

***Isleta Site
Monitoring Report #1 of 4
January, February, March 1989***

Prepared for
Atex Oil Company

Prepared by
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April, 1989

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Monitoring Report #1 of 4, 1989
Atex Oil Company: Isleta Site

Text



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1.0 Introduction

In 1981, hydrocarbon contamination of the subsurface occurred beneath Atex-Bell station #213. In the fall of 1983, Atex Oil Company (Atex) and the New Mexico Environmental Improvement Division (EID) entered into a settlement agreement whereby conditions would be met for plume containment and subsurface restoration. As part of this settlement agreement, periodic monitoring and quarterly reporting is to be performed. This report is the first report of 1989 (i.e., Monitoring Report #1 of 4, 1989).

2.0 Monitoring Data

Data presented in this report are divided into three categories: System Network, Hydraulic Response, and Water Quality Effects.

2.1 System Network

Contaminated water can be removed by a series of four extraction wells; PW-1, PW-2, PW-3, and PW-4 (Plate 1). During the course of this quarter, only wells PW-1, PW-2 and PW-3 have been utilized. Given plume distribution, maximum effect on containment, (assuming man-made containment is necessary)



especially in the southeast area of the site (i.e., near W-7), is accomplished by extracting water from the above three wells. Water from these wells is discharged through air stripping treatment and reinjected into a series of wells located to the west of the site. The reader is referred to previous (e.g., Monitoring Report #3 of 4, 1988, BAI October, 1988) for further details on the extraction/treatment portion of the system.

Between January 3, 1989 and March 30, 1989, the extraction system has averaged 15.23 gpm, with a total discharge this quarter of nearly 1.9 million gallons of water. Precipitate still occurs throughout the plumbing network and is responsible for much of the costs and down time involved with the operation. Difficulties with the pump were corrected on March 9, 1989. The impellers of the pump and the spaces between them were virtually clogged. On March 15, 1989, the system was shut down to clean screens on the injection wells. Air stripper maintenance was completed on March 31, 1989.

An alternate remediation system has been employed at the site. The location of the air sparge system is illustrated on Plate 2. This system consists of an air sparge and vacuum extraction system. A schematic of the system is detailed in Plate 3. A cross section of an extraction well is presented in Plate 4 and a cross section of a sparge well is presented in Plate 5. The



system was field tested between January and March, 1989 and became operational late March-early April, 1989.

2.2 Hydraulic Response

In as much as the present system is a "pump and treat", aquifer response to pumping can be monitored in water levels of observation wells. The potentiometric (water table) surface representing this quarter is presented on Plate 6 for measurements obtained on March 30, 1989. Appendix B presents this information in tabular form. As seen on Plate 6, classic containment to the south is marginal, suspected to be due primarily to the decreased pumping rate during this quarter. As discussed with the EID, and presented earlier in this report, it is questionable whether induced containment is necessary. This subject will be addressed in detail in an upcoming report to the EID. At that time, a formal request for termination of the present "pump and treat" system will be presented.

2.3 Water Quality Effects

Per settlement agreement requirements, quarterly monitoring of the key monitoring wells (i.e., MW-1, MW-3, MW-5, and W-7) was performed. All organic



water quality results to date are presented in Appendix C.

Time plots of benzene concentration for each of the key wells, for all measurements, are presented on Figures 1 through 4. The last data point plotted represents the benzene concentration obtained during this quarter.

3.0 System Effectiveness

Hydraulically, the plume was marginally contained during this quarter by the present "pump and treat" system. Chemically, the plume appears to have remained contained for the last 4 to 5 years. Further, influent concentration of hydrocarbon components has historically been low as evidenced by a 1988 average influent benzene concentration of 216 ppb (see Appendix A). This low influent concentration occurred despite high concentrations adjacent to the pumping wells. It is for these reasons, BAI has already implemented alternate reclamation technologies.



4.0 Conclusions

- Operation of the present system continued during this quarter with significant down time. The system averaged 15.23 gpm during this quarter.
- Hydraulically, the plume was only marginally controlled by the present system.
- Significant percent reductions of hydrocarbon components compared to the maximum recorded values have occurred. High concentrations of contamination still exist north of the pumping system. Concentrations of the key monitor wells continue to decrease as evidenced by the last data point on Figures 1 through 4.
- Influent hydrocarbon concentrations continue to remain low.
- Alternate reclamation technologies are now emplaced at the site.



