

Dist. III
P.O. Box 1980, Hobbs, NM
DEPUTY OIL & GAS INSPECTOR
District III
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

2040 South Pacheco Street
Santa Fe, New Mexico 87505

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

RECEIVED
APR 29 1999

PIT REMEDIATION AND CLOSURE REPORT OIL CON. DIV.
DIST. 3

Operator: PNM Gas Services (Burlington) **Telephone:** 324-3764
Address: 603 W. Elm Street Farmington, NM 87401
Facility or Well Name: McClanahan A #2E
Location: Unit O Sec 23 T 28 N R 10 W County San Juan
Pit Type: Separator ☒ Dehydrator ☐ Other _____
Land Type: BLM ☒ State ☐ Fee ☐ Other _____

Pit Location: Pit dimensions: length 15 width 15 depth 3
(Attach diagram) **Reference:** wellhead ☒ other _____
Footage from reference: 60'
Direction from reference: 10 Degrees ☒ East North ☐
of ☐ West South ☒

Depth to Ground Water:
(Vertical distance from contaminants to seasonal high water elevation of ground water)
Less than 50 feet (20 points)
50 feet to 99 feet (10 points)
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)
Yes (20 points)
No (0 points) 0

Distance to Surface Water:
(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) 10

RANKING SCORE (TOTAL POINTS): 30

Groundwater Site Summary Report

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

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

Operator: Burlington Resources
Sec: 23 Twn: 28 Rng: 10 Unit: 0
Canyon: Armenta

Vulnerable Class: Original
OCD Ranking: 30
Lead Agency: NMOCD

Topo Map: Figure 1

Well Completion Diagram: previously submitted

Site Map with Analytical Results: Figure 2

Groundwater Contour Map: Figure 3a (June 1998), Figure 3b (August 1998), Figure 3c (December 1998) & Figure 3d (February 1999)

Hydrograph: Figure 4

Analytical Results: See 1999 Annual Groundwater Report

Site Hydrology:

The McClanahan A2E site lies within Armenta Canyon, a north-draining tributary to the San Juan River located about 8 miles southeast of Bloomfield, New Mexico. The canyon's confluence with the San Juan River lies about 3-½ miles north of the site. The site lies at an elevation of about 5745 feet amsl, which is about ten feet higher than the streambed in the broad canyon floor. The canyon floor spans about 2000 feet and the site is located on the west-central flank of the alluvium-filled valley.

Subsurface materials beneath the site are composed of silty sands, as determined from the four monitoring wells installed (see Figure 1). The thickness of alluvium is typically less than 50 feet in many of the area drainages (Stone et al., 1983). Total depths of the wells were 30 feet or less, and no apparent bedrock units were encountered in the monitor well borings. Materials encountered in the well borings were silty and clayey sands.

Depth to water has ranged from 14 to 20 feet beneath the site. No appreciable seasonal changes in flow direction are apparent, as evidenced by the groundwater flow maps spanning the year in Figures 3a through 3d. Well MW-2 was reinstalled in June, 1998, and subsequently the water levels in well MW-2 are slightly higher than in well MW-1, imparting an apparent slight southward gradient. However, groundwater flow direction is ~~predominantly towards the northeast, which follows the surface topography and the direction of streamflow in~~ Armenta Canyon.

The site hydrograph (Figure 4) shows that in general water levels are higher in winter and spring, and lower in summertime. About one foot or more of water level fluctuations are observed seasonally. The apparent rise in water levels in well MW-2 is more likely due to its reinstallation and resurveying, and probably represents an upward shift of about one foot.

Activities for Previous Year:

PNM performed groundwater monitoring at the site on June 25, August 26 and December 2, 1998 and again on February 12, 1999. Water level measurements were taken in each of the four monitoring wells. PNM conducted the quarterly groundwater sampling in wells MW-2 and MW-4 for chemical analyses of benzene, toluene, ethylbenzene, and xylenes (BTEX); wells MW-1 and MW-3 were excluded because they have never detected appreciable concentrations of BTEX compounds. All wells were sampled for BTEX in February, 1999. Sampling was conducted in strict compliance with EPA protocol. PNM delivered the samples to OnSite Technologies, Farmington, New Mexico. The samples were analyzed for BTEX using EPA Method 8020.

Public Service Company of New Mexico - Gas Services

Environmental Services Division - Alvarado Square, MS-0408
Albuquerque, NM 87158

Contact: Maureen Gannon

Telephone: 505-241-2974

PNMGS Well Site: McClanahan A2E (continued)

Results:

Figure 2 presents the site map with analytical results to date. MW-1 and MW-3 have shown BTEX concentrations to be non-detectable or below WQCC standards since monitoring began. MW-2 and MW-4 (the source and downgradient wells, respectively) have shown consistent attenuation of all BTEX constituents over time, which was dramatically accelerated after the secondary source material excavation was performed in April, 1998. MW-2, the source well, has now remained below standards for four consecutive quarters, indicating that no appreciable amount of hydrocarbon-contaminated soil remains in place.

Future Actions:

Consistent with PNM's San Juan Basin Groundwater Management Plan, PNM requests closure of the McClanahan A2E with the submittal of the 1st Quarter 1999 Pit Closures Report. This request is based upon the analytical data collected over the last two years at the site. The primary and secondary excavations of source materials appear to have been successful in achieving clean-up at the site over the two-year monitoring period, since the BTEX concentrations in downgradient well, MW-4, and source well, MW-2, have been below standards for four consecutive quarters. The consistently downward concentration trends were greatly enhanced by the secondary source excavation in April, 1998. Resampling of all monitor wells also shows that BTEX compounds are below standards in the other wells.

