

**3R - 318**

# **REPORTS**

**DATE:**

**JAN. 21, 2003**

RECEIVED

FEB 14 2003

ENVIRONMENTAL BUREAU  
OIL CONSERVATION DIVISION

January 21, 2003



Environmental Project Services  
188 County Road 4900  
Bloomfield, NM 87413  
505-634-4956 Phone  
505-327-4577 Fax

Mr. Bill Olson  
Hydrogeologist  
Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

**RE: FLORANCE #124 PIT REMEDIATION AND CLOSURE REPORT**

Dear Mr. Olson:

Enclosed please find information on remediation and closure activities associated with the unlined surface impoundment located at the Florance #124 site. Public Service Company of New Mexico (PNM) previously owned the site and initiated closure activities on August 1, 1996. The site later became an asset of Williams upon purchase of Gas Company of New Mexico (GCNM) from PNM. Upon expiration of PNM's retained environmental liabilities associated with the site, Williams agreed to complete necessary closure work. As such, the enclosed documentation reflects activities of both PNM and Williams.

**Site History**

Excavation of petroleum hydrocarbon-impacted soil beneath the unlined surface impoundment was conducted in three phases. Phase I began on August 1, 1996 with the excavation and landfarming of approximately 425 cubic yards of contaminated soil. Ground water was encountered at a depth of 14-feet and the excavation was terminated at 15-feet. A sample of ground water collected from the excavation contained benzene (2214.6 µg/l), toluene (7397.7 µg/l) and total xylenes (4033.8 µg/l) at concentrations in excess of Water Quality Control Commission (WQCC) standards.

To evaluate the magnitude and extent of ground water contamination, four monitoring wells were installed on August 28, 1996. Free-phase product was not encountered in any well. Water samples collected in the third and fourth quarters of 1996 indicated that background TDS levels were in excess of 10,000 mg/l and that the source area well, MW-2, was the only well with elevated BTEX levels. Based on the TDS levels, PNM argued in their April 15, 1997 Groundwater Site Summary Report that area ground water had no beneficial use and requested closure of the site. No record of a response from NMOCD to the closure request exists in the files provided by PNM. It is assumed that the request was denied as evidenced by PNM's implementation of Phase II of the project.

Phase II began on March 2, 1999 with the excavation and landfarming of an additional 663 cubic yards of contaminated soil from an area centered around the source area well MW-2. Well MW-2 was left in place and monitoring continued through October 14, 1999. Dissolved BTEX levels in MW-2 remained above WQCC standards so a third phase of excavation was initiated on January 4, 2000. Phase III resulted in the removal of an additional 1321 cubic yards of contaminated soil. Monitoring well MW-2 was removed and replaced on January 18, 2000 with two new wells identified as MW-5 and MW-6. Exhibit A contains the original PNM Pit Remediation and Closure Report. In addition, excavation maps, field notes and landfarm confirmation sample results are included.

## Site Hydrogeology

The Florance #124 site is located in Unit C, Section 27, Township 29N, Range 9W of San Juan County, New Mexico (Figure 1). The site lies on the northeast edge of Largo Canyon. The alluvial sediments consist primarily of brown, silty sand grading from fine near the surface to coarse at 3-feet below ground surface. At 10-feet the material is primarily gray, coarse sand. Bedrock was encountered in one part of the excavation at a depth of 17-feet below ground surface.

Ground water in the unconsolidated sediments is unconfined and the depth to ground water is typically around 10-feet below ground level. A hydrograph for the wells is included in Exhibit B. Ground water flows to the southwest toward Largo Canyon. A potentiometric surface map is included in Exhibit B. The average hydraulic gradient across the site is 0.002. Hydraulic conductivities of the sediments are likely on the order of  $10^{-3}$  to  $10^{-1}$  cm/sec.

## Monitoring Results

Concentrations of benzene, toluene, ethylbenzene and xylene (BTEX) were analyzed in water samples collected quarterly from September 1996 through June 2002. The initial monitoring network consisted of four wells identified as MW-1 through MW-4. Wells MW-1, MW-3 and MW-4 demonstrated four consecutive quarters of no detectable BTEX beginning with the first sampling event on September 5, 1996. Sampling of these wells was discontinued in January 1998 with the exception of a final closure sampling conducted in June 2002.

After three years of monitoring well MW-2 total BTEX levels decreased from 1639.1  $\mu\text{g/l}$  to 67.9  $\mu\text{g/l}$ . Still, the benzene concentration remained at 53  $\mu\text{g/l}$ , well above WQCC standards. Following Phase III excavation activities, well MW-2 was replaced with wells MW-5 and MW-6. Concentrations of BTEX in well MW-5 were never detected. Total BTEX in well MW-6 was initially at 1014  $\mu\text{g/l}$ , but rapidly decreased to levels below the constituent detection limits. All monitoring wells have now demonstrated four consecutive quarters of BTEX levels below WQCC standards. Table 1 summarizes the ground water analytical results. Copies of laboratory analytical reports not previously submitted are attached.

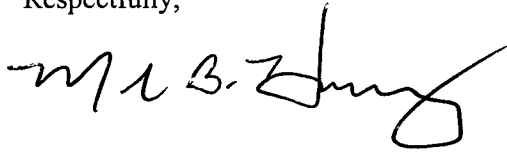
## Summary

The unlined surface impoundment at the Florance #124 site was addressed consistent with OCD Order 7940-C and with the guidelines pertaining to the remediation of unlined surface impoundments. The work included the removal of hydrocarbon-impacted soil and an evaluation of ground water impacted by the historical operation of the impoundment. A network of ground water monitoring wells was installed and ground water analyses showed that a BTEX plume existed in the vicinity of the former pit location. Natural attenuation of the BTEX compounds along with extensive source removal resulted in contaminant degradation to concentrations less than WQCC standards.

Based on current site conditions, Williams requests approval for closure of the Florance #124 site. Following receipt of your closure approval we will plug and abandon the monitoring wells in accordance with applicable regulations. Williams appreciates your time in reviewing this site closure request. If you have any questions or require any additional information, please contact me at 505-634-4956 or Jim Struhs, Project Hydrogeologist at 801-558-1918.

January 21, 2003  
Mr. Bill Olson, OCD  
Page 3

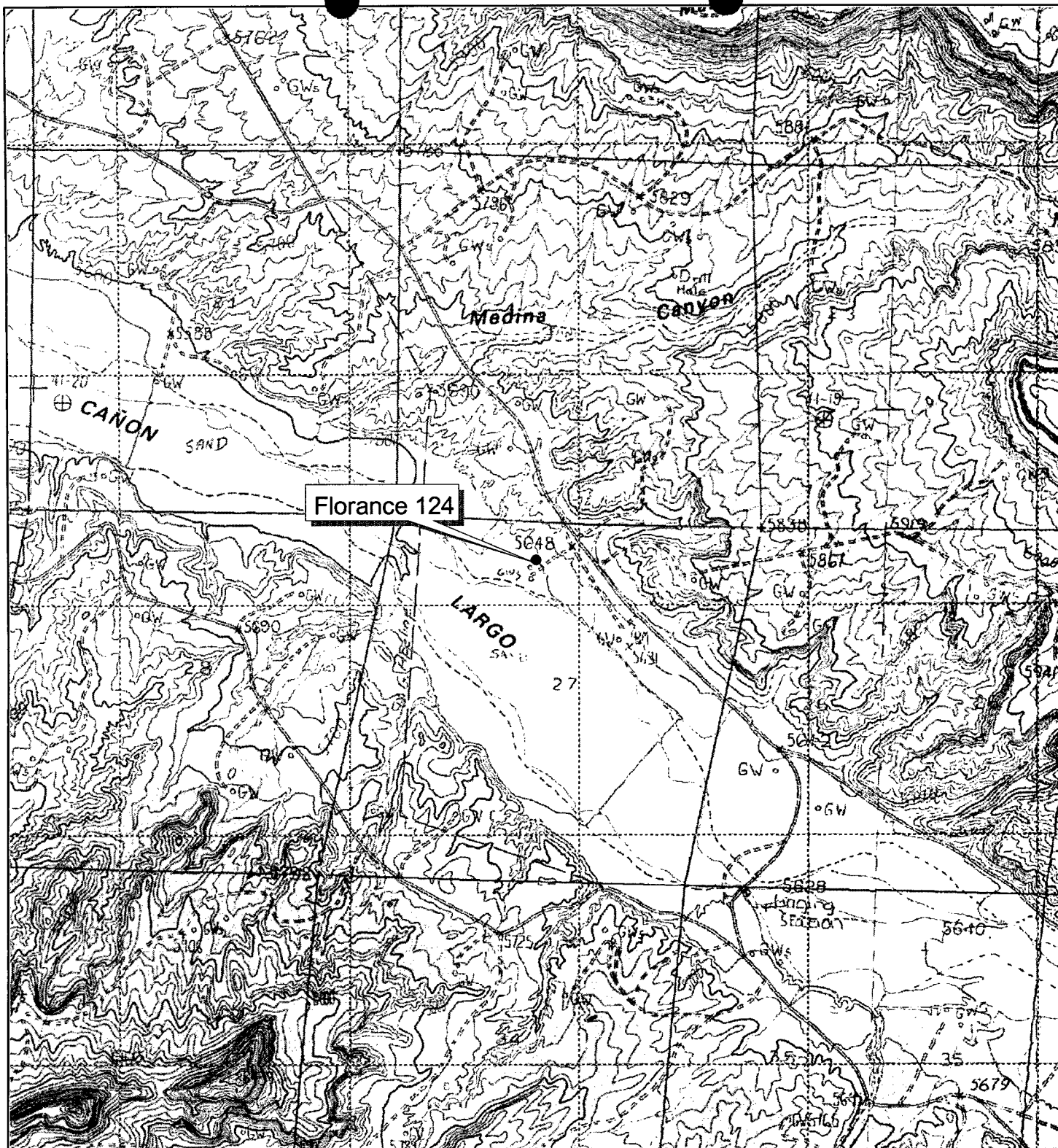
Respectfully,

A handwritten signature in black ink, appearing to read "Mr. B. Harvey". The signature is stylized with a large, sweeping "H" and a long, horizontal stroke extending to the right.