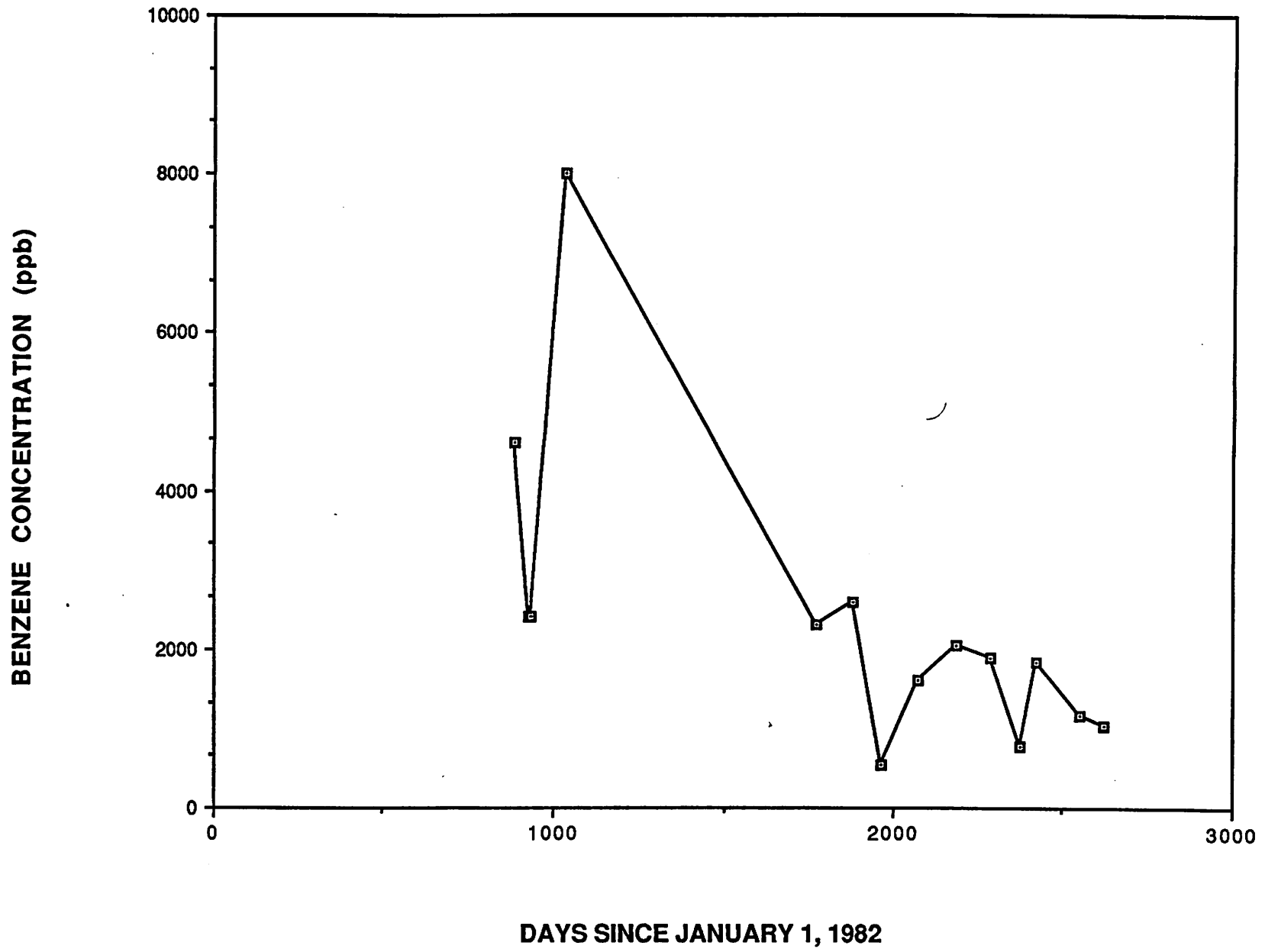
*Monitoring Report #1 of 4, 1989
Atex Oil Company: Isleta Site*