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

Public Service Company of New Mexico - Gas Services

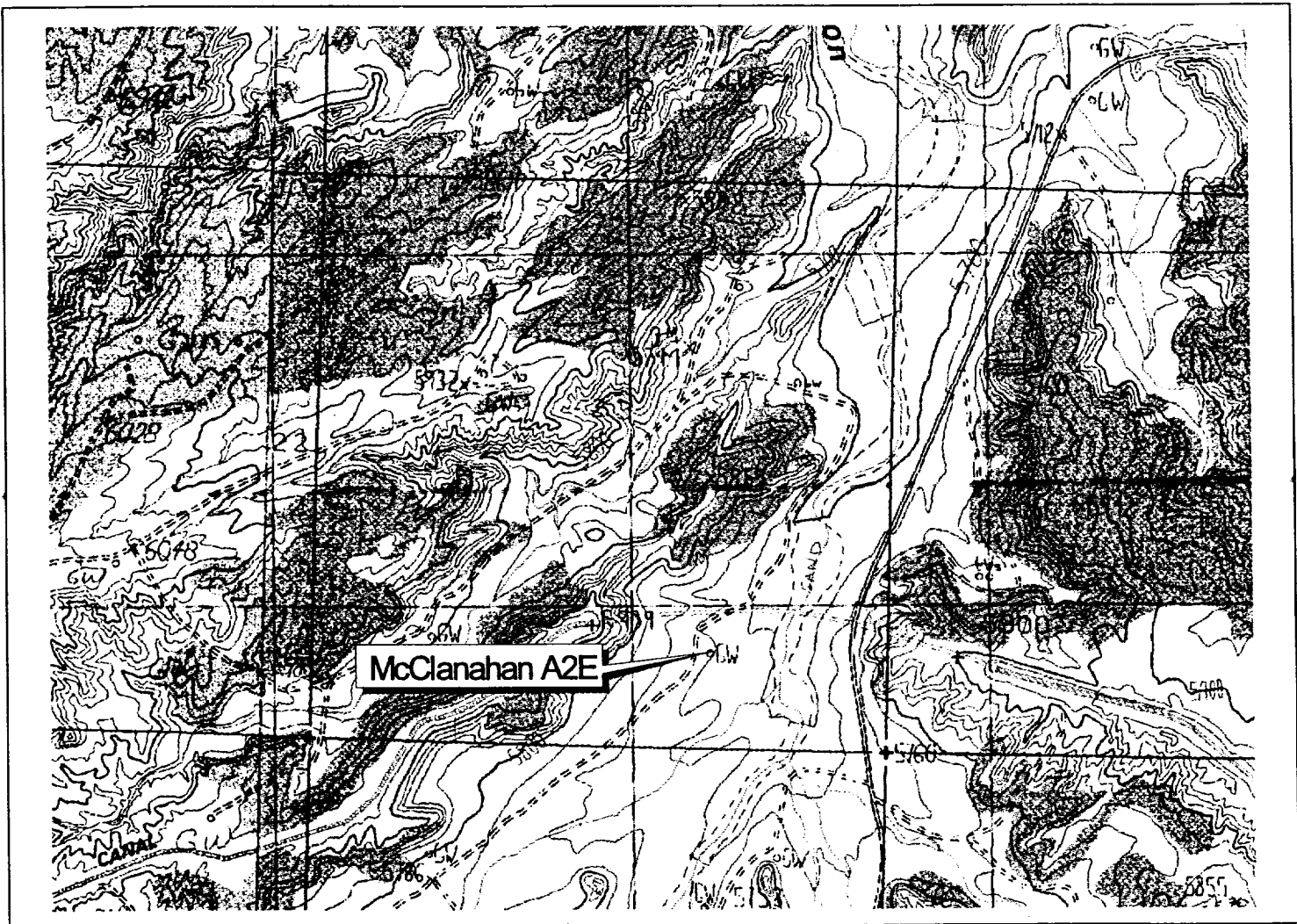
Environmental Services Division - Alvarado Square, MS-0408
Albuquerque, NM 87158

Contact: Maureen Gannon

Telephone: 505-241-2974



Figure 1.
McClanahan A2E Groundwater Site
Twn. 28N Rng. 10W Sec. 23 Unit O



Blanco, NM Quadrangle

0 1000 2000 3000 4000 5000 Feet

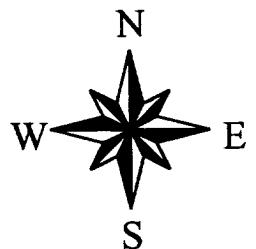


Figure 2. McClanahan A2E Site Map with Analytical Results
(Concentrations in ppb)

