

**3R - 321**

# **REPORTS**

**DATE:**

**1998**

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

April 2, 1998

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

RECEIVED  
APR 03 1998  
Bureau  
Oil Conservation Division



**RE: 1998 SAN JUAN BASIN ANNUAL GROUNDWATER REPORT**

Dear Bill:

PNM is pleased to submit the 1998 Annual Groundwater Report on Unlined Surface Impoundments in the San Juan Basin. Pursuant to PNM's Groundwater Management Program for Unlined Surface Impoundment Closures, the report details the ongoing investigation/remedial activities at unlined surface impoundments having groundwater contamination as identified by PNM. A list of groundwater sites reported in this document is provided below.

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

**PNM 1998 Groundwater Report**

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

Sincerely,

A handwritten signature in black ink, appearing to read "Maureen Gannon", with a long horizontal line extending to the right.

Maureen Gannon  
Project Manager

**Attachment**

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

**PNM 1998 Groundwater Report**

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

## **Groundwater Site Summary Report**

Quarter/Year: 2<sup>nd</sup>/97, 3<sup>rd</sup>/97, 4<sup>th</sup>/97 and 1<sup>st</sup>/98

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

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**Operator:** WFS

**Sec:** 25 **Twn:** 26 **Rng:** 4 **Unit:** B

**Canyon:** Tapequito

**Vulnerable Class:** Environmentally Sensitive

**OCD Ranking:** 50

**Lead Agency:** NMOCD/JAEPO

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PNM has prepared and submitted a site summary report detailing the activities, results and further actions at the Honolulu Loop Line Drip to the OCD under separate cover. The report is titled, "Honolulu Loop Line Drip Site Request for Change in Groundwater Monitoring Program Status," and dated March 31, 1998.

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### **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

APR 2 1998

Public Service Company  
of New Mexico  
Conservation Division

March 23, 1998

Bill Olson  
Hydrogeologist, Environmental Bureau  
New Mexico Oil Conservation Division  
2040 South Pacheco  
Santa Fe, New Mexico 87505



RE: Honolulu Loop Line Drip Site  
Request for Change in Groundwater Monitoring Program Status

Dear Bill:

With regards to the Honolulu Loop Drip site referenced above, PNM requests the following:

1. PNM monitoring for hydrocarbons associated with the former PNM drip pit be reduced to quarterly monitoring of MW-1, -2, -10, and -9.
  - These four wells are positioned in the immediate vicinity of the former PNM drip pit and source removal areas and provide the best indicators of how well PNM has remediated its source area.
  - Additional quarterly monitoring of MW-1 will be foregone until a closure petition is submitted, as four consecutive quarters of data less than detection limits and/or NMWQCC standards have already been collected at this well.
2. As the potentially responsible party, William Field Services (WFS) be requested by NMOCD to determine the lateral and vertical extent of contamination and perform any remedial actions associated with hydrocarbons released during September 1996 pipeline replacement activities.
  - PNM monitoring wells impacted by this release are identified as follows: MW-3, -4, -5, -6, -7, and -8.
  - PNM monitoring wells MW-4 and MW-6 have had frequent occurrences of clear to straw-colored free product since November 1996.

To further support our request, enclosed are the following data:

Chronology of major site events - Figure 1

Site conditions prior to the September 1996 WFS pipeline replacement indicated that source removal activities were complete and the extent of groundwater contamination had been defined by wells MW-1 through MW-5. The downgradient extent of BTEX contamination was clearly defined in July 1996 and BTEX attenuation with distance was documented by data from wells MW-1 through -5.

Following WFS pipeline replacement on September 10, 1996, PNM performed additional soil removal on September 17, 1996, west of the pipeline between the south end of the replaced pipeline section and Tapecito wash. PNM did not detect any evidence of free product at this time. Black-stained soils were observed and an additional 230 cy of soil were removed from an area west of the pipeline. Monitoring well MW-6 was installed downgradient of the excavated area and the southern end of the pipeline replacement – this well did not exhibit stained soil, hydrocarbon odors, or noticeable organic vapor meter readings during well installation or development.

Upon sampling in November 1996, PNM detected the presence of several inches of clear to straw-colored free product in MW-4 and MW-6. There was no prior indication of high concentrations of hydrocarbons in soil vapors, soils, or groundwater during well installation or prior sampling events. **A new source of hydrocarbons exists downgradient of the former PNM drip pit in the vicinity of these wells.**

PNM source well, MW-2 (old), was destroyed by WFS during the pipeline replacement process; PNM later replaced the old MW-2 with a new monitoring well (MW-2) sited in the remediated source area (see Figure 2). Post-pipeline replacement monitoring has shown the progressive redistribution of hydrocarbons in the subsurface now impacting downgradient wells MW-3 and MW-5. Installation of two additional wells further downgradient, MW-7 and MW-8, suggests that the hydrocarbons had spread in Tapecito wash. These wells were located by auger test hole surveying to evaluate the extent of hydrocarbon-impacted soil and groundwater.

Acknowledging the impact of this second source of hydrocarbons associated with the pipeline replacement, PNM installed two additional wells, MW-9 and MW-10, downgradient and cross-gradient of the former PNM drip pit, and upgradient of the pipeline release for the purposes of distinguishing dissolved hydrocarbon impacts between the PNM drip pit (east source) and the WFS pipeline (west source). PNM requests NMOCD divide responsibility for groundwater impacts to monitoring wells by proximity to hydrocarbon source as follows.

PNM Drip Pit Wells

MW-1, MW-2, MW-9, MW-10  
minor contribution to MW-3,-4,-6

WFS Pipeline Release Wells

MW-3, MW-4, MW-5, MW-6, MW-7, MW-8  
minor contribution to MW-10

Summary of Site Activity Map - Figure 2

This map details the subsurface investigation performed by PNM to evaluate the nature and sources of hydrocarbons at this site. PNM has attempted to characterize the nature and extent of hydrocarbons associated with both the former PNM drip pit and the recent pipeline release. PNM has installed ten monitoring wells, over fifteen test holes and auger borings, and has excavated almost 800 cubic yards of soil in characterizing and remediating the former PNM drip pit. PNM's investigation activities prior to and during September 1996 did not detect the presence of significant free product in the subsurface, nor did PNM operate any onsite equipment or disposal facilities in the fall of 1996 that could have caused the release of fresh product into the subsurface. To PNM's knowledge, the only such activity was the WFS pipeline replacement on September 10, 1996. Furthermore, the test pit investigation of July 1996 and subsequent removal of additional soil west of the pipeline on September 17, 1996 did not detect the presence of free product in the subsurface.

PNM discovered free product in MW-4 and MW-6 in November 1996, and proceeded to further investigate the lateral extent of hydrocarbons on the water through a series of auger borings. This auger boring investigation lead to the placement of MW-7 (TH-9) and MW-8 (TH-11) as downgradient wells. Upon laboratory characterization of product sampled from MW-4 and MW-6 as unrefined gasoline, PNM ceased further evaluation of extent and focused on the installation and monitoring of those wells between the drip pit and the new hydrocarbon source in order to demonstrate attenuation of contaminants following remediation of the former PNM drip pit. It was clear that a new source of hydrocarbons was present in

MW-4 and MW-6 with the potential to further spread in the subsurface. Monitoring remediation of the former PNM drip pit is accomplished by the network of monitoring wells MW-1,-2,-9, and -10.

Analytical data summary-Table 1

Table 1 summarizes the analytical results. Groundwater concentrations in the open drip pit were approximately 10,000 ppb BTEX. Prior to pipeline replacement, PNM had established the lateral extent of dissolved groundwater contamination attributed to the former drip pit. MW-4 was impacted at less than 500 ppb BTEX. MW-5 was the furthest downgradient well impacted by the PNM drip pit, with BTEX concentrations decreasing from 15.1 to 0.4 ppb by November 1996. There was never evidence of the presence of free product, either during soil excavation and removal, or well installation and sampling, prior to the WFS pipeline replacement in September 1996.

After September 1996, data for monitoring wells MW-3, MW-4, and MW-5 show the clearest impact over time from the input of a new hydrocarbon source. MW-4 detected several inches of free product in November 1996 after two quarters of BTEX concentrations less than 500 ppb; MW-3 showed a one quarter lag period in registering impacts from the fresh hydrocarbon release when BTEX concentrations increased from about 1 ppb to over 8,000 ppb; MW-5 showed a greater lag period given the greater distance from the estimated area of release, with BTEX concentrations increasing from 3 ppb in March 1997 to 352 ppb by June 1997. In total, six monitoring wells are directly impacted by this new hydrocarbon release: MW-3, -4, -5, -6, -7, and -8.

**PNM urges NMOCD to consider the baseline conditions established for the former PNM drip pit source area as those quantified in July 1996 by wells MW-1 through MW-5 (prior to the September 1996 pipeline release).** Groundwater response to PNM remedial activities associated with the former drip pit are best measured by immediate vicinity monitoring wells not directly impacted by the release: MW-1, -2, -9, and -10. PNM proposes that these four wells be the compliance wells for closure associated with the former PNM drip pit. While MW-6 is a downgradient well, it is impacted by the new release to the degree that any inputs from the former PNM pit are masked by the high hydrocarbon concentrations associated with the new release.

Water level maps from July 1996 through December 1997 - Attachment 1

Groundwater flow direction at the site is primarily from the northeast to the southwest parallel to the main axis of Tapecito Wash. Seasonal variations occur as snowmelt recharges the shallow groundwater system. The effects of snowmelt recharge are observed when the water table is at its maximum, for example in March 1997. In March 1997, groundwater flow in the vicinity of the PNM drip pit shifts to north-northwest and the hydraulic gradient increases as recharge from the adjacent terraces moves towards Tapecito Wash. Groundwater conditions revert to a southwesterly flow by June through December 1997. This seasonal shift in groundwater flow direction indicates that the downgradient well for the PNM drip pit will shift from MW-6 to MW-10 to MW-9, depending on season and groundwater recharge.

Groundwater elevations also bend and converge on areas excavated by PNM, as exemplified by flow contours around MW-2, indicating preferential flushing of the excavated area. This bending is especially pronounced during higher groundwater elevations, as more water is in contact with recently backfilled materials. The high degree of flushing will serve to accelerate natural attenuation of any hydrocarbons remaining in the subsurface near the former PNM drip pit.



### Concentration versus distance diagrams - Attachment 2

Concentration versus distance diagrams with the source as MW-2 within the area of the former PNM drip pit (source distance =0) were created to show contaminant attenuation with distance. July 1996 data clearly indicate that hydrocarbons attenuate within 200 feet of the drip pit. No free phase hydrocarbons are detected and maximum non-source concentrations are less than 500 ppb BTEX.

Conditions change abruptly in November 1996. MW-2, the PNM drip pit source well, continues to decline. However, clear to straw-colored free product is now detected in MW-4 and MW-6, approximately 100 feet downgradient of the PNM drip pit and 40 feet downgradient of the WFS pipeline. The only activity at the site between July 1996 and November 1996 capable of releasing fresh product to the subsurface was the WFS pipeline replacement activity of September 10, 1996. Excavations performed by PNM on September 17, 1996, north of the pipeline replacement activity, did not detect the presence of free product. However monitoring wells MW-4 and MW-6 detected several inches of clear to straw-colored free phase in November 1996. This sudden hydrocarbon release is shown graphically as a sharp slug input; concentrations decline rapidly with distance. As time goes on, concentrations at a distance also begin to increase as the hydrocarbons redistribute in the subsurface.

### Concentration versus time histories - Attachment 3

Concentration versus time histories are also graphed. MW-1 is the upgradient well and shows only one detected xylene hit through its monitoring history. MW-2 is the PNM drip pit source well. The original MW-2 (old) was located downgradient of the PNM drip pit, immediately adjacent to the WFS pipeline. The original well was likely influenced by both the drip pit and the pipeline. MW-2 (old) was destroyed on September 10, 1996 during WFS pipeline removal activities. PNM reinstalled MW-2 in the area of the remediated drip pit in order to measure remediated source inputs over time. As shown on the concentration vs. time graph, MW-2 source concentrations decrease with time. MW-9 and MW-10 are cross-gradient and downgradient monitoring wells to the PNM drip pit. They are further north than the suspected area of the pipeline hydrocarbon release and were installed to monitor contaminant migration from the remediated former PNM drip pit. Both of these wells also show downward concentration trends over time.

MW-3, -4, and -5 were downgradient wells installed by PNM to investigate the lateral extent of groundwater contamination. Initial sampling in June and July 1996 (pre-pipeline replacement) had maximum BTEX concentrations of less than 500 ppb, with concentrations decreasing with time and distance. However, in November 1996 and later sampling events, the concentrations in all of these monitoring wells rose several orders of magnitude with the presence of free product in MW-4 and continuing redistribution of those hydrocarbons with time and distance.

MW-6 was installed immediately following the WFS pipeline replacement. At the time of installation (September 17, 1996), MW-6 did not have any evidence of hydrocarbon-stained soils, odors, or free product. By November 1996, measurable free product was evident in this well. Concentrations in this well approach BTEX saturation limits in groundwater suggesting that this well is in close proximity to the source of the new hydrocarbon release.

Monitoring wells MW-7 and MW-8 were installed following a test boring program to delineate the extent of the new hydrocarbon release. These monitoring wells are located further downcanyon of the pipeline and serve as sentinel wells for monitoring redistribution of hydrocarbons associated with the new release. MW-8 follows trends similar to MW-4; MW-7 has had sporadic detection of hydrocarbons with excursions occasionally above standards.

## Summary

Based on the information cited above, PNM requests that:

1. NMOCD concur with PNM's request to modify the monitoring well sampling program to encompass only monitoring wells MW-1, -2, -9, and -10 to evaluate successful closure of the former PNM drip pit.
2. NMOCD direct WFS to proceed with further characterization and remediation of hydrocarbons released during September 1996 pipeline replacement activities at locations downgradient of the former PNM drip pit.

If you have any questions about this project or other unlined surface impoundment sites, please contact Maureen Gannon at 505.241.2974.

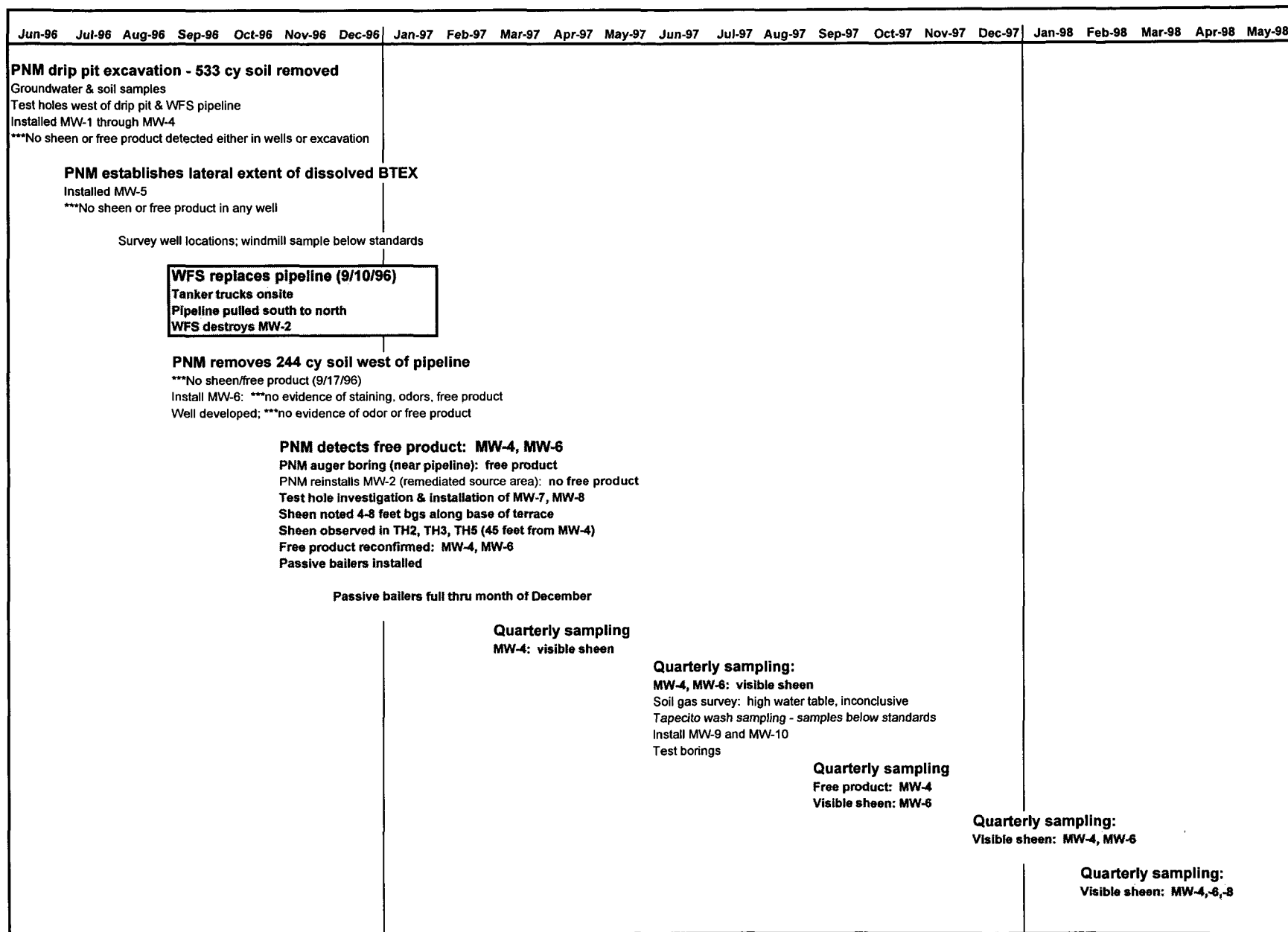
Sincerely,



Maureen Gannon  
Project Manager

cc: Denny Foust, OCD Aztec District Office  
Keith Manwell, Jicarilla Environmental Office  
Colin Adams, PNM Albuquerque  
Bill VonDrehle, Williams Field Services  
Ingrid Deklau, Williams Field Services  
Valda Terauds, ESI Albuquerque

Figure 1: Chronology -- Honolulu Site



**Table 1: SUMMARY OF ANALYTICAL RESULTS**

Sample	Matrix	Date Sampled	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Total BTEX (ug/L)
<b>PNM DRIP PIT: SOURCE AREA</b>							
Groundwater - open pit	Groundwater	06/05/96	1921.4	5671.0	173.3	2678.7	10444.4
Groundwater - open pit	Groundwater	06/05/96	1793.0	5426.5	200.4	2594.7	10014.6
Soil Composite	Soil	06/05/96	3707.9	37072.8	5751.4	55985.6	102517.7
<b>GROUNDWATER MONITORING DATA</b>							
			Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX
MW-1		06/20/96	<0.2	<0.2	<0.2	<0.2	<0.2
		07/25/96	<0.2	<0.2	<0.2	<0.2	<0.2
		11/06/96	<0.2	<0.2	<0.2	<0.2	<0.2
		03/07/97	<0.2	<0.2	<0.2	<0.2	<0.2
		06/04/97	<0.2	<0.2	<0.2	0.8	0.8
		09/18/97	<0.2	<0.2	<0.2	<0.2	<0.2
		12/15/97	<0.2	<0.2	<0.2	<0.2	<0.2
		02/09/98	<0.5	0.7	<0.5	1.6	2.3
MW-2 (old)		06/20/96	11055.2	396.8	20660.1	3860.4	35972.6
		07/25/96	10106.4	118.4	17717.5	4375.4	32317.6
MW-2		11/06/96	Well destroyed during WFS pipeline replacement				
		11/26/96	39.0	20.6	13.9	231.4	304.9
		03/07/97	243.6	107.0	194.2	946.3	1491.2
		06/04/97	37.5	27.8	5.1	91.0	161.2
		09/18/97	72.7	15.9	8.3	59.9	156.9
		12/15/97	3.7	6.5	3.0	25.0	38.2
		02/09/98	2.2	2.2	6.1	20.2	30.7
MW-3		06/20/96	98.5	1.8	2.0	6.3	108.6
		07/25/96	<0.2	<0.2	0.3	<0.2	0.3
		11/06/96	1.2	<0.2	<0.2	<0.2	1.2
		03/07/97	5325.6	44.0	533.1	2160.9	8063.7
		06/04/97	3989.0	103.0	1678.0	812.0	6583.0
		09/18/97	81.1	1.0	0.5	9.0	91.6
		12/15/97	423.0	11.0	<0.2	80.3	514.0
		02/09/98	2200.0	<2.5	65.0	433.0	2698.0
MW-4		06/20/96	341.4	26.2	3.2	64.8	435.6
		07/25/96	313.1	22.9	4.4	22.4	326.8
		11/06/96	3 inches of free phase- clear product				
		03/07/97	Visible hydrocarbon sheen - not sampled				
		06/04/97	889.0	249.0	3697.0	2007.0	6842.0
		09/18/97	Not sampled - 0.08 inches free product				
		12/15/97	62.0	56.0	90.0	412.0	618.0
		02/09/98	96.0	370.0	75.0	660.0	1201.0
MW-5		07/25/96	13.4	<0.2	1.3	0.4	15.1
		11/06/96	<0.2	0.4	<0.2	<0.2	0.4
		03/07/97	3.0	<0.2	0.2	<0.2	3.2
		06/04/97	352.0	<0.2	<0.2	<0.2	352.0
		09/18/97	33.2	<0.2	<0.2	<0.2	33.2
		12/15/97	<0.2	<0.2	<0.2	<0.2	<0.2
		02/09/98	<0.5	<0.5	<0.5	1.0	1.0
MW-6		09/17/96	Well installed; no indications of organic vapors or hydrocarbon staining				
		11/06/96	2 -3 inches of free phase - yellow, straw-colored product				
		03/07/97	18358.8	460.4	12030.4	7032.7	37909.2
		06/04/97	16434.0	714.0	9791.0	8841.0	34780.0
		09/18/97	16309.0	588.0	4531.0	6554.0	27981.0
		12/15/97	15061.0	520.0	1526.0	5412.0	22518.0
		02/09/98	15000.0	1000.0	490.0	5100.0	21590.0
MW-7		11/26/96	<0.2	<0.2	<0.2	<0.2	<0.2
		03/07/97	<0.2	<0.2	<0.2	<0.2	<0.2
		06/04/97	68.0	<0.2	<0.2	<0.2	68.0
		09/18/97	<0.2	<0.2	<0.2	<0.2	<0.2
		12/15/97	0.6	<0.2	<0.2	<0.2	0.6
		02/09/98	15.0	<0.5	<0.5	<1	15.0
MW-8		11/26/96	109.2	0.6	3.8	111.1	224.8
		03/07/97	281.5	6.6	12.8	187.6	488.6
		06/04/97	289.0	94.0	12.0	554.0	948.0
		09/18/97	<0.2	29.7	5.1	194.4	229.2
		12/15/97	<0.2	36.8	7.4	253.1	297.3
		02/09/98	7.5	11.0	52.0	353.0	423.5

Wells and data affected by product release are boxed

Values of 50,000 are input to represent free product for graphical/numerical analysis of MW-4 & MW-6.