Figures

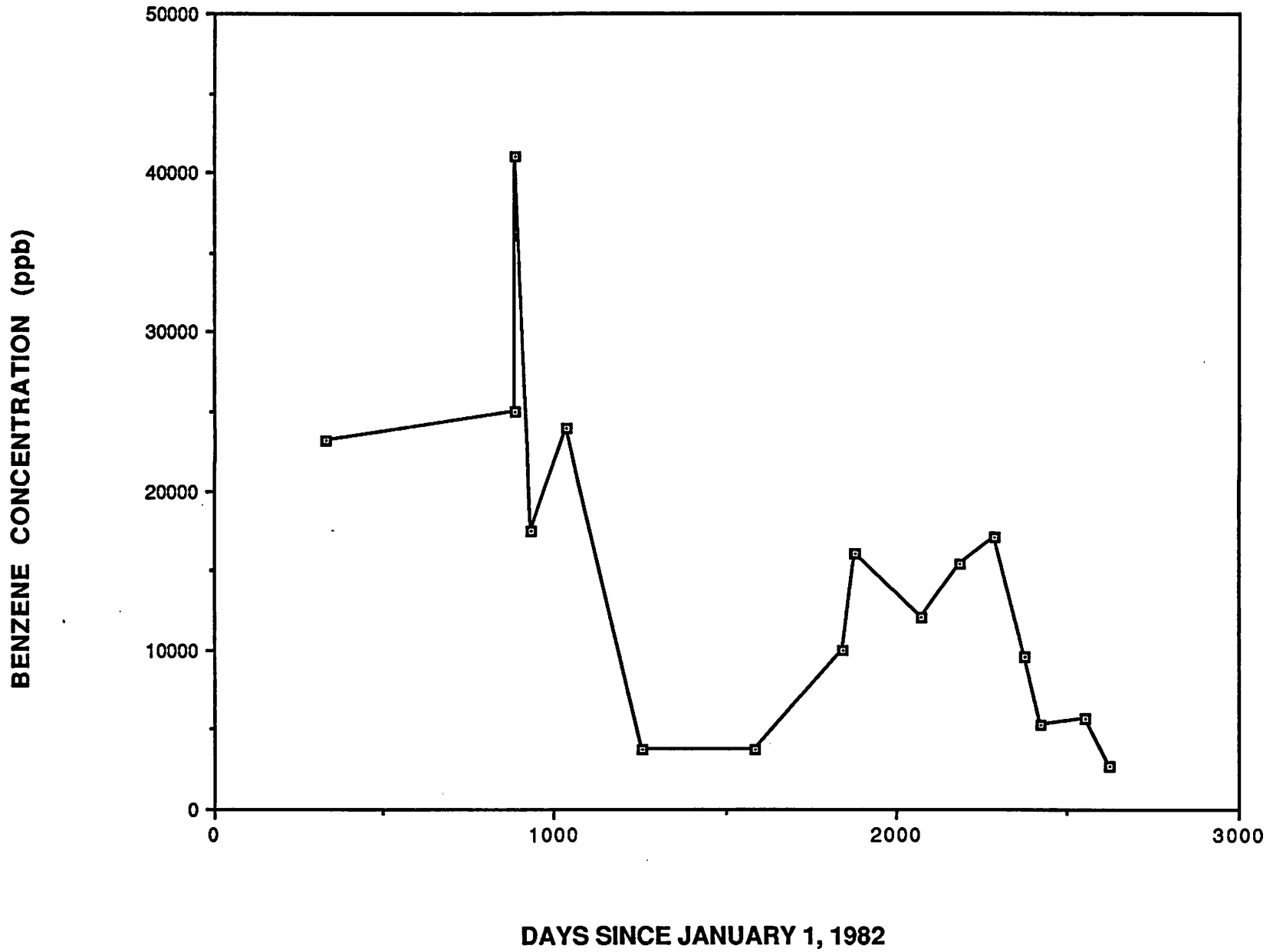


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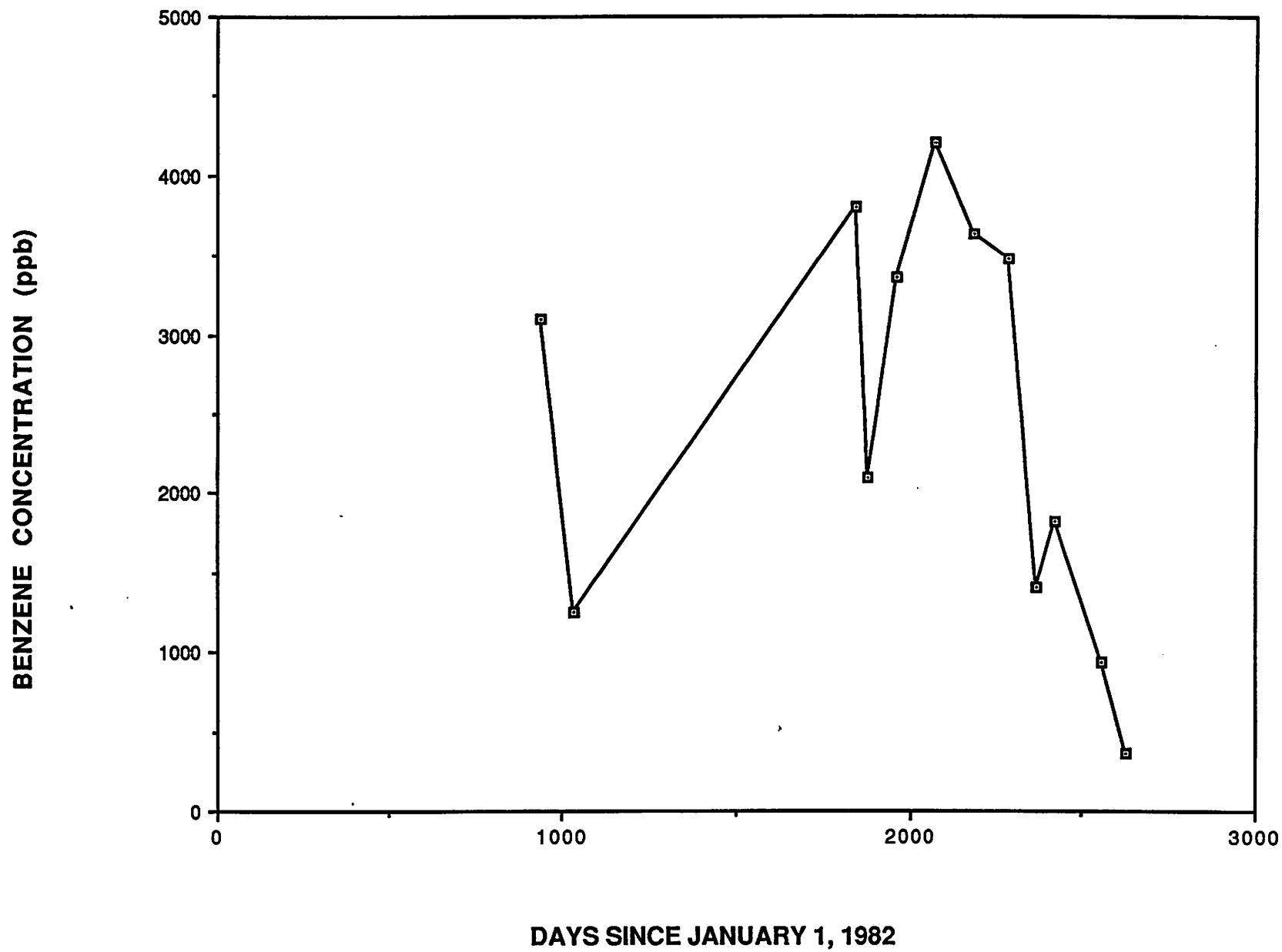
**FIGURE 1: WELL MW-1 BENZENE
CONCENTRATION OVER TIME**