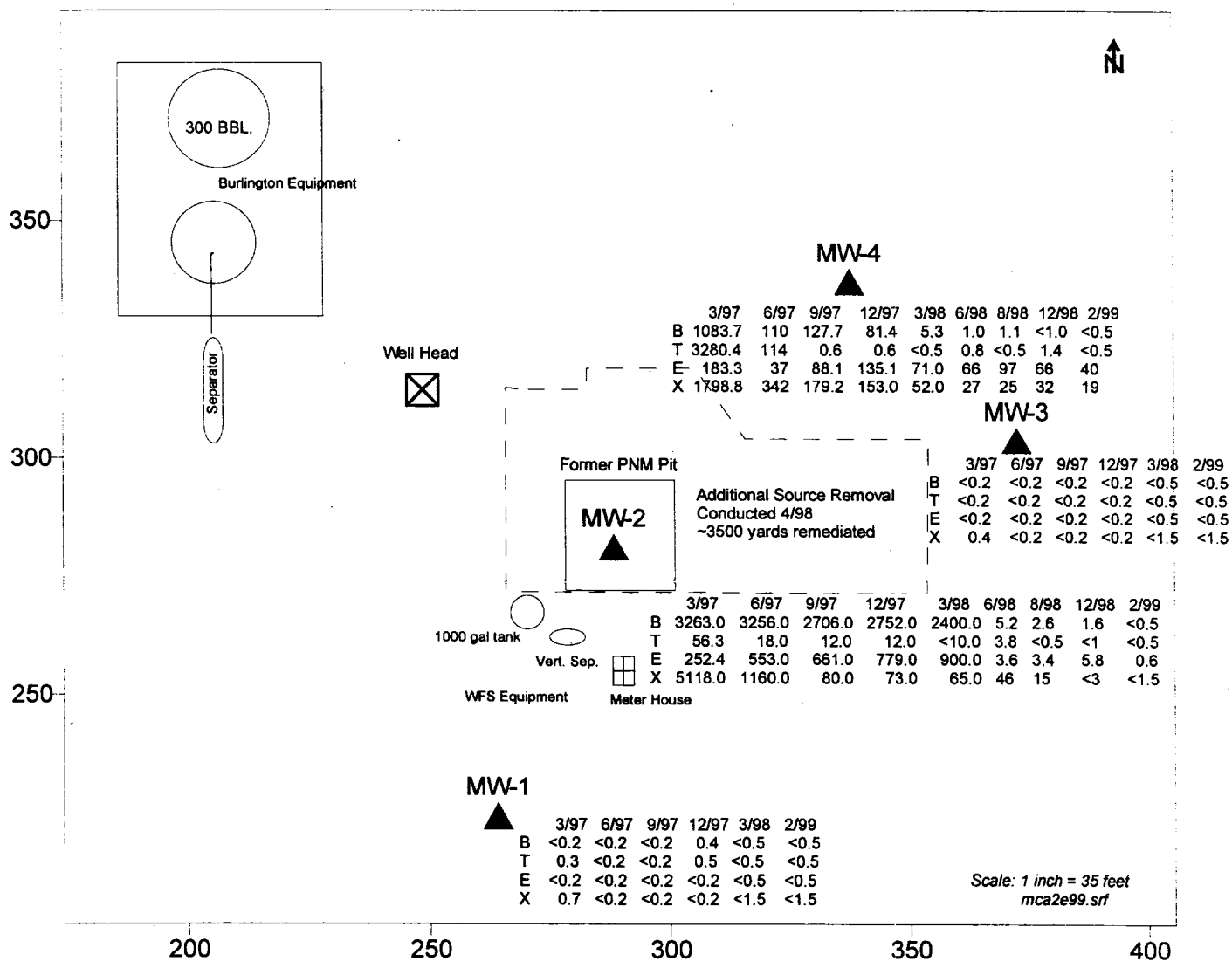
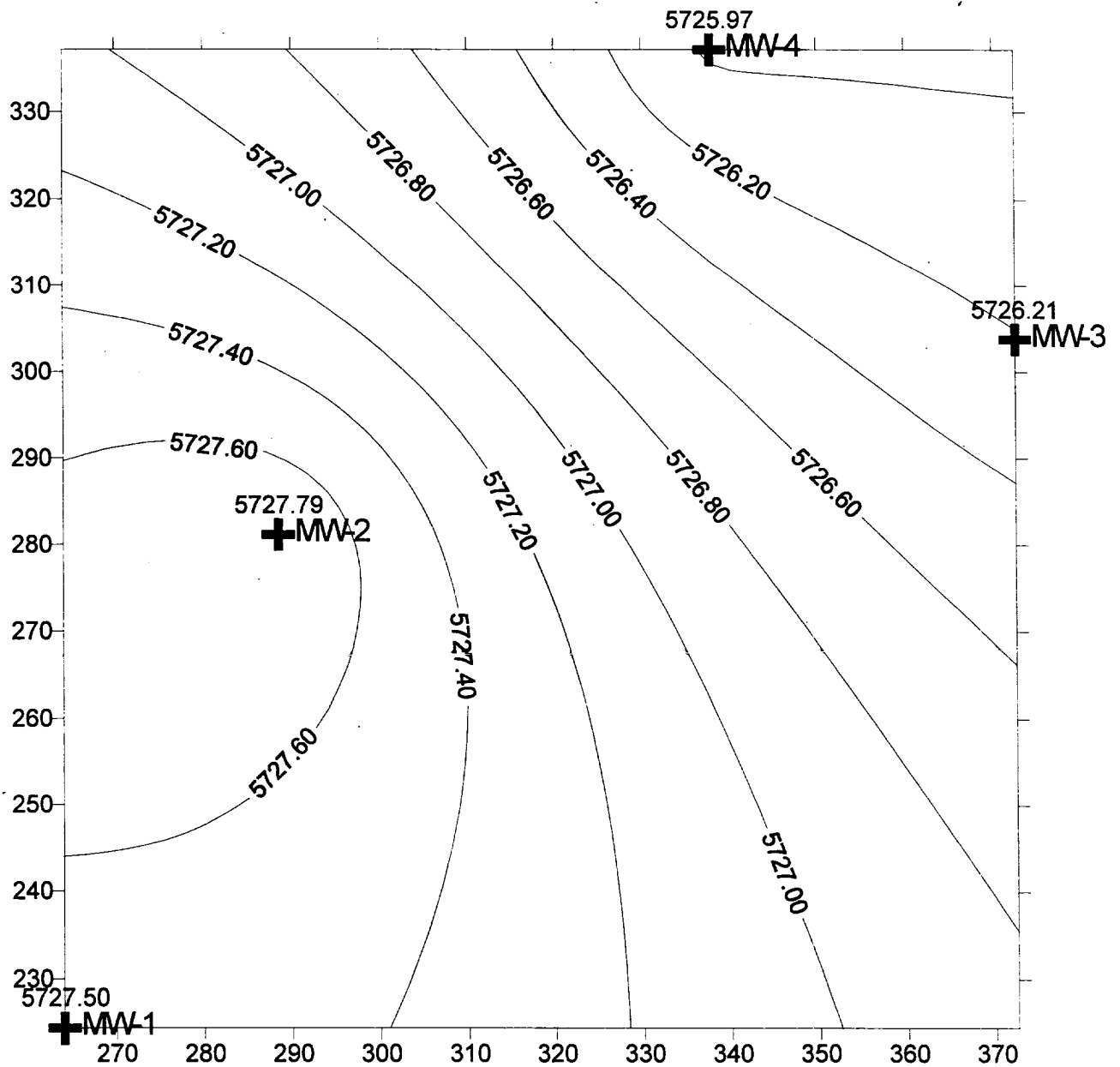
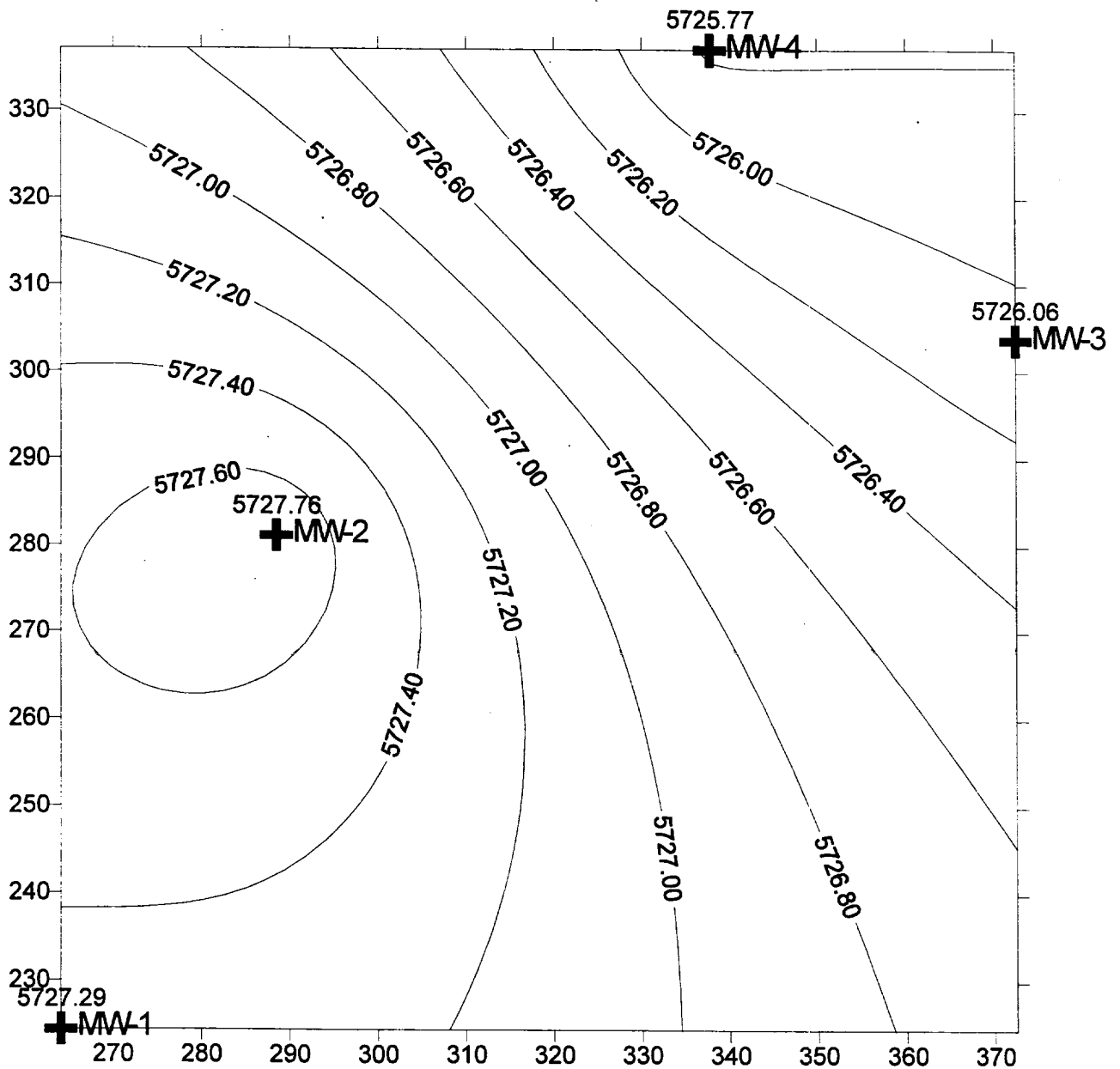