**Table 1: SUMMARY OF ANALYTICAL RESULTS**

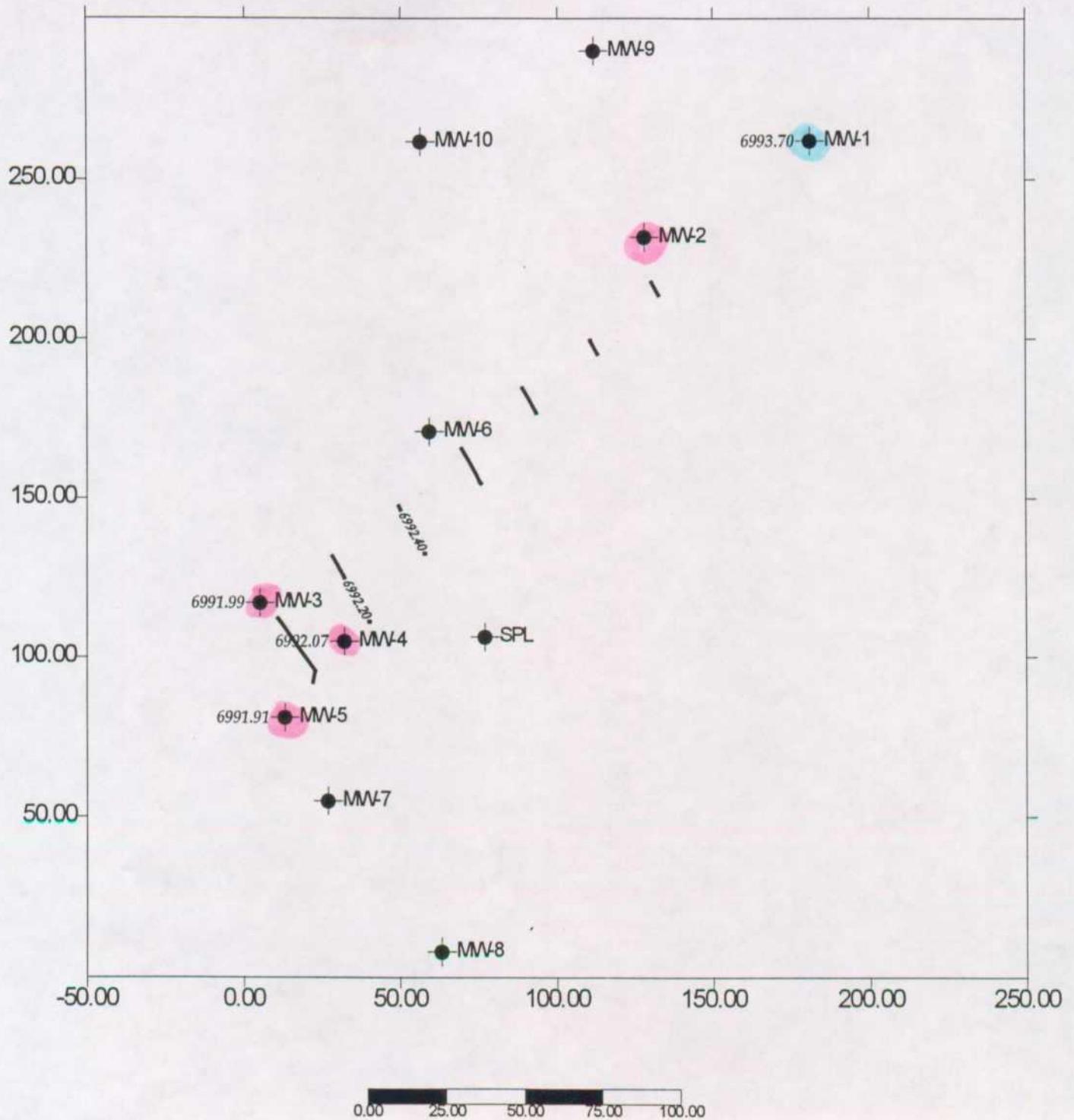
Sample	Matrix	Date Sampled	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Total BTEX (ug/L)
MW-9		06/11/97	<0.2	<0.2	0.7	0.4	1.1
		09/18/97	<0.2	<0.2	0.3	<0.2	0.3
		12/15/97	<0.2	<0.2	0.2	<0.2	0.2
		02/09/98	<0.5	0.7	<0.5	1.3	2.0
MW-10		06/11/97	352.0	4.0	5.0	2.0	363.0
		09/18/97	38.4	0.8	3.4	<0.2	42.6
		12/15/97	87.9	3.0	2.5	4.7	98.2
		02/09/98	1.3	3.5	2.7	<1	7.5

