

District Denny E. Faust  
P.O. Box 1980, Hobbs, NM  
District **DEPUTY OIL & GAS INSPECTOR**  
P.O. Drawer DD, Artesia, NM 88221  
District III  
1000 Rio Brazos Rd, Aztec, NM 87410  
**DEC 17 1998**

State of New Mexico  
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

2040 South Pacheco Street  
Santa Fe, New Mexico 87505

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

**PIT REMEDIATION AND CLOSURE REPORT**

**RECEIVED**  
JUL 31 1998  
OIL CON. DIV.  
DIST. 3

*Approved*

Operator: PNM Gas Services ( Grace Petroleum ) Telephone: 324-3764  
Address: 603 W. Elm Street Farmington, NM 87401  
Facility or Well Name: Lybrook Federal 19-1  
Location: Unit E Sec 19 T 24N R 6W County Rio Arriba  
Pit Type: Separator ☐ Dehydrator ☒ Other \_\_\_\_\_  
Land Type: BLM ☒ State ☐ Fee ☐ Other \_\_\_\_\_

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

(Attach diagram) Reference: wellhead ☒ other \_\_\_\_\_

Footage from reference: 141'

Direction from reference: 54 Degrees ☒ East North ☒  
of ☐ West South ☐

**Depth to Ground Water:**

(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) 0

**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) 0

**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) 0

**RANKING SCORE (TOTAL POINTS):** 0

Date Remediation Started: 10/22/97

Date Completed: 10/27/97

Remediation Method: Excavation ☒

Approx. Cubic Yard 1040

(Check all appropriate sections)

Landfarmed ☒

Amount Landfarmed (cubic yds) 1040

Other \_\_\_\_\_

Remediation Location: Onsite ☒

Offsite \_\_\_\_\_

(i.e., landfarmed onsite, name and location of offsite facility)

Backfill Material Location: \_\_\_\_\_

## General Description of Remedial Action:

Excavated contaminated soil to a pit size of 39' X 36' X 20' and landfarmed soil onsite within a bermed area at a depth of 6" to 12". Soil was aerated by disking/plowing until soil met regulatory levels.

\*\*\* Sandstone encountered at 20'. See attached risk analysis and lab analysis form.

Ground Water Encountered:

No ☒Yes ☐

Depth \_\_\_\_\_

## Final Pit Closure Sampling:

Sample Location Bottom of excavation.

(if multiple samples, attach sample result and diagram of sample locations and depths.)

Sample depth 20'

Sample date 10/27/97

Sample time 2:40:00 PM

## Sample Results

Benzene (ppm) 5.1370

Total BTEX (ppm) \*\*\* 64.9210

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

TPH (ppm) 958.00

Method 8015A

Vertical Extent (ft) \_\_\_\_\_

Risk Analysis form attached Yes ☒ No ☐

Ground Water Sample:

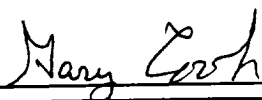
Yes ☐No ☒

(If yes, see attached Groundwater Site Summary Report)

