

3R - 337

REPORTS

DATE:

2000



Environmental Services
187 County Road 4980
Bloomfield, New Mexico 87413
(505) 632-4409
(505) 632-4405

September 18, 2000

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SEP 28 2000

Mr. William Olson
Hydrologist
Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

RE: 2000 SAN JUAN BASIN ANNUAL GROUNDWATER REPORT

Dear Mr. Olson:

Enclosed for your review is the 2000 San Juan Basin Annual Groundwater Report prepared by Williams for work conducted by Public Service New Mexico (PNM). The report presents monitoring data for twenty-two sites having petroleum hydrocarbon impacted groundwater, which resulted from the past use of unlined surface impoundments. The reporting period begins in the second quarter of 1999 and ends in the second quarter of 2000. The sites included in the report are listed in Table 1, attached.

The natural gas production and gathering facilities at which the impacted groundwater sites are located were formerly owned and operated by PNM. The facilities became assets of Williams upon purchase of the Gas Company of New Mexico (GCNM) from PNM. PNM had retained certain environmental liabilities associated with the assets including obligations for unlined surface impoundment impacts to soil and groundwater. Subsequent negotiations between PNM and Williams resulted in an agreement whereby Williams would complete further investigations and remediation at sites not previously closed by PNM. The agreement also states that Williams will complete work at sites where PNM has identified soil or groundwater contamination or otherwise initiated remedial actions.

During PNM's tenure, management of sites with hydrocarbon impacted groundwater was directed by their Ground Water Management Plan. This plan specified general procedures for site investigation, remediation, and reporting. The plan called for PNM to prepare an annual report summarizing the results of groundwater monitoring at each site. The report was to be submitted each April 1st and include data collected during the second, third and fourth quarters of the previous year and data from the first quarter of the reporting year.

Anticipating termination of their environmental obligations, PNM requested on March 4, 2000 an extension for submittal of the 2000 annual report so that they could also include data collected during the second quarter of 2000. Although PNM completed collection of monitoring data for the second quarter of 2000, they did not prepare and submit an annual report. Williams has prepared the 2000 annual report in an effort to maintain project continuity and to provide closure to PNM's management of the project.

As with most projects of this magnitude, first hand knowledge is paramount to prepare a thorough summary of site activities. Given the limited firsthand knowledge of project workings, Williams is in the unenviable position of trying to glean information from only the paper record. As such, the 2000 report simply transmits the PNM-collected data to OCD in what we hope is a concise and useable format. Initially, it was Williams' goal to provide more comprehensive reporting on the status of each site, however, preliminary evaluation of the data soon revealed that accurate interpretations could not be formulated in a timely manner.

Williams is continuing to review and evaluate the data provided by PNM to determine the best course for future actions at the sites. Preliminary review has revealed several high priority needs. For the majority of sites, accurate surveys are needed along with development of site base maps and a comprehensive database to facilitate project management. Moreover, sites with free product should be evaluated to determine the efficacy of free-product recovery and whether or not all source contributions are known.

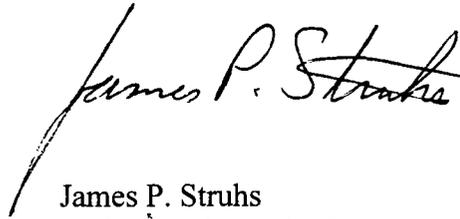
Organization of the report follows the same format used by PNM. Data for each site is contained in a separate tabbed section labeled with the site name. Each section contains a data summary table listing each monitoring well. The absence or presence of free product is indicated on the table and the concentrations of the BTEX compounds for the reporting period are noted. Following the data summary table are the actual laboratory analytical reports. In an effort to make this document more manageable, the laboratory quality control reports have not been included. These reports will of course remain a part of the project file and be made available for review upon request. In addition to the analytical data, a contour map depicting the elevation of the water table as interpolated from water-level data is also included. When possible, hydrographs illustrating the seasonal fluctuations in water-table elevations are presented.

Thank you for your understanding of the Williams position and the time to review this submittal. Mr. Jim Struhs has been assigned the role of Project Hydrogeologist and as such will be involved in many of the day to day project operations. If you have any questions regarding the report, you may call me at (505) 632-4409 or Jim at (505) 632-4457.