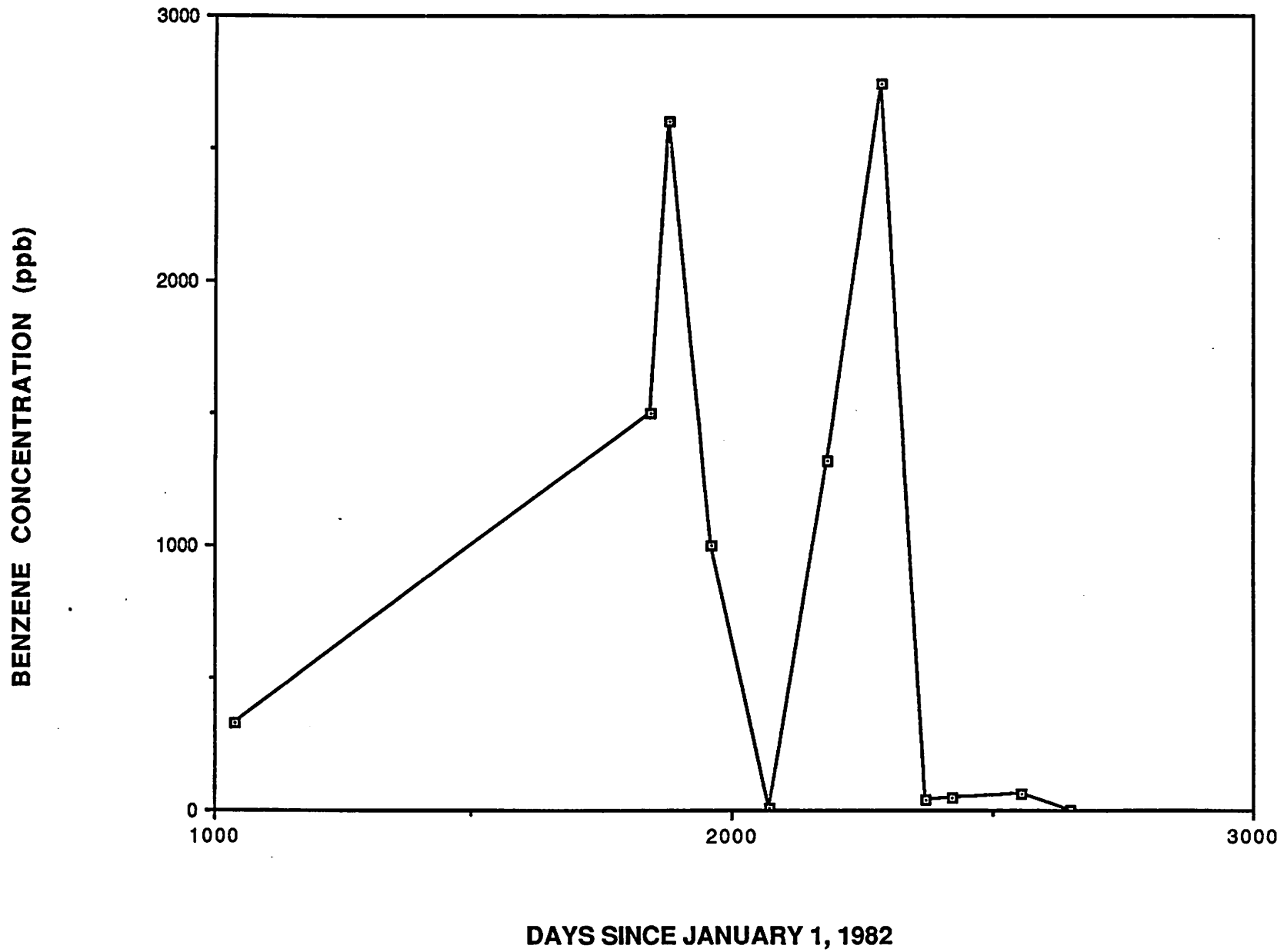
**FIGURE 2: WELL MW-3 BENZENE
CONCENTRATION OVER TIME**



**FIGURE 3: WELL MW-5 BENZENE
CONCENTRATION OVER TIME**



