3R - 321

REPORTS

DATE:
1997

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

April 15, 1997

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

RE: 1997 SAN JUAN BASIN ANNUAL GROUNDWATER REPORT

Dear Bill:

PNM is pleased to submit the 1997 Annual Groundwater Report on Unlined Surface Impoundments in the San Juan Basin. Pursuant to PNM's Groundwater Management Program for Unlined Surface Impoundment Closures, the report details the ongoing investigation/remedial activities at unlined surface impoundments having groundwater contamination as identified by PNM. A list of groundwater sites reported in this document is provided below.

Cozzens B1
Florance 32A
Florance 40
Florance 44
Florance 47X
Florance 124
Hampton 4M
Honolulu Loop-Line Drip
Jacques 2A
Kaufmann 1
Mangum 1E
McClanahan A2E
McClanahan 22
McCoy A1A
Reid 16 Drip
Templeton 1E
Zachry 18E

PNM plans to request closure of two of the above sites, the Florance 124 and the Templeton 1E, in our April 30, 1997 filing of the San Juan Pit Closure Reports to the OCD Santa Fe office. We did not report on our newest groundwater site, the Sammons 2, since this was discovered in the second quarter of 1997. If you have any questions regarding the contents of the report, please contact me at (505) 241-2974.

Sincerely,

Maureen Gannon
Project Manager

Attachment

cc: Denver Bearden, PNMGS
Denny Foust, OCD-Aztec Office
Robin Prisk, WFS

97rptltr.doc

PNM 1997 San Juan Basin Groundwater Report
April 15, 1997

Prepared for:

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

Prepared by:

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

PNMGS Well Site: **Honolulu Loop Line Drip**

Groundwater Site Summary Report

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

Quarter/Year: 4/96 & 1/97

Operator: WFS
Sec: 25 **Twn:** 26 **Rng:** 4 **Unit:** B
Canyon: Tapecito

Vulnerable Class: Environmentally Sensitive
OCD Ranking: 50
Lead Agency: NMOCD/JAEPO

Topo Map: previously submitted
Well Completion Diagram: previously submitted
Full Suite- Groundwater Sampling: previously submitted
Site Map with Analysis: Figure 1
Groundwater Contour Map(s): Figure 2 (December 1996)
Figure 3 (March 1997)
Groundwater Hydrograph: Figure 4
Analytical Results: attached

Activities for Previous Two Quarters (Oct. - Dec. 1996 & Jan. - Mar. 1997):

On November 6 and 26, 1996, and again on March 7, 1997, PNM performed quarterly sampling of groundwater monitoring wells at the site. Water and product levels were measured in each of the eight wells. In wells with no evidence of free product, PNM collected groundwater samples for chemical analyses of benzene, toluene, ethylbenzene, and xylenes (BTEX). In addition, MW-2, located in PNM's former source area, was sampled for polyaromatic hydrocarbons (PAHs) and Water Quality Control Commission (WQCC) metals (dissolved) on December 23, 1996. Sampling was performed in strict compliance with EPA protocol. In all instances, PNM delivered the samples to OnSite Technologies, Farmington, New Mexico. The samples were analyzed using the following methods:

- BTEX using EPA Method 8020
- PAHs using EPA Method 8310
- major cations/anions using various EPA methods
- WQCC metals- filtered (As, Ba, Cd, Cr, Pb, Se, and Ag using inductively coupled plasma (ICP) for heavy metals and atomic absorption spectroscopy (AAS) for Hg and Se).

During the November 6, 1996 sampling event, free product was discovered in monitoring wells, MW-4 and MW-6. Neither well was sampled at that time for BTEX. Further investigation of the free product occurred on November 14, 1996, which included the installation of monitoring wells, MW-7 and MW-8. On November 26, PNM reinstalled monitoring well, MW-2, which is now located in the center of the former PNM drip pit. During the months of November and December 1996 and January 1997, PNM monitored the free product and water levels in all monitoring wells at the site. PNM believes free product disappeared in MW-6 sometime in December. The results of the ongoing groundwater investigation through February 1997 were submitted to the Jicarilla Apache Environmental Protection Office (EPO) on March 5, 1997. A copy of this document was also provided to the New Mexico Oil Conservation Division (OCD).

During the March 7, 1997 sampling event, free product was not detected in either MW-4 or MW-6. However, MW-4 had a strong hydrocarbon odor and a noticeable sheen on the groundwater surface; therefore, this well was not sampled.

Results:

Figure 1 provides a site map showing benzene, toluene, ethylbenzene and xylenes (BTEX) analytical data for each monitoring well at the site since groundwater contamination was discovered. The free product discovered in

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**

MW-4 and MW-6 appears to be affecting groundwater in several wells at the site. Between November 1996 and March 1997, BTEX concentrations in MW-2 increased by 83%. MW-5, down-gradient of MW-4 and MW-6, saw a slight increase in benzene at the site (<2.0 to 3.0 ppb) during this same time period. Down-gradient monitoring wells, MW-3 and MW-8, experienced significant increases in BTEX concentrations between November 1996 and March 1997. The benzene concentration in MW-3 rose from 1.2 ppb to 5,325.6 ppb. Benzene in MW-8 increased from 109.2 to 281.5 ppb. Metals and PAH concentrations in MW-2 were determined to be below WQCC standards.

Figure 2 and figure 3 provide groundwater contour maps of the site for the fourth quarter of 1996 and the first quarter of 1997, respectively. The groundwater flow direction has changed slightly between the two quarters but still remains southwesterly beneath the site as was previously determined in July of 1996. Figure 3 presents a groundwater hydrograph of the site since monitoring began. The groundwater level rose in all wells over the last three quarters. Between December of 1996 and March 1997, water levels have risen an average of 1.6 feet.

Further Action:

PNM will continue to monitor the site on a quarterly basis. However, we believe that free product and/or hydrocarbon-saturated soil conditions remain at the site and will continue to impede or adversely affect successful remediation of soil and groundwater. We also believe that the presence of free product and/or saturated soils at the site is not the result of our former pit operations or our recent pit remediation activities. In an attempt to confirm this supposition, PNM will conduct a soil vapor survey at the site in an effort to determine the source of the free product/saturated soil. We will also install a monitoring well down-gradient from MW-8 to ensure that the lateral extent of groundwater contamination is defined. The findings of the survey will be made available to the Jicarilla EPO and the OCD after the investigation is conducted.

