

3R - 314

REPORTS

DATE:

1999

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

RECEIVED

April 5, 1999

APR 07 1999

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

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION



RE: 1999 SAN JUAN BASIN ANNUAL GROUNDWATER REPORT

Dear Bill:

PNM is pleased to submit the 1999 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.

Blanco Wash Drip	Mangum 1E
Davis 1	McClanahan 22
Dogie East Pit	McClanahan A 2E
Dogie North Pit	McCoy Gas Com A1
Florance 124	Miles Federal 1E Drip
Florance 32A	O' Shea 1M
Florance 40	Patterson A Com A1
Florance 44	Pritchard 2
Florance M 47X	Randleman 1
Hampton 4M	Reid 16 Drip
Honolulu Drip	Turner 1A
Ice Canyon Drip	Wilmerding 1M
Jacques 2A	Zachry 18E
Jicarilla Contract 147-6	
Linda 1A	

Consistent with PNM's San Juan Basin Groundwater Management Plan, PNM will request closure of four of the above sites, the Florance 32A, Jacques 2A, Mangum 1E and the McClanahan A2E, with the submittal of the 1st Quarter 1999 Pit Closures Report. This request is based upon the analytical data collected over the last two years at each of the sites. BTEX concentrations have been consistently below WQCC standards for four consecutive quarters.

Upon approval of the groundwater closure report, PNM will plug and abandon all of the groundwater monitoring wells at each of the locations. The concrete pad and metal vault surrounding each well will be removed. The well casing will be cut to ground surface and each well will be plugged to the surface

Bill Olson
04/05/99
Page 2

with cement containing 5% bentonite. If you have any questions regarding the contents of the report, please contact me at (505) 241-2974.

Sincerely,



Maureen Gannon
Project Manager

Enclosure

cc: Colin Adams, Esq.
Ingrid Deklau, WFS
Denny Foust, OCD-Aztec Office
Ron Johnson
Mark Sikelianos
Bill VonDrehle, WFS



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APR 07 1999

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Annual

Groundwater Report

1999

Volume II

*Unlined Surface Impoundments
San Juan Basin*



Groundwater Site Summary Report

Quarter/Year: 2nd/98, 3rd/98, 4th/98 & 1st/99

Operator: Amoco**Vulnerable Class:** Original**Sec:** 15 **Twn:** 30 **Rng:** 8 **Unit:** F**OCD Ranking:** 30**Canyon:** San Juan River**Lead Agency:** NMOCD

Topo Map: previously submitted**Well Completion Diagram:** previously submitted**Site Map with Analysis:** Figure 1**Groundwater Contour Map:** Figure 2a (April 1998), Figure 2b (August 1998), Figure 2c (November 1998), & Figure 2d (February 1999)**Groundwater Hydrograph:** Figure 3**Full-Suite Groundwater Results:** previously submitted**Analytical Results:** attached

Site Hydrology:

Florance 32A site (Figure 1) lies on the alluvial floodplain of the San Juan River, about three miles upstream (northeast) of Archuleta, New Mexico. The river meanders over a broad flat alluvial plain spanning a width of about half a mile, contained within steep valley walls. The site lies at an elevation of about 5695 ft. amsl, and the river is perhaps ten feet lower in elevation. A steep canyon wall lies just southeast of the site, and the river is about 600 feet north.

The five monitor wells at the site (Figure 1) showed sand and gravel materials in the subsurface. Several borings also found a cobble layer at shallow depths (less than 20 feet). These materials are characteristic of the bedload of the modern river. Depth to water is from 6 to 8 feet at the site.

Groundwater flows southwest beneath the site, as shown in Figures 2a, 2b, 2c and 2d. The flow direction is parallel to the orientation of the river valley axis.

The hydrograph (Figure 3) shows water level shifts in tandem in all the wells, indicating no seasonal change in groundwater flow direction; this is corroborated by plots of groundwater levels during different time periods (Figures 2a through 2d). Well MW-2 shows an anomalous water table elevation after it was reinstalled in January, 1998; however, this most likely reflects the undeveloped state of the well, and not the true water table elevation. After the sampling event of January, 1998, the water levels in well MW-2 again began to track parallel with the other wells. The hydrograph also shows marked seasonal changes in water levels, typically with higher levels during spring runoff. Comparison with USGS stream gauging records (site 09355500 - San Juan River near Archuleta) shows a direct relationship between river stage and groundwater elevation, thus emphasizing the direct hydraulic connection between the river and the shallow alluvial aquifer at the site.

Activities for Previous Year:

Due to the presence of high BTEX concentrations in MW-2, PNM conducted additional source removal at the site on January 5, 1998. Field crews removed approximately 2000 cubic yards in and around PNM's former pit. MW-2 was removed during the excavation. PNM re-installed MW-2 on January 29, 1998.

PNM conducted quarterly groundwater sampling at the Florance 32A on April 29, August 7 and November 4, 1998, and again on February 10, 1998. Water level data were collected from all wells during each sampling event. All sampling was performed in strict compliance with EPA protocol. PNM delivered the samples to OnSite Technologies, Farmington, New Mexico for chemical analyses of BTEX using EPA method 8020.

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**

PNMGS Well Site: Florance 2 (continued)

Results:

Figure 2 is a site map of the Florance 32A and includes groundwater analytical results. BTEX concentrations in the area of the former pit (well MW-2) have been below standards for four consecutive quarters. Apparently the additional source removal performed in January, 1998 appears to have accelerated the reduction of benzene in this area. The secondary source removal action was prompted by elevated BTEX concentrations in the source well.

Other wells have not shown detectable concentrations of BTEX compounds, except for MW-1 (the upgradient well). Concentrations in well MW-1 have also been below standards during every sampling event.

Future Actions:

Consistent with PNM's San Juan Basin Groundwater Management Plan, PNM will request closure of the Florance 32A with the submittal of the 1st Quarter 1999 Pit Closures Report. This request is based upon the analytical data collected over the last two years at the site. The secondary excavation of additional source materials appears to have been successful in achieving clean-up at the Jacques 2A; the BTEX concentrations in the source well (MW-2) have been below standards for four consecutive quarters. Resampling of all monitor wells also shows that BTEX compounds are below detection limits in the other wells.

Upon approval of the groundwater closure report, PNM will plug and abandon the five groundwater monitoring wells at the site. The concrete pad and metal vault surrounding each well will be removed. The well casing will be cut to ground surface and each well will be plugged on the surface with cement containing 5% bentonite.

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.
Florance 32A: Site Map With Analytical Results
(Concentrations in ppb)