Best regards,



Mark B. Harvey
Project Manager
Mark.Harvey@Williams.com



James P. Struhs
Project Hydrogeologist
Jim.Struhs@Williams.com

Attachment
Enclosure

c: Denny Foust, OCD Aztec District Office
Bill Liess, BLM Farmington District Office
Allen Talley, Williams

Table 1. List of Sites for Period Q2/1999 to Q2/2000

Site Name	Section	Township	Range	Unit Letter	OCD Notified	Installed Wells	2nd QTR 1999	3rd QTR 1999	4th QTR 1999	1st QTR 2000	2nd QTR 2000
Albright #4 Drip	22	29N	10W	F	9-Jul-99	28-Jul-99		5-Aug-99	6-Dec-99	5-Mar-00	7-Jun-00
Blanco Wash Drip	31	27N	8W	J	19-Feb-99	6-Apr-99	28-Apr-99	28-Sep-99	6-Dec-99	17-Mar-00	7-Jun-00
Chamberlain 1	14	32N	12W	F	30-Sep-99	13-Sep-99			11-Nov-99	1-Feb-00	2-May-00
Davis 1	11	31N	12W	E	2-Mar-99	2-Aug-99	25-May-99	20-Sep-99	8-Dec-99	14-Mar-00	8-Jun-00
Dogie East Pit	4	25N	6W	D	7-Jul-97	20-May-98	27-Apr-99	21-Sep-99	16-Nov-99	15-Feb-00	11-May-00
Dogie North Pit	4	25N	6W	D	7-Jul-97	6-Jul-97	27-Apr-99	21-Sep-99	16-Nov-99	15-Feb-00	11-May-00
Flornice 124	27	29N	9W	C	12-Aug-96	28-Aug-96	7-Apr-99	28-Jul-99	14-Oct-99	1-Feb-00	26-Apr-00
Flornice 40	21	30N	8W	G	27-Jan-97	29-Jan-97	21-Apr-99	28-Jul-99	1-Nov-99	21-Mar-00	14-Jun-00
Flornice M 47X	5	30N	9W	G	27-Jan-97	6-Feb-97	21-Apr-99	28-Jul-99	3-Nov-99	23-Mar-00	14-Jun-00
Grenier 4A	7	31N	11W	M	18-Oct-99	28-Sep-99			3-Nov-99	7-Mar-00	12-Jun-00
Hampton 4M	13	30N	11W	N	7-Jan-97	31-Jan-97	5-May-99	12-Jul-99	21-Oct-99	27-Jan-00	13-Jun-00
Honolulu Drip	15	26N	4W	B	18-Jun-96	13-Jun-96	14-Apr-99	21-Sep-99	23-Nov-99	9-Feb-00	23-May-00
Ice Canyon Drip	15	26N	6W	B	1-Dec-97	13-May-98	27-Apr-99	20-Sep-99	16-Nov-99	7-Feb-00	18-May-00
Jicarilla Contract 147-6	6	25N	5W	C	13-Aug-98	27-Jan-99	14-Apr-99	27-Sep-99	15-Nov-99	20-Mar-00	7-Jun-00
Kaufman 1	33	31N	13W	H	9-Mar-00					9-Mar-00	22-May-00
Miles Federal 1E Drip	5	26N	7W	N	23-Jun-97	7-Jul-97	1-Jun-99	3-Aug-99	23-Nov-99	7-Feb-00	18-May-00
O' Shea 1M	3	31N	13W	F	6-Jun-98	9-Jul-98	24-May-99	6-Aug-99	12-Nov-99	3-Feb-00	9-May-00
Patterson A Com A1	2	31N	12W	G	2-Mar-99	15-Mar-99	2-Jun-99	6-Aug-99	22-Nov-99	15-Mar-00	8-Jun-00
Pritchard 2	6	30N	8W	J	22-Feb-99	1-Apr-99	26-May-99	17-Aug-99	20-Oct-99	26-Jan-00	17-Apr-00
Randleman 1	13	31N	11W	K	9-May-97	14-May-97	19-Apr-99	17-Aug-99	27-Oct-99	25-Jan-00	10-Apr-00
Wilmerding 1M	10	31N	13W	C	5-Jun-98	1-Jul-98	1-Jun-99	10-Aug-99	12-Oct-99	1-Feb-00	1-May-00
Zachry 18E	11	28N	10W	O	6-Sep-96	19-Nov-96	20-Apr-99	2-Aug-99	1-Nov-99	31-Jan-00	26-Apr-00



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ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Annual
Groundwater
Report
2000

