

3R - 341

REPORTS

DATE:

1998

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

April 2, 1998

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

RECEIVED
APR 2 1998
Oil Conservation Bureau
Oil Conservation Division



RE: 1998 SAN JUAN BASIN ANNUAL GROUNDWATER REPORT

Dear Bill:

PNM is pleased to submit the 1998 Annual 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 reported in this document is provided below.

Cozzens B1
Dogie Compressor Station East Pit
Dogie Compressor Station North Pit
Florance 32A
Florance Z 40 M
Florance 44
Florance 47X
Florance 124
Hampton 4M
Honolulu Loop Line Drip
Ice Canyon Drip
Jacques 2A
Mangum 1E
McClanahan 22
McClanahan A2E
McCoy Gas Com A1
Miles Federal 1E
Miles Federal 1E Drip
Randleman 1
Reid 16 Drip
Sammons 2
Turner 1A
Turner 3
Zachry 18E

PNM 1998 Groundwater Report

PNM plans to request closure of two of the above sites, the Cozzens B1 and the Sammons 2, in our April 30, 1998 filing of the San Juan Pit Closure Reports to the OCD Santa Fe office. If you have any questions regarding the contents of the report, please contact me at (505) 241-2974.

Sincerely,



Maureen Gannon
Project Manager

Attachment

cc: Ingrid Deklau, WFS
Denny Foust, OCD-Aztec Office
Bill VonDrehle, WFS

PNM 1998 Groundwater Report

bcc: Colin Adams (w/o analytical results)
Kathy Juckes
Ron Johnson (w/o analytical results)
Mark Sikelianos

Groundwater Site Summary Report

Quarter/Year: 2nd/97, 3rd/97, 4th/97 & 1st/98

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

Operator: Burlington Resources
Sec: 18 Twn: 28N Rng: 9W Unit: L
Canyon: Munoz

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

Topo Map: previously submitted

Well Completion Diagram: previously submitted

Site Map with Analytical Results: Figure 1

Groundwater Contour Map: Figure 2 (June 1997), Figure 3 (September 1997), Figure 4 (December 1997) & Figure 5 (March 1998)

Hydrograph: Figure 6

Full suite-Groundwater Sampling Results: Table 1

Analytical Results: attached

Activities for Previous Year:

On April 30, July 22, and October 22, 1997 and again on January 21, 1998, PNM performed quarterly sampling of groundwater monitoring wells at the site. PNM measured water levels and conducted groundwater sampling in each well for chemical analyses of benzene, toluene, ethylbenzene, and xylenes (BTEX). In addition, on April 30, 1997, MW-1 and MW-2 were sampled for Water Quality Control Commission (WQCC) dissolved metals and major cations/anions. Sampling was performed in strict compliance with EPA protocol.

In all instances, PNM delivered the samples to OnSite Technologies, Farmington, New Mexico. The samples were analyzed using the following methods:

- BTEX using EPA Method 8020
- major cations/anions using various EPA methods
- WQCC metals- filtered (As, Ba, Cd, Cr, Pb, Se, and Ag using inductively coupled plasma (ICP) for heavy metals and atomic absorption spectroscopy (AAS) for Hg and Se).

Results:

Figure 1 presents a site map showing BTEX for each monitoring well since groundwater contamination was discovered. Table 1 provides a summary of the full suite of analytical results collected during the April 30, 1997 sampling event. Since monitoring began four quarters ago, MW-1, -3 and -4 have shown BTEX concentrations below WQCC standards. BTEX concentrations in MW-2 have fluctuated although xylene levels have remained fairly constant. As of January 1998, the benzene concentration is 13 ppb, toluene is 1264 ppb, ethylbenzene is 41 ppb and xylenes are 1664 ppb. Water quality analysis of MW-1 and -2 revealed elevated sulfate concentrations in both wells. Metals in either well were below WQCC standards.

Figure(s) 2, 3, 4 and 5 provide groundwater contour maps for the months of April, July and October 1997 and January 1998, respectively. In general, groundwater flows beneath the site in a southeasterly direction. Figure 6 is the hydrograph for the site. Water levels have risen over the past four quarters of monitoring in all wells.

Further Action:

PNM will continue to monitor groundwater elevations and conduct quarterly groundwater sampling at the Reid 16. Due to high toluene and xylenes concentrations at the site, further source removal is in the area of MW-2 also planned for this year.

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. Reid 16 Drip Groundwater Site Map and Analytical Results
(Concentrations in ppb)

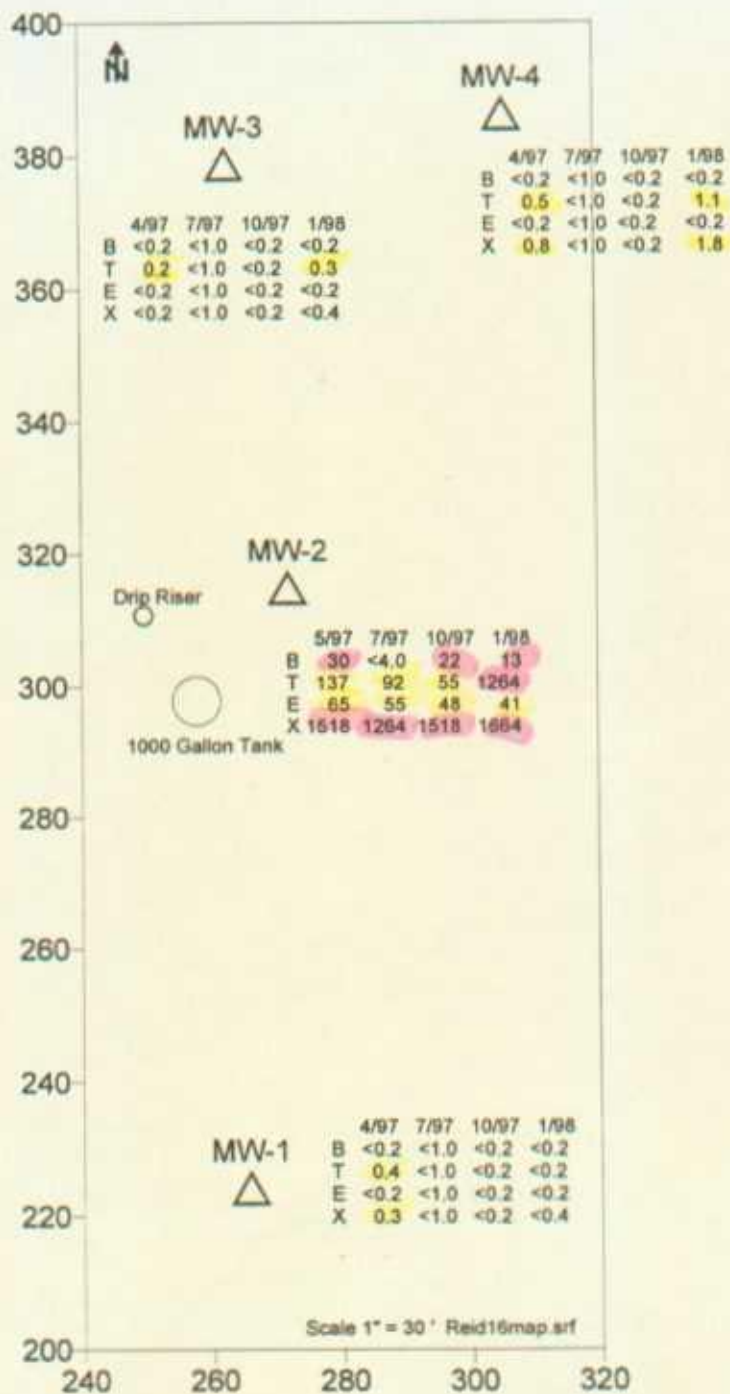


Figure 2. Reid 16 Drip Groundwater Contour Map (April 30, 1997)

