

3R - 303

REPORTS

DATE:

Nov. 1 - Aug. 1, 1996

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

November 1, 1996

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



RE: SAN JUAN BASIN 3RD QUARTER 1996 GROUNDWATER REPORT

Dear Bill:

PNM Gas Services, PNMGS, (formerly Gas Company of New Mexico) is pleased to submit the 3rd Quarter 1996 Groundwater Report on Unlined Surface Impoundments in the San Juan Basin. Pursuant to PNM's Groundwater Management Program for Unlined Surface Impoundment Closures, the report details the ongoing investigation/remedial activities at unlined surface impoundments having groundwater contamination as identified by PNM. A list of groundwater sites is provided below.

Abrams Gas/Com L1
Cozzens B1
Cozzens B1E
Florance 32A
Florance 44
Florance 124
Honolulu Loop-Line Drip
Kaufmann 1
McCoy A1A
Templeton 1E
Zachry 18E

RECEIVED

NOV 04 1996

Environmental Bureau
Oil Conservation Division

PNM hereby requests two modifications of our Groundwater Management Program Unlined Surface Impoundment Closures submitted to OCD in March of 1996:

- PNM wishes to file annual groundwater progress reports to the OCD instead of quarterly reporting. Concerning sites with problematic or unusual activities, we will prepare individual reports to the OCD between annual reports as necessary. We will also file closure reports on groundwater sites as remediation is completed.
- PNM also asks for an exemption from notifying the OCD 48 hours in advance of any major sampling event or related activity at a groundwater site. We invite OCD to participate in our sampling events at any time. Please feel free to call Denver Bearden or me to schedule a time in the field with us.

If you have any questions regarding the contents of this report or the proposed modifications, please contact me at (505) 241-2974.

Sincerely,
PNM Environmental Services Department

A handwritten signature in cursive script, appearing to read 'Maureen Gannon'.

Maureen Gannon
Project Manager

Attachment

cc: Denver Bearden, PNMGS
Denny Foust, OCD-Aztec Office
Leigh Gooding, WFS

bcc: Colin Adams (w/o analytical results)
Ron Johnson (w/o analytical results)
Toni Ristau (w/o analytical results)
Mark Sikelianos (w/o analytical results)

PNMGS Well Site: **Abrams Gas Com L #1**

Groundwater Site Summary Report

Copies: WFS(1)
Operator (1)
NMOCD District Office (1)
NMOCD Santa Fe (1)

Quarter: 3 Year: 96

Operator: Amoco
Sec: 26 Twn: 29 Rng: 10 Unit: M
Canyon: Armenta

Vulnerable Class: Original
OCD Ranking: 20
Lead Agency: NMOCD

Topo Map: previously submitted
Groundwater Contour Map: Figure 1
Hydrograph: Figure 2
Well Completion Diagram: previously submitted
Site Map with Analysis: Figure 3
Analytical Results: attached

Activities for Quarter:

PNM performed quarterly groundwater sampling at the Abrams Gas/Com L1 site on August 21, 1996. Water level measurements were taken in each of the five monitoring wells. PNM conducted groundwater sampling of each well for chemical analyses of benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Method 8020. Sampling was performed in strict compliance with EPA protocol. PNM hand-delivered samples to OnSite Technologies, Farmington, New Mexico.

Conclusions and Recommendations:

Figure 1 is the groundwater contour map of the site for the third quarter of 1996. Groundwater flows in a northwesterly direction beneath the site. Figure 2 is a hydrograph (water level versus time) of each groundwater monitoring well. Water levels at the Abrams consistently rose by an average of 4 feet in each well between April and August. This is probably the result of irrigation during the summer months in this area.

BTEX concentrations were non-detect in each of the five monitoring wells. PNM has now monitored groundwater at the site for four consecutive quarters and BTEX concentrations have been consistently below WQCC standards. We conclude that source removal and natural attenuation have been successful in remediating the soil and groundwater contamination at this site. Figure 3 provides a historical picture of the groundwater analytical results of the site.

PNM is filing formal closure of our former pit at the Abrams Gas/Com L1 well site. The closure report is included in the recent submittal of PNM Gas Services' October 30, 1996 "OCD Closure Reports" to OCD.

Further Action:

PNM will plug and abandon all five groundwater monitoring wells at the site. Where possible, the PVC well casing will be pulled and disposed. PNM will remove all metal vaults and concrete pads and restore the ground surface to its natural state.

Public Service Company of New Mexico - Gas Services

Environmental Services Division - Alvarado Square, MS-0408
Albuquerque, NM 87158

Contact: Maureen Gannon

Telephone: 505-241-2974

Figure 2
Abrams L1 Hydrograph
(water level vs. time)