Mark B. Harvey  
Project Coordinator

Attachments

c: Mr. Denny Foust, NMOCD, District III  
Mr. Bill Liess, BLM, Farmington District Office



**William's**

# Figure 1. Site Location Map

Florance #124

Unit C, Sec. 27, T29N, R9W

1000 0 1000 2000 Feet



EXHIBIT A

ORIGINAL PIT REMEDIATION AND CLOSURE REPORT



# Unlined Surface Impoundment Assessment Form

Run # 10-62

Site Information:

Well Name:	Florence #124			
Operator:	Amoco			
Legal Description:	Sec: 27	Twn: 29N	Rng: 9W	Unit: C
Meter #:	4978-21		PNM <input type="checkbox"/> Y <input type="checkbox"/> N	

Vulnerable Area	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Expanded <input type="checkbox"/> Extended <input type="checkbox"/> Other			
Date:	11/29/95		Well Pad Dimensions:	GCL Data Sheet #:
Time:	1145 AM PM		L 200 W 200	231
Canyon:	Largo		Site:	Dehydrator/Separator/Drip:
Quad Map (#):	Blanco		<input checked="" type="checkbox"/> Active <input type="checkbox"/> Abandoned <input type="checkbox"/> P & A <input type="checkbox"/> Temp. Disconnected	<input checked="" type="checkbox"/> Dehydrator <input type="checkbox"/> Drip <input checked="" type="checkbox"/> Separator <input type="checkbox"/> None Other Discharges

Pit Information:

PNM Pit #1:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Pit Dimensions:	
DH <input type="checkbox"/> SEP <input type="checkbox"/> DR <input type="checkbox"/>	
L 15 W 15 D 3	
Ref: WH <input checked="" type="checkbox"/> Other	
Distance from Ref:	100'
Degrees:	Due South

VDW 20'	OCD Rank:	Score
HDW 600'	Depth to Water	20
Water Sources	WH Prot. Area	0
<input type="checkbox"/> Water Well <input checked="" type="checkbox"/> Listed Canyon <input type="checkbox"/> Stock Pond <input type="checkbox"/> Other	Dist to Surf. Water	10
Total	30	

OVM 425 ppm
Testhole Depth 3'
Soil Desc. Sandy light grey
<input type="checkbox"/> Active <input type="checkbox"/> SAT <input checked="" type="checkbox"/> Inactive <input type="checkbox"/> Inaccessible
Fenced <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Birdcones <input type="checkbox"/> Yes <input type="checkbox"/> No N/A
Netting <input type="checkbox"/> Yes <input type="checkbox"/> No N/A

Other Pits:					
Pit #	Fence	Net	OVM	Inacc.	Tank
2	Y	Y			Y
3	Y	Y			Y
4	Y	Y			Y

Lab Sample	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Sample #(s):	COC#:
------------	---	--------------	-------

Geographical:

Geology:	<input checked="" type="checkbox"/> SS <input type="checkbox"/> Clay
<input checked="" type="checkbox"/> Sand <input type="checkbox"/> Outcrop <input type="checkbox"/> Rock	
<input type="checkbox"/> Gravel <input type="checkbox"/> Cliffs <input type="checkbox"/> Silt	
<input type="checkbox"/> Other	

Terrain:	<input type="checkbox"/> Mesa Top <input type="checkbox"/> Trailing Slope <input checked="" type="checkbox"/> River Bottom <input type="checkbox"/> Other
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Land Use:	<input checked="" type="checkbox"/> Grazing <input type="checkbox"/> Residential <input type="checkbox"/> Recreation <input type="checkbox"/> Other
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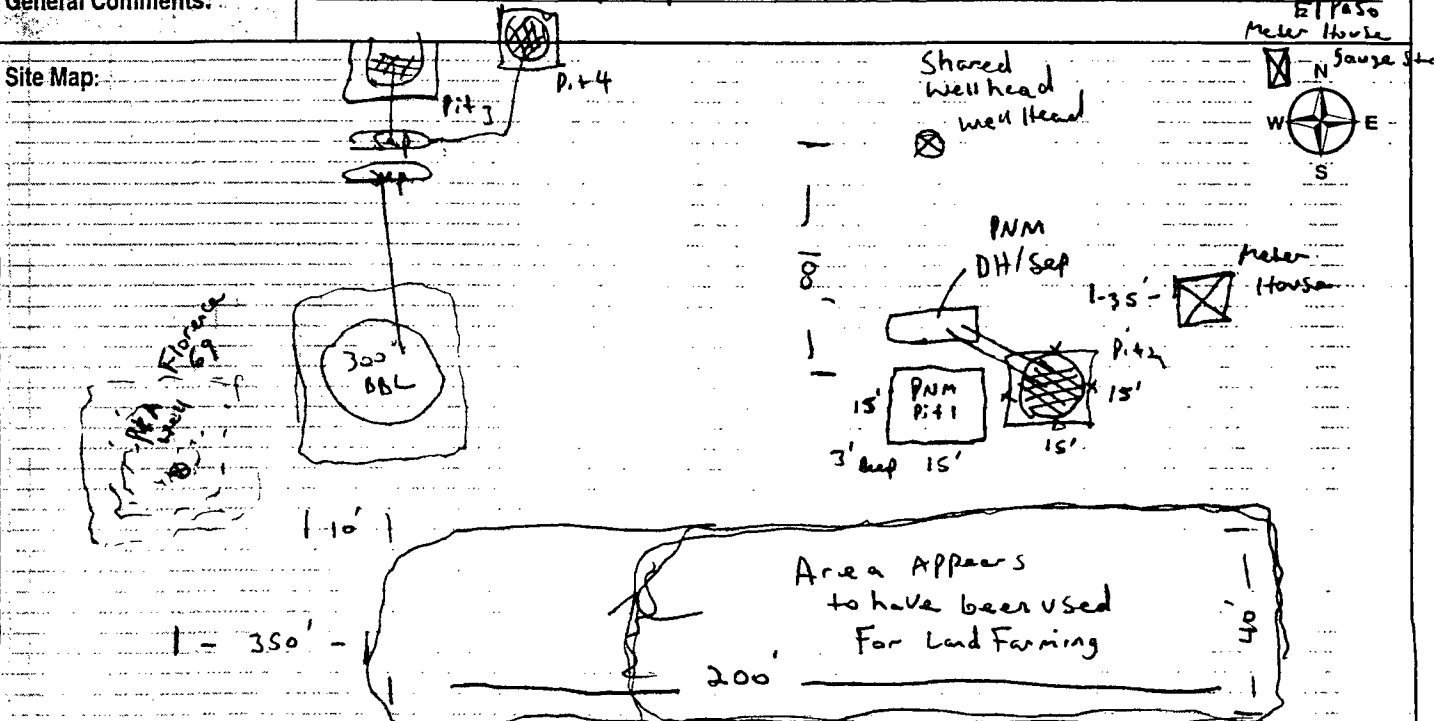
Land Type:	<input checked="" type="checkbox"/> BLM <input type="checkbox"/> State <input type="checkbox"/> Fee <input type="checkbox"/> Other
------------	---

Vegetation:	
Well Pad	Area
<input type="checkbox"/> Normal <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Stressed <input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> None <input type="checkbox"/>	<input type="checkbox"/>

General Comments:

Shared Site w/ El Paso Abandoned PNM Pit

Site Map:



Assessor's Signature

*Mar SL*

Date:

11/29/95

Box 1980, Hobbs, NM

District II

P.O. Drawer DD, Artesia, NM 88221

District III

1000 Rio Brazos Rd, Aztec, NM 87410

State of New Mexico  
Energy, Minerals and Natural Resources Department

## OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

SUBMIT 1 COPY TO  
APPROPRIATE  
DISTRICT OFFICE  
AND 1 COPY TO  
SANTA FE OFFICE

## PIT REMEDIATION AND CLOSURE REPORT

Operator PNM Gas Services Telephone: (505) 324-3764  
Address: 603 West Elm Farmington, NM 87401  
Facility or Well Name: Florance # 124  
Location: Unit or Qtr/Qtr Sec C Sec 27 T 29N R 9W County San Juan  
Pit Type: Separator        Dehydrator X Other         
Land Type: BLM X State        Fee        Other       

Pit Location: Pit dimensions: length 15 width 15 depth 3  
(Attach diagram) Reference: wellhead ~~700~~ other \_\_\_\_\_  
Footage from reference: 100'  
Direction from reference 90° Degrees X East North \_\_\_\_\_  
of  
West South X

<b>Depth to Ground Water:</b>			
(Vertical distance from contaminants	Less than 50 feet	(20 points)	
to seasonal high water elevation of	50 feet to 99 feet	(10 points)	
ground water	Greater than 100 feet	(0 points)	20

**Wellhead Protection Area:**  
(Less than 200 feet from a private domestic water source, or; less than 1,000 feet from all other water sources)

Large Wash

Yes	(20 points)
No	(0 points)

☒

<b>Distance to Surface Water:</b>		
(Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 200 feet	(20 points)
	200 feet to 1,000 feet	(10 points)
	Greater than 1,000 feet	(0 points)

/C2

RANKING SCORE (TOTAL POINTS): 30



Date Remediation Started: 8-1-96 Date Completed: 8-6-96

Remediation Method: Excavation X Approx. cubic yards \_\_\_\_\_

(Check all appropriate sections)

Landfarmed X Insitu Bioremediation \_\_\_\_\_

Other \_\_\_\_\_

Remediation Location: Onsite X Offsite \_\_\_\_\_  
(i.e., landfarmed onsite, name and location of offsite facility)

General Description of Remedial Action: \_\_\_\_\_

Ground Water Encountered: No \_\_\_\_\_ Yes X Depth 14'

Final Pit Sample location #9608020930 water at 14'

Closure Sampling: #9608021000 soil 4 walls + bottom

(if multiple samples, attach sample results and diagram of sample locations and depths)

Sample depth 12' water 14'

Sample date 8-2-96 Sample time 1000

Sample Results

Benzene (ppm) \_\_\_\_\_

Total BTEX (ppm) \_\_\_\_\_

Field headspace (ppm) \_\_\_\_\_

TPH \_\_\_\_\_

Ground Water Sample: Yes X No \_\_\_\_\_ (If yes, attach sample results)

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

DATE

SIGNATURE

*Handwritten signature*

PRINTED NAME  
AND TITLE

OFF: (505) 325-5667



LAB: (505) 325-1556

**AROMATIC VOLATILE ORGANICS**

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

Date: *5-Aug-96*  
COC No.: *4935*  
Sample No. *11680*  
Job No. *2-1000*

Project Name: *PNM Gas Services - Florance 124*  
Project Location: *9608021000; 5pt. Composite*  
Sampled by: *GC*  
Analyzed by: *HR*  
Sample Matrix: *Soil*

Date: *2-Aug-96* Time: *10:00*  
Date: *5-Aug-96*

**Laboratory Analysis**

Parameter	Result	Unit of Measure	Detection Limit	Unit of Measure
<i>Benzene</i>	<i>3122.5</i>	<i>ug/kg</i>	<i>0.2</i>	<i>ug/kg</i>
<i>Toluene</i>	<i>67771.4</i>	<i>ug/kg</i>	<i>0.2</i>	<i>ug/kg</i>
<i>Ethylbenzene</i>	<i>8791.0</i>	<i>ug/kg</i>	<i>0.2</i>	<i>ug/kg</i>
<i>m,p-Xylene</i>	<i>77503.2</i>	<i>ug/kg</i>	<i>0.2</i>	<i>ug/kg</i>
<i>o-Xylene</i>	<i>18576.4</i>	<i>ug/kg</i>	<i>0.2</i>	<i>ug/kg</i>
	<i>TOTAL</i>	<i>175764.6</i>		<i>ug/kg</i>

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

Approved by: *[Signature]*  
Date: *8/5/96*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