← San Juan River

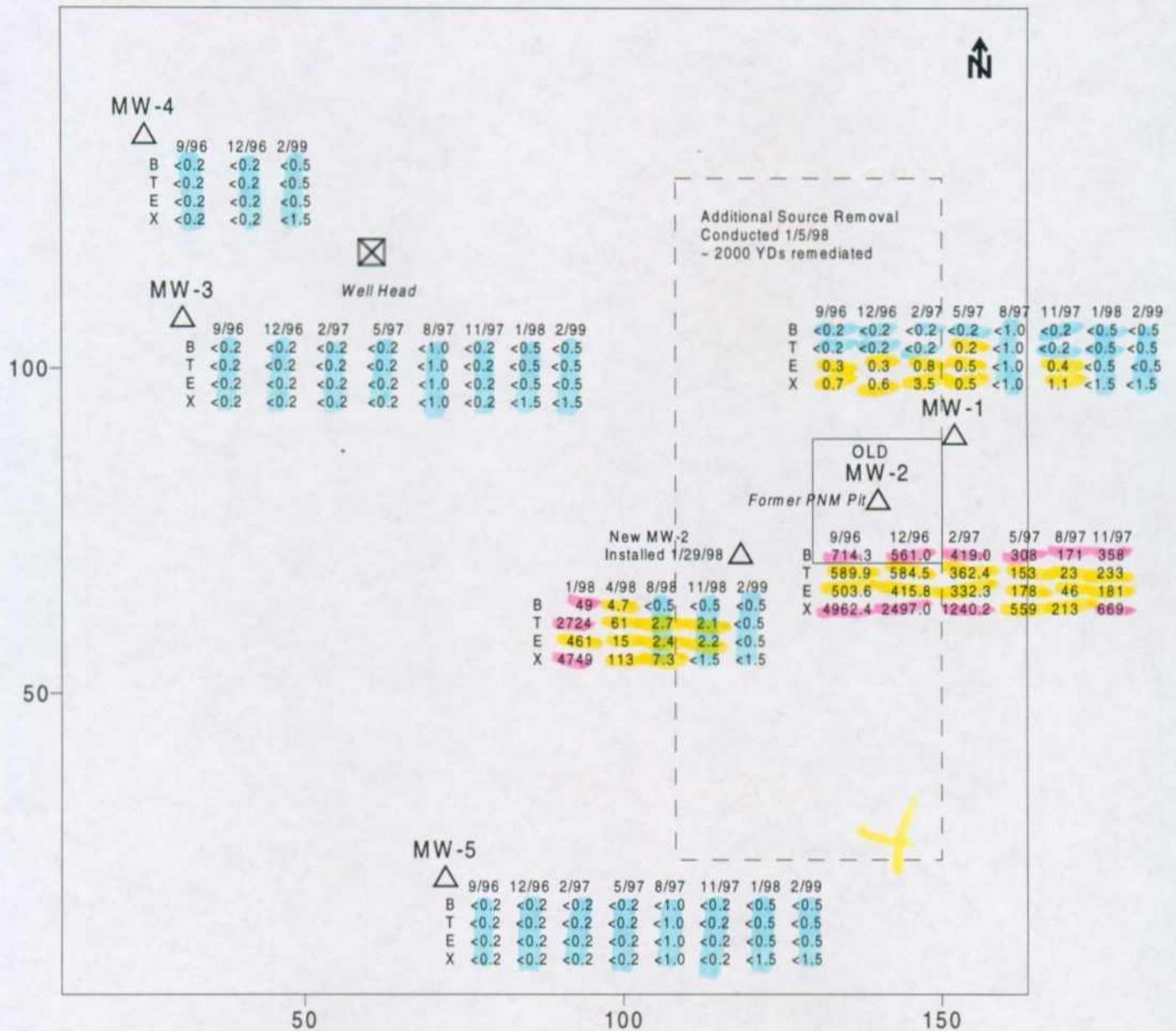


Figure 2a.
Florance 32A Groundwater Contour Map
(April 29, 1998)

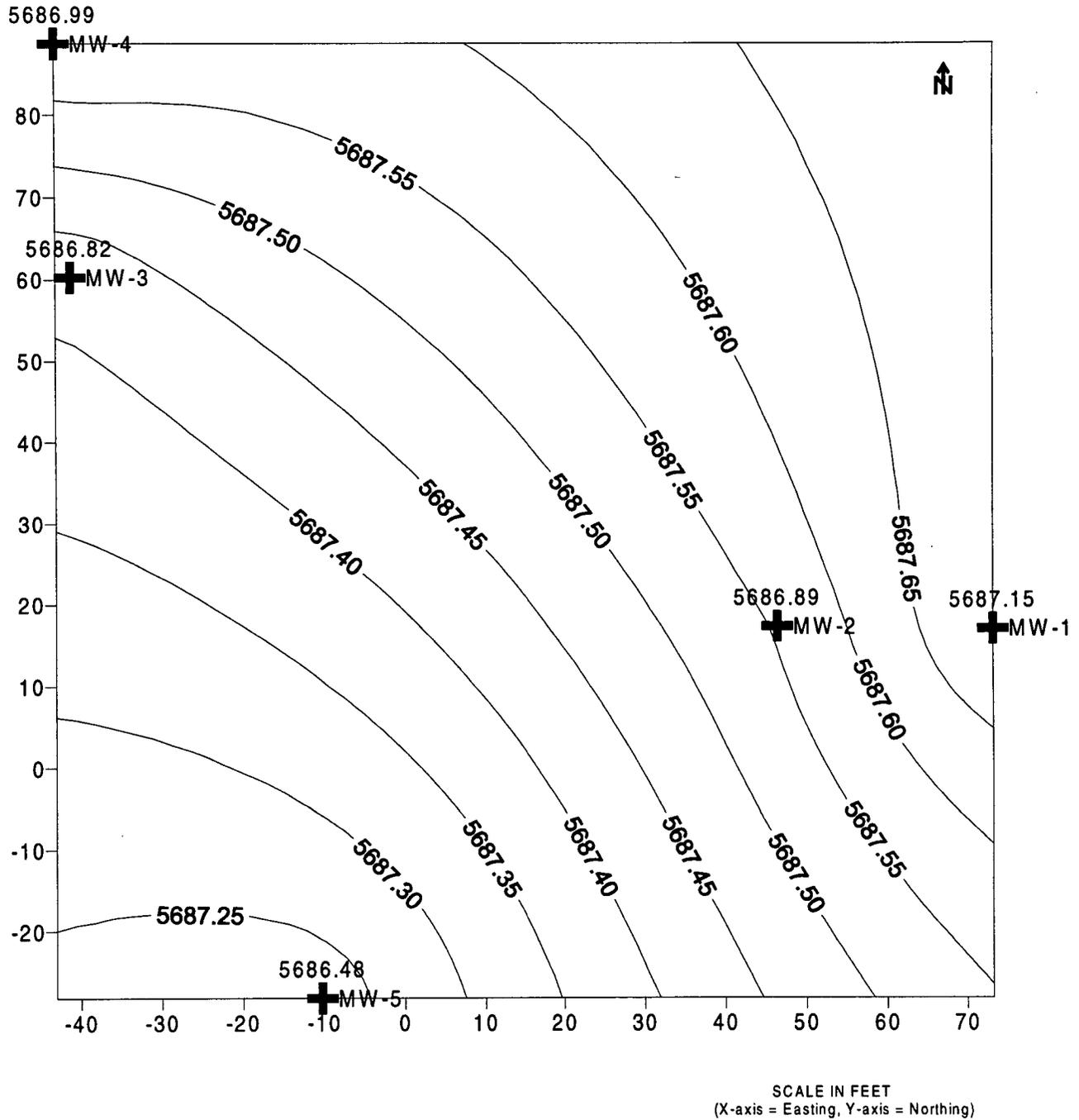
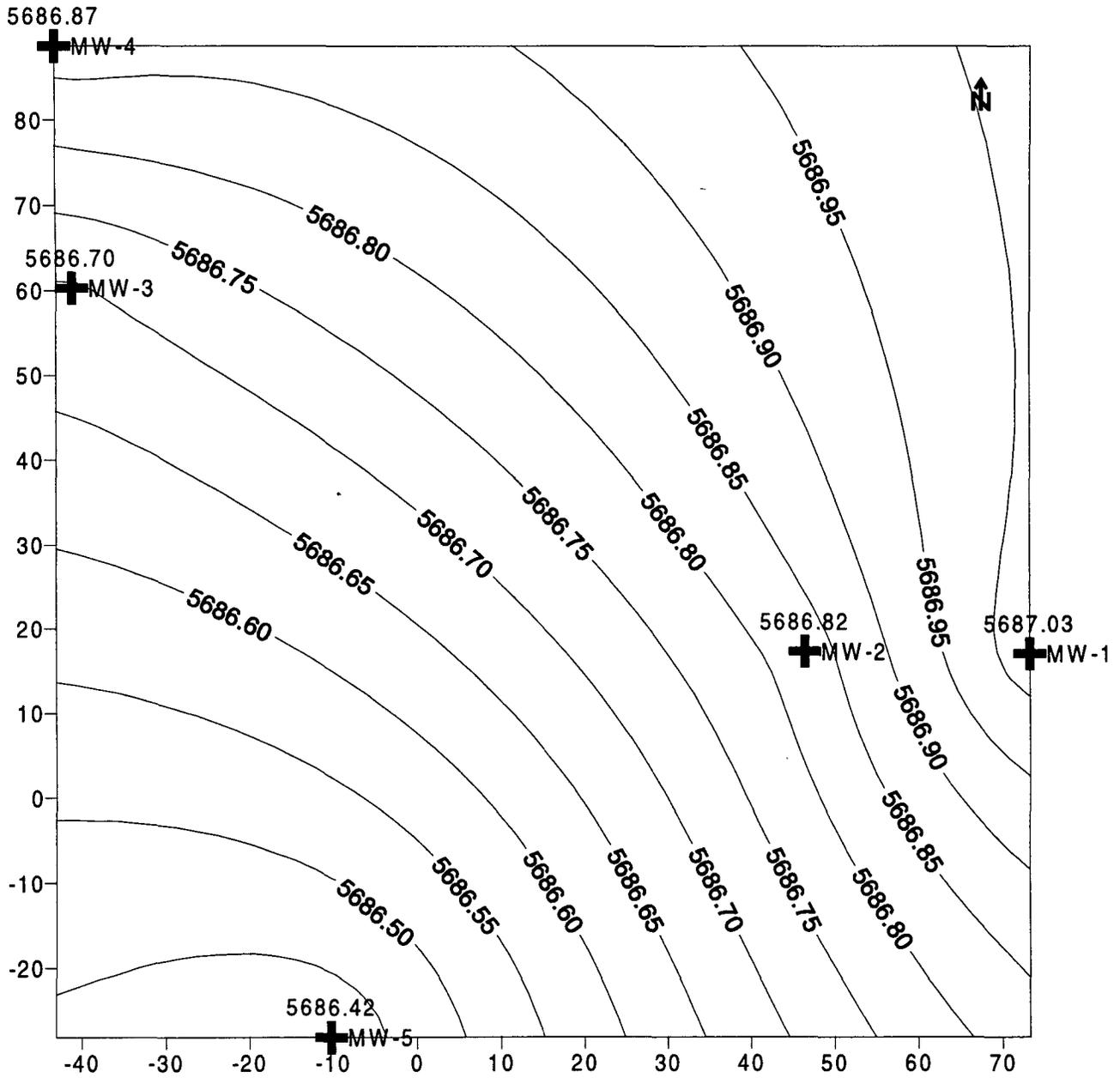
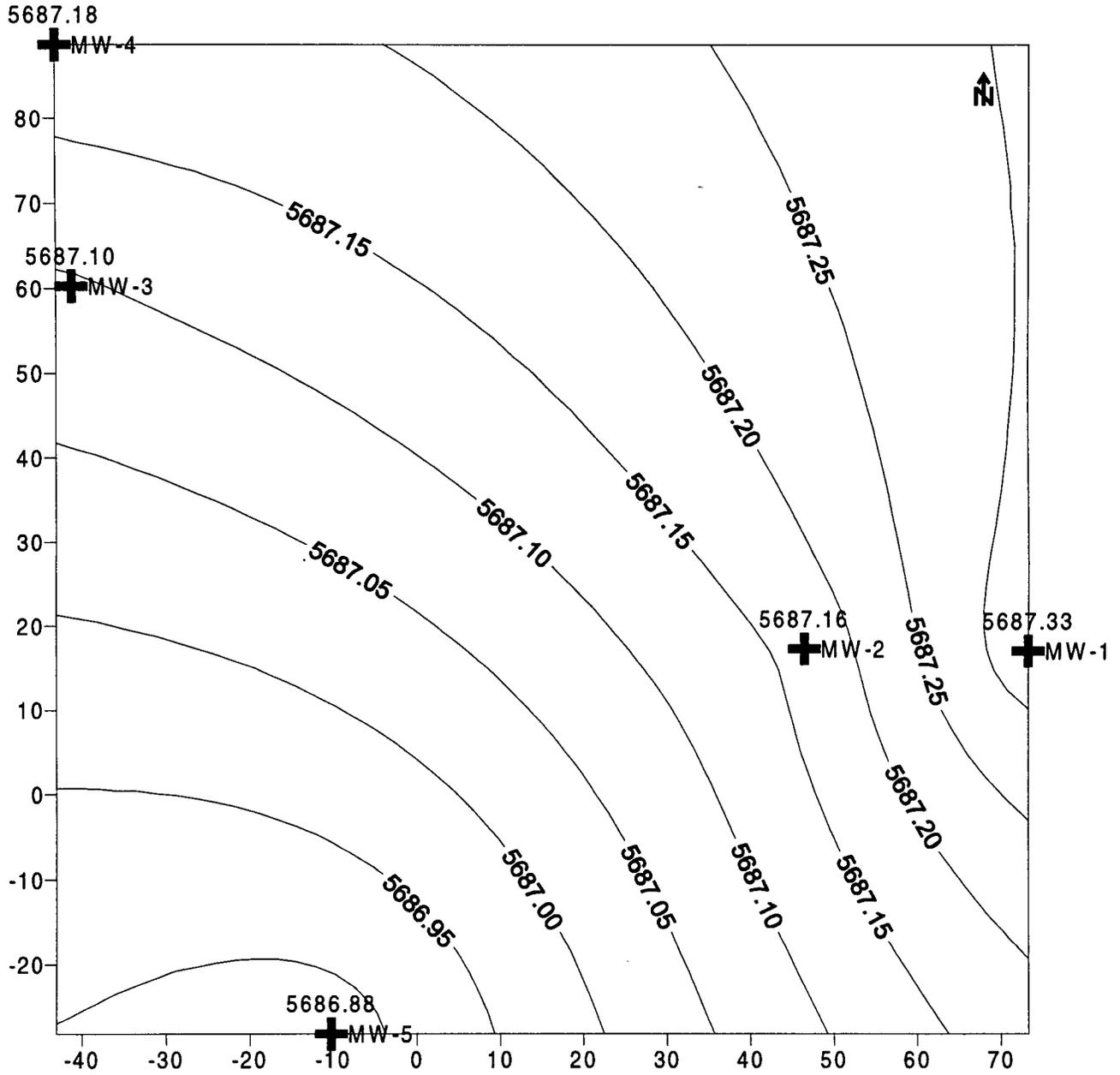