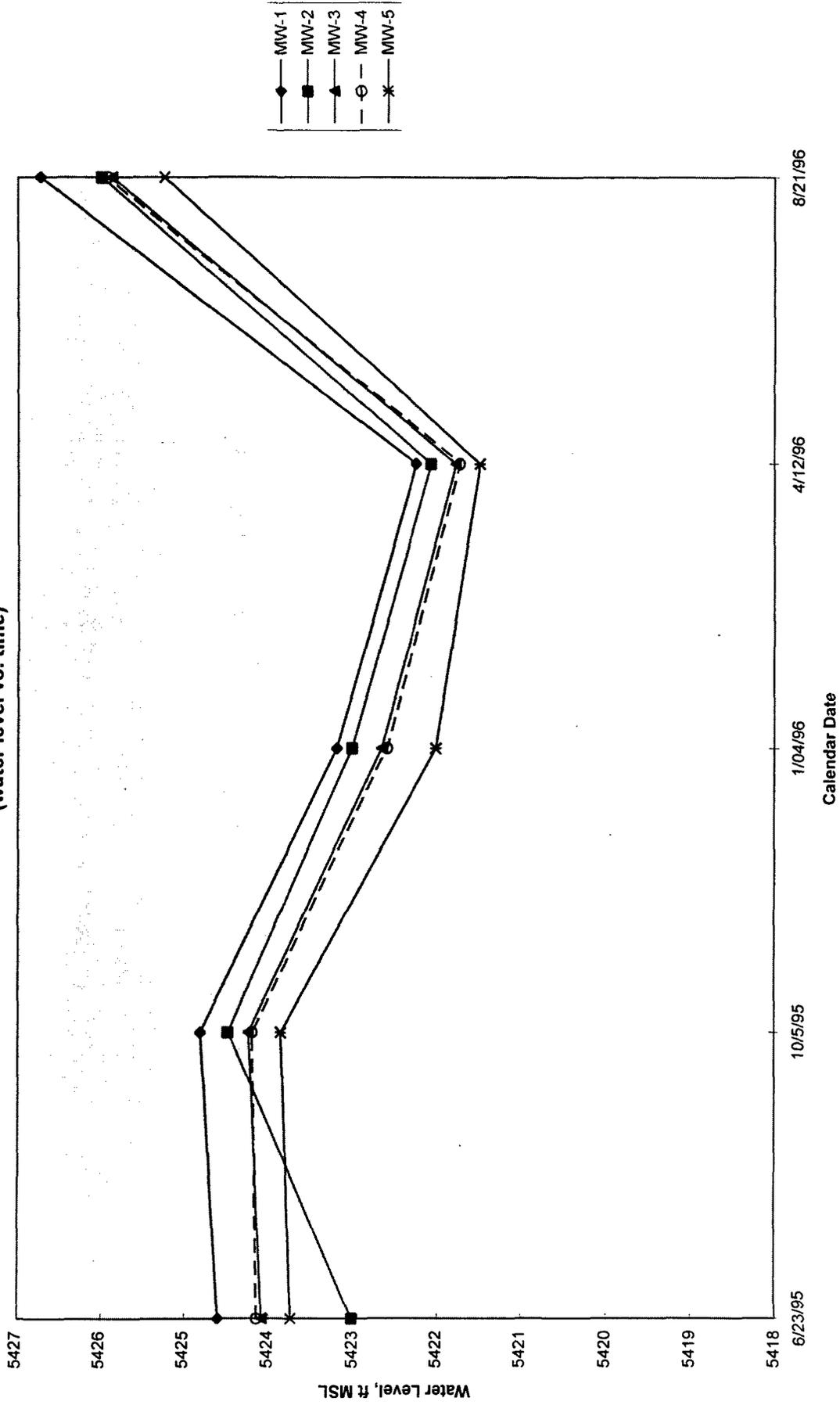
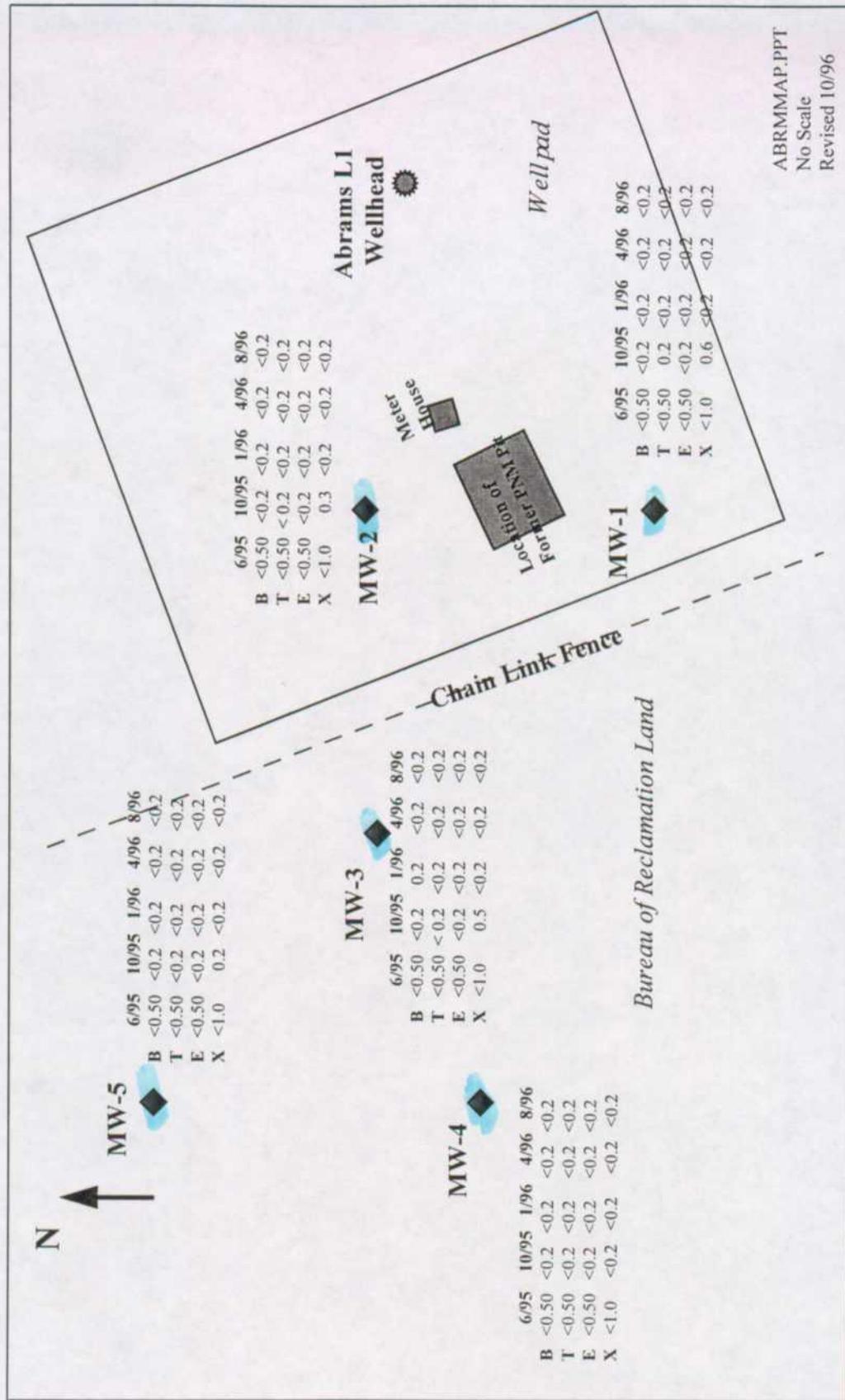