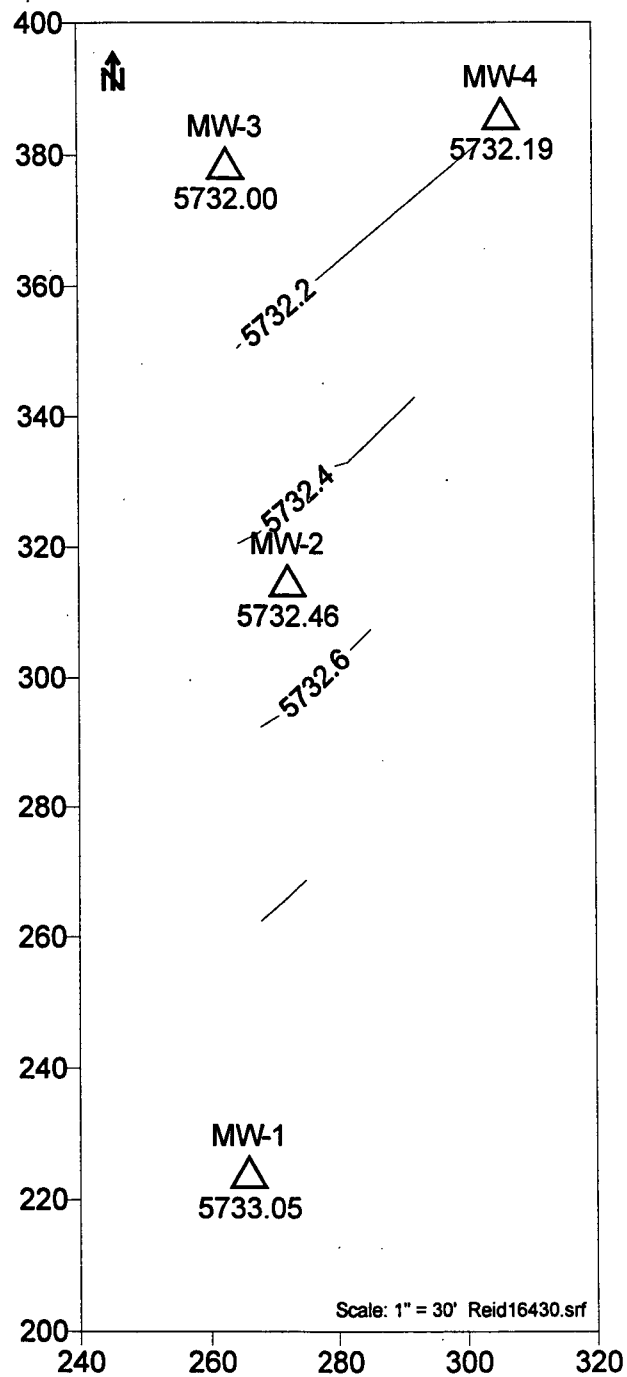


Figure 3. Reid 16 Drip Groundwater Contour Map (July 22, 1997)

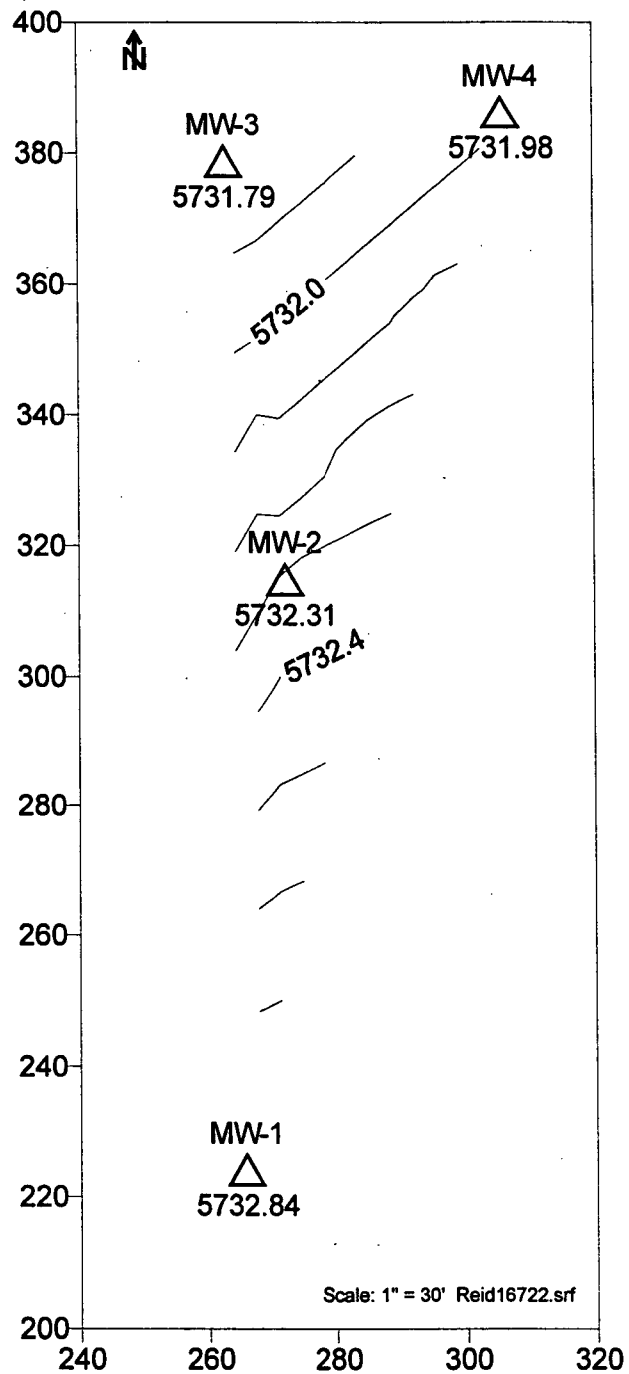


Figure 4. Reid 16 Drip Groundwater Contour Map (October 22, 1997)

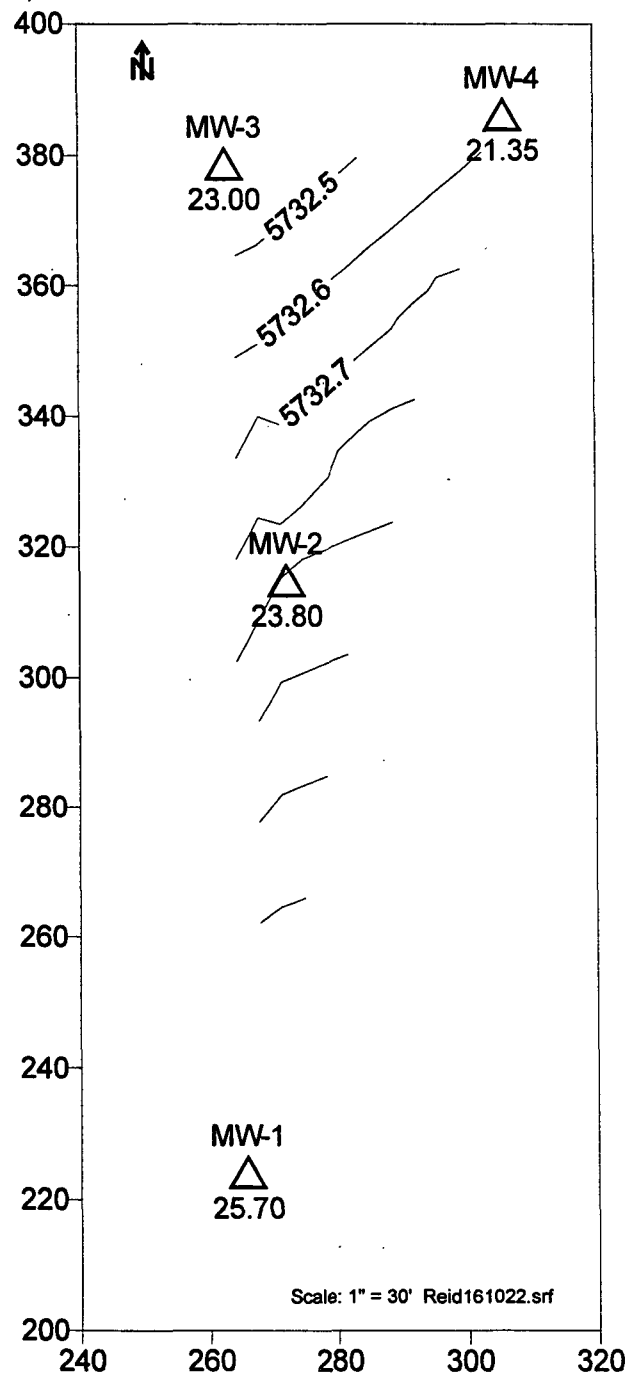


Figure 5. Reid 16 Drip Groundwater Contour Map (January 21, 1998)