Attachment 1

Groundwater Contour Maps  
July 1996 - February 1998

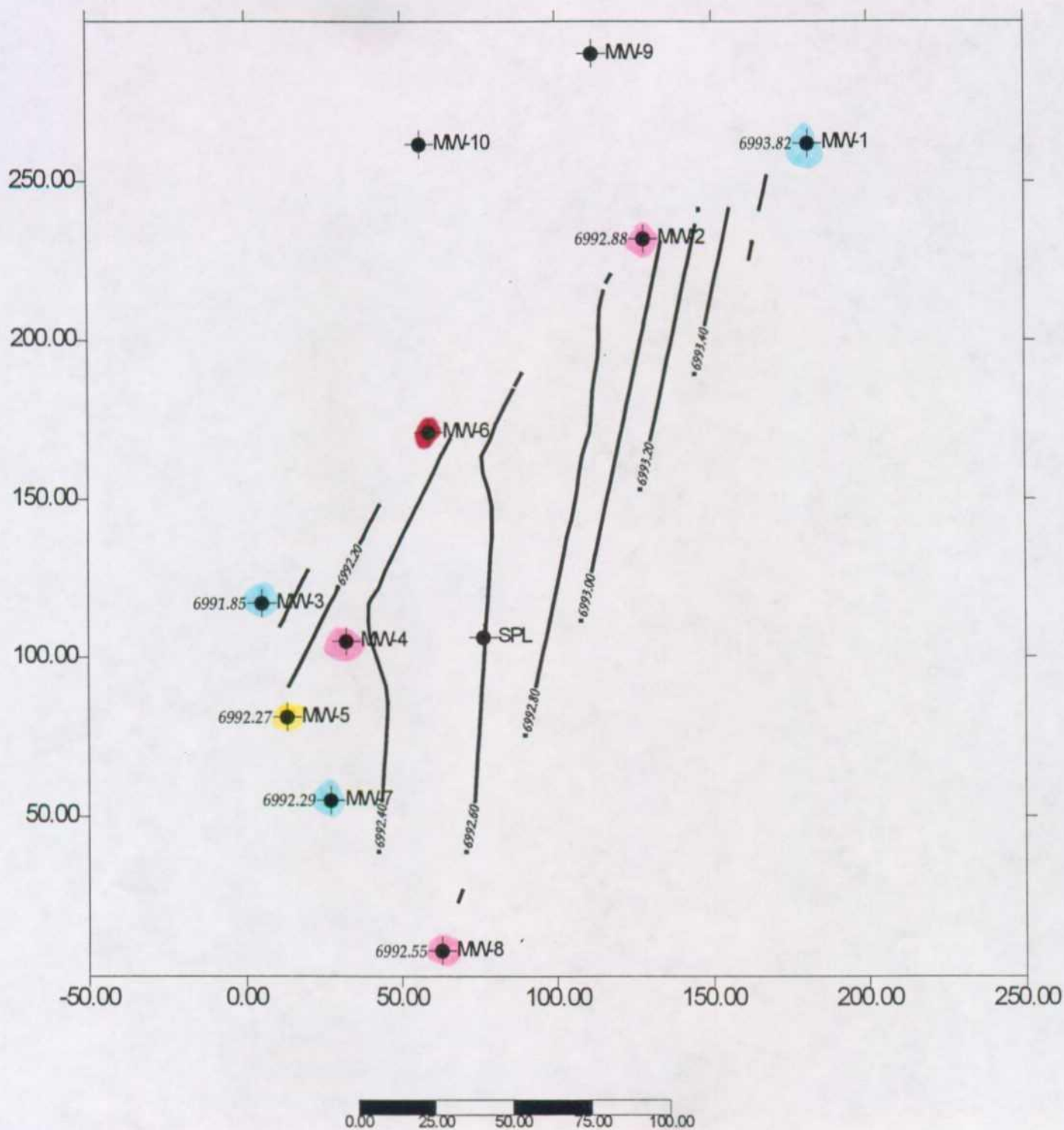
# HONOLULU LINE DRIP - GROUNDWATER ELEVATIONS

June 1996



# HONOLULU LINE DRIP - GROUNDWATER ELEVATIONS

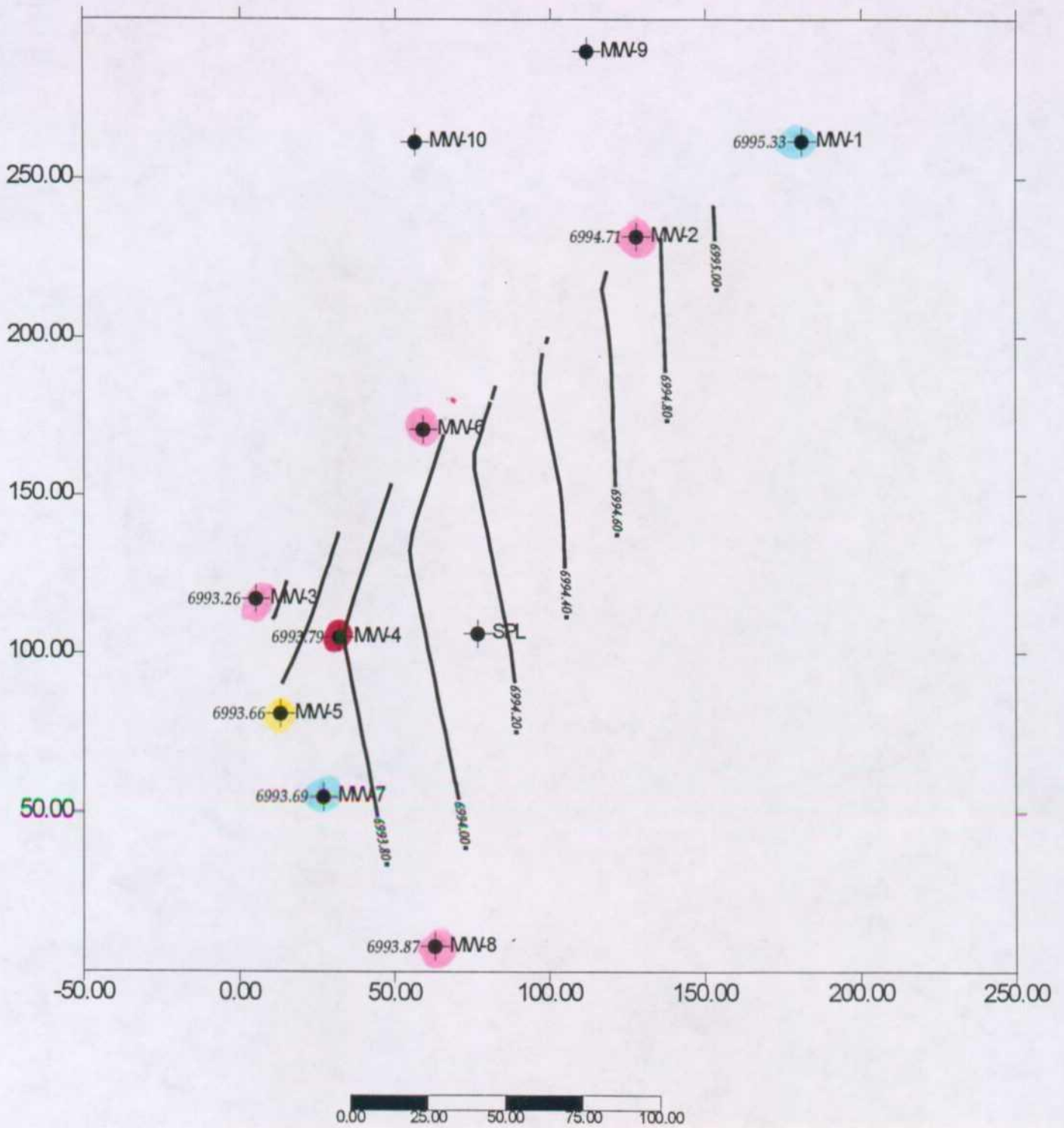
November 1996





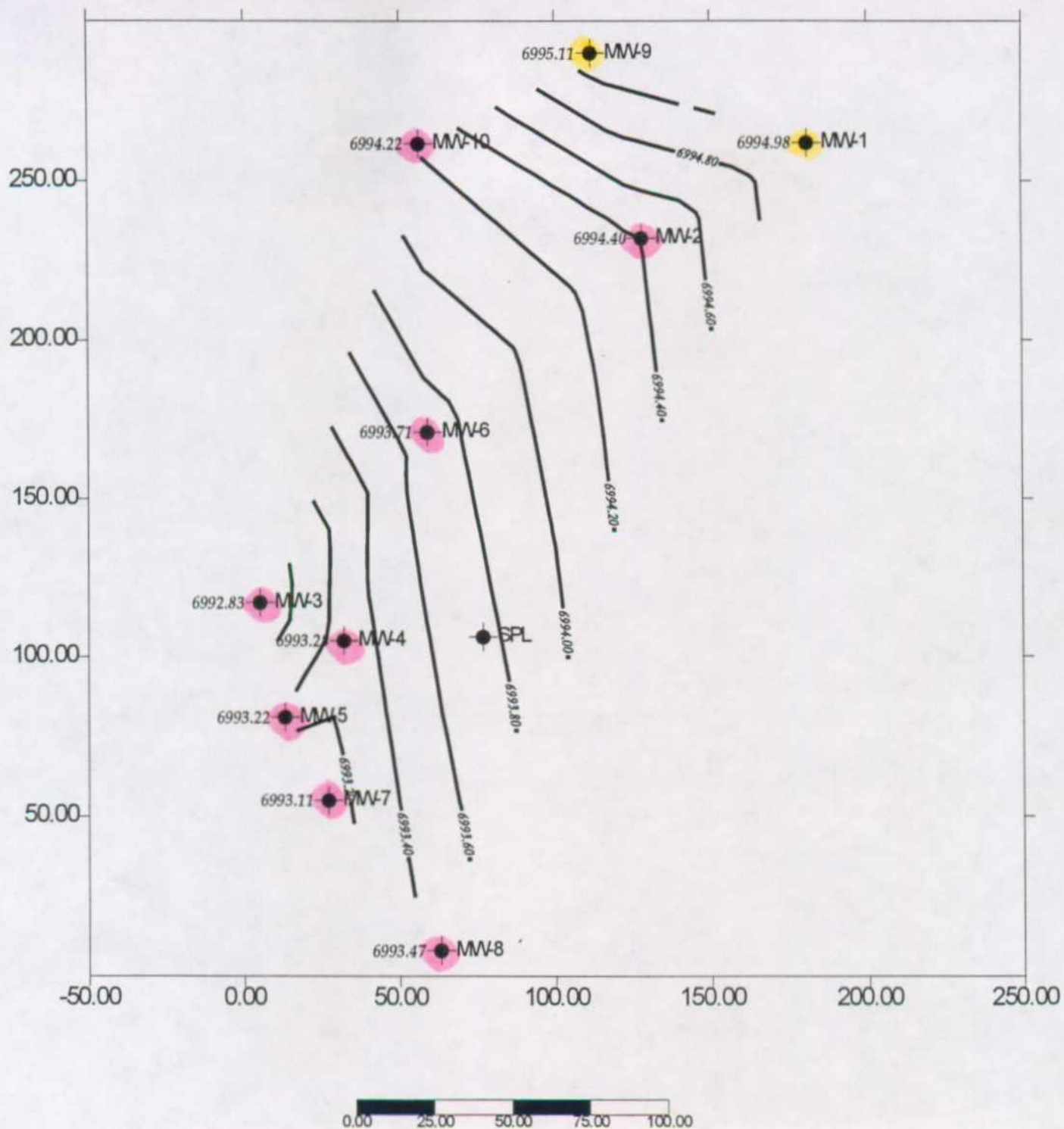
# HONOLULU LINE DRIP - GROUNDWATER ELEVATIONS

March 1997



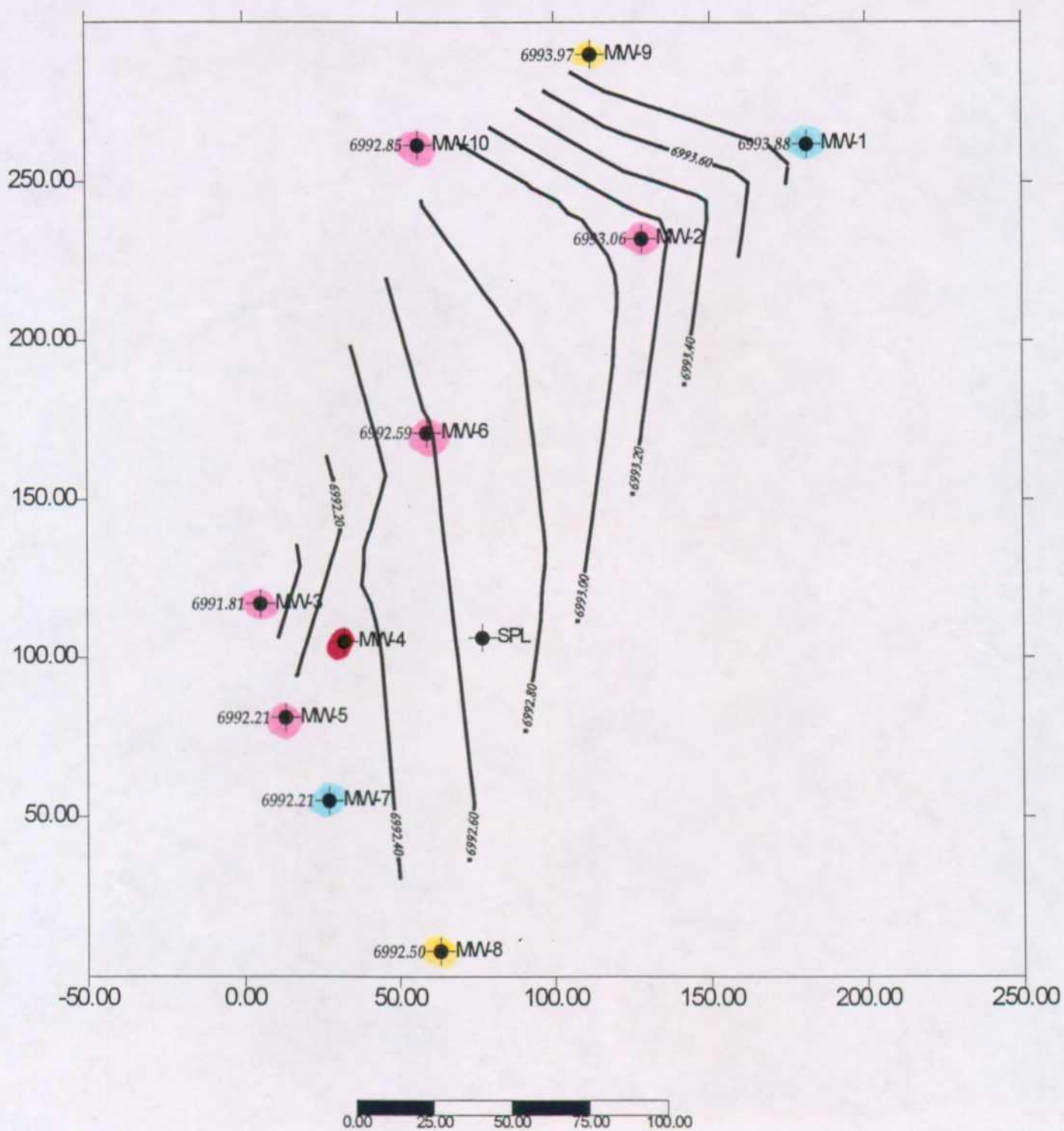
# HONOLULU LINE DRIP - GROUNDWATER ELEVATIONS

June 1997



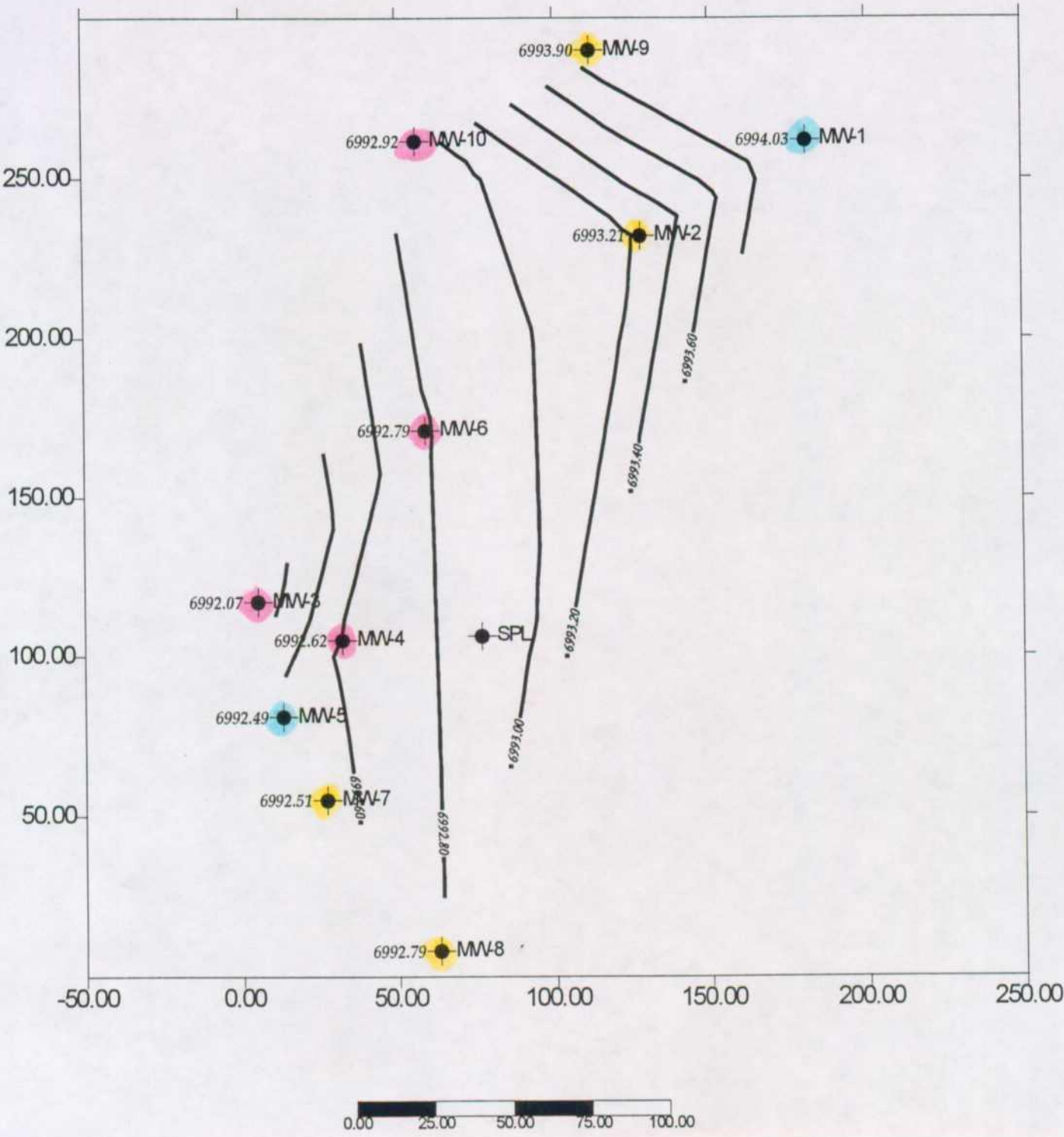
# HONOLULU LINE DRIP - GROUNDWATER ELEVATIONS

September 1997



HONOLULU LINE DRIP - GROUNDWATER ELEVATIONS

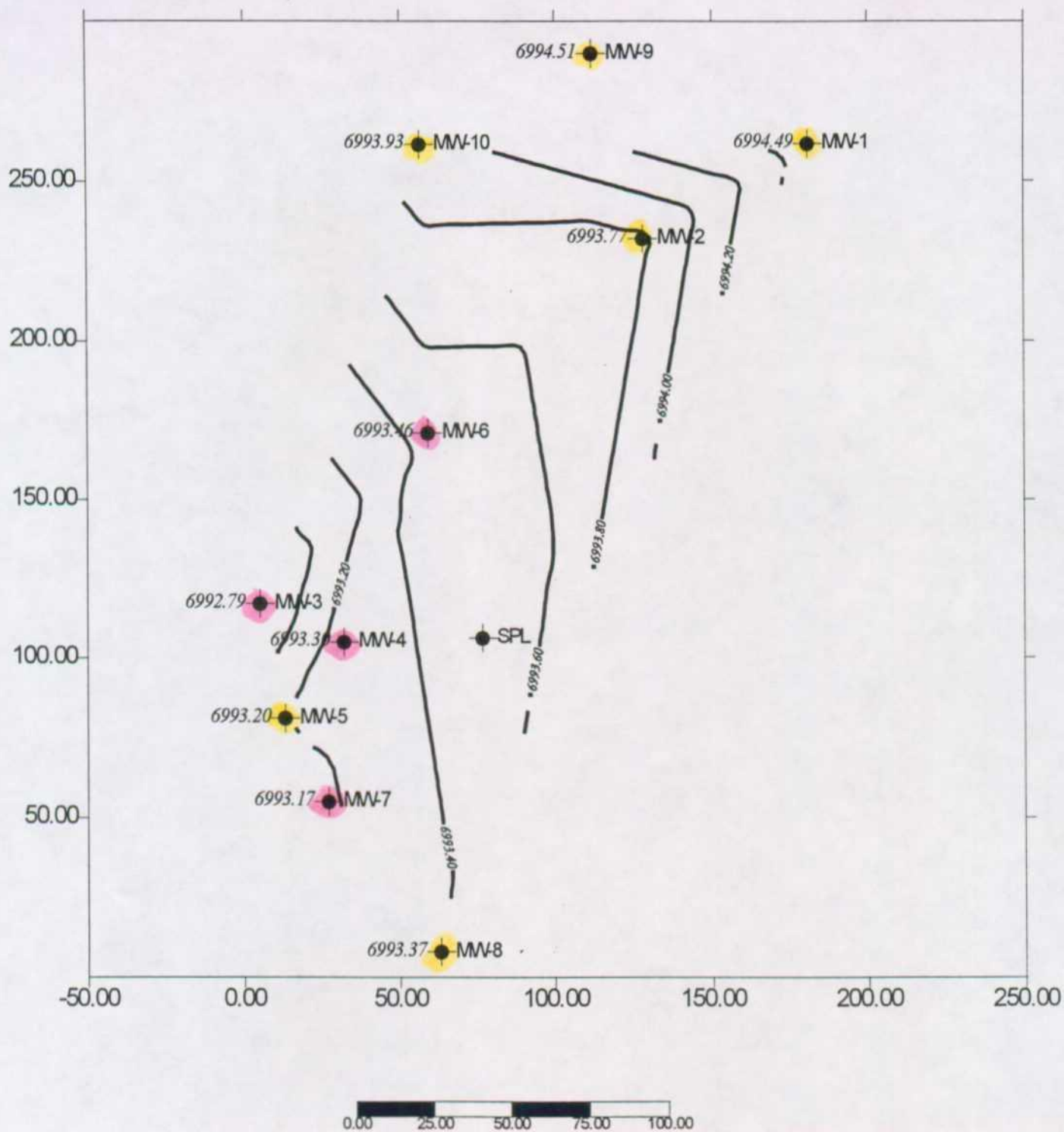
December 1997



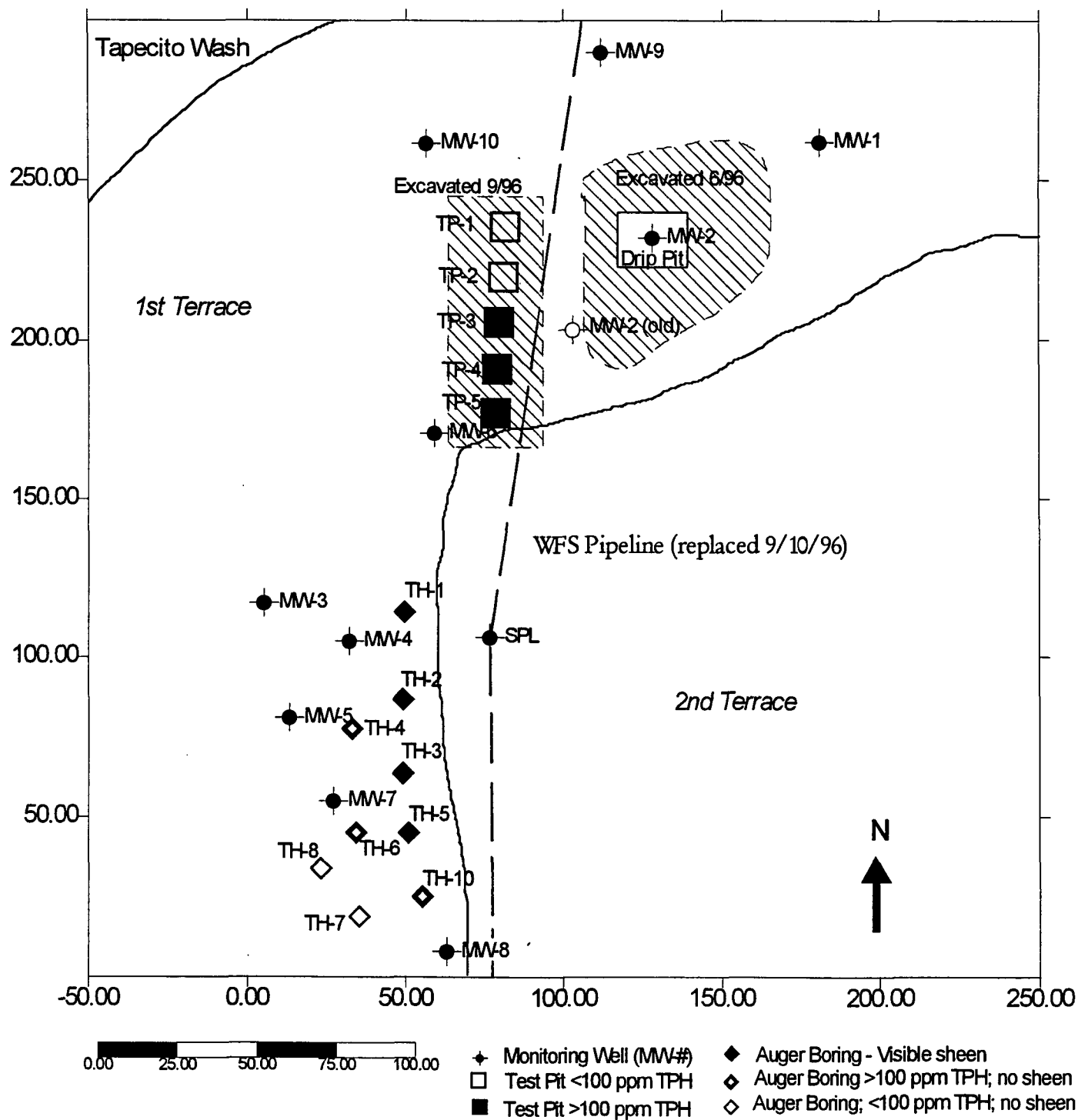


# HONOLULU LINE DRIP - GROUNDWATER ELEVATIONS

February 1998

