

3R - 342

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 1 1998
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

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

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

Operator: Burlington Resources
Sec: 32 Twn: 30N Rng: 12W Unit: G
Canyon: Animas River

Vulnerable Class: Original
OCD Ranking: 60
Lead Agency: NMOCD

Topo Map: previously submitted

Well Completion Diagram: Figure 1

Site Map with Analytical Results: Figure 2

Groundwater Contour Map: Figure 3 (June 1997), Figure 4 (September 1997), Figure 5 (December 1997) & Figure 6 (March 1998)

Hydrograph: Figure 7

Full suite-Groundwater Sampling Results: Table 1

Analytical Results: attached

Activities for Previous Year:

PNM installed five groundwater monitoring wells at the Sammons 2 well site on May 15, 1997. Figure 1 provides a typical groundwater monitoring well diagram for each well installation. On June 25, September 26 and December 23, 1997 and again on March 4, 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 September 17, 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 2 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 June 25, 1997 sampling event. Since monitoring began four quarters ago, all five wells have shown BTEX concentrations below WQCC standards. Water quality analysis of MW-1 and -2 revealed elevated sulfate concentrations at the site. Metals in either well were below WQCC standards.

Figure(s) 3, 4, 5 and 6 provide groundwater contour maps for the months of June, September and December 1997 and March 1998, respectively. In June and September, the groundwater flow was southwesterly in direction beneath the site. In December and March, the groundwater direction shifted to the west. Figure 7 shows the historical groundwater elevations at the site. The groundwater gradient and elevations are strongly influenced by the Animas River which runs along the northern border of the site. With the exception of September 1997, groundwater levels, in general, have risen over the last four quarters. The drop in elevation in MW-3, -4, and -5 in September is probably due to a decrease in the water level of the Animas River during that time.

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

Further Action:

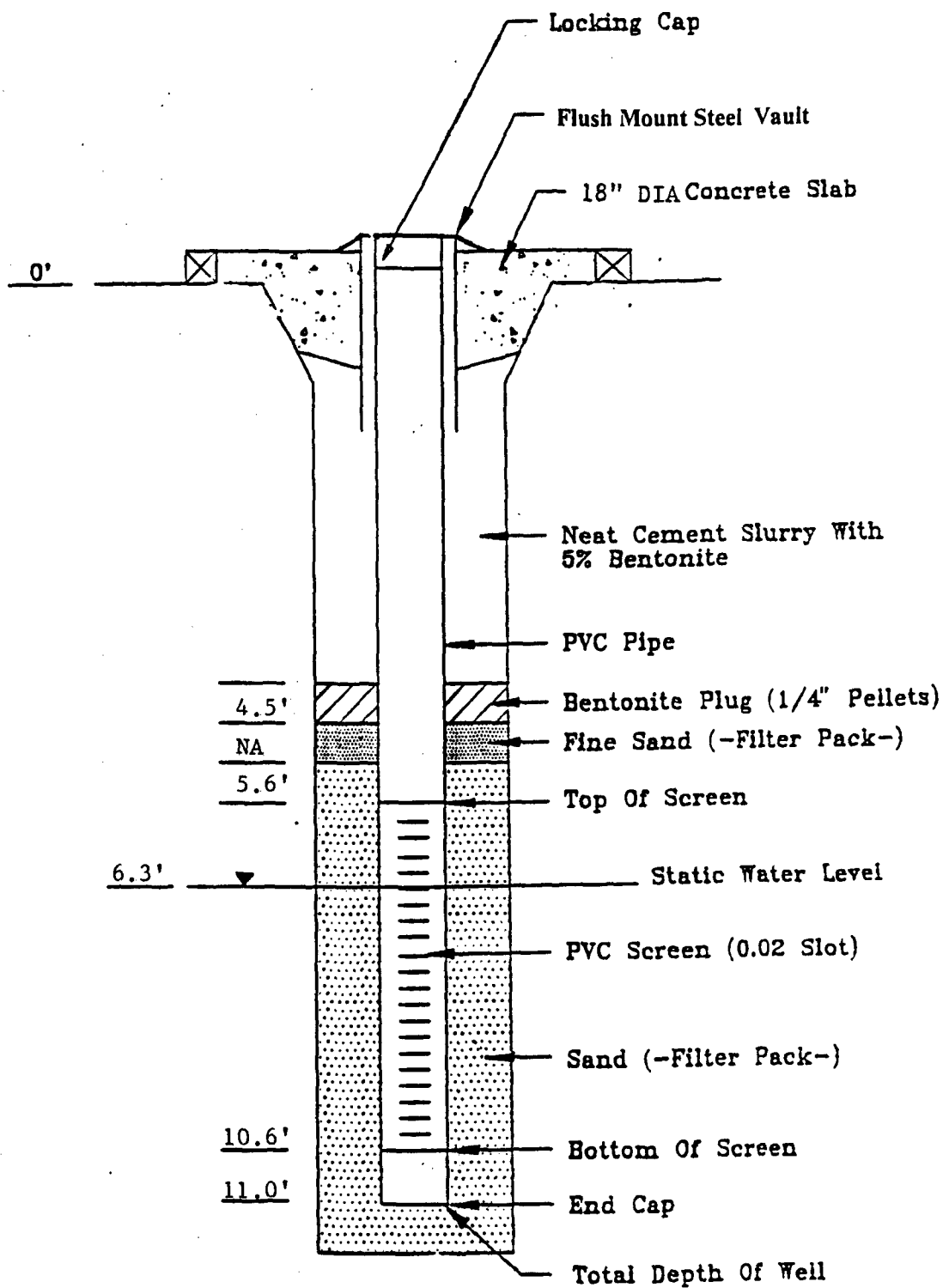
Consistent with PNM's San Juan Basin Groundwater Management Plan, PNM will request closure of the Sammons 2 groundwater site in our April 30, 1998 filing of San Juan Basin Pit Closure Reports to the OCD Santa Fe office. BTEX concentrations in all wells surrounding our former pit have been consistently below WQCC standards for four calendar quarters.

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



CLIENT: PNM	
DATE:	REV. NO.: 0
AUTHOR: M.D.G.	DRAWN BY: M.P.
CK'D BY: M.D.G.	FILE: DWG

Sammons 2

Figure 1
Well Completion Diagram

Figure 2. Sammons 2 Map & Analytical Results
(Concentrations in ppb)
 ← Animas River

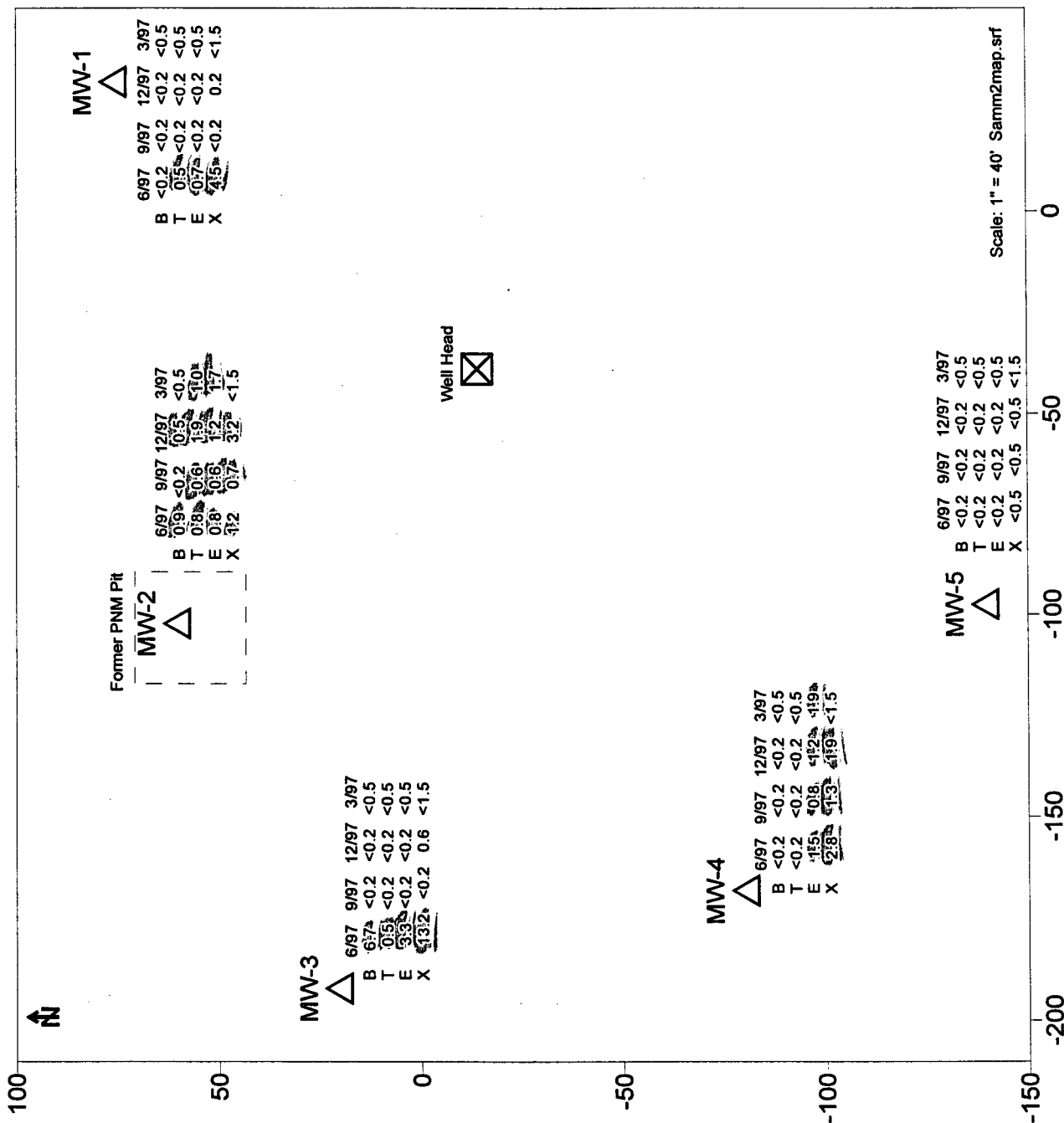


Figure 3. Sammons 2 Site Groundwater Map (June 25, 1997)

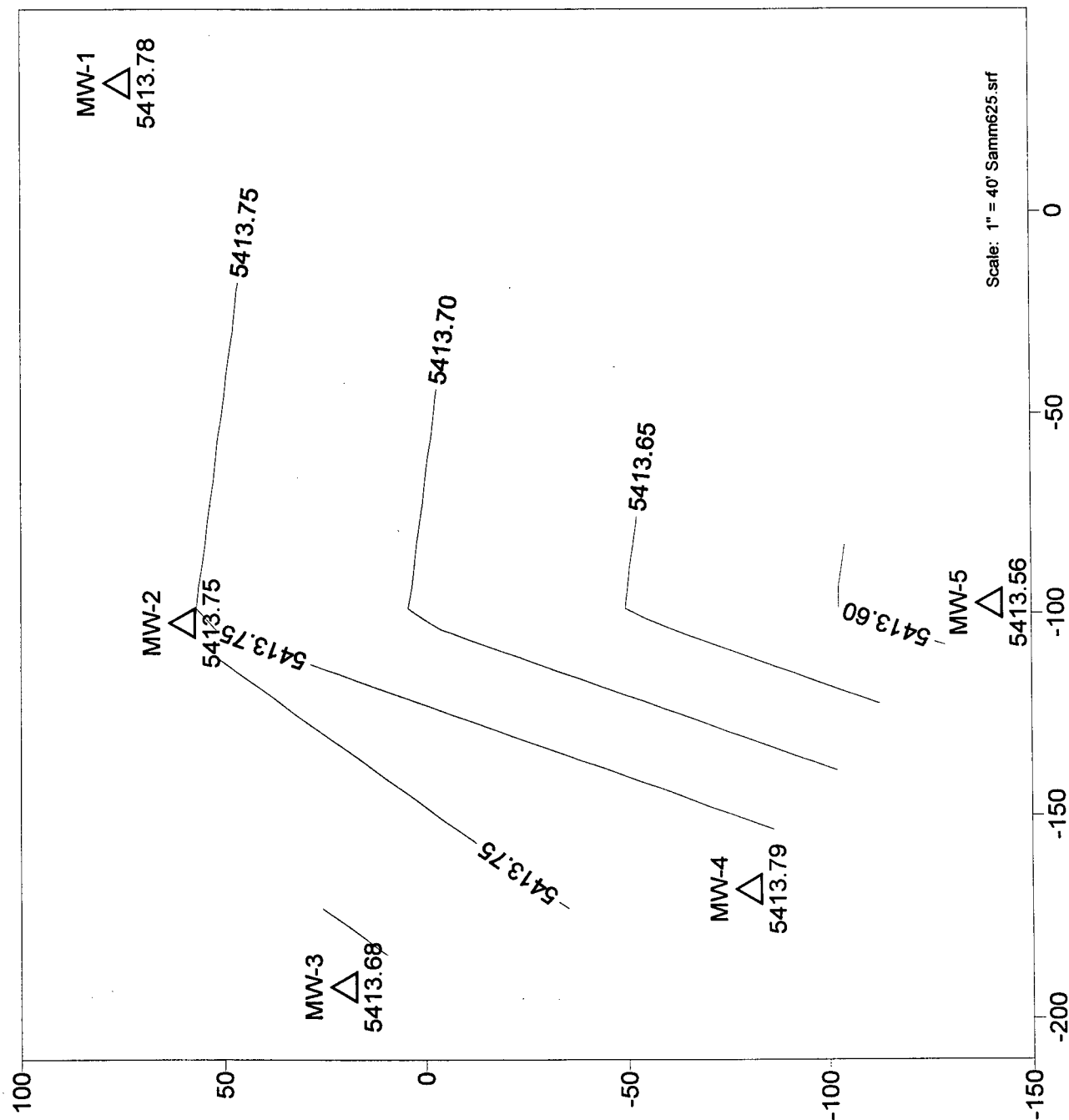


Figure 4. Sammons 2 Site Groundwater Map (September 26, 1997)

