GW site

District I
P.O. 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

2040 South Pacheco Street
Santa Fe, New Mexico 87505

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

RECEIVED
NOV - 1 1999
OIL CON. DIV.
DIST. 3

PIT REMEDIATION AND CLOSURE REPORT

Operator: PNM Gas Services (Amoco) **Telephone:** 324-3764

Address: 603 W. Elm Street Farmington, NM 87401

Facility or Well Name: Florance #32A

Location: Unit F Sec 15 T 30 N R 8 W County San Juan

Pit Type: Separator ☐ Dehydrator ☐ Other One inactive pit.

Land Type: BLM ☑ State ☐ Fee ☐ Other

Pit Location: Pit dimensions: length 20 ' width 20 ' depth 4 '

(Attach diagram) Reference: wellhead ☑ other

Footage from reference: 75'

Direction from reference: 20 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 50 feet to 99 feet Greater than 100 feet	(20 points) (10 points) (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 No	(20 points) (0 points)	0
Distance to Surface Water: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 200 feet 200 feet to 1,000 feet Greater than 1,000 feet	(20 points) (10 points) (0 points)	10
RANKING SCORE (TOTAL POINTS) :			30

Florance #32A

Date Remediation Started: 07/22/1996 **Date Completed:** 07/26/1996

Remediation Method: (Check all appropriate sections)
Excavation X Approx. Cubic Yard 133
Landfarmed X Amount Landfarmed (cubic yds) 133
Other

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

Backfill Material Location:

General Description of Remedial Action:

Excavated contaminated soil to a pit size of 16' X 16' X 14' and landfarmed soil onsite within a bermed area at a depth of 6" to 12". Soil was aerated by disking/plowing until soil met regulatory levels.

Conducted secondary source removal on 1/5/98; approximately 1400 cu yds of contaminated soil removed.

Ground Water Encountered: No ☐ Yes ☑ Depth 10' ***

Final Pit Closure Sampling: (if multiple samples, attach sample result and diagram of sample locations and depths.)

Sample Location: Five point composite; four side walls and center of pit bottom.

Sample depth: 14'

Sample date: 07/24/1996 Sample time: 10:50:00 AM

Sample Results

Benzene (ppm): 2.631

Total BTEX (ppm): 307.6732

Field headspace (ppm):

TPH (ppm): 879.60 Method: 8015A

Vertical Extent (ft): Risk Analysis form attached Yes — No ☑

Ground Water Sample: Yes ☑ No — (If yes, see attached Groundwater Site Summary Report)

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

DATE **October 28, 1999**

SIGNATURE Maureen Gannon

PRINTED NAME AND TITLE **Maureen Gannon, Project Manager**

PNMGS Well Site: **Florance 32A**

Groundwater Site Summary Report

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

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

Operator: Amoco
Sec: 15 **Twn:** 30 **Rng:** 8 **Unit:** F
Canyon: San Juan River

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

Topo Map: Figure 1
Site Map with Analysis: Figure 2
Groundwater Contour Map: Figure 3a (April 1998), Figure 3b (August 1998), Figure 3c (November 1998), & Figure 3d (February 1999)
Groundwater Hydrograph: Figure 4
Full-Suite Groundwater Results: previously submitted
Analytical Results: See 1999 Annual Groundwater Report. Results for temporary monitor well, TMW-1, are attached.
Well Completion Log/Diagram: TMW-1 only

Site Hydrology:

Florance 32A site (Figure 1) lies on the alluvial floodplain of the San Juan River, about three miles upstream (northeast) of Archuleta, New Mexico. The river meanders over a broad flat alluvial plain spanning a width of about half a mile, contained within steep valley walls. The site lies at an elevation of about 5695 ft. amsl, and the river is perhaps ten feet lower in elevation. A steep canyon wall lies just southeast of the site, and the river is about 600 feet north.

The five monitor wells at the site (Figure 1) showed sand and gravel materials in the subsurface. Several borings also found a cobble layer at shallow depths (less than 20 feet). These materials are characteristic of the bedload of the modern river. Depth to water is from 6 to 8 feet at the site.

Groundwater flows southwest beneath the site, as shown in Figures 3a, 3b, 3c and 3d. The flow direction is parallel to the orientation of the river valley axis.

The hydrograph (Figure 4) shows water level shifts in tandem in all the wells, indicating no seasonal change in groundwater flow direction; this is corroborated by plots of groundwater levels during different time periods (Figures 3a through 3d). Well MW-2 shows an anomalous water table elevation after it was reinstalled in January, 1998; however, this most likely reflects the undeveloped state of the well, and not the true water table elevation. After the sampling event of January, 1998, the water levels in well MW-2 again began to track parallel with the other wells. The hydrograph also shows marked seasonal changes in water levels, typically with higher levels during spring runoff. Comparison with USGS stream gauging records (site 09355500 - San Juan River near Archuleta) shows a direct relationship between river stage and groundwater elevation, thus emphasizing the direct hydraulic connection between the river and the shallow alluvial aquifer at the site.

Activities for Previous Year:

Due to the presence of high BTEX concentrations in MW-2, PNM conducted additional source removal at the site on January 5, 1998. The secondary source removal action was prompted by elevated BTEX concentrations in the source well. Field crews removed approximately 2000 cubic yards in and around PNM's former pit. MW-2 was removed during the excavation. PNM re-installed MW-2 on January 29, 1998.

PNM conducted quarterly groundwater sampling at the Florance 32A on April 29, August 7 and November 4, 1998, and again on February 10, 1998. Water level data were collected from all wells during each sampling event. All sampling was performed in strict compliance with EPA protocol. PNM delivered the samples to OnSite Technologies, Farmington, New Mexico for chemical analyses of BTEX using EPA method 8021B.

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: Florance 32A (continued)

On July 27, 1999, PNM installed a temporary monitor well southwest of our former pit between MW-3 and MW-5. This well was installed as requested to alleviate any concerns regarding potential impacts to the southwest of PNM's former dehydrator pit. Figure 2 shows the exact location of this well. On August 5, 1999, this well was sampled and analyzed for BTEX by method 8021B.