***Diesel Range Organics***

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

Date: *5-Aug-96*  
COC No.: *4935*  
Sample No. *11680*  
Job No. *2-1000*

Project Name: *PNM Gas Services - Florance 124*  
Project Location: *9608021000; 5pt. Composite*  
Sampled by: *GC*  
Analyzed by: *HR*  
Sample Matrix: *Soil*

Date: *2-Aug-96* Time: *10:00*  
Date: *5-Aug-96*

***Laboratory Analysis***

<i>Parameter</i>	<i>Result</i>	<i>Unit of Measure</i>	<i>Detection Limit</i>	<i>Unit of Measure</i>
<i>Diesel Range Organics (C10 - C28)</i>	<i>11.9</i>	<i>mg/kg</i>	<i>5.0</i>	<i>mg/kg</i>

***Quality Assurance Report***

*DRO QC No.: 0479-QC*

***Calibration Check***

<i>Parameter</i>	<i>Method Blank</i>	<i>Unit of Measure</i>	<i>True Value</i>	<i>Analyzed Value</i>	<i>% Diff</i>	<i>Limit</i>
<i>Diesel Range (C10 - C28)</i>	<i>&lt;5.0</i>	<i>ppm</i>	<i>2,000</i>	<i>1,883</i>	<i>5.8</i>	<i>15%</i>

***Matrix Spike***

<i>Parameter</i>	<i>1- Percent Recovered</i>	<i>2 - Percent Recovered</i>	<i>Limit</i>	<i>%RSD</i>	<i>Limit</i>
<i>Diesel Range (C10-C28)</i>	<i>93</i>	<i>99</i>	<i>(70-130)</i>	<i>5</i>	<i>20%</i>

***Method*** - SW-846 EPA Method 8015A mod. - Nonhalogenated Volatile Hydrocarbons by Gas Chromatography

Approved by: *[Signature]*  
Date: *8/5/96*

P.O. BOX 2606 • FARMINGTON, NM 87499

TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT

OFF: (505) 325-5667



LAB: (505) 325-1556

### AROMATIC VOLATILE ORGANICS

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

Date: *2-Aug-96*  
COC No.: *4936*  
Sample No.: *11681*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance 124*  
Project Location: *9608020930*  
Sampled by: *GC*  
Analyzed by: *DC*  
Sample Matrix: *Water*

Date: *2-Aug-96* Time: *9:30*  
Date: *2-Aug-96*

#### Laboratory Analysis

Parameter	Result	Unit of Measure	Detection Limit	Unit of Measure
<i>Benzene</i>	2214.6	ug/L	0.2	ug/L
<i>Toluene</i>	7397.7	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	297.1	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	3082.0	ug/L	0.2	ug/L
<i>o-Xylene</i>	951.8	ug/L	0.2	ug/L
	<i>TOTAL</i>	13943.1	ug/L	

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

Approved by: *JCG*  
Date: *8/2/96*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667

# ON SITE

TECHNOLOGIES, LTD.

LAB: (505) 325-1556

## QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 2-Aug-96

Internal QC No.: 0486-QC

Surrogate QC No.: 0488-QC

Reference Standard QC No.: 0417-QC

### Method Blank

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

### Calibration Check

Parameter	Unit of Measure	True Value	Analyzed Value	% Diff	Limit
Benzene	ppb	20.0	18.9	6	15%
Toluene	ppb	20.0	19.4	3	15%
Ethylbenzene	ppb	20.0	19.7	1	15%
m,p-Xylene	ppb	40.0	39.1	2	15%
o-Xylene	ppb	20.0	19.3	3	15%

### Matrix Spike

Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	108	109	(39-150)	0	20%
Toluene	115	114	(46-148)	1	20%
Ethylbenzene	115	114	(32-160)	1	20%
m,p-Xylene	112	111	(35-145)	0	20%
o-Xylene	108	109	(35-145)	1	20%

### Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)	
11681-4936	100	

S1: Fluorobenzene

8/1/96-8/6/96

Excavation Work Sheet						
Well Name	Operator	S	T	R	UI	
Florance #124	Amoco	27	29N	9W	C	
Pit Dimensions at Start		Excavation Dimensions at End				
15X15X3		28X27X15				
Excavated Cu. Yds.	Overburden Cu. Yds.			Spoil Cu. Yds.		
420	0			420		
PIT PID READINGS						
Feet	Center	N. Wall	S. Wall	E. Wall	W. Wall	Soil Type
3'	113	10.8	13.9	5	15	Sand
6'	641	24.3	12.1	8.3	12.6	Sand
9'	485	15.3	15.2	9.7	9.5	Sand
12'	685	67.3	32.2	71.2	12	Sand
15'	792	132	419	411	270	Sand
18'						
21'						
Composite Sample # 9608021000      Water Sample # 9608020930						
Location	Depth		PID Reading			
North Wall	12'		132			
South Wall	12'		419			
East Wall	12'		411			
West Wall	12'		270			
Pit Bottom	15'		88			
Land Farm Location:	On Location					
Back Fill Location:	BLM approved Wash 1.6 Miles east of location.					
Comments:	Water at 14', walls very unstable.					

Florance #124  
Sec. 27,29N, 9W, Conoco  
Amoco

Date: August 1, 1996

8-01-96: Ray Haston and contractor excavated pit. At 14' water was seeping into pit. Walls were not very stable and started collapsing. The pit was excavated to 28X27X15 ft. Pit was left open for 24 hours, before grabbing water sample.

8-02-96: Water sample grabbed #9608020930.  
Lab results high. Pit fenced in and left open for Tierra Environmental to chemical treat.

8-05-96: Tierra Environmental to treat pit. Pit was sprayed with 250 gallons of solution (Oxy). Environmental well was placed in middle of pit and 4 yards of gravel spread around base.

Spoil pile approximately 425 yards was landfarmed on location.

8-06-96: Backfilling pit with clean soil from BLM approved wash.

8-07-96 - Back filled pit

# Excavation Field Notes

RAD

Date: 3/2/99		Name: R. Dedrick				
Well Name		Operator	S	T	R	UI
Florange 124		Amoco	27	29N	9W	C
Pit Dimensions at Start		Excavation Dimensions at End				
0x0x0 Redig		38'x30'x12'				
Excavated Cu. Yds.	Composite Sample # (walls): 9903031345					
663	Composite Sample # (bottom): N/A Water					
PIT READINGS						
Feet	PID Reading	Soil Type	Location	Headspace	Depth	
5'	0.0 ppm	Sand	North Wall	1.6	9'	
10'	1855 ppm		East Wall	4.3	9'	
15'			South Wall	0.6	9'	
20'			West Wall	1.6	9'	
25'			Pit Bottom	N/A Water	12'	
30'						
Land Farm Location: On Site						
Field Notes: 3/2/99 Dug test hole to 10' on Northeast corner or South East corner of old excavation, we hit about 1' of contamination on top of the water. Sandy soil that slotted very bad. Started the excavation around MW2 20' in all directions. Dug down to 5' with the front bucket on the back hoe. Pit size 38'x38'x5'. Dug down with back hoe on the north wall to 10' hit some cont. and water. Dug down to 12' getting all cont. going North and East and West. Pit size 38'x13'x12'. Dug on East wall moving South 10'x10'x10' S/D for the night. 415 cu. yds.						
3/3/99 - S/D digging back to the west on the South end a 10' strip. Cont. still running to the South. Clearing going East & West. Move South 10' more. Cont. ends at 7'. Dug a 7' Strip East to West. Sampled and ran head space readings on all 4 walls. 1400 Hrs. S/D up back filling with stock piled clean over bendown.						



OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

Date: 12-Mar-99

<b>Client:</b>	PNM - Public Service Company of NM	<b>Client Sample Info:</b>	Florance 124
<b>Work Order:</b>	9903015	<b>Client Sample ID:</b>	9903031345; 4pt. Comp Walls
<b>Lab ID:</b>	9903015-01A	<b>Matrix:</b>	SOIL
<b>Project:</b>	Florance 124	<b>Collection Date:</b>	3/3/99 1:45:00 PM
		<b>COC Record:</b>	7477

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
<b>DIESEL RANGE ORGANICS</b>		<b>SW8015</b>				<b>Analyst: HR</b>
T/R Hydrocarbons: C10-C28	ND	25		mg/Kg	1	3/10/99

**Qualifiers:**

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

ND - Not Detected at Practical Quantitation Limit

R - RPD outside accepted recovery limits

J - Analyte detected below Practical Quantitation Limit

E - Value above quantitation range

B - Analyte detected in the associated Method Blank

Sum: - Surrogate


1 of 1

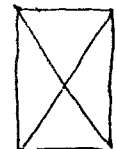
P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

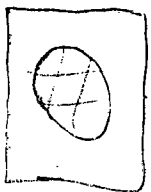
Horance 124  
Sec 27 T29N R9W White  
Amoco