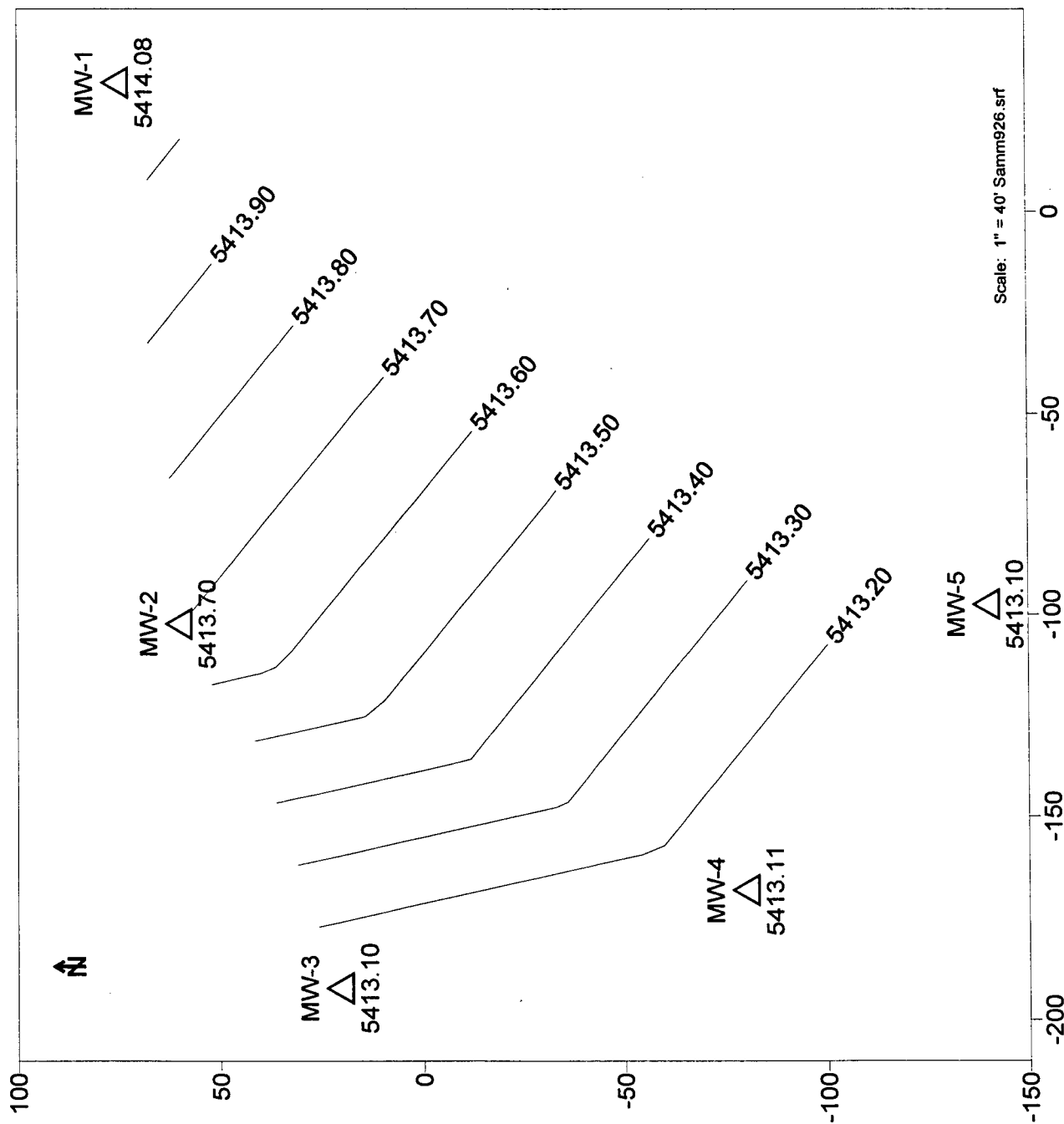


Figure 5. Sammons 2 Site Groundwater Map (December 23, 1997)

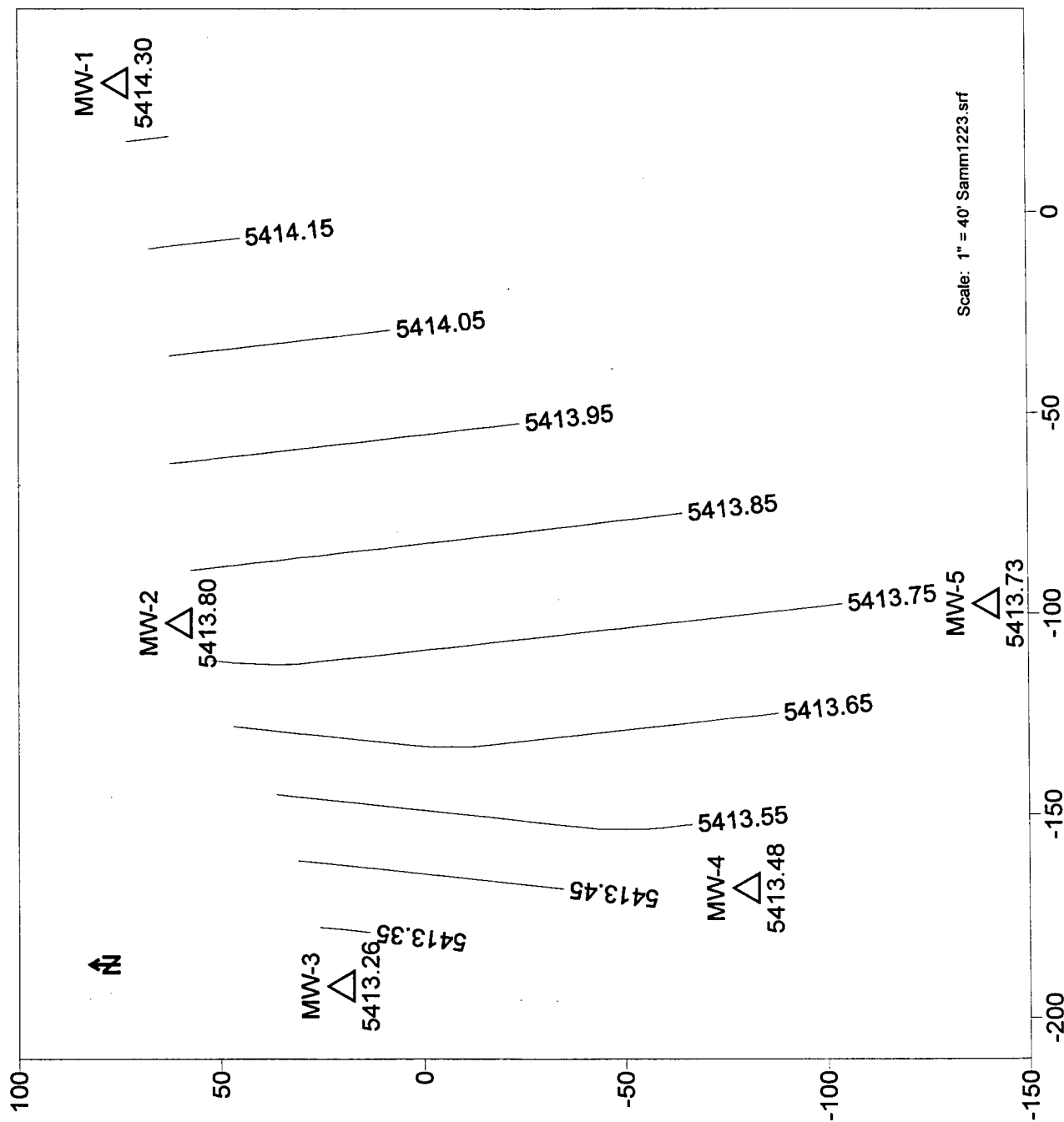


Figure 6. Sammons 2 Site Groundwater Map (March 4, 1998)