Figure 3a. McClanahan A2E Groundwater Contour Map
(June 25, 1998)



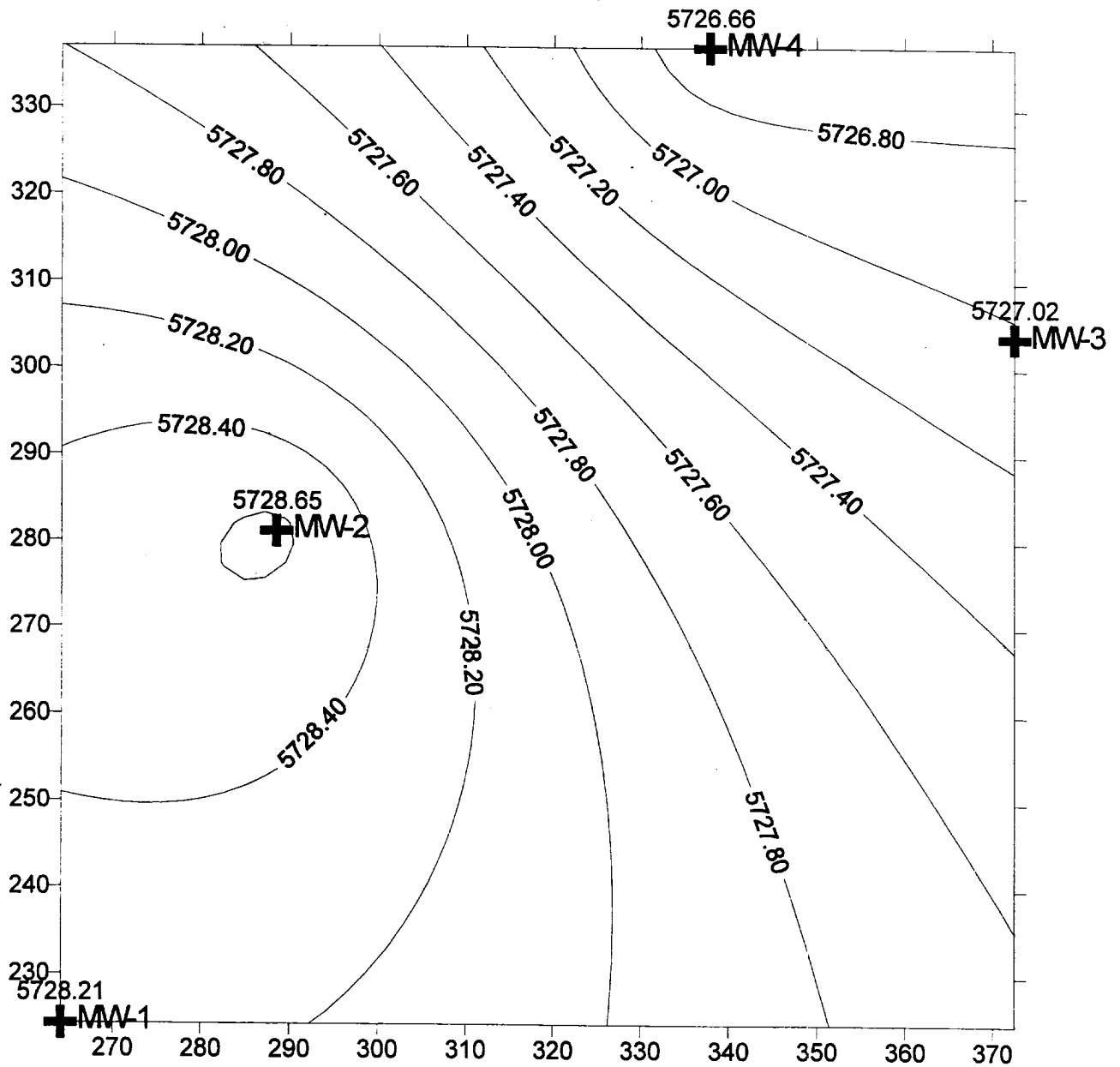
SCALE IN FEET
(X-axis = Easting,
Y-axis = Northing)