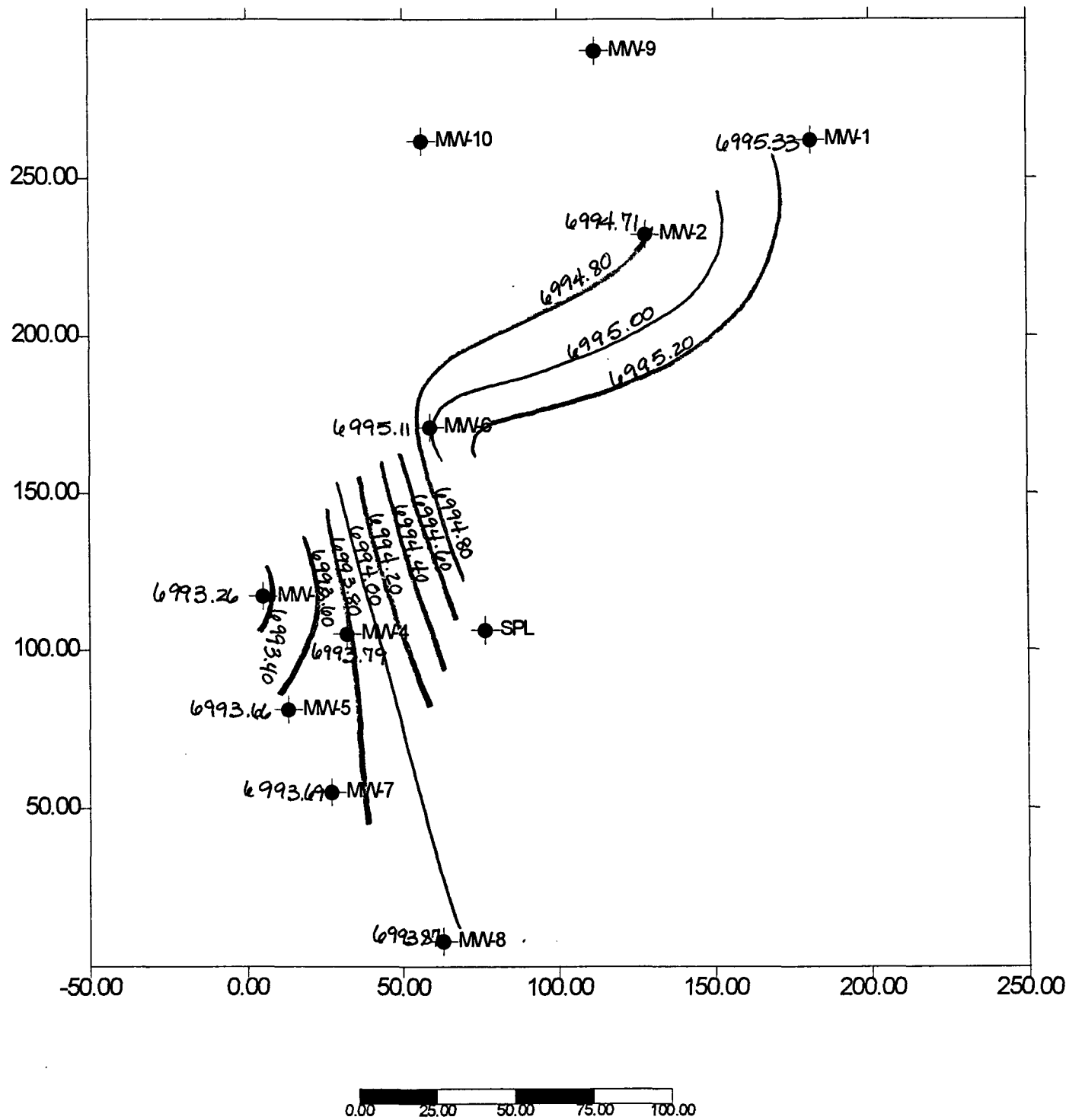


# HONOLULU LINE DRIP: Summary of Site Activity



HONOLULU LINE DRIP - Groundwater Elevations

March 1997

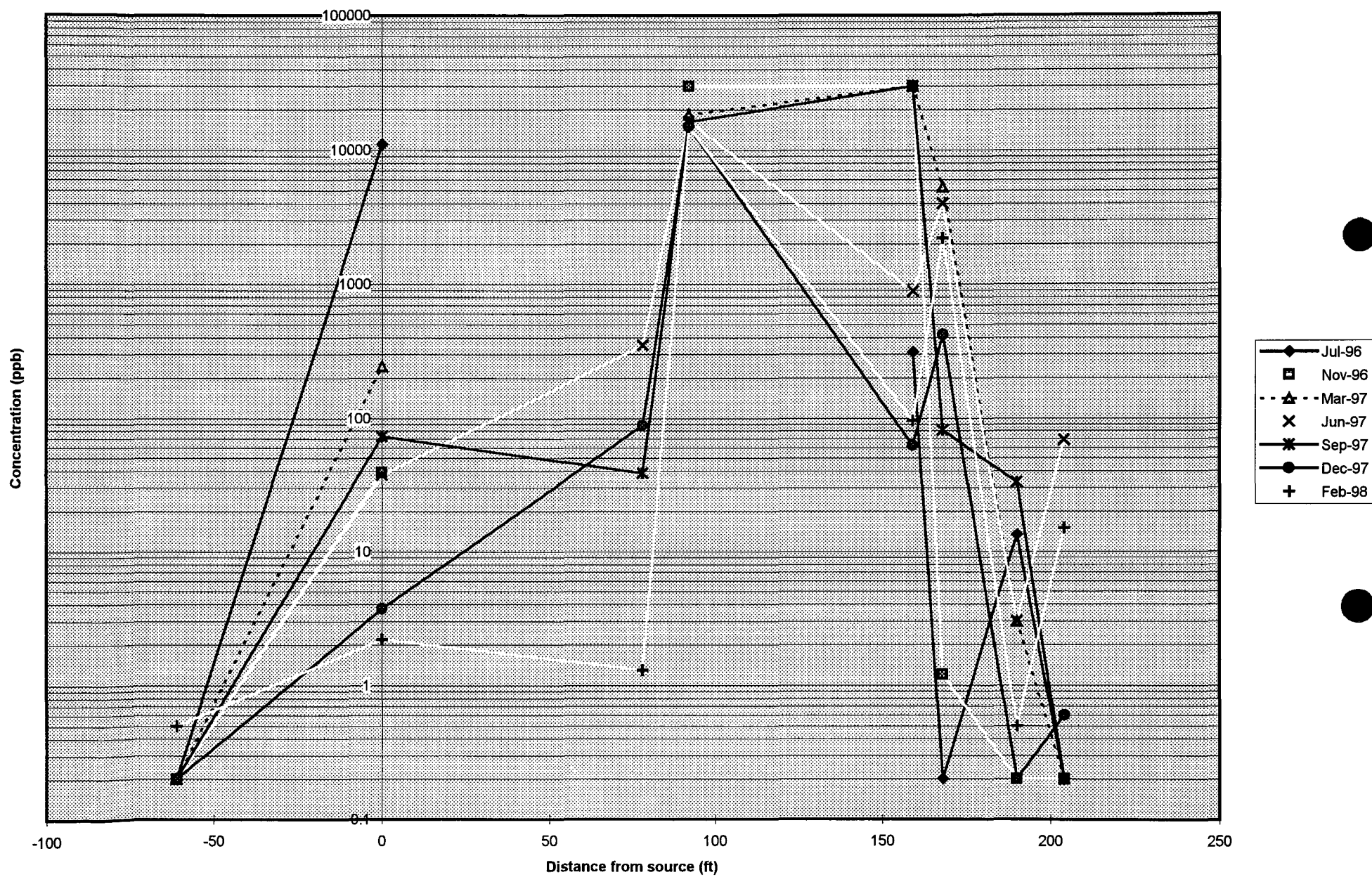


Attachment 2

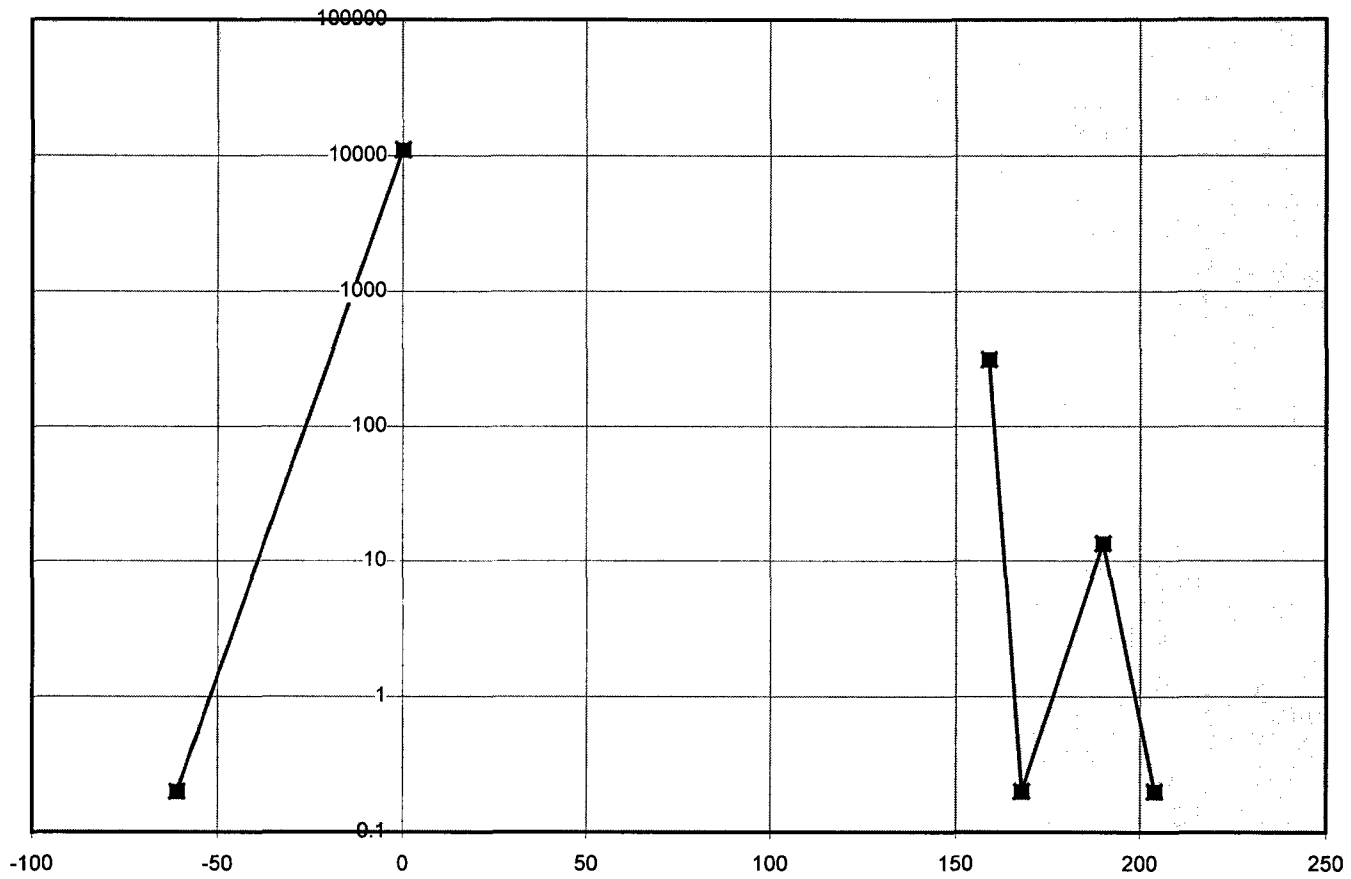
Concentration vs. Distance



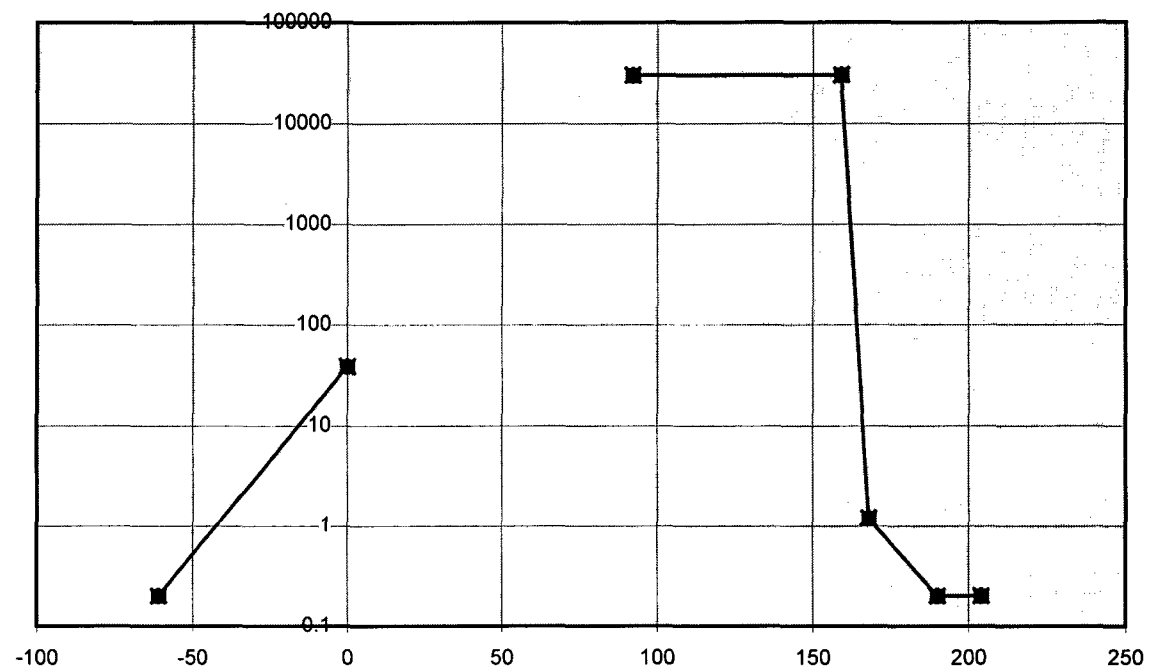
### Benzene: Concentration vs. Distance



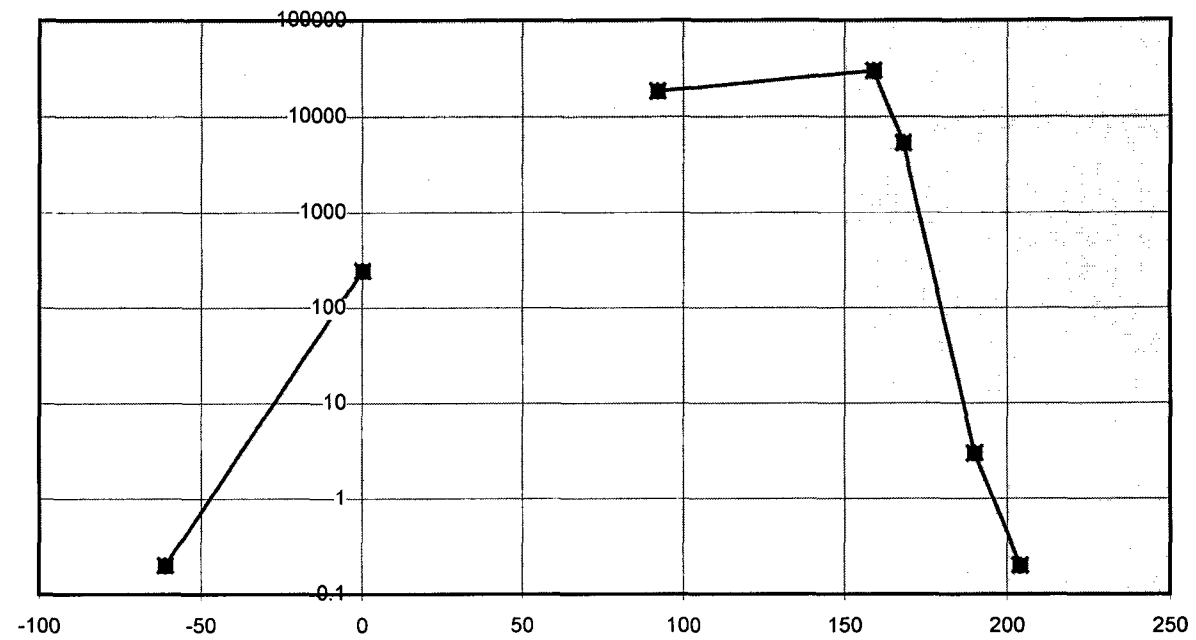
**Benzene vs. Distance: July 1996**



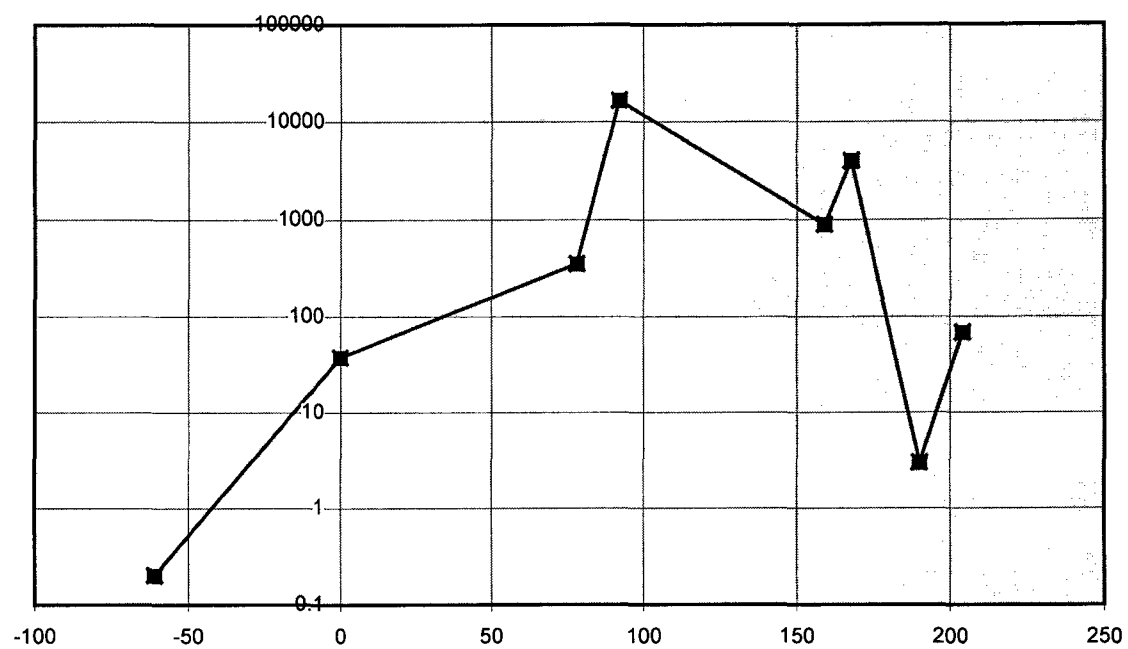
**Benzene vs. Distance: November 1996**



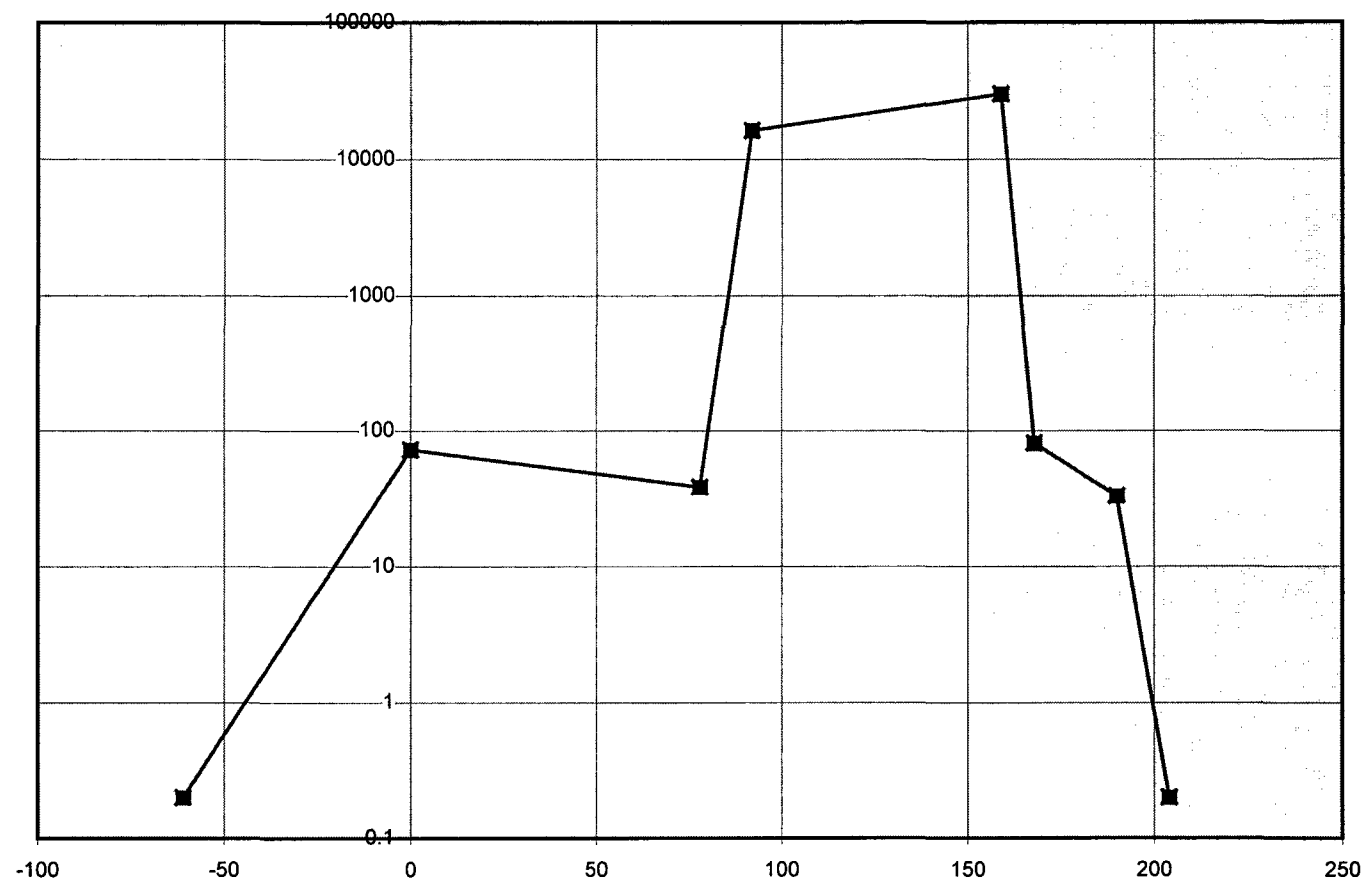
**Benzene vs. Distance: March 1997**



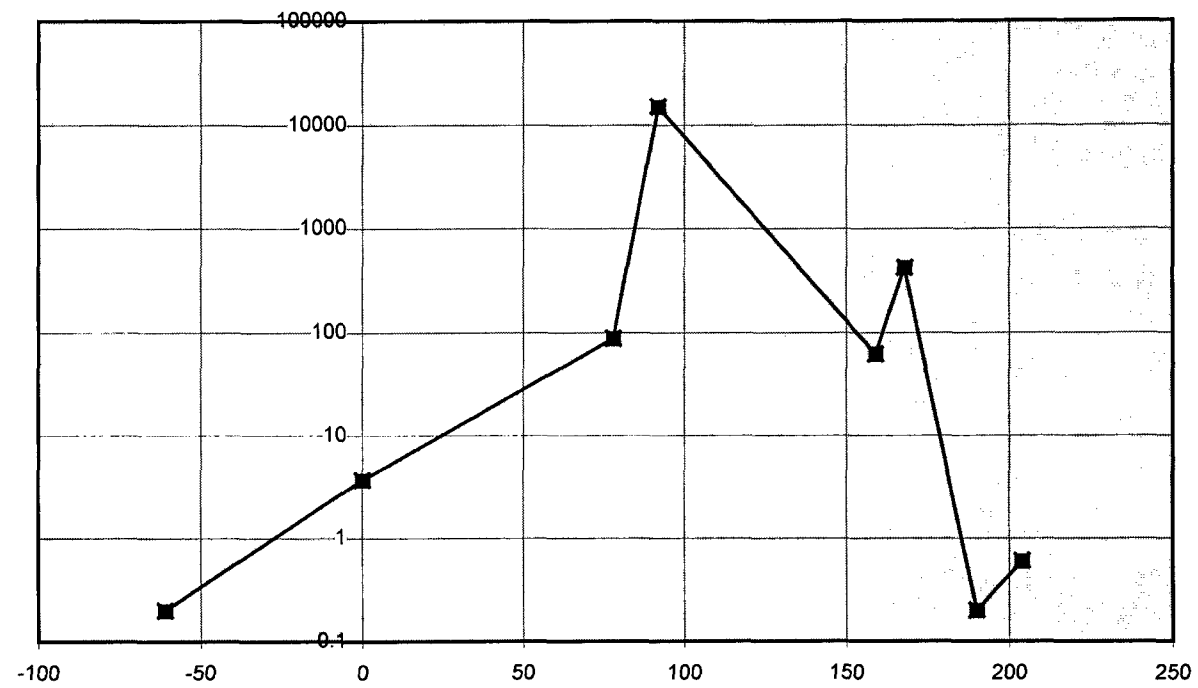
**Benzene vs. Distance: June 1997**



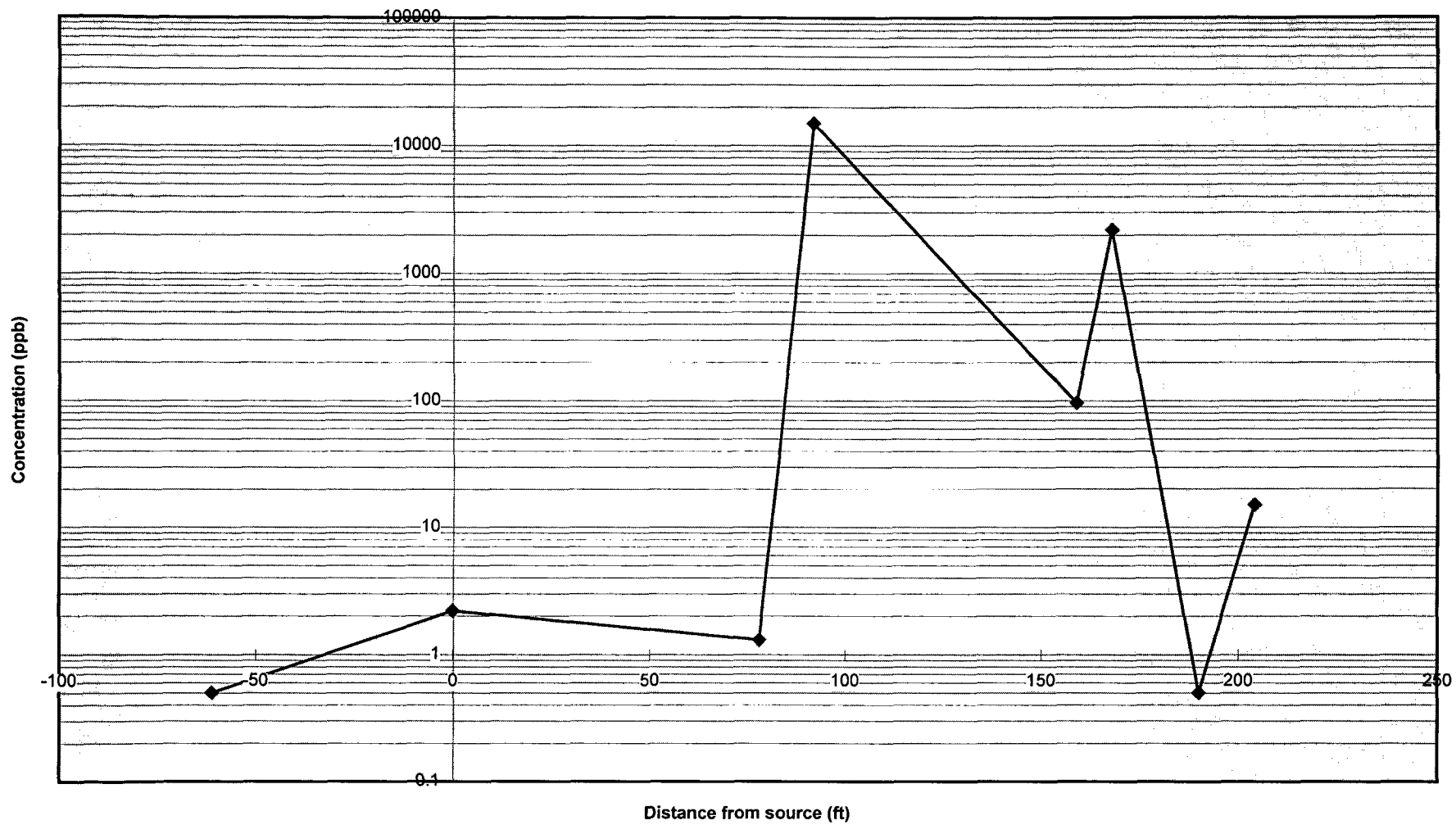
**Benzene vs. Distance: September 1997**