Figure 2c.
Florance 32A Groundwater Contour Map
(November 4, 1998)



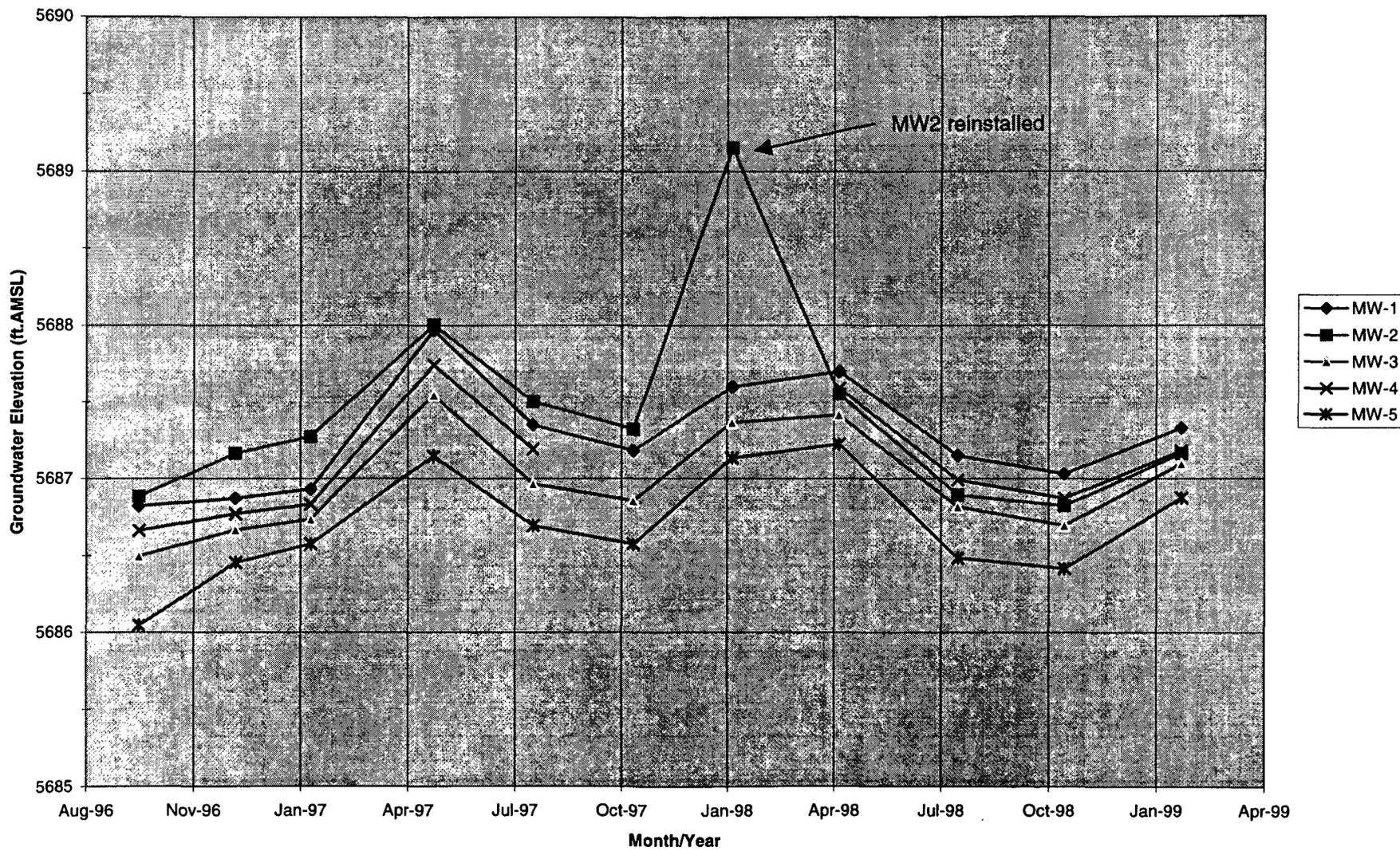
SCALE IN FEET
(X-axis = Easting, Y-axis = Northing)

Figure 2d.
Florance 32A Groundwater Contour Map
(February 10, 1999)



SCALE IN FEET
(X-axis = Easting, Y-axis = Northing)

Figure 3. Florance 32A Hydrograph
(Water Level vs. Time)



OFF: (505) 325-5667



LAB: (505) 325-1556

May 11, 1998

Maureen Gannon
PNM - Public Service Company of NM
Alvarado Square Mail Stop 0408
Albuquerque, NM 87158
TEL: (505) 241-2974
FAX (505) 241-2340

2nd Quarter 98

RE: Florance 32A

Order No.: 9804055

Dear Maureen Gannon,

On Site Technologies, LTD. received 2 samples on 4/29/98 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
BTEX (SW8020A)

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,

A handwritten signature in black ink, appearing to be "D Cox", written in a cursive style.

