

1R - 482

GENERAL CORRESPONDENCE

YEAR(S):
2007

Hansen, Edward J., EMNRD

1R 482
Gen. Cor.
2007

From: Price, Wayne, EMNRD
Sent: Thursday, August 30, 2007 9:59 AM
To: mark@laenvironmental.com; mburrows@valornet.com
Cc: VonGonten, Glenn, EMNRD; Hansen, Edward J., EMNRD
Subject: Technical meeting held Aug. 29, 2007

1R0482 Penrose Federal - OCD is in receipt of the January 09 and May 10, 2007 documents and pursuant to our discussions on August 29, 2007 hereby approves installation of the monitor well in close proximity to the pit and approves the proposed remediation plan. Please include this E-mail notice in the final closure report.

Wayne Price-Environmental Bureau Chief
Oil Conservation Division
1220 S. Saint Francis
Santa Fe, NM 87505
E-mail wayne.price@state.nm.us
Tele: 505-476-3490
Fax: 505-476-3462

8/30/2007



July 27, 2007

HAND DELIVERY

Mr. Wayne Price, Bureau Chief
Environmental Bureau
Oil Conservation Division
New Mexico Department of Energy,
Minerals and Natural Resources
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

AUG 29
2 PMRECEIVED
2007 JUL 27 PM 3 05

Re: Penrose Federal Lease Battery #1, Unit F, Section 9, Township 22S,
Range 37E, Lea County, New Mexico
OCD Case #1R0482

Dear Mr. Price:

As you are aware, representatives of John H. Hendrix Corporation ("Hendrix") have been in contact with you to arrange a meeting to further discuss installation of a monitoring well near an unlined pit in Section 9, Township 22 South, Range 37 East, Lea County, New Mexico. Mr. Edward J. Hansen, on behalf of the New Mexico Oil Conservation Division ("OCD"), sent Hendrix a letter, dated February 9, 2007, directing Hendrix to install a monitoring well in the center of the pit. As the OCD and Hendrix were still having a dialogue about how to best monitor possible ground water contamination from the pit, on April 12, 2007, the OCD granted Hendrix a 30-day extension to install the monitoring well.

You have indicated to Hendrix that you are available to meet at the end of August and you and Mr. Larson are working out the details of when that meeting will occur. Hendrix therefore requests an additional extension of 60 days to install a ground water monitoring well as required by the OCD's February 9, 2007 letter.

Thank you for your consideration.

Sincerely,

Ocean Munds-Dry

ATTORNEY FOR JOHN H. HENDRIX CORP.

cc: Mark J. Larson

2007 MAY 11 AM 11 05

May 10, 2007

VIA EMAIL: wcarr@hollandhart.com

Mr. William F. Carr, Attorney
Holland & Hart LLP
110 N. Guadalupe, Suite 1
Santa Fe, New Mexico 87505

Re: 1R0482, Response Monitoring Well Installation Request, John H. Hendrix Corporation, Penrose Federal Lease, Battery #1 Unlined Surface Impoundment (Closed), Unit F (SE/4, NW/4), Section 9, Township 22 South, Range 37 East, Lea County, New Mexico

Dear Mr. Carr:

This letter is written by Larson and Associates, Inc. (LA), as consultant to John H. Hendrix Corporation (JHHC), in response to a letter from the New Mexico Oil Conservation Division (OCD) on February 9, 2007, directing JHHC to install a monitoring well near the center of an unlined pit (Site) closed under OCD Order No – R3221. The Site is located in Unit F (SE/4, NW/4), Section 9, Township 22 South, Range 37 East, in Lea County, New Mexico. On April 12, 2007, the OCD granted an extension for thirty (30) days to respond to the request. The latitude and longitude for the Site is north 32° 24' 32.2" and west 103° 10' 14.7", respectively. Figure 1 presents a location and topographic map.

Background

On June 29, 2006, LA personnel collected soil samples from four (4) air rotary borings (BH-26 through BH-29) that were drilled to about 15 feet below ground surface (BGS) near the corners of the pit and one boring (BH-30) that was drilled near the center of the pit to about 25 feet BGS. On July 29, 2006, October 5, 2006 and October 31, 2006, additional samples were collected from boring BH-30 at approximately 30, 35, 40, 45, 50, 55, 60 65 and 70 feet BGS. The soil samples were collected every 5 feet and analyzed for field headspace analysis according to OCD guidelines, and by laboratory analysis for benzene, toluene, ethyl benzene, xylene (collectively referred to as BTEX), chloride and total petroleum hydrocarbons (TPH) including gasoline range organics (GRO) and diesel range organics (DRO). Table 1 presents a summary of the laboratory analysis.