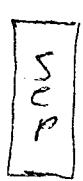

Site Map

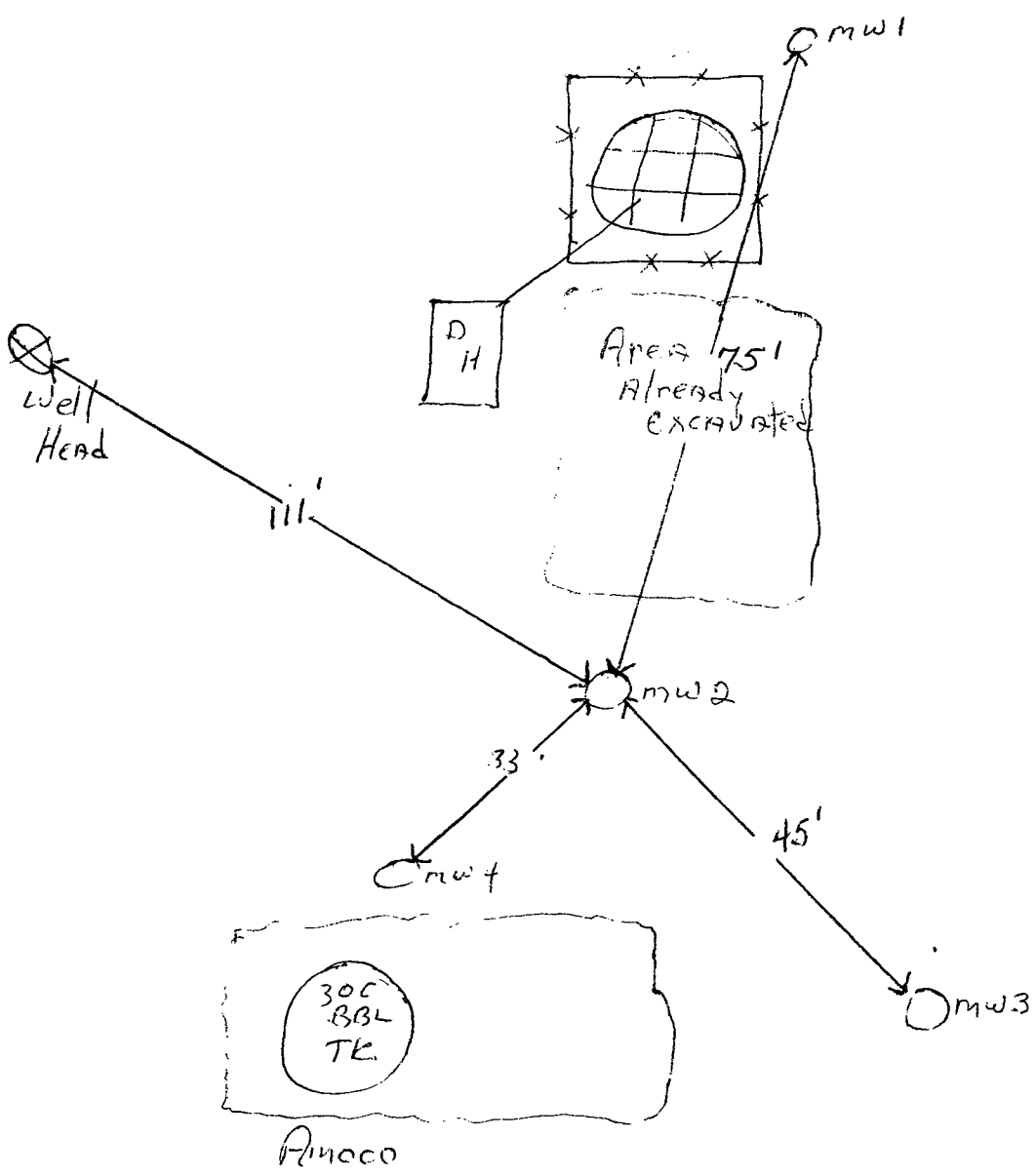
  
El Paso  
meter  
house

 Williams  
meter  
house

 45  
BBL  
TK  
Amoco

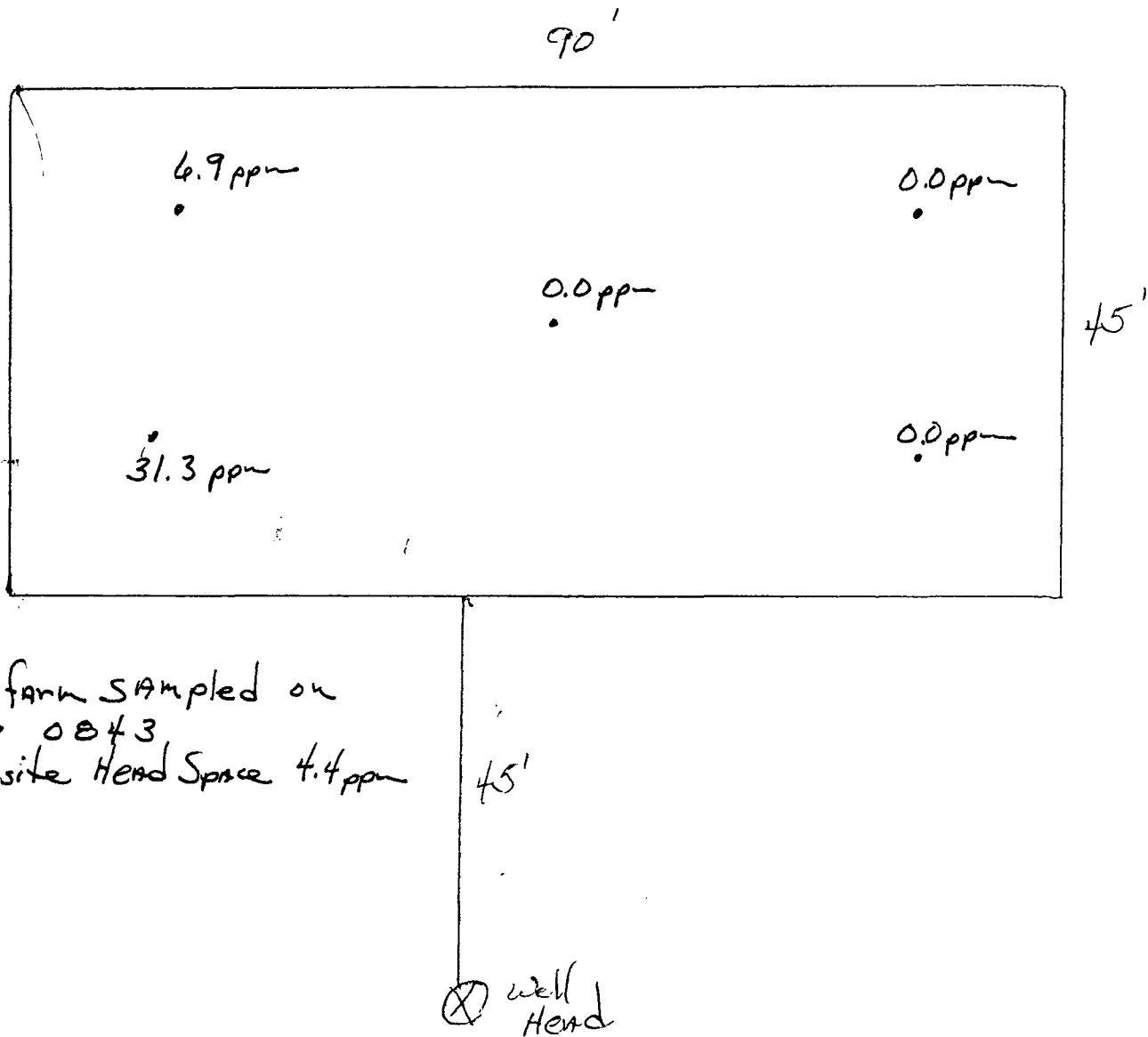
45 BBL  
TK  
Amoco 

   
Two Sep.  
Amoco



Florange 124  
Sec. 27 T29N R9W 4th  
Amoco

# Landfarm Drawing



OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

Date: 06-Apr-99

<b>Client:</b>	PNM - Public Service Company of NM	<b>Client Sample Info:</b>	Florance 124 LF
<b>Work Order:</b>	9903062	<b>Client Sample ID:</b>	9903300843; 5pt. Comp
<b>Lab ID:</b>	9903062-01A	<b>Matrix:</b>	SOIL
<b>Project:</b>	Florance 124 LF	<b>Collection Date:</b>	3/30/99 8:43:00 AM
		<b>COC Record:</b>	7374

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
<b>DIESEL RANGE ORGANICS</b>		<b>SW8015</b>				Analyst: DC
T/R Hydrocarbons: C10-C28	ND	25		mg/Kg	1	4/1/99

**Qualifiers:**

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

# Excavation Field Notes

## Jicarilla

<b>Date:</b> 1-4-00		<b>Name:</b> Roy Burnham				
<b>Well Name</b>		<b>Operator</b>	<b>S</b>	<b>T</b>	<b>R</b>	<b>UI</b>
Florance 124		Amoco	27	29N	9W	
<b>Pit Dimensions at Start</b>		<b>Excavation Dimensions at End</b>				
18' X 18' X 5'		86.5' X 82.5' X 16'				
<b>Excavated Cu. Yds.</b>		<b>Composite Sample # (walls):</b>				
Clean 4228.880		North wall - 0001041420				
Contaminated 1321.527		East wall 0001060850				
		West wall 0001060945				
		South wall 0001111022				
<b>Composite Sample # (bottom):</b>						

### PIT READINGS

Feet	Reading	Soil Type	Location	Headspace	Depth
5'	clean	sand	North Wall	Pid - 0.3 ppm	16'
10'	clean	sand	South Wall		
12'	450 to 600	Black/sand	East Wall	Pid 1.9 ppm	16'
20/16	0.3 pid		West Wall	Pid 3.9 ppm	16'
25'			Pit Bottom		
30'					

**Land Farm Location:** Florance 124

**Field Notes:** 1-4-00 Removed fence, and equipment sludgging on North wall. Found contamination at 12' 2' to 3' band, dug to within 4' of meterhouse before North wall cleaned up. Working on Northwest corner 3' Band of contamination 980 ppm on Pid Northwest corner clean. Working on East wall and moving South. Sampled North wall at 16' depth Pid 0.3 ppm. Backfilling some on North wall. Water coming in at 12' to 14' on South wall. Lots of contamination found under D.H. 2' of overburden 12' to 14' of Black Contaminated soil 1840 ppm slo for the night.

1-5-00 Digging on Southwest corner lots of contamination moved over to Southeast corner to define Contamination Dug all clay on South wall hit rock at 17' on South west wall East and west wall cleaning up slo for the night

1-6-00 Sampled EAST and west wall at 16'. worked most of the day. moved stage pile so we can dig on South wall monday slo for the weekend

1-10-00 - Working on Southwest corner and moving stage Pile.

Grey soil 1.9 ppm Black Soil 582 ppm digging toward the South North, EAST, west wall samples taken to lab TPH and BTEX →



# Excavation Field Notes

## Jicarilla

OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

Date: 24-Jan-00

<b>Client:</b>	PNM - Public Service Company of NM	<b>Client Sample Info:</b>	Florance 124
<b>Work Order:</b>	0001007	<b>Client Sample ID:</b>	0001041420; 16ft N. Wall
<b>Lab ID:</b>	0001007-01A	<b>Matrix:</b>	SOIL
<b>Project:</b>	Florance 124	<b>Collection Date:</b>	1/4/2000 2:20:00 PM
		<b>COC Record:</b>	7831

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
<b>DIESEL RANGE ORGANICS</b>		<b>SW8015B</b>				Analyst: <b>DM</b>
T/R Hydrocarbons: C10-C28	ND	25		mg/Kg	1	1/14/2000
<b>AROMATIC VOLATILES BY GC/PID</b>		<b>SW8021B</b>				Analyst: <b>DM</b>
Benzene	ND	1		µg/Kg	1	1/13/2000
Toluene	ND	2		µg/Kg	1	1/13/2000
Ethylbenzene	ND	1		µg/Kg	1	1/13/2000
m,p-Xylene	ND	2		µg/Kg	1	1/13/2000
o-Xylene	ND	1		µg/Kg	1	1/13/2000

**Qualifiers:**

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surrogate - Surrogate

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-Jan-00

<b>Client:</b>	PNM - Public Service Company of NM	<b>Client Sample Info:</b>	Florance 124
<b>Work Order:</b>	0001007	<b>Client Sample ID:</b>	0001060851; 16ft E. Wall
<b>Lab ID:</b>	0001007-02A	<b>Matrix:</b>	SOIL
<b>Project:</b>	Florance 124	<b>Collection Date:</b>	1/6/2000 8:51:00 AM
		<b>COC Record:</b>	7831

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
<b>DIESEL RANGE ORGANICS</b>		<b>SW8015B</b>				Analyst: <b>DM</b>
T/R Hydrocarbons: C10-C28	ND	25		mg/Kg	1	1/14/2000
<b>AROMATIC VOLATILES BY GC/PID</b>		<b>SW8021B</b>				Analyst: <b>DM</b>
Benzene	ND	1		µg/Kg	1	1/13/2000
Toluene	ND	2		µg/Kg	1	1/13/2000
Ethylbenzene	ND	1		µg/Kg	1	1/13/2000
m,p-Xylene	ND	2		µg/Kg	1	1/13/2000
o-Xylene	ND	1		µg/Kg	1	1/13/2000