Figure 3. Abrams Gas/Com I Well Site
Well Locations & Analytical Results
(Concentrations in ppb)



OFF: (505) 325-5667



LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn: **Maureen Gannon**
 Company: **PNM Gas Services**
 Address: **Alevarado Square, Mail Stop 0408**
 City, State: **Albuquerque, NM 87158**

Date: **22-Aug-96**
 COC No.: **4979**
 Sample No. **11844**
 Job No. **2-1000**

Project Name: **PNM Gas Services - Abrams Gas/Com L1**

Project Location: **9608211000; MW-1**

Sampled by: **MG** Date: **21-Aug-96** Time: **10:00**

Analyzed by: **DC** Date: **21-Aug-96**

Sample Matrix: **Water**

Laboratory Analysis

Parameter	Result	Unit of Measure	Detection Limit	Unit of Measure
Benzene	<0.2	ug/L	0.2	ug/L
Toluene	<0.2	ug/L	0.2	ug/L
Ethylbenzene	<0.2	ug/L	0.2	ug/L
m,p-Xylene	<0.2	ug/L	0.2	ug/L
o-Xylene	<0.2	ug/L	0.2	ug/L
	TOTAL	<0.2		ug/L

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

Approved by: *JCL*
 Date: *8/22/96*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -



QIP: (505) 325-5667

LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn: *Maureen Gannon*
 Company: *PNM Gas Services*
 Address: *Alevarado Square, Mail Stop 0408*
 City, State: *Albuquerque, NM 87158*

Date: *22-Aug-96*
 COC No.: *4979*
 Sample No. *11845*
 Job No. *2-1000*

Project Name: *PNM Gas Services - Abrams Gas/Com L1*

Project Location: *9608211030; MW-2*

Sampled by: *MG* Date: *21-Aug-96* Time: *10:30*

Analyzed by: *DC* Date: *21-Aug-96*

Sample Matrix: *Water*

Laboratory Analysis

<i>Parameter</i>	<i>Result</i>	<i>Unit of Measure</i>	<i>Detection Limit</i>	<i>Unit of Measure</i>
<i>Benzene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i><0.2</i>	<i>ug/l.</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i><0.2</i>	<i>ug/L</i>		

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

Approved by: *[Signature]*
 Date: *8/22/96*

OFF: (505) 325-5667



LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn: *Maureen Gannon*
 Company: *PNM Gas Services*
 Address: *Alevarado Square, Mail Stop 0408*
 City, State: *Albuquerque, NM 87158*

Date: *22-Aug-96*
 COC No.: *4979*
 Sample No. *11846*
 Job No. *2-1000*

Project Name: *PNM Gas Services - Abrams Gas/Com L1*Project Location: *9608211100; MW-3*Sampled by: *MG* Date: *21-Aug-96* Time: *11:00*Analyzed by: *DC* Date: *21-Aug-96*Sample Matrix: *Water***Laboratory Analysis**

<i>Parameter</i>	<i>Result</i>	<i>Unit of Measure</i>	<i>Detection Limit</i>	<i>Unit of Measure</i>
<i>Benzene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
TOTAL	<i><0.2</i>	<i>ug/l.</i>		

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

Approved by: *JG*
 Date: *8/22/96*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn: *Maureen Gannon*
 Company: *PNM Gas Services*
 Address: *Alevarado Square, Mail Stop 0408*
 City, State: *Albuquerque, NM 87158*

Date: *22-Aug-96*
 COC No.: *4979*
 Sample No. *11847*
 Job No. *2-1000*

Project Name: *PNM Gas Services - Abrams Gas/Com L1*Project Location: *9608211130; MW-4*Sampled by: *MG* Date: *21-Aug-96* Time: *11:30*Analyzed by: *DC* Date: *21-Aug-96*Sample Matrix: *Water***Laboratory Analysis**

<i>Parameter</i>	<i>Result</i>	<i>Unit of Measure</i>	<i>Detection Limit</i>	<i>Unit of Measure</i>
<i>Benzene</i>	<i><0.2</i>	<i>ug/l.</i>	<i>0.2</i>	<i>ug/l.</i>
<i>Toluene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i><0.2</i>	<i>ug/l.</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
	<i>TOTAL</i>	<i><0.2</i>		<i>ug/L</i>

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

Approved by: *JAG*
 Date: *8/22/96*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OIT: (505) 325-5667



LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn: **Maureen Gannon**
 Company: **PNM Gas Services**
 Address: **Alevarado Square, Mail Stop 0408**
 City, State: **Albuquerque, NM 87158**

Date: **22-Aug-96**
 COC No.: **4979**
 Sample No. **11848**
 Job No. **2-1000**

Project Name: **PNM Gas Services - Abrams Gas/Com L1**
 Project Location: **9608211200; MW-5**
 Sampled by: **MG** Date: **21-Aug-96** Time: **12:00**
 Analyzed by: **DC** Date: **21-Aug-96**
 Sample Matrix: **Water**

Laboratory Analysis

<i>Parameter</i>	<i>Result</i>	<i>Unit of Measure</i>	<i>Detection Limit</i>	<i>Unit of Measure</i>
<i>Benzene</i>	<0.2	ug/L	0.2	ug/L
<i>Toluene</i>	<0.2	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	<0.2	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	<0.2	ug/L	0.2	ug/L
<i>o-Xylene</i>	<0.2	ug/L	0.2	ug/L
TOTAL	<0.2	ug/l.		