Referring to Table 1, BTEX was reported in the samples at concentrations above the test method detection limit, but below the OCD recommended remediation action levels (RRAL). TPH was reported in all samples, except BH-26, 15 to 16 feet, and

exceeded the RRAL of 1,000 milligrams per kilogram (mg/Kg). The TPH decreased below the method detection limit (<20 mg/Kg) in samples below 40 feet at location BH-30. Chloride was reported between 425 mg/Kg (BH-26, 0 to 2 feet) and 10,500 mg/Kg (BH-28, 15 to 16 feet). Chloride was 4,310 mg/Kg in the sample from BH-30, 70 to 71 feet BGS. Ground water occurs at approximately 75 feet BGS based on New Mexico State Engineer (NMSE) records. A report was submitted to the OCD on January 9, 2007, and the borings were plugged according the NMSE rules.

Technical Review

Published information, including USEPA (1986 and 1991) and Tramm and Crosby (2006), states that drilling through contaminated soil into ground water should be avoided when using methods that produce an open boring (i.e., air rotary, solid auger, etc.) since there is a potential for cross-contamination of contaminated soil with ground water due to smearing, caving and sloughing. Further, the USEPA (1989) considers the goal of a monitoring well to determine what affect a surface or near surface release has had on near-by ground water quality. Dissolved constituents released at or near the surface descend vertically through the unsaturated zone and migrate laterally in the direction of ground water flow. The monitoring well is normally completed in the first permeable water-bearing zone hydraulically down-gradient of the release. Hollow-stem augers would provide a temporary barrier against bore hole caving and sloughing, however, this method is not appropriate for the Site due to caliche in the subsurface at location BH-30 between about 22 and 33 feet BGS.

Guidelines published by the OCD in February 1993 ("Unlined Surface Impoundment Closure Guidelines") and August 1993 ("Guidelines for Remediation of Leaks, Spills and Releases") state that one monitor well should be installed adjacent to and hydrologically down-gradient from the unlined surface impoundment (leak, spill or release) to determine if protectable fresh water has been impacted by the disposal activities. Monitoring wells installed according to OCD guidelines have produced results that have confirmed impacts to protectable ground water ("1RP0465, Ground Water Investigation Report, Will Cary Unlined Pit, John H. Hendrix Corporation, Lea County, New Mexico, January 31, 2007").

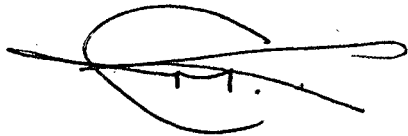
Recommendation

The results of laboratory analysis of soil samples from boring BH-30 indicate that chloride has migrated vertically and may have encountered ground water. Installing a monitoring well in the pit poses a significant risk for cross-contamination of ground water from contaminated soil. Therefore, JHHC should install a monitoring well according to OCD guidelines and USEPA recommended practices. The well should be installed adjacent (within 25 feet) and hydrologically down gradient (southeast) of the pit. Figure 2 presents a Site drawing and proposed monitoring well location.

Mr. William F. Carr
May 10, 2007
Page 3

The monitoring well should be installed using conventional air-rotary drilling techniques and soil samples collected about every five (5) feet to about 70 feet BGS, and analyzed by a laboratory for chloride to verify concentration in the unsaturated soil. The boring should be advanced approximately ten (10) feet into ground water and a well should be constructed using ten (10) feet of 2-inch schedule 40 PVC 0.010-inch factory slotted screen packed with graded silica sand appropriate for the well screen. The sand should extend above the screen about 2 feet and a layer of bentonite chips about 2 feet thick should be placed over the sand and hydrated with potable water. The remainder of the annulus should be filled with cement-bentonite grout and well secured with a locking cover anchored in concrete. The well will need to be developed by bailing with a disposable polyethylene bailer until the water is turbid-free before ground water samples are collected for BTEX, dissolved metals, cations, anions and total dissolved solids. A report, including geologic log, well construction diagram and laboratory report should be submitted to the OCD within 45 days after receipt of the final laboratory report. The OCD requires notification at least 48 hours prior to drilling and sampling the well. Please call me with questions at (432) 687-0901 or email mark@laenvironmental.com.