Figure 1. Honolulu Loop Line Drip: Site Map with Analytical Results
(concentrations in ppb)

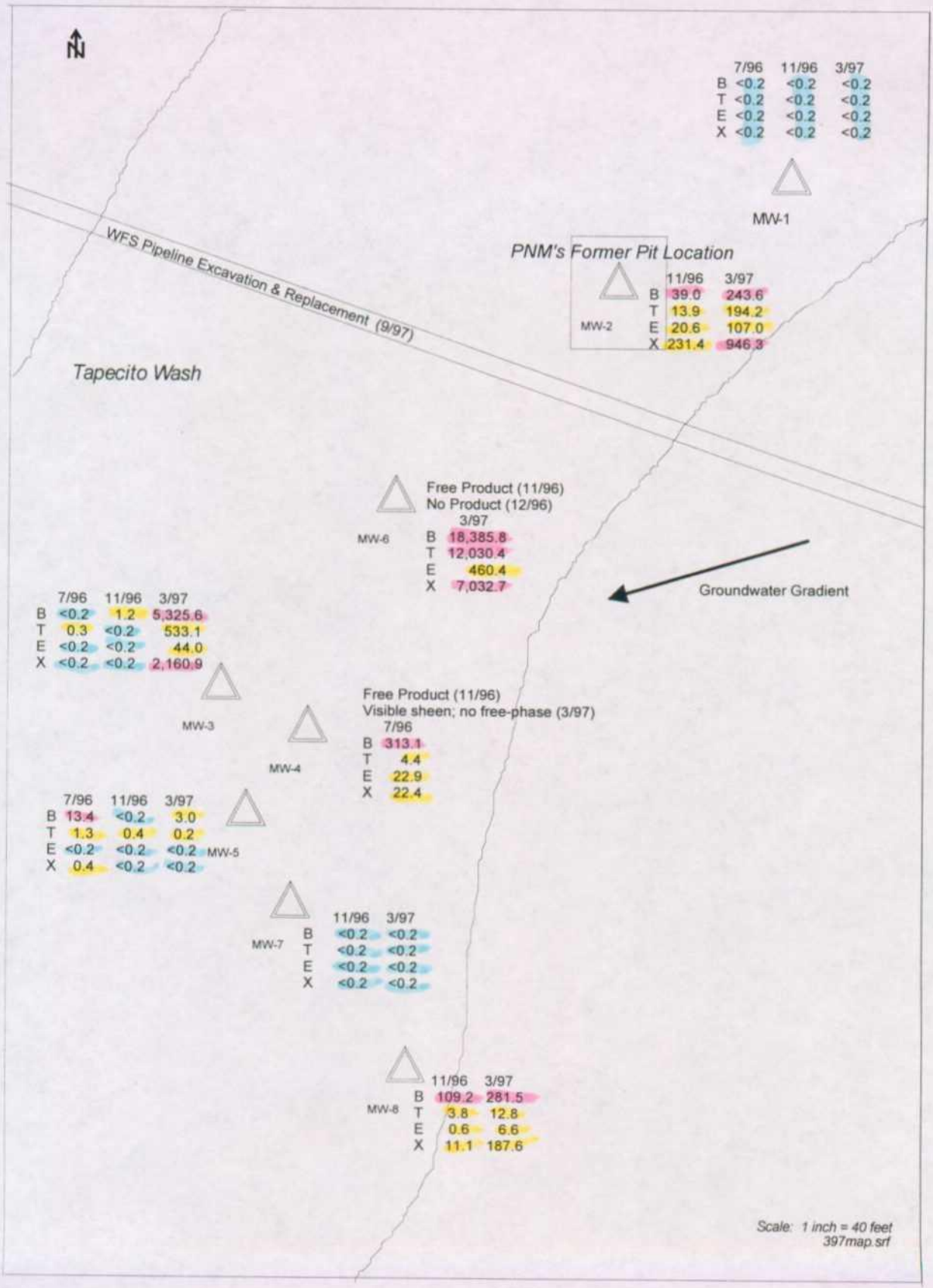


Figure 2. Honolulu Loop Line Drip Groundwater Contour Map (December 1996)

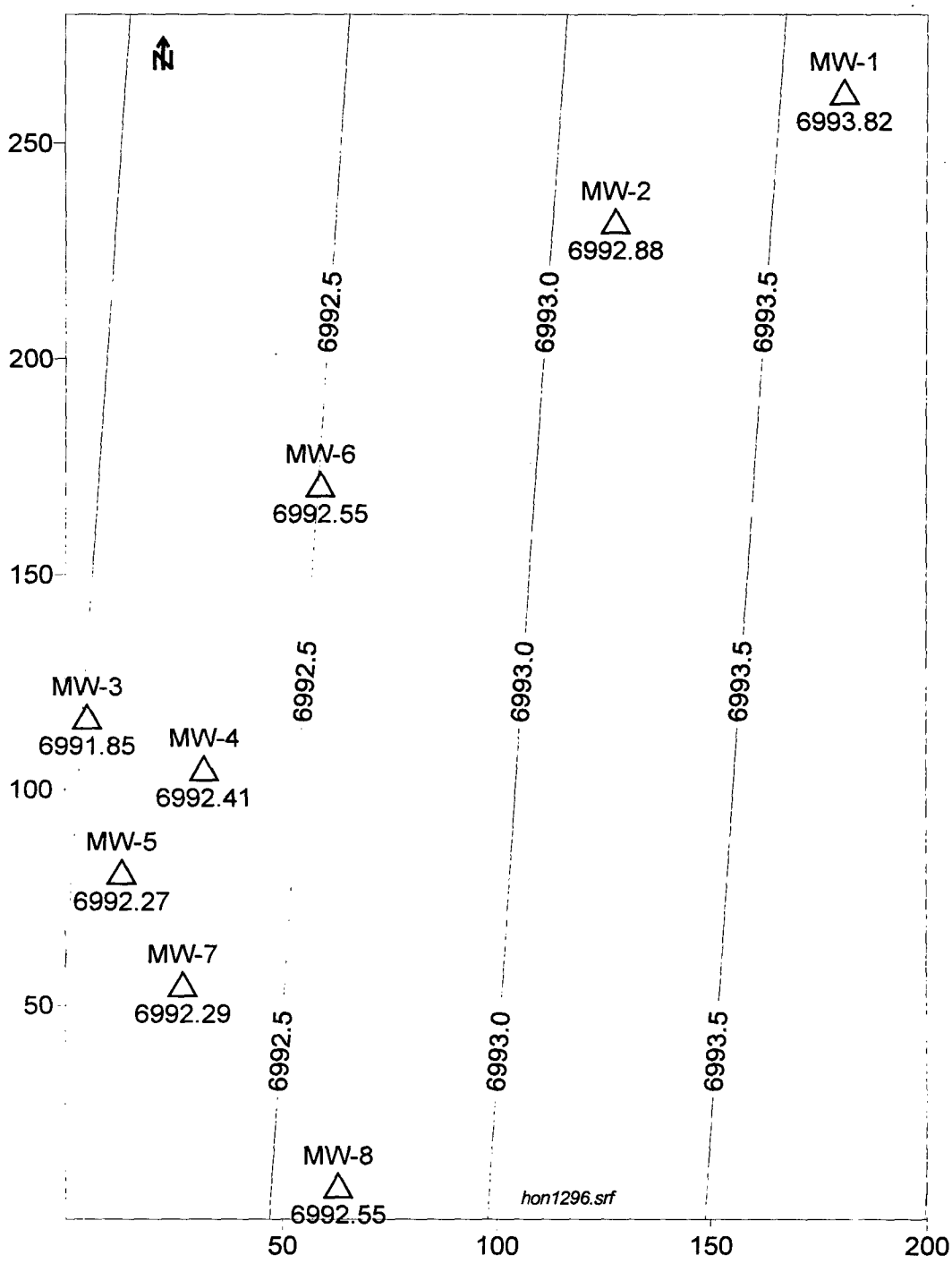


Figure 3. Honolulu Loop Line Drip Groundwater Contour Map (March 1997)