Figure 3b. McClanahan A2E Groundwater Contour Map
(August 26, 1998)



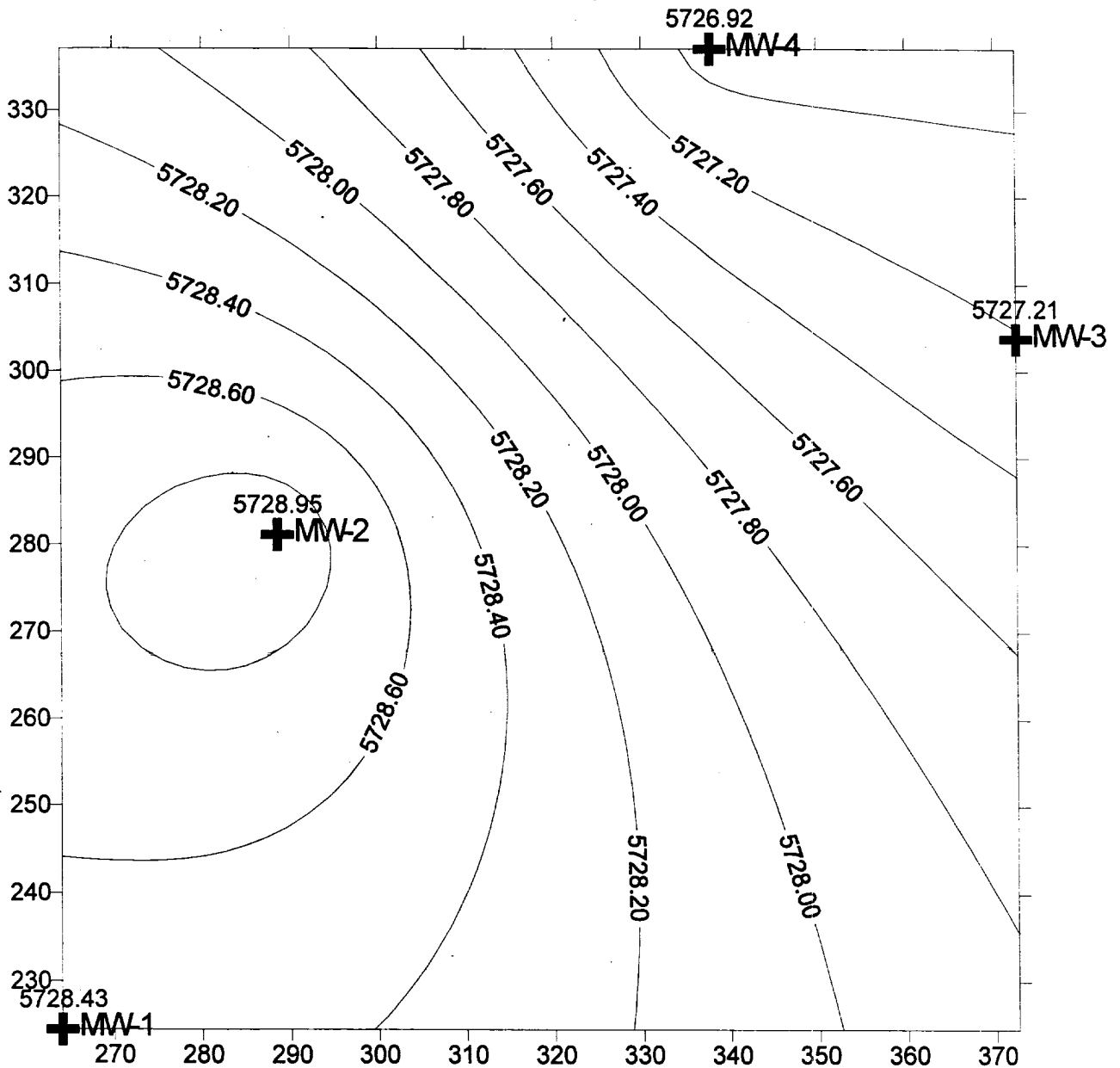
SCALE IN FEET
(X-axis = Easting,
Y-axis = Northing)

Figure 3c. McClanahan A2E Groundwater Contour Map
(December 2, 1998)