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

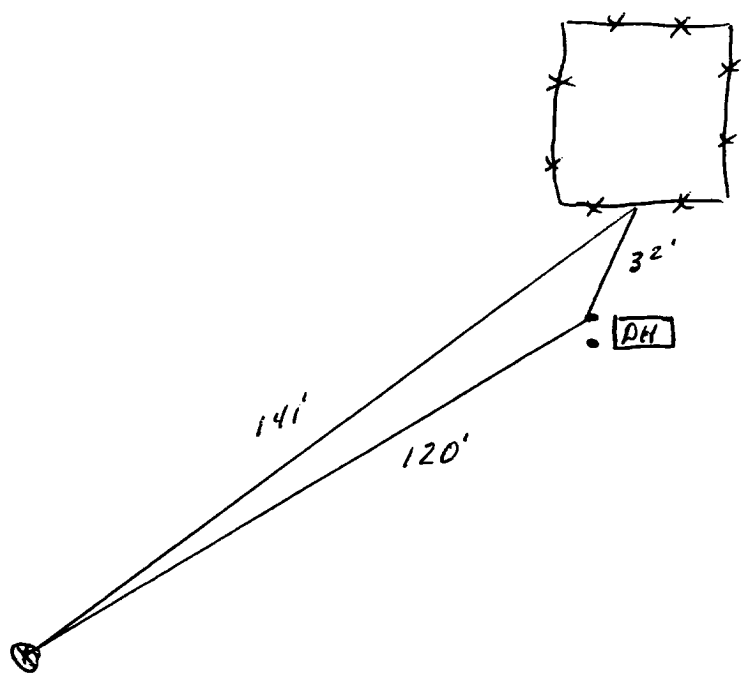
DATE July 27, 1998

SIGNATURE

PRINTED NAME Gary Cook  
AND TITLE Environmental Technician III

↑  
N

10-22-97 - @ 1300  
Lybrook Federal 19-1 (P+A)  
Grace Petroleum  
(E) 19-24N-6W  
Rio Arriba  
Footage from Ref. (P+A) marker - 141'  
54° E of N



OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

Attn: *Denver Bearden*  
Company: *PNM Gas Services*  
Address: *603 W. Elm*  
City, State: *Farmington, NM 87401*

Date: *31-Oct-97*  
COC No.: *5825*  
Sample No.: *16681*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Lybrook Federal 19-1*  
Project Location: *9710271440; Bottom @ 20'*  
Sampled by: *GC* Date: *27-Oct-97* Time: *14:40*  
Analyzed by: *DC/HR* Date: *30-Oct-97*  
Sample Matrix: *Soil*

#### Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Diesel Range Organics (C10 - C28)</i>	<i>958</i>	<i>mg/kg</i>	<i>5</i>	<i>mg/kg</i>

ND - Not Detected at Limit of Quantitation

#### Quality Assurance Report

DRO QC No.: 0555-STD

#### Continuing Calibration Verification

Parameter	Method Blank	Unit of Measure	True Value	Analyzed Value	RPD	RPD Limit
<i>Diesel Range (C10 - C28)</i>	<i>ND</i>	<i>ppm</i>	<i>200</i>	<i>201</i>	<i>0.4</i>	<i>15%</i>

#### Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	RPD	RPD Limit
<i>Diesel Range (C10-C28)</i>	<i>80</i>	<i>93</i>	<i>(70-130)</i>	<i>12</i>	<i>20%</i>

Method - SW-846 EPA Method 8015A mod. - Nonhalogenated Volatile Hydrocarbons by Gas Chromatography

Approved by: *[Signature]*  
Date: *10/31/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

Attn: *Denver Bearden*  
Company: *PNM Gas Services*  
Address: *603 W. Elm*  
City, State: *Farmington, NM 87401*

Date: *31-Oct-97*  
COC No.: *5825*  
Sample No.: *16681*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Lybrook Federal 19-1*

Project Location: *9710271440; Bottom @ 20'*

Sampled by: *GC* Date: *27-Oct-97* Time: *14:40*

Analyzed by: *DC* Date: *29-Oct-97*

Sample Matrix: *Soil*

### Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>5137</i>	<i>ug/kg</i>	<i>1000</i>	<i>ug/kg</i>
<i>Toluene</i>	<i>11464</i>	<i>ug/kg</i>	<i>1000</i>	<i>ug/kg</i>
<i>Ethylbenzene</i>	<i>4064</i>	<i>ug/kg</i>	<i>1000</i>	<i>ug/kg</i>
<i>m,p-Xylene</i>	<i>36536</i>	<i>ug/kg</i>	<i>1000</i>	<i>ug/kg</i>
<i>o-Xylene</i>	<i>7719</i>	<i>ug/kg</i>	<i>1000</i>	<i>ug/kg</i>
<i>TOTAL</i>	<i>64921</i>	<i>ug/kg</i>		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved by: *[Signature]*  
Date: *10/31/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING PLANTS WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

Attn: *Denver Bearden*  
Company: *PNM Gas Services*  
Address: *603 W. Elm*  
City, State: *Farmington, NM 87401*

Date: *31-Oct-97*  
COC No.: *5825*  
Sample No.: *16680*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Lybrook Federal 19-1*  
Project Location: *9710271430; 4 Wall @ 12'*  
Sampled by: *GC*  
Analyzed by: *DC/HR*  
Sample Matrix: *Soil*