**FIGURE 4: WELL W-7 BENZENE
CONCENTRATION OVER TIME**

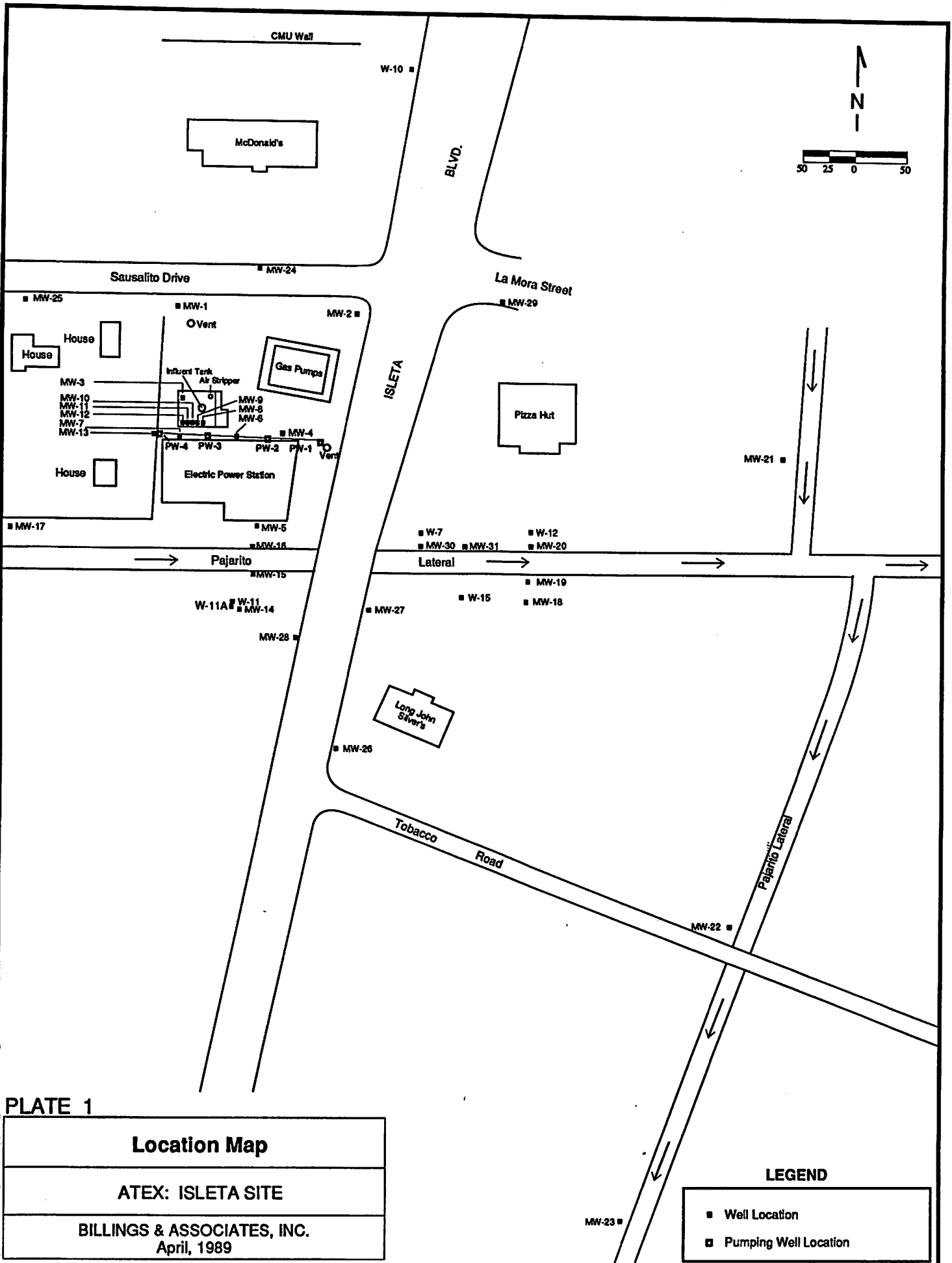


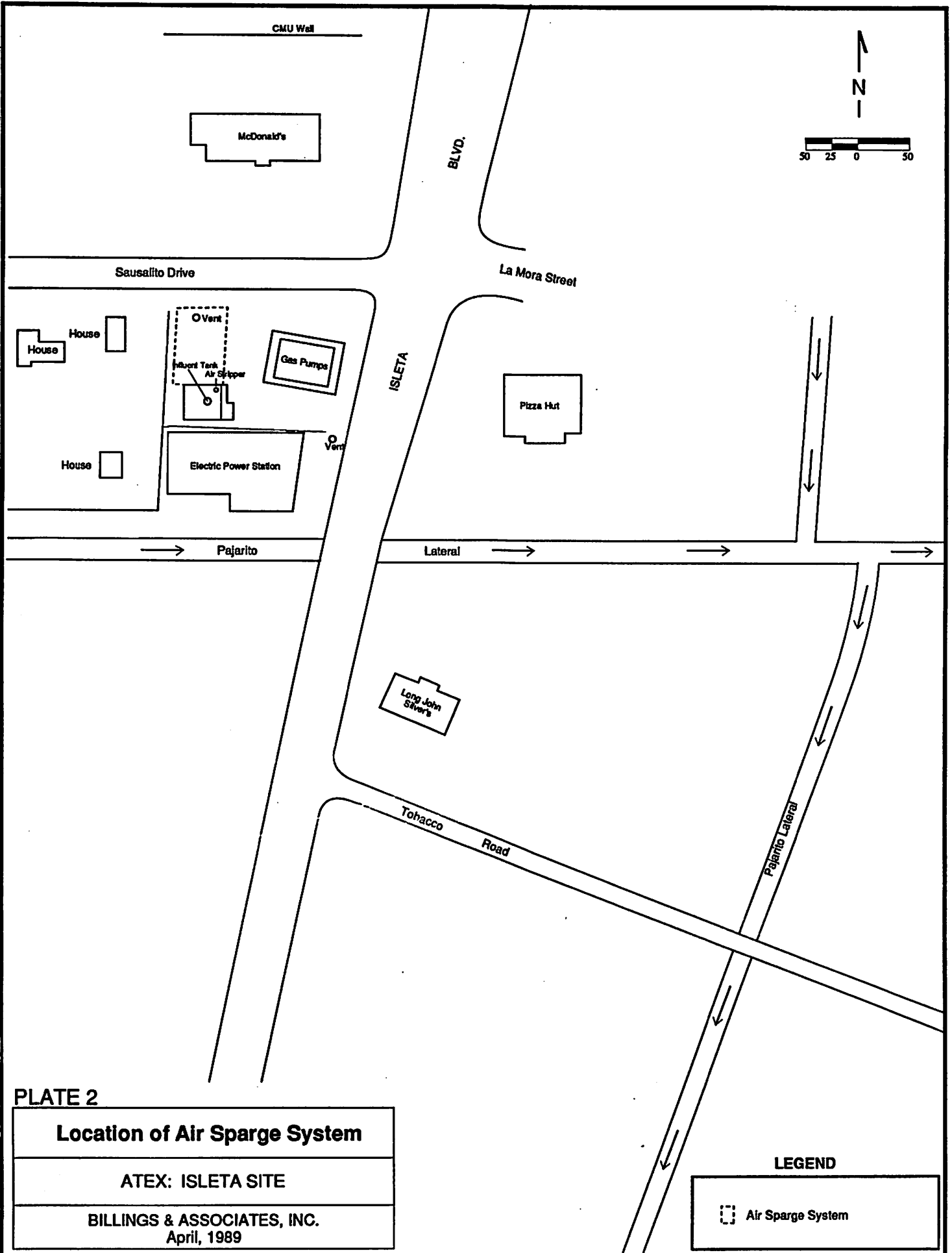
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Plates