Results:

Figure 2 is a site map of the Florance 32A and includes groundwater analytical results. BTEX concentrations in the area of the former pit (well MW-2) have been below standards for four consecutive quarters. The additional source removal performed in January 1998 accelerated the reduction of benzene in this area.

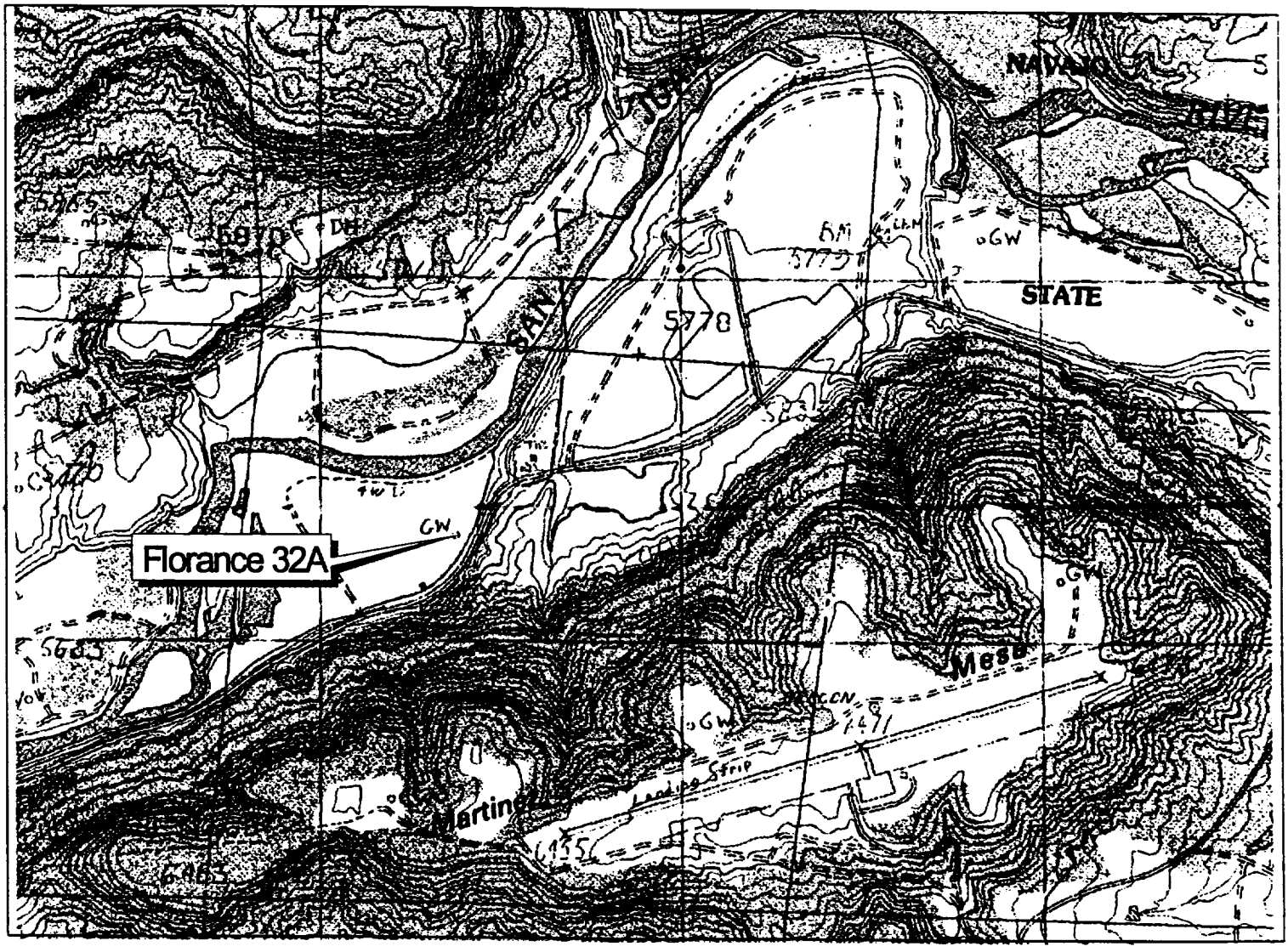
All other wells on site have not shown detectable concentrations of BTEX compounds. BTEX concentrations in temporary monitor well, TMW-1, were below detection levels.

Future Actions:

Consistent with PNM's San Juan Basin Groundwater Management Plan, PNM requests closure of the Florance 32A. This request is based upon the analytical data collected over the last two years at the site. The secondary excavation of additional source materials was successful in achieving clean-up at the Florance 32A; the BTEX concentrations in the source well (MW-2) have been below standards for four consecutive quarters. Resampling of all monitor wells also shows that BTEX compounds are below detection limits in the other wells.

Upon approval of the groundwater closure report, PNM will plug and abandon the five 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 o the surface with cement containing 5% bentonite.

Figure 1.
Florance 32A Groundwater Site
Twn. 30N Rng. 8W Sec. 15 Unit F



Archuleta, NM Quadrangle

0 1000 2000 3000 4000 5000 Feet

N
W E
S

Figure 2.
Florance 32A: Site Map With Analytical Results
(Concentrations in ppb)