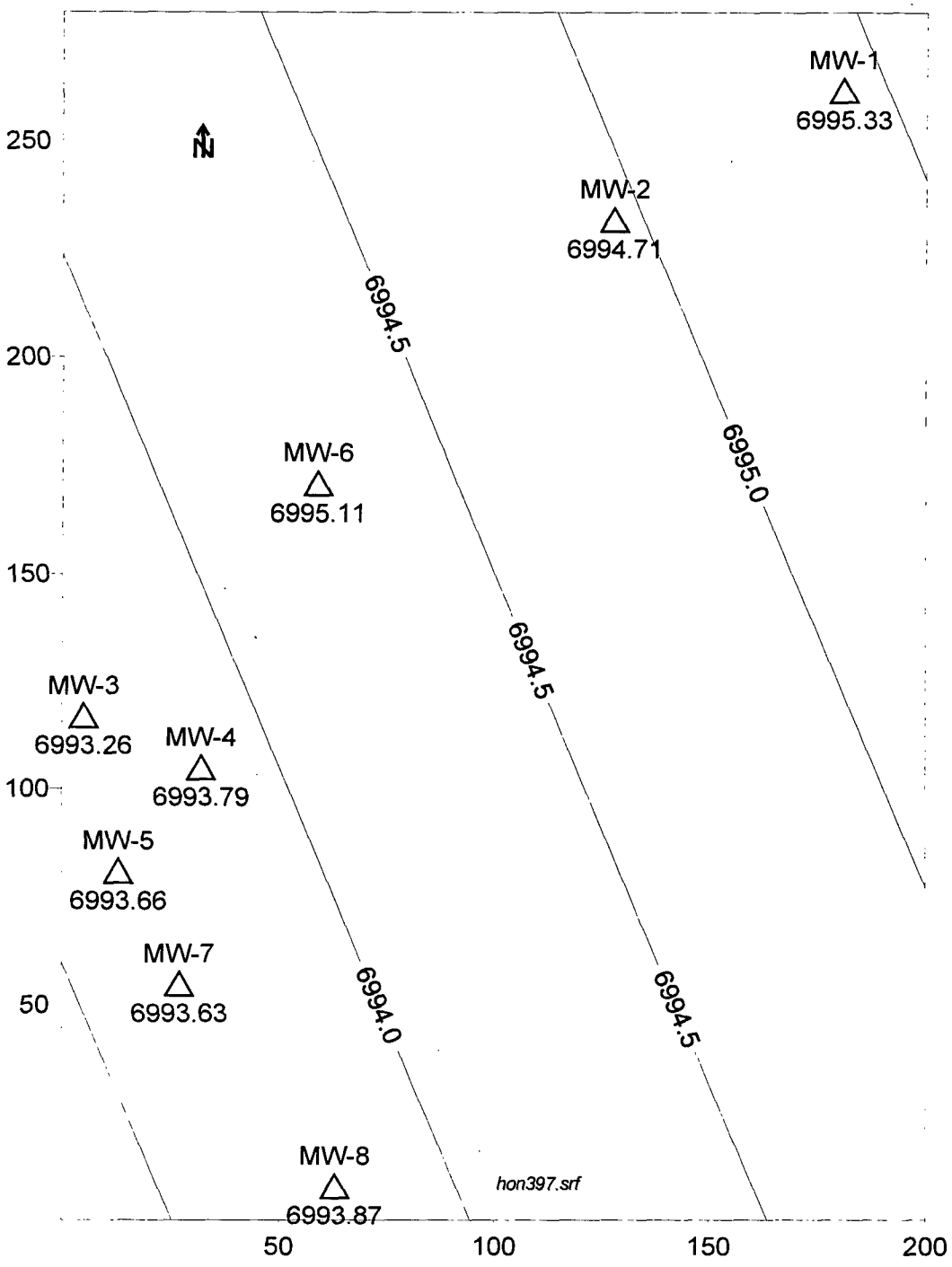
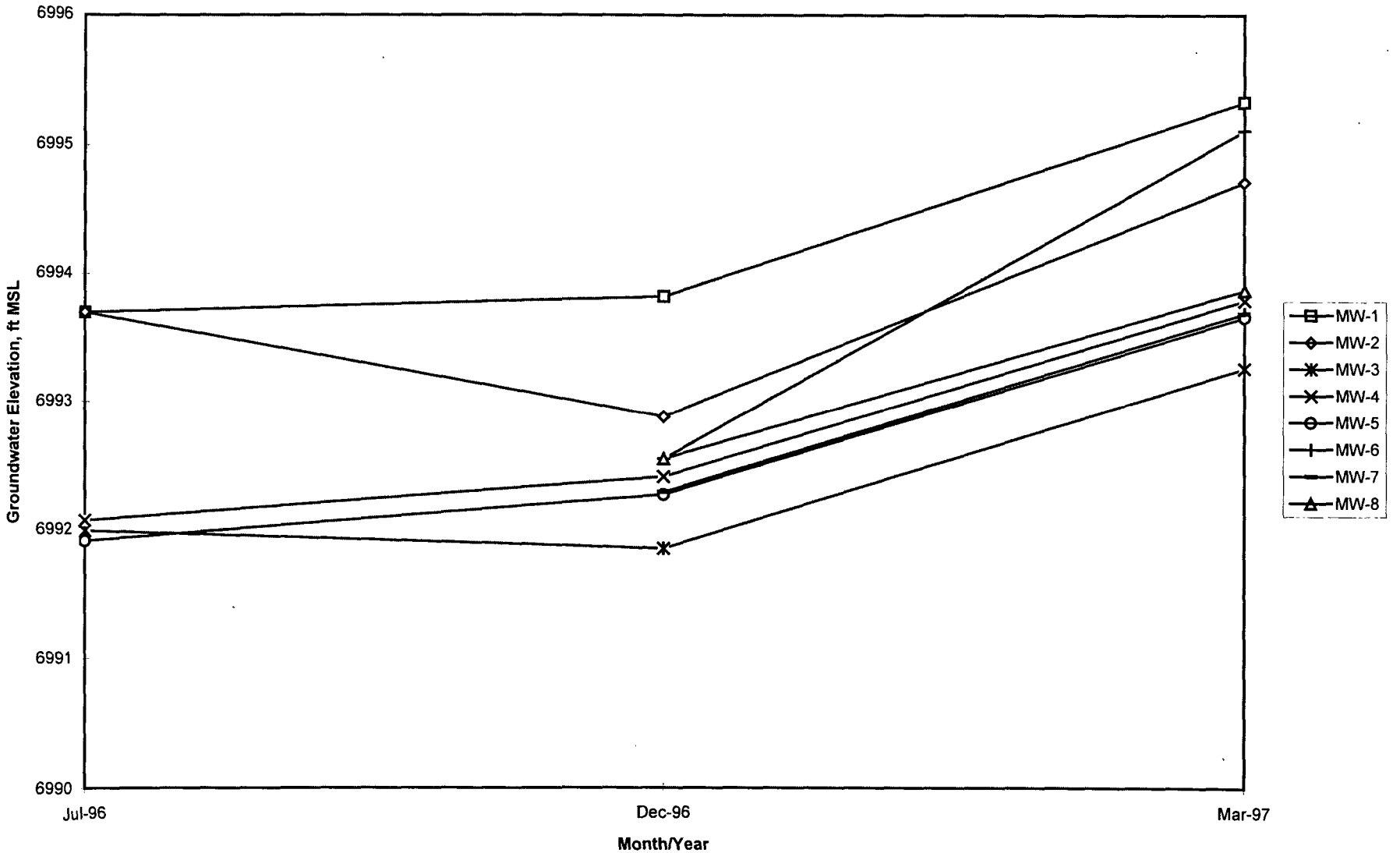