**Benzene vs. Distance: December 1997**



Benzene vs. Distance: February 1998

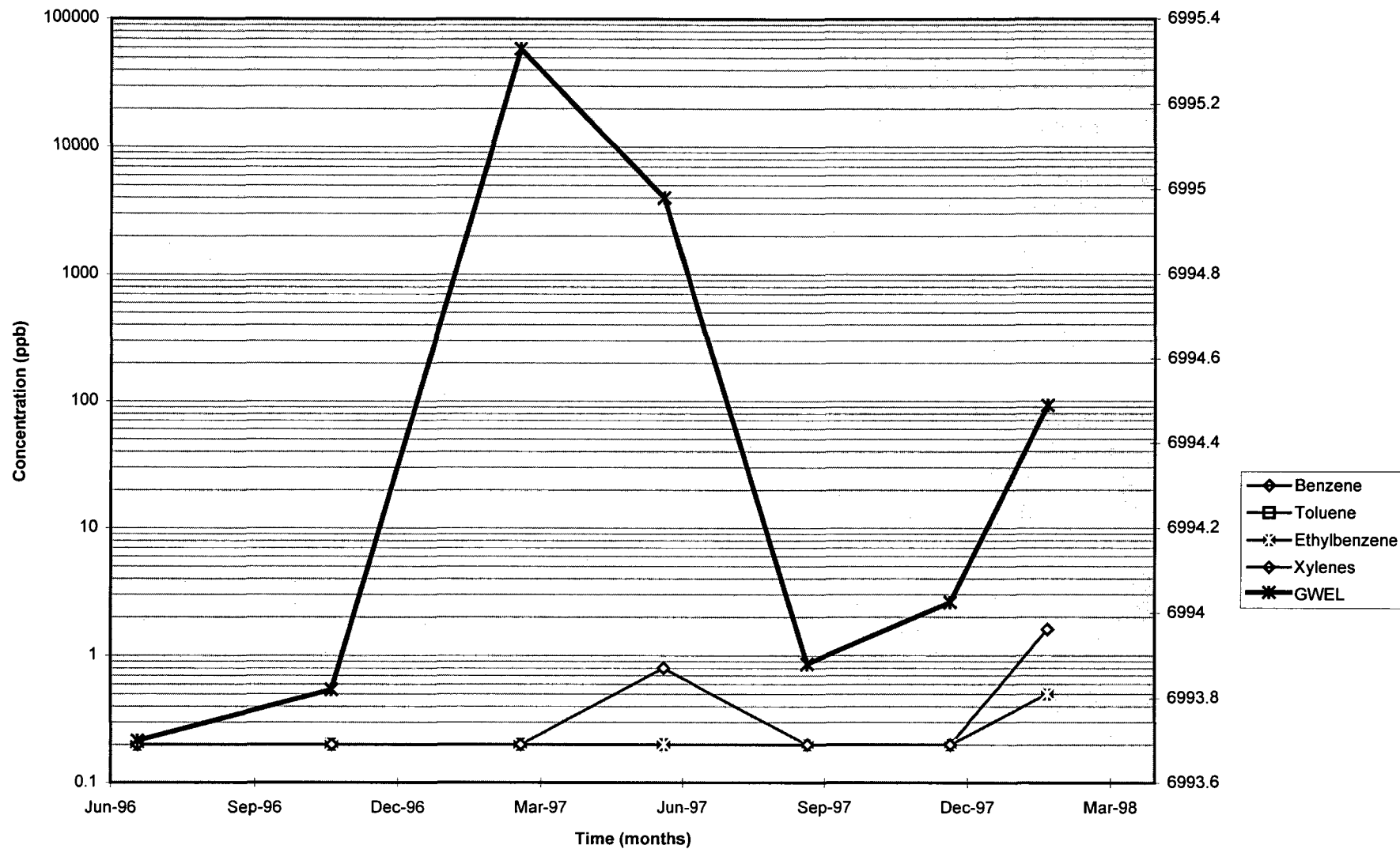




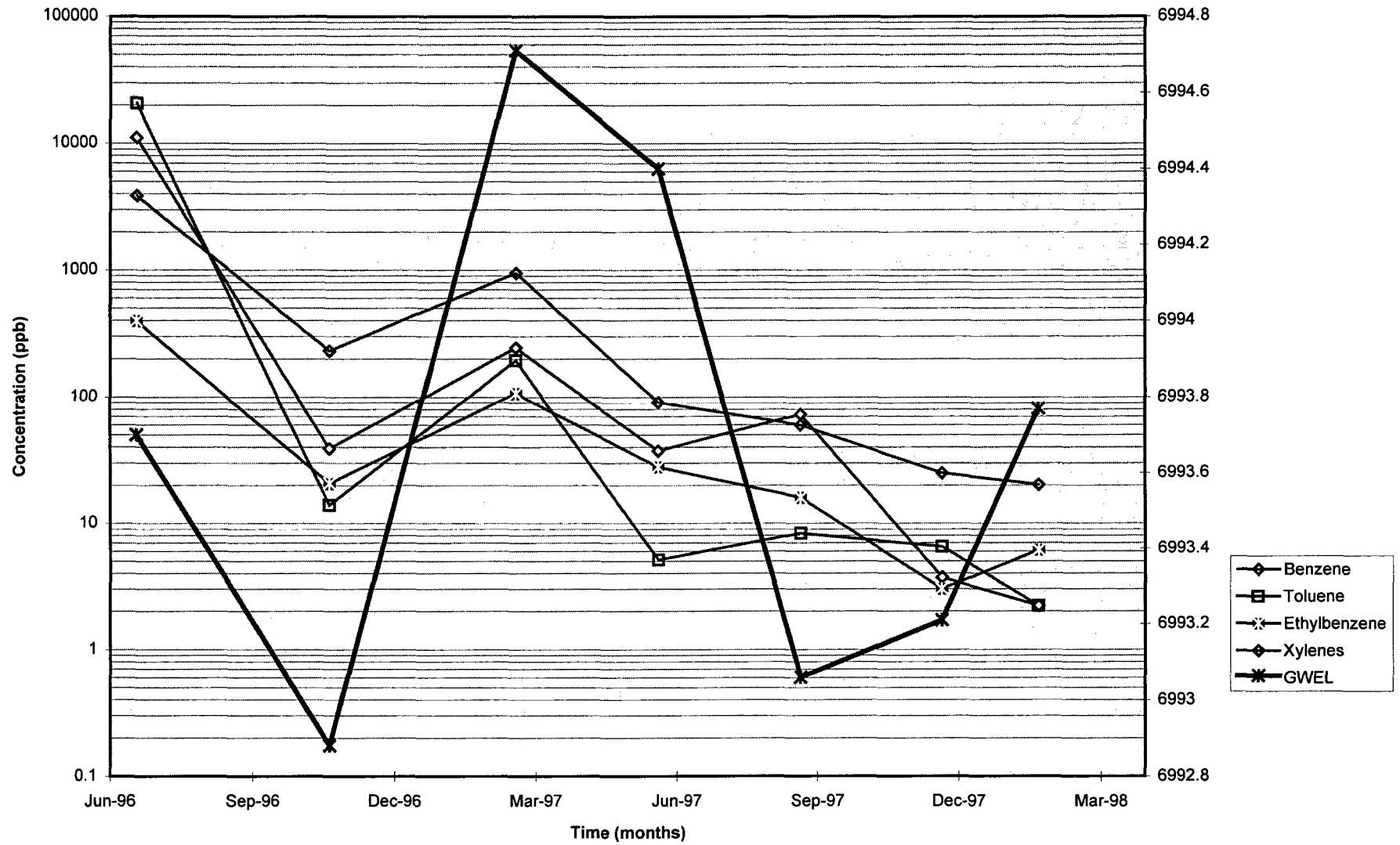
Attachment 3

Concentration vs. Time

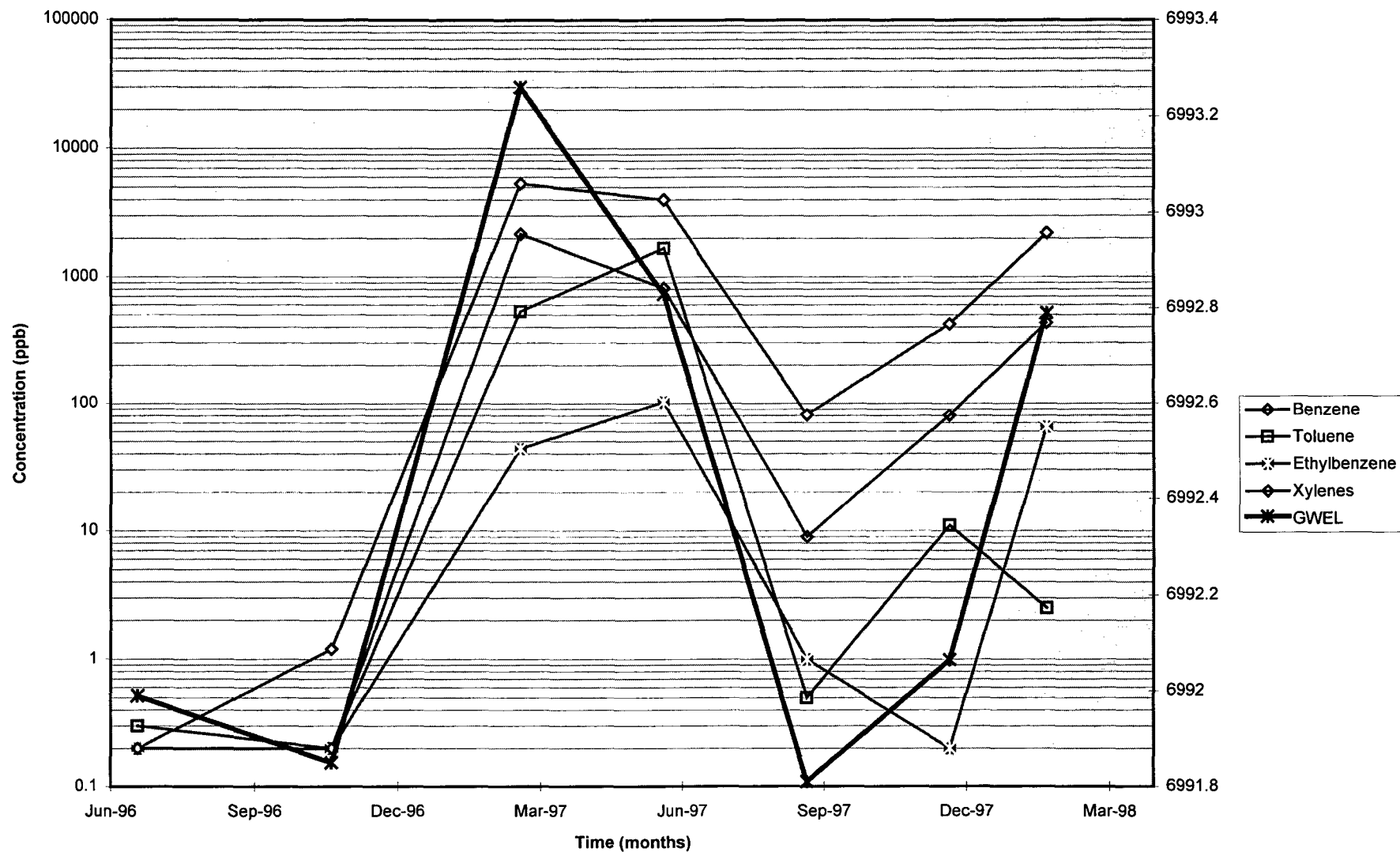
MW-1: Trends w/Time



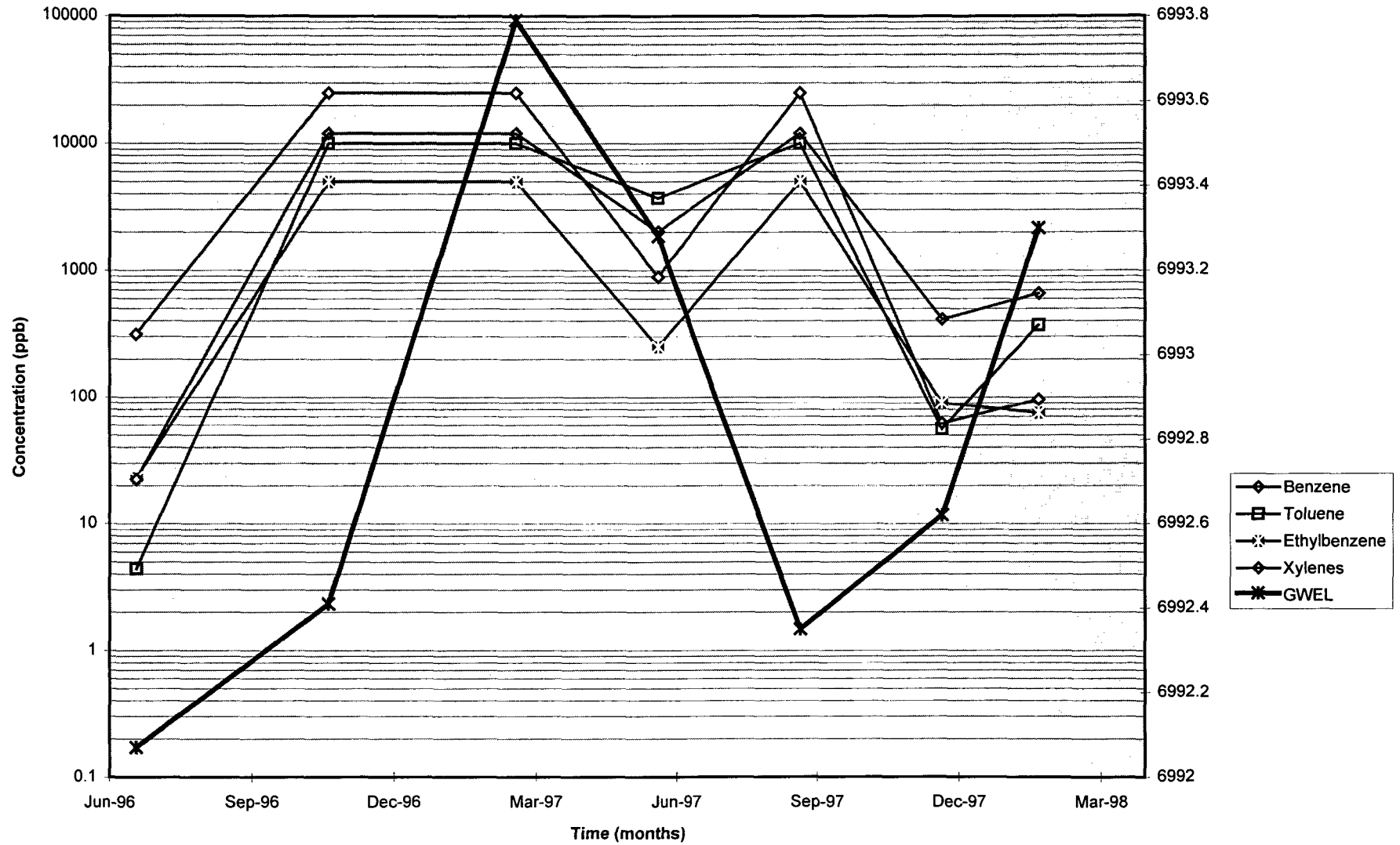
MW-2: Trends w/Time



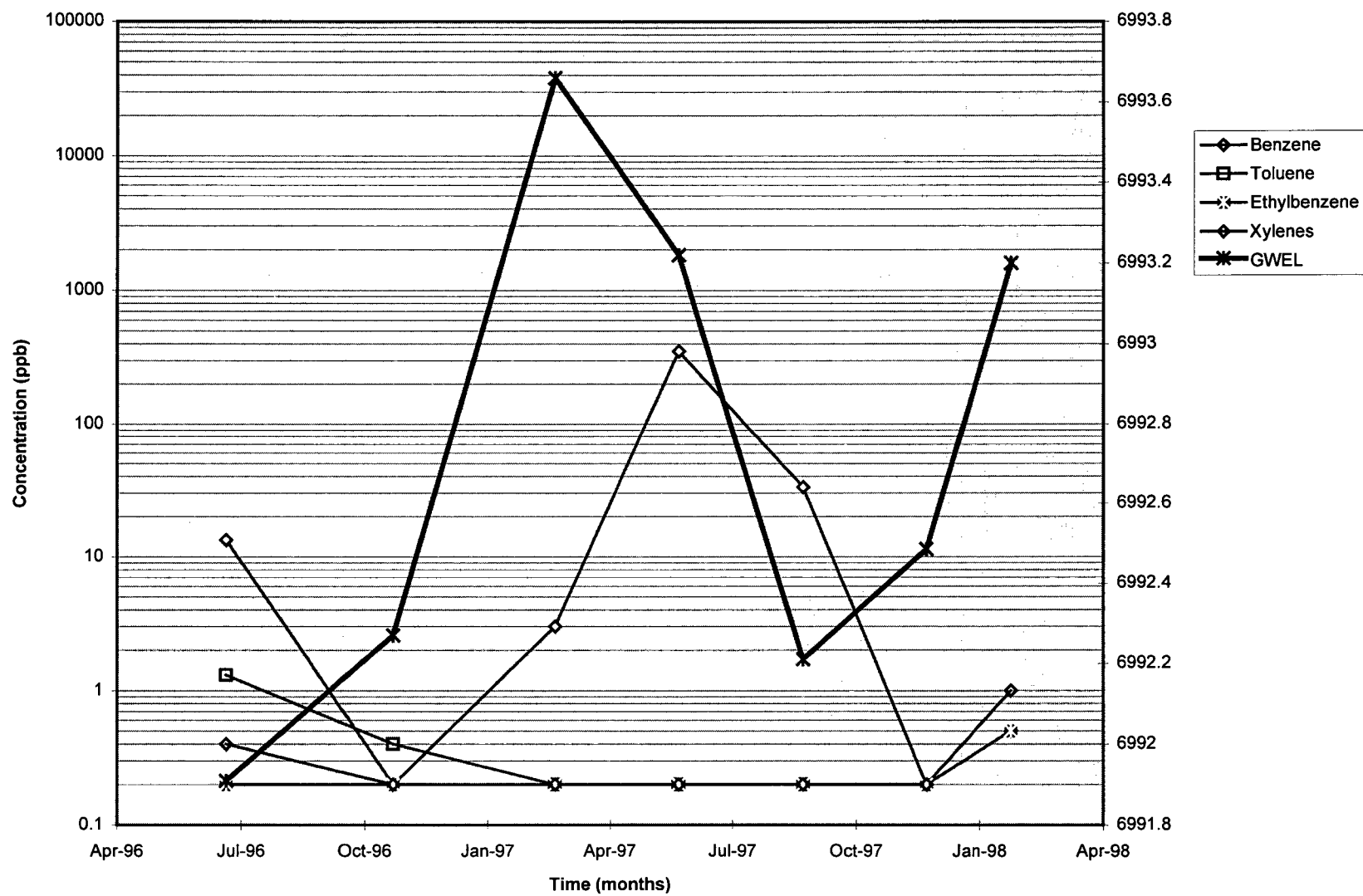
MW-3: Trends w/Time



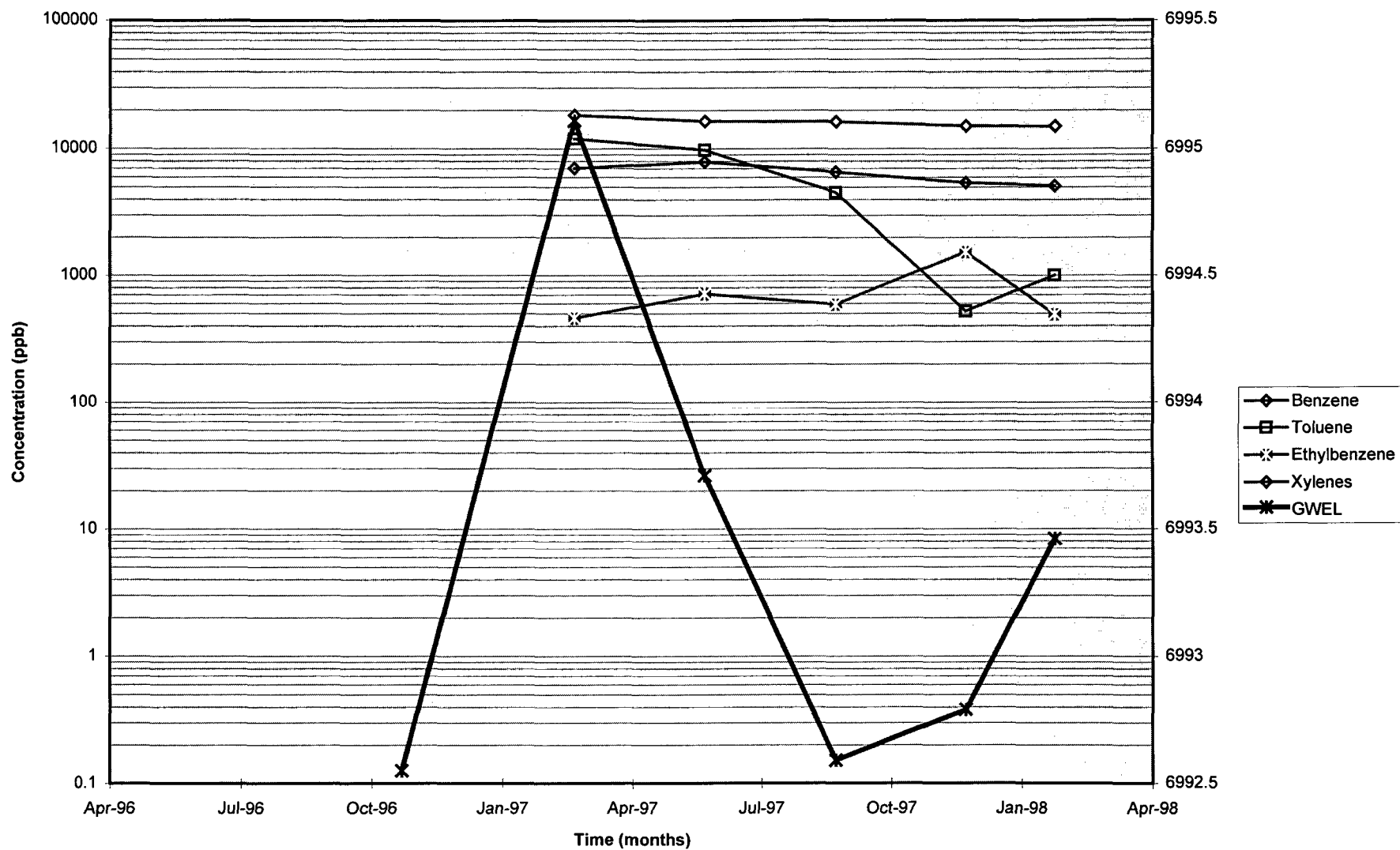
MW-4: Trends w/Time



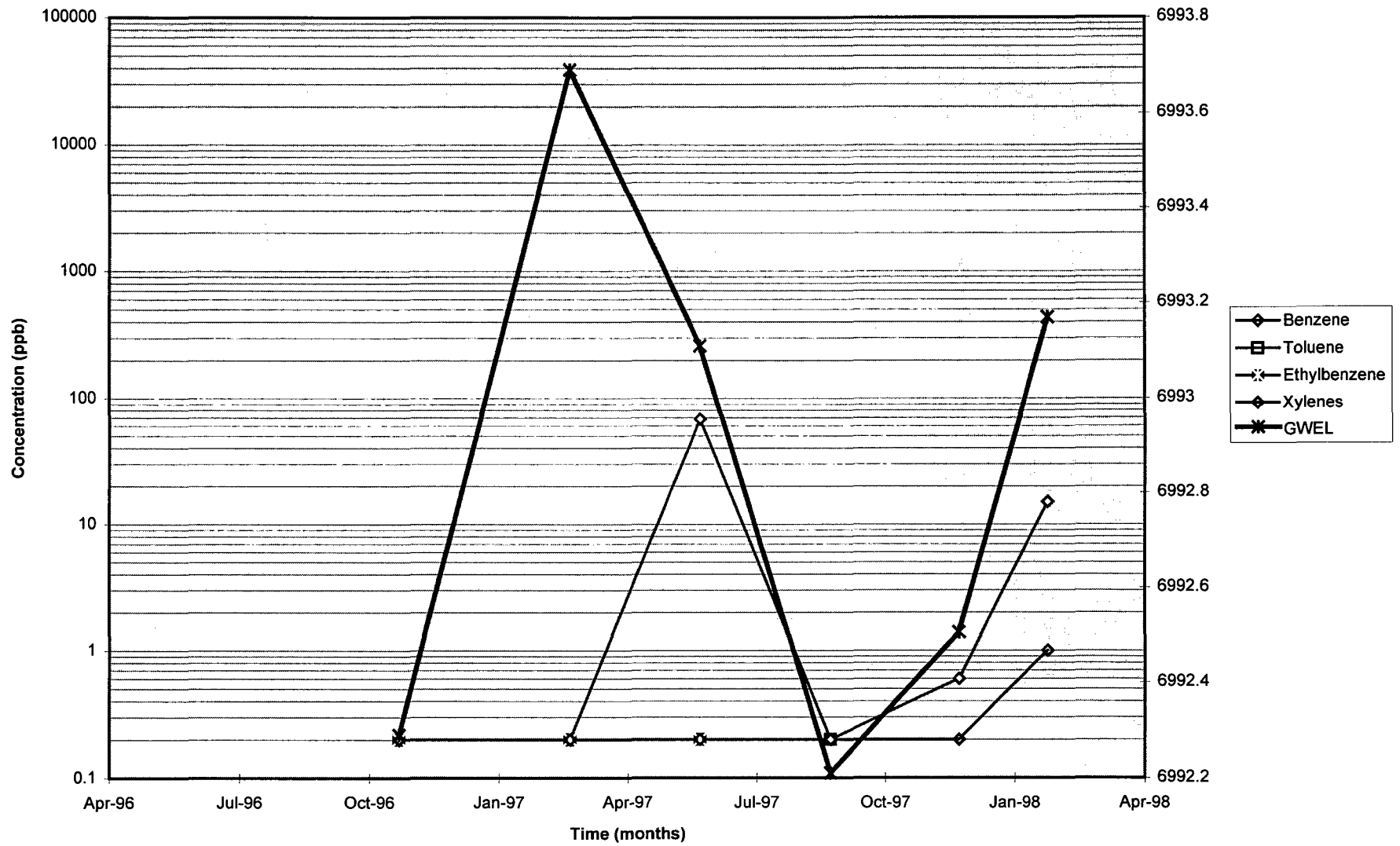
MW-5: Trends w/Time



MW-6: Trends w/Time

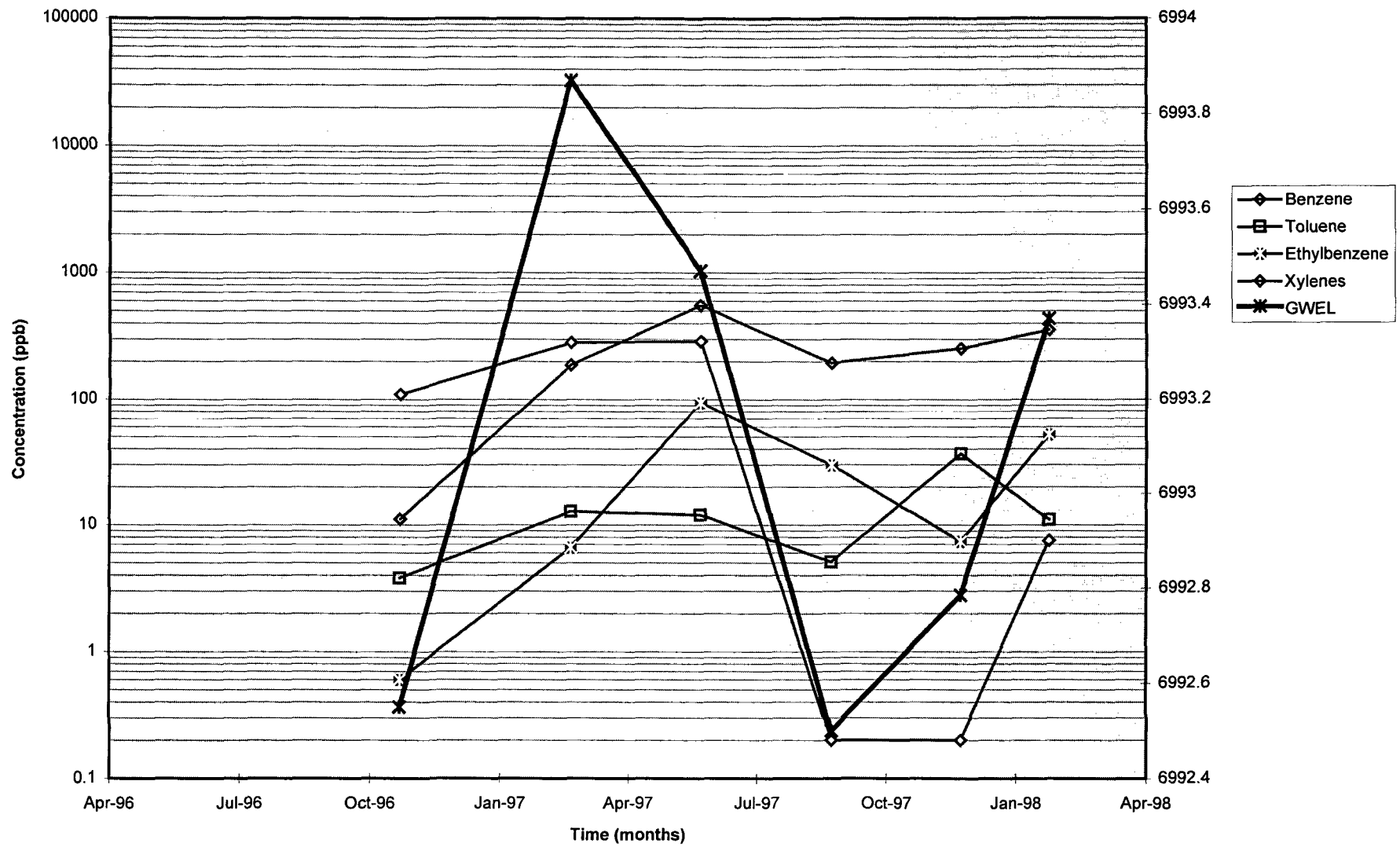


MW-7: Trends w/Time

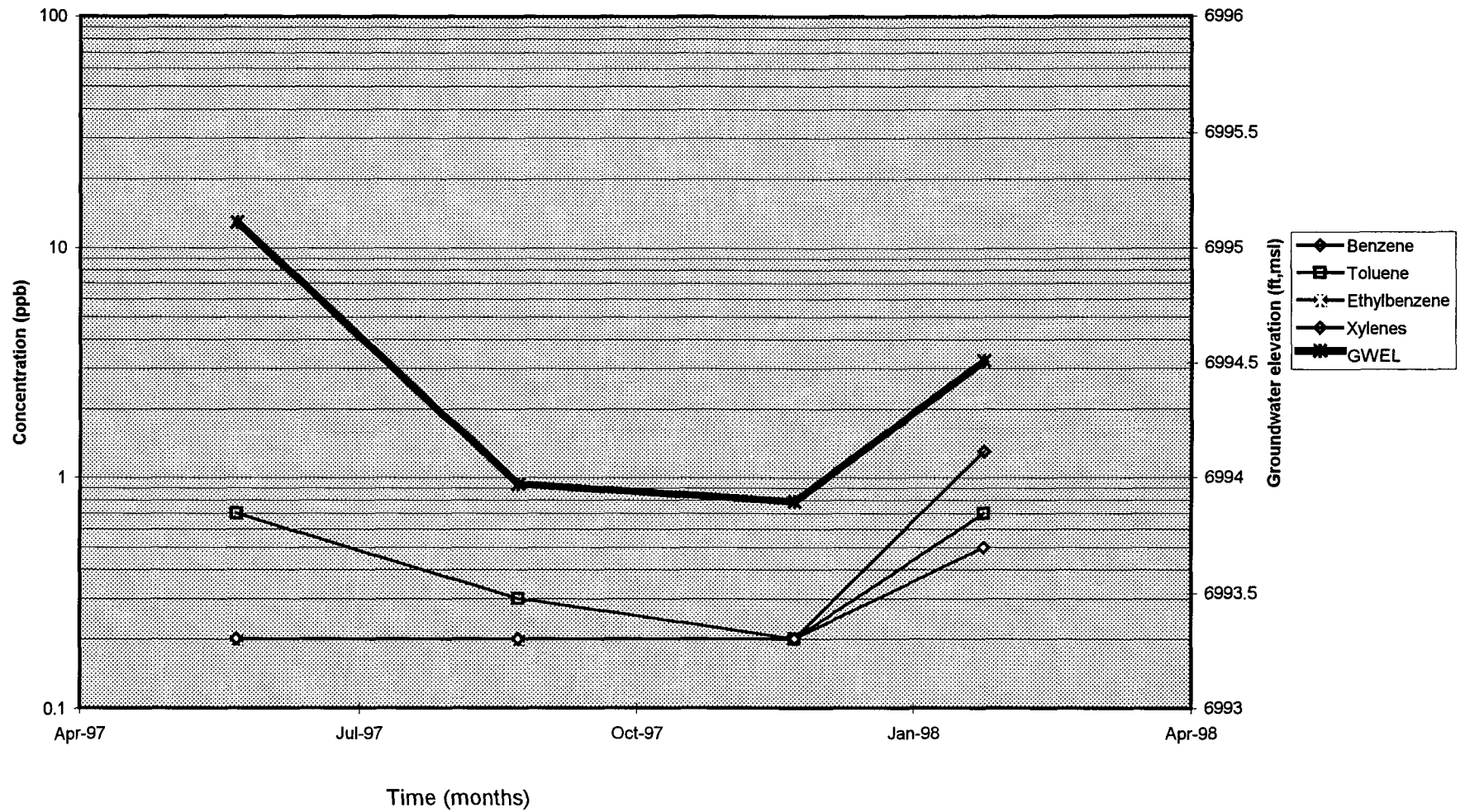




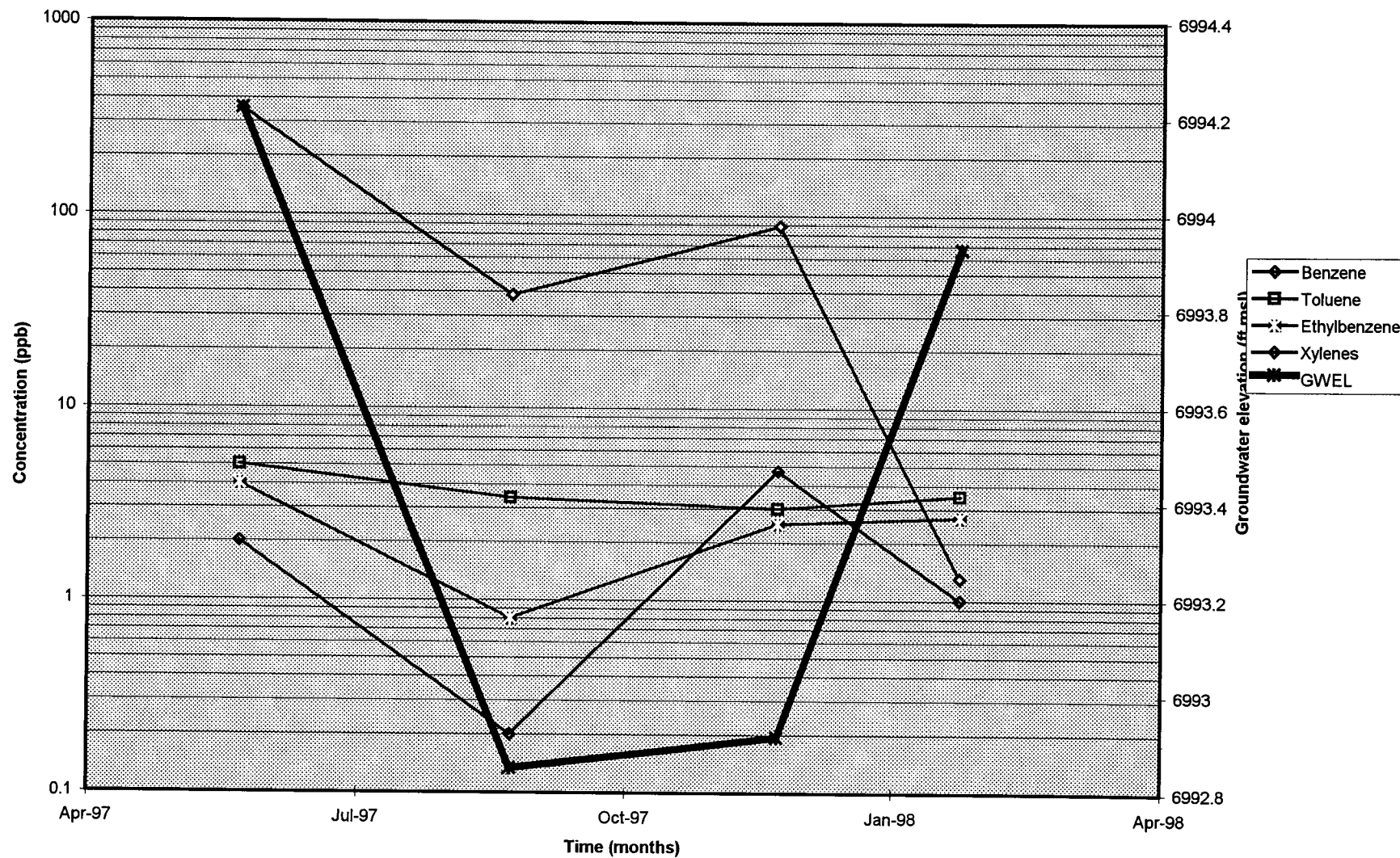
MW-8: Trends w/Time



MW-9: Trends w/Time



MW-10: Trends w/Time



OFF: (505) 325-5667



LAB: (505) 325-1556

February 24, 1998

Maureen Gannon  
PNM Gas Services  
Alevardo Square, Mail Stop 0408  
Albuquerque, NM 87401  
TEL: (505) 241-2974  
FAX (505) 241-2340

RE: Honolulu Loop Line Drip

Order No.: 9802002

Dear Maureen Gannon,

On Site Technologies, LTD. received 11 samples on 2/11/98 for the analyses presented in the following report.