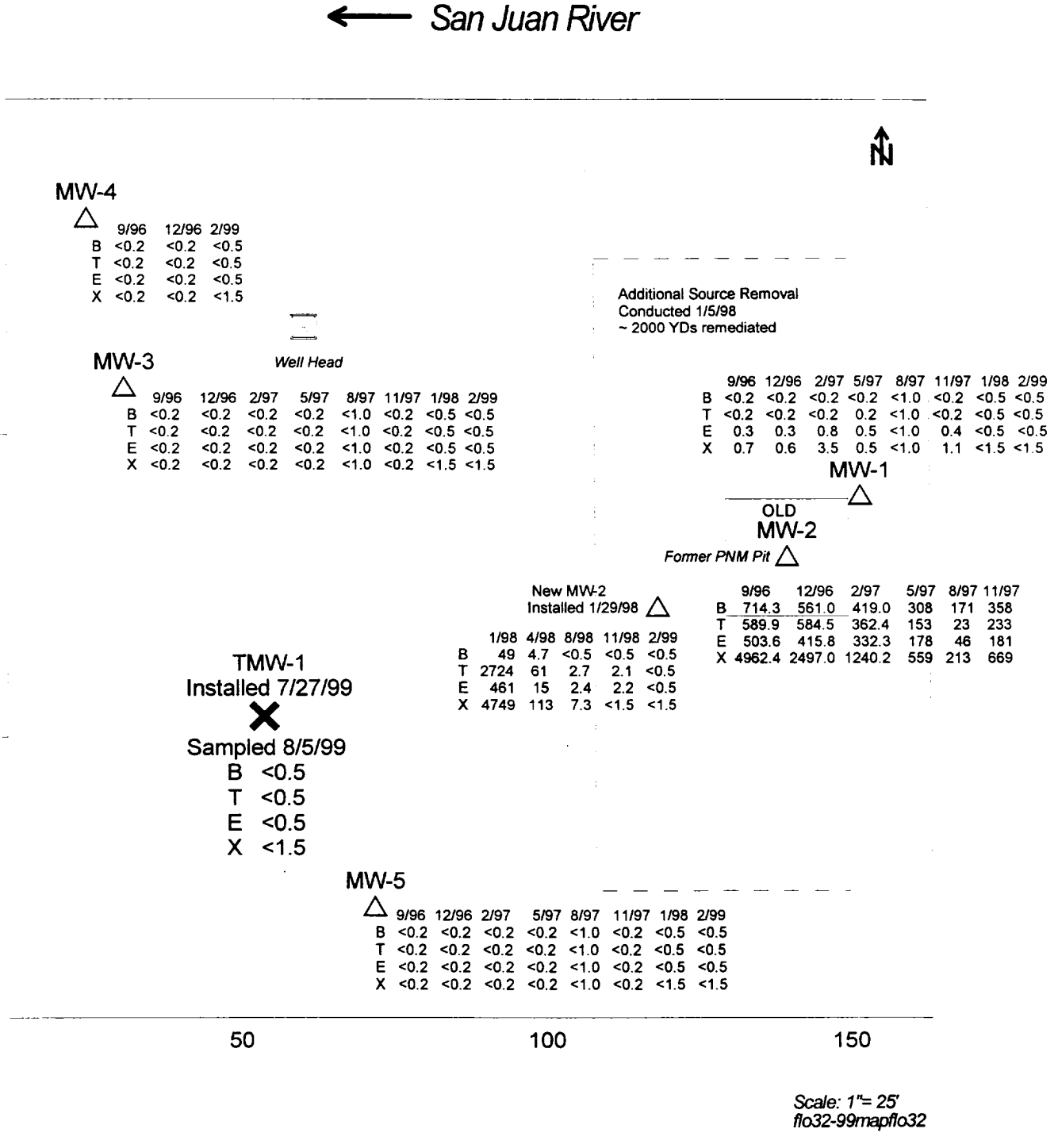
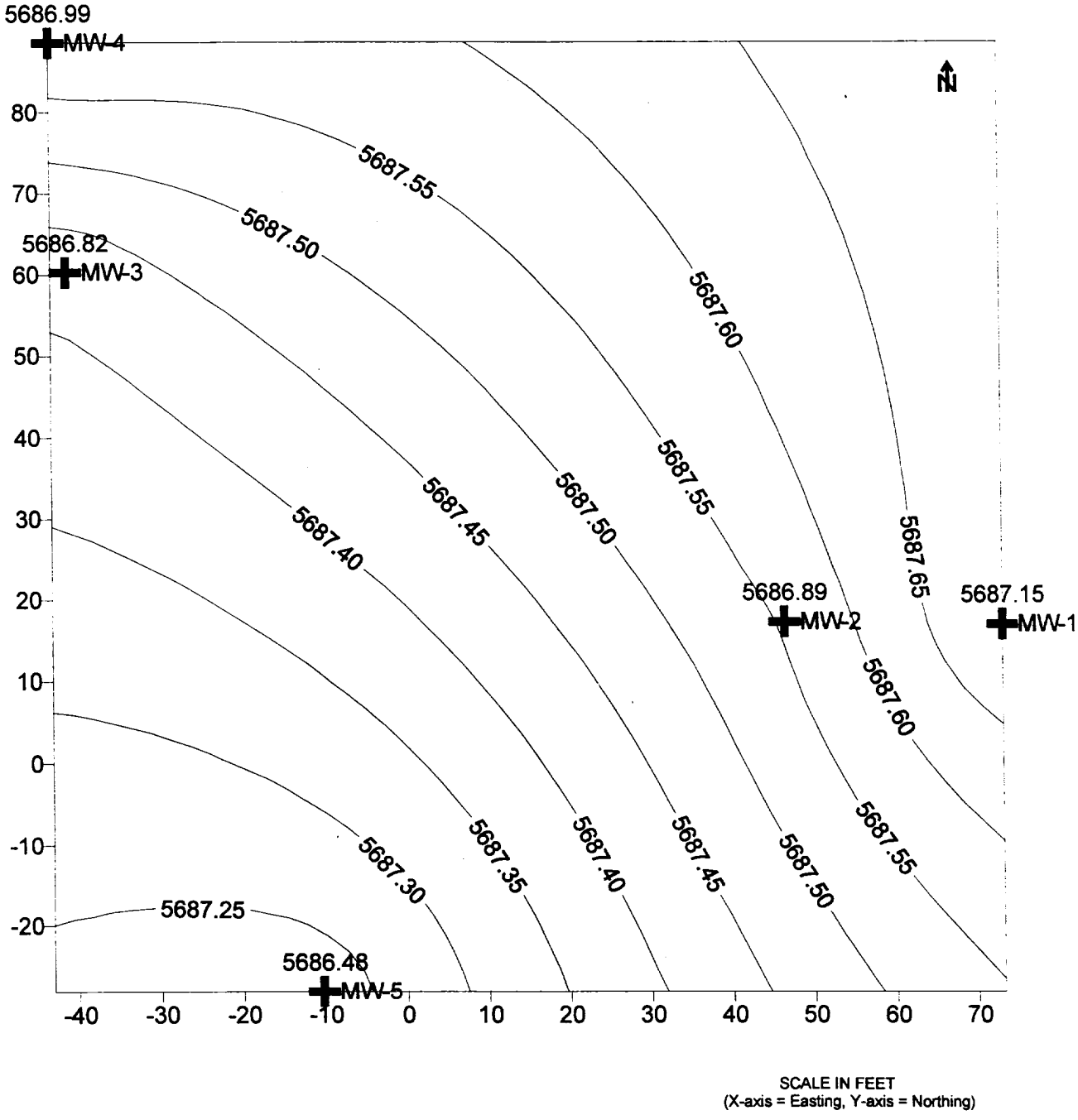