Figure 4. Honolulu Loop Line Drip Hydrograph
(Time vs Water Level)



honhyd.xls

Mountain States Analytical

The Quality

January 3, 1997

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

Reference:
Project: Honolulu Loop Line Drip Run 12-51
Project No.: PNM 1002
MSAI Group: 14760

Dear Mr. Cox:

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

13257-5712 (Dissolved)

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

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

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

We look forward to working with you on future projects.

With Regards,

Rolf E. Larsen

Rolf E. Larsen
Project Manager

Analytical Report

Mountain States Analytical
The Quality Solution

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

Attn: Mr. David Cox
Project: Honolulu Loop Line Drip Run 12-51

Sample ID: 13257-5712 (Dissolved) 9612231035 ; MW-2
Matrix: Waste Water

MSAI Sample: 57190
MSAI Group: 14760
Date Reported: 01/03/97
Discard Date: 02/02/97
Date Submitted: 12/24/96
Date Sampled: 12/23/96
Collected by: RD
Purchase Order: 5712
Project No.: PNM 1002

Test	Analysis	Results as Received	Units	Method Detection Limit
0249D	Cadmium by ICP, Dissolved w/ww Method: SW-846 6010A	ND	mg/l	0.004
0251F	Chromium by ICP, Dissolved Method: SW-846 6010A	ND	mg/l	0.010
0255F	Lead by ICP, Dissolved Method: SW-846 6010A	ND	mg/l	0.040
0259F	Mercury by CVAA, w/ww Diss, 245.1 Method: SW-846 245.1	ND	mg/l	0.0001
0266D	Silver by ICP, Dissolved Method: SW-846 6010A	ND	mg/l	0.006
0392I	Flame/ICP Prep for Metals, Waters Method: SW-846 3005A	Complete		
0392M	Mercury Prep CVAA, Waters Method: SW-846 7470	Complete		
401	Prep for HAA, ww Method: SW-846 7061A	Complete		
045I	Arsenic by ICP, Dissolved Method: SW-846 6010A	ND	mg/l	0.030
450	Selenium by HAA, ww Diss, 7741 Method: SW-846 7741	ND	mg/l	0.003
541B	Barium by ICP, Dissolved Method: SW-846 6010A	0.445	mg/l	0.003

Mountain States Analytical
The Quality Solution

On Site Technologies, Ltd.

MSAI Sample: 57190
MSAI Group: 14760

Sample ID: 13257-5712 (Dissolved)

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

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager

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

SOUTHERN PETROLEUM LABORATORIES, INC.

Certificate of Analysis Number: 96-12-C49

Approved for Release by:

Ed Fry, Project Manager — Date: 1/9/97

Greg Grandits
Laboratory Director

Idelis Williams
Quality Assurance Officer

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

Certificate of Analysis No. H9-9612C49-01

On Site Technologies
612 East Murray
Farmington, NM 87401
ATTN: David Cox

P.O.# 5712
01/06/97

PROJECT: ON Site Tech
SITE: Honolulu Loop Line Drip Run
SAMPLED BY: On Site Technologies
SAMPLE ID: 9612231030;MW-2

PROJECT NO: PNM1002
MATRIX: WATER
DATE SAMPLED: 12/23/96 10:30:00
DATE RECEIVED: 12/24/96

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Naphthalene	1	0.45	ug/L
Acenaphthylene	ND	0.25	ug/L
Acenaphthene	ND	0.5	ug/L
Fluorene	ND	1.0	ug/L
Phenanthrene	ND	1.0	ug/L
Anthracene	ND	0.5	ug/L
Fluoranthene	ND	0.5	ug/L
Pyrene	ND	0.5	ug/L
Chrysene	ND	0.40	ug/L
Benzo (a) anthracene	ND	0.40	ug/L
Benzo (b) fluoranthene	ND	0.30	ug/L
Benzo (k) fluoranthene	ND	0.35	ug/L
Benzo (a) pyrene	ND	0.15	ug/L
Dibenzo (a,h) anthracene	ND	0.35	ug/L
Benzo (g,h,i) perylene	ND	0.5	ug/L
Indeno (1,2,3-cd) pyrene	ND	0.40	ug/L

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Biphenyl	2.0 ug/L	235 MI	50	150
Coronene	0.25 ug/L	40 MI	50	150

ANALYZED BY: KA DATE/TIME: 12/30/96 23:36:43
EXTRACTED BY: JN DATE/TIME: 12/26/96 09:00:00
METHOD: 8310 Polynuclear Aromatic Hydrocarbons
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed
MI - Matrix Interference.

