

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

DEPUTY OIL & GAS INSPECTOR
P.O. Drawer DD, Artesia, NM 88221

District III
1000 Rio Brazos Rd, Aztec, NM 87410

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

JUN 23 1998

PIT REMEDIATION AND CLOSURE REPORT

Operator: PNM Gas Services (Caulkins) Telephone: 324-3764

Address: 603 W. Elm Street Farmington, NM 87401

Facility or Well Name: Breech F #4M

Location: Unit P Sec 33 T 27 N R 6 W County Rio Arriba

Pit Type: Separator ☐ Dehydrator ☐ Other Dual drips

Land Type: BLM ☒ State ☐ Fee ☐ Other No

Pit Location: Pit dimensions: length 20 width 20 depth 4

(Attach diagram) Reference: wellhead ☒ other

Footage from reference: 145'

Direction from reference: 55 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

Eirech F #4M

Date Remediation Started: 7/23/97

Date Completed: 7/23/97

Remediation Method: Excavation ☒

Approx. Cubic Yard 322

(Check all appropriate sections)

Landfarmed ☒

Amount Landfarmed (cubic yds) 322

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 22' X 22' X 18' 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.

Encountered bedrock at 43'. See attached risk analysis form and laboratory analysis.

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 21'

Sample date 7/23/97

Sample time 12:00:00 PM

Sample Results

Benzene (ppm) 8.9180

Total BTEX (ppm) *** 498.6750

Field headspace (ppm) _____

TPH (ppm) 614.00

Method 8015A

Vertical Extent (ft) 43'

Risk Assessment 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 January 27, 1998

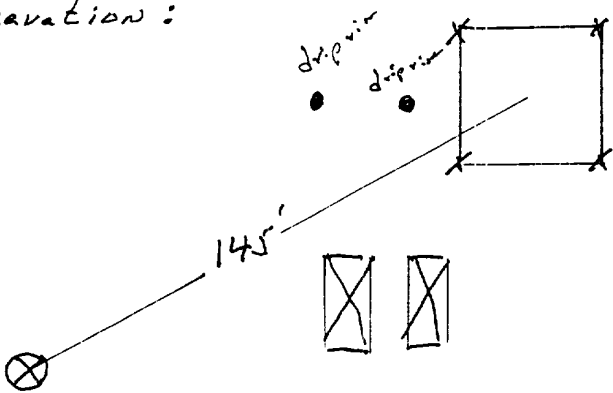
SIGNATURE

PRINTED NAME AND TITLE Denver Bearden
Administrator III

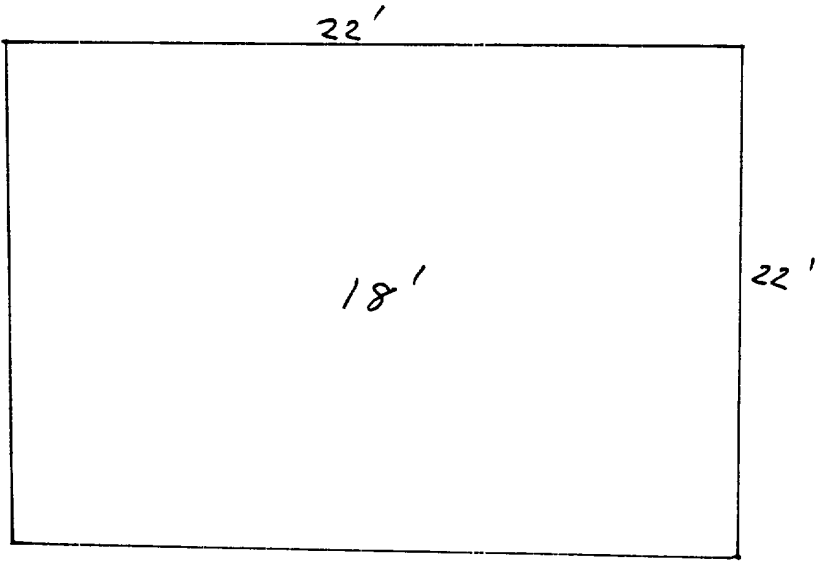
Breech F# 4m
Caulkins Oil
Sec. 33, 27N, 6W, P