San Juan Basin, New Mexico
Lined Surface Impoundments

Site Summary Report

Site Name: O'Shea 1M

Reporting Period: 2nd Qtr 1999 - 2nd Qtr 2000

Location: Unit F, Sec 3, Twn 31N, Rng 13W

Canyon: La Plata River

Operator: Chateau

Vulnerable Class: original

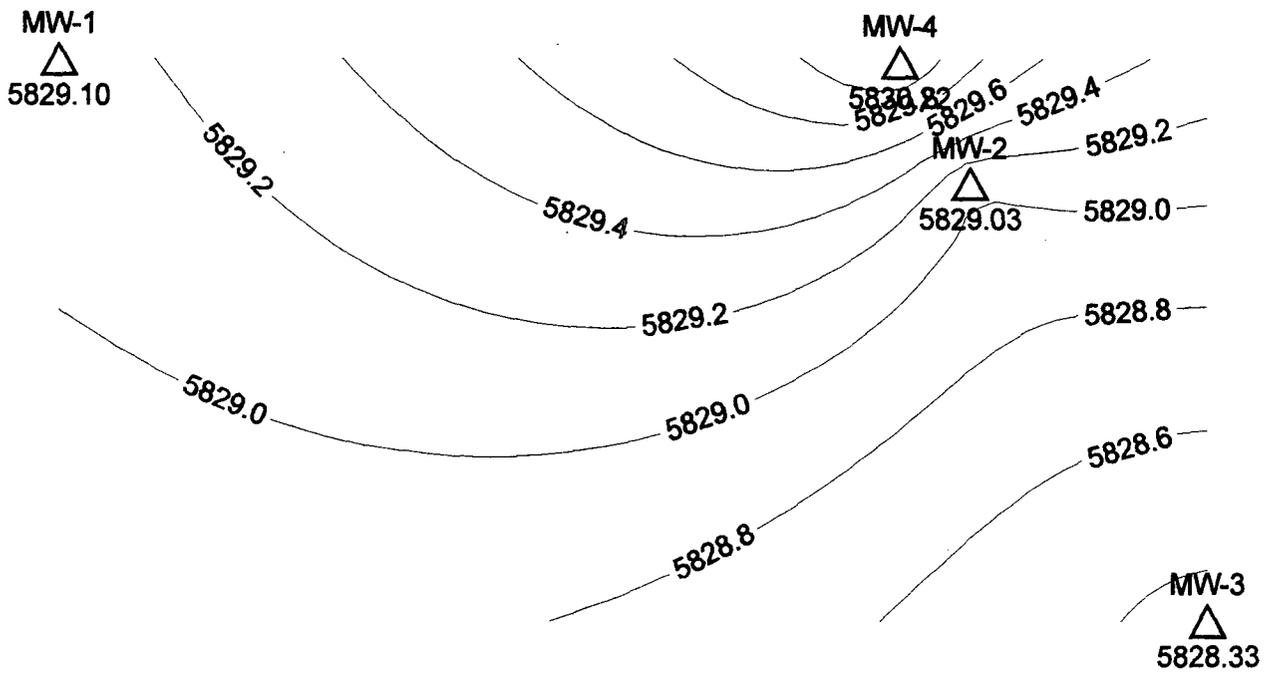
OCD Ranking: 40

Lead Agency: NMOCD

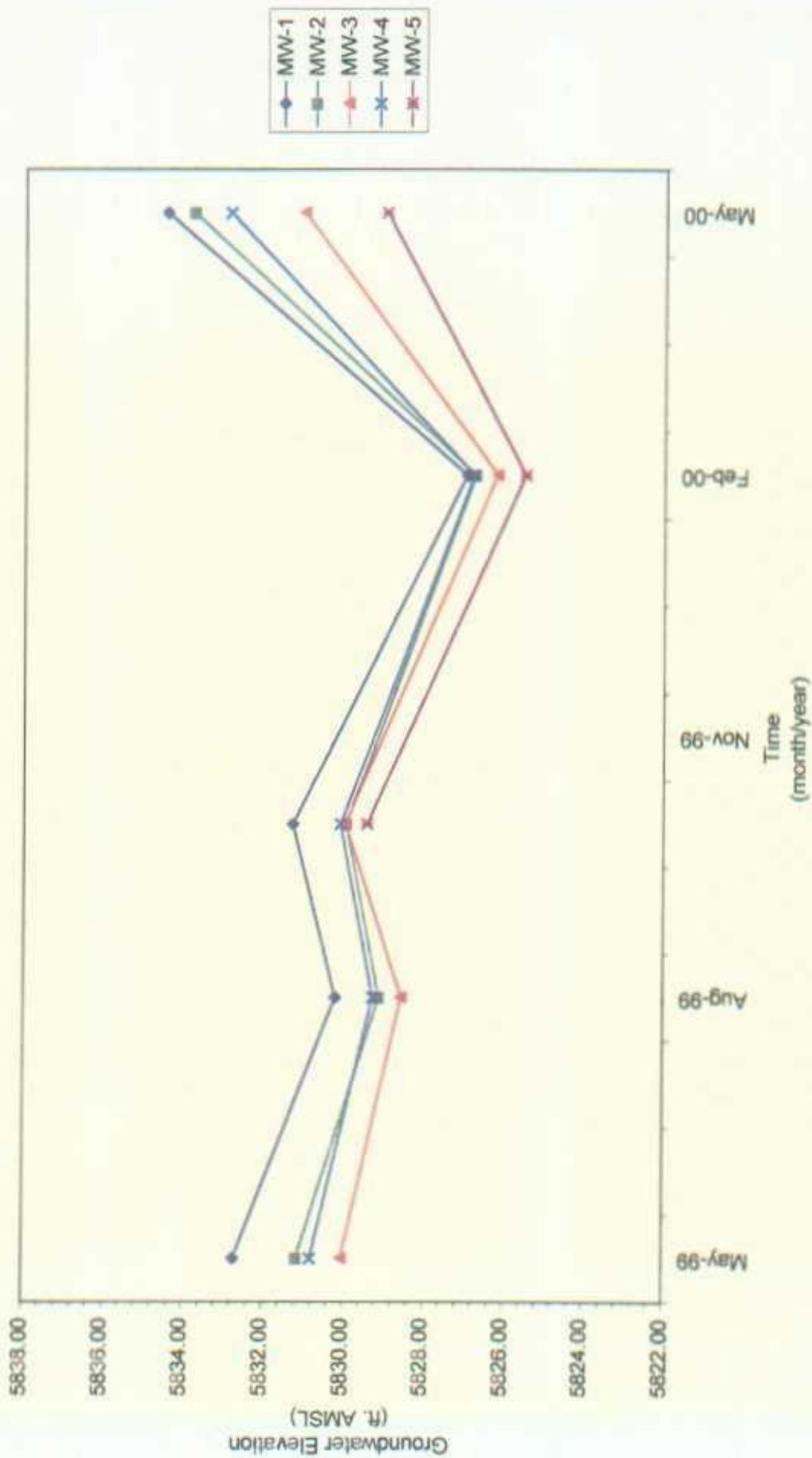
Status Narrative

This site has five monitoring wells, with five quarters of ground water monitoring completed to date. The downgradient and lateral extents of the contaminant plume are defined and monitoring results indicate that natural attenuation is occurring. Monitoring wells MW-2 and MW-4 are the only wells that remain above WQCC standards. The procedures used for installing the monitoring wells are being evaluated with respect to their ability to provide representative groundwater samples.

O'Shea 1M
Potentiometric Surface Map
(May 24, 1999)



O'Shea 1M
 Hydrograph for Period Q2/1999 - Q2/2000
 (Elevation vs. Time)



O' Shea 1M
Summary of Groundwater Analytical Data
(Q2/1999 - Q2/2000)

Well ID	Sample ID	Sample Date	Free Product		Analytes (values in ug/L)			
