

**3R - 337**

**MONITORING  
REPORT**

**04/12/2005**

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3R0337

APR 25 2005

Oil Conservation Division  
Environmental Bureau



Environmental Projects  
188 County Road 4900  
Bloomfield, NM 87413  
505-634-4956 Phone  
505-632-4780 Fax

April 12, 2005

Mr. Glen Von Gonten  
Hydrogeologist  
Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

RE: O'SHEA # 1M DEHY PIT REMEDIATION AND CLOSURE REPORT

Dear Mr. Von Gonten:

Enclosed please find information on remediation and closure activities associated with the unlined surface impoundment located at the O'Shea # 1M well site. Public Service Company of New Mexico (PNM) was previously responsible for the site and initiated pit closure activities on June 2, 1998. The site later became the responsibility of Williams upon purchase of Gas Company of New Mexico (GCNM) from PNM. Upon expiration of PNM's retained environmental liabilities associated with this site, Williams agreed to complete necessary closure work. As such, the enclosed documentation reflects activities of both PNM and Williams, all of which has been previously reported.

#### Site History

Excavation of petroleum hydrocarbon impacted soil beneath the unlined surface impoundment began on June 2, 1998. An approximate total of 780 cubic yards of contaminated soil were removed and remediated by on-site landfarming. The excavation was reportedly terminated at a depth of 16 feet, ten feet below where ground water was encountered. A sample of the ground water collected from the excavation contained benzene, toluene and total xylene at concentrations in excess of Water Quality Control Commission (WQCC) standards. A letter notifying the Oil Conservation Division (OCD) of ground water contamination at the site was submitted on June 16, 1998. Work at the site included the removal of an estimated 1500 barrels of water prior to backfilling.

To evaluate the magnitude and extent of ground water contamination, monitoring wells were installed in and around the former pit location. A down gradient well was installed consistent with standard site investigation protocol. The depth and location of wells were approved by NMOCD. Ground water samples were collected periodically from the wells over a period of five years through March 2003. Irrigation to the surrounding field has apparently ceased and the wells have been dry since 2003.

## Site Hydrogeology

The O'Shea # 1M site lies at an elevation of about 5825 feet, just west of the town of La Plata, NM. The site lies within the broad alluvial plain of the south-flowing La Plata River. Irrigation ditches divert water from the La Plata and carry water to irrigate fields on the alluvial plain throughout the growing season.

The site is less than one mile from the streambed of the La Plata River, however, there are three nearby irrigation ditches that have exerted strong control over site hydrology. The McDermott and Cunningham ditches lie east of the site and the Highland Park ditch lies just west of the site. The site lies on the north side of Murphy Arroyo, which is an east-flowing intermittent stream that crosses the various ditches on its way to the La Plata River. Several ponds exist upgradient of the site and appear to be fed by irrigation ditches.

During site excavation activities, about 6 – 7 feet of silty-clay was encountered in the subsurface. Beyond this depth, cobbles and gravels were prevalent. Groundwater was found at a depth of 6 feet as noted in field reports completed during excavation activities. Following excavation and subsequent backfilling, monitoring wells were installed. Based on monitoring since 1998, water levels fluctuate radically depending on the presence or absence of water in the irrigation ditches. On numerous occasions, monitoring wells were found to be dry, suggesting an artificially induced water table.

## Monitoring Results

Concentrations of benzene, toluene, ethylbenzene and xylene (BTEX) were analyzed in water samples collected during quarters when water was present. Of the five wells in the monitoring network, only well MW-2 had more than one exceedance of a measured WQCC water quality standard. Results of the 2003 sampling events (the last period when all wells could be sampled) confirm earlier water quality findings. Table 1 summarizes the analytical results from episodic sampling of the monitoring wells.

Following the initial sampling event, in only one well did benzene and total xylene concentrations exceed WQCC standards (MW-2). It is arguable that the initial sample was not representative due to soil agitation and liberation of contaminants during excavation of the soil mass. Further, a significant amount of water was removed from the excavation which likely resulted in more representative conditions subsequent to excavation work.

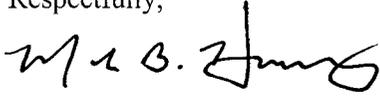
## Summary

The unlined surface impoundment at the O'Shea # 1M was addressed consistent with OCD Order 7940-C and with the guidelines pertaining to the remediation of unlined surface impoundments. The work included the removal of hydrocarbon impacted soils and an evaluation of groundwater impacted by the historical operation of the impoundment. A network of ground water monitoring wells was installed and ground water analyses showed that a small BTEX plume may have existed in the vicinity of the former pit location. Natural attenuation of the BTEX compounds resulted in contaminant degradation to concentrations less than WQCC MCLs. The monitoring results show that there have been no exceedances of WQCC standards for BTEX in ground water dating to the second quarter of 2001.

April 12, 2005  
Mr. Glen Von Gonten, OCD  
Page 3

Based on current site conditions, Williams requests approval for closure of the O'Shea # 1M site. Following receipt of your closure approval we will plug and abandon the monitoring wells in accordance with applicable guidelines. Williams appreciates your time in reviewing this site closure request. If you have any questions or require any additional information, please contact me at 505-634-4956.