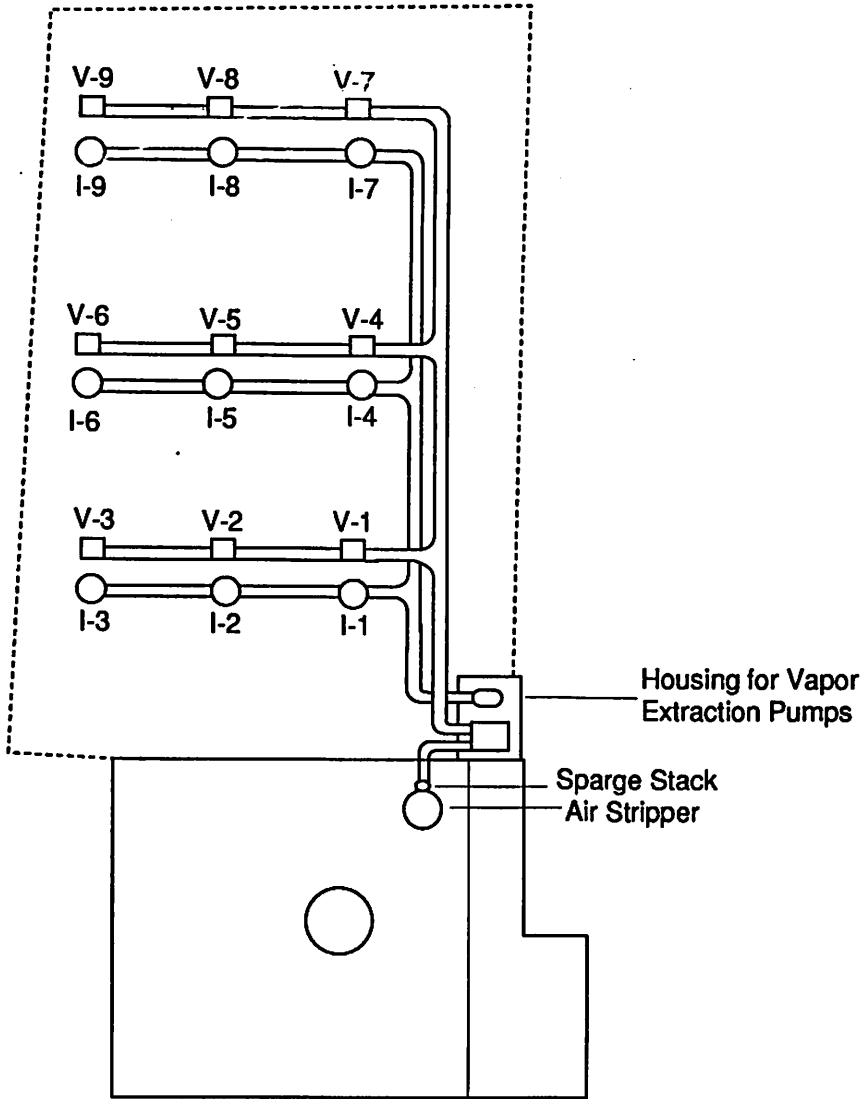


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Sausalito Drive



Housing for Vapor
Extraction Pumps

Sparge Stack
Air Stripper

Electric Power Station

LEGEND

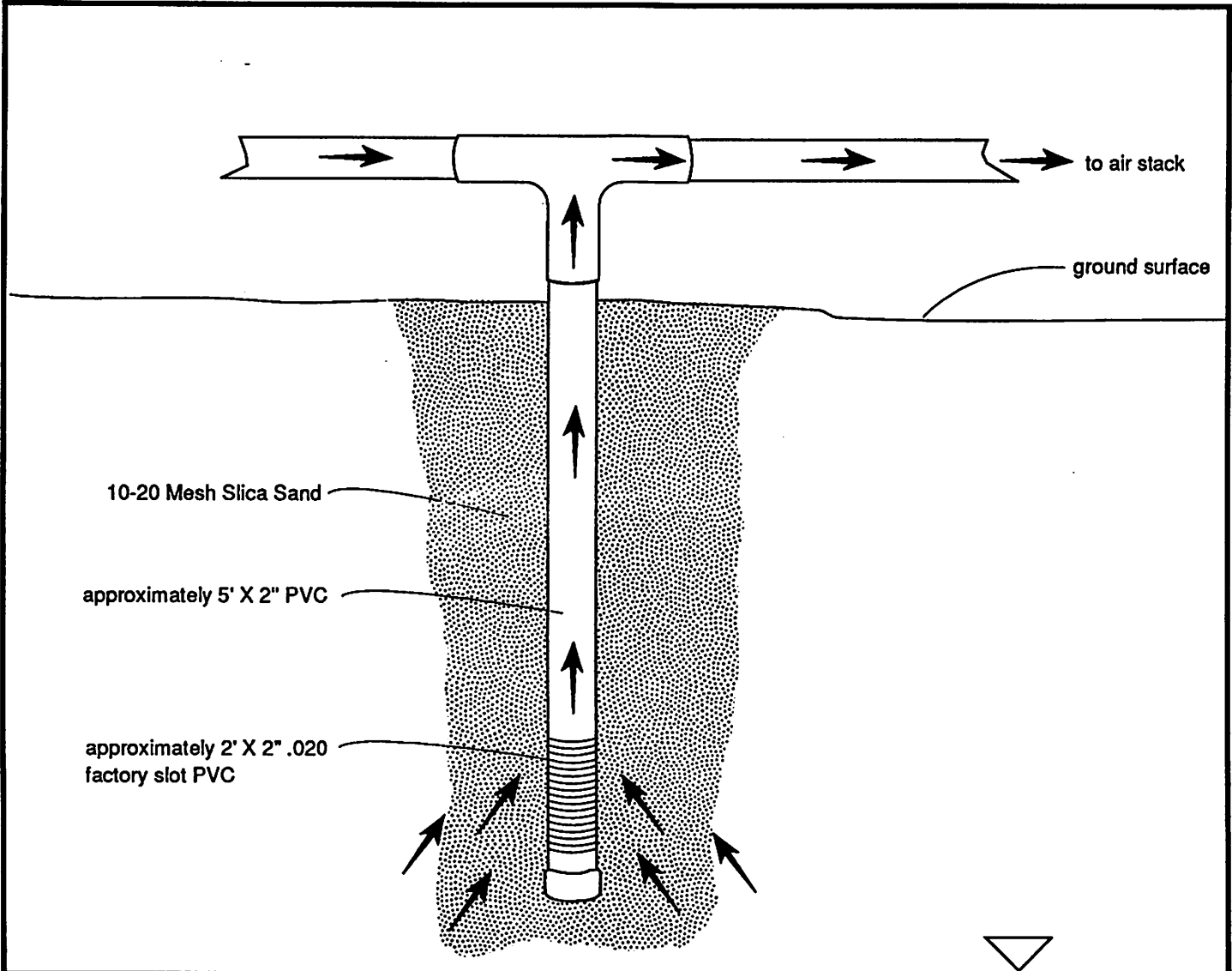
V-1	□	Vacuum Well Number
I-1	○	Injection Well Number