			Present Yes/No	Thickness (ft.)	benzene	toluene	ethy/benzene	total xylenes
MW-1	9905241552	24-May-99	N		<0.5	<0.5	<0.5	<1.5
	9908061220	6-Aug-99	N		<0.5	<0.5	<0.5	<1.5
	9910120847	12-Oct-99	N		<0.5	<0.5	<0.5	<1.5
	0002030945	3-Feb-00	N		<0.5	<0.5	<0.5	<1.5
	0005091418	9-May-00	N		<0.5	<0.5	<0.5	<1.5
MW-2	9905241617	24-May-99	N		220	460	340	5020
	9908061255	6-Aug-99	N		100	120	250	3577
	9910120924	12-Oct-99	N		140	700	330	3870
	0002030956	3-Feb-00	N		170	780	370	3200
	0005091442	9-May-00	N		9	17	260	3460
MW-3	9905241641	24-May-99	N		150	<5	190	648
	9908061325	6-Aug-99	N		19	<0.5	82	218
	9910120938	12-Oct-99	N		<0.5	2	7	33
	0002031014	3-Feb-00	N		11	<0.5	8	28
	0005091459	9-May-00	N		10	<0.5	65	106
MW-4	9905241721	24-May-99	N		1.4	0.5	2.9	4.6
	9908061300	6-Aug-99	N		<0.5	<0.5	<0.5	<1.5
	9910120955	12-Oct-99	N		<0.5	<0.5	<0.5	<1.5
	0002031033	3-Feb-00	N		<0.5	<0.5	<0.5	<1.5
	0005091518	9-May-00	N		<0.5	<0.5	<0.5	<1.5
MW-5	9905241751	24-May-99	N		140	<5	180	615
	9909070924	7-Sep-99	N		<0.5	<0.5	1.4	<1.5
	9910121009	12-Oct-99	N		<0.5	<0.5	<0.5	<1.5
	0002031048	3-Feb-00	N		<0.5	<0.5	<0.5	<1.5
	0005091536	9-May-00	N		3.1	1.9	3	36