Respectfully,

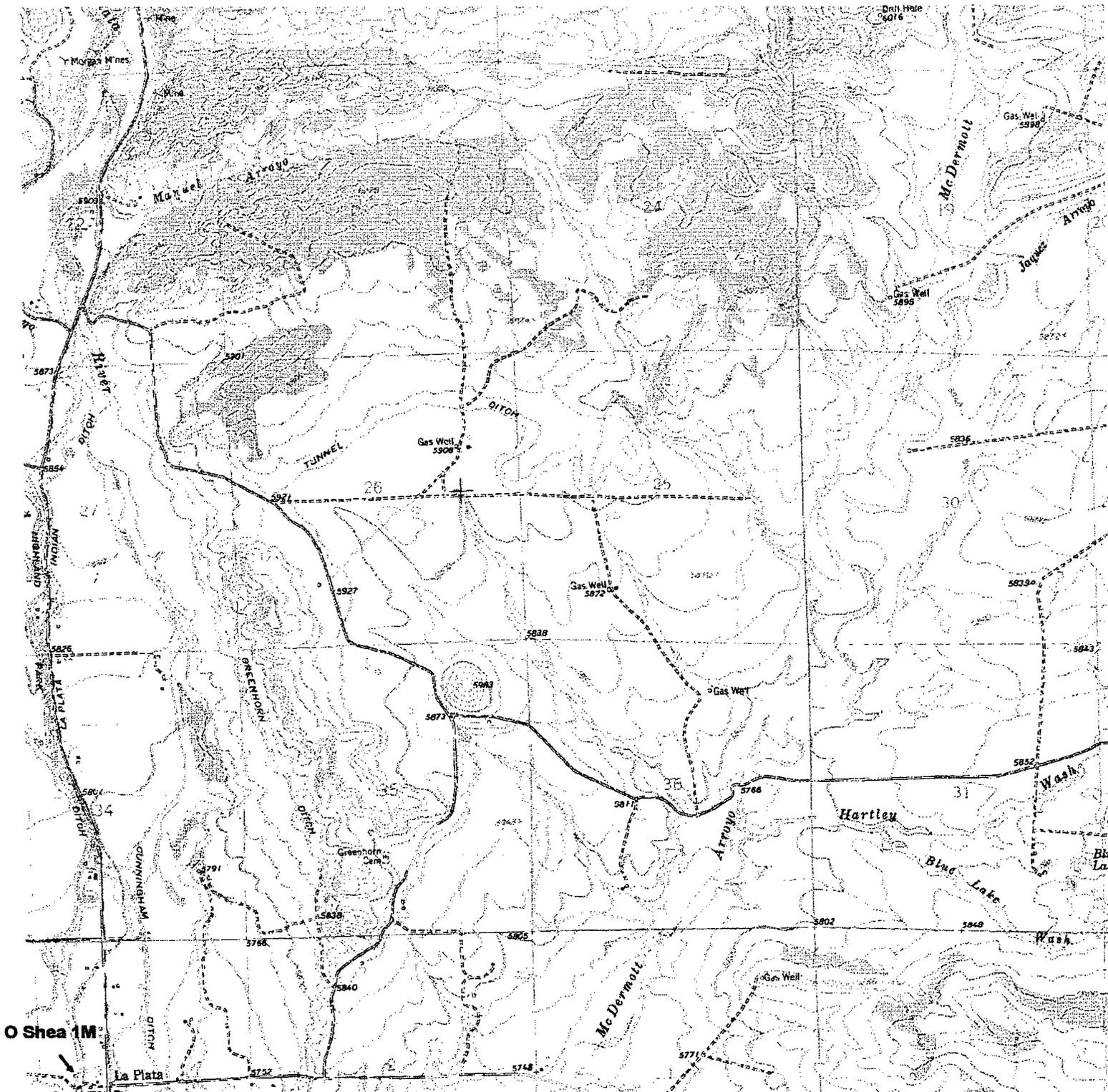
A handwritten signature in black ink, appearing to read "Mark B. Harvey". The signature is written in a cursive style with a large, prominent "H" at the end.

Mark B. Harvey  
Project Coordinator

enclosures

c: Mr. Denny Foust, OCD District III, Aztec  
Mr. Bill Liess, BLM Farmington District Office

# O Shea 1M T31N, R13W, S3, Unit F



LA PLATA, N. MEX.- COLO.

# Analytical Data Summary

Site Name:

O' Shea 1M

Reporting Period:

~~12/11/02~~  
11/98 To 12/31/04

Well ID	Sample Date	Sample ID	Benzene ug/l	Toluene ug/l	Ethylbenzene ug/l	Xylene (Total) ug/l
<b>MW-1</b>						
	12/6/02	122906DEC02	ND	ND	ND	5.6
	3/24/03	154424MAR03	ND	ND	ND	ND
<b>MW-2</b>						
	11/1/00	102701NOV00	89.9	46.5	333	3050
	11/1/00	110801NOV00	96.3	52.2	370	4010
	1/3/01	115503JAN01	26.9	58.8	311	2680
	4/5/01	133105APR01	12.4	39.8	182	846
	10/1/01	130001OCT01	3.7	<2.0	71	360
	3/21/02	125021MAR02	5.8	ND	57.	150
	6/13/02	171513JUN02	8.3	32.	59.	150
	12/6/02	124106DEC02	2.5	2.5	85.	380
	3/24/03	162424MAR03	ND	12.	6.3	8.0
<b>MW-3</b>						
	11/1/00	105201NOV00	3.78	<1	10.4	5.65
	1/3/01	121503JAN01	4.23	45.1	1.92	20.8
	4/5/01	134005APR01	1.85	19.2	5.81	7.37
	10/1/01	124601OCT01	<1.0	<2.0	<2.0	<2.0
	3/21/02	125821MAR02	2.5	ND	ND	ND
	6/13/02	170413JUN02	2.0	ND	ND	8.2
	3/24/03	160624MAR03	ND	ND	ND	ND
<b>MW-4</b>						
	12/6/02	125306DEC02	ND	ND	ND	ND
	3/24/03	161424MAR03	ND	ND	ND	ND
<b>MW-5</b>						
	12/6/02	130806DEC02	ND	ND	ND	ND
	3/24/03	155824MAR03	ND	ND	ND	ND