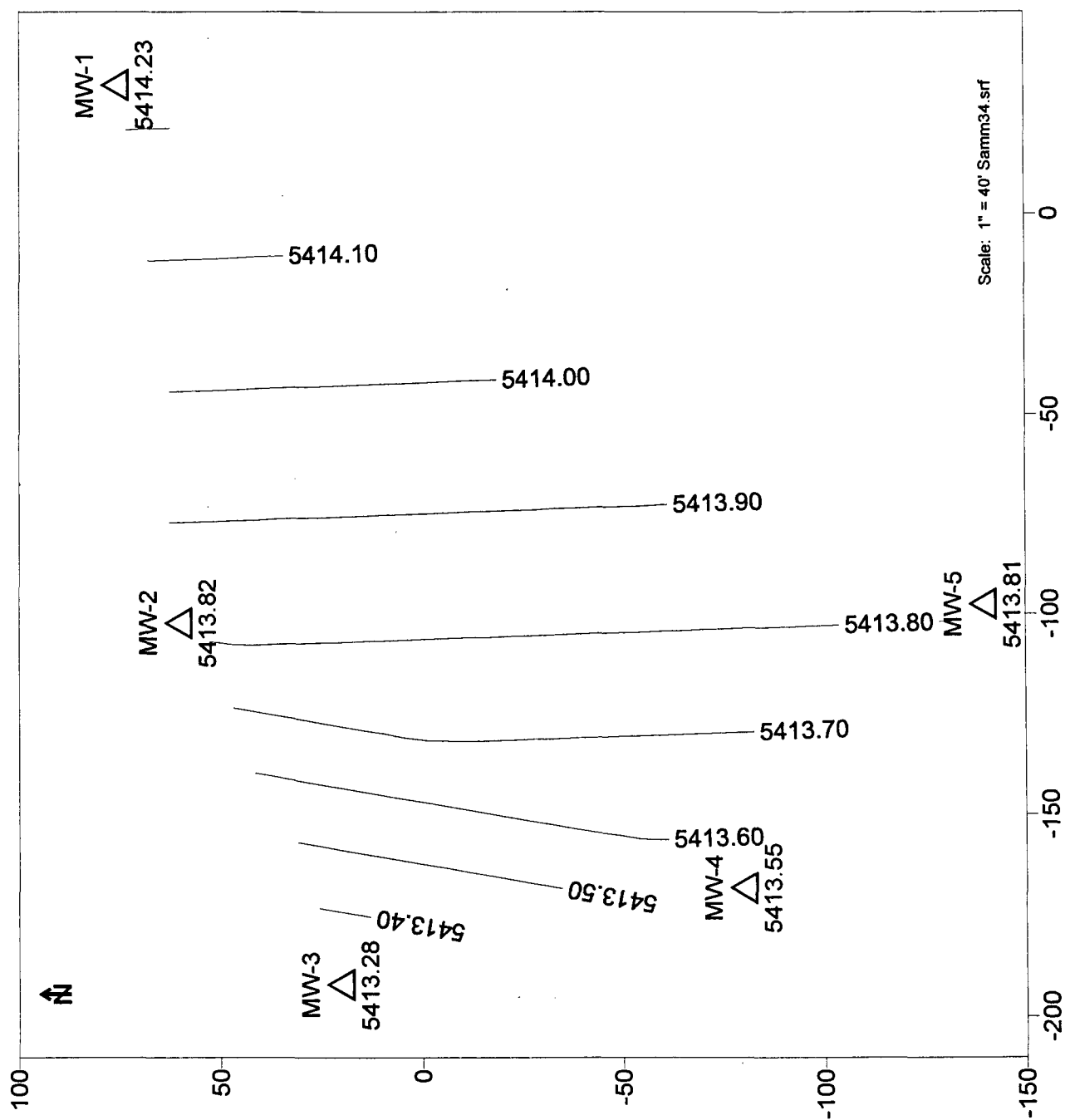


Figure 7. Sammon 2 Hydrograph

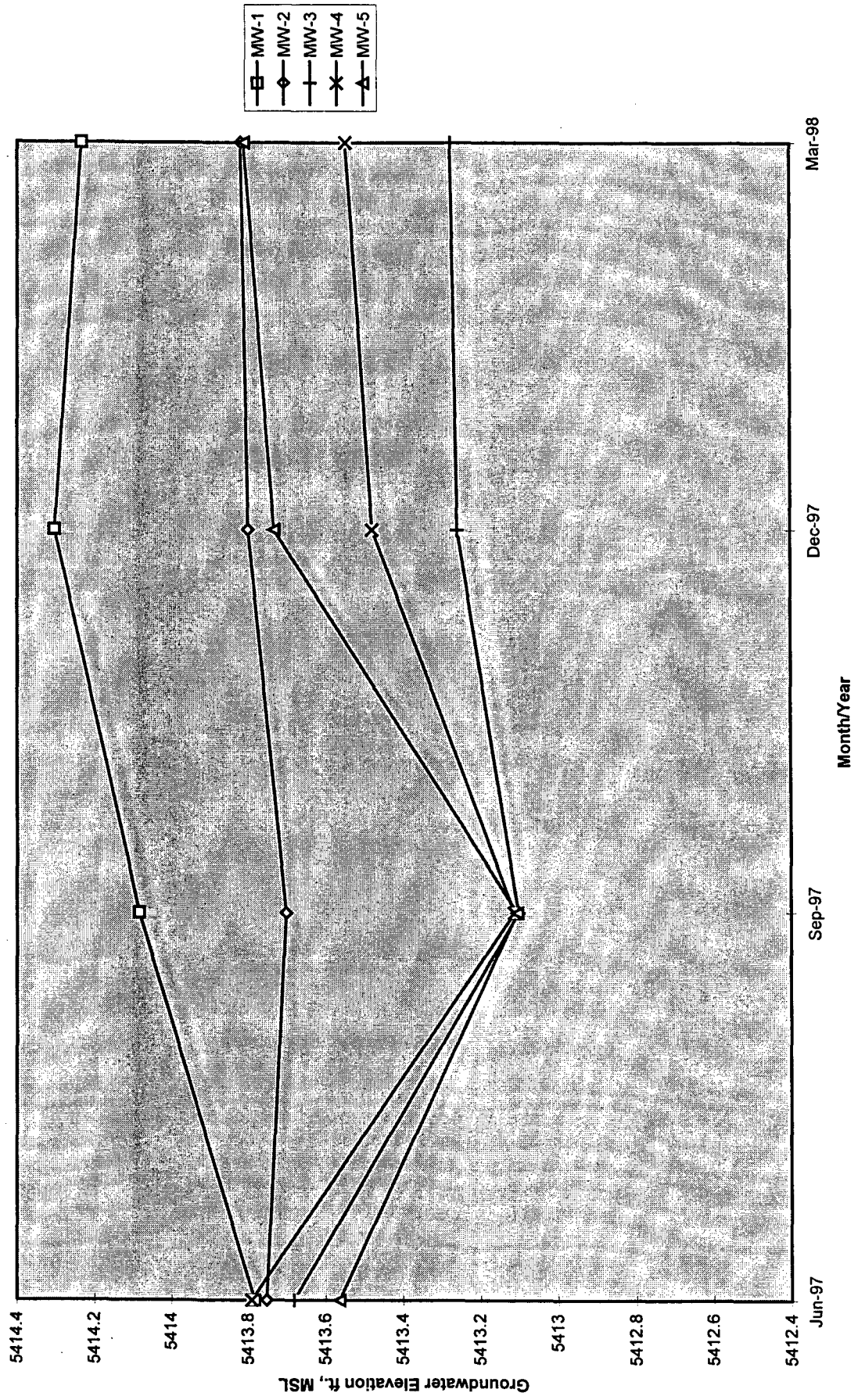


Table 1. SAMMONS 2 GROUNDWATER SAMPLING RESULTS, mg/l (6/25/97)

Constituent	WQCC Stds.	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6 (MW- 3 duplicate)
B	0.01	<0.0002	0:0009	0:0067	<0.0002	<0.0002	0.0066
T	0.75	0:0005	0:0008	0:0005	<0.0002	<0.0002	0.0005
E	0.75	0:0007	0:0008	0:0033	0.0015	<0.0002	0.0030
X	0.62	0:0045	0:0012	0.0132	0.0028	0.0002	0.0120
PAHs	0.03	NA	NA	NA	NA	NA	NA
Metals							
As	0.1	<0.030	<0.030	NA	NA	NA	NA
Ba	1	0.120	0.154	NA	NA	NA	NA
Cd	0.01	<0.004	<0.004	NA	NA	NA	NA
Cr	0.05	<0.010	<0.010	NA	NA	NA	NA
Pb	0.05	<0.040	<0.040	NA	NA	NA	NA
Se	0.05	<0.006	<0.006	NA	NA	NA	NA
Ag	0.05	<0.006	<0.006	NA	NA	NA	NA
Hg	0.002	<0.0001	<0.0001	NA	NA	NA	NA
Cations/Anions							
Na	NA	812	365	NA	NA	NA	NA
Ca	NA	440	450	NA	NA	NA	NA
Mg	NA	125	46.2	NA	NA	NA	NA
K	NA	10.9	15.1	NA	NA	NA	NA
Cl	NA	303	94.5	NA	NA	NA	NA
SO4	NA	2681	1558	NA	NA	NA	NA
CO3	NA	<1	<1	NA	NA	NA	NA
HCO3	NA	751	823	NA	NA	NA	NA
OH	NA	<1	<1	NA	NA	NA	NA
Cation/Anion Balance							
Difference Cation- Anion	NA	8.83	6.07	NA	NA	NA	NA
Total Cation-Anion	NA	144.51	91.11	NA	NA	NA	NA
% Difference	NA	6.1	6.7	NA	NA	NA	NA
TDS, calc	NA	5123	3352	NA	NA	NA	NA
TDS, meas	NA	5164	3246	NA	NA	NA	NA
Hardness as CaCO3	NA	1613	1314	NA	NA	NA	NA

NA: Not Applicable

BDL: Below Detection Limit

NS: Not Sampled

** Out of Acceptable Range, % Diff. +/-5

P Free Product

s:\gaspits\samnstb.doc

OFF: (505) 325-5667



LAB: (505) 325-1556

24 July 1997

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

Reference:

Project Name: Sammons 2
Project Loc.: MW-1, MW-2, MW-3, MW-4, MW-5, MW-6
On Site ID: COC Record No.5567

Dear Denver,

Enclosed please find the analytical results for your project referenced above. This includes the parameters sub-contracted to Mountain States Analytical for dissolved metals.

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,

A handwritten signature in dark ink, appearing to read "D Cox", is written over the typed name.

On Site Technologies, Ltd.
David Cox
Laboratory Manager

cc: Maureen Gannon, PNM Gas Services

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: *13-Jul-97*
COC No.: *5567*
Sample No.: *15120*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Sammons 2*
Project Location: *9706251600; MW-1*
Sampled by: *MS/MG/BK* Date: *25-Jun-97* Time: *16:00*
Analyzed by: *DC* Date: *7-Jul-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>	0.5	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	0.7	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	4.1	ug/L	0.2	ug/L
<i>o-Xylene</i>	0.4	ug/L	0.2	ug/L
<i>TOTAL</i>	5.7	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *DAG*
Date: *7/14/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

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

Date: *13-Jul-97*
COC No.: *5567*
Sample No.: *15121*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Sammons 2*
Project Location: *9706251630; MW-2*
Sampled by: *MS/MG/BK*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *25-Jun-97* Time: *16:30*
Date: *7-Jul-97*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>0.9</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>0.8</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>0.8</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>0.9</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>0.3</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>3.7</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: *DC*
Date: *7/14/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

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: *13-Jul-97*
COC No.: *5567*
Sample No.: *15122*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Sammons 2*
Project Location: *9706251700; MW-3*
Sampled by: *MS/MG/BK*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *25-Jun-97* Time: *17:00*
Date: *7-Jul-97*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>6.7</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>0.5</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>3.3</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>12.8</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>0.4</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>23.7</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: *7/14/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- PIONEER IN BLENDING INNOVATION 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: *13-Jul-97*
COC No.: *5567*
Sample No.: *15123*
Job No.: *2-1000*

Project Name: ***PNM Gas Services - Sammons 2***
Project Location: ***9706251730; MW-4***
Sampled by: *MS/MG/BK* Date: *25-Jun-97* Time: *17:30*
Analyzed by: *DC* Date: *7-Jul-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>	1.5	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	2.1	ug/L	0.2	ug/L
<i>o-Xylene</i>	0.7	ug/L	0.2	ug/L
<i>TOTAL</i>	4.3	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *DC*

Date: *7/14/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

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

Date: *13-Jul-97*
COC No.: *5567*
Sample No.: *15124*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Sammons 2*
Project Location: *9706251800; MW-5*
Sampled by: *MS/MG/BK*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *25-Jun-97* Time: *18:00*
Date: *7-Jul-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>	ND	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	0.2	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: *7/14/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TESTING OF BLENDING PROPERTY 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: *13-Jul-97*
COC No.: *5567*
Sample No.: *15125*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Sammons 2*
Project Location: *9706251830; MW-6*
Sampled by: *MS/MG/BK*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *25-Jun-97* Time: *18:30*
Date: *7-Jul-97*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>6.6</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>0.5</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>3.0</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>11.6</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>0.4</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>22.0</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: *Jac*

Date: *7/14/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

QUALITY ASSURANCE REPORT*for EPA Method 8020*

Date Analyzed: 7-Jul-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	19.8	1	15%
Toluene	ppb	20.0	20.2	1	15%
Ethylbenzene	ppb	20.0	20.4	2	15%
m,p-Xylene	ppb	40.0	39.5	1	15%
o-Xylene	ppb	20.0	20.3	2	15%

Matrix Spike

Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	102	91	(39-150)	5	20%
Toluene	91	84	(46-148)	4	20%
Ethylbenzene	100	92	(32-160)	5	20%
m,p-Xylene	99	91	(35-145)	5	20%
o-Xylene	100	94	(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)	
15120-5567	93				
15121-5567	92				
15122-5567	92				
15123-5567	91				
15124-5567	92				
15125-5567	93				(92) 7/14/97

S1: Fluorobenzene

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNICAL SERVING 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: *21-Jul-97*
 COC No.: *5567*
 Sample ID.: *15120*
 Job No.: *2-1000*

Project Name: ***PNM Gas Services - Sammons 2***Project Location: ***9706251600; MW-1***Sampled by: ***MS/MG/BK***Date: *25-Jun-97* Time: *16:00*Analyzed by: ***HR***Date: *7-Jul-97***Laboratory Analysis**

Parameter	Results as Received	Unit of Measure		Results as Received	Unit of Measure	
<i>Cations</i>						
Sodium <i>Na</i>	812	mg/L		35.32	me/L	
Calcium <i>Ca</i>	440	mg/L		21.96	me/L	
Magnesium <i>Mg</i>	125	mg/L		10.29	me/L	
Potassium <i>K</i>	10.9	mg/L		0.28	me/L	
<i>Anions</i>						
Chloride <i>Cl</i>	303	mg/L		8.55	me/L	
Sulfate <i>SO4</i>	2681	mg/L		55.82	me/L	
Carbonate <i>CO3 as CaCO3</i>	< 1	mg/L		< 0.01	me/L	
Bicarbonate <i>HCO3 as CaCO3</i>	751	mg/L		12.31	me/L	
Hydroxide <i>OH as CaCO3</i>	< 1	mg/L		< 0.01	me/L	
Total Dissolved Solids			Cation-Anion Balance 8.83 Difference Cation-Anion, me/L 144.51 Total Cation-Anion, me/L 6.1 % Difference Cation-Anion Comments			
Calculated, Sum of Cation/Anion	5123	mg/L				
Total Dissolved Solids						
Dried @ 180 C	5164	mg/L				
pH	7.23					
Conductivity @ 25 C	5730	uS/cm				
Total Hardness as CaCO3	1613	mg/L				

Approved by: *Cal*Date: *7/21/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- FARMINGTON, NM 87401 - (505) 325-5667

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: *21-Jul-97*
 COC No.: *5567*
 Sample ID.: *15121*
 Job No.: *2-1000*

Project Name: ***PNM Gas Services - Sammons 2***
 Project Location: ***9706251630; MW-2***

Sampled by: *MS/MG/BK* Date: *25-Jun-97* Time: *16:30*
 Analyzed by: *HR* Date: *7-Jul-97*

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Results as Received	Unit of Measure
Cations				
Sodium <i>Na</i>	365	mg/L	15.88	me/L
Calcium <i>Ca</i>	450	mg/L	22.46	me/L
Magnesium <i>Mg</i>	46.2	mg/L	3.80	me/L
Potassium <i>K</i>	15.1	mg/L	0.39	me/L
Anions				
Chloride <i>Cl</i>	94.5	mg/L	2.67	me/L
Sulfate <i>SO4</i>	1558	mg/L	32.44	me/L
Carbonate <i>CO3 as CaCO3</i>	< 1	mg/L	< 0.01	me/L
Bicarbonate <i>HCO3 as CaCO3</i>	823	mg/L	13.49	me/L
Hydroxide <i>OH as CaCO3</i>	< 1	mg/L	< 0.01	me/L
Total Dissolved Solids				
Calculated, Sum of Cation/Anion	3352	mg/L	Cation-Anion Balance 6.07 Difference Cation-Anion, me/L 91.11 Total Cation-Anion, me/L 6.7 % Difference Cation-Anion	
Total Dissolved Solids				
Dried @ 180 C	3246	mg/L		
pH	7.12			
Conductivity @ 25 C	3650	uS/cm	Comments	
Total Hardness as CaCO3	1314	mg/L		

Approved by: *[Signature]*
 Date: *7/21/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- FINDING A WAY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

QUALITY ASSURANCE REPORT*Cation-Anion Balance*

Date: 7-Jul-97

Quality Control Sample

<i>Parameter</i>	<i>Laboratory Identification</i>	<i>True Value</i>	<i>Analyzed Value</i>	<i>Unit of Measure</i>	<i>% Diff</i>	<i>Limit % Diff</i>
Sodium, Na	0451-QC	2.32	2.36	mg/L	2	10
Calcium, Ca	0465-QC	2.18	2.16	mg/L	-1	10
Magnesium, Mg	0465-QC	2.86	3.00	mg/L	5	10
Potassium, K	0451-QC	1.33	1.30	mg/L	-2	10
Chloride, Cl	0437-QC	150	147	mg/L	-2	10
Sulfate, SO ₄	0541-QC	78	79	mg/L	2	10
Alkalinity	0541-QC	159	167	mg/L	5	10
pH	0541-QC	9.13	9.13		0	10
Conductivity	0541-QC	740	733	uS/cm	-1	15
Total Dissolved Solids, 180C	0541-QC	642	620	uS/cm	-3	15

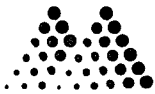
Matrix Spike

<i>Parameter</i>	<i>Laboratory Identification</i>	<i>Analyzed Value</i>	<i>Matrix Spike</i>	<i>Spike Value</i>	<i>Unit of Measure</i>	<i>Spike Recovery</i>
Sodium, Na	15121-5567	1.46	0.50	2.02	mg/L	103%
Calcium, Ca	15120-5567	0.88	0.50	1.48	mg/L	107%
Magnesium, Mg	15121-5567	0.92	0.50	1.50	mg/L	106%
Potassium, K	15121-5567	0.76	0.50	1.30	mg/L	103%

Method Blank

<i>Parameter</i>	<i>Laboratory Identification</i>	<i>Analyzed Value</i>	<i>Unit of Measure</i>
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, SO ₄	LF-Blank	< 1	mg/L
Conductivity	LF-Blank	< 2	uS/cm

7/21/97



Mountain States Analytical, Inc.