ND = analyte not detected above method detection limit

NS = well not sampled for specified analytes

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 09-Jul-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	OShea 1M
Work Order:	9905080	Client Sample ID:	99050241552; MW-1
Lab ID:	9905080-01A	Matrix:	AQUEOUS
Project:	OShea 1M	Collection Date:	5/24/99 3:52:00 PM
		COC Record:	7079

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DC		
Benzene	ND	0.5		µg/L	1	6/1/99
Toluene	ND	0.5		µg/L	1	6/1/99
Ethylbenzene	ND	0.5		µg/L	1	6/1/99
m,p-Xylene	ND	1		µg/L	1	6/1/99
o-Xylene	ND	0.5		µg/L	1	6/1/99

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: 09-Jul-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	OShea 1M
Work Order:	9905080	Client Sample ID:	9905241617; MW-2
Lab ID:	9905080-02A	Matrix:	AQUEOUS
Project:	OShea 1M	Collection Date:	5/24/99 4:17:00 PM
		COC Record:	7079

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B			Analyst: DC	
Benzene	220	25		µg/L	50	6/1/99
Toluene	460	25		µg/L	50	6/1/99
Ethylbenzene	340	25		µg/L	50	6/1/99
m,p-Xylene	4700	50		µg/L	50	6/1/99
o-Xylene	320	25		µg/L	50	6/1/99

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: 09-Jul-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	OShea 1M
Work Order:	9905080	Client Sample ID:	99050241641; MW-3
Lab ID:	9905080-03A	Matrix:	AQUEOUS
Project:	OShea 1M	Collection Date:	5/24/99 4:41:00 PM
		COC Record:	7079

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DC		
Benzene	150	5		µg/L	10	6/1/99
Toluene	ND	5		µg/L	10	6/1/99
Ethylbenzene	190	5		µg/L	10	6/1/99
m,p-Xylene	630	10		µg/L	10	6/1/99
o-Xylene	18	5		µg/L	10	6/1/99

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: 09-Jul-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	OShea 1M
Work Order:	9905080	Client Sample ID:	9905241721; MW-4
Lab ID:	9905080-04A	Matrix:	AQUEOUS
Project:	OShea 1M	Collection Date:	5/24/99 5:21:00 PM
		COC Record:	7079

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DC		
Benzene	1.4	0.5		µg/L	1	6/1/99
Toluene	0.5	0.5		µg/L	1	6/1/99
Ethylbenzene	2.9	0.5		µg/L	1	6/1/99
m,p-Xylene	4.6	1		µg/L	1	6/1/99
o-Xylene	ND	0.5		µg/L	1	6/1/99

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: 09-Jul-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	OShea 1M
Work Order:	9905080	Client Sample ID:	9905241751; MW-5
Lab ID:	9905080-05A	Matrix:	AQUEOUS
Project:	OShea 1M	Collection Date:	5/24/99 5:51:00 PM
		COC Record:	7079

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DC		
Benzene	140	5		µg/L	10	6/1/99
Toluene	ND	5		µg/L	10	6/1/99
Ethylbenzene	180	5		µg/L	10	6/1/99
m,p-Xylene	600	10		µg/L	10	6/1/99
o-Xylene	15	5		µg/L	10	6/1/99

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: 19-Aug-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	Oshea 1M
Work Order:	9908016	Client Sample ID:	9908061220; MW-1
Lab ID:	9908016-01A	Matrix:	AQUEOUS
Project:	Oshea 1M	Collection Date:	08/06/1999 12:20:00 PM
		COC Record:	7824

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DC		
Benzene	ND	0.5		µg/L	1	08/12/1999
Toluene	ND	0.5		µg/L	1	08/12/1999
Ethylbenzene	ND	0.5		µg/L	1	08/12/1999
m,p-Xylene	ND	1		µg/L	1	08/12/1999
o-Xylene	ND	0.5		µg/L	1	08/12/1999

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: 19-Aug-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	Oshea 1M
Work Order:	9908016	Client Sample ID:	9908061255; MW-2
Lab ID:	9908016-02A	Matrix:	AQUEOUS
Project:	Oshea 1M	Collection Date:	08/06/1999 12:55:00 PM
		COC Record:	7824