David Cox



OFF: (505) 325-5667

LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 11-May-98

CLIENT: PNM - Public Service Company of NM

Project: Florance 32A

Lab Order: 9804055

CASE NARRATIVE

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

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

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

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 11-May-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Florance 32A
Work Order:	9804055	Client Sample ID:	9804291130; MW-2
Lab ID:	9804055-01A	Matrix:	AQUEOUS
Project:	Florance 32A	Collection Date:	4/29/98 11:30:00 AM
		COC Record:	7250

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Benzene	4.7	0.5		µg/L	1	5/7/98
Toluene	61	0.5		µg/L	1	5/7/98
Ethylbenzene	15	0.5		µg/L	1	5/7/98
m,p-Xylene	93	1		µg/L	1	5/7/98
o-Xylene	20	0.5		µg/L	1	5/7/98

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 11-May-98

Client: PNM - Public Service Company of NM	Client Sample Info: Florance 32A
Work Order: 9804055	Client Sample ID: 9804291200; MW-6
Lab ID: 9804055-02A Matrix: AQUEOUS	Collection Date: 4/29/98 12:00:00 PM
Project: Florance 32A	COC Record: 7250

*Duplicate
of
MW-2*

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Benzene	2.8	0.5		µg/L	1	5/7/98
Toluene	32	0.5		µg/L	1	5/7/98
Ethylbenzene	11	0.5		µg/L	1	5/7/98
m,p-Xylene	61	1		µg/L	1	5/7/98
o-Xylene	8	0.5		µg/L	1	5/7/98

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

On Site Technologies, LTD.

Date: 11-May-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9804055
Project: Florance 32A

QC SUMMARY REPORT
Method Blank

Sample ID: MB1	Batch ID: GC-1_980507	Test Code: SW8020A	Units: µg/L	Analysis Date 5/7/98	Prep Date:						
Client ID:	9804055	Run ID: GC-1_980507A		SeqNo: 1678							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.0604	0.5									J
Ethylbenzene	.0824	0.5									J
m,p-Xylene	.2996	1									J
Methyl tert-Butyl Ether	.0751	1									J
o-Xylene	.1208	0.5									J
Toluene	.173	0.5									J

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

On Site Technologies, LTD.

Date: 11-May-98

CLIENT: PNM - Public Service Company of NM
 Work Order: 9804055
 Project: Florance 32A

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9804054-01AMS	Batch ID: GC-1_980507	Test Code: SW8020A	Units: µg/L	Analysis Date 5/7/98	Prep Date:						
Client ID: 9804055	Run ID: GC-1_980507A	SeqNo: 1679									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	8323	50	4000	3999	108.1%	56	128				S
Ethylbenzene	5411	50	4000	995.8	110.4%	78	107				S
m,p-Xylene	28750	100	8000	14760	174.9%	67	118				S
Methyl tert-Butyl Ether	3732	100	4000	18.23	92.9%	70	130				S
o-Xylene	9129	50	4000	3818	132.8%	78	107				S
Toluene	18610	50	4000	12990	140.7%	74	116				S

✓ CONFIRMED
 L.S.
 5/11/98
 H.S.

Sample ID: 9804054-01AMSD	Batch ID: GC-1_980507	Test Code: SW8020A	Units: µg/L	Analysis Date 5/7/98	Prep Date:						
Client ID: 9804055	Run ID: GC-1_980507A	SeqNo: 1680									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	7975	50	4000	3999	99.4%	56	128	8323	4.3%	12	S
Ethylbenzene	5198	50	4000	995.8	105.1%	78	107	5411	4.0%	11	S
m,p-Xylene	27560	100	8000	14760	160.1%	67	118	28750	4.2%	10	S
Methyl tert-Butyl Ether	3664	100	4000	18.23	91.1%	70	130	3732	1.9%	15	S
o-Xylene	8811	50	4000	3818	124.8%	78	107	9129	3.5%	14	S
Toluene	17820	50	4000	12990	120.7%	74	116	18610	4.4%	14	S

✓ CONFIRMED
 L.S.
 5/11/98
 H.S.

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: 11-May-98

CLIENT: PNM - Public Service Company of NM

Work Order: 9804055

Project: Florance 32A

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCS WATER	Batch ID: GC-1_980507	Test Code: SW8020A	Units: µg/L	Analysis Date 5/7/98	Prep Date:						
Client ID:	9804055	Run ID: GC-1_980507A	SeqNo: 1677								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	42.28	0.5	40	0.0604	105.6%	56	128				
Ethylbenzene	42.69	0.5	40	0.0824	106.5%	78	107				
m,p-Xylene	82.27	1	80	0.2996	102.5%	67	118				
Methyl tert-Butyl Ether	38.02	1	40	0.0751	94.9%	70	130				
o-Xylene	42.5	0.5	40	0.1208	105.9%	78	107				
Toluene	42.21	0.5	40	0.173	105.1%	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

On Site Technologies, LTD.

Date: 11-May-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9804055
Project: Florance 32A

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: **CCV1 QC0529/30** Batch ID: **GC-1_980507** Test Code: **SW8020A** Units: **µg/L** Analysis Date **5/7/98** Prep Date:
Client ID: **9804055** Run ID: **GC-1_980507A** SeqNo: **1672**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.26	0.5	20	0	106.3%	85	115				
Ethylbenzene	21.65	0.5	20	0	108.3%	85	115				
m,p-Xylene	41.55	1	40	0	103.9%	85	115				
Methyl tert-Butyl Ether	19.41	1	20	0	97.0%	85	115				
o-Xylene	21.46	0.5	20	0	107.3%	85	115				
Toluene	21.37	0.5	20	0	106.8%	85	115				
1,4-Difluorobenzene	92.8	0	100	0	92.8%	70	130				
4-Bromochlorobenzene	89.27	0	100	0	89.3%	70	130				
Fluorobenzene	92.92	0	100	0	92.9%	70	130				

Sample ID: **CCV2 QC0529/30** Batch ID: **GC-1_980507** Test Code: **SW8020A** Units: **µg/L** Analysis Date **5/7/98** Prep Date:
Client ID: **9804055** Run ID: **GC-1_980507A** SeqNo: **1673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.82	0.5	20	0	104.1%	85	115				
Ethylbenzene	21.2	0.5	20	0	106.0%	85	115				
m,p-Xylene	40.61	1	40	0	101.5%	85	115				
Methyl tert-Butyl Ether	18.49	1	20	0	92.4%	85	115				
o-Xylene	21.2	0.5	20	0	106.0%	85	115				
Toluene	20.97	0.5	20	0	104.9%	85	115				
1,4-Difluorobenzene	92.53	0	100	0	92.5%	70	130				
4-Bromochlorobenzene	90.18	0	100	0	90.2%	70	130				
Fluorobenzene	92.97	0	100	0	93.0%	70	130				

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

CLIENT: PNM - Public Service Company of NM
Work Order: 9804055
Project: Florance 32A

QC SUMMARY REPORT
 Continuing Calibration Verification Standard

Sample ID: CCV3 QC0529/30		Batch ID: GC-1_980507		Test Code: SW8020A		Units: µg/L		Analysis Date 5/7/98		Prep Date:	
Client ID: 9804055		Run ID: GC-1_980507A		SeqNo: 1674							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.24	0.5	20	0	106.2%	85	115				
Ethylbenzene	21.5	0.5	20	0	107.5%	85	115				
m,p-Xylene	41.01	1	40	0	102.5%	85	115				
Methyl tert-Butyl Ether	17.96	1	20	0	89.8%	85	115				
o-Xylene	22.72	0.5	20	0	113.6%	85	115				
Toluene	21.47	0.5	20	0	107.3%	85	115				
1,4-Difluorobenzene	92.47	0	100	0	92.5%	70	130				
4-Bromochlorobenzene	88.18	0	100	0	88.2%	70	130				
Fluorobenzene	92.84	0	100	0	92.8%	70	130				

Sample ID: CCV4 QC0529/30		Batch ID: GC-1_980507		Test Code: SW8020A		Units: µg/L		Analysis Date 5/7/98		Prep Date:	
Client ID: 9804055		Run ID: GC-1_980507A		SeqNo: 1675							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.82	0.5	20	0	104.1%	85	115				
Ethylbenzene	21.86	0.5	20	0	109.3%	85	115				
m,p-Xylene	41.02	1	40	0	102.6%	85	115				
Methyl tert-Butyl Ether	18.32	1	20	0	91.6%	85	115				
o-Xylene	21.68	0.5	20	0	108.4%	85	115				
Toluene	21.03	0.5	20	0	105.1%	85	115				
1,4-Difluorobenzene	92.66	0	100	0	92.7%	70	130				
4-Bromochlorobenzene	88.98	0	100	0	89.0%	70	130				
Fluorobenzene	92.65	0	100	0	92.6%	70	130				

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

CLIENT: PNM - Public Service Company of NM
Work Order: 9804055
Project: Florance 32A