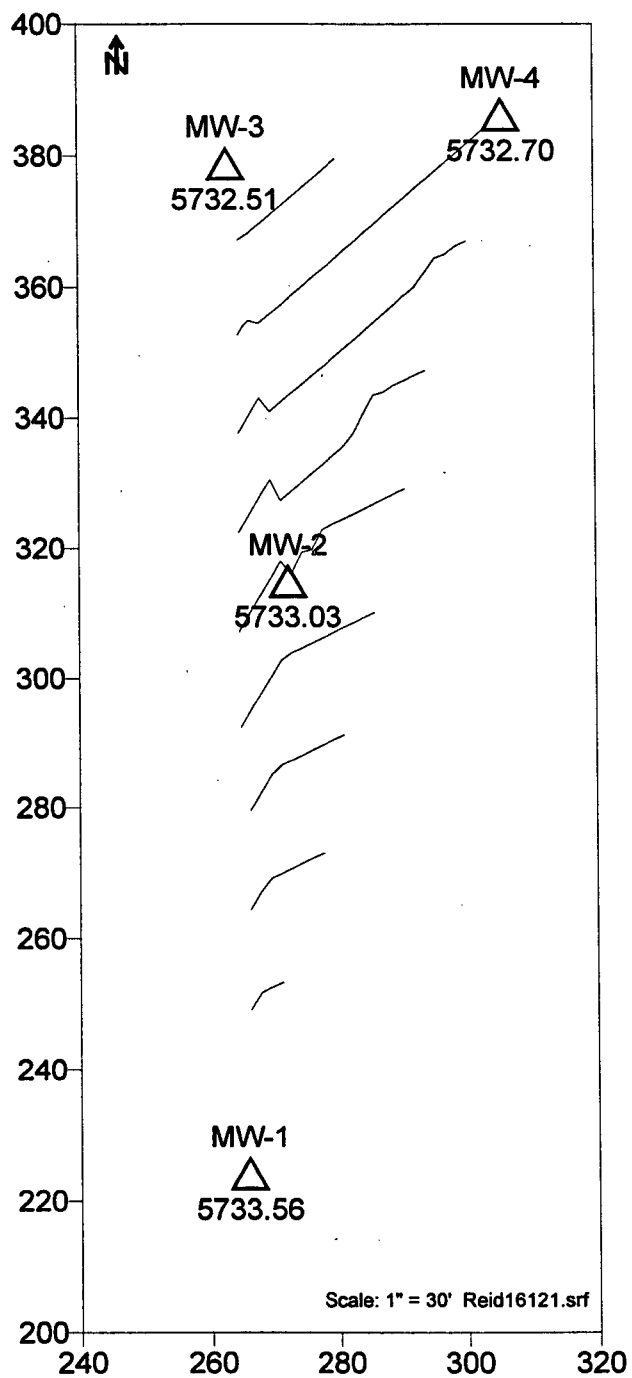


Figure 6. Reid 16 Drip Hydrograph
(Water Level vs. Time)

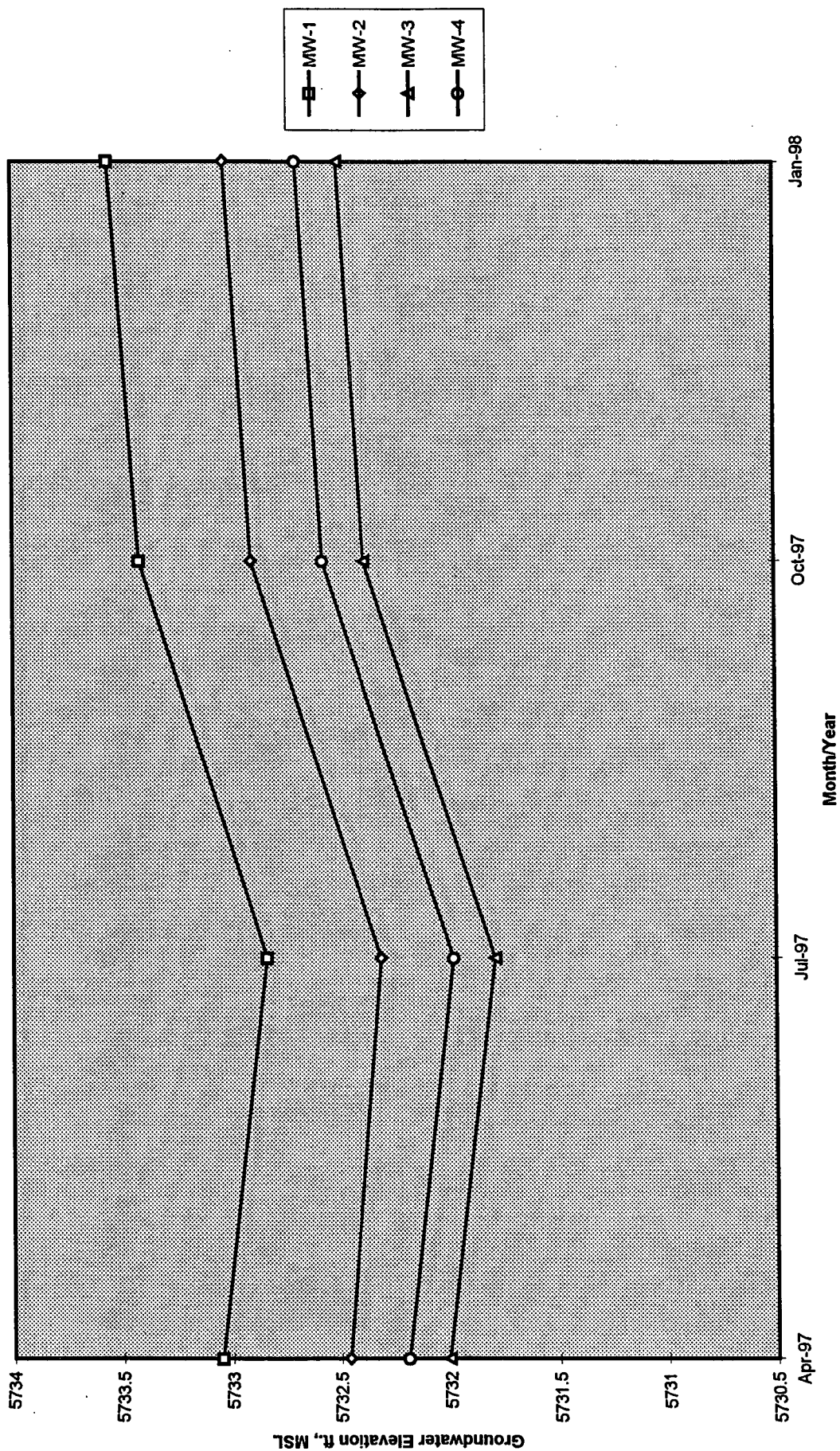


Table 1. REID 16 GROUNDWATER SAMPLING RESULTS, mg/l (4/30/97)

Constituent	WQCC Stds.	MW-1	MW-2 (5/20/97)	MW-3	MW-4
B	0.01	<0.0002	0.030	<0.0002	<0.0002
T	0.75	0.0004	0.137	0.0002	0.0005
E	0.75	<0.0002	0.065	<0.0002	<0.0002
X	0.62	0.0003	1.518	<0.0002	0.0008
PAHs	0.03	NA	NA	NA	NA
Metals					
As	0.1	<0.030	<0.030	NA	NA
Ba	1	0.013	0.028	NA	NA
Cd	0.01	0.004	<0.004	NA	NA
Cr	0.05	<0.010	<0.010	NA	NA
Pb	0.05	<0.040	<0.040	NA	NA
Se	0.05	<0.006	<0.006	NA	NA
Ag	0.05	<0.006	<0.006	NA	NA
Hg	0.002	<0.001	<0.0001	NA	NA
Cations/Anions					
Na	NA	412	289	NA	NA
Ca	NA	484	391	NA	NA
Mg	NA	47.4	43.2	NA	NA
K	NA	7.0	23.7	NA	NA
Cl	NA	37	132	NA	NA
SO4	NA	2037	1562	NA	NA
CO3	NA	<1	<1	NA	NA
HCO3	NA	166	354	NA	NA
OH	NA	<1	<1	NA	NA
Cation/Anion Balance					
Difference Cation- Anion	NA	0.002	5.80	NA	NA
Total Cation-Anion	NA	92.33	78.29	NA	NA
% Difference	NA	0.0	7.4	NA	NA
TDS, calc	NA	3190	2795	NA	NA
TDS, meas	NA	3224	2722	NA	NA
Hardness as CaCO3	NA	1404	1154	NA	NA