COMMENTS:

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

QUALITY CONTROL

DOCUMENTATION

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

** SPL BATCH QUALITY CONTROL REPORT **
METHOD EPA 8310

Matrix: Aqueous
Units: ug/L

Batch Id: 1961228053400

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Naphthalene	ND	0.50	0.50	100	33 - 122
Acenaphthylene	ND	0.50	0.49	98.0	42 - 138
Acenaphthene	ND	0.50	0.56	112	25 - 123
Fluorene	ND	0.50	0.45	90.0	19 - 142
Phenanthrene	ND	0.50	0.49	98.0	40 - 121
Anthracene	ND	0.50	0.49	98.0	32 - 121
Fluoranthene	ND	0.50	0.49	98.0	51 - 115
Pyrene	ND	0.50	0.50	100	45 - 117
Chrysene	ND	0.50	0.52	104	44 - 122
Benzo (a) anthracene	ND	0.50	0.51	102	57 - 118
Benzo (b) fluoranthene	ND	0.50	0.51	102	62 - 121
Benzo (k) fluoranthene	ND	0.50	0.51	102	63 - 117
Benzo (a) pyrene	ND	0.50	0.51	102	42 - 120
Benzo (a,h) anthracene	ND	0.50	0.47	94.0	53 - 118
Benzo (g,h,i) perylene	ND	0.50	0.46	92.0	51 - 116
Indeno (1,2,3-cd) pyrene	ND	0.50	0.55	110	60 - 116

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
NAPHTHALENE	ND	0.50	0.46	92.0	0.46	92.0	0	30	1 - 122
ACENAPHTHYLENE	ND	0.50	0.49	98.0	0.48	96.0	2.06	30	1 - 124
ACENAPHTHENE	ND	0.5	0.53	106	0.48	96.0	9.90	30	1 - 124
FLUORENE	ND	0.5	0.41	82.0	0.46	92.0	11.5	30	1 - 142
PHENANTHRENE	ND	0.5	0.49	98.0	0.48	96.0	2.06	30	1 - 155
ANTHRACENE	ND	0.5	0.50	100	0.51	102	1.98	30	1 - 126
FLUORANTHENE	ND	0.5	0.47	94.0	0.46	92.0	2.15	30	14 - 123
PYRENE	ND	0.5	0.50	100	0.50	100	0	30	1 - 140
CHRYSENE	ND	0.50	0.49	98.0	0.51	102	4.00	30	1 - 199
BENZO (A) ANTHRACENE	ND	0.50	0.49	98.0	0.51	102	4.00	30	12 - 135
BENZO (B) FLUORANTHENE	ND	0.50	0.49	98.0	0.50	100	2.02	30	6 - 150
BENZO (K) FLUORANTHENE	ND	0.50	0.49	98.0	0.50	100	2.02	30	1 - 159
BENZO (A) PYRENE	ND	0.50	0.63	126	0.64	128	1.57	30	1 - 128
DIBENZO (A,H) ANTHRACENE	ND	0.50	0.47	94.0	0.48	96.0	2.11	30	1 - 110
BENZO (G,H,I) PERYLENE	ND	0.5	0.50	100	0.51	102	1.98	30	1 - 116
INDENO (1,2,3-CD) PYRENE	ND	0.50	0.48	96.0	0.49	98.0	2.06	30	1 - 116

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

** SPL BATCH QUALITY CONTROL REPORT **
METHOD EPA 8310

Matrix: Aqueous
Units: ug/L

Batch Id: 1961228053400

Analyst: KA
Sequence Date: 12/27/96
SPL ID of sample spiked: 961223SFB1
Sample File ID: 961224A\001-0101
Method Blank File ID:
Blank Spike File ID: 961227A\004-0101
Matrix Spike File ID: 961224A\002-0101
Matrix Spike Duplicate File ID: 961224A\003-0101

* = Values Outside QC Range
NC = Not Calculated (Sample exceeds spike by factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = |(<4> - <5> | / [(<4> + <5>) x 0.5] x 100
(**) = Source: SPL-Houston Historical Data (3rd Q '96)
(***) = Source: Temporary Limits

SAMPLES IN BATCH(SPL ID): 9612C49-01A

CHAIN OF CUSTODY

AND

SAMPLE RECEIPT CHECKLIST

CHAIN OF CUSTODY RECORD

4612C49

6251

ON SITE TECHNOLOGIES, LTD.

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

Date: 12/23/96

Page 1 of 1

Purchase Order No.: 5712 | Job No. PNM1002

SEND INVOICE TO
Name ACCOUNTS PAYABLE
Company ON SITE | Dept.
Address
City, State, Zip

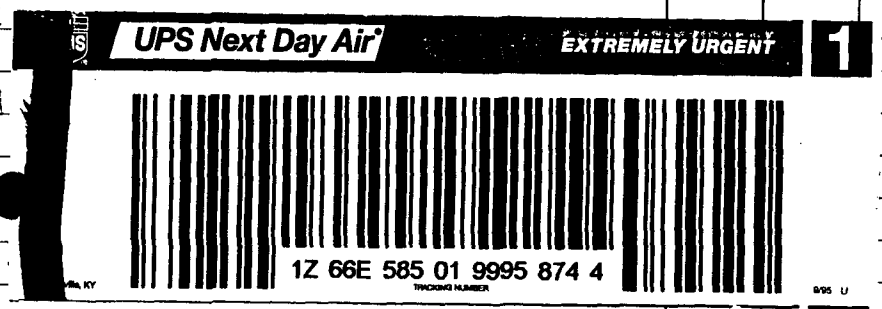
REPORT RESULTS TO
Name DAVID COX | Title
Company ON SITE
Mailing Address 612 E MURRAY
City, State, Zip FARMINGTON, NM 87401
Telephone No. 505-325-2432 | Telefax No. 505-325-6256

Sampling Location:
HONOLULU LOOP LINE DRIP RUN 12-51

Sampler:
RD

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	PAH-EPA 8310	LAB ID
961223 1030 ; MW-2	12/23/96	1030	H_2O	cool	1	✓	13256-5712 62 (12)



EOI 3°C

Relinquished by:	Date/Time 12/23/96 1500	Received by:	Date/Time 12/24/96 0915
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Authorized by: _____ Date 12/23/96
(Client Signature Must Accompany Request)

Rush	24-48 Hours	10 Working Days	Special Instructions:

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

SPL Houston Environmental Laboratory

Sample Login Checklist

Date: 12/24/96	Time: 0915

SPL Sample ID: 9612C49

			Yes	No
1	Chain-of-Custody (COC) form is present.		✓	
2	COC is properly completed.		✓	
3	If no, Non-Conformance Worksheet has been completed.			
4	Custody seals are present on the shipping container.		✓	
5	If yes, custody seals are intact.		✓	
6	All samples are tagged or labeled.		✓	
7	If no, Non-Conformance Worksheet has been completed.			
8	Sample containers arrived intact		✓	
9	Temperature of samples upon arrival:		3° C	
10	Method of sample delivery to SPL:	SPL Delivery		
		Client Delivery		
		FedEx Delivery (airbill #)		
		Other: UPS	1Z66E5850199[illegible]874	
11	Method of sample disposal:	SPL Disposal	✓	
		HOLD		
		Return to Client		

Name: Adam Sellas	Date: 12/24/96

CHAIN OF CUSTODY RECORD

5712

ON SITE TECHNOLOGIES, LTD.