**O' Shea 1M**  
**Summary of Groundwater Analytical Data**  
**(Q2/1999 - Q2/2000)**

Well ID	Sample ID	Sample Date	Free Product		Analytes (values in ug/L)			
			Present Yes/No	Thickness (ft.)	benzene	toluene	ethylbenzene	total xylenes
MW-1	9905241552	24-May-99	N		<0.5	<0.5	<0.5	<1.5
	9908061220	6-Aug-99	N		<0.5	<0.5	<0.5	<1.5
	9910120847	12-Oct-99	N		<0.5	<0.5	<0.5	<1.5
	0002030945	3-Feb-00	N		<0.5	<0.5	<0.5	<1.5
	0005091418	9-May-00	N		<0.5	<0.5	<0.5	<1.5
MW-2	9905241617	24-May-99	N		220	460	340	5020
	9908061255	6-Aug-99	N		100	120	250	3577
	9910120924	12-Oct-99	N		140	700	330	3870
	0002030956	3-Feb-00	N		170	780	370	3200
	0005091442	9-May-00	N		9	17	260	3460
MW-3	9905241641	24-May-99	N		150	<5	190	648
	9908061325	6-Aug-99	N		19	<0.5	82	218
	9910120938	12-Oct-99	N		<0.5	2	7	33
	0002031014	3-Feb-00	N		11	<0.5	8	28
	0005091459	9-May-00	N		10	<0.5	65	106
MW-4	9905241721	24-May-99	N		1.4	0.5	2.9	4.6
	9908061300	6-Aug-99	N		<0.5	<0.5	<0.5	<1.5
	9910120955	12-Oct-99	N		<0.5	<0.5	<0.5	<1.5
	0002031033	3-Feb-00	N		<0.5	<0.5	<0.5	<1.5
	0005091518	9-May-00	N		<0.5	<0.5	<0.5	<1.5
MW-5	9905241751	24-May-99	N		140	<5	180	615
	9909070924	7-Sep-99	N		<0.5	<0.5	1.4	<1.5
	9910121009	12-Oct-99	N		<0.5	<0.5	<0.5	<1.5
	0002031048	3-Feb-00	N		<0.5	<0.5	<0.5	<1.5
	0005091536	9-May-00	N		3.1	1.9	3	36

ND = analyte not detected above method detection limit

NS = well not sampled for specified analytes



**Pace Analytical Services, Inc.**  
 9608 Loiret Blvd.  
 Lenexa, KS 66219  
 Phone: 913.599.5665  
 Fax: 913.599.1759

MILE HIGH ENVIRONMENTAL  
 187 C.R. 4980  
 Bloomfield, NM 87413

Lab Project Number: 6057807  
 Client Project ID: SJB-GW OSHEAI

Attn: Mr. Jim Struhs  
 Phone: (505)632-4457

Lab Sample No: 605034388      Project Sample Number: 6057807-001      Date Collected: 03/21/02 12:50  
 Client Sample ID: 125021MAR02      MW-2      Matrix: Water      Date Received: 03/27/02 09:40

Parameters	Results	Units	Report Limit	Analyzed by	CAS No.	Ftnote	Reg Limit
<b>GC Volatiles</b>							
Aromatic Volatile Organics      Prep/Method: EPA 8021 / EPA 8021							
Benzene	5.8	ug/l	2.0	03/31/02 12:57 SHF	71-43-2		
Ethylbenzene	57.	ug/l	2.0	03/31/02 12:57 SHF	100-41-4		
Toluene	ND	ug/l	2.0	03/31/02 12:57 SHF	108-88-3		
Xylene (Total)	150	ug/l	5.0	03/31/02 12:57 SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	96	%		03/31/02 12:57 SHF	2164-17-2		

### REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 6057807  
Client Project ID: SJB-GW OSHEAI

Lab Sample No: 605034396      Project Sample Number: 6057807-002      Date Collected: 03/21/02 12:58  
Client Sample ID: 125821MAR03 MW-3      Matrix: Water      Date Received: 03/27/02 09:40

Parameters	Results	Units	Report Limit	Analyzed by	CAS No.	Ftnote	Reg Limit
<b>GC Volatiles</b>							
Aromatic Volatile Organics	Prep/Method: EPA 8021 / EPA 8021						
Benzene	2.5	ug/l	2.0	03/29/02 22:54 SHF	71-43-2		
Ethylbenzene	ND	ug/l	2.0	03/29/02 22:54 SHF	100-41-4		
Toluene	ND	ug/l	2.0	03/29/02 22:54 SHF	108-88-3		
Xylene (Total)	ND	ug/l	5.0	03/29/02 22:54 SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	99	%		03/29/02 22:54 SHF	2164-17-2		

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Phone: 913.599.5665

Fax: 913.599.1759

Lab Project Number: 6059953

Client Project ID: OSHA

Lab Sample No: 605212869 Project Sample Number: 6059953-001 Date Collected: 06/13/02 17:15  
Client Sample ID: 171513JUN02 MW-2 Matrix: Water Date Received: 06/20/02 09:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC Volatiles</b>								
Aromatic Volatile Organics	Method: EPA 8021							
Benzene	8.3	ug/l	2.0	06/21/02 15:27		71-43-2		
Ethylbenzene	59.	ug/l	2.0	06/21/02 15:27		100-41-4		
Toluene	32.	ug/l	2.0	06/21/02 15:27		108-88-3		
Xylene (Total)	150	ug/l	5.0	06/21/02 15:27		1330-20-7		
a,a,a-Trifluorotoluene (S)	84	%		06/21/02 15:27		98-08-8		

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Phone: 913.599.5665

Fax: 913.599.1759

Lab Project Number: 6059953

Client Project ID: OSHEA

Lab Sample No: 605212877

Project Sample Number: 6059953-002

Date Collected: 06/13/02 17:04

Client Sample ID: 170413JUN02 MW-3

Matrix: Water

Date Received: 06/20/02 09:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	ReqLmt
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**GC Volatiles**

Aromatic Volatile Organics

Method: EPA 8021

Benzene	2.0	ug/l	2.0	06/21/02 15:56		71-43-2		
Ethylbenzene	ND	ug/l	2.0	06/21/02 15:56		100-41-4		
Toluene	ND	ug/l	2.0	06/21/02 15:56		108-88-3		
Xylene (Total)	8.2	ug/l	5.0	06/21/02 15:56		1330-20-7		
a,a,a-Trifluorotoluene (S)	97	%		06/21/02 15:56		98-08-8		

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Lab Project Number: 6065824  
Client Project ID: SJB-GW OSHEAIM

Lab Sample No: 605680941      Project Sample Number: 6065824-001      Date Collected: 12/06/02 12:53  
Client Sample ID: 125306DEC02    mw-4      Matrix: Water      Date Received: 12/17/02 08:00

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC Volatiles</b>									
Aromatic Volatile Organics	Method: EPA 8021								
Benzene	ND	ug/l	2.0	1.0	12/18/02 19:35	SHF	71-43-2		
Ethylbenzene	ND	ug/l	2.0	1.0	12/18/02 19:35	SHF	100-41-4		
Toluene	ND	ug/l	2.0	1.0	12/18/02 19:35	SHF	108-88-3		
Xylene (Total)	ND	ug/l	5.0	1.0	12/18/02 19:35	SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	96	%		1.0	12/18/02 19:35	SHF	98-08-8		

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Lab Project Number: 6065824  
Client Project ID: SJB-GW OSHEAIM