NA: Not Applicable
 BDL: Below Detection Limit
 NS: Not Sampled
 **: Out of Acceptable Range, % Diff. +/-5
 P: Free Product



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: *5-May-97*
COC No.: *5552*
Sample No.: *14382*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Reid 16*
Project Location: *9704301130; MW-1*
Sampled by: *MS/MG* Date: *30-Apr-97* Time: *11:30*
Analyzed by: *DC* Date: *5-May-97*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	0.4	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	0.3	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	0.7	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*

Date: *5/6/97*

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: *5-May-97*
 COC No.: *5552*
 Sample ID: *14382*
 Job No.: *2-1000*

Project Name: *PNM Gas Services - Reid 16*
 Project Location: *9704301130; MW-1*

Sampled by: *MS/MG* Date: *30-Apr-97* Time: *11:30*
 Analyzed by: *HR* Date: *2-May-97*

Laboratory Analysis

Parameter	Result	Unit of Measure		Result	Unit of Measure	
Cations						
Sodium <i>Na</i>	412	mg/L		17.92	me/L	
Calcium <i>Ca</i>	484	mg/L		24.15	me/L	
Magnesium <i>Mg</i>	47.4	mg/L		3.90	me/L	
Potassium <i>K</i>	7.0	mg/L		0.18	me/L	
Anions						
Chloride <i>Cl</i>	37	mg/L		1.04	me/L	
Sulfate <i>SO4</i>	2037	mg/L		42.41	me/L	
Carbonate <i>CO3 as CaCO3</i>	<1	mg/L		<0.01	me/L	
Bicarbonate <i>HCO3 as CaCO3</i>	166	mg/L		2.72	me/L	
Hydroxide <i>OH as CaCO3</i>	<1	mg/L		<0.01	me/L	
Total Dissolved Solids			Cation-Anion Balance 0.02 Difference Cation-Anion, me/L 92.33 Total Cation-Anion, me/L 0.0 % Difference Cation-Anion Comments			
Calculated, Sum of Cation/Anion	3190	mg/L				
Total Dissolved Solids						
Dried @ 180 C	3224	mg/L				
pH	7.35					
Conductivity @ 25 C	2960	uS/cm				
Total Hardness as CaCO3	1404	mg/L				

Approved by: *[Signature]*Date: *5-2-97*

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: *5-May-97*
 COC No.: *5552*
 Sample ID: *14383*
 Job No.: *2-1000*

Project Name: *PNM Gas Services - Reid 16*Project Location: *9704301200; MW-2*Sampled by: *MS/MG*Date: *30-Apr-97* Time: *12:00*Analyzed by: *HR*Date: *2-May-97***Laboratory Analysis**

Parameter	Result	Unit of Measure	Result	Unit of Measure
Cations				
Sodium Na	289	mg/L	12.57	me/L
Calcium Ca	391	mg/L	19.51	me/L
Magnesium Mg	43.2	mg/L	3.55	me/L
Potassium K	23.7	mg/L	0.61	me/L
Anions				
Chloride Cl	132	mg/L	3.72	me/L
Sulfate SO ₄	1562	mg/L	32.52	me/L
Carbonate CO ₃ as CaCO ₃	<1	mg/L	<0.01	me/L
Bicarbonate HCO ₃ as CaCO ₃	354	mg/L	5.80	me/L
Hydroxide OH as CaCO ₃	<1	mg/L	<0.01	me/L
Total Dissolved Solids				
Calculated, Sum of Cation/Anion	2795	mg/L	Cation-Anion Balance 5.80 Difference Cation-Anion, me/L 78.29 Total Cation-Anion, me/L ✓ 7.4 % Difference Cation-Anion Comments	
Total Dissolved Solids				
Dried @ 180 C	2722	mg/L		
pH	8.01			
Conductivity @ 25 C	2670	uS/cm		
Total Hardness as CaCO ₃	1154	mg/L		

Approved by: *[Signature]*
 Date: *5.20/97*

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: *2-May-97*
COC No.: *5552*
Sample No.: *14384*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Reid 16*
Project Location: *9704301230; MW-3*

Sampled by: *MS/MG* Date: *30-Apr-97* Time: *12:30*
Analyzed by: *DC* Date: *2-May-97*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	0.2	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	ND	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	0.2	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *5/6/97*

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: *8-May-97*
COC No.: *5552*
Sample No.: *14385*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Reid 16*
Project Location: *9704301300; MW-4*
Sampled by: *MS/MG*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *30-Apr-97* Time: *13:00*
Date: *6-May-97*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	0.5	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	0.4	ug/L	0.2	ug/L
<i>o-Xylene</i>	0.4	ug/L	0.2	ug/L
<i>TOTAL</i>	1.3	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *5/19/97*

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -



ON SITE
TECHNOLOGIES, LTD.

QUALITY ASSURANCE REPORT

Internal QC No.: 0527-STD
Surrogate QC No.: 0528-STD
Reference Standard QC No.: 0529/30-QC

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

<i>Parameter</i>	<i>Unit of Measure</i>	<i>True Value</i>	<i>Analyzed Value</i>	<i>% Diff</i>	<i>Limit</i>
<i>Benzene</i>	ppb	20.0	18.8	6	15%
<i>Toluene</i>	ppb	20.0	19.3	4	15%
<i>Ethylbenzene</i>	ppb	20.0	19.5	3	15%
<i>m,p-Xylene</i>	ppb	40.0	37.7	6	15%
<i>o-Xylene</i>	ppb	20.0	19.5	3	15%

<i>Parameter</i>	<i>1 - Percent Recovered</i>	<i>2 - Percent Recovered</i>	<i>Limit</i>	<i>%RSD</i>	<i>Limit</i>
<i>Benzene</i>	89	89	(39-150)	0	20%
<i>Toluene</i>	93	91	(46-148)	1	20%
<i>Ethylbenzene</i>	92	92	(32-160)	0	20%
<i>m,p-Xylene</i>	93	92	(35-145)	0	20%
<i>o-Xylene</i>	92	91	(35-145)	0	20%

	S1 Percent <i>Laboratory Identification</i> <i>Recovered</i>	S2 Percent <i>Laboratory Identification</i> <i>Recovered</i>		S1 Percent <i>Laboratory Identification</i> <i>Recovered</i>	S2 Percent <i>Laboratory Identification</i> <i>Recovered</i>
<i>Limit Percent Recovered</i>	(70-130)		<i>Limit Percent Recovered</i>	(70-130)	
14384-5552	93				
					②
					5% K ₂ O

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 5-May-97

Internal QC No.: 0527-STD

Surrogate QC No.: 0528-STD

Reference Standard QC No.: 0529/30-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	18.7	7	15%
Toluene	ppb	20.0	19.4	3	15%
Ethylbenzene	ppb	20.0	19.7	1	15%
m,p-Xylene	ppb	40.0	38.1	5	15%
o-Xylene	ppb	20.0	19.7	2	15%

Matrix Spike

Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	90	86	(39-150)	4	20%
Toluene	92	88	(46-148)	4	20%
Ethylbenzene	92	87	(32-160)	3	20%
m,p-Xylene	88	83	(35-145)	3	20%
o-Xylene	88	84	(35-145)	3	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
14382-5552	90				
					(102) 5/9/97

S1: Fluorobenzene

OFF: (505) 325-5667



LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

Cation/Anion Balance

Date: 2-May-97

Quality Control Sample

Parameter	Laboratory Identification	True Value	Analyzed Value	Unit of Measure	% Diff	Limit % Diff
Sodium, Na	0540-QC	2.32	2.18	mg/L	-6	10
Calcium, Ca	0462-QC	2.18	2.19	mg/L	0	10
Magnesium, Mg	0462-QC	1.14	1.23	mg/L	8	10
Potassium, K	0540-QC	0.73	0.78	mg/L	7	10
Chloride, Cl	0437-QC	150	150	mg/L	0	10
Sulfate, SO4	0540-QC	78	69	mg/L	-11 ✓ (OK)	10 ✓ (OK)
Alkalinity	0539-QC	159	159	mg/L	0	10
pH	0539-QC	9.13	9.08		-1	10
Conductivity	0539-QC	740	759	uS/cm	3	15
Total Dissolved Solids, 180C	0540-QC	642	632	uS/cm	-2	15