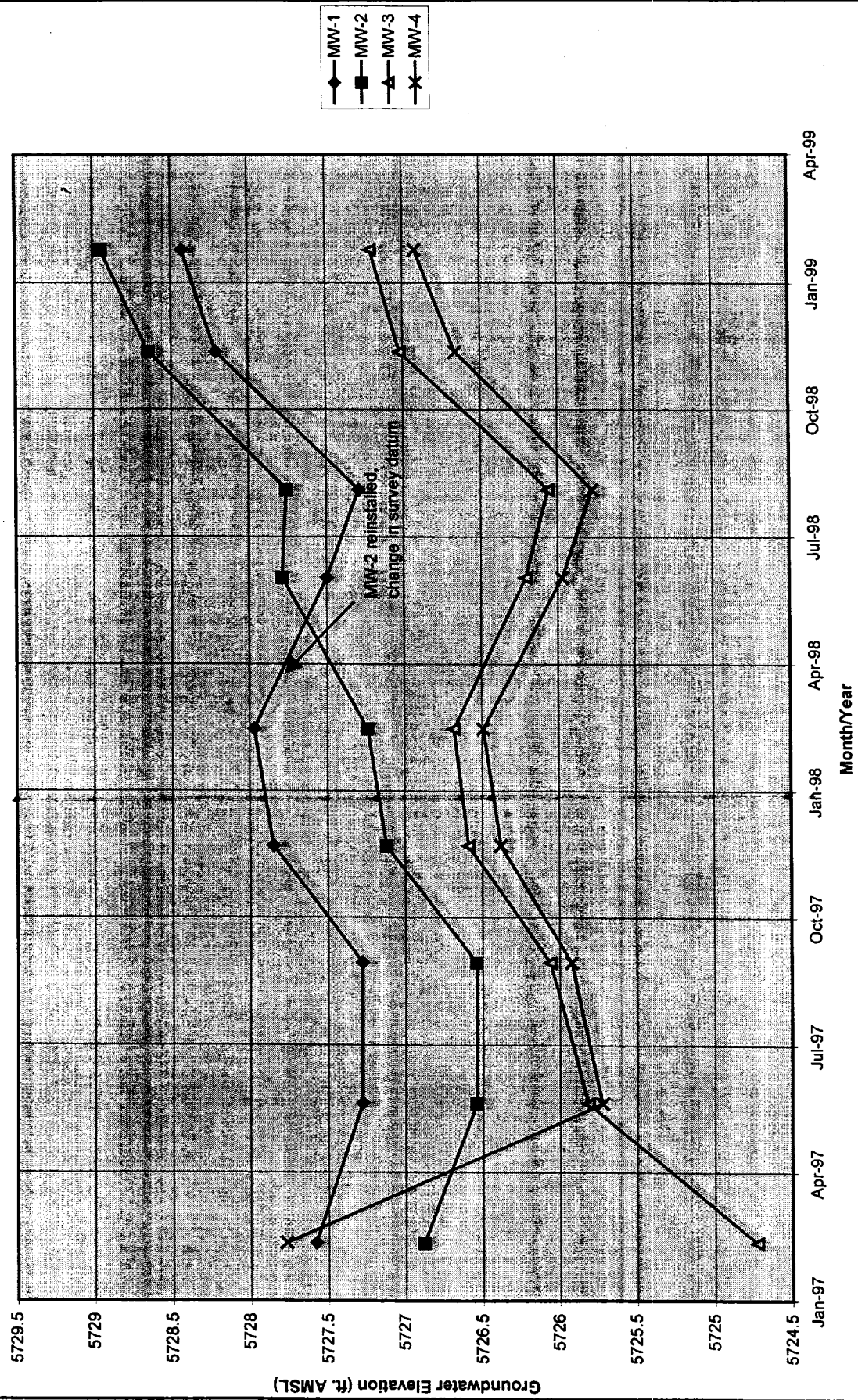
SCALE IN FEET
(X-axis = Easting,
Y-axis = Northing)

Figure 3d. McClanahan A2E Groundwater Contour Map
February 12, 1999)



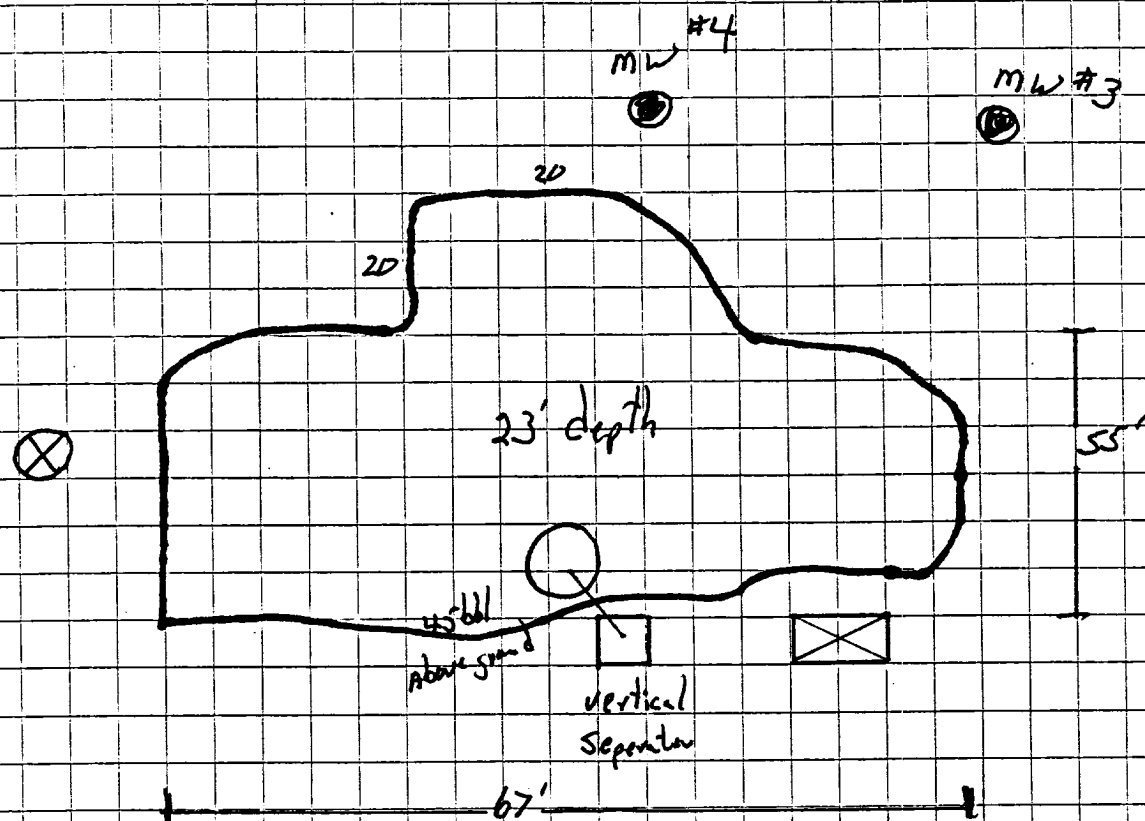
SCALE IN FEET
(X-axis = Easting,
Y-axis = Northing)

Figure 4. McClanahan A2E Hydrograph
(Water Level vs. Time)



McClanahan A#2E
 Burlington Resources
 Sec. 23, 28N, 10W, 0

4-16-98



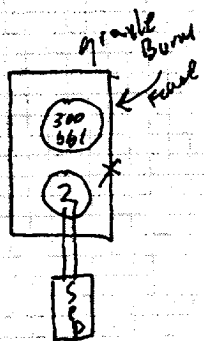
Water at 23' depth

$$\begin{aligned}
 67 \times 55 \times 23 &= 3139 \text{ yds} \\
 20 \times 20 \times 23 &= 341 \text{ yds} \\
 \hline
 &3480 \text{ yds}
 \end{aligned}$$

$$\begin{aligned}
 \text{overburden} &= 2421 \text{ yds} \\
 \text{spoil} &= 1059 \text{ yds}
 \end{aligned}$$

Land farmed on location.