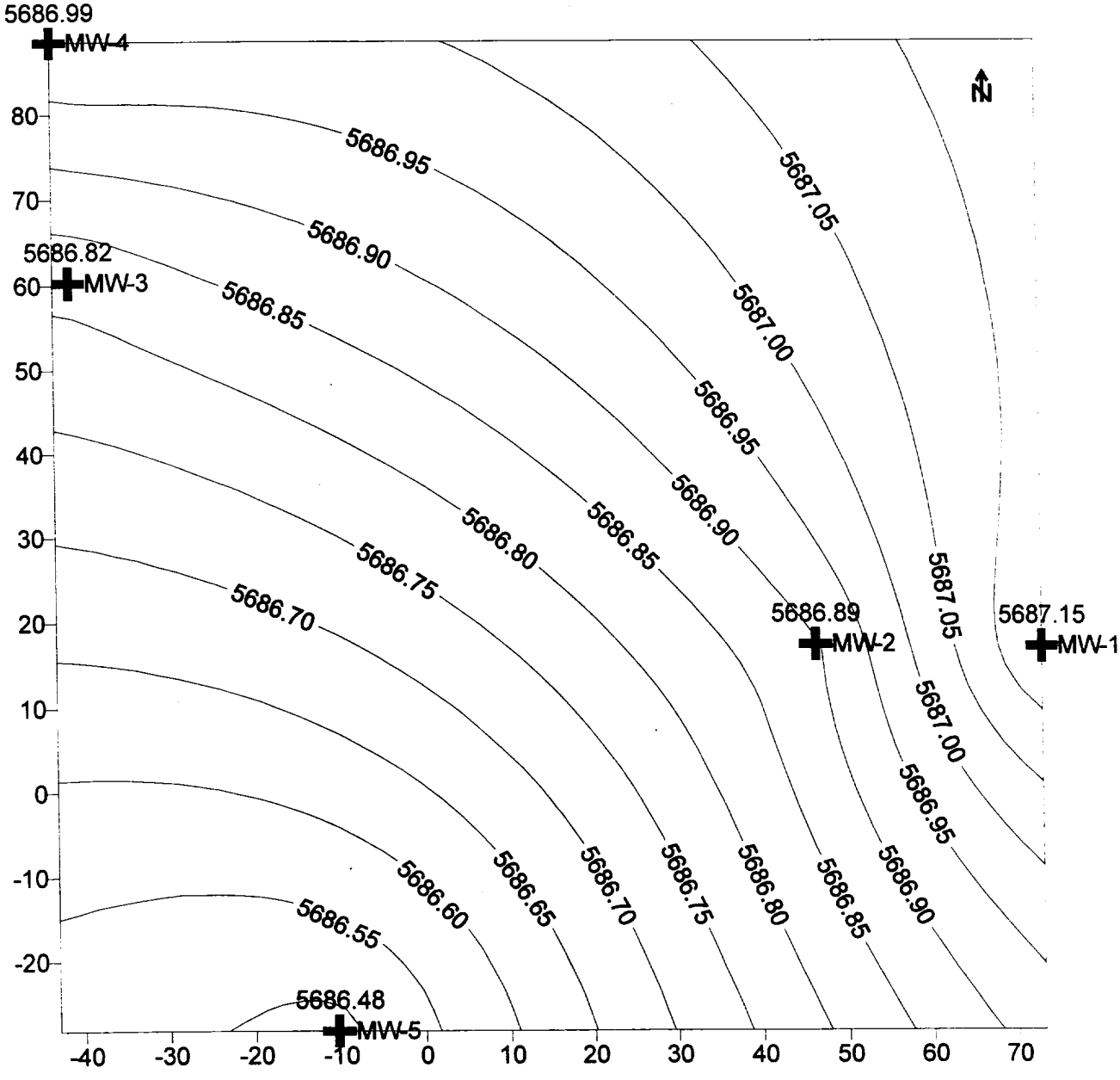
Figure 3a.
Florance 32A Groundwater Contour Map
(April 29, 1998)