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

Date: 12-23-96

Page 1 of 1

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

Sampling Location: Honolulu Loop Line Drip Run 12-51

Sampler: R Dedrick

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	PAHs	Dissolved WQCC metals	LAB ID
9612231030 MW-2	12/23/96	1030	Water	Ice	1	X		13256-5712
9612231035 MW-2	12/23/96	1035	Water	Ice	2		X	13257

Relinquished by: Ronald (illegible) Dedrick	Date/Time 12/23/96 1330	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Authorized by: Ronald (illegible) Dedrick Date 12/23/96
(Client Signature Must Accompany Request)

Rush	24-48 Hours	10 Working Days	Special Instructions:
			Results to be sent to both parties.

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

Groundwater 11/06/96
Did not sample MW-6 (new well) & MW-4 due product encountered

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn:	Denver Bearden	Date:	8-Nov-96
Company:	PNM Gas Services	COC No.:	5420
Address:	603 W. Elm	Sample No.:	12771
City, State:	Farmington, NM 87401	Job No.:	2-1000

Project Name:	PNM Gas Services - Honolulu Loop Line Drip				
Project Location:	9611061100; MW-1				
Sampled by:	MG/MS	Date:	6-Nov-96	Time:	11:00
Analyzed by:	DC	Date:	7-Nov-96		
Sample Matrix:	Water				

Laboratory Analysis

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

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

Approved by:
Date: 11/8/96

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn:	Denver Bearden	Date:	8-Nov-96
Company:	PNM Gas Services	COC No.:	5420
Address:	603 W. Elm	Sample No.:	12772
City, State:	Farmington, NM 87401	Job No.:	2-1000

Project Name:	**PNM Gas Services - Honolulu Loop Line Drip**				
Project Location:	**9611061130; ~~MW-2~~** Duplicate of MW-3				
Sampled by:	MG/MS	Date:	6-Nov-96	Time:	11:30
Analyzed by:	DC	Date:	7-Nov-96		
Sample Matrix:	Water	Duplicate of MW-3			

Laboratory Analysis

Parameter	Result	Unit of Measure	Detection Limit	Unit of Measure
Benzene	1.0	ug/L	0.2	ug/L
Toluene	<0.2	ug/L	0.2	ug/L
Ethylbenzene	<0.2	ug/L	0.2	ug/L
m,p-Xylene	<0.2	ug/L	0.2	ug/L
o-Xylene	<0.2	ug/L	0.2	ug/L
TOTAL	1.0	ug/L		

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

Approved by:

Date: 11/8/96

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn:	Denver Bearden	Date:	8-Nov-96
Company:	PNM Gas Services	COC No.:	5420
Address:	603 W. Elm	Sample No.:	12773
City, State:	Farmington, NM 87401	Job No.:	2-1000

Project Name:	PNM Gas Services - Honolulu Loop Line Drip				
Project Location:	9611061200; MW-3				
Sampled by:	MG/MS	Date:	6-Nov-96	Time:	12:00
Analyzed by:	DC	Date:	7-Nov-96		
Sample Matrix:	Water				

Laboratory Analysis

Parameter	Result	Unit of Measure	Detection Limit	Unit of Measure
Benzene	1.2	ug/L	0.2	ug/L
Toluene	<0.2	ug/L	0.2	ug/L
Ethylbenzene	<0.2	ug/L	0.2	ug/L
m,p-Xylene	<0.2	ug/L	0.2	ug/L
o-Xylene	<0.2	ug/L	0.2	ug/L
TOTAL	1.2	ug/L		

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

Approved by:

Date: 11/8/96

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn:	Denver Bearden	Date:	8-Nov-96
Company:	PNM Gas Services	COC No.:	5420
Address:	603 W. Elm	Sample No.:	12774
City, State:	Farmington, NM 87401	Job No.:	2-1000

Project Name:	PNM Gas Services - Honolulu Loop Line Drip				
Project Location:	9611061300; MW-5				
Sampled by:	MG/MS	Date:	6-Nov-96	Time:	13:00
Analyzed by:	DC	Date:	7-Nov-96		
Sample Matrix:	Water				

Laboratory Analysis

Parameter	Result	Unit of Measure	Detection Limit	Unit of Measure
Benzene	<0.2	ug/L	0.2	ug/L
Toluene	0.4	ug/L	0.2	ug/L
Ethylbenzene	<0.2	ug/L	0.2	ug/L
m,p-Xylene	<0.2	ug/L	0.2	ug/L
o-Xylene	<0.2	ug/L	0.2	ug/L
TOTAL	0.4	ug/L		

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

Approved by:
Date: 11/8/96

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 7-Nov-96

Internal QC No.: 0516-QC
Surrogate QC No.: 0516-QC
Reference Standard QC No.: 0417-QC

Method Blank

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

Calibration Check

Parameter	*Unit of Measure*	*True Value*	*Analyzed Value*	*% Diff*	*Limit*
Benzene	ppb	20.0	20.3	2	15%
Toluene	ppb	20.0	21.2	6	15%
Ethylbenzene	ppb	20.0	21.4	7	15%
m,p-Xylene	ppb	40.0	42.6	6	15%
o-Xylene	ppb	20.0	21.2	6	15%

Matrix Spike

Parameter	*1- Percent Recovered*	*2 - Percent Recovered*	*Limit*	*%RSD*	*Limit*
Benzene	89	99	(39-150)	8	20%
Toluene	91	102	(46-148)	8	20%
Ethylbenzene	91	104	(32-160)	9	20%
m,p-Xylene	88	100	(35-145)	9	20%
o-Xylene	86	97	(35-145)	8	20%

Surrogate Recoveries

Laboratory Identification	*S1 Percent Recovered*	*S2 Percent Recovered*
Limit Percent Recovered	(70-130)	
12771-5420	97	
12772-5420	97	
12773-5420	96	
12774-5420	96	

S1: Flourobenzene

DE

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn:	*Denver Bearden*	*Date:*	2-Dec-96
Company:	*PNM Gas Services*	*COC No.:*	*5373*
Address:	*603 W. Elm*	*Sample No.:*	*13060*
City, State:	*Farmington, NM 87401*	*Job No.:*	*2-1000*

Project Name:	***PNM Gas Services - Honolulu Loop Line Drip***				
Project Location:	***9611261200; MW-8***				
Sampled by:	MG	Date:	26-Nov-96	Time:	12:00
Analyzed by:	DC	Date:	2-Dec-96		
Sample Matrix:	*Water*				