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

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

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

Sincerely,

  
David Cox

OFF: (505) 325-5667



LAB: (505) 325-1556

**ANALYTICAL REPORT****Date:** 24-Feb-98

<b>Client:</b>	PNM Gas Services	<b>Client Sample Info:</b>	Honolulu Loop Line Drip
<b>Work Order:</b>	9802002	<b>Client Sample ID:</b>	9802091118; MW-1
<b>Lab ID:</b>	9802002-01A	<b>Matrix:</b>	AQUEOUS
<b>Project:</b>	Honolulu Loop Line Drip	<b>Collection Date:</b>	2/9/98 11:18:00 AM
		<b>COC#:</b>	7138

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
<b>AROMATIC VOLATILES BY GC-PID</b>		<b>SW8021A</b>		<b>Analyst: DC</b>		
Benzene	ND	0.5		µg/L	1	2/17/98
Toluene	0.7	0.5		µg/L	1	2/17/98
Ethylbenzene	ND	0.5		µg/L	1	2/17/98
m,p-Xylene	1.6	1		µg/L	1	2/17/98
o-Xylene	ND	0.5		µg/L	1	2/17/98
Surr: Fluorobenzene	99.9	70-130		%REC	1	2/17/98
Surr: 1,4-Difluorobenzene	101.6	70-130		%REC	1	2/17/98
Surr: 4-Bromochlorobenzene	97.0	70-130		%REC	1	2/17/98

**Qualifiers:**

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

OFF: (505) 325-5667



LAB: (505) 325-1556

**ANALYTICAL REPORT****Date:** 24-Feb-98

<b>Client:</b>	PNM Gas Services	<b>Client Sample Info:</b>	Honolulu Loop Line Drip
<b>Work Order:</b>	9802002	<b>Client Sample ID:</b>	9802091135; MW-2
<b>Lab ID:</b>	9802002-02A	<b>Matrix:</b>	AQUEOUS
<b>Project:</b>	Honolulu Loop Line Drip	<b>Collection Date:</b>	2/9/97 11:35:00 AM
		<b>COC#:</b>	7138

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
<b>AROMATIC VOLATILES BY GC-PID</b>		<b>SW8021A</b>		<b>Analyst: DC</b>		
Benzene	2.2	0.5		µg/L	1	2/17/98
Toluene	2.2	0.5		µg/L	1	2/17/98
Ethylbenzene	6.1	0.5		µg/L	1	2/17/98
m,p-Xylene	17	1		µg/L	1	2/17/98
o-Xylene	3.2	0.5		µg/L	1	2/17/98
Surr: Fluorobenzene	89.7	70-130		%REC	1	2/17/98
Surr: 1,4-Difluorobenzene	89.5	70-130		%REC	1	2/17/98
Surr: 4-Bromochlorobenzene	86.4	70-130		%REC	1	2/17/98

**Qualifiers:**

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

\* - Value exceeds Maximum Contaminant Level

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1 of 1

OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

Date: 24-Feb-98

<b>Client:</b>	PNM Gas Services	<b>Client Sample Info:</b>	Honolulu Loop Line Drip
<b>Work Order:</b>	9802002	<b>Client Sample ID:</b>	9802091150; MW-3
<b>Lab ID:</b>	9802002-03A	<b>Matrix:</b>	AQUEOUS
<b>Project:</b>	Honolulu Loop Line Drip	<b>Collection Date:</b>	2/9/97 11:50:00 AM
		<b>COC#:</b>	7138

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
<b>AROMATIC VOLATILES BY GC-PID</b>		<b>SW8021A</b>		<b>Analyst: DC</b>		
Benzene	2200	10		µg/L	20	2/18/98
Toluene	ND	2.5		µg/L	5	2/17/98
Ethylbenzene	65	2.5		µg/L	5	2/17/98
m,p-Xylene	420	5		µg/L	5	2/17/98
o-Xylene	13	2.5		µg/L	5	2/17/98
Surr: Fluorobenzene	100.6	70-130		%REC	5	2/17/98
Surr: Fluorobenzene	98.3	70-130		%REC	20	2/18/98
Surr: 1,4-Difluorobenzene	102.7	70-130		%REC	5	2/17/98
Surr: 1,4-Difluorobenzene	99.4	70-130		%REC	20	2/18/98
Surr: 4-Bromochlorobenzene	95.2	70-130		%REC	5	2/17/98
Surr: 4-Bromochlorobenzene	101.2	70-130		%REC	20	2/18/98

**Qualifiers:**

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

\* - Value exceeds Maximum Contaminant Level

P.O. BOX 2606 • FARMINGTON, NM 87499

1 of 1

OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

Date: 24-Feb-98

Client: PNM Gas Services

Client Sample Info: Honolulu Loop Line Drip

Work Order: 9802002

Client Sample ID: 9802091205; MW-4

Lab ID: 9802002-04A Matrix: AQUEOUS

Collection Date: 2/9/98 12:05:00 PM

Project: Honolulu Loop Line Drip

COC#: 7138

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC-PID		SW8021A		Analyst: DC		
Benzene	96	2.5		µg/L	5	2/18/98
Toluene	370	2.5		µg/L	5	2/18/98
Ethylbenzene	75	2.5		µg/L	5	2/18/98
m,p-Xylene	510	5		µg/L	5	2/18/98
o-Xylene	150	2.5		µg/L	5	2/18/98
Surr: Fluorobenzene	108.9	70-130		%REC	5	2/18/98
Surr: 1,4-Difluorobenzene	94.5	70-130		%REC	5	2/18/98
Surr: 4-Bromochlorobenzene	90.8	70-130		%REC	5	2/18/98

**Qualifiers:**

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

\* - Value exceeds Maximum Contaminant Level

P.O. BOX 2606 • FARMINGTON, NM 87499

1 of 1



OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

Date: 24-Feb-98

<b>Client:</b>	PNM Gas Services	<b>Client Sample Info:</b>	Honolulu Loop Line Drip
<b>Work Order:</b>	9802002	<b>Client Sample ID:</b>	9802091220; MW-5
<b>Lab ID:</b>	9802002-05A	<b>Matrix:</b>	AQUEOUS
<b>Project:</b>	Honolulu Loop Line Drip	<b>Collection Date:</b>	2/9/98 12:20:00 PM
		<b>COC#:</b>	7138

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
<b>AROMATIC VOLATILES BY GC-PID</b>		<b>SW8021A</b>		<b>Analyst: DC</b>		
Benzene	ND	0.5		µg/L	1	2/17/98
Toluene	ND	0.5		µg/L	1	2/17/98
Ethylbenzene	ND	0.5		µg/L	1	2/17/98
m,p-Xylene	ND	1		µg/L	1	2/17/98
o-Xylene	ND	0.5		µg/L	1	2/17/98
Surr: Fluorobenzene	100.3	70-130		%REC	1	2/17/98
Surr: 1,4-Difluorobenzene	101.0	70-130		%REC	1	2/17/98
Surr: 4-Bromochlorobenzene	97.4	70-130		%REC	1	2/17/98

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

P.O. BOX 2606 • FARMINGTON, NM 87499

1 of 1

OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

Date: 24-Feb-98

Client: PNM Gas Services

Client Sample Info: Honolulu Loop Line Drip

Work Order: 9802002

Client Sample ID: 9802091235; MW-6

Lab ID: 9802002-06A Matrix: AQUEOUS

Collection Date: 2/9/98 12:35:00 PM

Project: Honolulu Loop Line Drip

COC#: 7138

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC-PID		SW8021A		Analyst: DC		
Benzene	15000	50		µg/L	100	2/17/98
Toluene	1000	50		µg/L	100	2/17/98
Ethylbenzene	490	50		µg/L	100	2/17/98
m,p-Xylene	4100	100		µg/L	100	2/17/98
o-Xylene	1000	50		µg/L	100	2/17/98
Surr: Fluorobenzene	98.8	70-130		%REC	100	2/17/98
Surr: 1,4-Difluorobenzene	98.8	70-130		%REC	100	2/17/98
Surr: 4-Bromochlorobenzene	96.2	70-130		%REC	100	2/17/98

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

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

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE FARMING SECTOR -

OFF: (505) 325-5667



LAB: (505) 325-1556

# ANALYTICAL REPORT

Date: 24-Feb-98

<b>Client:</b>	PNM Gas Services	<b>Client Sample Info:</b>	Honolulu Loop Line Drip
<b>Work Order:</b>	9802002	<b>Client Sample ID:</b>	9802091254; MW-7
<b>Lab ID:</b>	9802002-07A	<b>Matrix:</b>	AQUEOUS
<b>Project:</b>	Honolulu Loop Line Drip	<b>Collection Date:</b>	2/9/98 12:54:00 PM
		<b>COC#:</b>	7138

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
<b>AROMATIC VOLATILES BY GC-PID</b>		<b>SW8021A</b>		<b>Analyst: DC</b>		
Benzene	15	0.5		µg/L	1	2/17/98
Toluene	ND	0.5		µg/L	1	2/17/98
Ethylbenzene	ND	0.5		µg/L	1	2/17/98
m,p-Xylene	ND	1		µg/L	1	2/17/98
o-Xylene	ND	0.5		µg/L	1	2/17/98
Surr: Fluorobenzene	100.0	70-130		%REC	1	2/17/98
Surr: 1,4-Difluorobenzene	101.0	70-130		%REC	1	2/17/98
Surr: 4-Bromochlorobenzene	97.4	70-130		%REC	1	2/17/98

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

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

Date: 24-Feb-98

<b>Client:</b>	PNM Gas Services	<b>Client Sample Info:</b>	Honolulu Loop Line Drip
<b>Work Order:</b>	9802002	<b>Client Sample ID:</b>	9802091306; MW-8
<b>Lab ID:</b>	9802002-08A	<b>Matrix:</b>	AQUEOUS
<b>Project:</b>	Honolulu Loop Line Drip	<b>Collection Date:</b>	2/9/98 1:06:00 PM
		<b>COC#:</b>	7138

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
<b>AROMATIC VOLATILES BY GC-PID</b>		<b>SW8021A</b>		<b>Analyst: DC</b>		
Benzene	7.5	0.5		µg/L	1	2/17/98
Toluene	11	0.5		µg/L	1	2/17/98
Ethylbenzene	52	0.5		µg/L	1	2/17/98
m,p-Xylene	300	1		µg/L	1	2/17/98
o-Xylene	53	0.5		µg/L	1	2/17/98
Surr: Fluorobenzene	103.2	70-130		%REC	1	2/17/98
Surr: 1,4-Difluorobenzene	96.1	70-130		%REC	1	2/17/98
Surr: 4-Bromochlorobenzene	89.9	70-130		%REC	1	2/17/98

**Qualifiers:**

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

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

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

Date: 24-Feb-98

<b>Client:</b>	PNM Gas Services	<b>Client Sample Info:</b>	Honolulu Loop Line Drip
<b>Work Order:</b>	9802002	<b>Client Sample ID:</b>	9802091320; MW-9
<b>Lab ID:</b>	9802002-09A	<b>Matrix:</b>	AQUEOUS
<b>Project:</b>	Honolulu Loop Line Drip	<b>Collection Date:</b>	2/9/98 1:20:00 PM
		<b>COC#:</b>	7138

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
<b>AROMATIC VOLATILES BY GC-PID</b>		<b>SW8021A</b>		Analyst: DC		
Benzene	ND	0.5		µg/L	1	2/17/98
Toluene	0.7	0.5		µg/L	1	2/17/98
Ethylbenzene	ND	0.5		µg/L	1	2/17/98
m,p-Xylene	1.3	1		µg/L	1	2/17/98
o-Xylene	ND	0.5		µg/L	1	2/17/98
Surr: Fluorobenzene	98.4	70-130		%REC	1	2/17/98
Surr: 1,4-Difluorobenzene	99.6	70-130		%REC	1	2/17/98
Surr: 4-Bromochlorobenzene	94.9	70-130		%REC	1	2/17/98

**Qualifiers:**

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY PROVIDING INDUSTRIAL WASTE TREATMENT SOLUTIONS

OFF: (505) 325-5667



LAB: (505) 325-1556

# ANALYTICAL REPORT

Date: 24-Feb-98

<b>Client:</b>	PNM Gas Services	<b>Client Sample Info:</b>	Honolulu Loop Line Drip
<b>Work Order:</b>	9802002	<b>Client Sample ID:</b>	9802091332; MW-10
<b>Lab ID:</b>	9802002-10A	<b>Matrix:</b>	AQUEOUS
<b>Project:</b>	Honolulu Loop Line Drip	<b>Collection Date:</b>	2/9/98 1:32:00 PM
		<b>COC#:</b>	7138

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
<b>AROMATIC VOLATILES BY GC-PID</b>		<b>SW8021A</b>		<b>Analyst: DC</b>		
Benzene	1.3	0.5		µg/L	1	2/17/98
Toluene	3.5	0.5		µg/L	1	2/17/98
Ethylbenzene	2.7	0.5		µg/L	1	2/17/98
m,p-Xylene	ND	1		µg/L	1	2/17/98
o-Xylene	ND	0.5		µg/L	1	2/17/98
Surr: Fluorobenzene	98.0	70-130		%REC	1	2/17/98
Surr: 1,4-Difluorobenzene	99.1	70-130		%REC	1	2/17/98
Surr: 4-Bromochlorobenzene	95.0	70-130		%REC	1	2/17/98

**Qualifiers:**

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

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

**ANALYTICAL REPORT**

Date: 24-Feb-98

<b>Client:</b>	PNM Gas Services	<b>Client Sample Info:</b>	Honolulu Loop Line Drip
<b>Work Order:</b>	9802002	<b>Client Sample ID:</b>	9802091352; MW-11
<b>Lab ID:</b>	9802002-11A	<b>Matrix:</b>	AQUEOUS
<b>Project:</b>	Honolulu Loop Line Drip	<b>Collection Date:</b>	2/9/98 1:52:00 PM
		<b>COC#:</b>	7138

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
<b>AROMATIC VOLATILES BY GC-PID</b>		<b>SW8021A</b>		<b>Analyst: DC</b>		
Benzene	16000	50		µg/L	100	2/17/98
Toluene	1200	50		µg/L	100	2/17/98
Ethylbenzene	540	50		µg/L	100	2/17/98
m,p-Xylene	4400	100		µg/L	100	2/17/98
o-Xylene	1100	50		µg/L	100	2/17/98
Surr: Fluorobenzene	98.0	70-130		%REC	100	2/17/98
Surr: 1,4-Difluorobenzene	98.1	70-130		%REC	100	2/17/98
Surr: 4-Bromochlorobenzene	95.9	70-130		%REC	100	2/17/98

Duplicate of MW-6

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

OFF: (505) 325-5667

**ON SITE**  
**TECHNOLOGIES, LTD.**

LAB: (505) 325-1556

**ANALYTICAL REPORT**

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

Date: *30-Dec-97*  
COC No.: *5619*  
Sample No.: *17088*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Drip*  
Project Location: *9712151120; MW-1*  
Sampled by: *RD* Date: *15-Dec-97* Time: *11:20*  
Analyzed by: *DC* Date: *23-Dec-97*  
Sample Matrix: *Liquid*

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

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *12/30/97*

P.O. BOX 2606 • FARMINGTON, NM 87499



On Site Technologies, LTD.

Date: 25-Feb-98

CLIENT: PNM Gas Services  
Work Order: 9802002  
Project: Honolulu Loop Line Drip

**QC SUMMARY REPORT**  
Method Blank

Sample ID: <b>MB1 W</b>	Batch ID: <b>GC-1_980218</b>	Test Code: <b>SW8021A</b>	Units: <b>µg/L</b>	Analysis Date: <b>2/18/98</b>	Prep Date:						
Client ID:	<b>9802002</b>	Run ID: <b>GC-1_980218A</b>	SeqNo: <b>257</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.1623	0.5									J
Ethylbenzene	ND	0.5									
m,p-Xylene	ND	1									
o-Xylene	ND	0.5									
Toluene	.0581	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: 25-Feb-98

CLIENT: PNM Gas Services  
Work Order: 9802002  
Project: Honolulu Loop Line Drip

**QC SUMMARY REPORT**  
Sample Matrix Spike

Sample ID: 9802002-03AMS	Batch ID: GC-1_980218	Test Code: SW8021A	Units: µg/L			Analysis Date: 2/18/98			Prep Date:		
Client ID: 9802091150; MW-	9802002	Run ID: GC-1_980218A				SeqNo: 276					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	3055	10	800	2193	107.8%	57	128				
Ethylbenzene	915	10	800	73.53	105.2%	78	107				
m,p-Xylene	2035	20	1600	425.1	100.6%	67	118				
o-Xylene	898.6	10	800	38.59	107.5%	78	107				S
Toluene	856	10	800	3.18	106.6%	74	116				

Sample ID: 9802002-03AMSD	Batch ID: GC-1_980218	Test Code: SW8021A	Units: µg/L	Analysis Date: 2/18/98				Prep Date:			
Client ID: 9802091150; MW-	9802002	Run ID: GC-1_980218A				SeqNo: 277					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	2927	10	800	2193	91.8%	57	128	3055	4.3%	12	
Ethylbenzene	899	10	800	73.53	103.2%	78	107	915	1.8%	11	
m,p-Xylene	1984	20	1600	425.1	97.4%	67	118	2035	2.5%	10	
o-Xylene	842.4	10	800	38.59	100.5%	78	107	898.6	6.5%	14	
Toluene	808	10	800	3.18	100.6%	74	116	856	5.8%	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: 25-Feb-98

CLIENT: PNM Gas Services  
Work Order: 9802002  
Project: Honolulu Loop Line Drip

**QC SUMMARY REPORT**  
Laboratory Control Spike - generic

Sample ID: <b>LCS WATER</b>	Batch ID: <b>GC-1_980218</b>	Test Code: <b>SW8021A</b>	Units: <b>µg/L</b>	Analysis Date: <b>2/18/98</b>	Prep Date:						
Client ID:	<b>9802002</b>	Run ID: <b>GC-1_980218A</b>	SeqNo: <b>259</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41.54	0.5	40	0.1623	103.4%	84	114				
Ethylbenzene	44.37	0.5	40	0	110.9%	86	118				
m,p-Xylene	84.33	1	80	0	105.4%	50	150				
o-Xylene	43.43	0.5	40	0	108.6%	49	147				
Toluene	42.69	0.5	40	0.0581	106.6%	87	120				

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: 25-Feb-98

CLIENT: PNM Gas Services  
Work Order: 9802002  
Project: Honolulu Loop Line Drip

**QC SUMMARY REPORT**  
Continuing Calibration Verification Standard

Sample ID: **CCV1 QC0529/30** Batch ID: **GC-1\_980218** Test Code: **SW8021A** Units: **µg/L** Analysis Date: **2/18/98** Prep Date:  
Client ID: **9802002** Run ID: **GC-1\_980218A** SeqNo: **258**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.28	0.5	20	0	106.4%	85	115				
Ethylbenzene	22.72	0.5	20	0	113.6%	85	115				
m,p-Xylene	42.78	1	40	0	107.0%	85	115				
o-Xylene	22.12	0.5	20	0	110.6%	85	115				
Toluene	21.7	0.5	20	0	108.5%	85	115				
1,4-Difluorobenzene	105.5	0	100	0	105.5%	70	130				
4-Bromochlorobenzene	95.89	0	100	0	95.9%	70	130				
Fluorobenzene	99.12	0	100	0	99.1%	70	130				

Sample ID: **CCV2 QC0529/30** Batch ID: **GC-1\_980218** Test Code: **SW8021A** Units: **µg/L** Analysis Date: **2/18/98** Prep Date:  
Client ID: **9802002** Run ID: **GC-1\_980218A** SeqNo: **267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.01	0.5	20	0	105.0%	85	115				
Ethylbenzene	22.35	0.5	20	0	111.7%	85	115				
m,p-Xylene	42	1	40	0	105.0%	85	115				
o-Xylene	21.71	0.5	20	0	108.5%	85	115				
Toluene	21.42	0.5	20	0	107.1%	85	115				
1,4-Difluorobenzene	100.8	0	100	0	100.8%	70	130				
4-Bromochlorobenzene	97.87	0	100	0	97.9%	70	130				
Fluorobenzene	99.21	0	100	0	99.2%	70	130				

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

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

B - Analyte detected in the associated Method Blank

**CLIENT:** PNM Gas Services  
**Work Order:** 9802002  
**Project:** Honolulu Loop Line Drip

**QC SUMMARY REPORT**  
Continuing Calibration Verification Standard

Sample ID: CCV3 QC0529/30		Batch ID: GC-1_980218		Test Code: SW8021A		Units: µg/L		Analysis Date: 2/18/98			Prep Date:	
Client ID:		9802002		Run ID:		GC-1_980218A		SeqNo: 279				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	21.04	0.5	20	0	105.2%	85	115					
Ethylbenzene	22.47	0.5	20	0	112.4%	85	115					
m,p-Xylene	42.3	1	40	0	105.8%	85	115					
o-Xylene	22.07	0.5	20	0	110.3%	85	115					
Toluene	21.51	0.5	20	0	107.5%	85	115					
1,4-Difluorobenzene	100.6	0	100	0	100.6%	70	130					
4-Bromochlorobenzene	95.78	0	100	0	95.8%	70	130					
Fluorobenzene	99.07	0	100	0	99.1%	70	130					

**Qualifiers:**

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

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

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 24-Feb-98

CLIENT: PNM Gas Services  
Work Order: 9802002  
Project: Honolulu Loop Line Drip

**QC SUMMARY REPORT**  
Method Blank

Sample ID: <b>MB1 W</b>	Batch ID: <b>GC-1_980217</b>	Test Code: <b>SW8021A</b>	Units: <b>µg/L</b>	Analysis Date: <b>2/17/98</b>	Prep Date:						
Client ID:	<b>9802002</b>	Run ID: <b>GC-1_980217A</b>	SeqNo: <b>71</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.1481	0.5									J
Ethylbenzene	ND	0.5									
m,p-Xylene	ND	1									
o-Xylene	ND	0.5									
Toluene	.0621	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: 24-Feb-98

CLIENT: PNM Gas Services  
Work Order: 9802002  
Project: Honolulu Loop Line Drip

# QC SUMMARY REPORT Continuing Calibration Verification Standard

Sample ID: CCV2 QC0529/30	Batch ID: GC-1_980217	Test Code: SW8021A	Units: µg/L	Analysis Date: 2/17/98				Prep Date:			
Client ID:	9802002	Run ID:	GC-1_980217A	SeqNo: 81							
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	21.77	0.5	20	0	108.8%	85	115				
m,p-Xylene	42.35	1	40	0	105.9%	85	115				
o-Xylene	22.08	0.5	20	0	110.4%	85	115				
Toluene	21.94	0.5	20	0	109.7%	85	115				
1,4-Difluorobenzene	100.6	0	100	0	100.7%	70	130				
4-Bromochlorobenzene	96.82	0	100	0	96.8%	70	130				
Fluorobenzene	99.99	0	100	0	100.0%	70	130				

Sample ID: <b>CCV2 QC0529/30</b>	Batch ID: <b>GC-1_980217</b>	Test Code: <b>SW8021A</b>	Units: <b>µg/L</b>			Analysis Date: <b>2/17/98</b>			Prep Date:		
Client ID:	<b>9802002</b>	Run ID:	<b>GC-1_980217A</b>			SeqNo:	<b>72</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.01	0.5	20	0	100.0%	85	115				
Ethylbenzene	21.19	0.5	20	0	105.9%	85	115				
m,p-Xylene	39.98	1	40	0	99.9%	85	115				
o-Xylene	20.82	0.5	20	0	104.1%	85	115				
Toluene	20.3	0.5	20	0	101.5%	85	115				
1,4-Difluorobenzene	101.8	0	100	0	101.8%	70	130				
4-Bromochlorobenzene	99.27	0	100	0	99.3%	70	130				
Fluorobenzene	99.75	0	100	0	99.8%	70	130				

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

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

B - Analyte detected in the associated Method Blank

**CLIENT:** PNM Gas Services  
**Work Order:** 9802002  
**Project:** Honolulu Loop Line Drip

**QC SUMMARY REPORT**  
Continuing Calibration Verification Standard

Sample ID: <b>CCV3 QC0529/30</b>		Batch ID: <b>GC-1_980217</b>		Test Code: <b>SW8021A</b>		Units: <b>µg/L</b>		Analysis Date: <b>2/17/98</b>			Prep Date:	
Client ID:		<b>9802002</b>		Run ID:		<b>GC-1_980217A</b>		SeqNo:		<b>94</b>		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	20.56	0.5	20	0	102.8%	85	115					
Ethylbenzene	21.76	0.5	20	0	108.8%	85	115					
m,p-Xylene	40.95	1	40	0	102.4%	85	115					
o-Xylene	21.29	0.5	20	0	106.4%	85	115					
Toluene	20.93	0.5	20	0	104.6%	85	115					
1,4-Difluorobenzene	101.2	0	100	0	101.2%	70	130					
4-Bromochlorobenzene	95.23	0	100	0	95.2%	70	130					
Fluorobenzene	99.96	0	100	0	100.0%	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



On Site Technologies, LTD.

Date: 24-Feb-98

CLIENT: PNM Gas Services

Work Order: 9802002

Project: Honolulu Loop Line Drip

## QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER	Batch ID: GC-1_980217	Test Code: SW8021A	Units: µg/L			Analysis Date: 2/17/98			Prep Date:		
Client ID:	9802002	Run ID:	GC-1_980217A			SeqNo:		73			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	43.06	0.5	40	0.1481	107.3%	84	114				
Ethylbenzene	45.72	0.5	40	0	114.3%	86	118				
m,p-Xylene	87.09	1	80	0	108.9%	50	150				
o-Xylene	44.73	0.5	40	0	111.8%	49	147				
Toluene	44.06	0.5	40	0.0621	110.0%	87	120				

**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



## CHAIN OF CUSTODY RECORD

5619

Date: 12-15-97

Page 1 of 1

TECHNOLOGIES, LTD.