Larson and Associates, Inc.



Mark J. Larson, P.G., C.P.G., C.G.W.P.
Senior Project Manager/President

Encl

cc: Marvin Burrows/JHHC
Ronnie Westbrook/JHC

References

USEPA, September 1986, RCRA Ground-Water Monitoring Technical Enforcement Guidance Document: OSWER-9950.1, 207 pp.

USEPA, January 1989, EPA Ground Water Handbook: ISBN: 0-86587-761-0, 212 pp.

USEPA, March 1991, Handbook of Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells: EPA 160014-891034, 324 pp.

Tramm, K.S. and Crosby, E.C., 2006, Environmental Due Diligence: Infinity Publishing, 421 pp.

Table

Table 1
1R0482

Summary of Field and Laboratory Analysis of Soil Samples
John H. Hendrix Corporation, Penrose Federal Tank Battery #1

Unit Letter F (SE/4,NW/4), Section 9, Township 22 South, Range 37 East, Lea County, New Mexico

Page 1 of 2

Boring Number	Sample Date	Sample Depth	PID (ppm)	Benzene (mg/kg)	BTEX (mg/kg)	GRO C6-C12 (mg/kg)	DRO C28 (mg/kg)	DRO C12 - C28 (mg/kg)	DRO C35 (mg/kg)	DRO C35 (mg/kg)	C6-C35 (mg/kg)	Chloride (mg/kg)
BH-21	06/29/2006	0 - 2	0.1	--	--	<10	<10	<10	<10	<30	<30	25.8
	06/29/2006	5 - 6	3.9	--	--	--	--	--	--	--	--	--
BH-22	06/29/2006	0 - 1	4.1	--	--	<10	359	185	185	544	544	69.2
	06/29/2006	5 - 6	1.1	--	--	--	--	--	--	--	--	--
BH-23	06/29/2006	0 - 2	1,316	3.85	85.97	2,200	5,230	942	942	8,372	8,372	138
	06/29/2006	5 - 6	907	--	--	49.9	729	72.6	72.6	851.5	851.5	673
	06/29/2006	10 - 11	10.2	--	--	--	--	--	--	--	--	--
BH-24	06/29/2006	0 - 2	1.7	--	--	<10	<10	<10	<10	<30	<30	29.1
	06/29/2006	5 - 6	1.1	--	--	--	--	--	--	--	--	--
BH-25	06/29/2006	0 - 2	1.0	--	--	<50	2,610	633	633	3,243	3,243	19.6
	06/29/2006	5 - 7	1.5	--	--	<10	<10	<10	<10	<30	<30	402
BH-26	06/29/2006	0 - 2	340	0.35	3.251	93.3	1,670	268	268	2,031.3	2,031.3	425
	06/29/2006	5 - 7	868	0.0619	2.9929	1,860	6,610	738	738	9,208	9,208	2,350
	06/29/2006	10 - 11	788	0.0112	0.8782	455	1,630	190	190	2,275	2,275	5,040
	06/29/2006	15 - 16	119	<0.025	<0.125	<10	<10	<10	<10	<30	<30	8,730
BH-27	06/29/2006	0 - 2	800	2.19	27.76	2,420	15,200	2,130	2,130	19,750	19,750	1,010
	06/29/2006	5 - 7	1,308	0.555	16.825	2,270	5,430	677	677	16,757	16,757	981
	06/29/2006	10 - 11	994	0.0529	2.2679	484	2,090	255	255	2,829	2,829	4,260
	06/29/2006	15 - 16	1,050	0.0553	2.8633	2,330	7,440	889	889	10,659	10,659	1,000
BH-28	06/29/2006	0 - 2	156	0.144	1.327	132	6,120	878	878	7,130	7,130	1,020
	06/29/2006	5 - 7	501	0.106	5.044	1,490	10,500	1,270	1,270	13,260	13,260	1,480
	06/29/2006	10 - 11	763	0.0105	1.3925	457	1,580	178	178	2,215	2,215	5,970
	06/29/2006	15 - 16	887	0.0182	3.0452	787	2,730	291	291	3,808	3,808	10,500
BH-29	06/29/2006	0 - 2	59.7	--	--	79.7	4,830	735	735	5,644.7	5,644.7	354
	06/29/2006	5 - 7	436	--	--	731	7,310	938	938	8,979	8,979	2,680
	06/29/2006	10 - 11	747	<0.025	1.284	298	2,140	205	205	2,643	2,643	3,900
	06/29/2006	15 - 16	847	0.059	6.098	1,260	3,420	335	335	5,015	5,015	6,260