QC SUMMARY REPORT
 Continuing Calibration Verification Standard

Sample ID: CCV5 QC0529/30		Batch ID: GC-1_980507		Test Code: SW8020A		Units: µg/L		Analysis Date 5/7/98		Prep Date:	
Client ID: 9804055		Run ID: GC-1_980507A		SeqNo: 1676							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.54	0.5	20	0	102.7%	85	115				
Ethylbenzene	20.93	0.5	20	0	104.6%	85	115				
m,p-Xylene	40.5	1	40	0	101.2%	85	115				
Methyl tert-Butyl Ether	17.55	1	20	0	87.8%	85	115				
o-Xylene	20.6	0.5	20	0	103.0%	85	115				
Toluene	21.34	0.5	20	0	106.7%	85	115				
1,4-Difluorobenzene	91.93	0	100	0	91.9%	70	130				
4-Bromochlorobenzene	88.69	0	100	0	88.7%	70	130				
Fluorobenzene	92.03	0	100	0	92.0%	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 - Public Service Company of NM
Work Order: 9804055
Project: Florance 32A
Test No: SW8020A

**QC SUMMARY REPORT
 SURROGATE RECOVERIES**

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ				
9804051-01A	89.6	85	90.3				
9804051-02A	89.5	84.7	89.6				
9804052-01A	90.3	88	91.7				
9804053-01A	78	80	80.4				
9804054-01A	91.5	89.1	92.8				
9804054-01AMS	91.5	91.3	93.3				
9804054-01AMSD	90	89.2	91.1				
9804055-01A	81.8	77.1	87.9				
9804055-02A	85.9	83.4	88.5				
9804056-01A	85.8	85.3	86.6				
9804057-01A	93.4	88.7	93.7				
9804057-02A	90.2	88.6	91.3				
9804057-03A	91.2	88.6	91.7				
9805003-01A	93.1	88.8	93.5				
9805003-02A	90.7	88.8	91.6				
CCV1 QC0529/30	92.8	89.3	92.9				
CCV2 QC0529/30	92.5	90.2	93				
CCV3 QC0529/30	92.5	88.2	92.8				
CCV4 QC0529/30	92.7	89	92.6				
CCV5 QC0529/30	91.9	88.7	92				
LCS WATER	92.5	89.2	92.5				
MB1	93.1	86.4	93.6				

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	70-130
4BCBZ	= 4-Bromochlorobenzene	70-130
FLBZ	= Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits

OFF: (505) 325-5667



LAB: (505) 325-1556

August 18, 1998

3rd Quarter 98

Maureen Gannon
PNM - Public Service Company of NM
Alvarado Square Mail Stop 0408
Albuquerque, NM 87158
TEL: (505) 241-2974
FAX (505) 241-2340

RE: Florance 32A

Order No.: 9808013

Dear Maureen Gannon,

On Site Technologies, LTD. received 2 samples on 8/7/98 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
BTEX (SW8020A)

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,

A handwritten signature in black ink, appearing to read "David Cox", written in a cursive style.

David Cox

OFF: (505) 325-5667



LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 18-Aug-98

CLIENT: PNM - Public Service Company of NM
Project: Florance 32A
Lab Order: 9808013

CASE NARRATIVE

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

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

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

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 18-Aug-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Florance 32A
Work Order:	9808013	Client Sample ID:	9808070730; MW-2
Lab ID:	9808013-01A	Matrix:	AQUEOUS
Project:	Florance 32A	Collection Date:	8/7/98 7:30:00 AM
		COC Record:	7283

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Benzene	ND	0.5		µg/L	1	8/15/98
Toluene	2.7	0.5		µg/L	1	8/15/98
Ethylbenzene	2.4	0.5		µg/L	1	8/15/98
m,p-Xylene	7.3	1		µg/L	1	8/15/98
o-Xylene	ND	0.5		µg/L	1	8/15/98

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 18-Aug-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Florance 32A	
Work Order:	9808013	Client Sample ID:	9808070800; MW-6	MW-2 Duplicate
Lab ID:	9808013-02A	Matrix:	AQUEOUS	Collection Date: 8/7/98 8:00:00 AM
Project:	Florance 32A		COC Record: 7283	

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Benzene	ND	0.5		µg/L	1	8/15/98
Toluene	2.8	0.5		µg/L	1	8/15/98
Ethylbenzene	3.1	0.5		µg/L	1	8/15/98
m,p-Xylene	9.6	1		µg/L	1	8/15/98
o-Xylene	ND	0.5		µg/L	1	8/15/98

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

On Site Technologies, LTD.

Date: 18-Aug-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9808013
Project: Florance 32A

QC SUMMARY REPORT
Method Blank

Sample ID: MB1	Batch ID: GC-1_980815	Test Code: SW8020A	Units: µg/L	Analysis Date 8/15/98	Prep Date:						
Client ID:	9808013	Run ID: GC-1_980815A		SeqNo: 5509							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.0541	0.5									J
Ethylbenzene	.0909	0.5									J
m,p-Xylene	.2062	1									J
Methyl tert-Butyl Ether	ND	1									
o-Xylene	.1945	0.5									J
Toluene	.1879	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-Aug-98

CLIENT: PNM - Public Service Company of NM
 Work Order: 9808013
 Project: Florance 32A

QC SUMMARY REPORT
 Sample Matrix Spike

Sample ID: 9808014-01AMS	Batch ID: GC-1_980815	Test Code: SW8020A	Units: µg/L	Analysis Date 8/15/98	Prep Date:						
Client ID: 9808013	Run ID: GC-1_980815A	SeqNo: 5510									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	7147	50	4000	3566	89.5%	56	128				
Ethylbenzene	4629	50	4000	970.6	91.5%	78	107				
m,p-Xylene	19620	100	8000	12540	88.5%	67	118				
Methyl tert-Butyl Ether	3512	100	4000	15.95	87.4%	70	130				
o-Xylene	6971	50	4000	3355	90.4%	78	107				
Toluene	14820	50	4000	11270	88.9%	74	116				

Sample ID: 9808014-01AMSD	Batch ID: GC-1_980815	Test Code: SW8020A	Units: µg/L	Analysis Date 8/15/98	Prep Date:						
Client ID: 9808013	Run ID: GC-1_980815A	SeqNo: 5511									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	6980	50	4000	3566	85.4%	56	128	7147	2.4%	12	
Ethylbenzene	4502	50	4000	970.6	88.3%	78	107	4629	2.8%	11	
m,p-Xylene	19120	100	8000	12540	82.2%	67	118	19620	2.6%	10	
Methyl tert-Butyl Ether	3530	100	4000	15.95	87.8%	70	130	3512	0.5%	15	
o-Xylene	6840	50	4000	3355	87.1%	78	107	6971	1.9%	14	
Toluene	14440	50	4000	11270	79.4%	74	116	14820	2.6%	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-Aug-98

CLIENT: PNM - Public Service Company of NM

Work Order: 9808013

Project: Florance 32A

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCS WATER	Batch ID: GC-1_980815	Test Code: SW8020A	Units: µg/L	Analysis Date: 8/15/98	Prep Date:						
Client ID:	9808013	Run ID: GC-1_980815A	SeqNo: 5508								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	38.72	0.5	40	0.0541	96.7%	56	128				
Ethylbenzene	38.44	0.5	40	0.0909	95.9%	78	107				
m,p-Xylene	73.37	1	80	0.2062	91.5%	67	118				
Methyl tert-Butyl Ether	45.59	1	40	0	114.0%	70	130				
o-Xylene	38.61	0.5	40	0.1945	96.0%	78	107				
Toluene	38.26	0.5	40	0.1879	95.2%	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

On Site Technologies, LTD.

Date: 18-Aug-98

CLIENT: PNM - Public Service Company of NM
 Work Order: 9808013
 Project: Florance 32A

QC SUMMARY REPORT
 Continuing Calibration Verification Standard

Sample ID: CCV1 QC0606/07	Batch ID: GC-1_980815	Test Code: SW8020A	Units: µg/L	Analysis Date 8/15/98	Prep Date:						
Client ID: 9808013	Run ID: GC-1_980815A	SeqNo: 5505									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.31	0.5	20	0	101.5%	85	115				
Ethylbenzene	20.3	0.5	20	0	101.5%	85	115				
m,p-Xylene	38.57	1	40	0	96.4%	85	115				
Methyl tert-Butyl Ether	23.28	1	20	0	116.4%	85	115				S
o-Xylene	20.24	0.5	20	0	101.2%	85	115				
Toluene	20.32	0.5	20	0	101.6%	85	115				
1,4-Difluorobenzene	86.44	0	100	0	86.4%	70	130				
4-Bromochlorobenzene	94.3	0	100	0	94.3%	70	130				
Fluorobenzene	82.86	0	100	0	82.9%	70	130				

Sample ID: CCV2 QC0606/07	Batch ID: GC-1_980815	Test Code: SW8020A	Units: µg/L	Analysis Date 8/15/98	Prep Date:						
Client ID: 9808013	Run ID: GC-1_980815A	SeqNo: 5506									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.94	0.5	20	0	99.7%	85	115				
Ethylbenzene	20.15	0.5	20	0	100.8%	85	115				
m,p-Xylene	38.21	1	40	0	95.5%	85	115				
Methyl tert-Butyl Ether	21.47	1	20	0	107.4%	85	115				
o-Xylene	20.07	0.5	20	0	100.3%	85	115				
Toluene	20.18	0.5	20	0	100.9%	85	115				
1,4-Difluorobenzene	86.16	0	100	0	86.2%	70	130				
4-Bromochlorobenzene	88.01	0	100	0	88.0%	70	130				
Fluorobenzene	82.37	0	100	0	82.4%	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 - Public Service Company of NM
Work Order: 9808013
Project: Florance 32A