Lab Sample No: 605680958      Project Sample Number: 6065824-002      Date Collected: 12/06/02 13:08  
Client Sample ID: 130806DEC02      MW-5      Matrix: Water      Date Received: 12/17/02 08:00

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	ReqLmt
<b>GC Volatiles</b>									
Aromatic Volatile Organics	Method: EPA 8021								
Benzene	ND	ug/l	2.0	1.0	12/18/02 20:04	SHF	71-43-2		
Ethylbenzene	ND	ug/l	2.0	1.0	12/18/02 20:04	SHF	100-41-4		
Toluene	ND	ug/l	2.0	1.0	12/18/02 20:04	SHF	108-88-3		
Xylene (Total)	ND	ug/l	5.0	1.0	12/18/02 20:04	SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	101	%		1.0	12/18/02 20:04	SHF	98-08-8		

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Lab Project Number: 6065824  
Client Project ID: SJB-GW OSHEAIM

Lab Sample No: 605680966      Project Sample Number: 6065824-003      Date Collected: 12/06/02 12:41  
Client Sample ID: 124106DEC02      MW-2      Matrix: Water      Date Received: 12/17/02 08:00

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC Volatiles</b>									
Aromatic Volatile Organics	Method: EPA 8021								
Benzene	2.5	ug/l	2.0	1.0	12/18/02 20:33	SHF	71-43-2		
Ethylbenzene	85.	ug/l	2.0	1.0	12/18/02 20:33	SHF	100-41-4		
Toluene	2.5	ug/l	2.0	1.0	12/18/02 20:33	SHF	108-88-3		
Xylene (Total)	380	ug/l	5.0	1.0	12/18/02 20:33	SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	91	%		1.0	12/18/02 20:33	SHF	98-08-8		

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Lab Project Number: 6065824  
Client Project ID: SJB-GW OSHEAIM

Lab Sample No: 605680974      Project Sample Number: 6065824-004      Date Collected: 12/06/02 12:29  
Client Sample ID: 122906DEC02      MW-1      Matrix: Water      Date Received: 12/17/02 08:00

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC Volatiles</b>									
Aromatic Volatile Organics	Method: EPA 8021								
Benzene	ND	ug/l	2.0	1.0	12/18/02 21:01	SHF	71-43-2		
Ethylbenzene	ND	ug/l	2.0	1.0	12/18/02 21:01	SHF	100-41-4		
Toluene	ND	ug/l	2.0	1.0	12/18/02 21:01	SHF	108-88-3		
Xylene (Total)	5.6	ug/l	5.0	1.0	12/18/02 21:01	SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	94	%		1.0	12/18/02 21:01	SHF	98-08-8		

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Fax: 913.599.1759

Lab Project Number: 6068855  
Client Project ID: SJB-GW 0SHEA

Lab Sample No: 605938919 Project Sample Number: 6068855-001 Date Collected: 03/24/03 16:24  
Client Sample ID: 162424MAR03 MW-2 Matrix: Water Date Received: 03/27/03 09:45

Parameters Results Units Report Limit DF Analyzed By CAS No. Qual RegLmt

GC Volatiles

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
Aromatic Volatile Organics		Method: EPA 8021							
Benzene	ND	ug/l	2.0	1.0	03/29/03 11:34	DCKI	71-43-2		
Ethylbenzene	6.3	ug/l	2.0	1.0	03/29/03 11:34	DCKI	100-41-4		
Toluene	12.	ug/l	2.0	1.0	03/29/03 11:34	DCKI	108-88-3		
Xylene (Total)	8.0	ug/l	5.0	1.0	03/29/03 11:34	DCKI	1330-20-7		
a,a,a-Trifluorotoluene (S)	109	%		1.0	03/29/03 11:34	DCKI	98-08-8		

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Lab Sample No: 605938927      Project Sample Number: 6068855-002      Date Collected: 03/24/03 15:44  
Client Sample ID: 154424MAR03      MW-1      Matrix: Water      Date Received: 03/27/03 09:45

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC Volatiles</b>									
Aromatic Volatile Organics		Method: EPA 8021							
Benzene	ND	ug/l	2.0	1.0	03/28/03 18:34	DCKI	71-43-2		
Ethylbenzene	ND	ug/l	2.0	1.0	03/28/03 18:34	DCKI	100-41-4		
Toluene	ND	ug/l	2.0	1.0	03/28/03 18:34	DCKI	108-88-3		
Xylene (Total)	ND	ug/l	5.0	1.0	03/28/03 18:34	DCKI	1330-20-7		
a,a,a-Trifluorotoluene (S)	104	%		1.0	03/28/03 18:34	DCKI	98-08-8		

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Lab Project Number: 6068855  
Client Project ID: SJB-GW OSHEA

Lab Sample No: 605938935      Project Sample Number: 6068855-003      Date Collected: 03/24/03 16:14  
Client Sample ID: 161424MAR03 MW-4      Matrix: Water      Date Received: 03/27/03 09:45

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	ReqLmt
<b>GC Volatiles</b>									
Aromatic Volatile Organics      Method: EPA 8021									
Benzene	ND	ug/l	2.0	1.0	03/28/03 19:04	DCKI	71-43-2		
Ethylbenzene	ND	ug/l	2.0	1.0	03/28/03 19:04	DCKI	100-41-4		
Toluene	ND	ug/l	2.0	1.0	03/28/03 19:04	DCKI	108-88-3		
Xylene (Total)	ND	ug/l	5.0	1.0	03/28/03 19:04	DCKI	1330-20-7		
a,a,a-Trifluorotoluene (S)	104	%		1.0	03/28/03 19:04	DCKI	98-08-8		

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Lab Project Number: 6068855  
Client Project ID: SJB-GW OSHEA

Lab Sample No: 605938943      Project Sample Number: 6068855-004      Date Collected: 03/24/03 15:58  
Client Sample ID: 155824MAR03 MW-S      Matrix: Water      Date Received: 03/27/03 09:45

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC Volatiles</b>									
Aromatic Volatile Organics	Method: EPA 8021								
Benzene	ND	ug/l	2.0	1.0	03/28/03 20:33	DCKI	71-43-2		
Ethylbenzene	ND	ug/l	2.0	1.0	03/28/03 20:33	DCKI	100-41-4		
Toluene	ND	ug/l	2.0	1.0	03/28/03 20:33	DCKI	108-88-3		
Xylene (Total)	ND	ug/l	5.0	1.0	03/28/03 20:33	DCKI	1330-20-7		
a,a,a-Trifluorotoluene (S)	105	%		1.0	03/28/03 20:33	DCKI	98-08-8		