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Surr: - Surrogate

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-Jan-00

<b>Client:</b>	PNM - Public Service Company of NM	<b>Client Sample Info:</b>	Florance 124
<b>Work Order:</b>	0001007	<b>Client Sample ID:</b>	0001060954; 16ft W. Wall
<b>Lab ID:</b>	0001007-03A	<b>Matrix:</b>	SOIL
<b>Project:</b>	Florance 124	<b>Collection Date:</b>	1/6/2000 9:54:00 AM
		<b>COC Record:</b>	7831

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
<b>DIESEL RANGE ORGANICS</b>		<b>SW8015B</b>				Analyst: DM
T/R Hydrocarbons: C10-C28	ND	25		mg/Kg	1	1/17/2000
<b>AROMATIC VOLATILES BY GC/PID</b>		<b>SW8021B</b>				Analyst: DM
Benzene	ND	1		µg/Kg	1	1/13/2000
Toluene	ND	2		µg/Kg	1	1/13/2000
Ethylbenzene	ND	1		µg/Kg	1	1/13/2000
m,p-Xylene	ND	2		µg/Kg	1	1/13/2000
o-Xylene	ND	1		µg/Kg	1	1/13/2000

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E - Value above quantitation range

Surr: - Surrogate

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-Jan-00

<b>Client:</b>	PNM - Public Service Company of NM	<b>Client Sample Info:</b>	Florance 124
<b>Work Order:</b>	0001009	<b>Client Sample ID:</b>	0001111022; S. Wall @ 16ft
<b>Lab ID:</b>	0001009-01A	<b>Matrix:</b>	SOIL
<b>Project:</b>	Florance 124	<b>Collection Date:</b>	1/11/2000 10:22:00 AM
		<b>COC Record:</b>	7830

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
<b>DIESEL RANGE ORGANICS</b>		<b>SW8015B</b>				Analyst: DM
T/R Hydrocarbons: C10-C28	ND	25		mg/Kg	1	1/17/2000
<b>AROMATIC VOLATILES BY GC/PID</b>		<b>SW8021B</b>				Analyst: DM
Benzene	ND	1		µg/Kg	1	1/13/2000
Toluene	ND	2		µg/Kg	1	1/13/2000
Ethylbenzene	ND	1		µg/Kg	1	1/13/2000
m,p-Xylene	ND	2		µg/Kg	1	1/13/2000
o-Xylene	ND	1		µg/Kg	1	1/13/2000

**Qualifiers:**

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ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

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S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

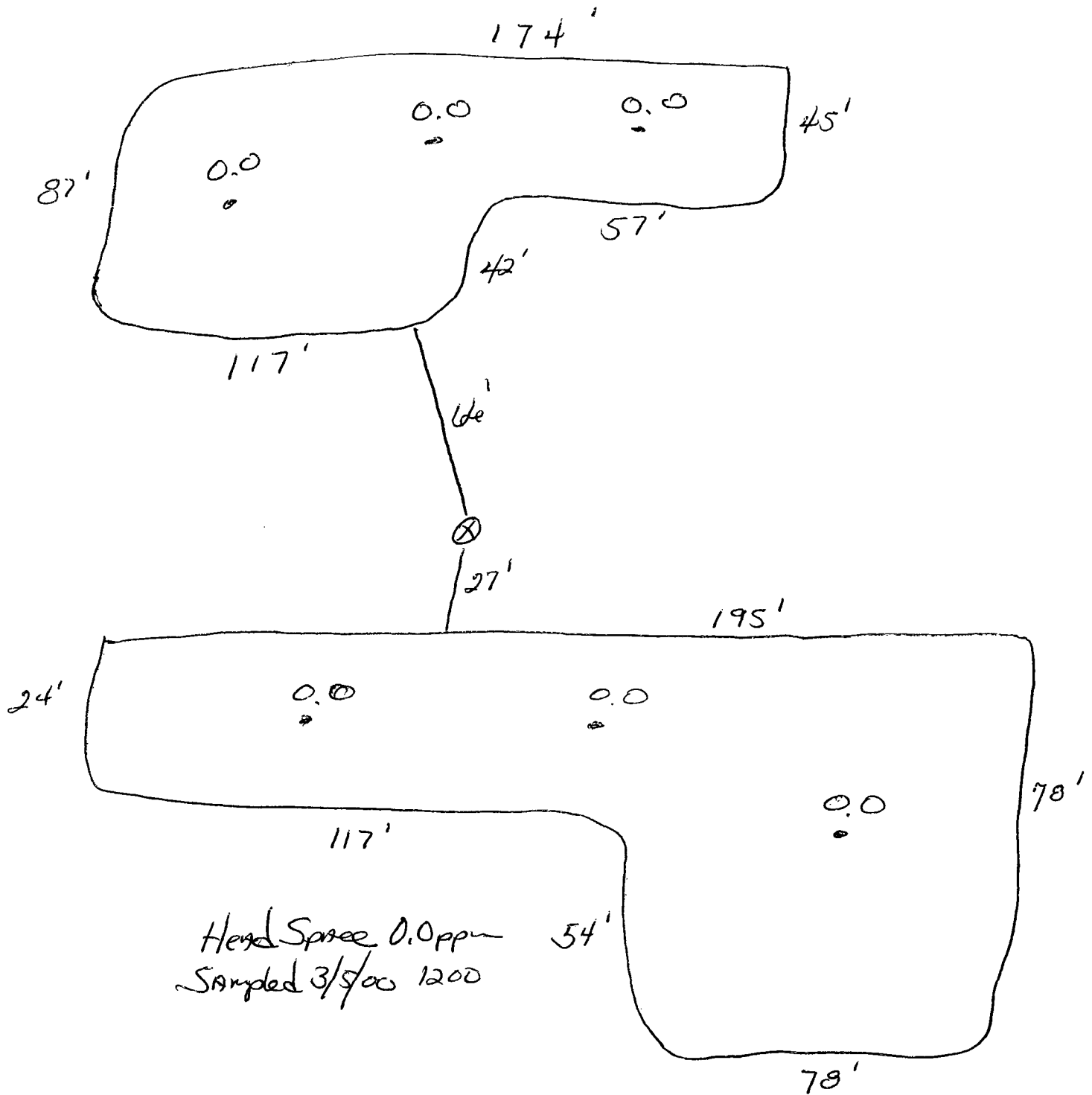
Surrogate - Surrogate

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

Florance 124  
Sec. 27 T29N R9W Unit G  
Amoco

Land farm #1



Land farm located on Florance 27 location  
Sec. 26 T29N R9W Unit L  
Amoco

N  
↑ Not to scale

OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

Date: 14-Mar-00

<b>Client:</b>	PNM - Public Service Company of NM	<b>Client Sample Info:</b>	Florance 124 LF #1
<b>Work Order:</b>	0003007	<b>Client Sample ID:</b>	0003051200; 6pt Comp
<b>Lab ID:</b>	0003007-01A	<b>Matrix:</b>	SOIL
<b>Project:</b>	Florance 124 Landfarms	<b>Collection Date:</b>	3/5/2000 12:00:00 PM
		<b>COC Record:</b>	8502

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
<b>DIESEL RANGE ORGANICS</b>		<b>SW8015B</b>				Analyst: DM
T/R Hydrocarbons: C10-C28	ND	25		mg/Kg	1	3/9/2000

**Qualifiers:**

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

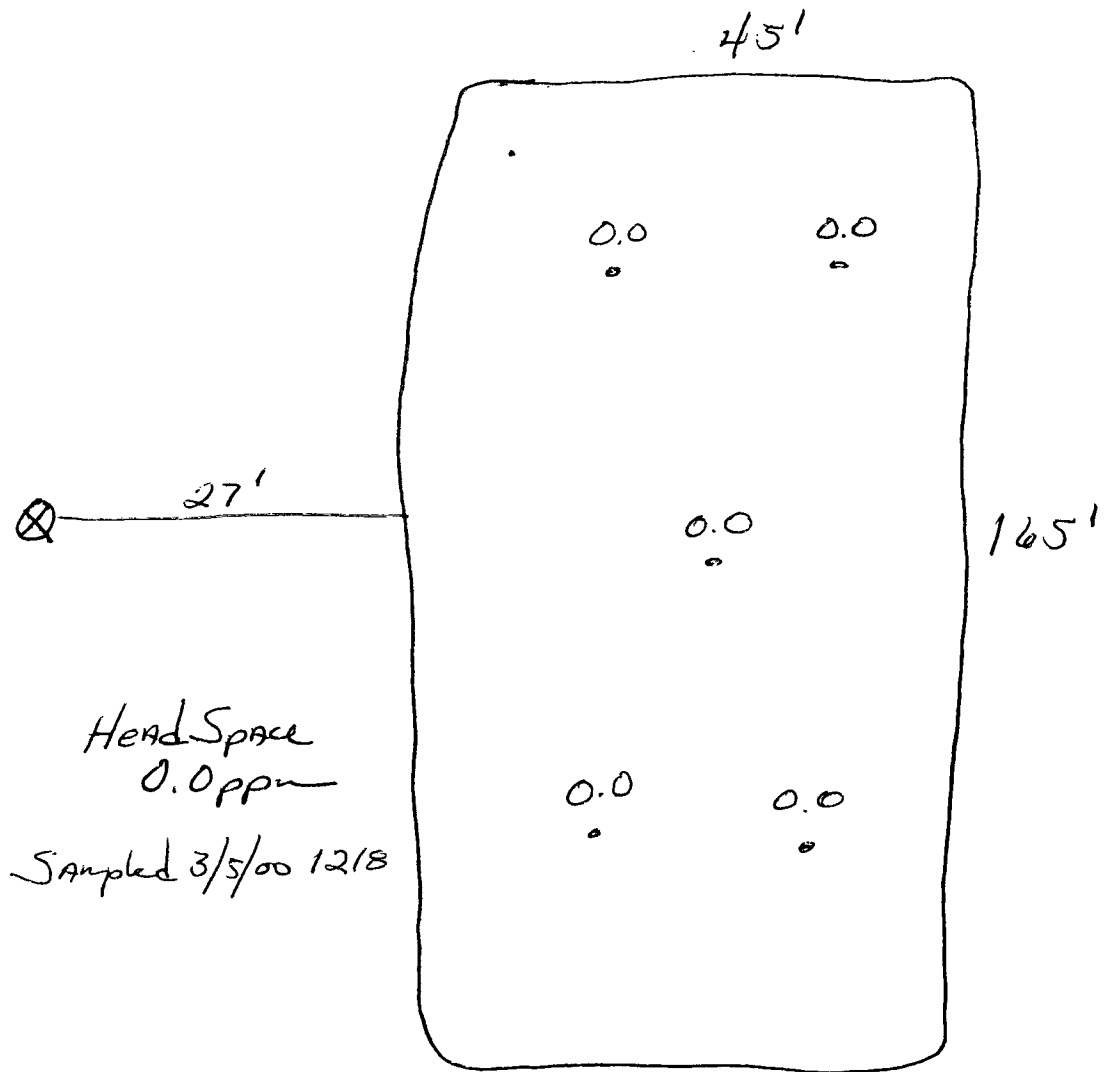
1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

nce 124  
Sec. 27 T29N R. 9W Unit C  
Amoco

Landfarm #2



Landfarm located on Florence 86 location  
Sec. 26 T29N R9W unit D  
Amoco

N



Not to scale

OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

Date: 14-Mar-00

<b>Client:</b>	PNM - Public Service Company of NM	<b>Client Sample Info:</b>	Florance 124 LF#2
<b>Work Order:</b>	0003007	<b>Client Sample ID:</b>	0003051218; 5pt Comp
<b>Lab ID:</b>	0003007-02A	<b>Matrix:</b>	SOIL
<b>Project:</b>	Florance 124 Landfarms	<b>Collection Date:</b>	3/5/2000 12:18:00 PM
		<b>COC Record:</b>	8502