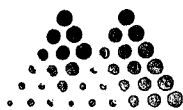
Matrix Spike

Parameter	Laboratory Identification	Analyzed Value	Matrix Spike	Spike Value	Unit of Measure	Spike Recovery
Sodium, Na	14382-5552	2.06	0.50	2.73	mg/L	107%
Calcium, Ca	14383-5552	1.96	0.50	2.46	mg/L	100%
Magnesium, Mg	14382-5552	1.18	0.50	1.73	mg/L	103%
Potassium, K	14383-5552	1.18	0.50	1.69	mg/L	101%

Method Blank

Parameter	Laboratory Identification	Analyzed Value	Unit of Measure
Sodium, Na	LF-Blank	<0.2	mg/L
Calcium, Ca	LF-Blank	<0.05	mg/L
Magnesium, Mg	LF-Blank	<0.05	mg/L
Potassium, K	LF-Blank	<0.05	mg/L
Chloride, Cl	LF-Blank	<3 X DL	mg/L
Sulfate, SO4	LF-Blank	<1	mg/L
Conductivity	LF-Blank	<2	uS/cm

5/2/97



Mountain States Analytical

RECEIVED MAY 27 1997

May 22, 1997

Mr. David Cox
On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Reference:

Project: Reid 16
Project No.: PNM1002/21000
MSAI Group: 16180

Dear Mr. Cox:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

Reid 16 9704301130 MW-1

Reid 16 9704301200 MW-2

All holding times were met for the tests performed on these samples.

If the report is acceptable, please approve the enclosed invoice and forward it for payment.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

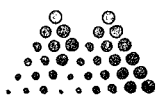
With Regards,

Wm D. Ford

for

Rolf E. Larsen
Project Manager

RECEIVED MAY 27 1997



Mountain States Analytical, Inc.

The Quality Solution

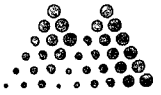
On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: Reid 16

Sample ID: Reid 16 9704301130 MW-1
Matrix: Waste Water

MSAI Sample: 62375
MSAI Group: 16180
Date Reported: 05/22/97
Discard Date: 06/21/97
Date Submitted: 05/06/97
Date Sampled: 04/30/97
Collected by: MS
Purchase Order: 5552
Project No.: PNM1002/21000

Test	Analysis	Results as Received	Units	Method Detection Limit
0249D	Cadmium by ICP, w/ww Diss, 6010A Method: SW-846 6010A	0.004	mg/l	0.004
0251F	Chromium by ICP, w/ww Diss, 6010A Method: SW-846 6010A	< 0.010	mg/l	0.010
0255F	Lead by ICP, w/ww Diss, 6010A Method: SW-846 6010A	< 0.040	mg/l	0.040
0259B	Mercury by CVAA, w/ww, 7470 Method: SW-846 7470	< 0.0001	mg/l	0.0001
0266D	Silver by ICP, w/ww Diss, 6010A Method: SW-846 6010A	< 0.006	mg/l	0.006
0392I	Flame/ICP Prep, w/ww, 3005A Method: SW-846 3005A	Complete		
0392M	Mercury Prep CVAA, w/ww, 7470 Method: SW-846 7470	Complete		
0401	Prep for HAA, w/ww, 7062/7742 Method: SW-846 7062/7742	Complete		
1045I	Arsenic by ICP, w/ww, 6010A Method: SW-846 6010A	< 0.030	mg/l	0.030
1450	Selenium by HAA, w/ww Diss, 7742 Method: SW-846 7742	< 0.006	mg/l	0.006
2541B	Barium by ICP, w/ww Diss, 6010A Method: SW-846 6010A	0.013	mg/l	0.003



Mountain States Analytical, Inc.

On Site Technologies, Ltd.

The Quality Solution

Page 2

Sample ID: Reid 16 9704301130 MW-1

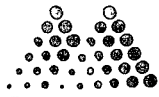
MSAI Sample: 62375
MSAI Group: 16180

Test	Analysis	Results as Received	Units	Method Detection Limit
0939	Sample Filtering Method: MSAI IN-HOUSE	Complete		

Respectfully Submitted,
Reviewed and Approved by:

for Len D. Ford
Rolf E. Larsen
Project Manager

RECEIVED MAY 27 1997



Mountain States Analytical, Inc.

The Quality Solution

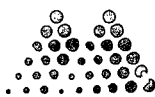
On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: Reid 16

Sample ID: Reid 16 9704301200 MW-2
Matrix: Waste Water

MSAI Sample: 62376
MSAI Group: 16180
Date Reported: 05/22/97
Discard Date: 06/21/97
Date Submitted: 05/06/97
Date Sampled: 04/30/97
Collected by: MS
Purchase Order: 5552
Project No.: PNM1002/21000

Test	Analysis	Results as Received	Units	Method Detection Limit
0249D	Cadmium by ICP, w/ww Diss, 6010A Method: SW-846 6010A	< 0.004	mg/l	0.004
0251F	Chromium by ICP, w/ww Diss, 6010A Method: SW-846 6010A	< 0.010	mg/l	0.010
0255F	Lead by ICP, w/ww Diss, 6010A Method: SW-846 6010A	< 0.040	mg/l	0.040
0259B	Mercury by CVAA, w/ww, 7470 Method: SW-846 7470	< 0.0001	mg/l	0.0001
0266D	Silver by ICP, w/ww Diss, 6010A Method: SW-846 6010A	< 0.006	mg/l	0.006
0392I	Flame/ICP Prep, w/ww, 3005A Method: SW-846 3005A	Complete		
0392M	Mercury Prep CVAA, w/ww, 7470 Method: SW-846 7470	Complete		
0401	Prep for HAA, w/ww, 7062/7742 Method: SW-846 7062/7742	Complete		
1045I	Arsenic by ICP, w/ww, 6010A Method: SW-846 6010A	< 0.030	mg/l	0.030
1450	Selenium by HAA, w/ww Diss, 7742 Method: SW-846 7742	< 0.006	mg/l	0.006
2541B	Barium by ICP, w/ww Diss, 6010A Method: SW-846 6010A	0.028	mg/l	0.003



Mountain States Analytical, Inc.

On Site Technologies, Ltd.

The Quality Solution

Page 2

Sample ID: Reid 16 9704301200 MW-2

MSAI Sample: 62376
MSAI Group: 16180

Test	Analysis	Results as Received	Units	Method Detection Limit
0939	Sample Filtering Method: MSAI IN-HOUSE	Complete		

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Rolf E. Larsen
Project Manager

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

Distribution:	White :: On Site	Yellow :: AB	Pink :: Sampler	Goktoured	Client

TECHNOLOGIES, LTD.

Distribution:	White -- On Site	Yellow -- LAB	Pink -- Sampler	Goldenrod -- Client
---------------	------------------	---------------	-----------------	---------------------

OFF: (505) 325-5667



LAB: (505) 325-1556

27 May 1997

Denver Bearden
PNM Gas Services
603 W. Elm Street
Farmington, NM 87401

Reference:

Project Name: Reid 16
Project Loc.: MW1, MW2, MW3, MW4, MW5: 970311
On Site ID: COC No. 5552

Dear Denver,

Enclosed please find the analytical results for your project referenced above. Please note that this does not include BTEX EPA 8020 Analytical Reports for MW2 and MW5, 9704301200 and 9704301330, respectively. Due to extensive contamination and chromatography problems, On Site Technologies requested re-sampling of these monitor wells. Mark Sikelianos submitted samples for MW2 on May 20, 1997 (COC 5555), and we will have analysis completed ASAP.

Should you have any questions please feel free to call me at your convenience, (505) 325-2432.

Thank you once again for your consideration.

Sincerely,


David Cox
Laboratory Manager

Attachments (2)

cc: Maureen Gannon, PNM Gas Services

OFF: (505) 325-5667

ON SITE

LAB: (505) 325-1555

TECHNOLOGIES, LTD.

10 June 1997

Denver Bearden
PNM Gas Services
603 W. Elm Street
Farmington, NM 87401

Reference:

Project Name: Reid 16 Drip
Project Loc.: MW-2: 9705201030
On Site ID: COC Record No. 5555

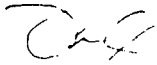
Dear Denver,

Enclosed please find the analytical results for your project referenced above. This sample completes the second quarter analyses submitted for the Reid 16.

We trust you will find all in order and should you have any questions regarding these results please contact me at any time. (505) 325-2432.