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
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Lab Project Number: 6068855  
Client Project ID: SJB-GW OSHEA

Lab Sample No: 605938950      Project Sample Number: 6068855-005      Date Collected: 03/24/03 16:06  
Client Sample ID: 160624MAR03 MW-3      Matrix: Water      Date Received: 03/27/03 09:45

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC Volatiles</b>									
Aromatic Volatile Organics	Method: EPA 8021								
Benzene	ND	ug/l	2.0	1.0	03/28/03 21:02	DCKI	71-43-2		
Ethylbenzene	ND	ug/l	2.0	1.0	03/28/03 21:02	DCKI	100-41-4		
Toluene	ND	ug/l	2.0	1.0	03/28/03 21:02	DCKI	108-88-3		
Xylene (Total)	ND	ug/l	5.0	1.0	03/28/03 21:02	DCKI	1330-20-7		
a,a,a-Trifluorotoluene (S)	104	%		1.0	03/28/03 21:02	DCKI	98-08-8		

## REPORT OF LABORATORY ANALYSIS

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Public Service Company  
of New Mexico  
Alvarado Square MS 0408  
Albuquerque, NM 87158

June 16, 1998

SENT CERTIFIED MAIL

Mr. William Olson  
Hydrogeologist  
Oil Conservation Division  
2040 So. Pacheco  
Santa Fe, New Mexico 87505



**RE: NOTIFICATION OF GROUNDWATER CONTAMINATION: O'SHEA #1M WELL SITE**

Dear Bill:

Pursuant to New Mexico Water Quality Control Commission (WQCC) Regulations, section 1-203, PNM hereby provides written notification of groundwater contamination at the O'Shea #1M well site, located in S3 T31N R13W, unit letter "F". A topographic map showing the location of the site is provided as an attachment. The operator is Chateau. This letter follows Email notification provided to you on Tuesday, June 16, 1998 (M. Gannon, PNM to B. Olson, OCD).

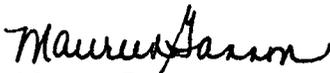
On June 2, 1998, during a routine pit remediation, a PNM environmental technician discovered groundwater at 6 feet below ground surface. A groundwater sample was collected and delivered to OnSite Technologies, Farmington, New Mexico. A hardcopy of the analytical results is attached. A summary of the analytical results is provided below:

Component	Units	WQCC Stds.	Groundwater Sample
Benzene	ppb	10	75
Toluene	ppb	750	<b>2900</b>
Ethylbenzene	ppb	750	520
Xylenes	ppb	620	<b>6200</b>
Total BTEX	ppb		9615

**Bold type indicates a WQCC exceedance.**

This letter serves as written notification of groundwater impact at the O'Shea #1M. PNM will conduct future activities at the site pursuant to PNM's Groundwater Management Plan. If you have any questions, please call me at (505) 241-2974. Thank you.

Sincerely,  
PNM

  
Maureen Gannon  
Project Manager

Attachment

cc: Colin Adams, PNM  
Chester Deal, Chateau  
Denny Foust, OCD-Aztec Office  
Ingrid Deklau, WFS  
**Kathy Juckes, PNM**  
Toni Ristau, PNM  
Bill von Drehle, WFS

S:\GASPITS\OSHEA1MLTR



# Unlined Surface Impoundment Assessment Form

Site Information:

Well Name:	O'SHEA # 1M				Vulnerable Area:	<input checked="" type="checkbox"/> Original	<input type="checkbox"/> Expanded	<input type="checkbox"/> Extended	<input type="checkbox"/> Other	
Operator:	SNYDER OIL				Date:	1/30/96		Well Pad Dimensions:	Data Sheet #:	
					Time:	0700 AM/PM		L 150 W 100	4031	
Legal Description:	Sec	Twn	Rng	Unit	Canyon:	MURPHY ARROYO			County:	SAN JUAN
	3	31N	13W	F	Quad Map (#):	LA PLATA			Run #:	303

1450' FNL 1750' FWL

Pit Information:

PNM Pit:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	PNM Equipment:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Ref: WH <input checked="" type="checkbox"/> Other	OVM:	750 ppm		
<input type="checkbox"/> Active	<input type="checkbox"/> SAT	Tank Set:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Distance from Ref:	60'		Testhole Depth:	10"
<input checked="" type="checkbox"/> Abandoned	<input type="checkbox"/> Inaccessible	Discharges to Pit:	<input type="checkbox"/> SEP <input checked="" type="checkbox"/> DH <input type="checkbox"/> DR <input type="checkbox"/> None	Degrees:	25° E of N		Soil Desc:	DARK BROWN
L 20 W 20 D 3		Lab Sample:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Sample #(s):			COC#:	

Geographical:

Geology:	<input type="checkbox"/> SS <input type="checkbox"/> Clay	Terrain:	<input checked="" type="checkbox"/> Mesa Top	Land Use:	<input checked="" type="checkbox"/> Grazing	Land Type:	<input type="checkbox"/> BLM	Vegetation:	
<input checked="" type="checkbox"/> Sand	<input type="checkbox"/> Outcrop <input type="checkbox"/> Rock	<input type="checkbox"/> Trailing Slope	<input type="checkbox"/> Residential	<input type="checkbox"/> State	<input type="checkbox"/> Recreation	<input checked="" type="checkbox"/> Fee	<input type="checkbox"/> Normal	Well Pad	Area
<input checked="" type="checkbox"/> Gravel	<input type="checkbox"/> Cliffs <input type="checkbox"/> Silt	<input type="checkbox"/> River Bottom	<input type="checkbox"/> Other	<input type="checkbox"/> Other	<input type="checkbox"/> Other	<input type="checkbox"/> Other	<input type="checkbox"/> Stressed	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Other							<input type="checkbox"/> None	<input type="checkbox"/>	<input type="checkbox"/>

Ranking:

Depth to Groundwater: (Vertical distance from contaminants to seasonal high water elevation of groundwater)	Less than 50 feet (20 points) 50 feet to 99 feet (10 points) Greater than 100 feet (0 points)	10
Wellhead Protection Area: (Less than 200 feet from a private domestic water source, or less than 1,000 feet from all other water sources)	Yes (20 points) No (0 points)	20
Distance to Surface Water: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals, and ditches)	Less than 200 feet (20 points) 200 feet to 1,000 feet (10 points) Greater than 1,000 feet (0 points)	10
Distance to Ephemeral Stream (dry wash): (Horizontal distance to all downgradient streams having a width of at least 10 feet) <i>Jicarilla only</i>	Less than or equal to 100 feet (10 points) Greater than 100 feet (0 points)	
Distance to Nearest Lake, Playa, or Watering Pond: (Horizontal distance to all downgradient lakes, playas, and livestock or wildlife water ponds) <i>Jicarilla only</i>	Less than or equal to 100 feet (10 points) Greater than 100 feet (0 points)	

General Comments:

# 2 PIT HAS 45 BBL TANK set # 1  
 PIT Earth 750 ppm 10" Deep DARK BROWN SOIL (Cobbles and SAND) (Combo Lock # 9077 keep Gate closed)

Assessor's Signature:

Ray Burnha

Date:

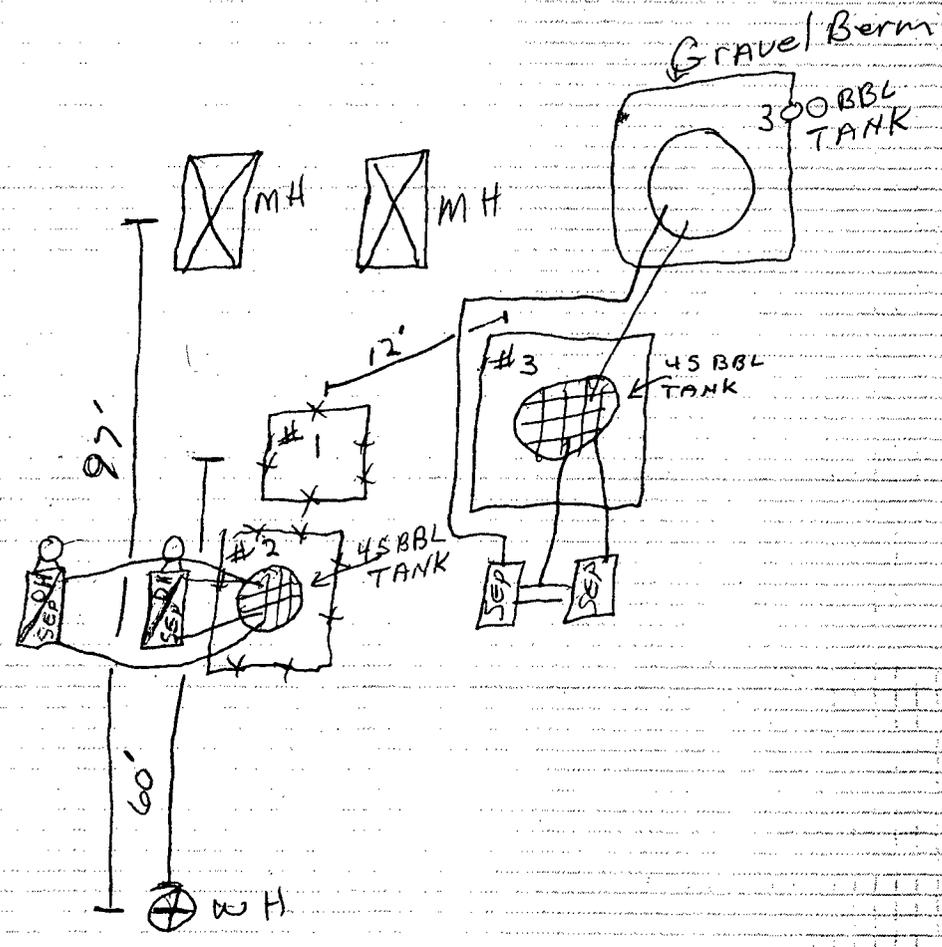
1/30/96

Well Name:	O'SHEA 1M			
Legal Description:	Sec	Twn	Rng	Unit
	3	31N	13W	F

Data Sheet #: 4031



1450' FNL + 1750' FWL



FARM TAP

District I  
P.O. Box 1980, Hobbs, NM

State of New Mexico  
Energy, Minerals and Natural Resources Department

SUBMIT 1 COPY TO  
APPROPRIATE  
DISTRICT OFFICE  
AND 1 COPY TO  
SANTA FE OFFICE

Drawer DD, Artesia, NM 88221

OIL CONSERVATION DIVISION

District III  
1000 Rio Brazos Rd. Aztec, NM 87410

2040 South Pacheco Street  
Santa Fe, New Mexico 87505

**PIT REMEDIATION AND CLOSURE REPORT**

Operator: PNM Gas Services (Chateau Oil) Telephone: 324-3764

Address: 603 W. Elm Street Farmington, NM 87401

Facility or Well Name: O'Shea #1m

Location: Unit: F Sec. 3 T. 31 N R. 13 W County SAN JUAN

Pit Type: Separator      Dehydrator X Other     

Land Type: BLM      State      Fee X Other     

Pit Location: Pit dimensions: length 20 width 20 depth 3

(Attach diagram) Reference: wellhead X other     

Footage from reference: 60'

Direction from reference: 25° Degrees X East North X  
of  
     West South     

<b>Depth to Ground Water:</b>  (Vertical distance from contaminants to seasonal high water elevation of ground water)	Less than 50 feet	(20 points)	
	50 feet to 99 feet	(10 points)	
	Greater than 100 feet	(0 points)	<u>10</u>

<b>Wellhead Protection Area:</b>  (Less than 200 feet from a private domestic water source, or; less than 1,000 feet from all other water sources)	Yes	(20 points)	
	No	(0 points)	<u>0</u>

<b>Distance to Surface Water:</b>  (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 200 feet	(20 points)	
	200 feet to 1,000 feet	(10 points)	
	Greater than 1,000 feet	(0 points)	<u>20</u>