Date: *27-Oct-97* Time: *14:30*  
Date: *30-Oct-97*

#### Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Diesel Range Organics (C10 - C28)</i>	<i>57</i>	<i>mg/kg</i>	<i>5</i>	<i>mg/kg</i>

ND - Not Detected at Limit of Quantitation

#### Quality Assurance Report

DRO QC No.: 0555-STD

#### Continuing Calibration Verification

Parameter	Method Blank	Unit of Measure	True Value	Analyzed Value	RPD	RPD Limit
<i>Diesel Range (C10 - C28)</i>	<i>ND</i>	<i>ppm</i>	<i>200</i>	<i>201</i>	<i>0.4</i>	<i>15%</i>

#### Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	RPD	RPD Limit
<i>Diesel Range (C10-C28)</i>	<i>80</i>	<i>93</i>	<i>(70-130)</i>	<i>12</i>	<i>20%</i>

Method - SW-846 EPA Method 8015A mod. - Nonhalogenated Volatile Hydrocarbons by Gas Chromatography

Approved by: *[Signature]*  
Date: *10/31/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BEYOND THE LIMITS OF THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

Attn: *Denver Bearden*  
Company: *PNM Gas Services*  
Address: *603 W. Elm*  
City, State: *Farmington, NM 87401*

Date: *31-Oct-97*  
COC No.: *5825*  
Sample No.: *16680*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Lybrook Federal 19-1*

Project Location: *9710271430; 4 Walls @ 12'*

Sampled by: *GC* Date: *27-Oct-97* Time: *14:30*

Analyzed by: *DC* Date: *29-Oct-97*

Sample Matrix: *Soil*

#### Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/kg	50	ug/kg
<i>Toluene</i>	417	ug/kg	50	ug/kg
<i>Ethylbenzene</i>	1625	ug/kg	50	ug/kg
<i>m,p-Xylene</i>	6819	ug/kg	50	ug/kg
<i>o-Xylene</i>	1430	ug/kg	50	ug/kg
	<i>TOTAL</i>	10291	ug/kg	

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved by: *[Signature]*  
Date: *10/31/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECH: LOW BLENDING INDUSTRIES WITH THE ENVIRONMENT -