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

Flo32A - apr98

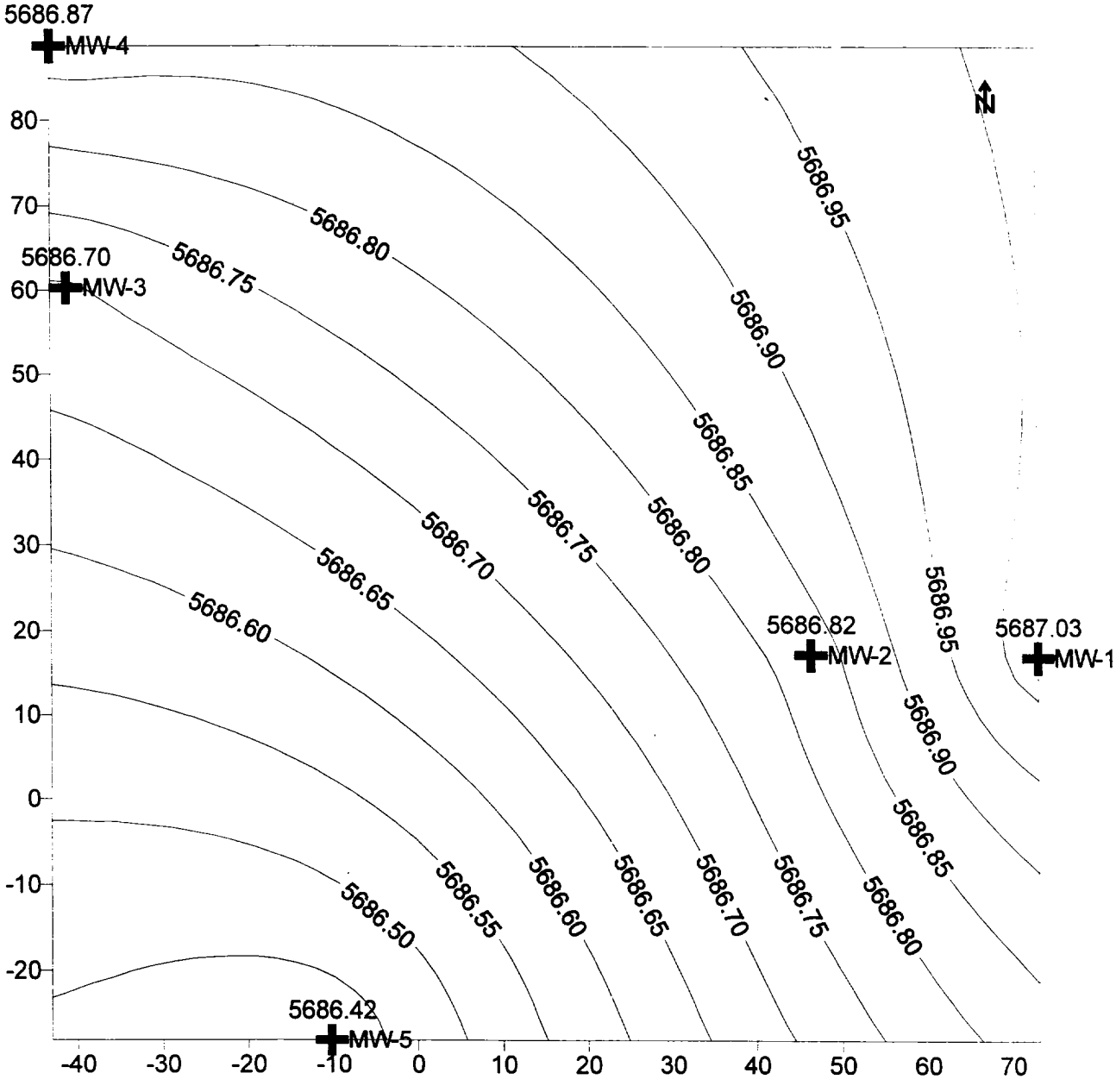
Figure 3b.
Florance 32A Groundwater Contour Map
(August 7, 1998)



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

Flo32A - aug98

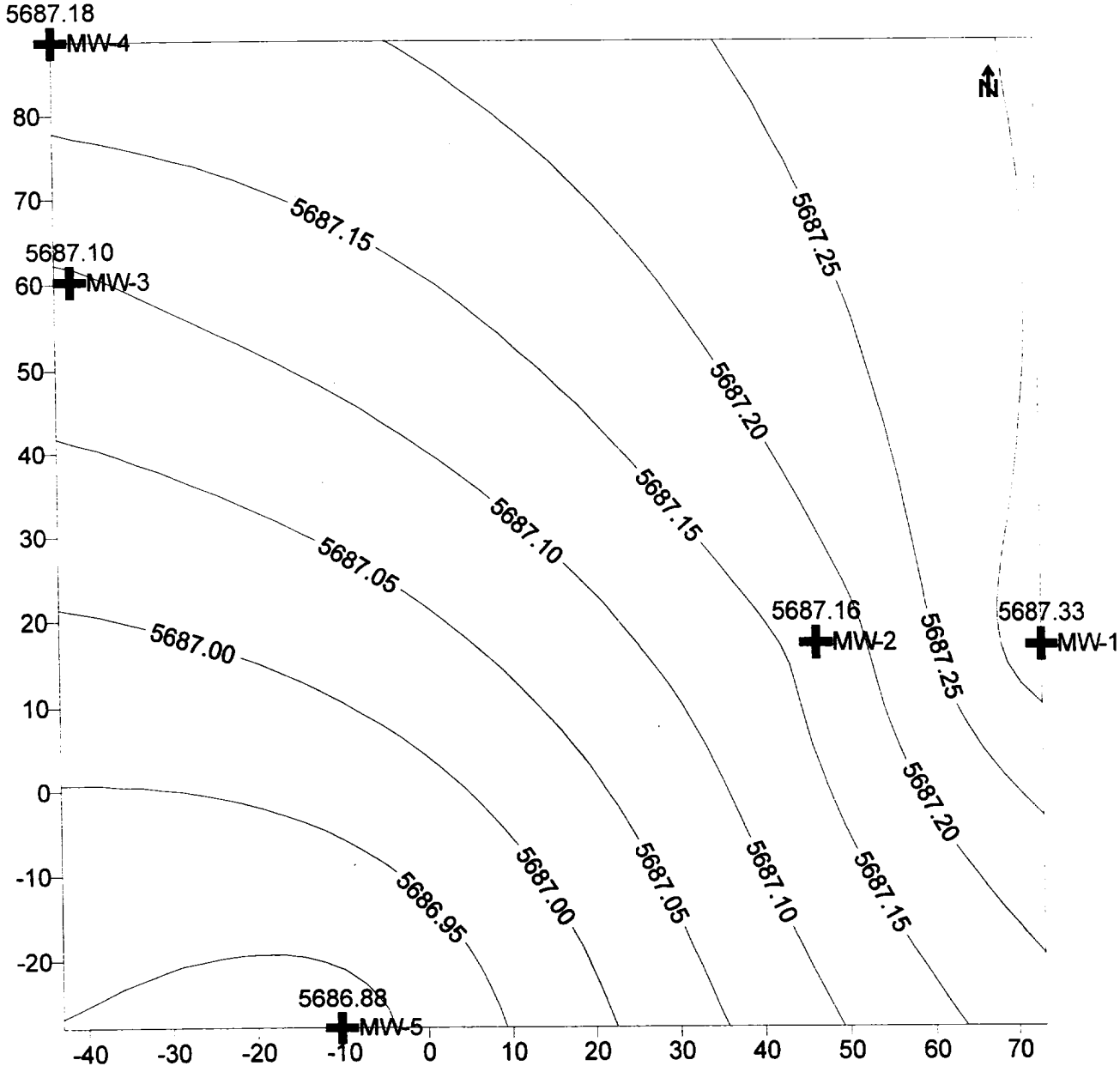
Figure 3c.
Florance 32A Groundwater Contour Map
(November 4, 1998)