McClanahan A #2E



50

Road



DH



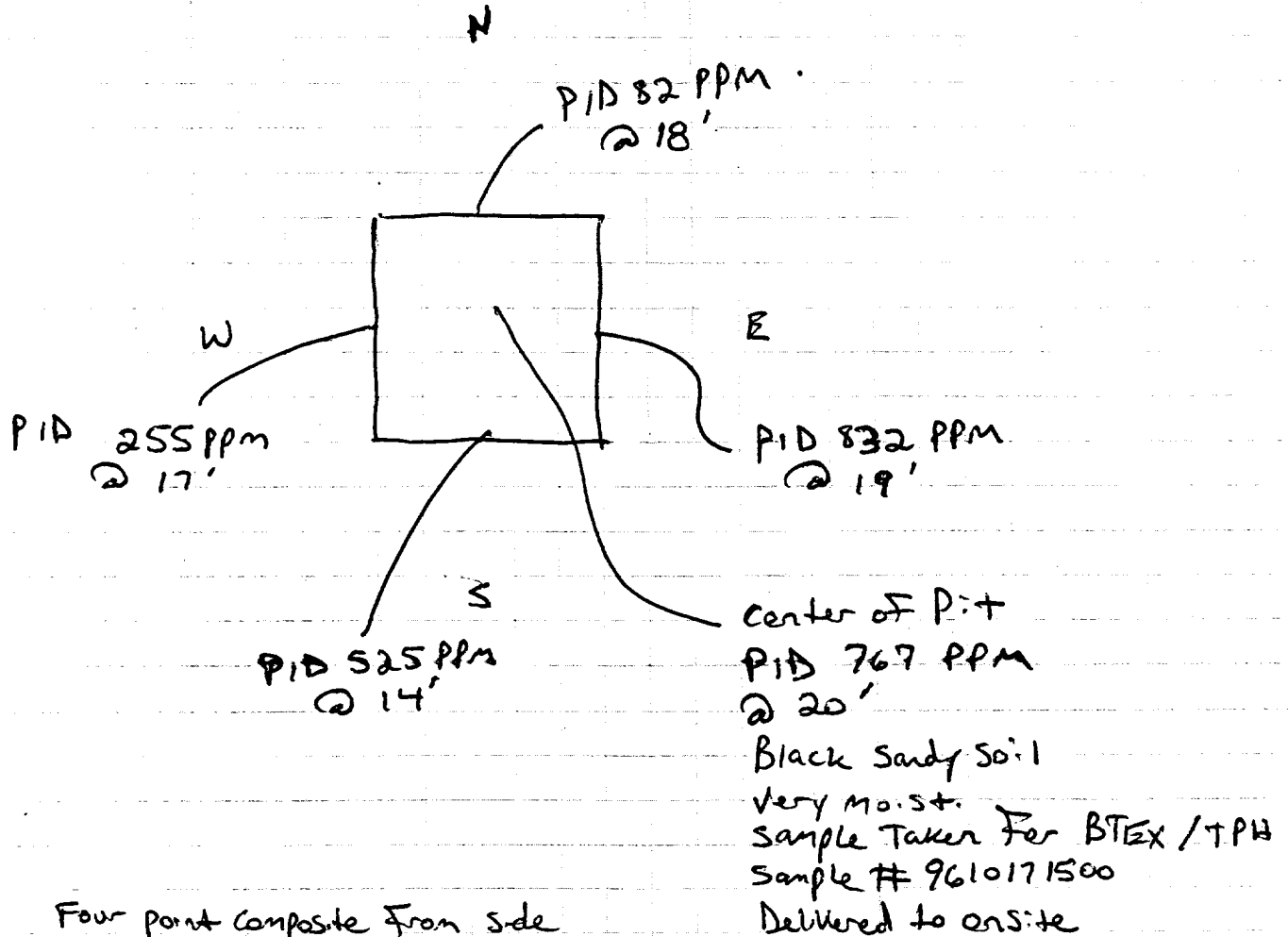
Assessor's Signature

Date:

6/21/95

PUBLIC SERVICE COMPANY OF NEW MEXICO

PROJECT McClanahan A2E		DEPARTMENT	
		FILE	SHEET OF
COMPONENT Section 23, Township 28N, Range 10W, Unit 0		BY	DATE
		CHECKED	DATE 10/17/96



Four point composite from side
 walls not submitted for lab analysis
 Excavation is 28 x 15 x 18
 Digging is slow with small bucket.
 Will secure site and wait for
 results of lab analysis before
 continuing. Also wait ~~until~~ ^{until} Monday,
 operator will have larger bucket
 to clean up hole and Ray will be
 back to make decision.

7560
 - 27

280

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: *23-Oct-96*
COC No.: *5126*
Sample No. *12649*
Job No. *2-1000*

Project Name: *PNM Gas Services - McClanahan A #2E*
Project Location: *9610201035; Pit Excavation Composite, Wall Sample*
Sampled by: *RH* Date: *20-Oct-96* Time: *10:35*
Analyzed by: *DC* Date: *22-Oct-96*
Sample Matrix: *Soil*

Laboratory Analysis

<i>Parameter</i>	<i>Result</i>	<i>Unit of Measure</i>	<i>Detection Limit</i>	<i>Unit of Measure</i>
<i>Benzene</i>	<i>1246.2</i>	<i>ug/kg</i>	<i>0.2</i>	<i>ug/kg</i>
<i>Toluene</i>	<i>27961.7</i>	<i>ug/kg</i>	<i>0.2</i>	<i>ug/kg</i>
<i>Ethylbenzene</i>	<i>5923.9</i>	<i>ug/kg</i>	<i>0.2</i>	<i>ug/kg</i>
<i>m,p-Xylene</i>	<i>60000.7</i>	<i>ug/kg</i>	<i>0.2</i>	<i>ug/kg</i>
<i>o-Xylene</i>	<i>12438.6</i>	<i>ug/kg</i>	<i>0.2</i>	<i>ug/kg</i>
<i>TOTAL</i>	<i>107571.0</i>	<i>ug/kg</i>		

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

Approved by: *[Signature]*
Date: *10/23/96*

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: *22-Oct-96*
 COC No.: *5126*
 Sample No. *12649*
 Job No. *2-1000*