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

Purchase Order No.:		Job No.:		Name: <b>Maureen Gannon</b>		Title:		
SEND INVOICE TO	Name: <b>Denver Bearden</b>		Company: <b>PNM Gas Services</b>		Dept. <b>324-3763</b>		Mailing Address: <b>Alverado Square, Mail Stop 0408</b>	
	Address: <b>603 W. Elm Street</b>		City, State, Zip: <b>Farmington, NM 87401</b>		Telephone No. <b>505-848-2974</b>		Telefax No.:	
	Sampling Location:		Number of Containers:		ANALYSIS REQUESTED			
	Sampler:							
SAMPLE IDENTIFICATION		DATE	TIME	MATRIX	PRES.	LAB ID		
9712151120 MW1		12/15/97	1120	H <sub>2</sub> O	HCL	2	X	17088-5615
9712151139 MW2		12/15/97	1139	H <sub>2</sub> O	HCL	2	X	17089
9712151201 MW3		12/15/97	1201	H <sub>2</sub> O	HCL	2	X	17090
9712151218 MW4		12/15/97	1218	H <sub>2</sub> O	HCL	2	X	17091
9712151247 MW5		12/15/97	1247	H <sub>2</sub> O	HCL	2	X	17092
9712151310 MW6		12/15/97	1310	H <sub>2</sub> O	HCL	2	X	17093
9712151337 MW7		12/15/97	1337	H <sub>2</sub> O	HCL	2	X	17094
9712151401 MW8		12/15/97	1401	H <sub>2</sub> O	HCL	2	X	17095
9712151528 MW9		12/15/97	1528	H <sub>2</sub> O	HCL	1	X	17096
9712151428 MW10		12/15/97	1428	H <sub>2</sub> O	HCL	2	X	17097
9712151448 MW11		12/15/97	1448	H <sub>2</sub> O	HCL	2	X	17098
Relinquished by: <i>Ronald A Dedrick</i>		Date/Time: 12/14/97 1652		Received by: <i>[Signature]</i>		Date/Time: 12/16/97 1652		
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: <i>Ronald A Dedrick</i>		Date: 12/15/97		Special Instructions:		Results to be sent to both parties.		
(Client Signature Must Accompany Request)								

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *1-Oct-97*  
COC No.: *5800*  
Sample No.: *16229*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9709180900; MW-1*  
Sampled by: *MS/MG* Date: *18-Sep-97* Time: *9:00*  
Analyzed by: *DC* Date: *29-Sep-97*  
Sample Matrix: *Liquid*

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

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *10/1/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667

**ON SITE**  
**TECHNOLOGIES, LTD.**

LAB: (505) 325-1556

**ANALYTICAL REPORT**

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

Date: *1-Oct-97*  
COC No.: *5800*  
Sample No.: *16230*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9709180930; MW-2*

Sampled by: *MS/MG* Date: *18-Sep-97* Time: *9:30*  
Analyzed by: *DC* Date: *29-Sep-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>72.7</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>8.3</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>15.9</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>48.8</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>11.1</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>156.9</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *10/1/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *1-Oct-97*  
COC No.: *5800*  
Sample No.: *16231*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9709181000; MW-3*  
Sampled by: *MS/MG* Date: *18-Sep-97* Time: *10:00*  
Analyzed by: *DC* Date: *30-Sep-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>81.1</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>0.5</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>1.0</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>6.4</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>2.6</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>91.6</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *10/1/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667

**ON SITE**  
**TECHNOLOGIES, LTD.**

LAB: (505) 325-1556

**ANALYTICAL REPORT**

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

Date: *1-Oct-97*  
COC No.: *5800*  
Sample No.: *16232*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9709181030; MW-5*  
Sampled by: *MS/MG* Date: *18-Sep-97* Time: *10:30*  
Analyzed by: *DC* Date: *29-Sep-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>33.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>ND</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>ND</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>33.2</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *10/1/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *1-Oct-97*  
COC No.: *5800*  
Sample No.: *16233*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9709181100; MW-6*  
Sampled by: *MS/MG* Date: *18-Sep-97* Time: *11:00*  
Analyzed by: *DC* Date: *29-Sep-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>16309</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Toluene</i>	<i>4531</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>588</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>5211</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>1343</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>27981</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *10/1/97*

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LAB: (505) 325-1556

**ANALYTICAL REPORT**

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

Date: *1-Oct-97*  
COC No.: *5800*  
Sample No.: *16234*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9709181130; MW-7*

Sampled by: *MS/MG* Date: *18-Sep-97* Time: *11:30*  
Analyzed by: *DC* Date: *29-Sep-97*  
Sample Matrix: *Liquid*

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

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *10/1/97*

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### ANALYTICAL REPORT

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

Date: *1-Oct-97*  
COC No.: *5800*  
Sample No.: *16235*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*

Project Location: *9709181200; MW-8*

Sampled by: *MS/MG*

Date: *18-Sep-97* Time: *12:00*

Analyzed by: *DC*

Date: *30-Sep-97*

Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	5.1	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	29.7	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	171.2	ug/L	0.2	ug/L
<i>o-Xylene</i>	23.2	ug/L	0.2	ug/L
<i>TOTAL</i>	229.2	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *10/1/97*

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LAB: (505) 325-1556

**ANALYTICAL REPORT**

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

Date: *1-Oct-97*  
COC No.: *5800*  
Sample No.: *16236*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*

Project Location: *9709181230; MW-9*

Sampled by: *MS/MG*

Date: *18-Sep-97* Time: *12:30*

Analyzed by: *DC*

Date: *29-Sep-97*

Sample Matrix: *Liquid*

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

ND - Not Detected at Limit of Quantitation

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

Approved By: *JAC*  
Date: *10/1/97*

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LAB: (505) 325-1556

**ANALYTICAL REPORT**

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

Date: *1-Oct-97*  
COC No.: *5800*  
Sample No.: *16237*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*

Project Location: *9709181300; MW-10*

Sampled by: *MS/MG*

Date: *18-Sep-97* Time: *13:00*

Analyzed by: *DC*

Date: *29-Sep-97*

Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>38.4</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>3.4</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>0.8</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>42.6</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *10/1/97*

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**ON SITE**  
**TECHNOLOGIES, LTD.**

LAB: (505) 325-1556

**ANALYTICAL REPORT**

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

Date: *1-Oct-97*  
COC No.: *5800*  
Sample No.: *16238*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9709181330; MW-11*  
Sampled by: *MS/MG* Date: *18-Sep-97* Time: *13:30*  
Analyzed by: *DC* Date: *29-Sep-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>115.4</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>0.6</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>1.3</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>9.0</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>3.6</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>129.9</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *10/1/97*

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OFF: (505) 325-5667



LAB: (505) 325-1556

### QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 29-Sep-97

Internal QC No.: 0527-STD

Surrogate QC No.: 0528-STD

Reference Standard QC No.: 0529/30-QC

#### Method Blank

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

#### Calibration Check

Parameter	Unit of Measure	True Value	Analyzed Value	RPD	Limit
Benzene	ppb	20.0	18.9	6	15%
Toluene	ppb	20.0	19.8	1	15%
Ethylbenzene	ppb	20.0	19.6	2	15%
m,p-Xylene	ppb	40.0	38.3	4	15%
o-Xylene	ppb	20.0	19.6	2	15%

#### Matrix Spike

Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	RPD	Limit
Benzene	89	88	(39-150)	1	20%
Toluene	94	93	(46-148)	1	20%
Ethylbenzene	93	92	(32-160)	1	20%
m,p-Xylene	92	91	(35-145)	1	20%
o-Xylene	93	93	(35-145)	1	20%

#### Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
16229-5800	96		16237-5800	95	
16230-5800	85		16238-5800	94	
16232-5800	94				
16233-5800	94				
16234-5800	96				
16236-5800	97				

S1: Fluorobenzene

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- TECHNICAL BLENDING INDUSTRIES -





# CHAIN OF CUSTODY RECORD

5800

Date: 9/18/97Page 1 of 1

TECHNOLOGIES, LTD.

657 W. Maple • P. O. Box 2606 • Farmington NM 87499

LAB: (505) 325-5667 • FAX: (505) 325-6256

Purchase Order No.:		Job No.:		Name <b>Maureen Gannon</b>		Title			
SEND INVOICE TO	Name <b>Denver Bearden</b>		Company <b>PNM Gas Services</b>		Company <b>PNM Gas Services</b>		Mailing Address <b>Alverado Square, Mail Stop 0408</b>		
	Address <b>603 W. Elm Street</b>		Dept. <b>324-3763</b>		City, State, Zip <b>Albuquerque, NM 87158</b>		Telephone No. <b>505-848-2974</b>		
	City, State, Zip <b>Farmington, NM 87401</b>				Telefax No.				
	Sampling Location: <b>Honolulu Loopline Dr. P</b>								
Sampler: <b>M.S. M.G.</b>									
SAMPLE IDENTIFICATION		SAMPLE		MATRIX		PRES.		LAB ID	
		DATE	TIME						
9709180900 MW-1				H <sub>2</sub> O HCL		2	X	16229-5800	
9709180930 MW-2						2	X	16230-	
9709181000 MW-3						2	X	16231-	
<del>9709181030 MW-4 M.S.</del>									
9709181030 MW-5						2	X	16232-	
9709181100 MW-6						2	X	16233-	
9709181130 MW-7						2	X	16234-	
9709181200 MW-8						2	X	16235-	
9709181230 MW-9						2	X	16236-	
9709181300 MW-10						2	X	16237-	
9709181330 MW-11						2	X	16238-	
Relinquished by: <i>[Signature]</i>		Date/Time <u>9/18/97 1400</u>		Received by: <i>[Signature]</i>		Date/Time <u>9/18/97 1401</u>			
Relinquished by: <i>[Signature]</i>		Date/Time <u>9/18/97 1543</u>		Received by: <i>[Signature]</i>		Date/Time <u>9/18/97 1543</u>			
Relinquished by:		Date/Time		Received by:		Date/Time			
Method of Shipment:				Rush		24-48 Hours		10 Working Days	
Authorized by: <i>[Signature]</i>		Date <u>9/18/97</u>						Special Instructions: <b>Results to be sent to both parties.</b>	
(Client Signature Must Accompany Request)									

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *6-Jun-97*  
COC No.: *5728*  
Sample No.: *14866*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9706051300; Centerline*  
Sampled by: *MG* Date: *5-Jun-97* Time: *13:00*  
Analyzed by: *DC* Date: *6-Jun-97*  
Sample Matrix: *Liquid*

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

ND - Not Detected at Limit of Quantitation

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

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

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OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *6-Jun-97*  
COC No.: *5728*  
Sample No.: *14867*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9706051330; W. of Centerline*

Sampled by: *MG* Date: *5-Jun-97* Time: *13:30*  
Analyzed by: *DC* Date: *6-Jun-97*  
Sample Matrix: *Liquid*

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

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*

Date: *6/6/97*

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Distribution: White - On Site    Yellow - IAB    Pink - Sampler    Goldonrod - Client

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LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *17-Jun-97*  
COC No.: *5490*  
Sample No.: *14932*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9706111500; MW-9*  
Sampled by: *MS/MG* Date: *11-Jun-97* Time: *15:00*  
Analyzed by: *DC* Date: *12-Jun-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	0.7	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	0.4	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	1.1	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*

Date: *6/17/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRIES WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *17-Jun-97*  
COC No.: *5490*  
Sample No.: *14933*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9706111530; MW-10*  
Sampled by: *MS/MG* Date: *11-Jun-97* Time: *15:30*  
Analyzed by: *DC* Date: *13-Jun-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>352</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>5</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>4</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>2</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>363</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*

Date: *6/17/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TEL: (505) 325-5667 FAX: (505) 325-1556







# CHAIN OF CUSTODY RECORD

5490

Date: 6-11-97Page 1 of 1657 W. Maple • P. O. Box 2606 • Farmington NM 87499  
LAB: (505) 325-5667 • FAX: (505) 325-6256

Purchase Order No.:		Job No.:		Name <b>Maureen Gannon</b>		Title		
SEND INVOICE TO	Name <b>Denver Bearden</b>		Company <b>PNM Gas Services</b>		Dept. <b>324-3763</b>		Mailing Address <b>Alverado Square, Mail Stop 0408</b>	
	Address <b>603 W. Elm Street</b>		City, State, Zip <b>Farmington, NM 87401</b>		Telephone No. <b>505-848-2974</b>		Telefax No.	
	Sampling Location: <i>Honolulu Loop Line Drip</i>		Sampler: <i>Mark Siskians / Maureen Gannon</i>		ANALYSIS REQUESTED			
	SAMPLE IDENTIFICATION		SAMPLE DATE TIME MATRIX PRES.		Number of Containers		LAB ID	
9706111500 MW9		6/11/97 — H <sub>2</sub> O HCL 2 X		2 X		14932-5490		
9706111530 MW10		6/11/97 — H <sub>2</sub> O HCL 2 X		2 X		14933 ✓		
Relinquished by: <i>Maureen Gannon</i>		Date/Time <i>6/11/97</i>		Received by: <i>Ray Burnham</i>		Date/Time <i>6/11/97 700</i>		
Relinquished by: <i>Ray Burnham</i>		Date/Time <i>6/12/97 1452</i>		Received by: <i>JK</i>		Date/Time <i>6/12/97 1452</i>		
Relinquished by:		Date/Time		Received by:		Date/Time		
Method of Shipment:		Rush		24-48 Hours		10 Working Days		
Authorized by: <i>Maureen Gannon</i>		Date <i>6/11/97</i>		Special Instructions: <b>Results to be sent to both parties.</b>				
(Client Signature Must Accompany Request)								



OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *6-Jun-97*  
COC No.: *5485*  
Sample No.: *14838*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9706041230; MW-1*  
Sampled by: *MS/MG* Date: *4-Jun-97* Time: *12:30*  
Analyzed by: *DC* Date: *6-Jun-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	ND	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	0.3	ug/L	0.2	ug/L
<i>o-Xylene</i>	0.5	ug/L	0.2	ug/L
<i>TOTAL</i>	0.8	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*

Date: *6/6/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *6-Jun-97*  
COC No.: *5485*  
Sample No.: *14839*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9706041300; MW-2*  
Sampled by: *MS/MG* Date: *4-Jun-97* Time: *13:00*  
Analyzed by: *DC* Date: *6-Jun-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>37.5</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>5.1</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>27.8</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>79.7</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>11.3</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>161.2</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

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

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *6-Jun-97*  
COC No.: *5485*  
Sample No.: *14840*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9706041330; MW-3*  
Sampled by: *MS/MG* Date: *4-Jun-97* Time: *13:30*  
Analyzed by: *DC* Date: *6-Jun-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>3989</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Toluene</i>	<i>1678</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>103</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>630</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>182</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>6583</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

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

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *6-Jun-97*  
COC No.: *5485*  
Sample No.: *14841*  
Job No.: *2-1000*

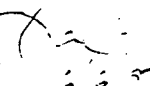
Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9706041400; MW-4*

Sampled by: *MS/MG* Date: *4-Jun-97* Time: *14:00*  
Analyzed by: *DC* Date: *6-Jun-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>889</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>Toluene</i>	<i>3697</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>249</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>1579</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>428</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>6842</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By:   
Date: *6/6/97*

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OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *6-Jun-97*  
COC No.: *5485*  
Sample No.: *14842*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9706041430; MW-5*  
Sampled by: *MS/MG* Date: *4-Jun-97* Time: *14:30*  
Analyzed by: *DC* Date: *6-Jun-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>352</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>Toluene</i>	<i>ND</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>ND</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>352</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*

Date: *6/6/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *6-Jun-97*  
COC No.: *5485*  
Sample No.: *14843*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9706041500; MW-6*  
Sampled by: *MS/MG* Date: *4-Jun-97* Time: *15:00*  
Analyzed by: *DC* Date: *6-Jun-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>16434</i>	<i>ug/L</i>	<i>40</i>	<i>ug/L</i>
<i>Toluene</i>	<i>9791</i>	<i>ug/L</i>	<i>40</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>714</i>	<i>ug/L</i>	<i>40</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>6113</i>	<i>ug/L</i>	<i>40</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>1728</i>	<i>ug/L</i>	<i>40</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>34780</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*

Date: *6/6/97*

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OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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


Date: *6-Jun-97*  
COC No.: *5485*  
Sample No.: *14844*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9706041530; MW-7*  
Sampled by: *MS/MG* Date: *4-Jun-97* Time: *15:30*  
Analyzed by: *DC* Date: *6-Jun-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	68.0	ug/L	0.2	ug/L
<i>Toluene</i>	ND	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	ND	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	68.0	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: 

Date: *6/6/97*

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LAB: (505) 325-1554

### ANALYTICAL REPORT

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

Date: *6-Jun-97*  
COC No.: *5485*  
Sample No.: *14845*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9706041600; MW-8*  
Sampled by: *MS/MG* Date: *4-Jun-97* Time: *16:00*  
Analyzed by: *DC* Date: *6-Jun-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>289</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>Toluene</i>	<i>12</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>94</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>462</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>92</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>948</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*

Date: *[Signature]*

P.O. BOX 2606 • FARMINGTON, NM 87499



OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *6-Jun-97*  
COC No.: *5485*  
Sample No.: *14846*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9706041630; MW-9*  
Sampled by: *MS/MG* Date: *4-Jun-97* Time: *16:30*  
Analyzed by: *DC* Date: *6-Jun-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>4743</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>Toluene</i>	<i>1956</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>113</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>702</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>201</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>7715</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By:

Date:

*5/6/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

TECHNICAL BLENDING INDUSTRIES WITH THE UNIVERSITY OF NEW MEXICO

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LAB: (505) 325-1556

### QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 6-Jun-97

Internal QC No.: 0527-STD

Surrogate QC No.: 0528-STD

Reference Standard QC No.: 0529/30-QC

#### Method Blank

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

#### Calibration Check

Parameter	Unit of Measure	True Value	Analyzed Value	% Diff	Limit
Benzene	ppb	20.0	19.7	2	15%
Toluene	ppb	20.0	20.5	3	15%
Ethylbenzene	ppb	20.0	21.0	5	15%
m,p-Xylene	ppb	40.0	39.6	1	15%
o-Xylene	ppb	20.0	21.7	9	15%

#### Matrix Spike

Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	96	80	(39-150)	3	20%
Toluene	100	90	(46-148)	3	20%
Ethylbenzene	104	98	(32-160)	4	20%
m,p-Xylene	98	92	(35-145)	4	20%
o-Xylene	101	97	(35-145)	3	20%

#### Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
14838-5485	97		14844-5485	96	
14839-5485	86		14845-5485	98	
14840-5485	96		14846-5485	96	
14841-5485	95				
14842-5485	96				
14843-5485	96				

S1: Fluorobenzene



## CHAIN OF CUSTODY RECORD

5485

Date: 6-05-97Page 1 of 1

TECHNOLOGIES, LTD.

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

Purchase Order No.:		Job No.		REPORT RESULTS TO	Name <b>Maureen Gannon</b>		Title																			
SEND INVOICE TO	Name <b>Denver Bearden</b>				Company <b>PNM Gas Services</b>																					
	Company <b>PNM Gas Services</b>		Dept. <b>324-3763</b>		Mailing Address <b>Alverado Square, Mail Stop 0408</b>																					
	Address <b>603 W. Elm Street</b>				City, State, Zip <b>Albuquerque, NM 87158</b>																					
	City, State, Zip <b>Farmington, NM 87401</b>				Telephone No. <b>505-848-2974</b>		Telefax No.																			
Sampling Location: <b>HONOLULU LOOP LINE DRIP</b>				Number of Containers <b>2</b>	ANALYSIS REQUESTED																					
Sampler: <b>M Sikeianos / M Gannon</b>					<div style="text-align: center;">DIEY 8020</div>																					
SAMPLE IDENTIFICATION															LAB ID											
DATE		TIME	MATRIX												PRES.											
9706041230		MW1	6/6/97												-	H2O	HCL	2	X							14838-5105
9706041300		MW2													-			2	X							14839
9706041330		MW3													-			2	X							14840
9706041400		MW4													-			2	X							14841
9706041430		MW5													-			2	X							14842
9706041500		MW6													-			2	X							14843
9706041530		MW7		-			2	X							14844											
9706041600		MW8		-			2	X							14845											
9706041630		MW9	6/04/97	-	H2O	HCL	2	X							14846											
Relinquished by: <b>M. Gannon</b>				Date/Time: <b>6/05/97 7:08</b>	Received by: <b>Ray Burnham</b>				Date/Time: <b>6/5/97 007</b>																	
Relinquished by: <b>Ray Burnham</b>				Date/Time: <b>6/5/97 1245</b>	Received by: <b>Ray Burnham</b>				Date/Time: <b>6/5/97 1245</b>																	
Relinquished by:				Date/Time:	Received by:				Date/Time:																	
Method of Shipment:				Rush		24-48 Hours		10 Working Days		Special Instructions:																
Authorized by: <b>Ray Burnham</b>				Date: <b>6/5/97</b>		X				<b>Results to be sent to both parties.</b>																
				(Client Signature Must Accompany Request)																						

OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

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

Date: *13-Mar-97*  
COC No.: *5744*  
Sample No.: *13843*  
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
<i>Benzene</i>	<i>&lt;0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>&lt;0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>&lt;0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>&lt;0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>&lt;0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>&lt;0.2</i>	<i>ug/L</i>		

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

Approved By: *LAG*

Date: *3/13/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *13-Mar-97*  
COC No.: *5744*  
Sample No.: *13844*  
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: *Call*

Date: *3/13/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *13-Mar-97*  
COC No.: *5744*  
Sample No.: *13845*  
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*

---

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

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

Approved By: *[Signature]*  
Date: *3/13/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

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

Date: *13-Mar-97*  
COC No.: *5744*  
Sample No.: *13846*  
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*

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

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

Approved By: *[Signature]*

Date: *3/13/97*

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *13-Mar-97*  
COC No.: *5744*  
Sample No.: *13847*  
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*

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

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

Approved By: *[Signature]*  
Date: *3 13 97*

P.O. BOX 2606 • FARMINGTON, NM 87499



OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *13-Mar-97*  
COC No.: *5744*  
Sample No.: *13848*  
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*

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

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

Approved By: *Tag*

Date: *3/13/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

### ***ANALYTICAL REPORT***

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

Date: *13-Mar-97*  
COC No.: *5744*  
Sample No.: *13849*  
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*

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

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

Approved By: *[Signature]*  
Date: *3/13/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

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

Date: *13-Mar-97*  
COC No.: *5744*  
Sample No.: *13850*  
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*

*Sup 131 13*

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

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

Approved By: *[Signature]*

Date: *3/13/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNICAL BLENDED AND ALTERNATIVE LABORATORY

OFF: (505) 325-5667



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: Fluorobenzene

(2)



# CHAIN OF CUSTODY RECORD

5744

Date: 3-07-97Page 1 of     

TECHNOLOGIES, LTD.

657 W. Maple • P. O. Box 2606 • Farmington NM 87499

LAB: (505) 325-5667 • FAX: (505) 325-6256

Purchase Order No.:		Job No.:		Name <b>Maureen Gannon</b>		Title	
SEND INVOICE TO	Name <b>Denver Bearden</b>				Company <b>PNM Gas Services</b>		
	Company <b>PNM Gas Services</b>		Dept. <b>324-3763</b>		Mailing Address <b>Alverado Square, Mail Stop 0408</b>		
	Address <b>603 W. Elm Street</b>				City, State, Zip <b>Albuquerque, NM 87158</b>		
	City, State, Zip <b>Farmington, NM 87401</b>				Telephone No. <b>505-848-2974</b>		Telefax No.
Sampling Location: <b>Honolulu loop line Drip</b>				ANALYSIS REQUESTED			
Sampler: <b>M. Sikelianos / Q. Burnham / M. Gannon</b>							
SAMPLE IDENTIFICATION		SAMPLE		MATRIX	PRES.	Number of Containers	LAB ID
		DATE	TIME				
9703071000	MW1			H <sub>2</sub> O	ICE	2 X	13843-5744
9703071030	MW2					2 X	13844
9703071100	MW3					2 X	13845
<del>9703071130</del>	<del>MW4</del>						
9703071200	MW5					2 X	13846-5744
9703071230	MW6 *					2 X	13847
9703071300	MW7					2 X	13848
9703071330	MW8					2 X	13849
9703071400	MW9			H <sub>2</sub> O	ICE	2 X	13850
							13851
Relinquished by: <b>Ry Burnham</b>		Date/Time <b>3/7/97 1337</b>		Received by: <b>[Signature]</b>		Date/Time <b>3/7/97 1337</b>	
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: <b>Ry Burnham</b>		Date <b>3/7/97</b>		Special Instructions:		Results to be sent to both parties.	
(Client Signature Must Accompany Request)							

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *6-Jun-97*  
COC No.: *5485*  
Sample No.: *14839*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*

Project Location: *9706041300; MW-2*

Sampled by: *MS/MG*

Date: *4-Jun-97* Time: *13:00*

Analyzed by: *DC*

Date: *6-Jun-97*

Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>37.5</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>5.1</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>27.8</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>79.7</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>11.3</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>161.2</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

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

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

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

Date: *6-Jun-97*  
COC No.: *5485*  
Sample No.: *14840*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*

Project Location: *9706041330; MW-3*

Sampled by: *MS/MG*

Date: *4-Jun-97* Time: *13:30*

Analyzed by: *DC*

Date: *6-Jun-97*

Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>3989</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Toluene</i>	<i>1678</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>103</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>630</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>182</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>6583</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*

Date: *6/6/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

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

Date: *6-Jun-97*  
COC No.: *5485*  
Sample No.: *14841*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*

Project Location: *9706041400; MW-4*

Sampled by: *MS/MG*

Date: *4-Jun-97* Time: *14:00*

Analyzed by: *DC*

Date: *6-Jun-97*

Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	889	ug/L	10	ug/L
<i>Toluene</i>	3697	ug/L	10	ug/L
<i>Ethylbenzene</i>	249	ug/L	10	ug/L
<i>m,p-Xylene</i>	1579	ug/L	10	ug/L
<i>o-Xylene</i>	428	ug/L	10	ug/L
<i>TOTAL</i>	6842	ug/L		

ND - Not Detected at Limit of Quantitation

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

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





## CHAIN OF CUSTODY RECORD

485

Date: 6-05-97

Page 1 of 1

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

Purchase Order No.:		Job No.:		REPORT RESULTS TO	Name <b>Maureen Gannon</b>		Title							
SEND INVOICE TO	Name <b>Denver Bearden</b>				Company <b>PNM Gas Services</b>									
	Company <b>PNM Gas Services</b>		Dept. <b>324-3763</b>		Mailing Address <b>Alverado Square, Mail Stop 0408</b>									
	Address <b>603 W. Elm Street</b>				City, State, Zip <b>Albuquerque, NM 87158</b>									
	City, State, Zip <b>Farmington, NM 87401</b>				Telephone No. <b>505-848-2974</b>		Telefax No.							
Sampling Location: <b>HONOLULU LOOP LINE DRIP</b>				Number of Containers <b>2</b>	ANALYSIS REQUESTED									
Sampler: <b>M Sikeianos / M Gannon</b>														
SAMPLE IDENTIFICATION					LAB ID									
DATE TIME MATRIX PRES.														
9706041230 MW1 6/04/97 - H2O HCL 2 X					14838-52105									
9706041300 MW2 - - - 2 X					14839									
9706041330 MW3 - - - 2 X					14840									
9706041400 MW4 - - - 2 X					14841									
9706041430 MW5 - - - 2 X					14847									
9706041500 MW6 - - - 2 X					14843									
9706041530 MW7 - - - 2 X				14841										
9706041600 MW8 - - - 2 X				14845										
9706041630 MW9 6/04/97 - H2O HCL 2 X				14846										
Relinquished by: <b>M. Gannon</b>				Date/Time <b>6/05/97 7:00</b>		Received by: <b>Ray Burnham</b>		Date/Time <b>6/5/97 12:07</b>						
Relinquished by: <b>Ray Burnham</b>				Date/Time <b>6/5/97 1245</b>		Received by: <b>Ray Burnham</b>		Date/Time <b>6/5/97 1245</b>						
Relinquished by:				Date/Time		Received by:		Date/Time						
Method of Shipment:				Rush		24-48 Hours		10 Working Days						
Authorized by: <b>Ray Burnham</b>				Date <b>6/5/97</b>		Special Instructions:								
						Results to be sent to both parties.								