Thank you once again for your consideration.

Sincerely,


David Cox
Laboratory Manager

Enclosures (2)

cc: Maureen Gannon, PNM Gas Services

ON SITE

OFF: (505) 325-5667

LAB: (505) 325-1556

TECHNOLOGIES, LTD.

ANALYTICAL REPORT

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

Date: *10-Jun-97*
COC No.: *5555*
Sample No.: *14656*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Reid 16 Drip*
Project Location: *9705201030; MW-2*
Sampled by: *MS* Date: *20-May-97* Time: *10:30*
Analyzed by: *DC* Date: *3-Jun-97*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>30</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>137</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>65</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>1287</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>231</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>1751</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *6/10/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

TECHNOLOGIES, LTD.

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 3-Jun-97

Internal QC No.: 0527-STD

Surrogate QC No.: 0528-STD

Reference Standard QC No.: 0529/30-QC

Method Blank

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

Calibration Check

<i>Parameter</i>	<i>Unit of Measure</i>	<i>True Value</i>	<i>Analyzed Value</i>	<i>% Diff</i>	<i>Limit</i>
<i>Benzene</i>	ppb	20.0	21.2	6	15%
<i>Toluene</i>	ppb	20.0	21.9	10	15%
<i>Ethylbenzene</i>	ppb	20.0	22.3	11	15%
<i>m,p-Xylene</i>	ppb	40.0	42.5	6	15%
<i>o-Xylene</i>	ppb	20.0	22.0	10	15%

Matrix Spike

<i>Parameter</i>	<i>1 - Percent Recovered</i>	<i>2 - Percent Recovered</i>	<i>Limit</i>	<i>%RSD</i>	<i>Limit</i>
<i>Benzene</i>	89	82	(39-150)	6	20%
<i>Toluene</i>	102	93	(46-148)	5	20%
<i>Ethylbenzene</i>	101	93	(32-160)	5	20%
<i>m,p-Xylene</i>	99	82	(35-145)	5	20%
<i>o-Xylene</i>	100	89	(35-145)	5	20%

Surrogate Recoveries

	S1 Percent Recovered	S2 Percent Recovered		S1 Percent Recovered	S2 Percent Recovered
Laboratory Identification			Laboratory Identification		
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
14656-5555	107				
				412	100
				10/11/97	6/10/97

S1: Flourobenezene



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

May 29, 1997

Mr. David Cox
ON SITE TECHNOLOGIES
612 East Murray
Farmington, NM 87401

RECEIVED JUN 12 1997

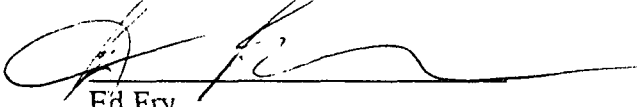
The following report contains analytical results for samples received at Southern Petroleum Laboratories (SPL) on May 21, 1997. The samples were assigned to Certificate of Analysis No(s).9705A32 and analyzed for the parameters specified on the chain of custody.

There were no analytical problems encountered with this group of samples and all quality control data was within acceptance limits.

If you have any questions or comments pertaining to this data report, please do not hesitate to contact me. Please reference the above Certificate of Analysis Number(s) during any inquiries.

Again, SPL is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Southern Petroleum Laboratories


Ed Fry
Project Manager

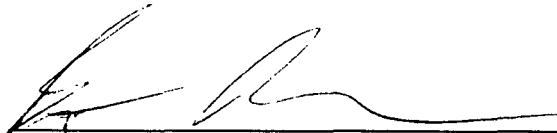


HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE 713/660-0901

Southern Petroleum Laboratories, Inc.

Certificate of Analysis Number: 97-05-A32

Approved for Release by:


Ed Fry, Project Manager

5/29/97
Date: _____

Greg Grandits
Laboratory Director

Idelis Williams
Quality Assurance Officer

The attached analytical data package may not be reproduced except in full without the express written approval of this laboratory.



RECEIVED JUN 2 1997

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9705A32-01

On Site Technologies
612 East Murray
Farmington, NM 87401
ATTN: David CoxP.O.#
5750
05/29/97PROJECT: Reid 16 Drip
SITE: Farmington, NM
SAMPLED BY: On Site Technologies, LTD.
SAMPLE ID: 9705201030 MW-2PROJECT NO: PNM1002
MATRIX: WATER
DATE SAMPLED: 05/20/97 10:30:00
DATE RECEIVED: 05/21/97

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Naphthalene	4	2.5	ug/L
Acenaphthylene	ND	2.5	ug/L
Acenaphthene	ND	7.5	ug/L
Fluorene	ND	7.5	ug/L
Phenanthrene	ND	2.5	ug/L
Anthracene	ND	2.5	ug/L
Fluoranthene	ND	2.5	ug/L
Pyrene	ND	2.5	ug/L
Chrysene	ND	2.5	ug/L
Benzo (a) anthracene	ND	2.5	ug/L
Benzo (b) fluoranthene	ND	2.5	ug/L
Benzo (k) fluoranthene	ND	2.5	ug/L
Benzo (a) pyrene	ND	2.5	ug/L
Dibenzo (a,h) anthracene	ND	2.5	ug/L
Benzo (g,h,i) perylene	ND	2.5	ug/L
Indeno (1,2,3-cd) pyrene	ND	2.5	ug/L

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1-Fluoronaphthalene	0.20 ug/L	D	50	150
Phenanthrene d-10	0.20 ug/L	D	50	150

ANALYZED BY: KA
EXTRACTED BY: AM
METHOD: 8310 Polynuclear Aromatic Hydrocarbons
DATE/TIME: 05/27/97 03:20:31
DATE/TIME: 05/22/97 08:00:00
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed
D - Diluted, control limits not applicable.

COMMENTS: Lab ID 14656-5555

QUALITY ASSURANCE: These analyses are performed in accordance
with EPA guidelines for quality assurance.

QUALITY CONTROL
DOCUMENTATION



SPL BATCH QUALITY CONTROL REPORT **
Method 8310 ***

PAGE

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Matrix: Aqueous

Batch Id: 1970526104110

Units: ug/L

B L A N K S P I K E S

S P I K E C O M P O U N D S	Sample Results <2>	Spike Added <3>	Matrix Spike		Matrix Spike Duplicate		MS/MSD Relative % Difference	QC Limits(**) (Advisory)	
			Result	Recovery	Result	Recovery		RPD	Recovery Range
			<1>	<4>	<1>	<5>		Max.	
NAPHTHALENE	ND	0.5	0.37	74.0	0.39	78.0	5.26	30	33 - 122
ACENAPHTHYLENE	ND	0.5	0.33	66.0	0.34	68.0	2.99	30	42 - 138
ACENAPHTHENE	ND	0.5	0.48	96.0	0.49	98.0	2.06	30	25 - 123
FLUORENE	ND	0.5	0.38	76.0	0.39	78.0	2.60	30	19 - 142
PHENANTHRENE	ND	0.5	0.40	80.0	0.40	80.0	0	30	40 - 121
ANTHRACENE	ND	0.5	0.32	64.0	0.33	66.0	3.08	30	32 - 121
FLUORANTHENE	ND	0.5	0.41	82.0	0.47	94.0	13.6	30	51 - 115
PYRENE	ND	0.5	0.40	80.0	0.43	86.0	7.23	30	45 - 117
CHRYSENE	ND	0.5	0.53	106	0.60	120	12.4	30	44 - 122
BENZO (A) ANTHRACENE	ND	0.5	0.40	80.0	0.43	86.0	7.23	30	57 - 118
BENZO (B) FLUORANTHENE	ND	0.5	0.43	86.0	0.49	98.0	13.0	30	62 - 121
BENZO (K) FLUORANTHENE	ND	0.5	0.43	86.0	0.52	104	18.9	30	63 - 117
BENZO (A) PYRENE	ND	0.5	0.23	46.0	0.26	52.0	12.2	30	42 - 120
DIBENZO (A,H) ANTHRACENE	ND	0.5	0.46	92.0	0.52	104	12.2	30	53 - 118
BENZO (G,H,I) PERYLENE	ND	0.5	0.43	86.0	0.48	96.0	11.0	30	51 - 116
INDENO (1,2,3-CD) PYRENE	ND	0.5	0.52	104	0.48	96.0	8.00	30	60 - 116

Analyst: KA

Sequence Date: 05/26/97

Method Blank File ID:

Sample File ID:

Blank Spike File ID: 970526A\017-1701

Matrix Spike File ID:

Matrix Spike Duplicate File ID:

* = Values Outside QC Range. * = Data outside Method Specification limits.