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
<b>DIESEL RANGE ORGANICS</b>		<b>SW8015B</b>				Analyst: DM
T/R Hydrocarbons: C10-C28	ND	25		mg/Kg	1	3/9/2000

**Qualifiers:**

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

ND - Not Detected at Practical Quantitation Limit

R - RPD outside accepted recovery limits

J - Analyte detected below Practical Quantitation Limit

E - Value above quantitation range

B - Analyte detected in the associated Method Blank

Sur. - Surrogate

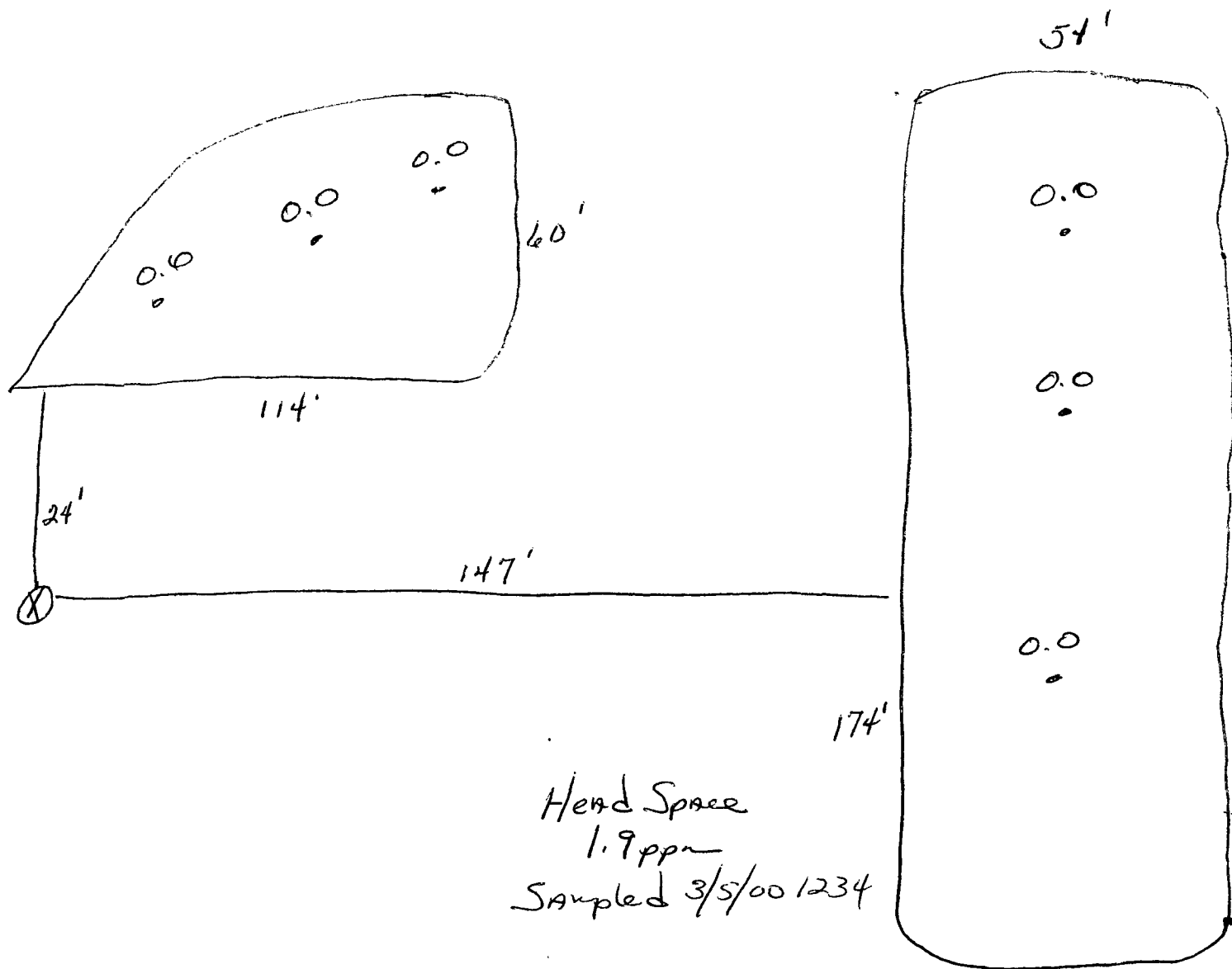
1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

Florance 124  
Sec. 27 T29N R9W Unit  
Amoco

Land farm #3



Land farm located on Florance 124 location

N  
↑

Not to scale

OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

Date: 14-Mar-00

<b>Client:</b>	PNM - Public Service Company of NM	<b>Client Sample Info:</b>	Florance 124 LF #3
<b>Work Order:</b>	0003007	<b>Client Sample ID:</b>	0003051234; 6pt Comp
<b>Lab ID:</b>	0003007-03A	<b>Matrix:</b>	SOIL
<b>Project:</b>	Florance 124 Landfarms	<b>Collection Date:</b>	3/5/2000 12:34:00 PM
		<b>COC Record:</b>	8502

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
<b>DIESEL RANGE ORGANICS</b>		<b>SW8015B</b>				Analyst: DM
T/R Hydrocarbons: C10-C28	ND	25		mg/Kg	1	3/9/2000

**Qualifiers:**

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

ND - Not Detected at Practical Quantitation Limit

R - RPD outside accepted recovery limits

J - Analyte detected below Practical Quantitation Limit

E - Value above quantitation range

B - Analyte detected in the associated Method Blank

Surr - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -



**EXHIBIT B**

**HYDROGRAPH AND POTENTIOMETRIC SURFACE MAP**

Florance #124 Hydrograph

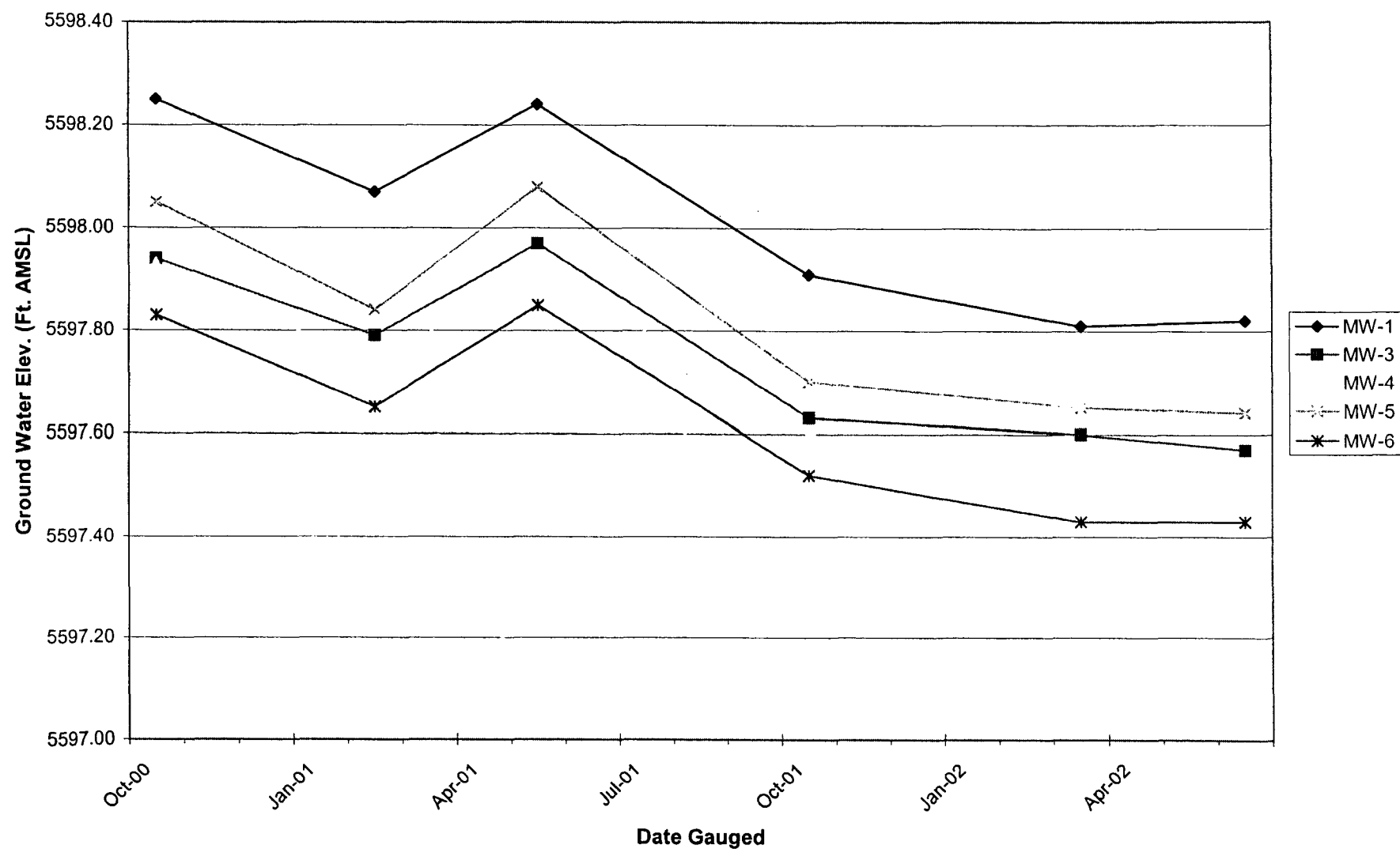
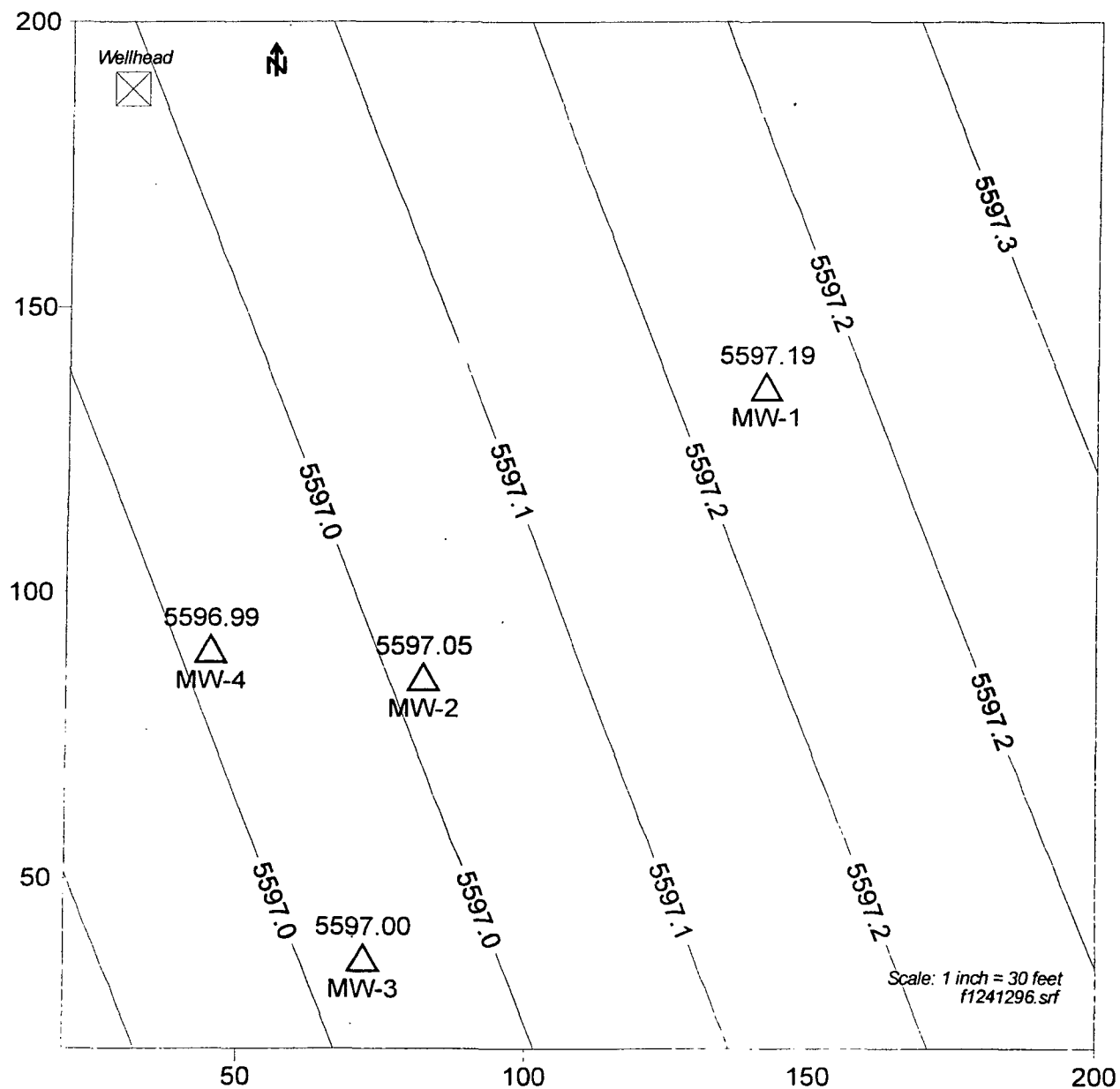