PLATE 3

Schematic of Air Sparge System

ATEX: ISLETA SITE

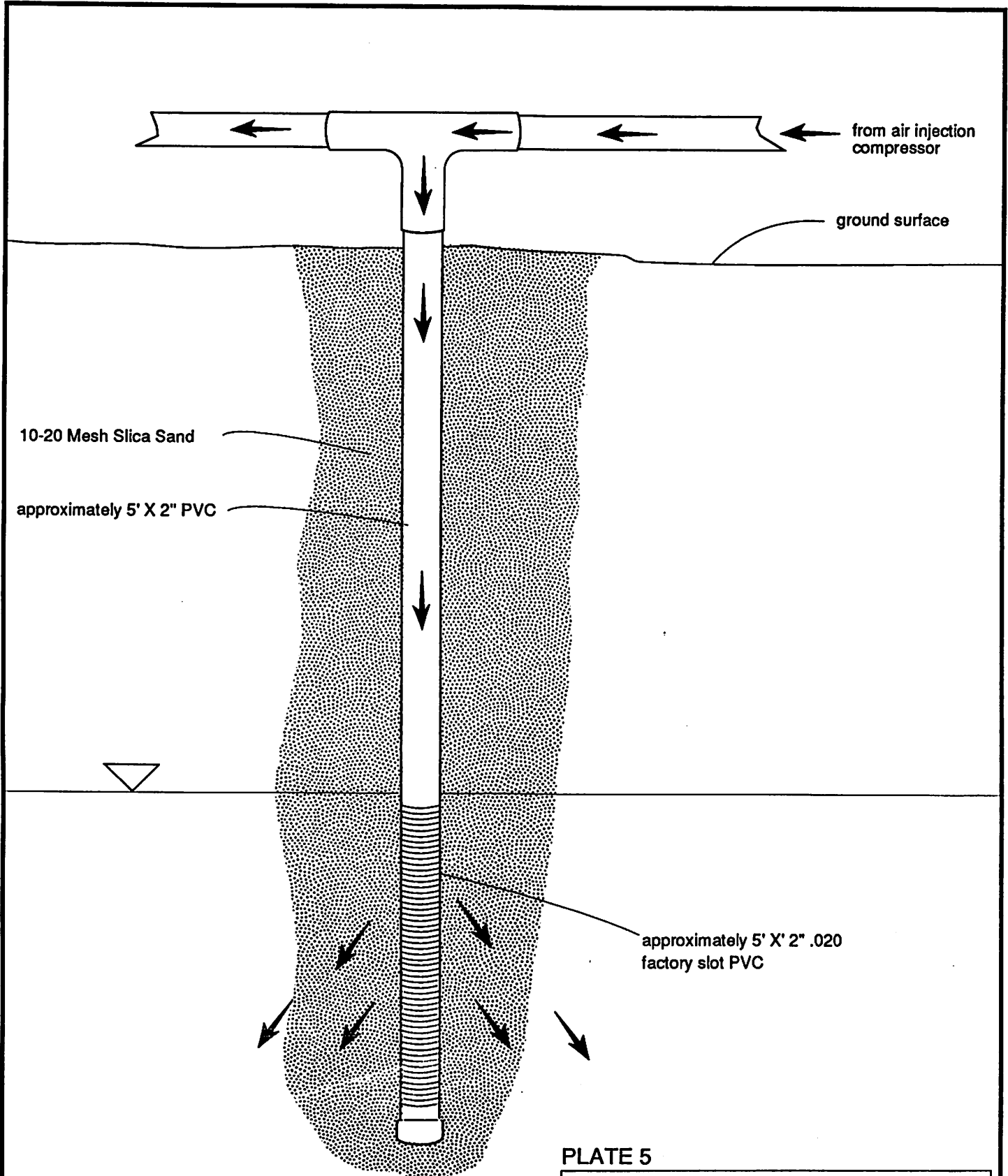
BILLINGS & ASSOCIATES, INC.
April, 1989



not to scale

PLATE 4

Cross Section of Air Extraction Well
ATEX: Isleta Site
Billings & Associates, Inc. April, 1989



10-20 Mesh Silica Sand

approximately 5' X 2" PVC

from air injection compressor

ground surface

approximately 5' X 2" .020 factory slot PVC

not to scale

PLATE 5
Cross Section of Sparge Well
 ATEX: Isleta Site
 Billings & Associates, Inc.
 April, 1989

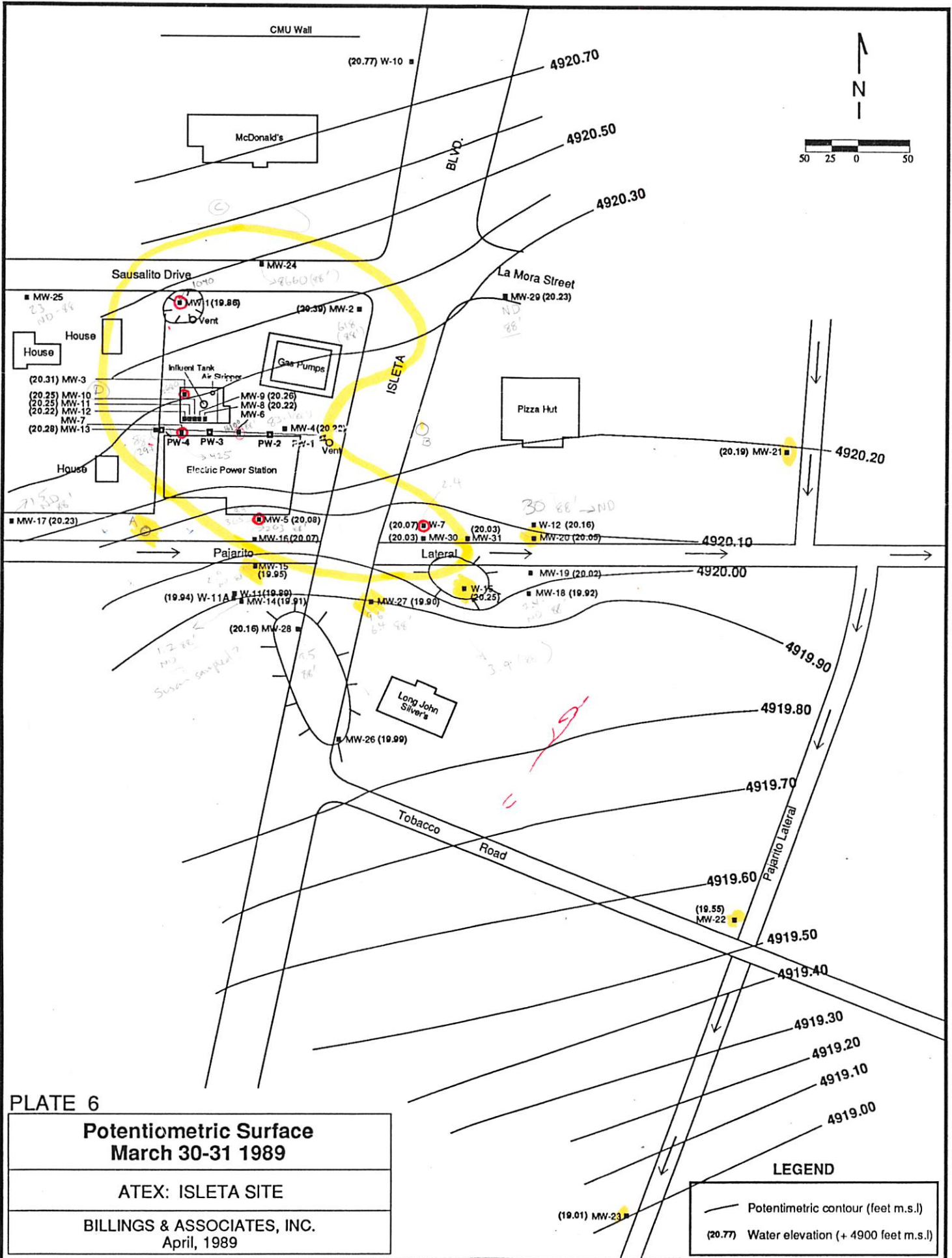


PLATE 6

**Potentiometric Surface
March 30-31 1989**

ATEX: ISLETA SITE

BILLINGS & ASSOCIATES, INC.
April, 1989

LEGEND

- Potentiometric contour (feet m.s.l.)
- (20.77) Water elevation (+ 4900 feet m.s.l.)