Lybrook Federal #19-1 Land Farm

Grace Petroleum

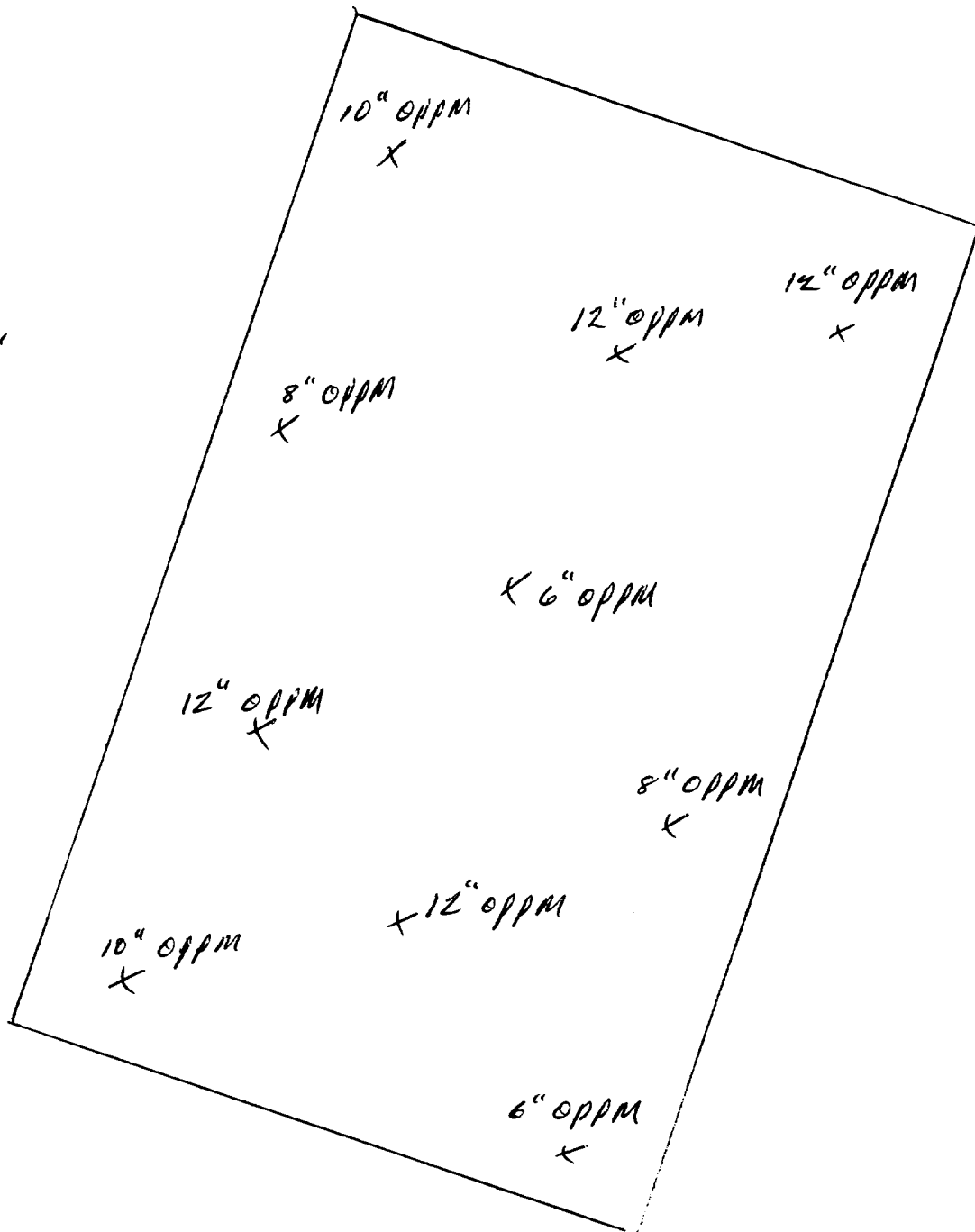
E-19-24N-6W

Lab Sample # 9805130900

Field head space - 0 ppm



6" to 12"





OFF: (505) 325-5667



LAB: (505) 325-1556

**On Site Technologies, LTD.**

**Date:** 20-May-98

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**CLIENT:** PNM - Public Service Company of NM  
**Project:** Landfarms  
**Lab Order:** 9805040

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**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: 20-May-98

<b>Client:</b>	PNM - Public Service Company of NM	<b>Client Sample Info:</b>	Lybrook Fed. 19-1
<b>Work Order:</b>	9805040	<b>Client Sample ID:</b>	9805130900; Landfarm
<b>Lab ID:</b>	9805040-03A	<b>Matrix:</b>	SOIL
<b>Project:</b>	Landfarms	<b>Collection Date:</b>	5/13/98 9:00:00 AM
		<b>COC Record:</b>	5219

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
<b>DIESEL RANGE ORGANICS</b>		<b>SW8015</b>				Analyst: DC
T/R Hydrocarbons: C10-C28	140	25		mg/Kg	1	5/18/98