Table 1
1R0482

Summary of Field and Laboratory Analysis of Soil Samples
John H. Hendrix Corporation, Penrose Federal Tank Battery #1
Unit Letter F (SE/4,NW/4), Section 9, Township 22 South, Range 37 East, Lea County, New Mexico

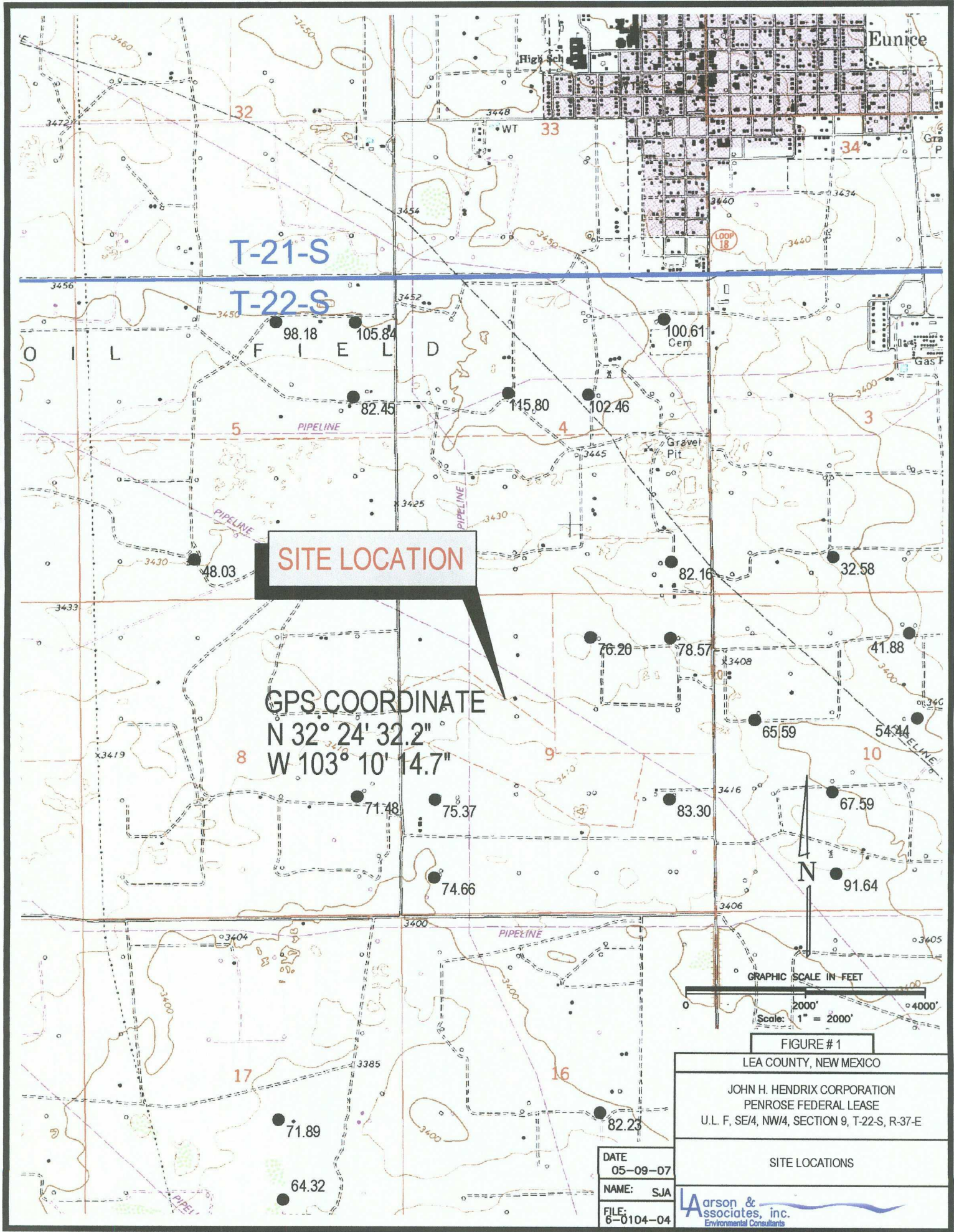
Page 2 of 2

Boring Number	Sample Date	Sample Depth	PID (ppm)	Benzene (mg/kg)	BTEX (mg/kg)	GRO C6-C12 (mg/kg)	DRO C12 - C28 (mg/kg)	DRO C35 (mg/kg)	DRO C35 (mg/kg)	Chloride (mg/kg)
BH-30	06/29/2006	0 - 2	411	1.69	12.41	512	9,100	1,190	10,802	530
	06/29/2006	5 - 7	1,004	1.16	42.01	1,810	7,990	874	10,674	142
	06/29/2006	10 - 12	954	0.0933	4.7633	636	2,080	207	2,923	436
	06/29/2006	15 - 16	1,086	0.332	16.542	1,550	5,880	704	8,143	1,740
	06/29/2006	20 - 21	1,064	0.357	3.95	337	887	100	2,644	2,290
	06/29/2006	25 - 26	1,048	0.142	4.867	808	2,730	371	3,909	3,410
	07/05/2006	30 - 31	690	0.0125	1.4925	587	2,350	173	3,110	2,550
	10/05/2006	35	69	--	--	136	1,220	--	1,356	2,340