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

Approved by: *DC*
 Date: *8/22/96*

OPI: (505) 325-5667



LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn: *Maureen Gannon*
 Company: *PNM Gas Services*
 Address: *Alevarado Square, Mail Stop 0408*
 City, State: *Albuquerque, NM 87158*

Date: *22-Aug-96*
 COC No.: *4979*
 Sample No. *11849*
 Job No. *2-1000*

Project Name: *PNM Gas Services - Abrams Gas/Com L1*
 Project Location: *9608211230; MW-6 (Duplicate of MW-1)*
 Sampled by: *MG* Date: *21-Aug-96* Time: *12:30*
 Analyzed by: *DC* Date: *21-Aug-96*
 Sample Matrix: *Water*

Laboratory Analysis

<i>Parameter</i>	<i>Result</i>	<i>Unit of Measure</i>	<i>Detection Limit</i>	<i>Unit of Measure</i>
<i>Benzene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
TOTAL	<i><0.2</i>	<i>ug/L</i>		

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

Approved by: *JaG*
 Date: *8/22/96*

OFF: (505) 325-5667



LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 21-Aug-96

Internal QC No.: 0486-QC
 Surrogate QC No.: 0488-QC
 Reference Standard QC No.: 0417-QC

Method Blank

Parameter	Result	Unit of Measure
Average Amount of All Analytes In Blank	<0.2	ppb

Calibration Check

Parameter	Unit of Measure	True Value	Analyzed Value	% Diff	Limit
Benzene	ppb	20.0	20.0	0	15%
Toluene	ppb	20.0	22.4	12	15%
Ethylbenzene	ppb	20.0	21.5	7	15%
m,p-Xylene	ppb	40.0	42.3	6	15%
o-Xylene	ppb	20.0	21.5	7	15%

Matrix Spike

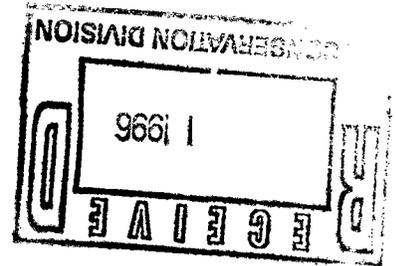
Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	115	91	(39-150)	16	20%
Toluene	119	94	(46-148)	17	20%
Ethylbenzene	122	96	(32-160)	17	20%
m,p-Xylene	117	92	(35-145)	17	20%
o-Xylene	115	91	(35-145)	16	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)	
11844-4979	102	
11845-4979	100	
11846-4979	100	
11847-4979	100	
11848-4979	100	
11849-4979	100	

S1: Fluorobenzene

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



August 1, 1996

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



RE: SAN JUAN BASIN 2ND QUARTER 1996 GROUNDWATER REPORT

Dear Bill:

PNM Gas Services, PNMGS, (formerly Gas Company of New Mexico) is pleased to submit the 2nd Quarter 1996 Groundwater Report on Unlined Surface Impoundments in the San Juan Basin. Pursuant to PNM's Groundwater Management Program for Unlined Surface Impoundment Closures, the report details the ongoing investigation/remedial activities at unlined surface impoundments having groundwater contamination as identified by PNM. A list of groundwater sites is provided below.

Abrams Gas/Com L1
Cozzens B1
Cozzens B1E
Florance 44
Honolulu Loop-Line Drip
Kaufmann 1
McCoy A1A
Templeton 1E

If you have any questions regarding the contents of the report, please contact me at (505) 241-2974.

Sincerely,
PNM Environmental Services Department

Maureen Gannon
Project Manager

MDG/GASPITS/OLSON01.LTR

Attachment

cc: Denver Bearden, PNMGS
Denny Foust, OCD-Aztec Office
Leigh Gooding, WFS

**Public Service Company of New Mexico
2nd Quarter 1996 Groundwater Report
August 1, 1996**

Prepared for:

**New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505**

Prepared by:

**Public Service Company of New Mexico
Environmental Services Department
Alvarado Square - MS 0408
Albuquerque, New Mexico 87158**

PNMGS Well Site: Abrams L 1

Site Summary Report

Copies: WFS(1)
Operator (1)
NMOCD District Office (1)
NMOCD Santa Fe (1)

Quarter: 2 Year: 96

Operator: Amoco
Sec: 26 Twn: 29 Rng: 10 Unit: M
Canyon: Armenta

Vulnerable Class: Original
OCD Ranking: 20
Lead Agency: NMOCD

Topo Map: previously submitted
Groundwater Contour Map: Figure 1
Hydrograph Map: Figure 2
Site Map with Analysis: Figure 3
Well Completion Diagram: previously submitted
Analytical Results: attached

Activities for Quarter:

PNM performed quarterly groundwater sampling at the Abrams Gas/Com L1 site in April. PNM conducted sampling in strict compliance with EPA protocol and delivered samples to OnSite Technologies, Farmington, New Mexico, for chemical analyses of benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Method 8020.

BTEX was not detected in any of the five monitoring at the site. OnSite Technologies reported all concentrations below the detection levels for each constituent.