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *17-Jun-97*  
COC No.: *5490*  
Sample No.: *14932*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9706111500; MW-9*  
Sampled by: *MS/MG* Date: *11-Jun-97* Time: *15:00*  
Analyzed by: *DC* Date: *12-Jun-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	0.7	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	0.4	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	1.1	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *6/17/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *17-Jun-97*  
COC No.: *5490*  
Sample No.: *14933*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*

Project Location: *9706111530; MW-10*

Sampled by: *MS/MG*

Date: *11-Jun-97* Time: *15:30*

Analyzed by: *DC*

Date: *13-Jun-97*

Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>352</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>5</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>4</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>2</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>363</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*

Date: *6/17/97*

P.O. BOX 2606 • FARMINGTON, NM 87499





**ON SITE**  
TECHNOLOGIES, LTD.

# QUALITY ASSURANCE REPORT

## for EPA Method 8020

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

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

<i>Parameter</i>	<i>Unit of Measure</i>	<i>True Value</i>	<i>Analyzed Value</i>	<i>% Diff</i>	<i>Limit</i>
<i>Benzene</i>	ppb	20.0	18.9	6	15%
<i>Toluene</i>	ppb	20.0	19.6	2	15%
<i>Ethylbenzene</i>	ppb	20.0	19.7	2	15%
<i>m,p-Xylene</i>	ppb	40.0	37.9	5	15%
<i>o-Xylene</i>	ppb	20.0	19.8	1	15%

<i>Parameter</i>	<i>1 - Percent Recovered</i>	<i>2 - Percent Recovered</i>	<i>Limit</i>	<i>%RSD</i>	<i>Limit</i>
<i>Benzene</i>	85	82	(39-150)	2	20%
<i>Toluene</i>	95	95	(46-148)	0	20%
<i>Ethylbenzene</i>	96	93	(32-160)	1	20%
<i>m,p-Xylene</i>	111	106	(35-145)	1	20%
<i>o-Xylene</i>	99	96	(35-145)	1	20%

	S1 Percent <i>Laboratory Identification</i> <i>Recovered</i>	S2 Percent <i>Laboratory Identification</i> <i>Recovered</i>		S1 Percent <i>Laboratory Identification</i> <i>Recovered</i>	S2 Percent <i>Laboratory Identification</i> <i>Recovered</i>
<i>Limit Percent Recovered</i>	(70-130)		<i>Limit Percent Recovered</i>	(70-130)	
14933-5490	95				
				JH	(n)
				6/17/97	6/17/97

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# CHAIN OF CUSTODY RECORD

490

Date: 6-11-97Page 1 of 1657 W. Maple • P. O. Box 2606 • Farmington NM 87499  
LAB: (505) 325-5667 • FAX: (505) 325-6256

Purchase Order No.:		Job No.		Name <b>Maureen Gannon</b>		Title							
SEND INVOICE TO	Name <b>Denver Bearden</b>			Company <b>PNM Gas Services</b>		Mailing Address <b>Alverado Square, Mail Stop 0408</b>							
	Company <b>PNM Gas Services</b>			Dept. <b>324-3763</b>		City, State, Zip <b>Albuquerque, NM 87158</b>							
	Address <b>603 W. Elm Street</b>			Telephone No. <b>505-848-2974</b>		Telefax No.							
	City, State, Zip <b>Farmington, NM 87401</b>												
Sampling Location: <i>Honolulu Loop Line Dip</i>				REPORT RESULTS TO	ANALYSIS REQUESTED								
Sampler: <i>Mark Siskians / Maureen Gannon</i>					Number of Containers <i>BTEXBODC</i>								
SAMPLE IDENTIFICATION		SAMPLE				MATRIX		PRES.		LAB ID			
		DATE	TIME										
9706111500 MW9		6/11/97	—			H2O HCL		2 X		14932-5490			
9706111530 MW10		6/11/97	—			H2O HCL		2 X		14933 ✓			
Relinquished by: <i>Maureen Gannon</i>		Date/Time <i>6/11/97</i>		Received by: <i>Roy Bearden</i>		Date/Time <i>6/11/97 700</i>							
Relinquished by: <i>Roy Bearden</i>		Date/Time <i>6/12/97 1452</i>		Received by: <i>OK</i>		Date/Time <i>6/12/97 1452</i>							
Relinquished by:		Date/Time		Received by:		Date/Time							
Method of Shipment:				Rush		24-48 Hours		10 Working Days		Special Instructions:			
Authorized by: <i>Maureen Gannon</i> Date <i>6/11/97</i> (Client Signature Must Accompany Request)										Results to be sent to both parties.			

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *6-Jun-97*  
COC No.: *5485*  
Sample No.: *14838*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*

Project Location: *9706041230; MW-1*

Sampled by: *MS/MG*

Date: *4-Jun-97* Time: *12:30*

Analyzed by: *DC*

Date: *6-Jun-97*

Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	ND	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	0.3	ug/L	0.2	ug/L
<i>o-Xylene</i>	0.5	ug/L	0.2	ug/L
<i>TOTAL</i>	0.8	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*

Date: *6/6/97*

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LAB: (505) 325-1556

**ANALYTICAL REPORT**

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

Date: *1-Oct-97*  
COC No.: *5800*  
Sample No.: *16229*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9709180900; MW-1*  
Sampled by: *MS/MG* Date: *18-Sep-97* Time: *9:00*  
Analyzed by: *DC* Date: *29-Sep-97*  
Sample Matrix: *Liquid*

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

ND - Not Detected at Limit of Quantitation

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

Approved By: *DC*  
Date: *10/1/97*

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**ANALYTICAL REPORT**

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

Date: *1-Oct-97*  
COC No.: *5800*  
Sample No.: *16230*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9709180930; MW-2*  
Sampled by: *MS/MG* Date: *18-Sep-97* Time: *9:30*  
Analyzed by: *DC* Date: *29-Sep-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>72.7</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>8.3</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>15.9</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>48.8</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>11.1</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>156.9</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *10/1/97*

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**ANALYTICAL REPORT**

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

Date: *1-Oct-97*  
COC No.: *5800*  
Sample No.: *16231*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9709181000; MW-3*  
Sampled by: *MS/MG* Date: *18-Sep-97* Time: *10:00*  
Analyzed by: *DC* Date: *30-Sep-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>81.1</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>0.5</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>1.0</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>6.4</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>2.6</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>91.6</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *10/1/97*

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**ANALYTICAL REPORT**

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

Date: *1-Oct-97*  
COC No.: *5800*  
Sample No.: *16232*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9709181030; MW-5*  
Sampled by: *MS/MG* Date: *18-Sep-97* Time: *10:30*  
Analyzed by: *DC* Date: *29-Sep-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>33.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>ND</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>ND</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>33.2</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *10/1/97*

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### ANALYTICAL REPORT

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

Date: *1-Oct-97*  
COC No.: *5800*  
Sample No.: *16233*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9709181100; MW-6*  
Sampled by: *MS/MG* Date: *18-Sep-97* Time: *11:00*  
Analyzed by: *DC* Date: *29-Sep-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>16309</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Toluene</i>	<i>4531</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>588</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>5211</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>1343</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>27981</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *10/1/97*

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**ANALYTICAL REPORT**

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

Date: *1-Oct-97*  
COC No.: *5800*  
Sample No.: *16234*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9709181130; MW-7*  
Sampled by: *MS/MG* Date: *18-Sep-97* Time: *11:30*  
Analyzed by: *DC* Date: *29-Sep-97*  
Sample Matrix: *Liquid*

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

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *10/1/97*

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### ANALYTICAL REPORT

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

Date: *1-Oct-97*  
COC No.: *5800*  
Sample No.: *16235*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9709181200; MW-8*  
Sampled by: *MS/MG* Date: *18-Sep-97* Time: *12:00*  
Analyzed by: *DC* Date: *30-Sep-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	5.1	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	29.7	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	171.2	ug/L	0.2	ug/L
<i>o-Xylene</i>	23.2	ug/L	0.2	ug/L
<i>TOTAL</i>	229.2	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *10/1/97*

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**ANALYTICAL REPORT**

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

Date: *1-Oct-97*  
COC No.: *5800*  
Sample No.: *16236*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9709181230; MW-9*  
Sampled by: *MS/MG* Date: *18-Sep-97* Time: *12:30*  
Analyzed by: *DC* Date: *29-Sep-97*  
Sample Matrix: *Liquid*

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

ND - Not Detected at Limit of Quantitation

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

Approved By: *JAC*  
Date: *10/1/97*

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**ANALYTICAL REPORT**

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

Date: *1-Oct-97*  
COC No.: *5800*  
Sample No.: *16237*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9709181300; MW-10*  
Sampled by: *MS/MG* Date: *18-Sep-97* Time: *13:00*  
Analyzed by: *DC* Date: *29-Sep-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>38.4</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>3.4</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>0.8</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>42.6</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *10/1/97*

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**ANALYTICAL REPORT**

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

Date: *1-Oct-97*  
COC No.: *5800*  
Sample No.: *16238*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Line Drip*  
Project Location: *9709181330; MW-11*  
Sampled by: *MS/MG* Date: *18-Sep-97* Time: *13:30*  
Analyzed by: *DC* Date: *29-Sep-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>115.4</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>0.6</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>1.3</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>9.0</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>3.6</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>129.9</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *Jac*  
Date: *10/1/97*

OFF: (505) 325-5667



LAB: (505) 325-1556

## QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 29-Sep-97

Internal QC No.: 0527-STD

Surrogate QC No.: 0528-STD

Reference Standard QC No.: 0529/30-QC

**Method Blank**

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

**Calibration Check**

Parameter	Unit of Measure	True Value	Analyzed Value	RPD	Limit
Benzene	ppb	20.0	18.9	6	15%
Toluene	ppb	20.0	19.8	1	15%
Ethylbenzene	ppb	20.0	19.6	2	15%
m,p-Xylene	ppb	40.0	38.3	4	15%
o-Xylene	ppb	20.0	19.6	2	15%

**Matrix Spike**

Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	RPD	Limit
Benzene	89	88	(39-150)	1	20%
Toluene	94	93	(46-148)	1	20%
Ethylbenzene	93	92	(32-160)	1	20%
m,p-Xylene	92	91	(35-145)	1	20%
o-Xylene	93	93	(35-145)	1	20%

**Surrogate Recoveries**

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
16229-5800	96		16237-5800	95	
16230-5800	85		16238-5800	94	
16232-5800	94				
16233-5800	94				
16234-5800	96				
16236-5800	97				

S1: Fluorobenzene



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## QUALITY ASSURANCE REPORT

Reference Standard QC No.: 0529/30-QC

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

<i>Parameter</i>	<i>Unit of Measure</i>	<i>True Value</i>	<i>Analyzed Value</i>	<i>RPD</i>	<i>Limit</i>
<i>Benzene</i>	ppb	20.0	18.9	6	15%
<i>Toluene</i>	ppb	20.0	20.1	0	15%
<i>Ethylbenzene</i>	ppb	20.0	20.1	0	15%
<i>m,p-Xylene</i>	ppb	40.0	39.1	2	15%
<i>o-Xylene</i>	ppb	20.0	20.2	1	15%

<i>Parameter</i>	<i>1 - Percent Recovered</i>	<i>2 - Percent Recovered</i>	<i>Limit</i>	<i>RPD</i>	<i>Limit</i>
<i>Benzene</i>	97	92	(39-150)	4	20%
<i>Toluene</i>	101	97	(46-148)	3	20%
<i>Ethylbenzene</i>	99	96	(32-160)	3	20%
<i>m,p-Xylene</i>	100	95	(35-145)	3	20%
<i>o-Xylene</i>	98	95	(35-145)	3	20%

	S1 Percent Recovered	S2 Percent Recovered		S1 Percent Recovered	S2 Percent Recovered
Laboratory Identification			Laboratory Identification		
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
16231-5800	94				
16235-5800	100				
				HR	(DC)
				10/8/97	10/1/97

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *30-Dec-97*  
COC No.: *5619*  
Sample No.: *17088*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Drip*

Project Location: *9712151120; MW-1*

Sampled by: *RD* Date: *15-Dec-97* Time: *11:20*

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

Sample Matrix: *Liquid*

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

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *12/30/97*

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OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *30-Dec-97*  
COC No.: *5619*  
Sample No.: *17089*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Drip*  
Project Location: *9712151139; MW-2*  
Sampled by: *RD* Date: *15-Dec-97* Time: *11:39*  
Analyzed by: *DC* Date: *23-Dec-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>3.7</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>3.0</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>6.5</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>21.3</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>3.7</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>38.2</i>	<i>ug/L</i>		

*9-16-98*  
*72.7*  
*8.3*  
*15.9*  
*48.8*  
*11.1*

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *12/30/97*

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- TECHNICAL SERVING INDUSTRIES WITH THE ENVIRONMENT

OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

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

Date: *30-Dec-97*  
COC No.: *5619*  
Sample No.: *17090*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Drip*  
Project Location: *9712151201; MW-3*  
Sampled by: *RD* Date: *15-Dec-97* Time: *12:01*  
Analyzed by: *DC* Date: *24-Dec-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>423</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>ND</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>11.0</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>72.4</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>7.9</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>514</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *12/30/97*

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OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *30-Dec-97*  
COC No.: *5619*  
Sample No.: *17091*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Drip*  
Project Location: *9712151218; MW-4*  
Sampled by: *RD* Date: *15-Dec-97* Time: *12:18*  
Analyzed by: *DC* Date: *23-Dec-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>62</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>90</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>56</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>313</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>99</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>618</i>	<i>ug/L</i>		

*9-15-17*

*Free product*

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*

Date: *12/30/97*

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- FARMINGTON BLENDING INDUSTRY WITH THE ELK HILLS -

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *30-Dec-97*  
COC No.: *5619*  
Sample No.: *17092*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Drip*  
Project Location: *9712151247; MW-5*  
Sampled by: *RD* Date: *15-Dec-97* Time: *12:47*  
Analyzed by: *DC* Date: *23-Dec-97*  
Sample Matrix: *Liquid*

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

4-15

33 2 ppb

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *12/30/97*

P.O. BOX 2606 • FARMINGTON, NM 87499



OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *30-Dec-97*  
COC No.: *5619*  
Sample No.: *17093*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Drip*  
Project Location: *9712151310; MW-6*  
Sampled by: *RD* Date: *15-Dec-97* Time: *13:10*  
Analyzed by: *DC* Date: *24-Dec-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>15061</i>	<i>ug/L</i>	<i>40</i>	<i>ug/L</i>
<i>Toluene</i>	<i>1526</i>	<i>ug/L</i>	<i>40</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>520</i>	<i>ug/L</i>	<i>40</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>4293</i>	<i>ug/L</i>	<i>40</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>1119</i>	<i>ug/L</i>	<i>40</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>22518</i>	<i>ug/L</i>		

*9/18/97*

*16309*

*4531*

*582*

*5211*

*1343*

ND - Not Detected at Limit of Quantitation

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

Approved By: *DAF*  
Date: *12/30/97*

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *30-Dec-97*  
COC No.: *5619*  
Sample No.: *17094*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Drip*  
Project Location: *9712151337; MW-7*  
Sampled by: *RD* Date: *15-Dec-97* Time: *13:37*  
Analyzed by: *DC* Date: *23-Dec-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>0.6</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>ND</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>ND</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>0.6</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *12/30/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNICAL SUPPORT AND CONSULTING SERVICES -

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *30-Dec-97*  
COC No.: *5619*  
Sample No.: *17095*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Drip*

Project Location: *9712151401; MW-8*

Sampled by: *RD* Date: *15-Dec-97* Time: *14:01*

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

Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	7.4	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	36.8	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	214.1	ug/L	0.2	ug/L
<i>o-Xylene</i>	39.0	ug/L	0.2	ug/L
<i>TOTAL</i>	297.3	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *12/30/97*

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *30-Dec-97*  
COC No.: *5619*  
Sample No.: *17096*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Drip*  
Project Location: *9712151528; MW-9*  
Sampled by: *RD* Date: *15-Dec-97* Time: *15:28*  
Analyzed by: *DC* Date: *23-Dec-97*  
Sample Matrix: *Liquid*

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

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *12/30/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *30-Dec-97*  
COC No.: *5619*  
Sample No.: *17097*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Drip*

Project Location: *9712151428; MW-10*

Sampled by: *RD* Date: *15-Dec-97* Time: *14:28*

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

Sample Matrix: *Liquid*

---

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>87.9</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>2.5</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>3.0</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>4.7</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>98.2</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

---

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

Approved By: *[Signature]*  
Date: *12/30/97*

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

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

Date: *30-Dec-97*  
COC No.: *5619*  
Sample No.: *17098*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Honolulu Loop Drip*  
Project Location: *9712151448; MW-11*  
Sampled by: *RD* Date: *15-Dec-97* Time: *14:48*  
Analyzed by: *DC* Date: *24-Dec-97*  
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	7.5	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	37.3	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	217.3	ug/L	0.2	ug/L
<i>o-Xylene</i>	38.9	ug/L	0.2	ug/L
<i>TOTAL</i>	301.0	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*  
Date: *12/30/97*

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- TECHNICAL SERVICES INDUSTRIES, INC. -

OFF: (505) 325-5667



LAB: (505) 325-1556

## QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 23-Dec-97

Internal QC No.: 0559-STD

Surrogate QC No.: 0567-STD

Reference Standard QC No.: 0529/30-QC

### Method Blank

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

### Calibration Check

Parameter	Unit of Measure	True Value	Analyzed Value	RPD	Limit
Benzene	ppb	40.0	39.7	1	15%
Toluene	ppb	40.0	41.7	4	15%
Ethylbenzene	ppb	40.0	41.5	4	15%
m,p-Xylene	ppb	80.0	80.1	0	15%
o-Xylene	ppb	40.0	42.1	5	15%

### Matrix Spike

Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	RPD	Limit
Benzene	85	84	(39-150)	1	20%
Toluene	89	89	(46-148)	1	20%
Ethylbenzene	87	86	(32-160)	1	20%
m,p-Xylene	84	83	(35-145)	1	20%
o-Xylene	84	85	(35-145)	1	20%

### Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
17088-5619	93		17096-5619	92	
17089-5619	84		17097-5619	91	
17091-5619	93				
17092-5619	94				
17094-5619	93				
17095-5619	98				

S1: Fluorobenzene

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- TECHNOLOGY BLENDING INDUSTRY WITH THE FARMINGTON AREA



ON SITE  
TECHNOLOGIES, LTD.

## QUALITY ASSURANCE REPORT

**Date Analyzed:** 24-Dec-97

Internal QC No.: 0559-STD

**Surrogate QC No.:** 0567-STD

Reference Standard QC No.: 0529/30-QC

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

<i>Parameter</i>	<i>Unit of Measure</i>	<i>True Value</i>	<i>Analyzed Value</i>	<i>RPD</i>	<i>Limit</i>
<i>Benzene</i>	ppb	20.0	18.2	9	15%
<i>Toluene</i>	ppb	20.0	19.1	4	15%
<i>Ethylbenzene</i>	ppb	20.0	19.2	4	15%
<i>m,p-Xylene</i>	ppb	40.0	36.9	8	15%
<i>o-Xylene</i>	ppb	20.0	19.0	5	15%

<i>Parameter</i>	<i>1- Percent Recovered</i>	<i>2 - Percent Recovered</i>	<i>Limit</i>	<i>RPD</i>	<i>Limit</i>
<i>Benzene</i>	101	88	(39-150)	6	20%
<i>Toluene</i>	100	94	(46-148)	6	20%
<i>Ethylbenzene</i>	100	93	(32-160)	6	20%
<i>m,p-Xylene</i>	97	90	(35-145)	6	20%
<i>o-Xylene</i>	99	93	(35-145)	6	20%

	S1 Percent Recovered	S2 Percent Recovered		S1 Percent Recovered	S2 Percent Recovered
Laboratory Identification			Laboratory Identification		
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
17090-5619	93				
17093-5619	93				
17098-5619	99				
				YK	(12)
				12/30/97	12/30/97

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -





## CHAIN OF CUSTODY RECORD

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Date: 3-07-97Page 1 of     

TECHNOLOGIES, LTD.

657 W. Maple • P. O. Box 2606 • Farmington NM 87499

LAB: (505) 325-5667 • FAX: (505) 325-6256

Purchase Order No.:		Job No.:		Name <b>Maureen Gannon</b>		Title							
SEND INVOICE TO	Name <b>Denver Bearden</b>		Company <b>PNM Gas Services</b>		Company <b>PNM Gas Services</b>		Mailing Address <b>Alverado Square, Mail Stop 0408</b>						
	Company <b>PNM Gas Services</b>		Dept. <b>324-3763</b>		Mailing Address <b>Alverado Square, Mail Stop 0408</b>		City, State, Zip <b>Albuquerque, NM 87158</b>						
	Address <b>603 W. Elm Street</b>		City, State, Zip <b>Farmington, NM 87401</b>		Telephone No. <b>505-848-2974</b>		Telefax No.						
	City, State, Zip <b>Farmington, NM 87401</b>												
Sampling Location: <b>Honolulu hoop line Drip</b>				ANALYSIS REQUESTED									
Sampler: <b>H. Sikelianos / Q. Burnham / M. Gannon</b>				Number of Containers									
SAMPLE IDENTIFICATION				SAMPLE DATE TIME MATRIX PRES.		LAB ID							
9703071000 MW1				H2O ICE 2 X		13843-5744							
9703071030 MW2				H2O ICE 2 X		13844							
9703071100 MW3				H2O ICE 2 X		13845							
<del>9703071130 MW4</del>													
9703071200 MW5				H2O ICE 2 X		13846-5744							
9703071230 MW6 *				H2O ICE 2 X		13847							
9703071300 MW7				H2O ICE 2 X		13848							
9703071330 MW8				H2O ICE 2 X		13849							
9703071400 MW9				H2O ICE 2 X		13850							
						13851							
Relinquished by: <b>Ry Burnham</b>				Date/Time <b>3/7/97 1337</b>		Received by: <b>[Signature]</b>				Date/Time <b>3/7/97 1337</b>			
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: <b>Results to be sent to both parties.</b>			
Authorized by: <b>Ry Burnham</b> (Client Signature Must Accompany Request)				Date <b>3/7/97</b>									



# CHAIN OF CUSTODY RECORD

Date: 2/14/91Page: 1 of 1

7478

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

Purchase Order No.:		Job No.		REPORT RESULTS TO	Name <b>Maureen Gannon</b>		Title											
SEND INVOICE TO	Name <b>Denver Bearden</b>				Company <b>PNM Gas Services</b>		Mailing Address <b>Alverado Square, Mail Stop 0408</b>											
	Company <b>PNM Gas Services</b>		Dept. <b>324-3763</b>		City, State, Zip <b>Albuquerque, NM 87158</b>													
	Address <b>603 W. Elm Street</b>				Telephone No. <b>505-848-2974</b>		Telefax No.											
	City, State, Zip <b>Farmington, NM 87401</b>																	
Sampling Location: <i>Honolulu Loop Drive</i>				Number of Containers	ANALYSIS REQUESTED													
Sampler: <i>Dedrick</i>																		
SAMPLE IDENTIFICATION		SAMPLE											MATRIX		PRES.		LAB ID	
		DATE	TIME															
<i>1802071110</i>		<i>2/14</i>	<i>11:10</i>										<i>10</i>		<i>10</i>		<i>-01A</i>	
<i>1802071135</i>		<i>2/14</i>	<i>11:35</i>										<i>10</i>		<i>10</i>		<i>-02A</i>	
<i>1802071150</i>		<i>2/14</i>	<i>11:50</i>										<i>10</i>		<i>10</i>		<i>-03A</i>	
<i>1802071205</i>		<i>2/14</i>	<i>12:05</i>										<i>10</i>		<i>10</i>		<i>-04A</i>	
<i>1802071220</i>		<i>2/14</i>	<i>12:20</i>										<i>10</i>		<i>10</i>		<i>-05A</i>	
<i>1802071235</i>		<i>2/14</i>	<i>12:35</i>										<i>10</i>		<i>10</i>		<i>-06A</i>	
<i>1802071250</i>		<i>2/14</i>	<i>12:50</i>	<i>10</i>		<i>10</i>		<i>-07A</i>										
<i>1802071306</i>		<i>2/14</i>	<i>1:06</i>	<i>10</i>		<i>10</i>		<i>-08A</i>										
<i>1802071320</i>		<i>2/14</i>	<i>1:20</i>	<i>10</i>		<i>10</i>		<i>-09A</i>										
<i>1802071332</i>		<i>2/14</i>	<i>1:32</i>	<i>10</i>		<i>10</i>		<i>-10A</i>										
<i>1802071342</i>		<i>2/14</i>	<i>1:42</i>	<i>10</i>		<i>10</i>		<i>-11A</i>										
Relinquished by: <i>Donald A. Gannon</i>				Date/Time <i>2/14/91 1:55</i>	Received by: <i>Maureen Gannon</i>				Date/Time <i>2/14/91 2:00</i>									
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>Donald A. Gannon</i> Date <i>2/14/91</i> (Client Signature <u>Must</u> Accompany Request)					Results to be sent to both parties.													