QC.SUMMARY REPORT
 Continuing Calibration Verification Standard

Sample ID: CCV3 QC0606/07 Batch ID: GC-1_980815 Test Code: SW8020A Units: µg/L Analysis Date 8/15/98 Prep Date:
 Client ID: 9808013 Run ID: GC-1_980815A SeqNo: 5507

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	38.5	0.5	40	0	96.2%	85	115				
Ethylbenzene	38.74	0.5	40	0	96.9%	85	115				
m,p-Xylene	73.86	1	80	0	92.3%	85	115				
Methyl tert-Butyl Ether	36.95	1	40	0	92.4%	85	115				
o-Xylene	38.49	0.5	40	0	96.2%	85	115				
Toluene	38.67	0.5	40	0	96.7%	85	115				
1,4-Difluorobenzene	85.82	0	100	0	85.8%	70	130				
4-Bromochlorobenzene	82.98	0	100	0	83.0%	70	130				
Fluorobenzene	82.15	0	100	0	82.2%	70	130				

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

CLIENT: PNM - Public Service Company of NM
Work Order: 9808013
Project: Florance 32A
Test No: SW8020A

**QC SUMMARY REPORT
 SURROGATE RECOVERIES**

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ				
9808008-02A	87.3	95.1	83.7				
9808008-03A	87.9	91	84				
9808008-04A	85.4	74.5	83.7				
9808008-05A	85.7	88.8	83.3				
9808008-06A	82.6	76	87.6				
9808008-07A	89.5	85.7	83.3				
9808008-08A	86.1	85.4	83.2				
9808008-09A	87.1	85.6	83.3				
9808008-10A	87	83.9	83				
9808008-11A	87.3	85.3	83.6				
9808008-12A	86.5	94	83.8				
9808013-01A	83.3	77.3	79.8				
9808013-02A	83.8	78.9	80.7				
9808014-01A	85	77.8	82				
9808014-01AMS	84.6	79.4	81.8				
9808014-01AMSD	84.6	80.6	81.7				
9808015-01A	87	87.1	83.3				
9808015-02A	87.1	89.3	83.4				
9808015-03A	87.2	87.4	83.6				
9808015-04A	87.3	86.8	83.4				
CCV1 QC0606/07	86.4	94.3	82.9				
CCV2 QC0606/07	86.2	88	82.4				
CCV3 QC0606/07	85.8	83	82.2				
LCS WATER	86.1	94.3	82.7				
MB1	87.1	93.2	83.6				

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	70-130
4BCBZ	= 4-Bromochlorobenzene	70-130
FLBZ	= Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits

OFF: (505) 325-5667



LAB: (505) 325-1556

November 06, 1998

Maureen Gannon
PNM - Public Service Company of NM
Alvarado Square Mail Stop 0408
Albuquerque, NM 87158
TEL: (505) 241-2974
FAX (505) 241-2340

4th Quarter 1998

RE: Florance 32A

Order No.: 9811013

Dear Maureen Gannon,

On Site Technologies, LTD. received 1 sample on 11/4/98 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
BTEX (SW8020A)

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,

A handwritten signature in black ink, appearing to read "David Cox", is written over a horizontal line.

David Cox

OFF: (505) 325-5667



LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 06-Nov-98

CLIENT: PNM - Public Service Company of NM
Project: Florance 32A
Lab Order: 9811013

CASE NARRATIVE

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

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

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

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 06-Nov-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Florance 32A
Work Order:	9811013	Client Sample ID:	9811040839; MW-2
Lab ID:	9811013-01A	Matrix:	AQUEOUS
Project:	Florance 32A	Collection Date:	11/4/98 8:39:00 AM
		COC Record:	7516

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Benzene	ND	1		µg/L	1	11/4/98
Toluene	2.1	1		µg/L	1	11/4/98
Ethylbenzene	2.2	1		µg/L	1	11/4/98
m,p-Xylene	ND	2		µg/L	1	11/4/98
o-Xylene	ND	1		µg/L	1	11/4/98

Qualifiers: PQL - Practical Quantitation Limit S - Spike Recovery outside accepted recovery limits
ND - Not Detected at Practical Quantitation Limit R - RPD outside accepted recovery limits
J - Analyte detected below Practical Quantitation Limit E - Value above quantitation range
B - Analyte detected in the associated Method Blank Surr: - Surrogate

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

On Site Technologies, LTD.

Date: 06-Nov-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9811013
Project: Florance 32A

QC SUMMARY REPORT
Method Blank

Sample ID: MB1	Batch ID: GC-1_981104	Test Code: SW8020A	Units: µg/L	Analysis Date 11/4/98	Prep Date:						
Client ID:	9811013	Run ID: GC-1_981104A	SeqNo: 8462								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1									
Ethylbenzene	ND	1									
m,p-Xylene	.1915	2									J
Methyl tert-Butyl Ether	ND	1									
o-Xylene	ND	1									
Toluene	.1132	1									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: 06-Nov-98

CLIENT: PNM - Public Service Company of NM
 Work Order: 9811013
 Project: Florance 32A

QC SUMMARY REPORT
 Sample Matrix Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	557.3	10	400	174.9	95.6%	56	128				
Ethylbenzene	495.2	10	400	103.2	98.0%	78	107				
m,p-Xylene	1867	20	800	1118	93.6%	67	118				
Methyl tert-Butyl Ether	414	10	400	2.82	102.8%	70	130				
o-Xylene	744.5	10	400	345.3	99.8%	78	107				
Toluene	1168	10	400	794.7	93.3%	74	116				

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	540.5	10	400	174.9	91.4%	56	128	557.3	3.1%	12	
Ethylbenzene	480	10	400	103.2	94.2%	78	107	495.2	3.1%	11	
m,p-Xylene	1809	20	800	1118	86.4%	67	118	1867	3.1%	10	
Methyl tert-Butyl Ether	409.9	10	400	2.82	101.8%	70	130	414	1.0%	15	
o-Xylene	726	10	400	345.3	95.2%	78	107	744.5	2.5%	14	
Toluene	1132	10	400	794.7	84.4%	74	116	1168	3.1%	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: 06-Nov-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9811013
Project: Florance 32A

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCS WATER	Batch ID: GC-1_981104	Test Code: SW8020A	Units: µg/L	Analysis Date: 11/4/98	Prep Date:						
Client ID:	9811013	Run ID: GC-1_981104A	SeqNo: 8461								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	39.08	1	40	0	97.7%	56	128				
Ethylbenzene	39.35	1	40	0	98.4%	78	107				
m,p-Xylene	77.64	2	80	0.1915	96.8%	67	118				
Methyl tert-Butyl Ether	39.46	1	40	0	98.6%	70	130				
o-Xylene	39.78	1	40	0	99.5%	78	107				
Toluene	39.28	1	40	0.1132	97.9%	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

On Site Technologies, LTD.

Date: 06-Nov-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9811013
Project: Florance 32A

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: CCV1 QC0606/07	Batch ID: GC-1_981104	Test Code: SW8020A	Units: µg/L	Analysis Date 11/4/98	Prep Date:						
Client ID: 9811013	Run ID: GC-1_981104A	SeqNo: 8459									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.15	1	20	0	105.7%	85	115				
Ethylbenzene	21.33	1	20	0	106.7%	85	115				
m,p-Xylene	42	2	40	0	105.0%	85	115				
Methyl tert-Butyl Ether	20.99	1	20	0	105.0%	85	115				
o-Xylene	21.54	1	20	0	107.7%	85	115				
Toluene	21.27	1	20	0	106.3%	85	115				
1,4-Difluorobenzene	89.74	0	100	0	89.7%	70	130				
4-Bromochlorobenzene	102.7	0	100	0	102.7%	70	130				
Fluorobenzene	87.6	0	100	0	87.6%	70	130				

Sample ID: CCV2 QC0606/07	Batch ID: GC-1_981104	Test Code: SW8020A	Units: µg/L	Analysis Date 11/4/98	Prep Date:						
Client ID: 9811013	Run ID: GC-1_981104A	SeqNo: 8460									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.8	1	20	0	104.0%	85	115				
Ethylbenzene	20.93	1	20	0	104.6%	85	115				
m,p-Xylene	41.08	2	40	0	102.7%	85	115				
Methyl tert-Butyl Ether	21.31	1	20	0	106.5%	85	115				
o-Xylene	21.31	1	20	0	106.6%	85	115				
Toluene	20.99	1	20	0	105.0%	85	115				
1,4-Difluorobenzene	89.25	0	100	0	89.2%	70	130				
4-Bromochlorobenzene	102.4	0	100	0	102.4%	70	130				
Fluorobenzene	87.7	0	100	0	87.7%	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 - Public Service Company of NM
 Work Order: 9811013
 Project: Florance 32A
 Test No: SW8020A