Conclusions and Recommendations:

Figure 1 is the groundwater contour map of the site for the second quarter of 1996. Figure 2 is a hydrograph (water level versus time) of each groundwater monitoring well. Water levels at the Abrams follow seasonal fluctuations in water table elevation. Between June and October of 1996, water levels raised an average of 0.41 feet in elevation. Since October, levels have steadily declined an average of 2.45 feet at the site.

PNM believes groundwater at the Abrams Gas/Com L1 well site has been successfully remediated through source removal and natural attenuation. Figure 3 provides an historical summary of the data since well installation and the commencement of sampling in June of 1995. After almost one full year of sampling, BTEX concentrations have remained below laboratory detection levels, and thus, below Water Quality Control Commission (WQCC) standards as well.

Further Action:

PNM will perform one additional quarter of sampling at the Abrams well site. If results are below WQCC standards, PNM will petition OCD for final closure of the site.

Public Service Company of New Mexico - Gas Services

Environmental Services Division - Alvarado Square, MS-0408
Albuquerque, NM 87158

Contact: Maureen Gannon

Telephone: (505) 241-2974

Figure 1. Abrams Gas/Com L1 Groundwater Contour Map (April 1996)

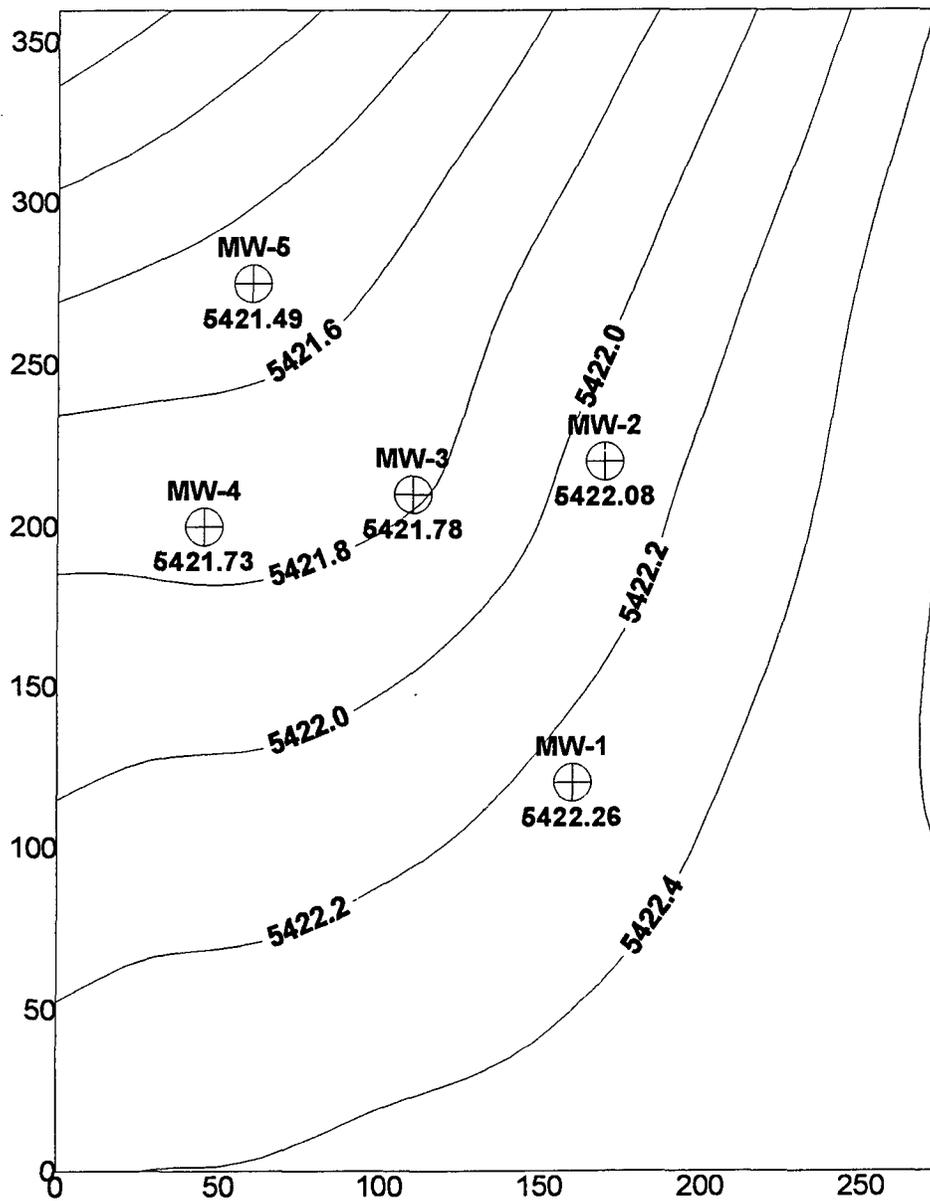


Figure 2. Abrams Gas/Com L.1 Hydrograph
(water level vs. time)