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

Flo32A - nov98

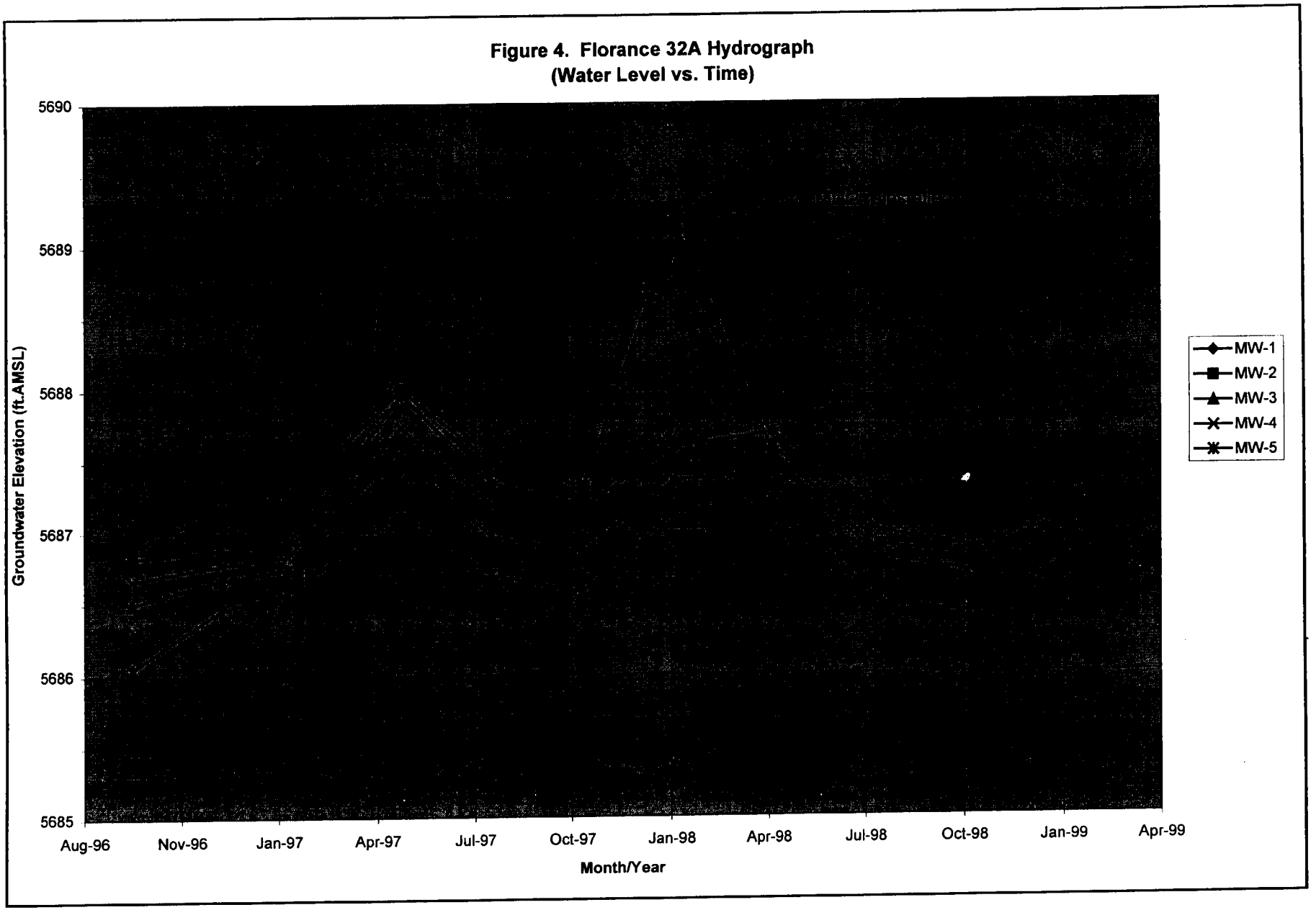
Figure 3d.
Florance 32A Groundwater Contour Map
(February 10, 1999)