July 16, 1997

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

Reference:

Project: Sammons 2
MSAI Group: 16924

Dear Mr. Cox:

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

15120-5567 Dissolved

15121-5567 Dissolved

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.

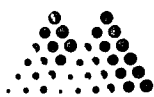
Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Rolf E. Larsen
Project Manager

RECEIVED JUL 21 1997



Mountain States Analytical, Inc.

The Quality Solution

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

Attn: Mr. David Cox
Project: Sammons 2

Sample ID: 15120-5567 Dissolved 9706251602 MW-1
Matrix: Waste Water

MSAI Sample: 65259
MSAI Group: 16924
Date Reported: 07/16/97
Discard Date: 08/15/97
Date Submitted: 07/01/97
Date Sampled: 06/25/97
Collected by:
Purchase Order: 5567
Project No.:

Test Analysis	Results as Received	Units	Method Detection Limit
0259B Mercury by CVAA, w/ww, 7470 Method: SW-846 7470	ND	mg/l	0.0001
0392I Flame/ICP Prep, w/ww, 3005A Method: SW-846 3005A	Completed		
0392M Mercury Prep CVAA, w/ww, 7470 Method: SW-846 7470	Complete		
1 Prep for HAA, w/ww, 7062/7742 Method: SW-846 7062/7742	Complete		
1451 Selenium by HAA, w/ww, 7742 Method: SW-846 7742	ND	mg/l	0.006
7245 Arsenic by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.030
7246 Barium by ICP, w/ww, 6010A Method: SW-846 6010A	0.120	mg/l	0.003
7249 Cadmium by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.004
7251 Chromium by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.010
7255 Lead by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.040
7266 Silver by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.006



Mountain States Analytical, Inc.

On Site Technologies, Ltd.

The Quality Solution

Page 2

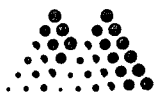
Sample ID: 15120-5567 Dissolved 9706251600 ml-1 (be)

MSAI Sample: 65259
MSAI Group: 16924

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

Respectfully Submitted,
Reviewed and Approved by:
Rolf E. Larsen
Project Manager

RECEIVED JUL 21 1997



Mountain States Analytical, Inc.

The Quality Solution

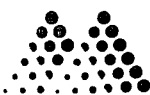
On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: Sammons 2

Sample ID: 15121-5567 Dissolved 9706251630 Mui-2
Matrix: Waste Water

MSAI Sample: 65260
MSAI Group: 16924
Date Reported: 07/16/97
Discard Date: 08/15/97
Date Submitted: 07/01/97
Date Sampled: 06/25/97
Collected by:
Purchase Order: 5567
Project No.:

Test Analysis	Results as Received	Units	Method Detection Limit
0259B Mercury by CVAA, w/ww, 7470 Method: SW-846 7470	0.0001	mg/l	0.0001
0392I Flame/ICP Prep, w/ww, 3005A Method: SW-846 3005A	Completed		
0392M Mercury Prep CVAA, w/ww, 7470 Method: SW-846 7470	Complete		
6001 Prep for HAA, w/ww, 7062/7742 Method: SW-846 7062/7742	Complete		
1451 Selenium by HAA, w/ww, 7742 Method: SW-846 7742	ND	mg/l	0.006
7245 Arsenic by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.030
7246 Barium by ICP, w/ww, 6010A Method: SW-846 6010A	0.154	mg/l	0.003
7249 Cadmium by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.004
7251 Chromium by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.010
7255 Lead by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.040
7266 Silver by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.006

**Mountain States Analytical, Inc.**

On Site Technologies, Ltd.

The Quality Solution

Page 2

MSAI Sample: 65260

MSAI Group: 16924

Sample ID: 15121-5567 Dissolved 9706251630 MW-2

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

Respectfully Submitted,
Reviewed and Approved by:Rolf E. Larsen
Project Manager

Analysis Batch Number: 0259B-07/07/97-107 -1

Identification : 0259B-Mercury by CVAA, w/ww, 7470

Sequence : 0259B-1

Number of Samples : 10

Batch Data-Date/Time : 07/08/97 / 16:25:59

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PBW1-359	Mercury	0.0100	0.1000

						QC LIMITS	
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	LOWER	UPPER
16955-65345	Mercury	1.0000	0.0400	1.0600	102.0	80.0	120.0

						QC LIMITS			
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	LOWER	UPPER	RPD #	LIMIT
16955-65345	Mercury	1.0000	0.0400	1.0500	101.0	80.0	120.0	1.0	20.0

DUPLICATE						
SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
16955-65345	Mercury	0.0400	0.0500	22.2(11)	20.0	1.00

					QC LIMITS	
SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	LOWER	UPPER
LCSW-359	Mercury	2.3500	2.5000	94.0	80.0	120.0

QC LIMITS						
CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER
1	Mercury	3.0000	3.1000	103.3	90.0	110.0
CCV--2	Mercury	5.0000	4.8300	96.6	80.0	120.0
CCV--3	Mercury	5.0000	4.7600	95.2	80.0	120.0
CCV--4	Mercury	5.0000	4.7200	94.4	80.0	120.0

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
ICB-	Mercury	-0.0500	0.1000
CCB-	Mercury	-0.0100	0.1000
CCB-	Mercury	0.0500	0.1000
CCB-	Mercury	-0.0400	0.1000

----- Result Footnotes -----

(11) - Both Duplicate results are less than the MDL.

Groups & Samples

16921-65239	16921-65240	16923-65258	16924-65259	16924-65260	16938-65303	16938-65304	16938-65305
16938-65306	16955-65345						

Analysis Batch Number: ICPWA-07/10/97-061 -3

Identification : ICPWA-Metals by ICP

Sequence : DATC191

Number of Samples : 7

Batch Data-Date/Time : 07/10/97 / 17:48:04

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PBW-348	Silver	0.0007	0.0060
	Barium	ND	0.0030
	Beryllium	ND	0.0002
	Calcium	0.0297	0.4000
	Cadmium	ND	0.0040
	Chromium	ND	0.0100
	Copper	ND	0.0100
	Iron	0.0041	0.2000
	Magnesium	0.0124	0.0500
	Molybdenum	0.0127	0.0300
	Nickel	ND	0.0300
	Lead	ND	0.0400
	Selenium	ND	0.0700
	Zinc	0.0040	0.0300

						QC LIMITS	
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	LOWER	UPPER
16939-65307	Silver	0.0500	-0.0028	0.0481	101.8	80.0	120.0
	Barium	2.0000	0.0384	1.9142	93.8	80.0	120.0
	Beryllium	0.0500	0.0000	0.0495	99.0	80.0	120.0
	Calcium	2.0000	86.3924	86.4119	1.0(2a)	80.0	120.0
	Cadmium	0.0500	-0.0020	0.0448	93.6	80.0	120.0
	Chromium	0.2000	-0.0027	0.1976	100.2	80.0	120.0
	Copper	0.2500	-0.0036	0.2394	97.2	80.0	120.0
	Iron	1.0000	0.0672	1.0533	98.6	80.0	120.0
	Magnesium	2.0000	61.7820	62.3159	26.7(2a)	80.0	120.0
	Molybdenum	0.5000	0.0188	0.5086	98.0	80.0	120.0
	Nickel	0.5000	0.0083	0.4915	96.6	80.0	120.0
	Lead	0.5000	0.0026	0.4837	96.2	80.0	120.0
	Selenium	2.0000	-0.0434	1.9466	99.5	80.0	120.0
	Zinc	0.5000	0.0100	0.5190	101.8	80.0	120.0

						QC LIMITS			
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	LOWER	UPPER	RPD #	LIMIT
16939-65307	Silver	0.0500	-0.0028	0.0503	106.2	80.0	120.0	4.2	20.0
	Barium	2.0000	0.0384	1.9193	94.0	80.0	120.0	0.2	20.0
	Beryllium	0.0500	0.0000	0.0498	99.6	80.0	120.0	0.6	20.0
	Calcium	2.0000	86.3924	88.5230	106.5	80.0	120.0	196.3(1a)	20.0
	Cadmium	0.0500	-0.0020	0.0455	95.0	80.0	120.0	1.5	20.0
	Chromium	0.2000	-0.0027	0.1971	99.9	80.0	120.0	0.3	20.0
	Copper	0.2500	-0.0036	0.2378	96.6	80.0	120.0	0.6	20.0
	Iron	1.0000	0.0672	1.1618	109.5	80.0	120.0	10.5	20.0
	Magnesium	2.0000	61.7820	63.4749	84.6	80.0	120.0	104.0(1a)	20.0
	Molybdenum	0.5000	0.0188	0.5141	99.1	80.0	120.0	1.1	20.0
	Nickel	0.5000	0.0083	0.4784	94.0	80.0	120.0	2.7	20.0
	Lead	0.5000	0.0026	0.4859	96.7	80.0	120.0	0.5	20.0
	Selenium	2.0000	-0.0434	1.9902	101.7	80.0	120.0	2.2	20.0
	Zinc	0.5000	0.0100	0.5143	100.9	80.0	120.0	0.9	20.0

Analysis Batch Number: ICPWA-07/10/97-061 -3

Identification : ICPWA-Metals by ICP

Sequence : DATC191

Number of Samples : 7

Batch Data-Date/Time : 07/10/97 / 17:48:04

DUPLICATE

SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
16939-65307	Silver	-0.0028	0.0000	200.0(11)	20.0	1.00
	Barium	0.0384	0.0372	3.2	20.0	1.00
	Beryllium	0.0000	0.0000	0.0	20.0	1.00
	Calcium	86.3924	85.0027	1.6	20.0	1.00
	Cadmium	-0.0020	0.0000	200.0(11)	20.0	1.00
	Chromium	-0.0027	0.0000	200.0(11)	20.0	1.00
	Copper	-0.0036	0.0000	200.0(11)	20.0	1.00
	Iron	0.0672	0.0000	200.0(11)	20.0	1.00
	Magnesium	61.7820	61.0093	1.3	20.0	1.00
	Molybdenum	0.0188	0.0250	28.3(11)	20.0	1.00
	Nickel	0.0083	0.0090	8.1	20.0	1.00
	Lead	0.0026	0.0041	44.8(11)	20.0	1.00
	Selenium	-0.0434	0.0000	200.0(11)	20.0	1.00
	Zinc	0.0100	0.0146	37.4(11)	20.0	1.00

CONTROL

SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS	
					LOWER	UPPER
LC5W-348	Silver	0.0546	0.0500	109.2	80.0	120.0
	Barium	1.9191	2.0000	96.0	80.0	120.0
	Beryllium	0.0500	0.0500	100.0	80.0	120.0
	Calcium	2.0202	2.0000	101.0	80.0	120.0
	Cadmium	0.0466	0.0500	93.2	80.0	120.0
	Chromium	0.1980	0.2000	99.0	80.0	120.0
	Copper	0.2438	0.2500	97.5	80.0	120.0
	Iron	0.9976	1.0000	99.8	80.0	120.0
	Magnesium	2.0176	2.0000	100.9	80.0	120.0
	Molybdenum	0.5003	0.5000	100.1	80.0	120.0
	Nickel	0.4950	0.5000	99.0	80.0	120.0
	Lead	0.4853	0.5000	97.1	80.0	120.0
	Selenium	1.9582	2.0000	97.9	80.0	120.0
	Zinc	0.5049	0.5000	101.0	80.0	120.0

QC LIMITS

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER
ICV-	Silver	0.4000	0.3802	95.0	90.0	110.0
	Barium	4.0000	3.6894	92.2	90.0	110.0
	Beryllium	0.4000	0.3891	97.3	90.0	110.0
	Calcium	40.0000	39.2943	98.2	90.0	110.0
	Cadmium	4.0000	3.8005	95.0	90.0	110.0
	Chromium	4.0000	3.8931	97.3	90.0	110.0
	Copper	4.0000	3.7408	93.5	90.0	110.0
	Iron	4.0000	3.9100	97.8	90.0	110.0
	Magnesium	20.0000	19.6684	98.3	90.0	110.0
	Molybdenum	20.0000	19.5090	97.5	90.0	110.0
	Nickel	8.0000	7.6585	95.7	90.0	110.0
	Lead	20.0000	18.8092	94.0	90.0	110.0
	Selenium	1.6000	1.5154	94.7	90.0	110.0
	Zinc	4.0000	3.8687	96.7	90.0	110.0
CCV1--2	Silver	0.4000	0.3767	94.2	90.0	110.0