**QC SUMMARY REPORT
 SURROGATE RECOVERIES**

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ				
9810083-01A	90.1	103	88.1				
9810083-01AMS	90.2	103	87.8				
9810083-01AMSD	89.9	103	87.6				
9810094-01A	90	102	88				
9810094-02A	89.8	103	87.9				
9811008-01A	89.1	99.6	96.9				
9811012-01A	82.6	97.4	82.6				
9811012-02A	82.4	96.4	82				
9811013-01A	88	102	85.6				
9811014-01A	89.7	104	88				
9811014-02A	89.8	104	88				
CCV1 QC0606/07	89.7	103	87.6				
CCV2 QC0606/07	89.2	102	87.7				
LCS WATER	89	102	87.6				
MB1	90.2	103	88				

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	70-130
4BCBZ	= 4-Bromochlorobenzene	70-130
FLBZ	= Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits



CHAIN OF CUSTODY RECORD

Date: 11/4/94

Page: 1 of 1

612 E. Murphy Dr. • P.O. Box 2606 • Farmington, NM 87499
 LAB: (505) 325-5667 • FAX: (505) 325-6256

Purchase Order No.:		Job No. <u>4-1505</u>		REPORT RESULTS TO	Name Maureen Gannon		Title			
SEND INVOICE TO	Name Denver Bearden		Company PNM Gas Services		Mailing Address Alverado Square, Mail Stop 0408					
	Company PNM Gas Services		Dept. 324-3763		City, State, Zip Albuquerque, NM 87158					
	Address 603 W. Elm Street				Telephone No. 505-848-2974		Telefax No.			
	City, State, Zip Farmington, NM 87401									
Sampling Location: <u>Florence 32A</u>				Number of Containers	ANALYSIS REQUESTED					
Sampler: <u>Lee, Tracy, 1/6</u>					/ / / / / / / / / /					
SAMPLE IDENTIFICATION		SAMPLE			MATRIX		PRES.		LAB ID	
		DATE			TIME					
<u>981104 0839</u>		<u>MW-2</u>			<u>11/4/94 0859</u>		<u>HEU</u>		<u>101</u>	
Relinquished by: <u>[Signature]</u>		Date/Time <u>11/04/94 1001</u>		Received by: <u>[Signature]</u>		Date/Time <u>11-1/94 1001</u>				
Relinquished by:		Date/Time		Received by:		Date/Time				
Relinquished by:		Date/Time		Received by:		Date/Time				
Method of Shipment:				Rush		24-48 Hours		10 Working Days		
Authorized by: _____ Date _____								Results to be sent to both parties.		
(Client Signature Must Accompany Request)										

OFF: (505) 325-5667



LAB: (505) 325-1556

February 23, 1999

*Received
Mar 02 99*

Maureen Gannon
PNM - Public Service Company of NM
Alvarado Square Mail Stop 0408
Albuquerque, NM 87158
TEL: (505) 241-2974
FAX (505) 241-2340

1st Quarter 1999

RE: Florance 32A

Order No.: 9902066

Dear Maureen Gannon,

On Site Technologies, LTD. received 6 samples on 2/11/99 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
BTEX (SW8021B)

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,

A handwritten signature in black ink, appearing to read "David Cox", written in a cursive style.

David Cox

OFF: (505) 325-5667



LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 23-Feb-99

CLIENT: PNM - Public Service Company of NM
Project: Florance 32A
Lab Order: 9902066

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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ANALYTICAL REPORT

Date: 23-Feb-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	Florance 32A
Work Order:	9902066	Client Sample ID:	9902101200; MW-1
Lab ID:	9902066-01A	Matrix:	AQUEOUS
Project:	Florance 32A	Collection Date:	2/10/99 12:00:00 PM
		COC Record:	7530

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Benzene	ND	0.5		µg/L	1	2/16/99
Toluene	ND	0.5		µg/L	1	2/16/99
Ethylbenzene	ND	0.5		µg/L	1	2/16/99
m,p-Xylene	ND	1		µg/L	1	2/16/99
o-Xylene	ND	0.5		µg/L	1	2/16/99

Qualifiers:

PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
B - Analyte detected in the associated Method Blank	Surr: - Surrogate

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ANALYTICAL REPORT

Date: 23-Feb-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	Florance 32A
Work Order:	9902066	Client Sample ID:	9902101220; MW-2
Lab ID:	9902066-02A	Matrix:	AQUEOUS
Project:	Florance 32A	Collection Date:	2/10/99 12:20:00 PM
		COC Record:	7530

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Benzene	ND	0.5		µg/L	1	2/16/99
Toluene	ND	0.5		µg/L	1	2/16/99
Ethylbenzene	ND	0.5		µg/L	1	2/16/99
m,p-Xylene	ND	1		µg/L	1	2/16/99
o-Xylene	ND	0.5		µg/L	1	2/16/99

Qualifiers: PQL - Practical Quantitation Limit S - Spike Recovery outside accepted recovery limits
ND - Not Detected at Practical Quantitation Limit R - RPD outside accepted recovery limits
J - Analyte detected below Practical Quantitation Limit E - Value above quantitation range
B - Analyte detected in the associated Method Blank Surr: - Surrogate

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 23-Feb-99

Client: PNM - Public Service Company of NM **Client Sample Info:** Florance 32A
Work Order: 9902066 **Client Sample ID:** 9902101230; MW-6
Lab ID: 9902066-03A **Matrix:** AQUEOUS **Collection Date:** 2/10/99 12:30:00 PM
Project: Florance 32A **COC Record:** 7530

*Duplicate
of
MW-2*

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Benzene	ND	0.5		µg/L	1	2/16/99
Toluene	ND	0.5		µg/L	1	2/16/99
Ethylbenzene	0.6	0.5		µg/L	1	2/16/99
m,p-Xylene	ND	1		µg/L	1	2/16/99
o-Xylene	ND	0.5		µg/L	1	2/16/99

Qualifiers: PQL - Practical Quantitation Limit S - Spike Recovery outside accepted recovery limits
 ND - Not Detected at Practical Quantitation Limit R - RPD outside accepted recovery limits
 J - Analyte detected below Practical Quantitation Limit E - Value above quantitation range
 B - Analyte detected in the associated Method Blank Surr: - Surrogate

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ANALYTICAL REPORT

Date: 23-Feb-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	Florance 32A
Work Order:	9902066	Client Sample ID:	9902101300; MW-3
Lab ID:	9902066-04A	Matrix:	AQUEOUS
Project:	Florance 32A	Collection Date:	2/10/99 1:00:00 PM
		COC Record:	7530

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Benzene	ND	0.5		µg/L	1	2/16/99
Toluene	ND	0.5		µg/L	1	2/16/99
Ethylbenzene	ND	0.5		µg/L	1	2/16/99
m,p-Xylene	ND	1		µg/L	1	2/16/99
o-Xylene	ND	0.5		µg/L	1	2/16/99

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

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LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 23-Feb-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	Florance 32A
Work Order:	9902066	Client Sample ID:	9902101320; MW-4
Lab ID:	9902066-05A	Matrix:	AQUEOUS
Project:	Florance 32A	Collection Date:	2/10/99 1:20:00 PM
		COC Record:	7530

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Benzene	ND	0.5		µg/L	1	2/16/99
Toluene	ND	0.5		µg/L	1	2/16/99
Ethylbenzene	ND	0.5		µg/L	1	2/16/99
m,p-Xylene	ND	1		µg/L	1	2/16/99
o-Xylene	ND	0.5		µg/L	1	2/16/99

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

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LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 23-Feb-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	Florance 32A
Work Order:	9902066	Client Sample ID:	9902101340; MW-5
Lab ID:	9902066-06A	Matrix:	AQUEOUS
Project:	Florance 32A	Collection Date:	2/10/99 1:40:00 PM
		COC Record:	7530

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Benzene	ND	0.5		µg/L	1	2/16/99
Toluene	ND	0.5		µg/L	1	2/16/99
Ethylbenzene	ND	0.5		µg/L	1	2/16/99
m,p-Xylene	ND	1		µg/L	1	2/16/99
o-Xylene	ND	0.5		µg/L	1	2/16/99

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

On Site Technologies, LTD.