	10/05/2006	40	17.8	--	--	<10	<10	--	<20	2,450
	10/05/2006	45	5.7	--	--	<10	<10	--	<20	2,340
	10/05/2006	50	2.0	--	--	<10	<10	--	<20	2,870
	10/05/2006	55	3.4	--	--	<10	<10	--	<20	3,400
	10/31/2006	60	0.1	--	--	--	--	--	--	2,720
	10/31/2006	65	0.1	--	--	--	--	--	--	2,600
	10/31/2006	70	0.1	--	--	--	--	--	--	4,310

Notes: Analysis performed by Environmental Lab of Texas, I. Ltd., Odessa, Texas

- BGS: Sample depth in feet below ground surface
- TPH: Total petroleum hydrocarbons (Sum of C6 to C35)
- mg/kg: Milligrams per kilogram
- <: Below method detection limit
- PID: Photoionization detector
- ppm: Parts per million
- : No data available
- BTEX: Sum of benzene, toluene, ethylbenzene and xylene
- GRO: Gasoline - range organics
- DRO: Diesel - range organics

Figures



SITE LOCATION

GPS COORDINATE
N 32° 24' 32.2"
W 103° 10' 14.7"

GRAPHIC SCALE IN FEET
0 2000' 4000'
Scale: 1" = 2000'

