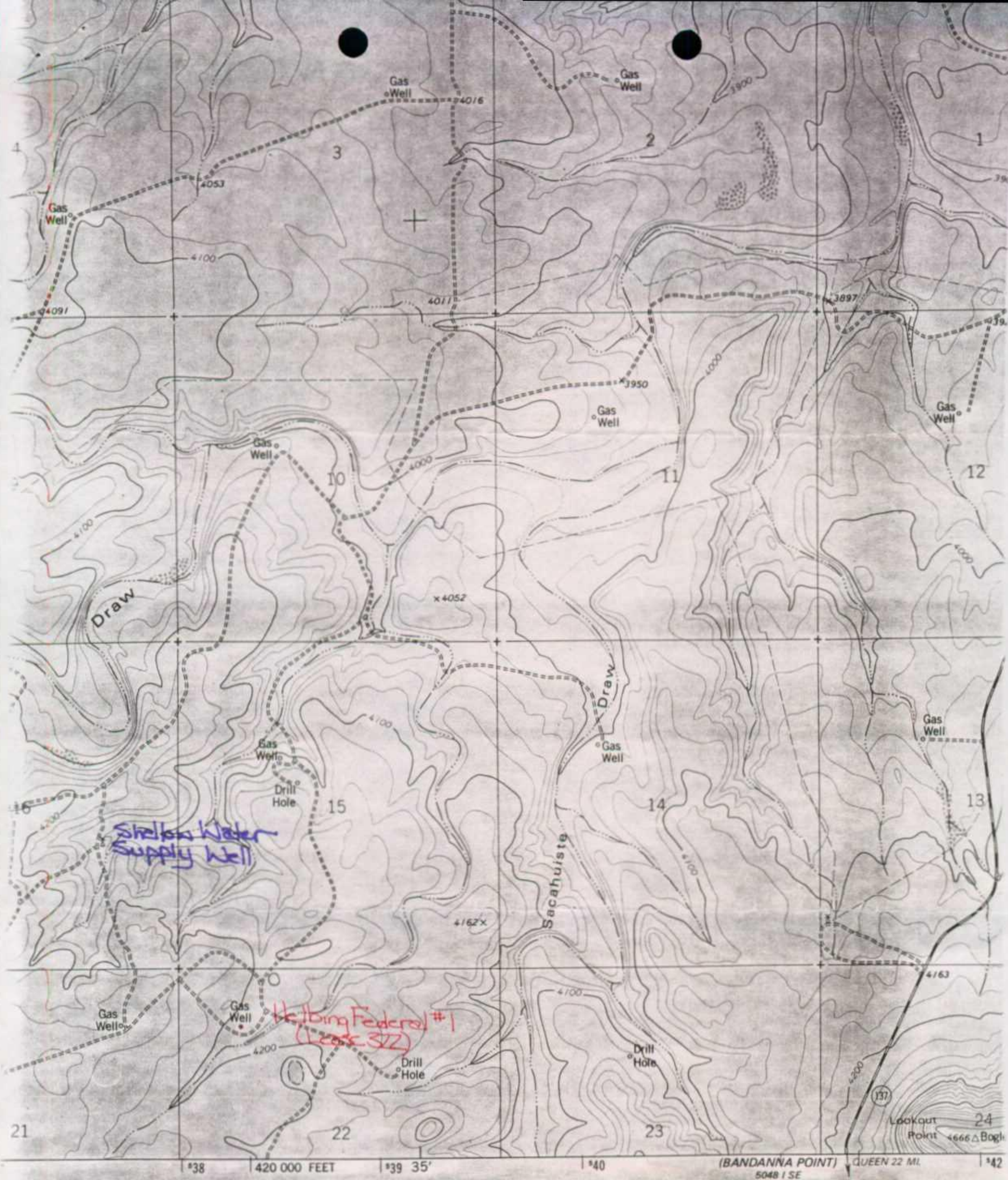
Sincerely,

Jenelle L. Vierzbicki

J. L. Vierzbicki
Environmental & Safety Representative

Attachment

xc: C. K. Curlee
R. J. Menzie, Jr.



Survey

aphs

MN
GN
0°14'
4 MILS
11°
196 MILS

SCALE 1:24 000

1 ½ 0

1000 0 1000 2000 3000 4000 5000 6000

1 .5 0

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929