NC = Not Calculated (Sample exceeds spike by factor of 4 or more)

ND = Not Detected/Below Detection Limit

% Recovery = $\left(\frac{<1> \quad <2>}{<3>} \right) \times 100$

Relative Percent Difference = $\left| \frac{<4> - <5>}{\left(\frac{<4> + <5>}{2} \right)} \right| \times 100$

(**) = Source: SPL Temporary Limits

SAMPLES IN BATCH(SPL ID):

9705A32-01A

RECEIVED JUN 17 1987

CHAIN OF CUSTODY
AND
SAMPLE RECEIPT CHECKLIST

100

Page _____ of _____

[illegible]

SPL Houston Environmental Laboratory

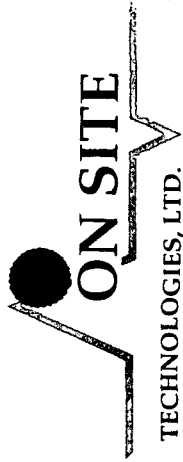
Sample Login Checklist

Date: 5/21/97	Time: 0900
------------------	---------------

SPL Sample ID: 9705A32

		Yes	No								
1	Chain-of-Custody (COC) form is present.	✓									
2	COC is properly completed.	✓									
3	If no, Non-Conformance Worksheet has been completed.										
4	Custody seals are present on the shipping container.	✓									
5	If yes, custody seals are intact.	✓									
6	All samples are tagged or labeled.	✓									
7	If no, Non-Conformance Worksheet has been completed.										
8	Sample containers arrived intact	✓									
9	Temperature of samples upon arrival:	4°C									
10	Method of sample delivery to SPL:	<table border="1"> <tr> <td>SPL Delivery</td> <td></td> </tr> <tr> <td>Client Delivery</td> <td></td> </tr> <tr> <td>FedEx Delivery (airbill #)</td> <td></td> </tr> <tr> <td>Other:</td> <td>UPS # 1Z66E5856110002209</td> </tr> </table>		SPL Delivery		Client Delivery		FedEx Delivery (airbill #)		Other:	UPS # 1Z66E5856110002209
SPL Delivery											
Client Delivery											
FedEx Delivery (airbill #)											
Other:	UPS # 1Z66E5856110002209										
11	Method of sample disposal:	<table border="1"> <tr> <td>SPL Disposal</td> <td>✓</td> </tr> <tr> <td>HOLD</td> <td></td> </tr> <tr> <td>Return to Client</td> <td></td> </tr> </table>		SPL Disposal	✓	HOLD		Return to Client			
SPL Disposal	✓										
HOLD											
Return to Client											

Name: S West	Date: 5/21/97
-----------------	------------------



CHAIN OF CUSTODY RECORD

555

Page 1 of 1

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

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	
Telephone No.:		Telephone No.:	
Telefax No.:		Telefax No.:	
Title:		Title:	
SEND INVOICE TO		RESULTS TO	
Sampling Location: Red 16 Dr. P		Number of Containers	
Sampler: <i>[Signature]</i>		Date/Time: 5/20/97 1330	
SAMPLE IDENTIFICATION		LAB ID	
9705201030 MW-2		14656-5555	
Date/Time: 5/20/97 1100		Date/Time: 5/20/97 1100	
Relinquished by: <i>[Signature]</i>		Received by: <i>[Signature]</i>	
Relinquished by:		Received by:	
Relinquished by:		Received by:	
Method of Shipment:		Special Instructions:	
Authorized by: <i>[Signature]</i>		Results to be sent to both parties.	

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: *5-Aug-97*
COC No.: *5568*
Sample No.: *15432*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Reid #16*
Project Location: *9707221100; MW-1*
Sampled by: *MG/MS* Date: *22-Jul-97* Time: *11:00*
Analyzed by: *DC* Date: *1-Aug-97*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	1.0	ug/L
<i>Toluene</i>	ND	ug/L	1.0	ug/L
<i>Ethylbenzene</i>	ND	ug/L	1.0	ug/L
<i>m,p-Xylene</i>	ND	ug/L	1.0	ug/L
<i>o-Xylene</i>	ND	ug/L	1.0	ug/L
<i>TOTAL</i>	ND	ug/L		

4-30

ND

0.4

ND

0.3

ND

0.7

ND - Not Detected at Limit of Quantitation

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

Approved By: *DC*

Date: *8/5/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY SERVING INDUSTRY WITH THE LATEST EQUIPMENT -

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: *5-Aug-97*
COC No.: *5568*
Sample No.: *15433*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Reid #16*
Project Location: *9707221130; MW-2*
Sampled by: *MG/MS* Date: *22-Jul-97* Time: *11:30*
Analyzed by: *DC* Date: *1-Aug-97*
Sample Matrix: *Liquid*

5-20

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	4	ug/L
<i>Toluene</i>	92	ug/L	4	ug/L
<i>Ethylbenzene</i>	55	ug/L	4	ug/L
<i>m,p-Xylene</i>	1082	ug/L	4	ug/L
<i>o-Xylene</i>	182	ug/L	4	ug/L
TOTAL	1411	ug/L		

Handwritten calculations to the left of the table:
Benzene 30
Toluene 137
Ethylbenzene 65
m,p-Xylene 1237
o-Xylene 231
1751

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *8/5/97*

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: *5-Aug-97*
COC No.: *5568*
Sample No.: *15434*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Reid #16*
Project Location: *9707221200; MW-3*
Sampled by: *MG/MS* Date: *22-Jul-97* Time: *12:00*
Analyzed by: *DC* Date: *1-Aug-97*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	1.0	ug/L
<i>Toluene</i>	ND	ug/L	1.0	ug/L
<i>Ethylbenzene</i>	ND	ug/L	1.0	ug/L
<i>m,p-Xylene</i>	ND	ug/L	1.0	ug/L
<i>o-Xylene</i>	ND	ug/L	1.0	ug/L
<i>TOTAL</i>	ND	ug/L		

4-30
ND
0.2
ND
ND
ND
ND
0.2

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *8/5/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- Technical Services Division -

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: *5-Aug-97*
COC No.: *5568*
Sample No.: *15435*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Reid #16*
Project Location: *9707221230; MW-4*
Sampled by: *MG/MS* Date: *22-Jul-97* Time: *12:30*
Analyzed by: *DC* Date: *1-Aug-97*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	1.0	ug/L
<i>Toluene</i>	ND	ug/L	1.0	ug/L
<i>Ethylbenzene</i>	ND	ug/L	1.0	ug/L
<i>m,p-Xylene</i>	ND	ug/L	1.0	ug/L
<i>o-Xylene</i>	ND	ug/L	1.0	ug/L
<i>TOTAL</i>	ND	ug/L		

ND
0.5
ND
0.4
0.9
1.3

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *8/5/97*

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- 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: *5-Aug-97*
COC No.: *5568*
Sample No.: *15436*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Reid #16*
Project Location: *9707221300; MW-5*
Sampled by: *MG/MS* Date: *22-Jul-97* Time: *13:00*
Analyzed by: *DC* Date: *1-Aug-97*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	4	ug/L
<i>Toluene</i>	99	ug/L	4	ug/L
<i>Ethylbenzene</i>	52	ug/L	4	ug/L
<i>m,p-Xylene</i>	1062	ug/L	4	ug/L
<i>o-Xylene</i>	182	ug/L	4	ug/L
<i>TOTAL</i>	1396	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *8/5/97*

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- TECHNOLOGY SERVING INDUSTRY AND 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: *5-Aug-97*
COC No.: *5568*
Sample No.: *15437*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Reid #16*
Project Location: *Trip Blank*
Sampled by: *MG/MS* Date: *22-Jul-97* Time: *9:25*
Analyzed by: *DC* Date: *1-Aug-97*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	1.0	ug/L
<i>Toluene</i>	ND	ug/L	1.0	ug/L
<i>Ethylbenzene</i>	ND	ug/L	1.0	ug/L
<i>m,p-Xylene</i>	ND	ug/L	1.0	ug/L
<i>o-Xylene</i>	ND	ug/L	1.0	ug/L
<i>TOTAL</i>	ND	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *8/5/97*