Figure 2. Florance 124 Groundwater Contour Map (December 1996)



**TABLE 1**

**SUMMARY OF LABORATORY ANALYTICAL DATA**

# Analytical Data Summary

Site Name:

Florance 124

Reporting Period:

7/1/96 To 7/1/02

Well ID	Sample Date	Sample ID	Benzene ug/l	Toluene ug/l	Ethylbenzene ug/l	Xylene (Total) ug/l
<b>MW-1</b>						
	9/5/96	9609051100	<0.2	<0.2	<0.2	<0.4
	12/6/96	9612061300	<0.2	<0.2	<0.2	<0.4
	8/20/97	9708201300	<1.0	<1.0	<1.0	<2.0
	11/6/97	9711061330	<0.2	<0.2	<0.2	<0.2
	1/19/98	9801191011	<0.2	0.3	<0.2	<0.4
	6/16/02	143316JUN02	ND	ND	ND	ND
<b>MW-2</b>						
	9/5/96	9609051130	122.4	725.0	26.9	764.8
	12/6/96	9612061330	55.1	172.7	15.7	455.5
	8/20/97	9708201330	26.9	51.8	17.0	142.8
	11/6/97	9711061400	15.5	32.1	8.8	90.5
	1/19/98	9801191031	32.9	45.2	18.1	155.5
	4/28/98	9804281200	20	17	9.6	88
	7/31/98	9807311200	25	14	12	100
	11/4/98	9811041400	<1.0	<1.0	<1.0	<3.0
	1/21/99	9901211530	37	13	14	130
	4/7/99	9904071220	12	39	2.4	44
	7/28/99	9907281253	35	<0.5	3.7	14.8
	10/14/99	9910141025	53	<0.5	3.9	11
<b>MW-3</b>						
	9/5/96	9609051200	<0.2	<0.2	<0.2	<0.4
	12/6/96	9612061400	<0.2	<0.2	<0.2	<0.4
	8/20/97	9708201400	<1.0	<1.0	<1.0	<2.0
	11/6/97	9711061430	<0.2	<0.2	<0.2	<0.4
	1/19/98	9801191046	<0.2	0.2	<0.2	<0.4
	6/16/02	144016JUN02	ND	ND	ND	ND
<b>MW-4</b>						
	9/5/96	9609051230	<0.2	<0.2	<0.2	<0.4
	12/6/96	9612061430	<0.2	<0.2	<0.2	<0.4
	8/20/97	9708201430	<1.0	<1.0	<1.0	<2.0
	11/6/97	9711061500	<0.2	<0.2	<0.2	<0.4
	1/19/98	9801191103	<0.2	0.2	<0.2	<0.4
	6/16/02	144716JUN02	ND	ND	ND	ND

Site Name:

Florance 124

Reporting Period:

7/1/96 To 7/1/02

Well ID	Sample Date	Sample ID	Benzene ug/l	Toluene ug/l	Ethylbenzene ug/l	Xylene (Total) ug/l
MW-5						
	2/1/00	0002011115	<0.5	<0.5	<0.5	<1.5
	4/26/00	0004261125	<0.5	<0.5	<0.5	<1.5
	10/30/00	152830OCT00	<1	<1	<1	<1
	2/1/01	121401FEB01	<1	<1	<1	<1
	5/1/01	120601MAY01	<1	<1	<1	<1
	10/26/01	130226OCT01	<1.0	<2.0	<2.0	<2.0
	3/22/02	124222MAR02	ND	ND	ND	ND
	6/16/02	150316JUN02	ND	ND	ND	ND
MW-6						
	2/1/00	0002011130	25	<0.5	53	936
	4/26/00	0004261110	12	2.9	25	214
	10/30/00	151030OCT00	1.51	<1	<1	<1
	10/30/00	142230OCT00	<1	<1	<1	<1
	2/1/01	122501FEB01	<1	1.51	<1	2.302
	5/1/01	123201MAY01	<1	<1	<1	1.73
	10/26/01	131026OCT01	<1.0	<2.0	<2.0	<2.0
	3/22/02	125122MAR02	ND	ND	ND	ND
	6/16/02	145416JUN02	ND	ND	ND	ND



**Pace Analytical Services, Inc.**  
9608 Loiret Blvd.  
Lenexa, KS 66219  
Phone: 913.599.5665  
Fax: 913.599.1759

April 09, 2002

Mr. Jim Struhs  
MILE HIGH ENVIRONMENTAL  
187 C.R. 4980  
Bloomfield, NM 87413

RE: Lab Project Number: 6057814  
Client Project ID: SJB-GW FLR124

Dear Mr. Struhs:

Enclosed are the analytical results for sample(s) received by the laboratory on March 27, 2002. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report please feel free to contact me.

Sincerely,

Mary Jane Walls  
mjwalls@pacelabs.com  
Project Manager

Kansas/NELAP Certification Number E-10116

Enclosures

## REPORT OF LABORATORY ANALYSIS

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**Pace Analytical Services, Inc.**  
9608 Loiret Blvd.  
Lenexa, KS 66219  
Phone: 913.599.5665  
Fax: 913.599.1759

## SAMPLE SUMMARY

Lab Project Number: 6057814  
Client Project ID: SJB-GW FLR124

Project	Sample				
<u>Sample Number</u>	<u>Number</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>
6057814-001	605034693	124222MAR02	Water	03/22/02 12:42	03/27/02 09:40
6057814-002	605034727	125122MAR02	Water	03/22/02 12:51	03/27/02 09:40

## REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219  
Phone: 913.599.5665  
Fax: 913.599.1759

## SAMPLE ANALYTE COUNT

Lab Project Number: 6057814

Client Project ID: SJB-GW FLR124

Project			Analysis		Analytes
<u>Sample Number</u>	<u>Sample No</u>	<u>Client Sample ID</u>	<u>Code</u>	<u>Analysis Description</u>	<u>Reported</u>
6057814-001	605034693	124222MAR02	8020 WPAC	Aromatic Volatile Organics	5
6057814-002	605034727	125122MAR02	8020 WPAC	Aromatic Volatile Organics	5

## REPORT OF LABORATORY ANALYSIS

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Phone: 913.599.5665  
Fax: 913.599.1759

MILE HIGH ENVIRONMENTAL  
187 C.R. 4980  
Bloomfield, NM 87413

Lab Project Number: 6057814  
Client Project ID: SJB-GW FLR124

Attn: Mr. Jim Struhs  
Phone: (505)632-4457

Lab Sample No: 605034693      Project Sample Number: 6057814-001      Date Collected: 03/22/02 12:42  
Client Sample ID: 124222MAR02      Matrix: Water      Date Received: 03/27/02 09:40

Parameters	Results	Units	Report Limit	Analyzed	by	CAS No.	Ftnote	Reg Limit
<b>GC Volatiles</b>								
Aromatic Volatile Organics	Prep/Method: EPA 8021 / EPA 8021							
Benzene	ND	ug/l	2.0	03/29/02 23:23	SHF	71-43-2		
Ethylbenzene	ND	ug/l	2.0	03/29/02 23:23	SHF	100-41-4		
Toluene	ND	ug/l	2.0	03/29/02 23:23	SHF	108-88-3		
Xylene (Total)	ND	ug/l	5.0	03/29/02 23:23	SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	103	%		03/29/02 23:23	SHF	2164-17-2		

Date: 04/09/02

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Lab Project Number: 6057814

Client Project ID: SJB-GW FLR124

Lab Sample No: 605034727  
Client Sample ID: 125122MAR02

Project Sample Number: 6057814-002  
Matrix: Water

Date Collected: 03/22/02 12:51  
Date Received: 03/27/02 09:40

Parameters	Results	Units	Report Limit	Analyzed	by	CAS No.	Ftnote	Req	Limit
<b>GC Volatiles</b>									
Aromatic Volatile Organics	Prep/Method: EPA 8021 / EPA 8021								
Benzene	ND	ug/l	2.0	03/29/02 23:52	SHF	71-43-2			
Ethylbenzene	ND	ug/l	2.0	03/29/02 23:52	SHF	100-41-4			
Toluene	ND	ug/l	2.0	03/29/02 23:52	SHF	108-88-3			
Xylene (Total)	ND	ug/l	5.0	03/29/02 23:52	SHF	1330-20-7			
a,a,a-Trifluorotoluene (S)	105	%		03/29/02 23:52	SHF	2164-17-2			