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B				Analyst: DC
Benzene	100	5		µg/L	10	08/12/1999
Toluene	120	5		µg/L	10	08/12/1999
Ethylbenzene	250	5		µg/L	10	08/12/1999
m,p-Xylene	3500	10		µg/L	10	08/12/1999
o-Xylene	77	5		µg/L	10	08/12/1999

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

1 of 1

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ANALYTICAL REPORT

Date: 19-Aug-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	Oshea 1M
Work Order:	9908016	Client Sample ID:	9908061300; MW 4 3
Lab ID:	9908016-03A	Matrix:	AQUEOUS
Project:	Oshea 1M	Collection Date:	08/06/1999 1:00:00 PM
		COC Record:	7824

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B				Analyst: DC
Benzene	19	0.5		µg/L	1	08/16/1999
Toluene	ND	0.5		µg/L	1	08/16/1999
Ethylbenzene	82	0.5		µg/L	1	08/16/1999
m,p-Xylene	210	1		µg/L	1	08/16/1999
o-Xylene	7.5	0.5		µg/L	1	08/16/1999

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: 19-Aug-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	Oshea 1M
Work Order:	9908016	Client Sample ID:	9908061325; MW-4
Lab ID:	9908016-04A	Matrix:	AQUEOUS
Project:	Oshea 1M	Collection Date:	08/06/1999 1:25:00 PM
		COC Record:	7824

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DC		
Benzene	ND	0.5		µg/L	1	08/12/1999
Toluene	ND	0.5		µg/L	1	08/12/1999
Ethylbenzene	ND	0.5		µg/L	1	08/12/1999
m,p-Xylene	ND	1		µg/L	1	08/12/1999
o-Xylene	ND	0.5		µg/L	1	08/12/1999

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

1 of 1

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 21-Sep-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	OShea 1M
Work Order:	9909015	Client Sample ID:	9909070924; MW-5
Lab ID:	9909015-01A	Matrix:	AQUEOUS
Project:	OShea 1M	Collection Date:	9/7/99 9:24:00 AM
		COC Record:	7786

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B			Analyst: HR	
Benzene	ND	0.5		µg/L	1	9/14/99
Toluene	ND	0.5		µg/L	1	9/14/99
Ethylbenzene	1.4	0.5		µg/L	1	9/14/99
m,p-Xylene	ND	1		µg/L	1	9/14/99
o-Xylene	ND	0.5		µg/L	1	9/14/99

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

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 22-Oct-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	OShea 1M
Work Order:	9910021	Client Sample ID:	9910120847; MW-1
Lab ID:	9910021-01A	Matrix:	AQUEOUS
Project:	OShea 1M	Collection Date:	10/12/99 8:47:00 AM
		COC Record:	7789

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B			Analyst: DC	
Benzene	ND	0.5		µg/L	1	10/17/99
Toluene	ND	0.5		µg/L	1	10/17/99
Ethylbenzene	ND	0.5		µg/L	1	10/17/99
m,p-Xylene	ND	1		µg/L	1	10/17/99
o-Xylene	ND	0.5		µg/L	1	10/17/99

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: 22-Oct-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	OShea 1M
Work Order:	9910021	Client Sample ID:	9910120924; MW-2
Lab ID:	9910021-02A	Matrix:	AQUEOUS
Project:	OShea 1M	Collection Date:	10/12/99 9:24:00 AM
		COC Record:	7789

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
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AROMATIC VOLATILES BY GC/PID

SW8021B

Analyst: DC

Benzene	140	5		µg/L	10	10/17/99
Toluene	700	5		µg/L	10	10/17/99
Ethylbenzene	330	5		µg/L	10	10/17/99
m,p-Xylene	3500	10		µg/L	10	10/17/99
o-Xylene	370	5		µg/L	10	10/17/99

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

1 of 1

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 22-Oct-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	OShea 1M
Work Order:	9910021	Client Sample ID:	9910120938; MW-3
Lab ID:	9910021-03A	Matrix:	AQUEOUS
Project:	OShea 1M	Collection Date:	10/12/99 9:38:00 AM
		COC Record:	7789

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B				Analyst: DC
Benzene	ND	0.5		µg/L	1	10/17/99
Toluene	2.4	0.5		µg/L	1	10/17/99
Ethylbenzene	6.8	0.5		µg/L	1	10/17/99
m,p-Xylene	28	1		µg/L	1	10/17/99
o-Xylene	5.1	0.5		µg/L	1	10/17/99