Analysis Batch Number: ICPWA-07/10/97-361-3

Identification: ICPWA-Metals by ICP

Sequence: DATC191

Number of Samples: 7

Batch Data-Date/Time: 07/10/97 / 17:48:04

QC LIMITS

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER
CCV1--2	Barium	4.0000	3.6922	92.3	90.0	110.0
	Beryllium	0.4000	0.3881	97.0	90.0	110.0
	Calcium	40.0000	38.8853	97.2	90.0	110.0
	Cadmium	4.0000	3.7802	94.5	90.0	110.0
	Chromium	4.0000	3.8600	96.5	90.0	110.0
	Copper	4.0000	3.7528	93.8	90.0	110.0
	Iron	4.0000	3.8906	97.3	90.0	110.0
	Magnesium	20.0000	19.6898	98.4	90.0	110.0
	Molybdenum	20.0000	19.3015	96.5	90.0	110.0
	Nickel	8.0000	7.5882	94.9	90.0	110.0
	Lead	20.0000	18.7379	93.7	90.0	110.0
	Selenium	1.6000	1.5432	96.4	90.0	110.0
	Zinc	4.0000	3.8584	96.5	90.0	110.0
CCV2--3	Silver	0.4000	0.3840	96.0	90.0	110.0
	Barium	4.0000	3.8026	95.1	90.0	110.0
	Beryllium	0.4000	0.3999	100.0	90.0	110.0
	Calcium	40.0000	39.5944	99.0	90.0	110.0
	Cadmium	4.0000	3.8616	96.5	90.0	110.0
	Chromium	4.0000	3.9356	98.4	90.0	110.0
	Copper	4.0000	3.8680	96.7	90.0	110.0
	Iron	4.0000	3.9457	98.6	90.0	110.0
	Magnesium	20.0000	20.1030	100.5	90.0	110.0
	Molybdenum	20.0000	19.7958	99.0	90.0	110.0
	Nickel	8.0000	7.7643	97.1	90.0	110.0
	Lead	20.0000	19.0176	95.1	90.0	110.0
	Selenium	1.6000	1.5716	98.2	90.0	110.0
	Zinc	4.0000	3.9206	98.0	90.0	110.0
CCV3--4	Silver	0.4000	0.3785	94.6	90.0	110.0
	Barium	4.0000	3.6341	90.9	90.0	110.0
	Beryllium	0.4000	0.3901	97.5	90.0	110.0
	Calcium	40.0000	39.7141	99.3	90.0	110.0
	Cadmium	4.0000	3.8432	96.1	90.0	110.0
	Chromium	4.0000	3.9153	97.9	90.0	110.0
	Copper	4.0000	3.6893	92.2	90.0	110.0
	Iron	4.0000	3.9736	99.3	90.0	110.0
	Magnesium	20.0000	19.6759	98.4	90.0	110.0
	Molybdenum	20.0000	19.6636	98.3	90.0	110.0
	Nickel	8.0000	7.7123	96.4	90.0	110.0
	Lead	20.0000	18.9438	94.7	90.0	110.0
	Selenium	1.6000	1.4722	92.0	90.0	110.0
	Zinc	4.0000	3.9217	98.0	90.0	110.0

CCB#	ANALYTE	CONC. FOUND #	CONC. LIMIT
ICB-	Silver	ND	0.0060
	Barium	0.0003	0.0030
	Beryllium	ND	0.0002
	Calcium	0.0062	0.4000
	Cadmium	ND	0.0040
	Chromium	ND	0.0100

Analysis Batch Name : ICB-4-07-1-97-161-13

Identification : ICB-4-M-161-13 by ICP

Sequence : DATC191

Number of Samples : 1

Batch Data-Date/Time : 07/10/97 17:48:04

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
ICB-	Cobalt	ND	0.0100
	Iron	0.0035	0.2000
	Magn	ND	0.0500
	Molybdenum	0.0088	0.0300
	Nickel	ND	0.0300
	Lead	0.0018	0.0400
	Selenium	ND	0.0700
	Zinc	0.0002	0.0300
CCB1-	Silver	ND	0.0060
	Barium	0.0001	0.0030
	Beryllium	ND	0.0002
	Cadmium	0.0098	0.4000
	Copper	ND	0.0040
	Chromium	0.0020	0.0100
	Copper	ND	0.0100
	Iron	ND	0.2000
	Magnesium	0.0167	0.0500
	Molybdenum	0.0132	0.0300
	Nickel	0.0055	0.0300
	Lead	ND	0.0400
	Selenium	ND	0.0700
	Zinc	0.0019	0.0300
CCB2-	Silver	0.0022	0.0060
	Barium	0.0003	0.0030
	Beryllium	ND	0.0002
	Cadmium	0.0067	0.4000
	Copper	ND	0.0040
	Chromium	0.0028	0.0100
	Cadmium	ND	0.0100
	Iron	0.0009	0.2000
	Magnesium	0.0072	0.0500
	Molybdenum	0.0064	0.0300
	Nickel	0.0017	0.0300
	Lead	0.0060	0.0400
	Selenium	ND	0.0700
	Zinc	0.0001	0.0300
CCB3-	Silver	0.0002	0.0060
	Barium	0.0008	0.0030
	Beryllium	ND	0.0002
	Cadmium	0.0399	0.4000
	Cadmium	ND	0.0040
	Chromium	0.0021	0.0100
	Copper	0.0003	0.0100
	Iron	ND	0.2000
	Magn	0.0306	0.0500
	Molybdenum	ND	0.0300
	Nickel	ND	0.0300
	Lead	0.0104	0.0400
	Selenium	0.0009	0.0700
	Zinc	0.0001	0.0300

Analysis Batch Number : 16924-07/10/97-061-3

Identification : ICP/A-Metals by ICP

Sequence : DATC191

Number of Samples : 7

Batch Data-Date/Time : 07/10/97 / 17:48:04

----- Result Footnotes -----

(2a) - Recovery is insignificant because sample conc. is >4x spike added.

(1a) - RPD has no significance due to insignificant spikes.

(11) - Both Duplicate results are less than the MDL.

Groups & Split:

16849-64971 16921-65239 16921-65240 16923-65258 16924-65259 16924-65260 16939-65307

Analysis Batch Number: 16924-07/10/97-061-4

Identification: 16924-Metals by ICP

Sequence : DATF191

Number of Samples: 4

Batch Data-Date/Time: 07/14/97 13:04:50

BLANK#	ANALYTE	CONC FOUND	#	CONC LIMIT
PBW-348	Arsenic	0.0003		0.0300
	Potassium	0.0505		0.1000
	Sodium	0.0891		0.2000

						QC LIMITS	
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	LOWER	UPPER
16939-65307	Arsenic	2.0000	-0.0040	1.9531	97.9	80.0	120.0
	Potassium	10.0000	4.6917	14.5836	98.9	80.0	120.0
	Sodium	3.0000	66.1699	66.8673	23.2(2a)	80.0	120.0

						QC LIMITS			
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	LOWER	UPPER	RPD #	LIMIT
16939-65307	Arsenic	2.0000	-0.0040	1.9688	98.6	80.0	120.0	0.7	20.0
	Potassium	10.0000	4.6917	15.0645	103.7	80.0	120.0	4.7	20.0
	Sodium	3.0000	66.1699	69.3435	105.8	80.0	120.0	128.1(2a)	20.0

DUPLICATE						
SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
16939-65307	Arsenic	-0.0040	0.0126	386.0(11)	20.0	1.00
	Potassium	4.6917	4.6337	1.2	20.0	1.00
	Sodium	66.1699	64.6447	2.3	20.0	1.00

						QC LIMITS	
SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #		LOWER	UPPER
LCSW-348	Arsenic	1.8896	2.0000	94.5		80.0	120.0
	Potassium	9.9704	10.0000	99.7		80.0	120.0
	Sodium	3.3926	3.0000	113.1		80.0	120.0

						QC LIMITS	
CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #		LOWER	UPPER
ICV-	Arsenic	1.6000	1.5334	95.8		90.0	110.0
	Potassium	40.0000	40.8083	102.0		90.0	110.0
	Sodium	40.0000	41.7806	104.5		90.0	110.0
CCV1--2	Arsenic	1.6000	1.5356	96.0		90.0	110.0
	Potassium	40.0000	40.2876	100.7		90.0	110.0
	Sodium	40.0000	41.0704	102.7		90.0	110.0
CCV2--3	Arsenic	1.6000	1.5225	95.2		90.0	110.0
	Potassium	40.0000	40.7369	101.8		90.0	110.0
	Sodium	40.0000	40.8427	102.1		90.0	110.0
CCV3--4	Arsenic	1.6000	1.4989	93.7		90.0	110.0
	Potassium	40.0000	39.9136	99.8		90.0	110.0
	Sodium	40.0000	40.4596	101.1		90.0	110.0
CCV4--5	Arsenic	1.6000	1.6039	100.2		90.0	110.0
	Potassium	40.0000	39.9675	99.9		90.0	110.0
	Sodium	40.0000	40.6287	101.6		90.0	110.0
CCV5--6	Arsenic	1.6000	1.5909	99.4		90.0	110.0
	Potassium	40.0000	39.9105	99.8		90.0	110.0
	Sodium	40.0000	41.5958	104.0		90.0	110.0

Analysis Batch Name: 1692-CA-07/10/97-161-14

Identification: ICP-A-Metals by ICP

Sequence : DATF191

Number of Samples : 3

Batch Data-Date/Time : 7/11/97 / 10:44:50

CCB#	ANALYTE	CONC. FOUND #	CONC. LIMIT
ICB-	Ar	ND	0.0300
	Potassium	ND	0.1000
	Sodium	0.0292	0.2000
CCB1-	Ar	ND	0.0300
	Potassium	ND	0.1000
	Sodium	0.0379	0.2000
CCB2-	Ar	ND	0.0300
	Potassium	ND	0.1000
	Sodium	0.0372	0.2000
CCB3-	Ar	ND	0.0300
	Potassium	ND	0.1000
	Sodium	0.0319	0.2000
CCB4-	Ar	ND	0.0300
	Potassium	0.0480	0.1000
	Sodium	ND	0.2000
CCB5-	Ar	ND	0.0300
	Potassium	0.0218	0.1000
	Sodium	0.0348	0.2000

----- Result Footnotes -----

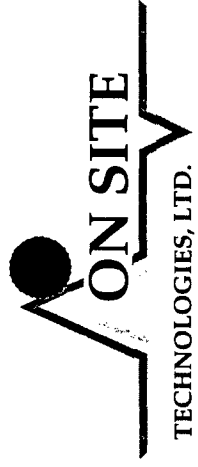
Recovery is insignificant because sample conc. is >4x spike added.

(11) - Both Duplicate results are less than the MDL.

Groups & Sample

16849-64971 16921-65139 16921-65240 16923-65258 16924-65259 16924-65260 16939-65307

[illegible]



CHAIN OF CUSTODY RECORD

567

Page 1 of 1

Date: 6/26/97

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

Purchase Order No.:		Job No.	
Name		Maureen Gannon	
Company		PNM Gas Services	
Address		Alverado Square, Mail Stop 0408	
City, State, Zip		Albuquerque, NM 87158	
Telephone No.		505-848-2974	
Telefax No.			

SEND INVOICE TO

Sampling Location: Sammons 2

SAMPLE IDENTIFICATION				SAMPLE		MATRIX	PRES.	Number of Containers	REPORT RESULTS TO	Name	Title
				DATE	TIME						
Sampler: M.S. MG- B.K.	9706251600	MW-1		6/26/97		H2O	H2O	3	REPORT RESULTS TO	Maureen Gannon	PNM Gas Services
	9706251630	MW-2						3			
	9706251700	MW-3						2			
	9706251730	MW-4						2			
	9706251800	MW-5						2			
	9706251830	MW-6		6/26/97		H2O	H2O	2			

Relinquished by:	Date/Time	Received by:	Date/Time
	6/26/97 1800		6/26/97 1800
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time
Method of Shipment:		Rush	
Authorized by:	Date	24-48 Hours	10 Working Days
	6/26/97 1800		
(Client Signature Must Accompany Request)		Special Instructions:	
		Results to be sent to both parties.	