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

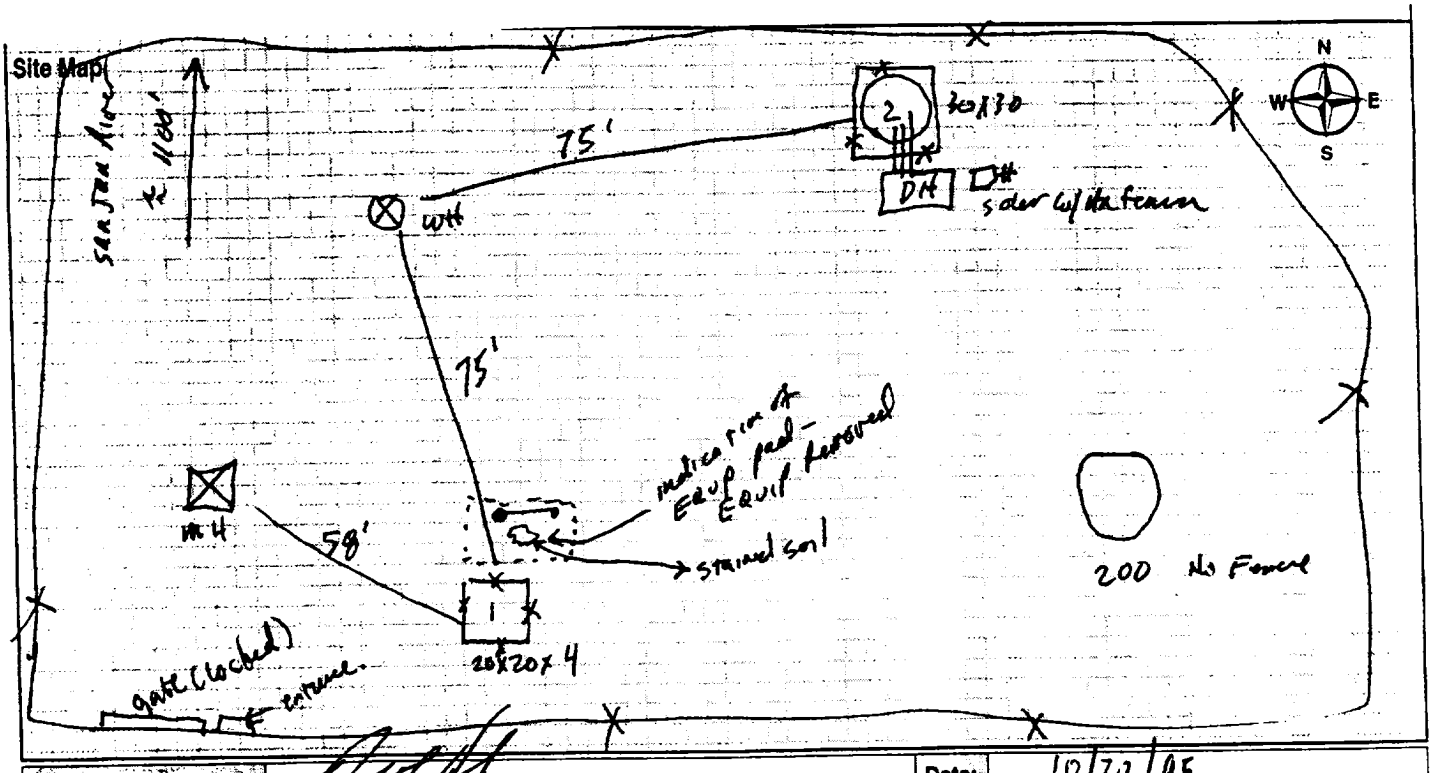
Flo32A - feb99

Figure 4. Florance 32A Hydrograph
(Water Level vs. Time)



flo32a - FLO32a-2.xls

Site Map



Assessor's Signature		Date:	10/22/95

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

Diesel Range Organics

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

Date: 24-Jul-96
COC No.: 4740
Sample No. 11564
Job No. 2-1000

Project Name: **PNM Gas Services - Florance 32A**
Project Location: **9607221050; Pit Excavation Composite of Walls**
Sampled by: RH Date: 22-Jul-96 Time: 10:50
Analyzed by: HR Date: 24-Jul-96
Sample Matrix: Soil

Laboratory Analysis

Parameter	Result	Unit of Measure	Detection Limit	Unit of Measure
Diesel Range Organics (C10 - C28)	879.6	mg/kg	5.0	mg/kg

Quality Assurance Report

DRO QC No.: 0479-QC

Calibration Check

Parameter	Method Blank	Unit of Measure	True Value	Analyzed Value	% Diff	Limit
Diesel Range (C10 - C28)	<5.0	ppm	2,000	1,798	10.1	15%

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Diesel Range (C10-C28)	98	100	(70-130)	2	20%

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

Approved by:
Date: 7/24/96

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn:	*Denver Bearden*	Date:	24-Jul-96
Company:	*PNM Gas Services*	*COC No.:*	*4740*
Address:	*603 W. Elm*	*Sample No.*	*11564*
City, State:	*Farmington, NM 87401*	*Job No.*	*2-1000*

Project Name:	***PNM Gas Services - Florance 32A***				
Project Location:	***9607221050; Pit Excavation Composite of Walls***				
Sampled by:	RH	Date:	22-Jul-96	Time:	10:50
Analyzed by:	DC	Date:	23-Jul-96		
Sample Matrix:	*Soil*				

Aromatic Volatile Organics

Component	*Result*	*Units of Measure*	*Detection Limit*	*Units of Measure*
Benzene	2631.0	ug/kg	0.2	ug/kg
Toluene	43482.8	ug/kg	0.2	ug/kg
Ethylbenzene	21766.2	ug/kg	0.2	ug/kg
m,p-Xylene	186938.3	ug/kg	0.2	ug/kg
o-Xylene	52854.9	ug/kg	0.2	ug/kg
TOTAL	307673.2	ug/kg		

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

Approved by: DaG

Date: 7/24/96

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn:	Denver Bearden	Date:	23-Jul-96
Company:	PNM Gas Services	COC No.:	4739
Address:	603 W. Elm	Sample No.:	11565
City, State:	Farmington, NM 87401	Job No.:	2-1000

Project Name:	PNM Gas Services - Florance 32A				
Project Location:	9607230915; Pit Excavation Ground Water Sample				
Sampled by:	RH	Date:	23-Jul-96	Time:	9:15
Analyzed by:	HR	Date:	23-Jul-96		
Sample Matrix:	Water				

Laboratory Analysis

Parameter	Result	Unit of Measure	Detection Limit	Unit of Measure
Benzene	797.5	ug/L	0.2	ug/L
Toluene	7014.0	ug/L	0.2	ug/L
Ethylbenzene	341.9	ug/L	0.2	ug/L
m,p-Xylene	5158.2	ug/L	0.2	ug/L
o-Xylene	1351.4	ug/L	0.2	ug/L
TOTAL	14663.1	ug/L		

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

Approved by:

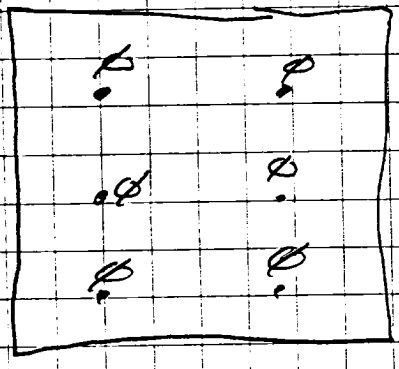
Date: 7/23/96

Florance #32A 9-10-96
Amoco
Sec. 15, 30N, 8W

Land Farm: On location

Composite sample # 9609101015 6pt. comp.