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	Sur: - Surrogate

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 22-Oct-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	OShea 1M
Work Order:	9910021	Client Sample ID:	9910120955; MW-4
Lab ID:	9910021-04A	Matrix:	AQUEOUS
Project:	OShea 1M	Collection Date:	10/12/99 9:55:00 AM
		COC Record:	7789

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed	
AROMATIC VOLATILES BY GC/PID		SW8021B				Analyst: DC	
Benzene	ND	0.5		µg/L	1	10/17/99	
Toluene	ND	0.5		µg/L	1	10/17/99	
Ethylbenzene	ND	0.5		µg/L	1	10/17/99	
m,p-Xylene	ND	1		µg/L	1	10/17/99	
o-Xylene	ND	0.5		µg/L	1	10/17/99	

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: 22-Oct-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	OShea 1M
Work Order:	9910021	Client Sample ID:	9910121009; MW-5
Lab ID:	9910021-05A	Matrix:	AQUEOUS
Project:	OShea 1M	Collection Date:	10/12/99 10:09:00 AM
		COC Record:	7789

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B				Analyst: DC
Benzene	ND	0.5		µg/L	1	10/17/99
Toluene	ND	0.5		µg/L	1	10/17/99
Ethylbenzene	ND	0.5		µg/L	1	10/17/99
m,p-Xylene	ND	1		µg/L	1	10/17/99
o-Xylene	0.7	0.5		µg/L	1	10/17/99

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



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ANALYTICAL REPORT

Date: 15-Feb-00

Client:	PNM - Public Service Company of NM	Client Sample Info:	OShea 1M
Work Order:	0002014	Client Sample ID:	0002030945; MW-1
Lab ID:	0002014-01A	Matrix:	AQUEOUS
Project:	OShea 1M	Collection Date:	2/3/2000 9:45:00 AM
		COC Record:	7869

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
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AROMATIC VOLATILES BY GC/PID		SW8021B			Analyst: DM	
Benzene	ND	0.5		µg/L	1	2/4/2000
Toluene	ND	0.5		µg/L	1	2/4/2000
Ethylbenzene	ND	0.5		µg/L	1	2/4/2000
m,p-Xylene	ND	1		µg/L	1	2/4/2000
o-Xylene	ND	0.5		µg/L	1	2/4/2000

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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OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 15-Feb-00

Client:	PNM - Public Service Company of NM	Client Sample Info:	OShea 1M
Work Order:	0002014	Client Sample ID:	0002030956; MW-2
Lab ID:	0002014-02A	Matrix:	AQUEOUS
Project:	OShea 1M	Collection Date:	2/3/2000 9:56:00 AM
		COC Record:	7869

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
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AROMATIC VOLATILES BY GC/PID		SW8021B			Analyst: DM	
Benzene	170	5		µg/L	10	2/4/2000
Toluene	780	5		µg/L	10	2/4/2000
Ethylbenzene	370	5		µg/L	10	2/4/2000
m,p-Xylene	2800	10		µg/L	10	2/4/2000
o-Xylene	400	5		µg/L	10	2/4/2000

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: 15-Feb-00

Client:	PNM - Public Service Company of NM	Client Sample Info:	OShea 1M
Work Order:	0002014	Client Sample ID:	0002031014; MW-3
Lab ID:	0002014-03A	Matrix:	AQUEOUS
Project:	OShea 1M	Collection Date:	2/3/2000 10:14:00 AM
		COC Record:	7869

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B				Analyst: DM
Benzene	11	0.5		µg/L	1	2/8/2000
Toluene	ND	0.5		µg/L	1	2/8/2000
Ethylbenzene	8.1	0.5		µg/L	1	2/8/2000
m,p-Xylene	25	1		µg/L	1	2/8/2000
o-Xylene	2.7	0.5		µg/L	1	2/8/2000

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

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OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 15-Feb-00

Client:	PNM - Public Service Company of NM	Client Sample Info:	OShea 1M
Work Order:	0002014	Client Sample ID:	0002031033; MW-4
Lab ID:	0002014-04A	Matrix:	AQUEOUS
Project:	OShea 1M	Collection Date:	2/3/2000 10:33:00 AM
		COC Record:	7869

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
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AROMATIC VOLATILES BY GC/PID

SW8021B

Analyst: **DM**

Benzene	ND	0.5		µg/L	1	2/4/2000
Toluene	ND	0.5		µg/L	1	2/4/2000
Ethylbenzene	ND	0.5		µg/L	1	2/4/2000
m,p-Xylene	ND	1		µg/L	1	2/4/2000
o-Xylene	ND	0.5		µg/L	1	2/4/2000

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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OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 15-Feb-00