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Fax: 913.599.1759

Lab Project Number: 6057814  
Client Project ID: SJB-GW FLR124

---

#### PARAMETER FOOTNOTES

ND Not detected at or above adjusted reporting limit  
NC Not Calculable  
J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit  
(S) Surrogate

Date: 04/09/02

Page: 3

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Lab Project Number: 6057814  
Client Project ID: SJB-GW FLR124

QC Batch: 119997      Analysis Method: EPA 8021  
QC Batch Method: EPA 8021      Analysis Description: Aromatic Volatile Organics  
Associated Lab Samples:      605034693      605034727

METHOD BLANK: 605008549  
Associated Lab Samples:      605034693      605034727

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Benzene	ug/l	ND	2.0	
Ethylbenzene	ug/l	ND	2.0	
Toluene	ug/l	ND	2.0	
Xylene (Total)	ug/l	ND	5.0	
a,a,a-Trifluorotoluene (S)	%	106		

LABORATORY CONTROL SAMPLE: 605008556

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Footnotes
Benzene	ug/l	20	21.45	107	84-122	
Ethylbenzene	ug/l	20	21.21	106	85-117	
Toluene	ug/l	20	21.14	106	87-117	
Xylene (Total)	ug/l	60	66.30	111	85-119	
a,a,a-Trifluorotoluene (S)				104	83-115	1

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Lab Project Number: 6057814  
Client Project ID: SJB-GW FLR124

---

## QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

LCS(D) Laboratory Control Sample (Duplicate)

MS(D) Matrix Spike (Duplicate)

DUP Sample Duplicate

ND Not detected at or above adjusted reporting limit

NC Not Calculable

J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

RPD Relative Percent Difference

(S) Surrogate

[1] Insufficient sample volume received for the MS/MSD. Acceptable recovery of the LCS indicates the analytical system is in control.

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June 26, 2002

Mr. Jim Struhs  
MILE HIGH ENVIRONMENTAL  
187 C.R. 4980  
Bloomfield, NM 87413

RE: Lab Project Number: 6059948  
Client Project ID: FLR124

Dear Mr. Struhs:

Enclosed are the analytical results for sample(s) received by the laboratory on June 20, 2002. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report please feel free to contact me.

Sincerely,

Mary Jane Walls  
mjwalls@pacelabs.com  
Project Manager

Kansas/NELAP Certification Number E-10116

Enclosures

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## SAMPLE SUMMARY

Lab Project Number: 6059948

Client Project ID: FLR124

Project Sample Number	Sample Number	Client Sample ID	Matrix	Date Collected	Date Received
6059948-001	605212588	143316JUN02	Water	06/16/02 14:33	06/20/02 09:00
6059948-002	605212596	144016JUN02	Water	06/16/02 14:40	06/20/02 09:00
6059948-003	605212604	144716JUN02	Water	06/16/02 14:47	06/20/02 09:00
6059948-004	605212612	150316JUN02	Water	06/16/02 15:03	06/20/02 09:00
6059948-005	605212620	145416JUN02	Water	06/16/02 14:54	06/20/02 09:00

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## SAMPLE ANALYTE COUNT

**Pace Analytical Services, Inc.**  
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Phone: 913.599.5665  
Fax: 913.599.1759

Lab Project Number: 6059948  
Client Project ID: FLR124

Project			Analysis		Analytes
<u>Sample Number</u>	<u>Sample No</u>	<u>Client Sample ID</u>	<u>Code</u>	<u>Analysis Description</u>	<u>Reported</u>
6059948-001	605212588	143316JUN02	8020 WPAC	Aromatic Volatile Organics	5
6059948-002	605212596	144016JUN02	8020 WPAC	Aromatic Volatile Organics	5
6059948-003	605212604	144716JUN02	8020 WPAC	Aromatic Volatile Organics	5
6059948-004	605212612	150316JUN02	8020 WPAC	Aromatic Volatile Organics	5
6059948-005	605212620	145416JUN02	8020 WPAC	Aromatic Volatile Organics	5

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Lab Project Number: 6059948  
Client Project ID: FLR124

Lab Sample No: 605212588 Project Sample Number: 6059948-001 Date Collected: 06/16/02 14:33  
Client Sample ID: 143316JUN02 Matrix: Water Date Received: 06/20/02 09:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
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#### GC Volatiles

Aromatic Volatile Organics

Method: EPA 8021

Benzene	ND	ug/l	2.0	06/21/02 19:37 JPR	71-43-2
Ethylbenzene	ND	ug/l	2.0	06/21/02 19:37 JPR	100-41-4
Toluene	ND	ug/l	2.0	06/21/02 19:37 JPR	108-88-3
Xylene (Total)	ND	ug/l	5.0	06/21/02 19:37 JPR	1330-20-7
a,a,a-Trifluorotoluene (S)	101	%		06/21/02 19:37 JPR	98-08-8

Date: 06/26/02

Page: 1

## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 6059948  
Client Project ID: FLR124

Lab Sample No: 605212596      Project Sample Number: 6059948-002      Date Collected: 06/16/02 14:40  
Client Sample ID: 144016JUN02      Matrix: Water      Date Received: 06/20/02 09:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC Volatiles</b>								
Aromatic Volatile Organics	Method: EPA 8021							
Benzene	ND	ug/l	2.0	06/21/02 20:39 JPR		71-43-2		
Ethylbenzene	ND	ug/l	2.0	06/21/02 20:39 JPR		100-41-4		
Toluene	ND	ug/l	2.0	06/21/02 20:39 JPR		108-88-3		
Xylene (Total)	ND	ug/l	5.0	06/21/02 20:39 JPR		1330-20-7		
a,a,a-Trifluorotoluene (S)	100	%		06/21/02 20:39 JPR		98-08-8		

## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 6059948  
Client Project ID: FLR124

Lab Sample No: 605212604  
Client Sample ID: 144716JUN02

Project Sample Number: 6059948-003  
Matrix: Water

Date Collected: 06/16/02 14:47  
Date Received: 06/20/02 09:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC Volatiles</b>								
Aromatic Volatile Organics	Method: EPA 8021							
Benzene	ND	ug/l	2.0	06/21/02 21:11 JPR		71-43-2		
Ethylbenzene	ND	ug/l	2.0	06/21/02 21:11 JPR		100-41-4		
Toluene	ND	ug/l	2.0	06/21/02 21:11 JPR		108-88-3		
Xylene (Total)	ND	ug/l	5.0	06/21/02 21:11 JPR		1330-20-7		
a,a,a-Trifluorotoluene (S)	102	%		06/21/02 21:11 JPR		98-08-8		

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Lab Project Number: 6059948  
Client Project ID: FLR124

Lab Sample No: 605212612  
Client Sample ID: 150316JUN02

Project Sample Number: 6059948-004  
Matrix: Water

Date Collected: 06/16/02 15:03  
Date Received: 06/20/02 09:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
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### GC Volatiles

Aromatic Volatile Organics

Method: EPA 8021

Benzene	ND	ug/l	2.0	06/21/02 21:42	JPR	71-43-2		
Ethylbenzene	ND	ug/l	2.0	06/21/02 21:42	JPR	100-41-4		
Toluene	ND	ug/l	2.0	06/21/02 21:42	JPR	108-88-3		
Xylene (Total)	ND	ug/l	5.0	06/21/02 21:42	JPR	1330-20-7		
a,a,a-Trifluorotoluene (S)	102	%		06/21/02 21:42	JPR	98-08-8		

Date: 06/26/02

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Lab Project Number: 6059948  
Client Project ID: FLR124

Lab Sample No: 605212620      Project Sample Number: 6059948-005      Date Collected: 06/16/02 14:54  
Client Sample ID: 145416JUN02      Matrix: Water      Date Received: 06/20/02 09:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
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**GC Volatiles**

Aromatic Volatile Organics	Method: EPA 8021							
Benzene	ND	ug/l	2.0	06/24/02 13:33	JPR	71-43-2		
Ethylbenzene	ND	ug/l	2.0	06/24/02 13:33	JPR	100-41-4		
Toluene	ND	ug/l	2.0	06/24/02 13:33	JPR	108-88-3		
Xylene (Total)	ND	ug/l	5.0	06/24/02 13:33	JPR	1330-20-7		
a,a,a-Trifluorotoluene (S)	103	%		06/24/02 13:33	JPR	98-08-8		

Date: 06/26/02

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**PARAMETER FOOTNOTES**

ND	Not detected at or above adjusted reporting limit
NC	Not Calculable
J	Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
MDL	Adjusted Method Detection Limit
(S)	Surrogate

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## QUALITY CONTROL DATA

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Phone: 913.599.5665  
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Lab Project Number: 6059948  
Client Project ID: FLR124

QC Batch: 124770      Analysis Method: EPA 8021  
QC Batch Method: EPA 8021      Analysis Description: Aromatic Volatile Organics  
Associated Lab Samples:      605212588      605212596      605212604      605212612      605212620

METHOD BLANK: 605214832  
Associated Lab Samples:      605212588      605212596      605212604      605212612      605212620

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Benzene	ug/l	ND	2.0	
Ethylbenzene	ug/l	ND	2.0	
Toluene	ug/l	ND	2.0	
Xylene (Total)	ug/l	ND	5.0	
a,a,a-Trifluorotoluene (S)	%	101		

LABORATORY CONTROL SAMPLE: 605214840

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Footnotes
Benzene	ug/l	20.00	20.49	102	84-122	
Ethylbenzene	ug/l	20.00	20.37	102	85-117	
Toluene	ug/l	20.00	19.96	100	87-117	
Xylene (Total)	ug/l	60.00	61.70	103	85-119	
a,a,a-Trifluorotoluene (S)				99	83-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 605217454      605217462

Parameter	Units	605212554 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Footnotes
Benzene	ug/l	0.5846	20.00	21.03	20.26	102	98	82-123	4	10	
Ethylbenzene	ug/l	0	20.00	20.48	19.62	102	98	84-118	4	10	
Toluene	ug/l	0.6244	20.00	20.22	19.35	98	94	82-117	4	10	
Xylene (Total)	ug/l	1.350	60.00	61.60	58.65	100	96	84-121	5	13	
a,a,a-Trifluorotoluene (S)						101	101	83-115			

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Lab Project Number: 6059948  
Client Project ID: FLR124

## QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

LCS(D) Laboratory Control Sample (Duplicate)  
MS(D) Matrix Spike (Duplicate)  
DUP Sample Duplicate  
ND Not detected at or above adjusted reporting limit  
NC Not Calculable  
J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit  
MDL Adjusted Method Detection Limit  
RPD Relative Percent Difference  
(S) Surrogate

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