Soil vapor head space PID reading: 2.1 ppm



⊗

2"-12" depth

~~Mules~~ Sand

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

Diesel Range Organics

Attn:	*Denver Bearden*	Date:	12-Sep-96
Company:	*PNM Gas Services*	*COC No.:*	*5005*
Address:	*603 W. Elm*	*Sample No.*	*12087*
City, State:	*Farmington, NM 87401*	*Job No.*	*2-1000*

Project Name:	***PNM Gas Services - Florance #32A Landfarm***				
Project Location:	***9609101015; 6pt. Composite, 2"-12" depth***				
Sampled by:	GC	Date:	10-Sep-96	Time:	10:15
Analyzed by:	DC/HR	Date:	12-Sep-96		
Sample Matrix:	*Soil*				

Laboratory Analysis

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

Quality Assurance Report

DRO QC No.: *0489-QC*

Calibration Check

Parameter	*Method Blank*	*Unit of Measure*	*True Value*	*Analyzed Value*	*% Diff*	*Limit*
Diesel Range (C10 - C28)	<5.0	ppm	100	104	4.2	15%

Matrix Spike

Parameter	*1- Percent Recovered*	*2 - Percent Recovered*	*Limit*	*%RSD*	*Limit*
Diesel Range (C10-C28)	98	114	(70-130)	11	20%

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

Approved by:

Date: 9/12/96

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

August 19, 1999

RECEIVED
AUG 3 0 1999

Maureen Gannon
PNM - Public Service Company of NM
Alvarado Square Mail Stop 0408
Albuquerque, NM 87158
TEL: (505) 241-2974
FAX (505) 241-2340

RE: Florance 32A

Order No.: 9908014

Dear Maureen Gannon,

On Site Technologies, LTD. received 1 sample on 08/06/1999 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
Aromatic Volatiles by GC/PID (SW8021B)

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

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

On Site Technologies, LTD.

Date: *19-Aug-99*

CLIENT: PNM - Public Service Company of NM
Project: Florance 32A
Lab Order: 9908014

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.

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Date: *19-Aug-99*

Client:	PNM - Public Service Company of NM	**Client Sample Info:**	Florance 32A
Work Order:	9908014	**Client Sample ID:**	9908051745; TMW-1
Lab ID:	9908014-01A **Matrix:** AQUEOUS	**Collection Date:**	08/05/1999 5:45:00 PM
Project:	Florance 32A	**COC Record:**	7822

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

Qualifiers:

PQL - Practical Quantitation Limit

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

P.O. BOX 2606 • FARMINGTON, NM 87499

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.
4000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Borehole # 1
Well # Temp #1
Page 2 of 2

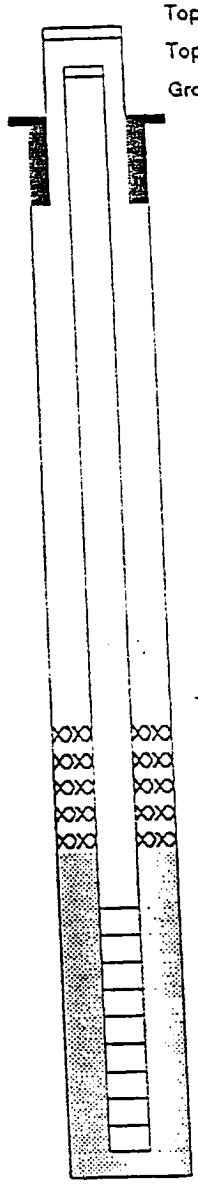
Project Name PNM WELL INSTALLATION
Project Number 71300 Phase 6001
Project Location FLORANCE #32A AMOCO

On-Site Geologist C. CULLICOTT
Personnel On-Site K. PADILLA, D. PADILLA
Contractors On-Site
Client Personnel On-Site GARY COOK

Elevation
Well Location S 15, T30N, R8W, F
GWL Depth 9.8' - TOC 2.6 = 7.2'
Installed By K. PADILLA, D. PADILLA
Date/Time Started 7/27/99 11:30 am
Date/Time Completed 7/27/99

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing		
Bottom of Protective Casing		
Top of Permanent Borehole Casing		
Bottom of Permanent Borehole Casing		
Top of Concrete		
Bottom of Concrete		
Top of Grout		
Bottom of Grout		
Top of Well Riser		
Bottom of Well Riser		
Top of Well Screen		5'
Bottom of Well Screen		15'
Top of Peltonite Seal		GS
Bottom of Peltonite Seal		3'
Top of Gravel Pack		3'
Bottom of Gravel Pack		15'
Top of Natural Cave-In		
Bottom of Natural Cave-In		
Top of Groundwater		
Total Depth of Borehole		15'



Top of Protective Casing
Top of Riser
Ground Surface
Top of Seal GS
Top of Gravel Pack 3'
Top of Screen 5'
Bottom of Screen 15'
Bottom of Borehole 15'

Comments:

Geologist Signature Cathy Cullicott

RECORD OF SUBSURFACE EXPLORA N

Borehole # 1
Well # TEMP#1
Page 1 of 2

Philip Environmental Services Corp.
4000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Project Name PAM WELL INSTALLATIO
Project Number 21300 Phase 6001
Project Location FLORANCE #32A AMOCO

Elevation
Borehole Location SEC 15, T30N, R8W, F
GWL Depth 9.8' FOC +2.6 = 7.2'
Logged By C. CULLICOTT
Drilled By K. PADILLA & D. PADILLA
Date/Time Started 7/27/99 11:30 am
Date/Time Completed 7/27/99

Well Logged By C. CULLICOTT
Personnel On-Site K. PADILLA, D. PADILLA
Contractors On-Site
Client Personnel On-Site GARY COOK

Drilling Method
Air Monitoring Method

Depth (Feet)	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU BZ	BH	S	Drilling Conditions & Blow Counts
0			SURFACE: SAND						
5	1		BROWN SILTY CLAY w/ sand & patchy HC STAIN. SANDIER						SS = Ø 4 blows
▽			@ 10' HIT COBBLES						
10			WITH DEPTH IN SPLIT SPOON						
TD 15			HIT WATER @ 10'						
			COBBLES TO 15'						
20			TD 15'						
25									
30									
35									
40									

Comments: SUNNY, WARM,
~150' FROM SAN JUAN RIVER

Geologist Signature Cathy Cullicott