Client:	PNM - Public Service Company of NM	Client Sample Info:	OShea 1M
Work Order:	0002014	Client Sample ID:	0002031048; MW-5
Lab ID:	0002014-05A	Matrix:	AQUEOUS
Project:	OShea 1M	Collection Date:	2/3/2000 10:48:00 AM
		COC Record:	7869

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
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AROMATIC VOLATILES BY GC/PID		SW8021B			Analyst: DM	
Benzene	ND	0.5		µg/L	1	2/8/2000
Toluene	ND	0.5		µg/L	1	2/8/2000
Ethylbenzene	ND	0.5		µg/L	1	2/8/2000
m,p-Xylene	ND	1		µg/L	1	2/8/2000
o-Xylene	ND	0.5		µg/L	1	2/8/2000

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
FAX: (505) 327-1496



LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: 22-May-00

Client:	PNM - Public Service Company of NM	Client Sample Info:	OShea 1M
Work Order:	0005020	Client Sample ID:	0005091418; MW-1
Lab ID:	0005020-01A	Matrix:	AQUEOUS
Project:	OShea 1M	Collection Date:	5/9/2000 2:18:00 PM
		COC Record:	7891

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B				Analyst: DM
Benzene	ND	0.5		µg/L	1	5/12/2000
Toluene	ND	0.5		µg/L	1	5/12/2000
Ethylbenzene	ND	0.5		µg/L	1	5/12/2000
m,p-Xylene	ND	.1		µg/L	1	5/12/2000
o-Xylene	ND	0.5		µg/L	1	5/12/2000

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

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667
FAX: (505) 327-1496



LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: 22-May-00

Client:	PNM - Public Service Company of NM	Client Sample Info:	OShea 1M
Work Order:	0005020	Client Sample ID:	0005091442; MW-2
Lab ID:	0005020-02A	Matrix:	AQUEOUS
Project:	OShea 1M	Collection Date:	5/9/2000 2:42:00 PM
		COC Record:	7891

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B				Analyst: DM
Benzene	8.7	5		µg/L	10	5/12/2000
Toluene	17	5		µg/L	10	5/12/2000
Ethylbenzene	260	5		µg/L	10	5/12/2000
m,p-Xylene	3100	10		µg/L	10	5/12/2000
o-Xylene	360	5		µg/L	10	5/12/2000

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
FAX: (505) 327-1496



LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: 22-May-00

Client:	PNM - Public Service Company of NM	Client Sample Info:	OShea 1M
Work Order:	0005020	Client Sample ID:	0005091459; MW-3
Lab ID:	0005020-03A	Matrix:	AQUEOUS
Project:	OShea 1M	Collection Date:	5/9/2000 2:59:00 PM
		COC Record:	7891

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B			Analyst: DM	
Benzene	10	0.5		µg/L	1	5/12/2000
Toluene	ND	0.5		µg/L	1	5/12/2000
Ethylbenzene	65	0.5		µg/L	1	5/12/2000
m,p-Xylene	57	1		µg/L	1	5/12/2000
o-Xylene	49	0.5		µg/L	1	5/12/2000

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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FAX: (505) 327-1496



LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: 22-May-00

Client:	PNM - Public Service Company of NM	Client Sample Info:	OShea 1M
Work Order:	0005020	Client Sample ID:	0005091518; MW-4
Lab ID:	0005020-04A	Matrix:	AQUEOUS
Project:	OShea 1M	Collection Date:	5/9/2000 3:18:00 PM
		COC Record:	7891

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID						Analyst: DM
		SW8021B				
Benzene	ND	0.5		µg/L	1	5/20/2000
Toluene	ND	0.5		µg/L	1	5/20/2000
Ethylbenzene	ND	0.5		µg/L	1	5/20/2000
m,p-Xylene	ND	1		µg/L	1	5/20/2000
o-Xylene	ND	0.5		µg/L	1	5/20/2000

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
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: 22-May-00

Client:	PNM - Public Service Company of NM	Client Sample Info:	OShea 1M
Work Order:	0005020	Client Sample ID:	0005091536; MW-5
Lab ID:	0005020-05A	Matrix:	AQUEOUS
Project:	OShea 1M	Collection Date:	5/9/2000 3:36:00 PM
		COC Record:	7891

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DM		
Benzene	3.1	0.5		µg/L	1	5/12/2000
Toluene	1.9	0.5		µg/L	1	5/12/2000
Ethylbenzene	3	0.5		µg/L	1	5/12/2000
m,p-Xylene	10	1		µg/L	1	5/12/2000
o-Xylene	26	0.5		µg/L	1	5/12/2000

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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