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: *1-Oct-97*
COC No.: *5840*
Sample No.: *16355*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Sammon 2*
Project Location: *9709261200; MW-1*
Sampled by: *MS/MG*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *26-Sep-97* Time: *12:00*
Date: *29-Sep-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>	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: *10/1/97*

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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: *1-Oct-97*
COC No.: *5840*
Sample No.: *16356*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Sammon 2*
Project Location: *9709261230; MW-2*
Sampled by: *MS/MG*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *26-Sep-97* Time: *12:30*
Date: *29-Sep-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>	0.6	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	0.6	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	0.2	ug/L	0.2	ug/L
<i>o-Xylene</i>	0.5	ug/L	0.2	ug/L
<i>TOTAL</i>	1.9	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: *10/1/97*

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OFF: (505) 325-5667

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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: *1-Oct-97*
COC No.: *5840*
Sample No.: *16357*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Sammon 2*
Project Location: *9709261300; MW-3*
Sampled by: *MS/MG* Date: *26-Sep-97* Time: *13:00*
Analyzed by: *DC* Date: *29-Sep-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: *10/1/97*

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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: *1-Oct-97*
COC No.: *5840*
Sample No.: *16358*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Sammon 2*
Project Location: *9709261330; MW-4*
Sampled by: *MS/MG* Date: *26-Sep-97* Time: *13:30*
Analyzed by: *DC* Date: *29-Sep-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>	0.8	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	1.0	ug/L	0.2	ug/L
<i>o-Xylene</i>	0.3	ug/L	0.2	ug/L
<i>TOTAL</i>	2.0	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: *10/1/97*

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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: *1-Oct-97*
COC No.: *5840*
Sample No.: *16359*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Sammon 2*
Project Location: *9709261400; MW-5*
Sampled by: *MS/MG* Date: *26-Sep-97* Time: *14:00*
Analyzed by: *DC* Date: *29-Sep-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: *DC*
Date: *10/1/97*

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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: *1-Oct-97*
COC No.: *5840*
Sample No.: *16360*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Sammon 2*

Project Location: *9709261430; MW-6*

Sampled by: *MS/MG*

Date: *26-Sep-97* Time: *14:30*

Analyzed by: *DC*

Date: *29-Sep-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>	0.9	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	1.1	ug/L	0.2	ug/L
<i>o-Xylene</i>	0.3	ug/L	0.2	ug/L
<i>TOTAL</i>	2.3	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: *10/1/97*

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QUALITY ASSURANCE REPORT*for EPA Method 8020*

Date Analyzed: 29-Sep-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	RPD	Limit
Benzene	ppb	20.0	18.9	6	15%
Toluene	ppb	20.0	19.8	1	15%
Ethylbenzene	ppb	20.0	19.6	2	15%
m,p-Xylene	ppb	40.0	38.3	4	15%
o-Xylene	ppb	20.0	19.6	2	15%

Matrix Spike

Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	RPD	Limit
Benzene	89	88	(39-150)	1	20%
Toluene	94	93	(46-148)	1	20%
Ethylbenzene	93	92	(32-160)	1	20%
m,p-Xylene	92	91	(35-145)	1	20%
o-Xylene	93	93	(35-145)	1	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)	
16355-5840	96				
16356-5840	96				
16357-5840	96				
16358-5840	96				
16359-5840	96				
16360-5840	95			WR 10/10/97	(m) 10/11/97

S1: Fluorobenzene

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- TECHNICAL SERVICES -



CHAIN OF CUSTODY RECORD

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Page 1 of 1

Date: 9/26/97

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.:	
Sampling Location: Sammons 2		ANALYSIS REQUESTED	
Sampler: M.S. M.G.		RESULTS TO REPORT	
SAMPLE IDENTIFICATION		Number of Containers	
DATE	TIME	MATRIX	PRES.
9709261200	MW-1	H ₂ O	HCL
9709261230	MW-2		
9709261300	MW-3		
9709261330	MW-4		
9709261400	MW-5		
9709261430	MW-6		
Samples Fizz When HCL & water added unable to get sample w/o bubbles		LAB ID	
		16355-5840	
		16356-	
		16357-	
		16358-	
		16359-	
		16360-	
Relinquished by: [Signature]		Date/Time: 9/26/97 1410	
Relinquished by:		Date/Time:	
Relinquished by:		Date/Time:	
Method of Shipment:		Special Instructions:	
Authorized by: [Signature]		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: *6-Jan-98*
COC No.: *7168*
Sample No.: *17235*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Sammons 2*
Project Location: *9712231300; MW-1*
Sampled by: *MS/RD/MG* Date: *23-Dec-97* Time: *13:00*
Analyzed by: *DC* Date: *5-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>	0.2	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: *1/6/98*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

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

Date: *6-Jan-98*
COC No.: *7168*
Sample No.: *17236*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Sammons 2*
Project Location: *9712231330; MW-2*
Sampled by: *MS/RD/MG* Date: *23-Dec-97* Time: *13:30*
Analyzed by: *DC* Date: *5-Jan-98*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>0.5</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>1.9</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>1.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>2.3</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>0.9</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>6.7</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: *1/6/98*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1550

ANALYTICAL REPORT

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

Date: *6-Jan-98*
COC No.: *7168*
Sample No.: *17237*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Sammons 2*
Project Location: *9712231400; MW-3*
Sampled by: *MS/RD/MG*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *23-Dec-97* Time: *14:00*
Date: *5-Jan-98*

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>	0.2	ug/L	0.2	ug/L
<i>o-Xylene</i>	0.4	ug/L	0.2	ug/L
<i>TOTAL</i>	0.6	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: *1/6/98*

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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: *6-Jan-98*
COC No.: *7168*
Sample No.: *17238*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Sammons 2*
Project Location: *9712231430; MW-4*
Sampled by: *MS/RD/MG*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *23-Dec-97* Time: *14:30*
Date: *5-Jan-98*

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>	1.2	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	1.5	ug/L	0.2	ug/L
<i>o-Xylene</i>	0.4	ug/L	0.2	ug/L
<i>TOTAL</i>	3.1	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: *1/6/98*

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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: *6-Jan-98*
COC No.: *7168*
Sample No.: *17239*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Sammons 2*
Project Location: *9712231500; MW-5*
Sampled by: *MS/RD/MG* Date: *23-Dec-97* Time: *15:00*
Analyzed by: *DC* Date: *5-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: *1/6/98*

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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: *6-Jan-98*
COC No.: *7168*
Sample No.: *17240*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Sammons 2*
Project Location: *9712231530; MW-6*
Sampled by: *MS/RD/MG* Date: *23-Dec-97* Time: *15:30*
Analyzed by: *DC* Date: *5-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>	0.2	ug/L	0.2	ug/L
<i>o-Xylene</i>	0.4	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: *1/6/98*

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QUALITY ASSURANCE REPORT*for EPA Method 8020**Date Analyzed:* 5-Jan-98*Internal QC No.:* 0559-STD*Surrogate QC No.:* 0567-STD*Reference Standard QC No.:* 0529/30-QC**Method Blank**

<i>Parameter</i>	<i>Result</i>	<i>Unit of Measure</i>
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>RPD</i>	<i>Limit</i>
Benzene	ppb	20.0	20.2	1	15%
Toluene	ppb	20.0	21.1	5	15%
Ethylbenzene	ppb	20.0	21.3	6	15%
m,p-Xylene	ppb	40.0	41.1	3	15%
o-Xylene	ppb	20.0	21.1	5	15%

Matrix Spike

<i>Parameter</i>	<i>1 - Percent Recovered</i>	<i>2 - Percent Recovered</i>	<i>Limit</i>	<i>RPD</i>	<i>Limit</i>
Benzene	93	84	(39-150)	5	20%
Toluene	96	90	(46-148)	5	20%
Ethylbenzene	98	92	(32-160)	5	20%
m,p-Xylene	94	88	(35-145)	6	20%
o-Xylene	96	91	(35-145)	5	20%

Surrogate Recoveries

<i>Laboratory Identification</i>	<i>S1 Percent Recovered</i>	<i>S2 Percent Recovered</i>	<i>Laboratory Identification</i>	<i>S1 Percent Recovered</i>	<i>S2 Percent Recovered</i>
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
17235-7168	96				
17236-7168	95				
17237-7168	95				
17238-7168	98				
17239-7168	96			2/R	(m)
17240-7168	96			1/6/98	1/6/98

S1: Fluorobenzene

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- Form 100-1, Rev. 10/97, EPA 821-R-97-010, EPA 821-R-97-010, EPA 821-R-97-010

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TECHNOLOGIES, LTD.

March 18, 1998

Maureen Gannon
PNM - Public Service Company of NM
Alvarado Square Mail Stop 0408
Albuquerque, NM 87401
TEL: (505) 241-2974
FAX (505) 241-2340

RE: Sammons 2

Order No.: 9803013

Dear Maureen Gannon,

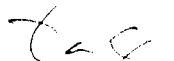
On Site Technologies, LTD. received 6 samples on 3/4/98 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
Aromatic Volatiles by GC-PID (SW8021A)

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

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

Sincerely,


David Cox

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LAB: (505) 325-1556

TECHNOLOGIES, LTD.

Date: 18-Mar-98

CLIENT: PNM - Public Service Company of NM
Project: Sammons 2
Lab Order: 9803013

CASE NARRATIVE

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

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

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

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TECHNOLOGIES, LTD.

ANALYTICAL REPORT

Date: 18-Mar-98

Client: PNM - Public Service Company of NM
Work Order: 9803013
Lab ID: 9803013-01A **Matrix:** AQUEOUS
Project: Sammons 2

Client Sample Info: Sammons 2
Client Sample ID: 9803040945; MW-1
Collection Date: 3/4/98 9:45:00 AM
COC#: 7141

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC-PID		SW8021A		Analyst: DC		
Benzene	ND	0.5		µg/L	1	3/9/98
Toluene	ND	0.5		µg/L	1	3/9/98
Ethylbenzene	ND	0.5		µg/L	1	3/9/98
m,p-Xylene	ND	1		µg/L	1	3/9/98
o-Xylene	ND	0.5		µg/L	1	3/9/98
Surr: Fluorobenzene	94.1	70-130		%REC	1	3/9/98
Surr: 1,4-Difluorobenzene	94.9	70-130		%REC	1	3/9/98
Surr: 4-Bromochlorobenzene	92.2	70-130		%REC	1	3/9/98

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

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TECHNOLOGIES, LTD.

ANALYTICAL REPORT

Date: 18-Mar-98

Client: PNM - Public Service Company of NM
Work Order: 9803013
Lab ID: 9803013-02A **Matrix:** AQUEOUS
Project: Sammons 2

Client Sample Info: Sammons 2
Client Sample ID: 9803041000; MW-2
Collection Date: 3/4/98 10:00:00 AM
COC#: 7141

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC-PID		SW8021A		Analyst: DC		
Benzene	ND	0.5		µg/L	1	3/9/98
Toluene	1	0.5		µg/L	1	3/9/98
Ethylbenzene	1.7	0.5		µg/L	1	3/9/98
m,p-Xylene	ND	1		µg/L	1	3/9/98
o-Xylene	ND	0.5		µg/L	1	3/9/98
Surr: Fluorobenzene	93.8	70-130		%REC	1	3/9/98
Surr: 1,4-Difluorobenzene	94.6	70-130		%REC	1	3/9/98
Surr: 4-Bromochlorobenzene	91.6	70-130		%REC	1	3/9/98

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

1 of 1

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TECHNOLOGIES, LTD.

ANALYTICAL REPORT

Date: 18-Mar-98

Client: PNM - Public Service Company of NM
Work Order: 9803013
Lab ID: 9803013-03A **Matrix:** AQUEOUS
Project: Sammons 2

Client Sample Info: Sammons 2
Client Sample ID: 9803041015; MW-3
Collection Date: 3/4/98 10:15:00 AM
COC#: 7141

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC-PID		SW8021A		Analyst: DC		
Benzene	ND	0.5		µg/L	1	3/6/98
Toluene	ND	0.5		µg/L	1	3/6/98
Ethylbenzene	ND	0.5		µg/L	1	3/6/98
m,p-Xylene	ND	1		µg/L	1	3/6/98
o-Xylene	ND	0.5		µg/L	1	3/6/98
Surr: Fluorobenzene	92.3	70-130		%REC	1	3/6/98
Surr: 1,4-Difluorobenzene	93.7	70-130		%REC	1	3/6/98
Surr: 4-Bromochlorobenzene	93.0	70-130		%REC	1	3/6/98

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

ON SITE

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TECHNOLOGIES, LTD.

ANALYTICAL REPORT

Date: 18-Mar-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Sammons 2
Work Order:	9803013	Client Sample ID:	9803041030; MW-4
Lab ID:	9803013-04A	Matrix:	AQUEOUS
Project:	Sammons 2	Collection Date:	3/4/98 10:30:00 AM
		COC#:	7141

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC-PID		SW8021A				Analyst: DC
Benzene	ND	0.5		µg/L	1	3/6/98
Toluene	ND	0.5		µg/L	1	3/6/98
Ethylbenzene	1.9	0.5		µg/L	1	3/6/98
m,p-Xylene	ND	1		µg/L	1	3/6/98
o-Xylene	0.6	0.5		µg/L	1	3/6/98
Surr: Fluorobenzene	91.1	70-130		%REC	1	3/6/98
Surr: 1,4-Difluorobenzene	92.1	70-130		%REC	1	3/6/98
Surr: 4-Bromochlorobenzene	92.2	70-130		%REC	1	3/6/98

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	

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TECHNOLOGIES, LTD.

ANALYTICAL REPORT

Date: 18-Mar-98

Client: PNM - Public Service Company of NM
Work Order: 9803013
Lab ID: 9803013-05A
Project: Sammons 2

Client Sample Info: Sammons 2
Client Sample ID: 9803041045; MW-5
Collection Date: 3/4/98 10:45:00 AM
COC#: 7141

Matrix: AQUEOUS

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC-PID		SW8021A		Analyst: DC		
Benzene	ND	0.5		µg/L	1	3/6/98
Toluene	ND	0.5		µg/L	1	3/6/98
Ethylbenzene	ND	0.5		µg/L	1	3/6/98
m,p-Xylene	ND	1		µg/L	1	3/6/98
o-Xylene	ND	0.5		µg/L	1	3/6/98
Surr: Fluorobenzene	92.1	70-130		%REC	1	3/6/98
Surr: 1,4-Difluorobenzene	93.8	70-130		%REC	1	3/6/98
Surr: 4-Bromochlorobenzene	93.6	70-130		%REC	1	3/6/98

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

ON SITE

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LAB: (505) 325-1556

TECHNOLOGIES, LTD.

ANALYTICAL REPORT

Date: 18-Mar-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Sammons 2
Work Order:	9803013	Client Sample ID:	9803041100; MW-6
Lab ID:	9803013-06A	Matrix:	AQUEOUS
Project:	Sammons 2	Collection Date:	3/4/98 11:00:00 AM
		COC#:	7141

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC-PID		SW8021A		Analyst: DC		
Benzene	ND	0.5		µg/L	1	3/6/98
Toluene	ND	0.5		µg/L	1	3/6/98
Ethylbenzene	ND	0.5		µg/L	1	3/6/98
m,p-Xylene	ND	1		µg/L	1	3/6/98
o-Xylene	ND	0.5		µg/L	1	3/6/98
Surr: Fluorobenzene	92.2	70-130		%REC	1	3/6/98
Surr: 1,4-Difluorobenzene	93.9	70-130		%REC	1	3/6/98
Surr: 4-Bromochlorobenzene	92.4	70-130		%REC	1	3/6/98

Qualifiers:

ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank	E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level	

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1 of 1

On Site Technologies, LTD.