7/23/97

start of excavation:



End of excavation:



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: *4-Aug-97*
COC No.: *5949*
Sample No.: *15469*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Breech F #4M*
Project Location: *9707231200; Bottom @ 21'*
Sampled by: *GC* Date: *23-Jul-97* Time: *12:00*
Analyzed by: *HR/DC* Date: *31-Jul-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>614</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.: 0548-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>192</i>	<i>4.3</i>	<i>15%</i>

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	RPD	RPD Limit
<i>Diesel Range (C10-C28)</i>	<i>86</i>	<i>88</i>	<i>(70-130)</i>	<i>3</i>	<i>20%</i>

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

Approved by: 
Date: *8/4/97*

P.O. BOX 2606 • FARMINGTON, NM 87499
- TECHNOLOGY BLENDING INDUSTRY 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-Jul-97*
COC No.: *5949*
Sample No.: *15469*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Breach F #4M*

Project Location: *9707231200; Bottom @ 21'*

Sampled by: GC Date: *23-Jul-97* Time: *12:00*

Analyzed by: HR Date: *30-Jul-97*

Sample Matrix: *Soil*

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>8918</i>	<i>ug/kg</i>	<i>2500</i>	<i>ug/kg</i>
<i>Toluene</i>	<i>53518</i>	<i>ug/kg</i>	<i>2500</i>	<i>ug/kg</i>
<i>Ethylbenzene</i>	<i>17759</i>	<i>ug/kg</i>	<i>2500</i>	<i>ug/kg</i>
<i>m,p-Xylene</i>	<i>334728</i>	<i>ug/kg</i>	<i>2500</i>	<i>ug/kg</i>
<i>o-Xylene</i>	<i>83752</i>	<i>ug/kg</i>	<i>2500</i>	<i>ug/kg</i>
	<i>TOTAL</i>	<i>498675</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: *7/31/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY 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: *4-Aug-97*
COC No.: *5949*
Sample No.: *15470*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Breech F #4M*
Project Location: *9707231330; Walls @ 16'*
Sampled by: *GC* Date: *23-Jul-97* Time: *13:30*
Analyzed by: *HR/DC* Date: *31-Jul-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>17</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.: 0548-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>192</i>	<i>4.3</i>	<i>15%</i>

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	RPD	RPD Limit
<i>Diesel Range (C10-C28)</i>	<i>86</i>	<i>88</i>	<i>(70-130)</i>	<i>3</i>	<i>20%</i>

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

Approved by: *[Signature]*
Date: *8/4/97*

P.O. BOX 2606 • FARMINGTON, NM 87499
- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -



ON SITE
TECHNOLOGIES, LTD.

ANALYTICAL REPORT

Date: 31-Jul-97
COC No.: 5949
Sample No.: 15470
Job No.: 2-1000


Project Name: ***PNM Gas Services - Breech F #4M***
Project Location: ***9707231330; Walls @ 16'***
Sampled by: GC Date:
Analyzed by: HR Date:
Sample Matrix: ***Soil***

23-Jul-97 Time: 13:30
30-Jul-97

Parameter		Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>		ND	ug/kg	2	ug/kg
<i>Toluene</i>		4	ug/kg	2	ug/kg
<i>Ethylbenzene</i>		4	ug/kg	2	ug/kg
<i>m,p-Xylene</i>		15	ug/kg	2	ug/kg
<i>o-Xylene</i>		5	ug/kg	2	ug/kg
	<i>TOTAL</i>	27	ug/kg		