Laboratory Analysis

Parameter	*Result*	*Unit of Measure*	*Detection Limit*	*Unit of Measure*
Benzene	109.2	ug/L	0.2	ug/L
Toluene	3.8	ug/L	0.2	ug/L
Ethylbenzene	0.6	ug/L	0.2	ug/L
m,p-Xylene	69.5	ug/L	0.2	ug/L
o-Xylene	41.6	ug/L	0.2	ug/L
TOTAL	224.8	ug/L		

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

Approved by: DAG

Date: 12/2/96

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn:	*Denver Bearden*	*Date:*	2-Dec-96
Company:	*PNM Gas Services*	*COC No.:*	*5373*
Address:	*603 W. Elm*	*Sample No.:*	*13061*
City, State:	*Farmington, NM 87401*	*Job No.:*	*2-1000*

Project Name:	***PNM Gas Services - Honolulu Loop Line Drip***				
Project Location:	***9611261230; MW-7***				
Sampled by:	MG	Date:	26-Nov-96	Time:	12:30
Analyzed by:	DC	Date:	2-Dec-96		
Sample Matrix:	*Water*				

Laboratory Analysis

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

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

Approved by:
Date: 12/2/96

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ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn:	*Denver Bearden*	*Date:*	2-Dec-96
Company:	*PNM Gas Services*	*COC No.:*	*5373*
Address:	*603 W. Elm*	*Sample No.:*	*13062*
City, State:	*Farmington, NM 87401*	*Job No.:*	*2-1000*

Project Name:	***PNM Gas Services - Honolulu Loop Line Drip***				
Project Location:	***9611261400; MW-2***				
Sampled by:	MG	Date:	26-Nov-96	Time:	14:00
Analyzed by:	DC	Date:	2-Dec-96		
Sample Matrix:	*Water*				

Laboratory Analysis

Parameter	*Result*	*Unit of Measure*	*Detection Limit*	*Unit of Measure*
Benzene	39.0	ug/L	0.2	ug/L
Toluene	13.9	ug/L	0.2	ug/L
Ethylbenzene	20.6	ug/L	0.2	ug/L
m,p-Xylene	194.0	ug/L	0.2	ug/L
o-Xylene	37.4	ug/L	0.2	ug/L
TOTAL	304.9	ug/L		

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

Approved by:
Date: 12/2/96

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 2-Dec-96

Internal QC No.: 0515-QC
Surrogate QC No.: 0516-QC
Reference Standard QC No.: 0417-QC

Method Blank

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

Calibration Check

Parameter	*Unit of Measure*	*True Value*	*Analyzed Value*	*% Diff*	*Limit*
Benzene	ppb	20.0	19.1	5	15%
Toluene	ppb	20.0	20.0	0	15%
Ethylbenzene	ppb	20.0	20.6	3	15%
m,p-Xylene	ppb	40.0	40.7	2	15%
o-Xylene	ppb	20.0	20.3	1	15%

Matrix Spike

Parameter	*1- Percent Recovered*	*2 - Percent Recovered*	*Limit*	*%RSD*	*Limit*
Benzene	101	104	(39-150)	2	20%
Toluene	80	82	(46-148)	2	20%
Ethylbenzene	57	53	(32-160)	5	20%
m,p-Xylene	50	46	(35-145)	6	20%
o-Xylene	51	50	(35-145)	1	20%

Surrogate Recoveries

Laboratory Identification	*S1 Percent Recovered*	*S2 Percent Recovered*
Limit Percent Recovered	(70-130)	
13060-5373	102	
13061-5373	96	
13062-5373	102	

S1: Flourobenzene

DC

CHAIN OF CUSTODY RECORD

5373

ON SITE TECHNOLOGIES, LTD.

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

Date: 11-26-96

Page 1 of 1

Purchase Order No.:		Job No.	
SEND INVOICE TO — Name	Denver Bearden		
Company	PNM Gas Services	Dept.	324-3763
Address	603 W. Elm Street		
City, State, Zip	Farmington, NM 87401		

REPORT RESULTS TO — Name	Maureen Gannon	Title	
Company	PNM Gas Services		
Mailing Address	Alverado Square, Mail Stop 0408		
City, State, Zip	Albuquerque, NM 87158		
Telephone No.	505-848-2974	Telefax No.	

Sampling Location: Trop Honolulu Tire Drip

Sampler: Maureen Gannon

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	BTEX 8020	LAB ID
9611261200 MW8	11/26/96		H2O	Ice	2	X	13060-5373
9611261230 MW7 DUP	"		H2O	Ice	2	X	13061
9611261400 ~~MW8~~ MW2	"		H2O	Ice	2	X	13062

Relinquished by: Maureen Gannon	11/26/96 1513	Received by: Randall A Dadlick	Date/Time 11/26/96 1514
Relinquished by: Randall A Dadlick	Date/Time 11-27-96 1341	Received by: Roy Bunton	Date/Time 11/27/96 1342
Relinquished by: Roy Bunton	Date/Time 11/27/96 1400	Received by: Heidi Reese	Date/Time 11/27/96 1400

Method of Shipment:

Authorized by: Roy Bunton Date 11/27/96
(Client Signature Must Accompany Request)

Rush	24-48 Hours	10 Working Days	Special Instructions:
			Results to be sent to both parties.

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

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	13-Mar-97
Company:	*PNM Gas Services*	COC No.:	*5744*
Address:	*603 W. Elm*	Sample No.:	*13843*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***PNM Gas Services - Honolulu Loop Line Drip***				
Project Location:	***9703071000; MW-1***				
Sampled by:	MS/MG	Date:	7-Mar-97	Time:	10:00
Analyzed by:	DC	Date:	11-Mar-97		
Sample Matrix:	*Liquid*				

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

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

Approved By: CAG

Date: 3/13/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	13-Mar-97
Company:	*PNM Gas Services*	COC No.:	*5744*
Address:	*603 W. Elm*	Sample No.:	*13844*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***PNM Gas Services - Honolulu Loop Line Drip***				
Project Location:	***9703071030; MW-2***				
Sampled by:	MS/MG	Date:	7-Mar-97	Time:	10:30
Analyzed by:	DC	Date:	11-Mar-97		
Sample Matrix:	*Liquid*				

Parameter	*Result*	*Unit of Measure*	*Detection Limit*	*Unit of Measure*
Benzene	243.6	ug/L	0.2	ug/L
Toluene	194.2	ug/L	0.2	ug/L
Ethylbenzene	107.0	ug/L	0.2	ug/L
m,p-Xylene	839.0	ug/L	0.2	ug/L
o-Xylene	107.3	ug/L	0.2	ug/L
TOTAL	1491.2	ug/L		