Date: 18-Mar-98

CLIENT: PNM Gas Services

Work Order: 9803013

Project: Sammons 2

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_980306	Test Code: SW8021A	Units: µg/L	Analysis Date: 3/6/98	Prep Date:
Client ID: 9803013	Run ID: GC-1_980306A	PQL	SPK value	SeqNo: 814	
Analyte	Result	%REC	SPK Ref Val	LowLimit	HighLimit
Benzene	.1423				
Ethylbenzene	.106				
m,p-Xylene	.2252				
o-Xylene	.1162				
Toluene	.0859				
		%RPD	RPD Ref Val	RPDLimit	Qual
					J
					J
					J
					J
					J

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: PNM Gas Services
Work Order: 9803013
Project: Sammons 2

Date: 18-Mar-98

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9803005-02AMS		Batch ID: GC-1_980306		Test Code: SW8021A		Units: µg/L		Analysis Date: 3/6/98		Prep Date:	
Client ID:		9803013		Run ID:		GC-1_980306A		SeqNo: 815			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	502.3	5	400	93.74	102.1%	57	128				
Ethylbenzene	443.2	5	400	18.72	106.1%	78	107				
m,p-Xylene	840.9	10	800	33.49	100.9%	67	118				
o-Xylene	413.6	5	400	2.226	102.9%	78	107				
Toluene	425.6	5	400	15.73	102.5%	74	116				

Sample ID: 9803005-02AMSD		Batch ID: GC-1_980306	Test Code: SW8021A	Units: µg/L		Analysis Date: 3/6/98		Prep Date:			
Client ID:		9803013	Run ID:	GC-1_980306A		SeqNo: 817					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	502.5	5	400	93.74	102.2%	57	128	502.3	0.0%	12	
Ethylbenzene	440.2	5	400	18.72	105.4%	78	107	443.2	0.7%	11	
m,p-Xylene	836.4	10	800	33.49	100.4%	67	118	840.9	0.5%	10	
o-Xylene	405.9	5	400	2.226	100.9%	78	107	413.6	1.9%	14	
Toluene	426.3	5	400	15.73	102.6%	74	116	425.6	0.2%	14	

Sample ID: 9803009-01AMS		Batch ID: GC-1_980306	Test Code: SW8021A		Units: µg/L		Analysis Date: 3/6/98				Prep Date:	
Client ID: 9803013		Run ID: GC-1_980306A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte		Result										
Benzene		379.9	2.5	200	179.2	100.3%	57	128				
Ethylbenzene		267.8	2.5	200	72.66	97.5%	78	107				
m,p-Xylene		546.3	5	400	165.5	95.2%	67	118				
o-Xylene		258.3	2.5	200	61.17	98.6%	78	107				
Toluene		321	2.5	200	126.7	97.2%	74	116				

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: PNM Gas Services

Work Order: 9803013

Project: Sammons 2

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID: 9803009-01AMSD		Batch ID: GC-1_980306	Test Code: SW8021A	Units: µg/L	Analysis Date: 3/6/98		Prep Date:				
Client ID:		9803013	Run ID: GC-1_980306A		SeqNo: 818						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	366.3	2.5	200	179.2	93.5%	57	128	379.9	3.6%	12	
Ethylbenzene	258.5	2.5	200	72.66	92.9%	78	107	267.8	3.5%	11	
m,p-Xylene	527.6	5	400	165.5	90.5%	67	118	546.3	3.5%	10	
o-Xylene	250.3	2.5	200	61.17	94.5%	78	107	258.3	3.2%	14	
Toluene	310.1	2.5	200	126.7	91.7%	74	116	321	3.5%	14	

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 18-Mar-98

CLIENT: PNM Gas Services

Work Order: 9803013

Project: Sammons 2

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER		Batch ID: GC-1_980306	Test Code: SW8021A	Units: µg/L	Analysis Date: 3/6/98		Prep Date:	
Client ID: 9803013		Run ID: 9803013	QC-1_980306A		SeqNo: 813			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val
Benzene	40.64	0.5	40	0.1423	101.3%	84	114	
Ethylbenzene	41.55	0.5	40	0.106	103.6%	86	118	
m,p-Xylene	79.12	1	80	0.2252	98.6%	50	150	
o-Xylene	40.5	0.5	40	0.1162	101.0%	49	147	
Toluene	40.3	0.5	40	0.0859	100.5%	87	120	
								%RPD RPDLimit Qual

Qualifiers:

NJ - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 18-Mar-98

CLIENT: PNM Gas Services
 Work Order: 9803013
 Project: Sammons 2

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0529/30		Batch ID: GC-1_980306		Test Code: SW8021A		Units: µg/L		Analysis Date: 3/6/98		Prep Date:	
Client ID:		9803013		Run ID:		GC-1_980306A		SeqNo: 809			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.8	0.5	20	0	109.0%	85	115				
Ethylbenzene	22.42	0.5	20	0	112.1%	85	115				
m,p-Xylene	42.28	1	40	0	105.7%	85	115				
o-Xylene	21.58	0.5	20	0	107.9%	85	115				
Toluene	21.56	0.5	20	0	107.8%	85	115				
1,4-Difluorobenzene	92.77	0	100	0	92.8%	70	130				
4-Bromochlorobenzene	92.72	0	100	0	92.7%	70	130				
Fluorobenzene	91.51	0	100	0	91.5%	70	130				

Sample ID: CCV2 QC0529/30		Batch ID: GC-1_980306		Test Code: SW8021A		Units: µg/L		Analysis Date: 3/6/98		Prep Date:		
Client ID:		9803013		Run ID:		GC-1_980306A		SeqNo: 810				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene		21.29	0.5	20	0	106.5%	85	115				
Ethylbenzene		21.93	0.5	20	0	109.7%	85	115				
m,p-Xylene		41.51	1	40	0	103.8%	85	115				
o-Xylene		21.33	0.5	20	0	106.6%	85	115				
Toluene		21.11	0.5	20	0	105.5%	85	115				
1,4-Difluorobenzene		92.68	0	100	0	92.7%	70	130				
4-Bromochlorobenzene		92.7	0	100	0	92.7%	70	130				
Fluorobenzene		91.54	0	100	0	91.5%	70	130				

Qualifiers:

ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: PNM Gas Services

Work Order: 9803013

Project: Sammons 2

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: CCV3 QC0529/30	Batch ID: GC-1_980306	Test Code: SW8021A	Units: µg/L	Analysis Date: 3/6/98	Prep Date:
Client ID: 9803013	Run ID: GC-1_980306A	PQL	SPK value	SeqNo: 811	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	21.02	0.5	20	0	105.1% 85 115
Ethylbenzene	21.46	0.5	20	0	107.3% 85 115
m,p-Xylene	40.59	1	40	0	101.5% 85 115
o-Xylene	20.8	0.5	20	0	104.0% 85 115
Toluene	20.73	0.5	20	0	103.7% 85 115
1,4-Difluorobenzene	93.17	0	100	0	93.2% 70 130
4-Bromochlorobenzene	91.77	0	100	0	91.8% 70 130
Fluorobenzene	92.09	0	100	0	92.1% 70 130

Sample ID: CCV4 QC0529/30	Batch ID: GC-1_980306	Test Code: SW8021A	Units: µg/L	Analysis Date: 3/6/98	Prep Date:
Client ID: 9803013	Run ID: GC-1_980306A	PQL	SPK value	SeqNo: 812	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	20.55	0.5	20	0	102.8% 85 115
Ethylbenzene	21.26	0.5	20	0	106.3% 85 115
m,p-Xylene	39.7	1	40	0	99.2% 85 115
o-Xylene	20.47	0.5	20	0	102.3% 85 115
Toluene	20.47	0.5	20	0	102.4% 85 115
1,4-Difluorobenzene	93.03	0	100	0	93.0% 70 130
4-Bromochlorobenzene	91.11	0	100	0	91.1% 70 130
Fluorobenzene	91.82	0	100	0	91.8% 70 130

Qualifiers:

NID - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 18-Mar-98

CLIENT: PNM Gas Services
Work Order: 9803013
Project: Sammons 2

QC SUMMARY REPORT

Method Blank

Sample ID: MB2	Batch ID: GC-1_980309	Test Code: SW8021A	Units: µg/L	Analysis Date: 3/9/98	Prep Date:
Client ID:	9803013	Run ID:	GC-1_980309A	SeqNo: 838	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	.0562	0.5			
Ethylbenzene	ND	0.5			
m,p-Xylene	ND	1			
o-Xylene	ND	0.5			
Toluene	.1089	0.5			J

Sample ID: MB3	Batch ID: GC-1_980309	Test Code: SW8021A	Units: µg/L	Analysis Date: 3/9/98	Prep Date:
Client ID:	9803013	Run ID:	GC-1_980309A	SeqNo: 839	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	.0606	0.5			J
Ethylbenzene	ND	0.5			
m,p-Xylene	.085	1			J
o-Xylene	ND	0.5			
Toluene	.1332	0.5			J

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 18-Mar-98

CLIENT: PNM Gas Services
Work Order: 9803013
Project: Sammons 2

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9803014-04AMS		Batch ID: GC-1_980309		Test Code: SW8021A		Units: µg/L		Analysis Date: 3/9/98		Prep Date:	
Client ID: 9803013		Run ID: GC-1_980309A		SeqNo: 840							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	432.7	5	400	15.69	104.3%	57	128				
Ethylbenzene	482.7	5	400	80.82	100.5%	78	107				
m,p-Xylene	2404	10	800	1553	106.3%	67	118				
o-Xylene	411.3	5	400	8.054	100.8%	78	107				
Toluene	423.8	5	400	26.23	99.4%	74	116				

Sample ID: 9803014-04AMSD		Batch ID: GC-1_980309		Test Code: SW8021A		Units: µg/L		Analysis Date: 3/9/98		Prep Date:	
Client ID: 9803013		Run ID: GC-1_980309A		SeqNo: 841							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	420.4	5	400	15.69	101.2%	57	128	432.7	2.9%	12	
Ethylbenzene	471.9	5	400	80.82	97.8%	78	107	482.7	2.3%	11	
m,p-Xylene	2344	10	800	1553	98.9%	67	118	2404	2.5%	10	
o-Xylene	403.7	5	400	8.054	98.9%	78	107	411.3	1.8%	14	
Toluene	414.7	5	400	26.23	97.1%	74	116	423.8	2.2%	14	

Qualifiers:

ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 18-Mar-98

CLIENT: PNM Gas Services
Work Order: 9803013
Project: Sammons 2

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER	Batch ID: GC-1_980309	Test Code: SW8021A	Units: µg/L	Analysis Date: 3/9/98	Prep Date:
Client ID: 9803013	Run ID: GC-1_980309A	PQL	SPK value	SeqNo: 837	
Analyte	Result	SPK value	SPK Ref Val	LowLimit	HighLimit
Benzene	40.38	0.5	0.0562	84	114
Ethylbenzene	41.14	0.5	0	86	118
m,p-Xylene	78.63	1	0	50	150
o-Xylene	40.18	0.5	0	49	147
Toluene	40.03	0.5	0.1089	87	120
				%REC	%RPD
				100.8%	
				102.9%	
				98.3%	
				100.4%	
				99.8%	
				RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 18-Mar-98

CLIENT: PNM Gas Services
Work Order: 9803013
Project: Sammons 2

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0529/30		Batch ID: GC-1_980309		Test Code: SW8021A		Units: µg/L		Analysis Date: 3/9/98		Prep Date:	
Client ID:		9803013		Run ID:		GC-1_980309A		SeqNo: 833			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.07	0.5	20	0	105.4%	85	115				
Ethylbenzene	21.08	0.5	20	0	105.4%	85	115				
m,p-Xylene	40.25	1	40	0	100.6%	85	115				
o-Xylene	20.89	0.5	20	0	104.4%	85	115				
Toluene	20.92	0.5	20	0	104.6%	85	115				
1,4-Difluorobenzene	95.09	0	100	0	95.1%	70	130				
4-Bromochlorobenzene	91.46	0	100	0	91.5%	70	130				
Fluorobenzene	93.8	0	100	0	93.8%	70	130				

Sample ID: CCV2 QC0529/30		Batch ID: GC-1_980309		Test Code: SW8021A		Units: µg/L		Analysis Date: 3/9/98		Prep Date:	
Client ID:		9803013		Run ID:		GC-1_980309A		SeqNo: 834			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.36	0.5	20	0	101.8%	85	115				
Ethylbenzene	20.99	0.5	20	0	105.0%	85	115				
m,p-Xylene	39.6	1	40	0	99.0%	85	115				
o-Xylene	20.27	0.5	20	0	101.4%	85	115				
Toluene	20.26	0.5	20	0	101.3%	85	115				
1,4-Difluorobenzene	94.88	0	100	0	94.9%	70	130				
4-Bromochlorobenzene	91.16	0	100	0	91.2%	70	130				
Fluorobenzene	94.06	0	100	0	94.1%	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: PNM Gas Services
Work Order: 9803013
Project: Sammons 2

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3 QC0529/30		Batch ID: GC-1_980309		Test Code: SW8021A		Units: µg/L		Analysis Date: 3/9/98		Prep Date:	
Client ID: 9803013		Run ID: GC-1_980309A		SeqNo: 835							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	22	0.5	20	0	110.0%	85	115				
Ethylbenzene	22.52	0.5	20	0	112.6%	85	115				
m,p-Xylene	42.59	1	40	0	106.5%	85	115				
o-Xylene	21.97	0.5	20	0	109.8%	85	115				
Toluene	21.92	0.5	20	0	109.6%	85	115				
1,4-Difluorobenzene	94.09	0	100	0	94.1%	70	130				
4-Bromochlorobenzene	90.22	0	100	0	90.2%	70	130				
Fluorobenzene	93.51	0	100	0	93.5%	70	130				

Sample ID: CCV4 QC0529/30		Batch ID: GC-1_980309		Test Code: SW8021A		Units: µg/L		Analysis Date: 3/9/98		Prep Date:	
Client ID: 9803013		Run ID: GC-1_980309A		SeqNo: 836							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.83	0.5	20	0	104.2%	85	115				
Ethylbenzene	21.37	0.5	20	0	106.8%	85	115				
m,p-Xylene	40.52	1	40	0	101.3%	85	115				
o-Xylene	20.89	0.5	20	0	104.5%	85	115				
Toluene	20.71	0.5	20	0	103.6%	85	115				
1,4-Difluorobenzene	94.24	0	100	0	94.2%	70	130				
4-Bromochlorobenzene	91.05	0	100	0	91.1%	70	130				
Fluorobenzene	93.28	0	100	0	93.3%	70	130				

Qualifiers: NID - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank



Date: 5/9/78

TECHNOLOGIES, LTD.