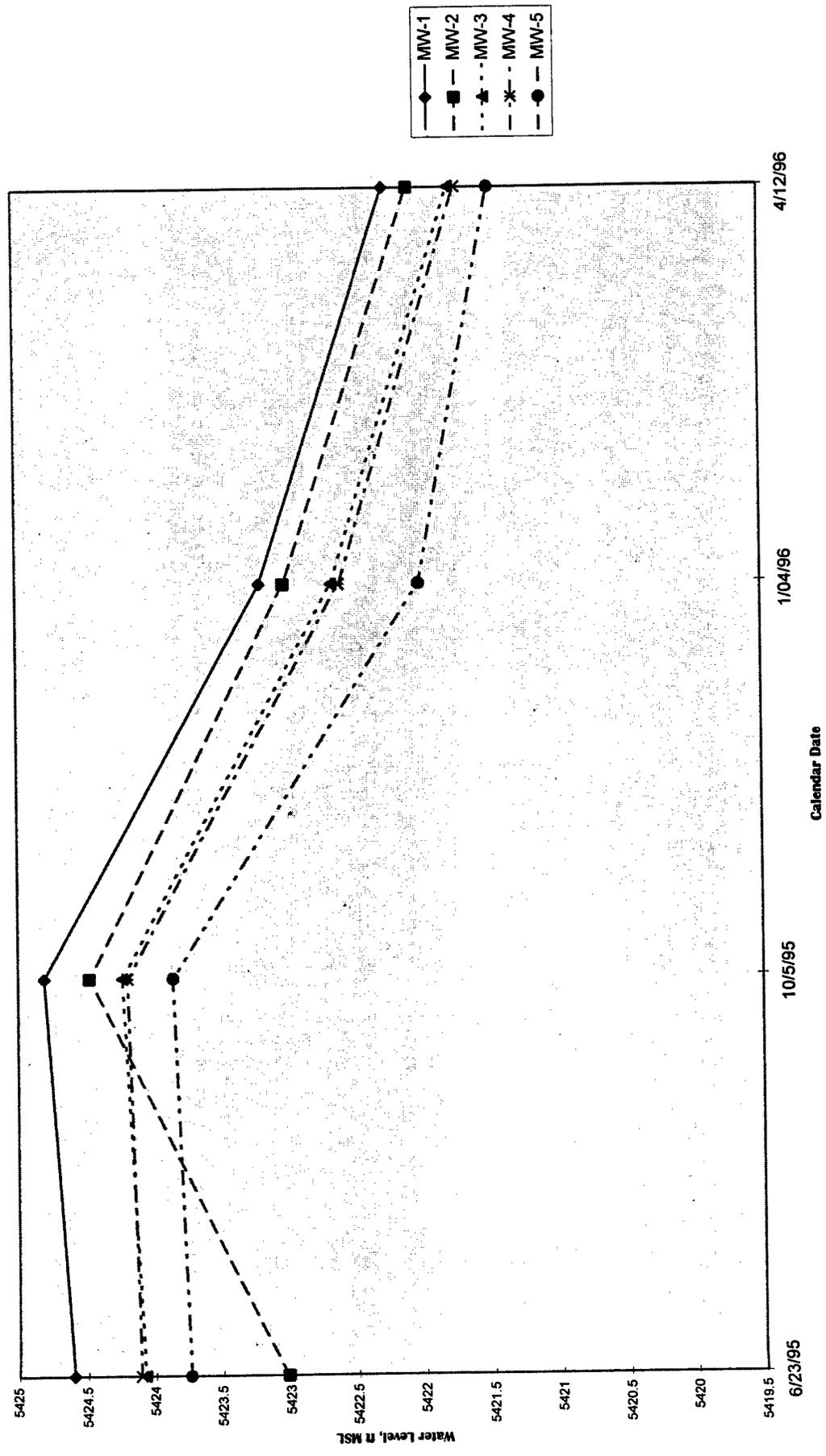
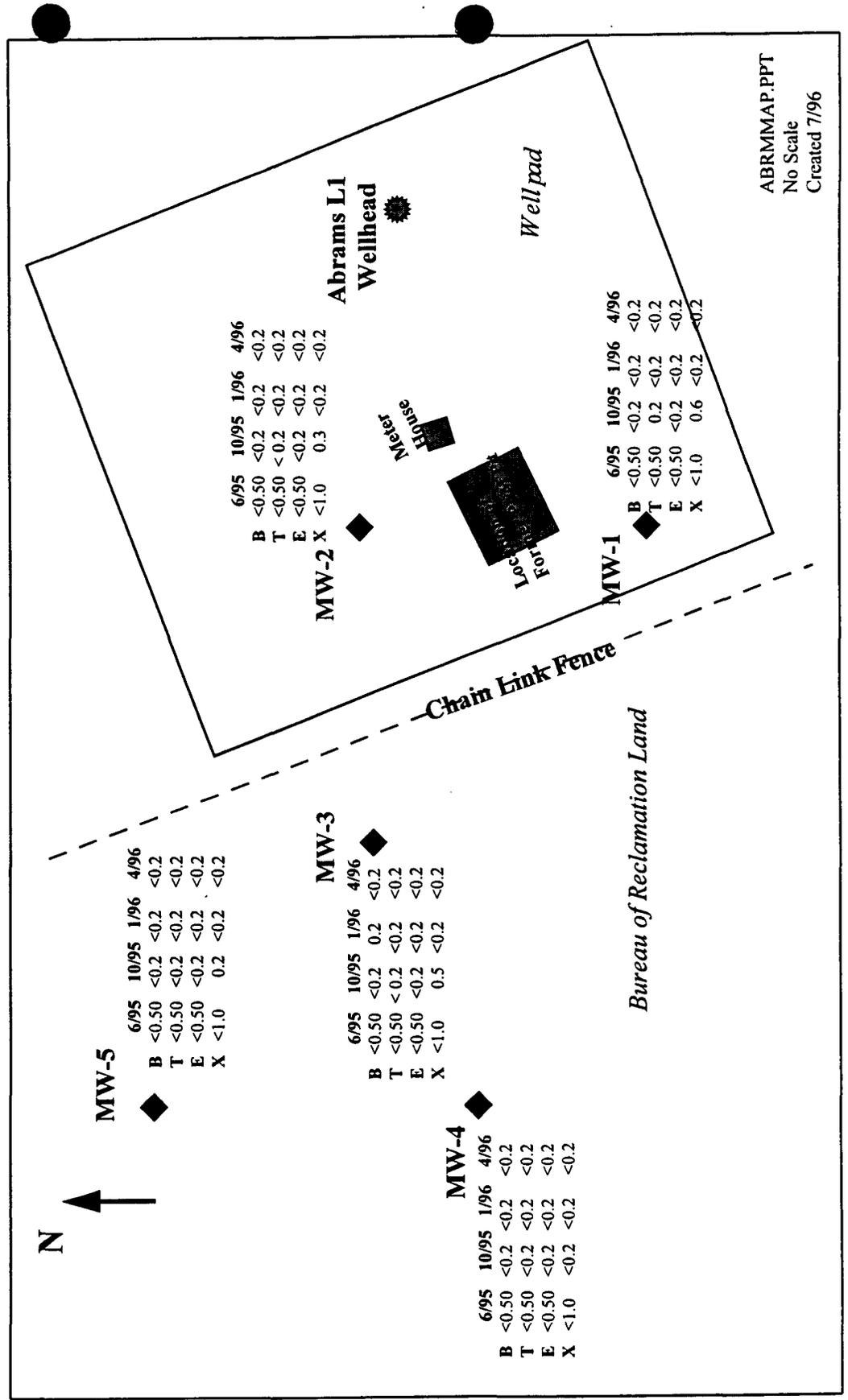