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

Approved By: Cal

Date: 3/13/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	13-Mar-97
Company:	*PNM Gas Services*	COC No.:	*5744*
Address:	*603 W. Elm*	Sample No.:	*13845*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***PNM Gas Services - Honolulu Loop Line Drip***				
Project Location:	***9703071100; MW-3***				
Sampled by:	MS/MG	Date:	7-Mar-97	Time:	11:00
Analyzed by:	DC	Date:	11-Mar-97		
Sample Matrix:	*Liquid*				

Parameter	*Result*	*Unit of Measure*	*Detection Limit*	*Unit of Measure*
Benzene	5325.6	ug/L	0.2	ug/L
Toluene	533.1	ug/L	0.2	ug/L
Ethylbenzene	44.0	ug/L	0.2	ug/L
m,p-Xylene	1750.4	ug/L	0.2	ug/L
o-Xylene	410.5	ug/L	0.2	ug/L
TOTAL	8063.7	ug/L		

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

Approved By:

Date: 3/13/97

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	13-Mar-97
Company:	*PNM Gas Services*	COC No.:	*5744*
Address:	*603 W. Elm*	Sample No.:	*13846*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***PNM Gas Services - Honolulu Loop Line Drip***				
Project Location:	***9703071200; MW-5***				
Sampled by:	MS/MG	Date:	7-Mar-97	Time:	12:00
Analyzed by:	DC	Date:	11-Mar-97		
Sample Matrix:	*Liquid*				

Parameter	*Result*	*Unit of Measure*	*Detection Limit*	*Unit of Measure*
Benzene	3.0	ug/L	0.2	ug/L
Toluene	0.2	ug/L	0.2	ug/L
Ethylbenzene	<0.2	ug/L	0.2	ug/L
m,p-Xylene	<0.2	ug/L	0.2	ug/L
o-Xylene	<0.2	ug/L	0.2	ug/L
TOTAL	3.2	ug/L		

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

Approved By:
Date: 3/13/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	13-Mar-97
Company:	*PNM Gas Services*	COC No.:	*5744*
Address:	*603 W. Elm*	Sample No.:	*13847*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***PNM Gas Services - Honolulu Loop Line Drip***				
Project Location:	***9703071230; MW-6***				
Sampled by:	MS/MG	Date:	7-Mar-97	Time:	12:30
Analyzed by:	DC	Date:	11-Mar-97		
Sample Matrix:	*Liquid*				

Parameter	*Result*	*Unit of Measure*	*Detection Limit*	*Unit of Measure*
Benzene	18385.8	ug/L	0.2	ug/L
Toluene	12030.4	ug/L	0.2	ug/L
Ethylbenzene	460.4	ug/L	0.2	ug/L
m,p-Xylene	5562.2	ug/L	0.2	ug/L
o-Xylene	1470.5	ug/L	0.2	ug/L
TOTAL	37909.2	ug/L		

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

Approved By: [signature]

Date: 3.13.97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	13-Mar-97
Company:	*PNM Gas Services*	COC No.:	*5744*
Address:	*603 W. Elm*	Sample No.:	*13848*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***PNM Gas Services - Honolulu Loop Line Drip***				
Project Location:	***9703071300; MW-7***				
Sampled by:	MS/MG	Date:	7-Mar-97	Time:	13:00
Analyzed by:	DC	Date:	11-Mar-97		
Sample Matrix:	*Liquid*				

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

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

Approved By: CaG

Date: 3/13/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	13-Mar-97
Company:	*PNM Gas Services*	COC No.:	*5744*
Address:	*603 W. Elm*	Sample No.:	*13849*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***PNM Gas Services - Honolulu Loop Line Drip***				
Project Location:	***9703071330; MW-8***				
Sampled by:	MS/MG	Date:	7-Mar-97	Time:	13:30
Analyzed by:	DC	Date:	11-Mar-97		
Sample Matrix:	*Liquid*				

Parameter	*Result*	*Unit of Measure*	*Detection Limit*	*Unit of Measure*
Benzene	281.5	ug/L	0.2	ug/L
Toluene	12.8	ug/L	0.2	ug/L
Ethylbenzene	6.6	ug/L	0.2	ug/L
m,p-Xylene	127.1	ug/L	0.2	ug/L
o-Xylene	60.5	ug/L	0.2	ug/L
TOTAL	488.6	ug/L		

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

Approved By:
Date: 3/13/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	13-Mar-97
Company:	*PNM Gas Services*	COC No.:	*5744*
Address:	*603 W. Elm*	Sample No.:	*13850*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***PNM Gas Services - Honolulu Loop Line Drip***				
Project Location:	***9703071400; MW-9***				
Sampled by:	MS/MG	Date:	7-Mar-97	Time:	14:00
Analyzed by:	DC	Date:	11-Mar-97		
Sample Matrix:	*Liquid*				

Parameter	*Result*	*Unit of Measure*	*Detection Limit*	*Unit of Measure*
Benzene	287.6	ug/L	0.2	ug/L
Toluene	12.6	ug/L	0.2	ug/L
Ethylbenzene	6.2	ug/L	0.2	ug/L
m,p-Xylene	117.2	ug/L	0.2	ug/L
o-Xylene	61.8	ug/L	0.2	ug/L
TOTAL	485.5	ug/L		

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

Approved By:

Date: 3/13/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 11-Mar-97

Internal QC No.: 0527-STD
Surrogate QC No.: 0528-STD
Reference Standard QC No.: 0417-QC

Method Blank

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

Calibration Check

Parameter	*Unit of Measure*	*True Value*	*Analyzed Value*	*% Diff*	*Limit*
Benzene	ppb	20.0	19.9	0	15%
Toluene	ppb	20.0	20.4	2	15%
Ethylbenzene	ppb	20.0	21.1	5	15%
m,p-Xylene	ppb	40.0	40.3	1	15%
o-Xylene	ppb	20.0	20.6	3	15%

Matrix Spike

Parameter	*1- Percent Recovered*	*2 - Percent Recovered*	*Limit*	*%RSD*	*Limit*
Benzene	102	95	(39-150)	5	20%
Toluene	104	98	(46-148)	5	20%
Ethylbenzene	107	100	(32-160)	5	20%
m,p-Xylene	102	96	(35-145)	5	20%
o-Xylene	105	98	(35-145)	5	20%

Surrogate Recoveries

Laboratory Identification	*S1 Percent Recovered*	*S2 Percent Recovered*	*Laboratory Identification*	*S1 Percent Recovered*	*S2 Percent Recovered*
Limit Percent Recovered	(70-130)		*Limit Percent Recovered*	(70-130)	
13843-5744	97		*13849-5744*	115	
13844-5744	96		*13850-5744*	114	
13845-5744	97				
13846-5744	97				
13847-5744	96				
13848-5744	97				

S1: *Flourobenzene*

QC