Distribution:	White - On Site	Yellow - LAB	Pink - Sampler	Goldenrod - Client
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April 8, 1997

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

RECEIVED
APR 11 1997
BURLINGTON RESOURCES



RE: NOTIFICATION OF GROUNDWATER CONTAMINATION AT THE SAMMONS 2 WELL SITE

Dear Bill:

Pursuant to New Mexico Water Quality Control Commission (WQCC) Regulations, section 1-203, PNM hereby provides written notification of groundwater contamination at the Sammons 2 well site, located in section 32, township 30 North, range 12 West, unit letter G. A topographic map showing the location of the site is provided as an attachment. The operator is Burlington Resources. This letter follows verbal notification provided to you on Monday, April 7, 1997 (M. Gannon, PNM to B. Olson, OCD, 4/7/97).

On April 2, 1997, field personnel collected a sample from groundwater in an excavation approximately 6 feet below ground surface. The groundwater sample was delivered to OnSite Technologies, Ltd., in Farmington, New Mexico, for laboratory analysis. A hardcopy of the analytical results is attached. A summary of the analytical results is provided below:

Component	Units	WQCC Stds.	Pit Excavation Water Sample
Benzene	ppb	10	89
Toluene	ppb	750	415
Ethylbenzene	ppb	750	192
Xylenes	ppb	620	1373
Total BTEX	ppb		2069

Bold type indicates a WQCC exceedance.

This letter serves as written notification of groundwater impact at the Sammons 2. PNM will conduct future activities at the site pursuant to PNM's Groundwater Management Plan. If you have any questions, please call me at (505) 241-2974. Thank you.

Sincerely,
PNM

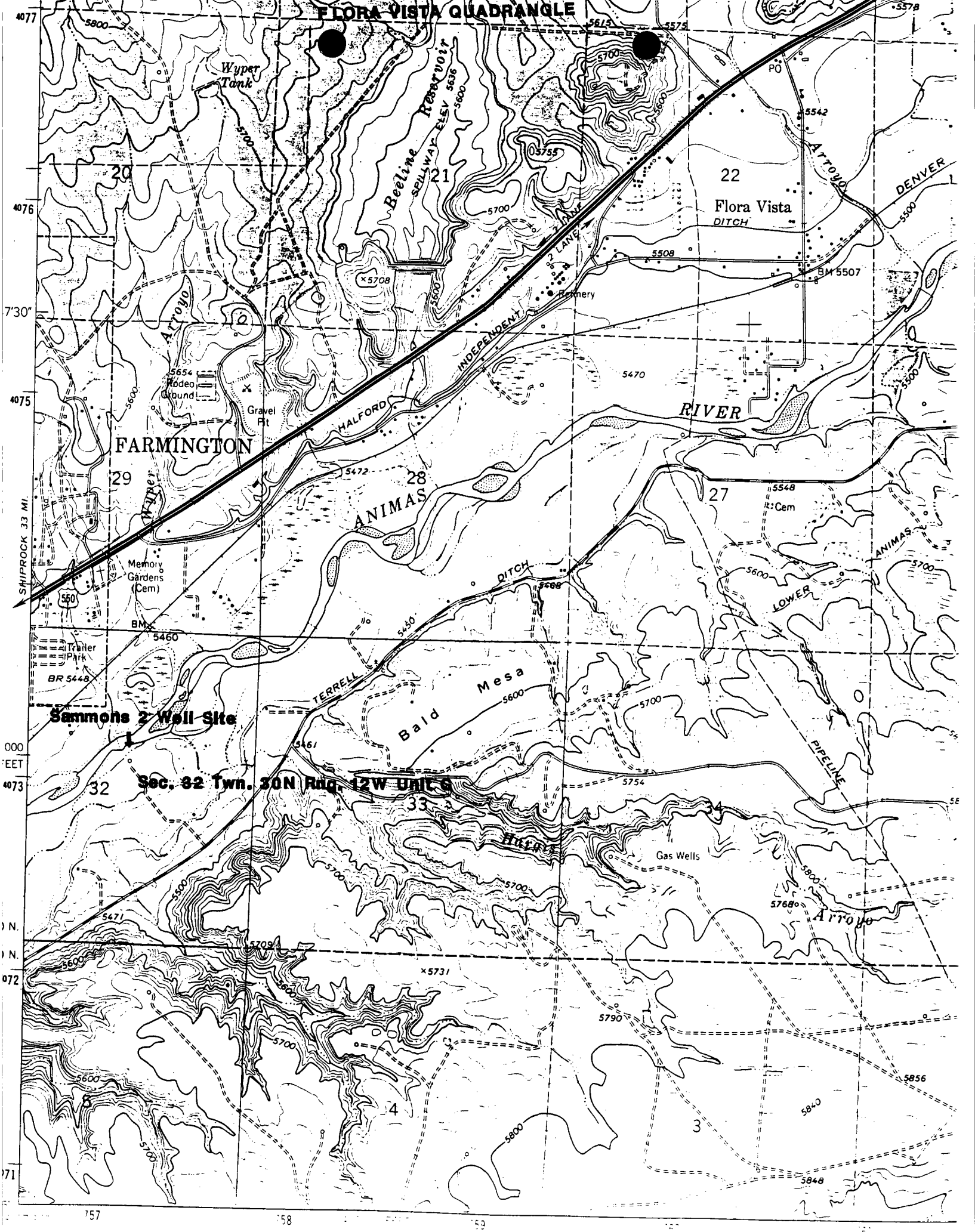
Maureen Gannon

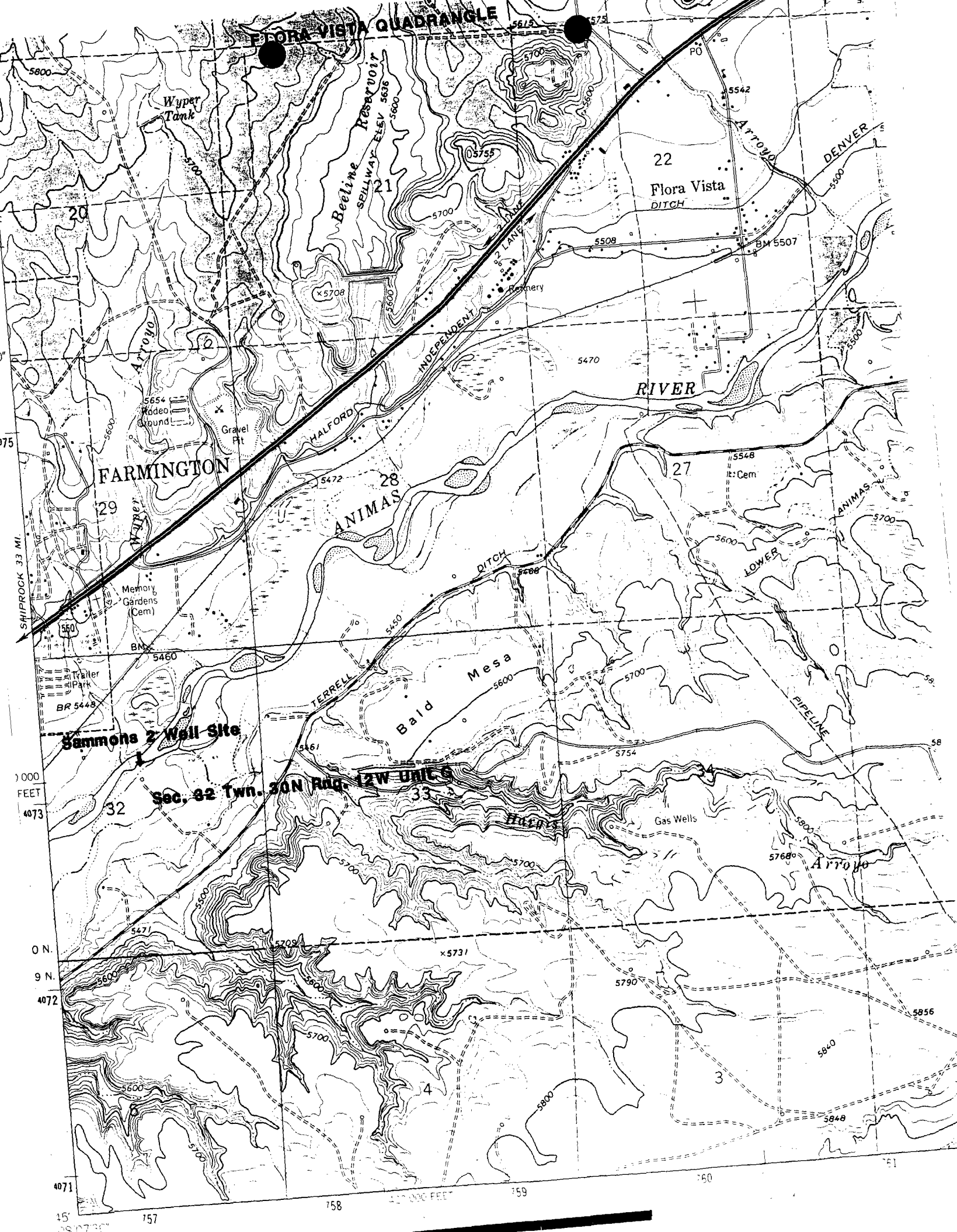
Maureen Gannon
Project Manager

s:\Gas pits\Sammltr.doc

Attachment

cc: Colin Adams, PNM
Denver Bearden, PNMGS
Denny Foust, OCD-Aztec Office
Robin Prisk, WFS
Toni Ristau, PNM
Craig Bock, Burlington Resources





FLORA VISTA QUADRANGLE

SHIPROCK 33 MI

1000
FEET
4073

0 N.
9 N.
4072

4071

FARMINGTON

Sec. 32 Twn. 30N Rng. 12W UNIT 6

Sammons 2 Well Site

ANIMAS

Bald Mesa

RIVER

DENVER

PIPELINE

Flora Vista
DITCH

LOWER

Gas Wells

Arroyo

Beeline Reservoir
SELLWAY ELEV 5636

Wyper Tank

Memory Gardens (Cem)

Gravel Pit

Barrio

PO

5542

BM 5507

5548

It: Cem

5755

5708

5472

5460

5461

5450

5471

5709

5700

5731

5790

5800

5848

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Deposited

OFF: (505) 325-5667



100' 100' 100' 100' 100' 100'
6' 10' 12' 14' 16' 18' 20' 22' 24' 26' 28' 30' 32' 34' 36' 38' 40' 42' 44' 46' 48' 50' 52' 54' 56' 58' 60' 62' 64' 66' 68' 70' 72' 74' 76' 78' 80' 82' 84' 86' 88' 90' 92' 94' 96' 98' 100'
Blending
532120 RL Unit "G"
LAB: (505) 325-1556

ANALYTICAL REPORT

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

Date: *2-Apr-97*
COC No.: *5140*
Sample No.: *14072*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Sammon #2*
Project Location: *9704020715; Pit Excavation Groundwater Sample*
Sampled by: *RH* Date: *2-Apr-97* Time: *7:15*
Analyzed by: *DC* Date: *2-Apr-97*
Sample Matrix: *Liquid*

Parameter	Result	Unit of Measure	Detection Limit	Unit of Measure
<i>Benzene</i>	<i>89</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>415</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>192</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>1260</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>113</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>2069</i>	<i>ug/L</i>		

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

Approved By: *[Signature]*
Date: *4/2/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -



ON SITE
TECHNOLOGIES, LTD.

QUALITY ASSURANCE REPORT

for EPA Method 8020

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

<i>Parameter</i>	<i>Result</i>	<i>Unit of Measure</i>
<i>Average Amount of All Analytes In Blank</i>	<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	18.1	9	15%
<i>Toluene</i>	ppb	20.0	19.2	4	15%
<i>Ethylbenzene</i>	ppb	20.0	19.7	2	15%
<i>m,p-Xylene</i>	ppb	40.0	37.9	5	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>	68	82	(39-150)	2	20%
<i>Toluene</i>	81	88	(46-148)	2	20%
<i>Ethylbenzene</i>	86	91	(32-160)	2	20%
<i>m,p-Xylene</i>	82	87	(35-145)	2	20%
<i>o-Xylene</i>	45	52	(35-145)	3	20%

[illegible]

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING: INVESTING WITH THE ENVIRONMENT -

TECHNOLOGIES, LTD.

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

[illegible]

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