Figure 3. Abrams Gas/Com 1 Well Site

Well Locations & Analytical Results

(Concentrations in ppb)





OFF: (505) 325-8786

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn: *Maureen Gannon*
Company: *PNM Gas Services*
Address: *Alevarado Square, Mail Stop 0408*
City, State: *Albuquerque, NM 87158*

Date: *12-Apr-96*
COC No.: *4645*
Sample No. *10608*
Job No. *2-1000*

Project Name: *PNM Gas Services - Abrams Gas COM L1*
Project Location: *9604111100; MW1*
Sampled by: *MG/MS* Date: *11-Apr-96* Time: *11:00*
Analyzed by: *DC* Date: *11-Apr-96*
Type of Sample: *Liquid*

Aromatic Volatile Organics

<i>Component</i>	<i>Result</i>	<i>Units of Measure</i>	<i>Detection Limit</i>	<i>Units of Measure</i>
<i>Benzene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
	<i>TOTAL</i>	<i><0.2</i>		<i>ug/L</i>

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

Approved by: *[Signature]*
Date: *4/12/96*



OFF: (505) 325-8786

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn: *Maureen Gannon*
Company: *PNM Gas Services*
Address: *Alevarado Square, Mail Stop 0408*
City, State: *Albuquerque, NM 87158*

Date: *12-Apr-96*
COC No.: *4645*
Sample No. *10609*
Job No. *2-1000*

Project Name: *PNM Gas Services - Abrams Gas COM L1*
Project Location: *9604111130; MW2*
Sampled by: *MG/MS* Date: *11-Apr-96* Time: *11:30*
Analyzed by: *DC* Date: *11-Apr-96*
Type of Sample: *Liquid*

Aromatic Volatile Organics

<i>Component</i>	<i>Result</i>	<i>Units of Measure</i>	<i>Detection Limit</i>	<i>Units of Measure</i>
<i>Benzene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
	<i>TOTAL</i>	<i><0.2</i>		<i>ug/L</i>

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

Approved by: *JG4*
Date: *4/12/96*



OFF: (505) 325-8786

LAB: (505) 325-5667

TECHNOLOGIES, LTD.

AROMATIC VOLATILE ORGANICS

Attn: *Maureen Gannon*
Company: *PNM Gas Services*
Address: *Alevardo Square, Mail Stop 0408*
City, State: *Albuquerque, NM 87158*

Date: *12-Apr-96*
COC No.: *4645*
Sample No. *10610*
Job No. *2-1000*

Project Name: *PNM Gas Services - Abrams Gas COM L1*

Project Location: *9604111200; MW3*

Sampled by: *MG/MS* Date: *11-Apr-96* Time: *12:00*

Analyzed by: *DC* Date: *11-Apr-96*

Type of Sample: *Liquid*

Aromatic Volatile Organics

<i>Component</i>	<i>Result</i>	<i>Units of Measure</i>	<i>Detection Limit</i>	<i>Units of Measure</i>
<i>Benzene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i><0.2</i>	<i>ug/L</i>		

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

Approved by: *JCG*
Date: *4/12/96*

OFF: (505) 325-8786



LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn: *Maureen Gannon*
 Company: *PNM Gas Services*
 Address: *Alevardo Square, Mail Stop 0408*
 City, State: *Albuquerque, NM 87158*

Date: *12-Apr-96*
 COC No.: *4645*
 Sample No. *10611*
 Job No. *2-1000*

Project Name: *PNM Gas Services - Abrams Gas COM L1*
 Project Location: *9604111330; MW4*
 Sampled by: *MG/MS* Date: *11-Apr-96* Time: *13:30*
 Analyzed by: *DC* Date: *11-Apr-96*
 Type of Sample: *Liquid*

Aromatic Volatile Organics

<i>Component</i>	<i>Result</i>	<i>Units of Measure</i>	<i>Detection Limit</i>	<i>Units of Measure</i>
<i>Benzene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
	<i>TOTAL</i>	<i><0.2</i>		<i>ug/L</i>

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

Approved by: *DG4*
 Date: *4/12/96*

OFF: (505) 325-8786

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TECHNOLOGIES, LTD.