ND - Not Detected at Limit of Quantitation

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

Approved by: 
Date: 7/31/97

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

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N

8-21-97 - @ 1115

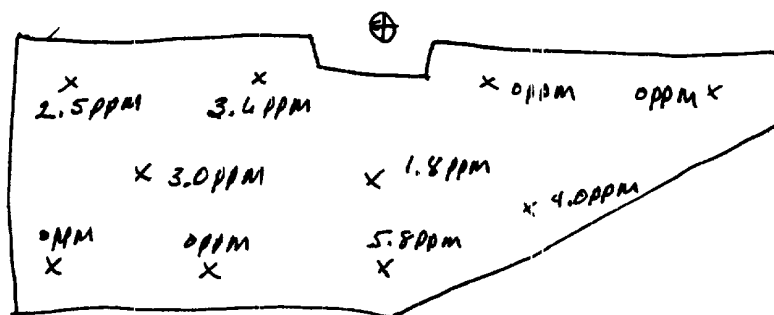
Breesh F #4 M

Caulkins

(I) 33-27N-6W

Rio Arriba Co.

Land farm Field Head space 3 ppm



2" - 10"

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: *25-Aug-97*
COC No.: *5211*
Sample No.: *15863*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Breech F #4M Landfarm*
Project Location: *9708211115; Composite Sample*
Sampled by: *RH* Date: *21-Aug-97* Time: *11:15*
Analyzed by: *HR/DC* Date: *22-Aug-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>119</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.: 0548-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>0.5</i>	<i>15%</i>

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	RPD	RPD Limit
<i>Diesel Range (C10-C28)</i>	<i>83</i>	<i>80</i>	<i>(70-130)</i>	<i>4</i>	<i>20%</i>

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

Approved by: *[Signature]*
Date: *8/25/97*

P.O. BOX 2606 • FARMINGTON, NM 87499
- TECHNOLOGY BLENDING INDUSTRY 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: *24-Nov-97*
COC No.: *5834*
Sample No.: *16867*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Breech F #4M*
Project Location: *9711121140; 46' depth*
Sampled by: *GC* Date: *12-Nov-97* Time: *11:40*
Analyzed by: *DC/HR* Date: *18-Nov-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>	ND	mg/kg	5	mg/kg

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>	ND	ppm	200	201	0.7	15%

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	RPD	RPD Limit
<i>Diesel Range (C10-C28)</i>	110	113	(70-130)	2	20%

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

Approved by: *[Signature]*
Date: *11/24/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY 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: *24-Nov-97*
COC No.: *5834*
Sample No.: *16867*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Breech F #4M*
Project Location: *9711121140; 46' depth*
Sampled by: *GC* Date: *12-Nov-97* Time: *11:40*
Analyzed by: *DC* Date: *17-Nov-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	1	ug/kg
<i>Toluene</i>	4	ug/kg	1	ug/kg
<i>Ethylbenzene</i>	5	ug/kg	1	ug/kg
<i>m,p-Xylene</i>	14	ug/kg	1	ug/kg
<i>o-Xylene</i>	3	ug/kg	1	ug/kg
	<i>TOTAL</i>	26	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: *11/24/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -



Well Name:	Breech F #4M
Well Legals:	Unit P, Sec 33, T27N, R6W
Pit Type:	Drip
Horizontal Distance to Surface Water:	Greater than 1,000 ft
Groundwater Depth:	Greater than 100 ft

RISK ANALYSIS

PNM requests closure of the Breech F #4M using a limited risk analysis of the site conditions.

1. PNM estimated groundwater to be at a depth of 185 ft. based upon elevation of site to the Largo Wash. (Reference: topographic map.)
2. This site is not located within 200 ft. of a domestic water well and is not within 1,000 ft. of any other water source.
3. Distance from the site to surface water is greater than 1,000 ft.
4. PNM excavated 322 cu. yds. from the former pit. Vertical extent was determined using a hollow stem drilling rig. Bedrock was encountered @ 43 ft. below ground surface.

Based upon the information provided above, PNM believes the Breech F #4M poses minimal risk to the environment. Subsurface lateral migration is limited based upon PNM's past experience in excavating 800 pits. Source removal minimizes the possibility of surface water contamination. Bedrock/sandstone provides a barrier between remaining contamination and groundwater. Vertical migration through bedrock or sandstone to groundwater is highly unlikely.