**RANKING SCORE (TOTAL POINTS):** 30

Date Remediation Started: 6-2-98 Date Completed: 6-4-98

Remediation Method: Excavation  Approx. Cubic Yard 780

(Check all appropriate sections) Landfarmed  Amount Landfarmed (cubic yds) 780

Other \_\_\_\_\_

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

Backfill Material Location: Push LF into open pit

General Description of Remedial Action:  
Excavated pit 28x47x16 Water at 6' depth

Ground Water Encountered: No  Yes  Depth \_\_\_\_\_

Final Pit Closure Sampling: Sample Location middle of pit

(if multiple samples, attach sample result and diagram of sample locations and depths.) Sample depth 6'

Sample date 6-2-98 Sample time 1545

Sample Results

Benzene (ppm) \_\_\_\_\_

Total BTEX (ppm) \_\_\_\_\_

Field headspace (ppm) \_\_\_\_\_

TPH \_\_\_\_\_ Method \_\_\_\_\_

Vertical Extent (ft) \_\_\_\_\_ Risk Assessment form attached Yes  No

Ground Water 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 MY BELIEF

DATE 6/4/98

SIGNATURE Mary Cook

PRINTED NAME AND TITLE Denver Bearden Administrator III

# Excavation Work Sheet

Date 6-2-98		Vertical Extent			
Well Name O'Shea #1M	Operator Chateau Oil	S 3	T 31N	R 13W	UI F
Pit Dimensions at Start 20 X 20 X 3		Excavation Dimensions at End 28 X 47 X 16			
Excavated Cu. Yds. 780	Overburden Cu. Yds. 0		Spoil Cu. Yds. 780		

PIT PID READINGS						
Feet	Center	Soil Type	N. Wall	S. Wall	E. Wall	W. Wall
3'		30-90 ppm				
6'	water	Blk/Grn Cobble				
15'						
20'						
25'						

H<sub>2</sub>O

Composite Sample #: 9806021545

Location	Depth	PID Reading
North Wall	H <sub>2</sub> O 6'	2
South Wall	H <sub>2</sub> O	
East Wall		
West Wall		
Pit Bottom		

Land Farm Location: on location

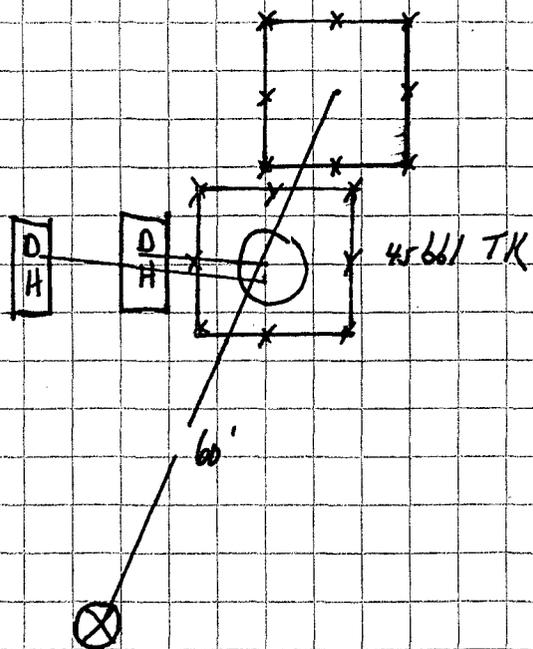
Back Fill Location: Push LF into open pit

Comments: No PID reading. Have water running into pit after first bucket full of dirt. Cobbles. Operator tank just east of PNM pit floating in water. Water at first probably due to irrigation. At 6' depth hit water and cobbles with Blk/Grn color. Soil was BRN with PID reading of 30-90 ppm before 6' level.

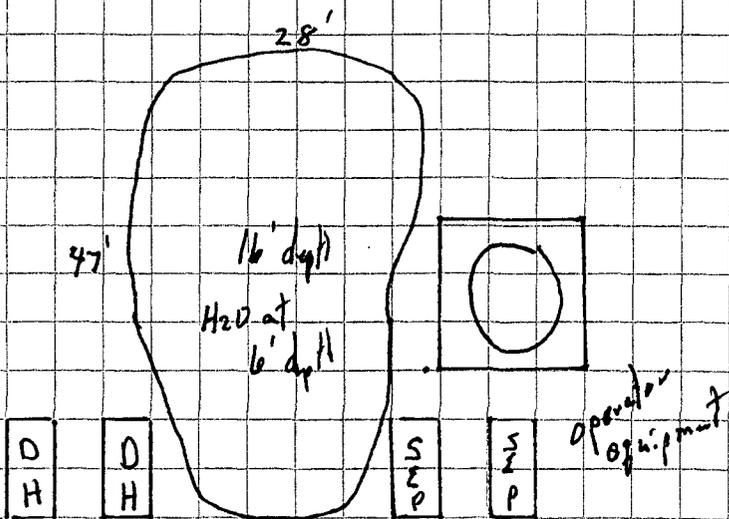
Dug test hole east side of operator equip. edge of roadway & it is hot, in fact appears dirtier than our pit. Will grab H<sub>2</sub>O sample (east test hole # 9806021605) over

O'Shea # 1M  
Chateau D:1  
Sec. 3, 31N, 13W, F

6-2-98



End of excavation:



OFF: (505) 325-5667



LAB: (505) 325-1556

July 07, 1998

Maureen Gannon  
 PNM - Public Service Company of NM  
 Alvarado Square Mail Stop 0408  
 Albuquerque, NM 87158  
 TEL: (505) 241-2974  
 FAX (505) 241-2340

Davis # 13  
 Davis # 3  
 Patterson A Com # 1  
 Davis # 18  
 Davis # 7  
 Davis # 1  
 Richardson # 8  
 Richardson # 1  
 Richardson # 9  
 Sheo # 2 M

RE: Landfarms

Order No.: 9806116

Dear Maureen Gannon,

On Site Technologies, LTD. received 10 samples on 6/30/98 for the analyses presented in the following report.

The Samples were analyzed for the following tests:

Diesel Range Organics (SW8015)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to read "David Cox".