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn: *Maureen Gannon*
Company: *PNM Gas Services*
Address: *Alevarado Square, Mail Stop 0408*
City, State: *Albuquerque, NM 87158*

Date: *12-Apr-96*
COC No.: *4645*
Sample No. *10612*
Job No. *2-1000*

Project Name: *PNM Gas Services - Abrams Gas COM L1*
Project Location: *9604111300; MW5*
Sampled by: *MG/MS* Date: *11-Apr-96* Time: *13:00*
Analyzed by: *DC* Date: *11-Apr-96*
Type of Sample: *Liquid*

Aromatic Volatile Organics

<i>Component</i>	<i>Result</i>	<i>Units of Measure</i>	<i>Detection Limit</i>	<i>Units of Measure</i>
<i>Benzene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i><0.2</i>	<i>ug/L</i>		

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

Approved by: *Ja4*
Date: *4/12/96*

OFF: (505) 325-8786



LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn: **Maureen Gannon**
 Company: **PNM Gas Services**
 Address: **Alevardo Square, Mail Stop 0408**
 City, State: **Albuquerque, NM 87158**

Date: **12-Apr-96**
 COC No.: **4645**
 Sample No. **10613**
 Job No. **2-1000**

Project Name: **PNM Gas Services - Abrams Gas COM L1**

Project Location: **9604111230; MW6**

Sampled by: **MG/MS** Date: **11-Apr-96** Time: **12:30**

Analyzed by: **DC** Date: **11-Apr-96**

Type of Sample: **Liquid**

Aromatic Volatile Organics

Component	Result	Units of Measure	Detection Limit	Units of Measure
Benzene	<0.2	ug/L	0.2	ug/L
Toluene	<0.2	ug/L	0.2	ug/L
Ethylbenzene	<0.2	ug/L	0.2	ug/L
m,p-Xylene	<0.2	ug/L	0.2	ug/L
o-Xylene	<0.2	ug/L	0.2	ug/L
	TOTAL	<0.2		ug/L

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

Approved by: *Jack*
 Date: **4/12/96**

OFF: (505) 325-8786

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TECHNOLOGIES, LTD.

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn: *Maureen Gannon*
Company: *PNM Gas Services*
Address: *Alevardo Square, Mail Stop 0408*
City, State: *Albuquerque, NM 87158*

Date: *12-Apr-96*
COC No.: *4645*
Sample No. *10614*
Job No. *2-1000*

Project Name: *PNM Gas Services - Abrams Gas COM L1*

Project Location: *Trip Blank*

Sampled by: *DC* Date: *10-Apr-96* Time: *17:00*

Analyzed by: *DC* Date: *11-Apr-96*

Type of Sample: *Liquid*

Aromatic Volatile Organics

<i>Component</i>	<i>Result</i>	<i>Units of Measure</i>	<i>Detection Limit</i>	<i>Units of Measure</i>
<i>Benzene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i><0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i><0.2</i>	<i>ug/L</i>		

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

Approved by: *Jaf*
Date: *4/12/96*

OFF: (505) 325-8786

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LAB: (505) 325-5667

QUALITY ASSURANCE REPORT for EPA Method 8020

Date Analyzed: 11-Apr-96

Internal QC No.: 0444-STD
Surrogate QC No.: 0445-STD
Reference Standard QC No.: 0355-STD

Method Blank

Analyte	Result	Units of Measure
Average Amount of All Analytes In Blank	<0.2	ppb

Calibration Check

Analyte	Units of Measure	True Value	Analyzed Value	% Diff	Limit
Benzene	ppb	20.0	20.0	0	15%
Toluene	ppb	20.0	19.8	1	15%
Ethylbenzene	ppb	20.0	20.0	0	15%
m,p-Xylene	ppb	40.0	39.4	1	15%
o-Xylene	ppb	20.0	19.9	1	15%

Matrix Spike

Analyte	1 - Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	111	113	(39-150)	2	20%
Toluene	111	114	(46-148)	2	20%
Ethylbenzene	111	114	(32-160)	2	20%
m,p-Xylene	107	112	(35-145)	3	20%
o-Xylene	105	107	(35-145)	1	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)	
10608-4645	95	
10609-4645	95	
10610-4645	95	
10611-4645	95	
10612-4645	95	
10613-4645	95	
10614-4645	95	

S1: Fluorobenzene

CHAIN OF CUSTODY RECORD

ON SITE

TECHNOLOGIES, LTD.

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
L.A.B: (505) 325-5667 • FAX: (505) 325-6256

Date: 4-11-96

Page 1 of 1

Purchase Order No.:		Job No.	
Name	Denver Bearden	Name	Maureen Gannon
Company	PNM Gas Services	Company	PNM Gas Services
Address	603 W. Elm Street	Mailing Address	Alverado Square, Mail Stop 0408
City, State, Zip	Farmington, NM 87401	City, State, Zip	Albuquerque, NM 87158
Dept. 324-3763		Telephone No.	505-848-2974
Title		Telefax No.	

ANALYSIS REQUESTED

REPORT RESULTS TO

Number of Containers

ABRAMS GAS/COM L1

Sampler: M Gannon per Bill

SAMPLE IDENTIFICATION	SAMPLE DATE		MATRIX	PRES.	LAB ID
	DATE	TIME			
NW1 9604111100			H2O	HgCl2	10608-4645
NW2 9604111130			"	"	10609
NW3 9604111200			"	"	10610
NW4 9604111330			"	"	10611
NW5 9604111300			"	"	10612
NW6 9604111330			"	"	10613
TRIP BLANK	4/10/96	1700	H2O	None	10614

Relinquished by: <u>Maureen Gannon</u>	Date/Time: <u>4/11/96</u>
Relinquished by: <u>[Signature]</u>	Date/Time: <u>4/11/96 14:33</u>
Relinquished by: <u>[Signature]</u>	Date/Time: <u>4/11/96 15:00</u>
Method of Shipment:	Special Instructions:
Authorized by: <u>Maureen Gannon</u>	Date: <u>4-11-96</u>

Results to be sent to both parties.