Date: 23-Feb-99

CLIENT: PNM - Public Service Company of NM
Work Order: 9902066
Project: Florance 32A

QC SUMMARY REPORT
Method Blank

Sample ID: MB1	Batch ID: GC-1_990216	Test Code: SW8021B	Units: µg/L	Analysis Date: 2/16/99	Prep Date:						
Client ID:	9902066	Run ID: GC-1_990216A	SeqNo: 11158								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.0456	0.5									J
Ethylbenzene	.0406	0.5									J
m,p-Xylene	.1017	1									J
Methyl tert-Butyl Ether	ND	1									J
o-Xylene	.0444	0.5									J
Toluene	.1013	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: 23-Feb-99

CLIENT: PNM - Public Service Company of NM
Work Order: 9902066
Project: Florance 32A

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9902064-01AMS	Batch ID: GC-1_990216	Test Code: SW8021B	Units: µg/L	Analysis Date 2/16/99	Prep Date:						
Client ID: 9902066	Run ID: GC-1_990216A	SeqNo: 11159									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	208.4	2.5	200	18.29	95.1%	73	115				
Ethylbenzene	212.9	2.5	200	27.38	92.8%	74	117				
m,p-Xylene	738.5	5	400	382.3	89.0%	76	112				
Methyl tert-Butyl Ether	204	5	200	40.74	81.6%	62	122				
o-Xylene	219.6	2.5	200	34.65	92.5%	83	112				
Toluene	208.2	2.5	200	33.82	87.2%	71	120				

Sample ID: 9902064-01AMSD	Batch ID: GC-1_990216	Test Code: SW8021B	Units: µg/L	Analysis Date 2/16/99	Prep Date:						
Client ID: 9902066	Run ID: GC-1_990216A	SeqNo: 11160									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	205.4	2.5	200	18.29	93.5%	73	115	208.4	1.5%	8	
Ethylbenzene	209	2.5	200	27.38	90.8%	74	117	212.9	1.9%	9	
m,p-Xylene	725.4	5	400	382.3	85.8%	76	112	738.5	1.8%	9	
Methyl tert-Butyl Ether	200	5	200	40.74	79.6%	62	122	204	2.0%	7	
o-Xylene	216.4	2.5	200	34.65	90.9%	83	112	219.6	1.5%	9	
Toluene	196.2	2.5	200	33.82	81.2%	71	120	208.2	5.9%	9	

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: 23-Feb-99

CLIENT: PNM - Public Service Company of NM

Work Order: 9902066

Project: Florance 32A

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCS WATER	Batch ID: GC-1_990216	Test Code: SW8021B	Units: µg/L	Analysis Date 2/16/99	Prep Date:						
Client ID:	9902066	Run ID: GC-1_990216A	SeqNo: 11157								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.2	0.5	40	0.0456	100.4%	84	110				
Ethylbenzene	40.73	0.5	40	0.0406	101.7%	86	113				
m,p-Xylene	78.45	1	80	0.1017	97.9%	81	114				
Methyl tert-Butyl Ether	41.75	1	40	0	104.4%	69	129				
o-Xylene	40.64	0.5	40	0.0444	101.5%	86	112				
Toluene	40.36	0.5	40	0.1013	100.6%	85	111				

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: 23-Feb-99

CLIENT: PNM - Public Service Company of NM
 Work Order: 9902066
 Project: Florance 32A

QC SUMMARY REPORT
 Continuing Calibration Verification Standard

Sample ID: CCV1 QC0606/07	Batch ID: GC-1_990216	Test Code: SW8021B	Units: µg/L	Analysis Date 2/16/99	Prep Date:						
Client ID: 9902066	Run ID: GC-1_990216A	SeqNo: 11154									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.53	0.5	20	0	102.6%	85	115				
Ethylbenzene	20.79	0.5	20	0	103.9%	85	115				
m,p-Xylene	39.96	1	40	0	99.9%	85	115				
Methyl tert-Butyl Ether	20.9	1	20	0	104.5%	85	115				
o-Xylene	20.73	0.5	20	0	103.6%	85	115				
Toluene	20.53	0.5	20	0	102.7%	85	115				
1,4-Difluorobenzene	93.7	0	100	0	93.7%	84	100				
4-Bromochlorobenzene	96.58	0	100	0	96.6%	87	105				
Fluorobenzene	93.28	0	100	0	93.3%	87	99				

Sample ID: CCV2 QC0606/07	Batch ID: GC-1_990216	Test Code: SW8021B	Units: µg/L	Analysis Date 2/16/99	Prep Date:						
Client ID: 9902066	Run ID: GC-1_990216A	SeqNo: 11155									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.81	0.5	20	0	104.0%	85	115				
Ethylbenzene	21.09	0.5	20	0	105.4%	85	115				
m,p-Xylene	40.47	1	40	0	101.2%	85	115				
Methyl tert-Butyl Ether	20.8	1	20	0	104.0%	85	115				
o-Xylene	21.01	0.5	20	0	105.0%	85	115				
Toluene	20.89	0.5	20	0	104.5%	85	115				
1,4-Difluorobenzene	93.54	0	100	0	93.5%	84	100				
4-Bromochlorobenzene	97.32	0	100	0	97.3%	87	105				
Fluorobenzene	93.55	0	100	0	93.6%	87	99				

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

CLIENT: PNM - Public Service Company of NM
Work Order: 9902066
Project: Florance 32A

QC SUMMARY REPORT
 Continuing Calibration Verification Standard

Sample ID:	Batch ID:	Test Code:	Units:	Analysis Date:	Prep Date:						
CCV3 QC0606/07	GC-1_990216	SW8021B	µg/L	2/16/99							
Client ID:	9902066	Run ID:	GC-1_990216A	SeqNo:	11156						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41.78	0.5	40	0	104.4%	85	115				
Ethylbenzene	40.52	0.5	40	0	101.3%	85	115				
m,p-Xylene	77.9	1	80	0	97.4%	85	115				
Methyl tert-Butyl Ether	40.67	1	40	0	101.7%	85	115				
o-Xylene	40.4	0.5	40	0	101.0%	85	115				
Toluene	40.32	0.5	40	0	100.8%	85	115				
1,4-Difluorobenzene	93.87	0	100	0	93.9%	84	100				
4-Bromochlorobenzene	97.43	0	100	0	97.4%	87	105				
Fluorobenzene	93.97	0	100	0	94.0%	87	99				

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 - Public Service Company of NM
Work Order: 9902066
Project: Florance 32A
Test No: SW8021B

**QC SUMMARY REPORT
 SURROGATE RECOVERIES**

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ				
9902048-01A	92.7	97.4	93.3				
9902059-04A	91.4	96.4	92.1				
9902059-05A	89.1	91.8	94				
9902060-01A	94.1	96.5	94.6				
9902060-02A	92.8	97	93				
9902060-03A	94	97.3	94.7				
9902063-01A	92.8	96.4	94.4				
9902063-02A	95	95.7	94.1				
9902064-01A	86.3	89.1	89.3				
9902064-01AMS	86.3	88.9	87.9				
9902064-01AMSD	86	88.4	88.3				
9902064-02A	87.3	91.2	89.6				
9902066-01A	93.8	96.5	94.9				
9902066-02A	93.8	97.4	94.8				
9902066-03A	93.1	96.2	93.6				
9902066-04A	94.2	96.9	94.6				
9902066-05A	93.7	96.3	94.9				
9902066-06A	93.4	97	94.9				
CCV1 QC0606/07	93.7	96.6	93.3				
CCV2 QC0606/07	93.5	97.3	93.6				
CCV3 QC0606/07	93.9	97.4	94				
LCS WATER	93.5	97.8	93				
MB1	94.3	96.5	94.2				

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	84-100
4BCBZ	= 4-Bromochlorobenzene	87-105
FLBZ	= Fluorobenzene	87-99

* Surrogate recovery outside acceptance limits



CHAIN OF CUSTODY RECORD

Date: 2/10/99

Page: 1 of 1

612 E. Murphy Dr. • P.O. Box 2606 • Farmington, NM 87499
 LAB: (505) 325-5667 • FAX: (505) 325-6258

Purchase Order No.:		Job No.:		REPORT RESULTS TO	Name Maureen Gannon		Title												
SEND INVOICE TO	Name Denver Bearden		Company PNM Gas Services		Mailing Address Alverado Square, Mall Stop 0408														
	Company PNM Gas Services		Dept. 324-3763		City, State, Zip Albuquerque, NM 87158														
	Address 603 W. Elm Street		Telephone No. 505-848-2974		Telefax No.														
	City, State, Zip Farmington, NM 87401																		
Sampling Location: Florange 32A				Number of Containers	ANALYSIS REQUESTED														
Sampler: Mark S. Kelionis					BTEX ROAD														
SAMPLE IDENTIFICATION			SAMPLE		LAB ID														
		DATE	TIME	MATRIX		PRES.													
MW-1		9902101200		H ₂ O	HCL	2	X												
MW-2		9902101220		↓	↓	2	X												
MW-6		9902101230		↓	↓	2	X												
MW-3		9902101300		↓	↓	2	X												
MW-4		9902101320		↓	↓	2	X												
MW-5		9902101340		↓	↓	2	X												
Relinquished by: <i>[Signature]</i>			Date/Time <u>2/10/99 1700</u>		Received by: <i>[Signature]</i>			Date/Time <u>2/10/99 1700</u>											
Relinquished by:			Date/Time		Received by:			Date/Time											
Relinquished by:			Date/Time		Received by:			Date/Time											
Method of Shipment:					Rush	24-48 Hours	10 Working Days	Special Instructions:											
Authorized by: <i>[Signature]</i> Date <u>2/10/99</u>					Results to be sent to both parties.														
(Client Signature <u>Must</u> Accompany Request)																			