**Qualifiers:**

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

1 of 1

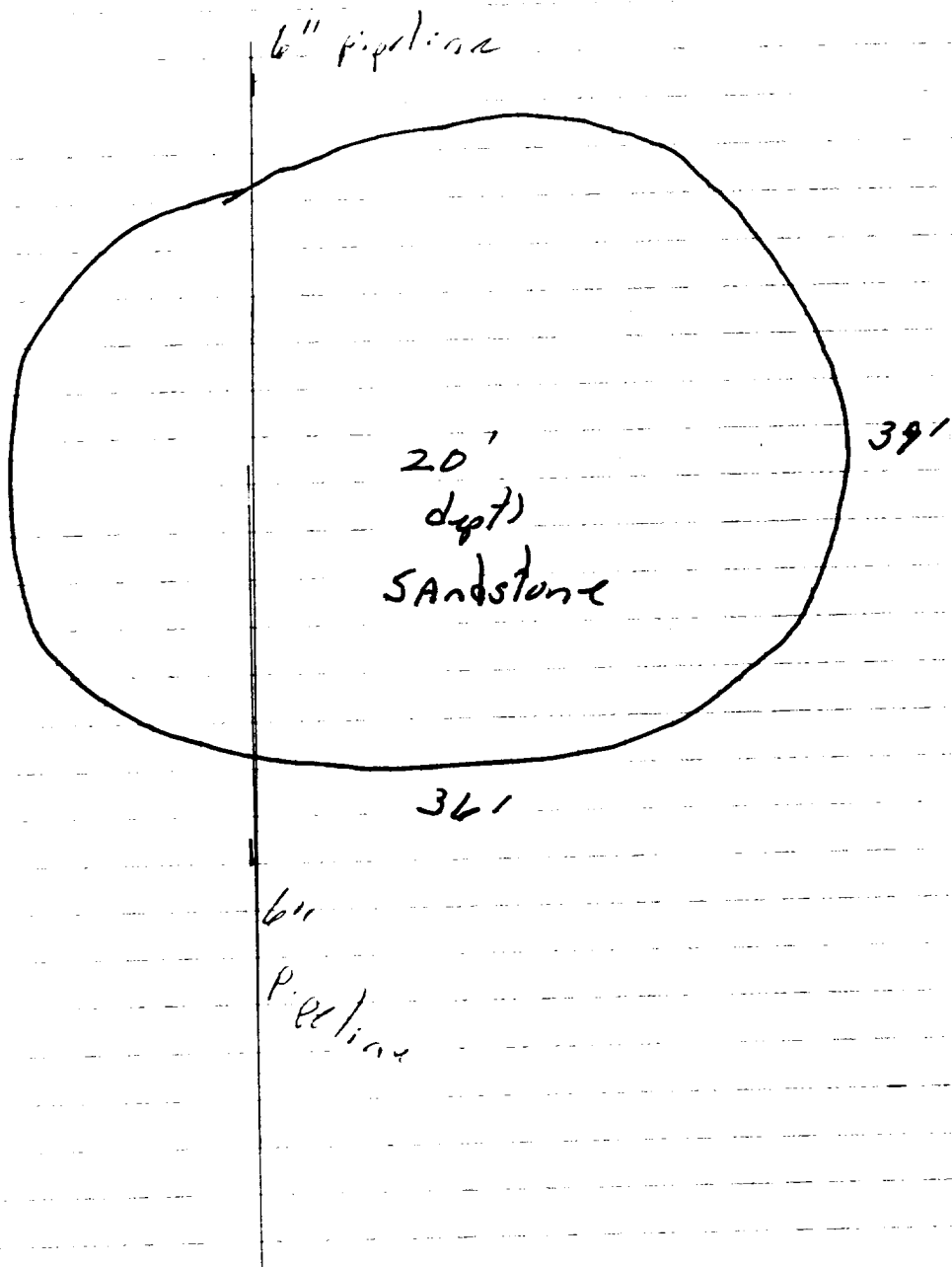
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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT

Lybrook Federal 19-1 (P4A)  
Grace Petroleum  
Sec. 19, 24N, 6W, E.

10/27/97

End of excavation:





**Environmental Services**

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Well Name:	Lybrook Federal 19-1
Well Legals:	Unit E, Sec 19, T24N, R6W
Pit Type:	Dehydrator
Horizontal Distance to Surface Water:	Less than 200 feet
Groundwater Depth:	Greater than 100 feet

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## **RISK ANALYSIS**

PNM requests closure of their former pit on the Lybrook Federal 19-1 well site using a limited risk analysis based on the following conditions:

1. Groundwater is estimated to be at a depth of 400 feet based upon the elevation of the site and the elevation of the nearest "listed" or "named" wash (Rincon Largo Canyon). (Reference: Nageezi, NM topographic map.)
2. PNM excavated 1,040 cubic yards of soil from the former pit. Subsurface lateral contamination has been remediated (see attached analytical results). Source removal minimizes the possibility of surface water contamination.
3. Sandstone was encountered at 20 feet below ground surface. Bedrock/sandstone provides a barrier between remaining contamination and groundwater. Vertical migration through bedrock or sandstone to groundwater is unlikely.
4. PNM excavated and performed remediation to the maximum depth and horizontal extent practicable.

PNM believes their former pit on the Lybrook Federal 19-1 well site poses minimal threat to groundwater, human health and the environment based upon our past experience in excavating over 800 pits.