Project Name: *PNM Gas Services - McClanahan A #2E*
 Project Location: *9610201035; Pit Excavation Composite Wall Sample*
 Sampled by: *RH* Date: *20-Oct-96* Time: *10:30*
 Analyzed by: *DC/HR* Date: *22-Oct-96*
 Sample Matrix: *Soil*

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>68.1</i>	<i>mg/kg</i>	<i>5.0</i>	<i>mg/kg</i>

Quality Assurance ReportDRO QC No.: *0489-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><5.0</i>	<i>ppm</i>	<i>100</i>	<i>102</i>	<i>2.1</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>97</i>	<i>(70-130)</i>	<i>3</i>	<i>20%</i>

Method - SW-846 EPA Method 8015A mod. - Nonhalogenated Volatile Hydrocarbons by Gas ChromatographyApproved by: *[Signature]*Date: *10/22/96*

P.O. BOX 2606 • FARMINGTON, NM 87499

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: *23-Oct-96*
COC No.: *5127*
Sample No.: *12655*
Job No.: *2-1000*

Project Name: *PNM Gas Services - McClanahan A #2E*
Project Location: *9610210745; Pit Excavation Ground Water Sample*
Sampled by: *RH* Date: *21-Oct-96* Time: *7:45*
Analyzed by: *DC* Date: *22-Oct-96*
Sample Matrix: *Water*

Laboratory Analysis

<i>Parameter</i>	<i>Result</i>	<i>Unit of Measure</i>	<i>Detection Limit</i>	<i>Unit of Measure</i>
<i>Benzene</i>	<i>3561.5</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>7770.6</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>314.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>3795.3</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>913.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>16354.8</i>	<i>ug/L</i>		

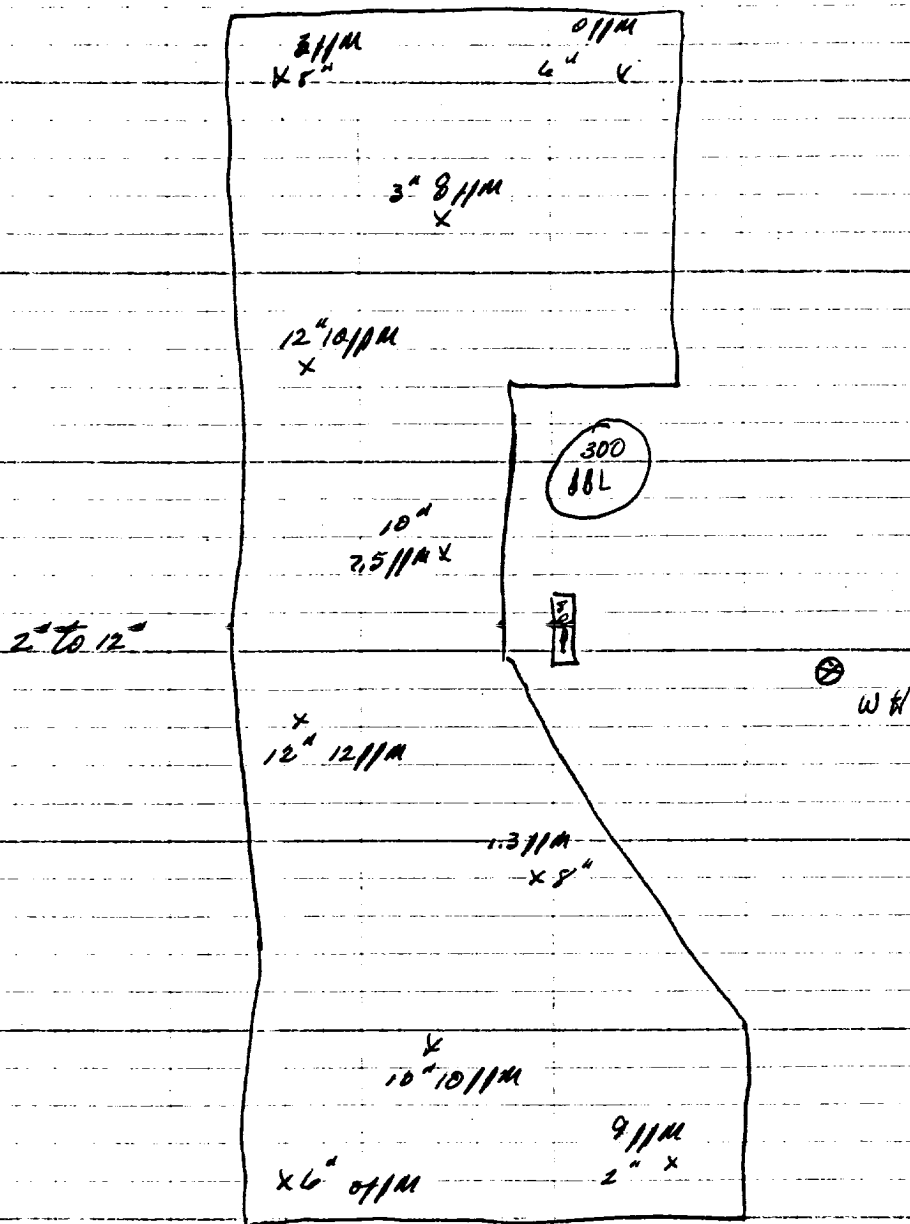
Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography

Approved by: *[Signature]*
Date: *10/23/96*

P.O. BOX 2606 • FARMINGTON, NM 87499

McClanahan A #2E
(O) 23-28N-10W
Burlington
San Juan County
Lab Sample # 19806040800
Field head space 2 ppm

↑
N



OFF: (505) 325-5667

ON SITE

LAB: (505) 325-1556

TECHNOLOGIES, LTD.

On Site Technologies, LTD.

Date: 08-Jun-98

CLIENT: PNM - Public Service Company of NM
Project: Landfarm Composites
Lab Order: 9806013

CASE NARRATIVE

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

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

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

OFF: (505) 325-5667

ON SITE

TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 08-Jun-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	McClanahan A2E
Work Order:	9806013	Client Sample ID:	9806040800: Landfarm
Lab ID:	9806013-01A	Matrix:	SOIL
Project:	Landfarm Composites	Collection Date:	6/4/98 8:00:00 AM
		COC Record:	5224

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS		SW8015				Analyst: HR
T/R Hydrocarbons: C10-C28	ND	25		mg/Kg	1	6/4/98

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

1 of 1

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