FIGURE # 1

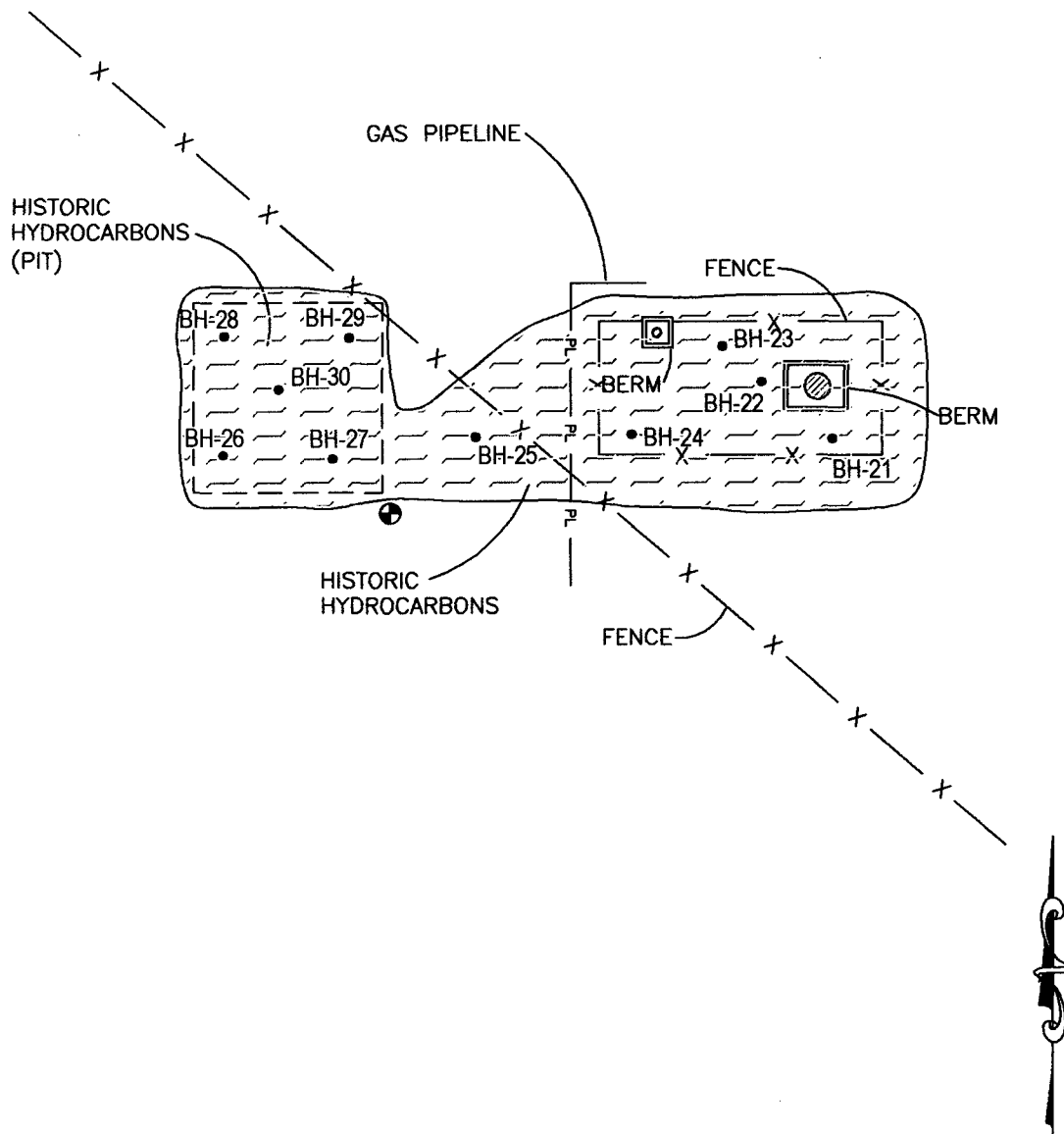
LEA COUNTY, NEW MEXICO

JOHN H. HENDRIX CORPORATION
PENROSE FEDERAL LEASE
U.L. F, SE/4, NW/4, SECTION 9, T-22-S, R-37-E

SITE LOCATIONS

DATE
05-09-07
NAME: SJA
FILE:
6-0104-04

Larson &
Associates, inc.
Environmental Consultants



LEGEND

BH-21 • BORE HOLE LOCATION

⊕ PROPOSED DOWN-GRADIENT
MONITOR WELL LOCATION

GRAPHIC SCALE IN FEET

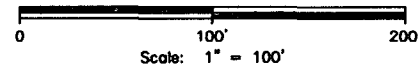


FIGURE #2

LEA COUNTY, NEW MEXICO

JOHN H. HENDRIX CORPORATION
PENROSE FEDERAL TANK BATTERY
U.L. F, (SE/4, NW/4)
SECTION 9, T-22-S, R-37-E

SITE DRAWING

DATE
05-09-07

NAME: SJA

FILE:
6-0104-03

Larson &
Associates, inc.
Environmental Consultants



April 13, 2007

2007 APR 13 AM 2 20

HAND DELIVERY

Mr. Wayne Price, Bureau Chief
Environmental Bureau
Oil Conservation Division
New Mexico Department of Energy,
Minerals and Natural Resources
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

Re: Penrose Federal Lease Battery #1, Unit F, Section 9, Township 22S,
Range 37E, Lea County, New Mexico
OCD Case #1R0482

Dear Mr. Price:

Pursuant to your discussion with Mr. Carr yesterday, this letter is to confirm that you have granted John H. Hendrix Corporation ("Hendrix") a 30-day extension to install a ground water monitoring well as specified in Mr. Edward J. Hansen's letter of February 9, 2007.

Thank you for your consideration.

Sincerely,

Ocean Munds-Dry

ATTORNEY FOR JOHN H. HENDRIX CORP.

Enclosures

cc: Mark J. Larson