OFF: (505) 325-5667



LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 1-Aug-97

Internal QC No.: 0527-STD

Surrogate QC No.: 0528-STD

Reference Standard QC No.: 0529/30-QC

Method Blank

Parameter	Result	Unit of Measure
Average Amount of All Analytes In Blank	< 1.0	ppb

Calibration Check

Parameter	Unit of Measure	True Value	Analyzed Value	RPD	Limit
Benzene	ppb	20.0	19.2	4	15%
Toluene	ppb	20.0	20.4	2	15%
Ethylbenzene	ppb	20.0	20.2	1	15%
m,p-Xylene	ppb	40.0	38.7	3	15%
o-Xylene	ppb	20.0	20.5	3	15%

Matrix Spike

Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	RPD	Limit
Benzene	89	88	(39-150)	1	20%
Toluene	95	95	(46-148)	1	20%
Ethylbenzene	95	94	(32-160)	1	20%
m,p-Xylene	89	87	(35-145)	1	20%
o-Xylene	93	93	(35-145)	0	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
15437-5568	95				
15432-5568	95				
15433-5568	101				
15434-5568	95				
15435-5568	93			JK	(re)
15436-5568	102			8/5/97	8/5/97

S1: Fluorobenzene

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -



CHAIN OF CUSTODY RECORD

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Date: 7-22-97 Page 1 of 1

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

Purchase Order No.:		Job No.		
Name	Denver Bearden			
Company	PNM Gas Services	Dept.	324-3763	
Address	603 W. Elm Street			
City, State, Zip	Farmington, NM 87401			
Sampling Location: <i>Raid #16</i>				
Sampler: <i>Maureen Gannon / MSkelley</i>				
SEND TO	SAMPLE IDENTIFICATION	SAMPLE		PRES.
		DATE	TIME	
9707221100	MW1			
9707221130	MW2			
9707221200	MW3			
9707221230	MW4			
9707221300	MW5			
TRIP BLANK				
REPORT TO		RESULTS TO		
Name: Maureen Gannon		Title:		
Company: PNM Gas Services				
Mailing Address: Alverado Square, Mail Stop 0408				
City, State, Zip: Albuquerque, NM 87158				
Telephone No.: 505-848-2974		Telefax No.:		
ANALYSIS REQUESTED				
Number of Containers		LAB ID		
2		15432-5368		
2		15433		
2		15434		
2		15435		
2		15436		
1		15437		
Received by:		Date/Time: 7/22/97 1523		
Received by:		Date/Time:		
Received by:		Date/Time:		
Rush		10 Working Days		
24-48 Hours		Special Instructions:		
Results to be sent to both parties.				
Relinquished by: <i>Maureen</i>		Date/Time: 7/22/97 1523		
Relinquished by:		Date/Time:		
Relinquished by:		Date/Time:		
Method of Shipment:				
Authorized by: _____		Date: _____		
(Client Signature Must Accompany Request)				

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: *30-Oct-97*
COC No.: *5850*
Sample No.: *16648*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Reid 16 Drip*

Project Location: *9710221000; MW-1*

Sampled by: *MS* Date: *22-Oct-97* Time: *10:00*

Analyzed by: *DC* Date: *23-Oct-97*

Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	ND	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	ND	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	ND	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *10/30/97*

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— PNM GAS SERVICES, A DIVISION OF PNM UTILITIES —

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: *30-Oct-97*
COC No.: *5850*
Sample No.: *16649*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Reid 16 Drip*

Project Location: *9710221030; MW-2*

Sampled by: *MS* Date: *22-Oct-97* Time: *10:30*

Analyzed by: *DC* Date: *23-Oct-97*

Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>22</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>161</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>48</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>1242</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>276</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>1748</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *10/30/97*

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ANALYTICAL REPORT

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

Date: *30-Oct-97*
COC No.: *5850*
Sample No.: *16650*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Reid 16 Drip*
Project Location: *9710221100; MW-3*
Sampled by: *MS* Date: *22-Oct-97* Time: *11:00*
Analyzed by: *DC* Date: *23-Oct-97*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	ND	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	ND	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	ND	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *Jac*
Date: *10/30/97*

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LAB: (505) 325-1556

ANALYTICAL REPORT

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

Date: *30-Oct-97*
COC No.: *5850*
Sample No.: *16651*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Reid 16 Drip*

Project Location: *9710221130; MW-4*

Sampled by: *MS* Date: *22-Oct-97* Time: *11:30*

Analyzed by: *DC* Date: *23-Oct-97*

Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	ND	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	ND	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	ND	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *10/30/97*

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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: *30-Oct-97*
COC No.: *5850*
Sample No.: *16652*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Reid 16 Drip*

Project Location: *9710221200; MW-5*

Sampled by: *MS* Date: *22-Oct-97* Time: *12:00*

Analyzed by: *DC* Date: *23-Oct-97*

Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	ND	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	ND	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	ND	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *Jag*
Date: *10/30/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

Technical Report prepared by the Environmental

OFF: (505) 325-5667



LAB: (505) 325-1556

QUALITY ASSURANCE REPORT
for EPA Method 8020

Date Analyzed: 23-Oct-97

Internal QC No.: 0559-STD

Surrogate QC No.: 0556-STD

Reference Standard QC No.: 0529/30-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	RPD	Limit
Benzene	ppb	20.0	19.6	2	15%
Toluene	ppb	20.0	20.0	0	15%
Ethylbenzene	ppb	20.0	20.1	1	15%
m,p-Xylene	ppb	40.0	38.6	4	15%
o-Xylene	ppb	20.0	20.1	0	15%

Matrix Spike

Parameter	1- Percent Recovered	2- Percent Recovered	Limit	RPD	Limit
Benzene	88	83	(39-150)	5	20%
Toluene	93	86	(46-148)	5	20%
Ethylbenzene	96	90	(32-160)	5	20%
m,p-Xylene	96	83	(35-145)	5	20%
o-Xylene	92	85	(35-145)	5	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
16648-5850	96				
16649-5850	94				
16650-5850	96				
16651-5850	96				
16652-5850	96				
				11/3/97	10/30/97

S1: Fluorobenzene

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[illegible]

Distribution: White – On Site	Yellow – LAB	Pink – Sampler	Goldenrod – Client
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OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

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

Date: *2-Feb-98*
COC No.: *7135*
Sample No.: *17389*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Reid 16 Drip*
Project Location: *9801211021; MW-1*
Sampled by: *RD* Date: *21-Jan-98* Time: *10:21*
Analyzed by: *DC* Date: *27-Jan-98*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	ND	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	ND	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	ND	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *2/2/98*

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LAB: (505) 325-1556

ANALYTICAL REPORT

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

Date: *2-Feb-98*
COC No.: *7135*
Sample No.: *17390*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Reid 16 Drip*
Project Location: *9801211048; MW-2*
Sampled by: *RD* Date: *21-Jan-98* Time: *10:48*
Analyzed by: *DC* Date: *28-Jan-98*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>13</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>22</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>41</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>1476</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>188</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>1741</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *2/2/98*

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LAB: (505) 325-1556

ANALYTICAL REPORT

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

Date: *2-Feb-98*
COC No.: *7135*
Sample No.: *17391*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Reid 16 Drip*
Project Location: *9801211113; MW-3*
Sampled by: *RD* Date: *21-Jan-98* Time: *11:13*
Analyzed by: *DC* Date: *27-Jan-98*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	0.3	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	0.3	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	0.7	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *2/2/98*

OFF: (505) 325-5667

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TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

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

Date: *2-Feb-98*
COC No.: *7135*
Sample No.: *17392*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Reid 16 Drip*
Project Location: *9801211133; MW-4*
Sampled by: *RD* Date: *21-Jan-98* Time: *11:33*
Analyzed by: *DC* Date: *27-Jan-98*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	1.1	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	1.4	ug/L	0.2	ug/L
<i>o-Xylene</i>	0.4	ug/L	0.2	ug/L
<i>TOTAL</i>	3.0	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *2/2/98*

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LAB: (505) 325-1556

ANALYTICAL REPORT

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

Date: *2-Feb-98*
COC No.: *7135*
Sample No.: *17393*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Reid 16 Drip*
Project Location: *9801211153; MW-5*
Sampled by: *RD* Date: *21-Jan-98* Time: *11:53*
Analyzed by: *DC* Date: *28-Jan-98*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>14</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>29</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>35</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>1842</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>232</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>2153</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *2/2/98*

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