David Cox

OFF: (505) 325-5667



LAB: (505) 325-1556

**On Site Technologies, LTD.**

Date: 07-Jul-98

---

**CLIENT:** PNM - Public Service Company of NM

**Project:** Landfarms

**Lab Order:** 9806116

**CASE NARRATIVE**

---

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

Date: 07-Jul-98

<b>Client:</b>	PNM - Public Service Company of NM	<b>Client Sample Info:</b>	Oshea #1M LF
<b>Work Order:</b>	9806116	<b>Client Sample ID:</b>	9806301230; 6pt. Comp. 2-12in.
<b>Lab ID:</b>	9806116-10A	<b>Matrix:</b>	SOIL
<b>Project:</b>	Landfarms	<b>Collection Date:</b>	6/30/98 12:30:00 PM
		<b>COC Record:</b>	7307

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
<b>DIESEL RANGE ORGANICS</b>		<b>SW8015</b>				Analyst: HR
T/R Hydrocarbons: C10-C28	30	25		mg/Kg	1	7/2/98

**Qualifiers:**

- |   |   |
|---|---|
| PQL - Practical Quantitation Limit                      | S - Spike Recovery outside accepted recovery limits |
| ND - Not Detected at Practical Quantitation Limit       | R - RPD outside accepted recovery limits            |
| J - Analyte detected below Practical Quantitation Limit | E - Value above quantitation range                  |
| B - Analyte detected in the associated Method Blank     | Surr: - Surrogate                                   |



**ANALYTICAL REPORT**

Date: 28-Jul-98

<b>Client:</b> PNM - Public Service Company of NM	<b>Client Sample Info:</b> OShea #1M LF
<b>Work Order:</b> 9807059	<b>Client Sample ID:</b> 9807211130
<b>Lab ID:</b> 9807059-03A <b>Matrix:</b> SOIL	<b>Collection Date:</b> 7/21/98 11:30:00 AM
<b>Project:</b> PNM Pit Remediation	<b>COC Record:</b> 7326

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
<b>DIESEL RANGE ORGANICS</b>		<b>SW8015</b>				Analyst: HR
T/R Hydrocarbons: C10-C28	ND	25		mg/Kg	1	7/28/98
<b>BTEX</b>		<b>SW8020A</b>				Analyst: DC
Benzene	ND	1		µg/Kg	1	7/22/98
Toluene	2.6	2		µg/Kg	1	7/22/98
Ethylbenzene	1.4	1		µg/Kg	1	7/22/98
m,p-Xylene	4.1	2		µg/Kg	1	7/22/98
o-Xylene	2	1		µg/Kg	1	7/22/98

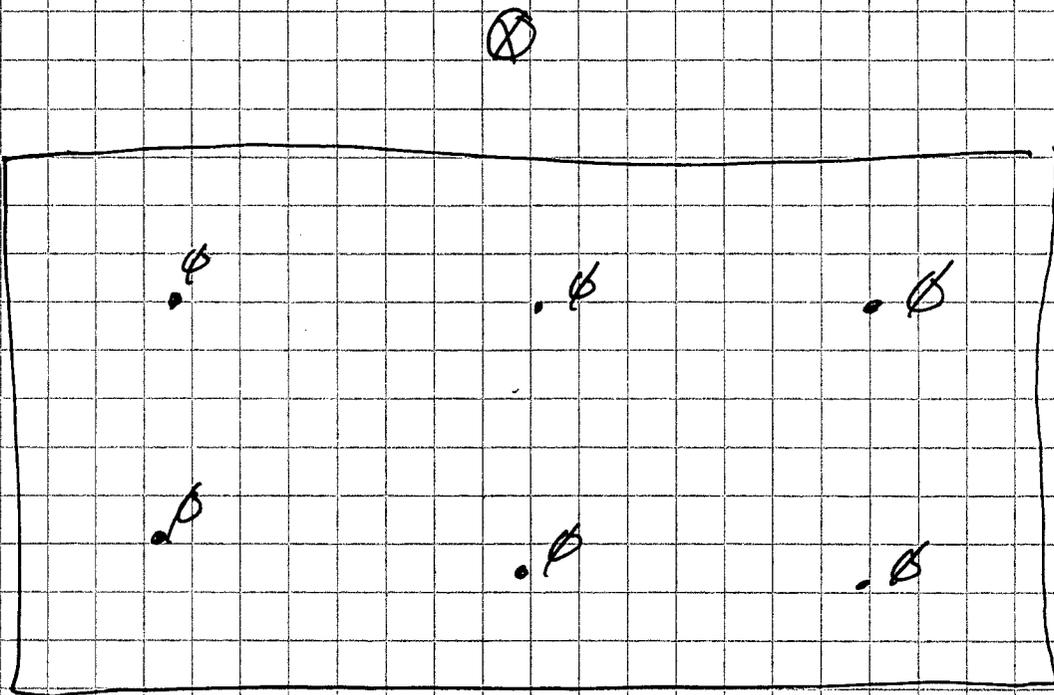
<p><b>Qualifiers:</b></p> <p>PQL - Practical Quantitation Limit</p> <p>ND - Not Detected at Practical Quantitation Limit</p> <p>J - Analyte detected below Practical Quantitation Limit</p> <p>B - Analyte detected in the associated Method Blank</p>	<p>S - Spike Recovery outside accepted recovery limits</p> <p>R - RPD outside accepted recovery limits</p> <p>E - Value above quantitation range</p> <p>Surr: - Surrogate</p>
--	---

O'Shea # 1m  
Chateau Oil  
Sec. 3, 31N, 13W

6/30/98

Land farm:

780 ya-ds



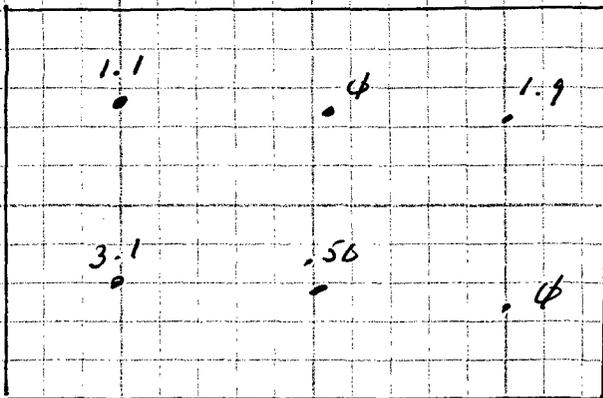
9806301230  
2"-12" depth

soil vapor headspace =  $\phi$  ppm

O'Shea #1M  
Chelan  
Sec. 3, 31N, 13W

7/21/98

Landfarm: On location



2"-12" depth

9807211130

soil vapor head = 6.1



ROCK