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Appendices



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Appendix A

Discharge and System Monitoring Data (Q: instantaneous discharge in gallons/minute) (totalizer: flowmeter in gallons)



DISCHARGE AND SYSTEM MONITORING DATA: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>TIME</u>	<u>Q</u>	<u>TOTALIZER</u>	<u>REMARKS</u>
INFLUENT	1/3/89	1500	50	16250300	CLEANED FILTER (BY TAPPING)
EFFLUENT	1/3/89	1500	49	17560000	26 PSI
EFFLUENT	1/24/89				P=10 PSI
INFLUENT	1/24/89	11.00		16564345	
INFLUENT	1/31/89	9.45	50	16680900	

ATEX: ISLETA SITE
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DISCHARGE AND SYSTEM MONITORING DATA: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>TIME</u>	<u>Q</u>	<u>TOTALIZER</u>	<u>REMARKS</u>
EFFLUENT	1/31/89				P=10.5 PSI
INFLUENT	2/6/89	10.26	49	16773700	
INFLUENT	2/8/89	12.57		16804700	
INFLUENT	2/8/89	1257		16804700	
INFLUENT	3/9/89	1346		17134100	

DISCHARGE AND SYSTEM MONITORING DATA: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>TIME</u>	<u>Q</u>	<u>TOTALIZER</u>	<u>REMARKS</u>
INFLUENT	3/10/89	1208		17176700	
INFLUENT	3/15/89				SYSTEM WATER OFF TO CLEAN WELL STEMS ON INJECTION WELLS.
INFLUENT	3/16/89				SYSTEM BACK ON LINE
INFLUENT	3/16/89	1540	47		
INFLUENT	3/20/89	1722	51	17617000	

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DISCHARGE AND SYSTEM MONITORING DATA: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>TIME</u>	<u>Q</u>	<u>TOTALIZER</u>	<u>REMARKS</u>
INFLUENT	3/21/89	1515	44	1762700	
INFLUENT	3/21/89	1513	44	17672600	
INFLUENT	3/30/89	1054	45	18132100	
INFLUENT	3/30/89	1054	45	18132100	
INFLUENT	3/31/89	0900			SYSTEM TURNED OFF TO CLEAN AIR STRIPPER

DISCHARGE AND SYSTEM MONITORING DATA: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>TIME</u>	<u>Q</u>	<u>TOTALIZER</u>	<u>REMARKS</u>
INFLUENT	3/31/89	1435	45		SYSTEM BACK ON.

Appendix B

Observation Wells- Depth to Water (DTW: depths in feet)



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OBSERVATION WELLS - DEPTH TO WATER: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>TIME</u>	<u>DTW</u>	<u>REMARKS</u>
MW-1	3/31/89		11.33	
MW-10	3/31/89		10.02	
MW-11	3/31/89		9.785	
MW-12	3/31/89		9.79	
MW-13	3/31/89		9.78	
MW-14	3/30/89		8.75	
MW-15	3/30/89		10.25	
MW-15	3/30/89		10.55	
MW-16	3/31/89		11.82	
MW-17	3/31/89		12.73	
MW-18	3/30/89		10.52	
MW-19	3/30/89		10.12	
MW-2	3/31/89		11.57	
MW-20	3/30/89		10.09	
MW-21	3/30/89		9.69	
MW-22	3/30/89		8.95	
MW-23	3/30/89		10.15	
MW-24	3/30/89			UNABLE TO LOCATE
MW-25	3/31/89			REMAINS CLOGGED AT APPROX. 5.5 FEET
MW-26	3/30/89		8.66	
MW-27	3/30/89		8.80	
MW-28	3/30/89		8.44	
MW-29	3/30/89		8.79	
MW-3	3/31/89		10.90	

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OBSERVATION WELLS - DEPTH TO WATER: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>TIME</u>	<u>DTW</u>	<u>REMARKS</u>
MW-30	3/30/89		9.85	
MW-31	3/30/89		10.04	
MW-4	3/31/89		12.29	
MW-5	3/31/89		11.84	
MW-6	3/31/89			SEALED OFF AT APPROX. 8.5 FEET
MW-7	3/31/89			PLUGGED AT APPROX. 8.5 FEET
MW-8	3/31/89		10.54	
MW-9	3/31/89		9.97	
W-10	3/30/89		8.27	
W-11	3/30/89		9.87	
W-11A	3/30/89		9.45	
W-12	3/30/89		9.54	
W-7	3/30/89		9.99	

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Appendix C

Organic Water Quality (all concentrations in ppb)



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ORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>LAB</u>	<u>BENZENE</u>	<u>TOLUENE</u>	<u>ETHYLBENZENE</u>	<u>XYLENES</u>	<u>EDC</u>	<u>EDB</u>	<u>NAPHTHALENES</u>
EFFLUENT	2/29/88		7.5	1.0		1.5			
	<u>REMARKS</u>	ND = 1							
EFFLUENT	3/3/88		1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	<u>REMARKS</u>	ND = 1							
EFFLUENT	3/22/88		1.0	<1.0	<1.0	<1.0			
	<u>REMARKS</u>	ND = 1							
EFFLUENT	3/30/88		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	<u>REMARKS</u>	ND = 1							
EFFLUENT	4/19/88		<1.0	<1.0		<1.0			
	<u>REMARKS</u>	ND = 1							
EFFLUENT	5/5/88		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	<u>REMARKS</u>	ND = 1							
EFFLUENT	5/20/88		<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	
	<u>REMARKS</u>	ND = 1 (<0.1 for EDB)							
EFFLUENT	6/6/88		<1.0	<1.0		<1.0			
	<u>REMARKS</u>								

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ORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>LAB</u>	<u>BENZENE</u>	<u>TOLUENE</u>	<u>ETHYLBENZENE</u>	<u>XYLENES</u>	<u>EDC</u>	<u>EDB</u>	<u>NAPHTHALENES</u>
EFFLUENT	6/20/88		<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0
<u>REMARKS</u>	ND = 1 (<0.1 for EDB)								
EFFLUENT	7/5/88		<1.0	<1.0		<1.0			
<u>REMARKS</u>									
EFFLUENT	7/5/88								
<u>REMARKS</u>	P=32 psj; INJECTION LINE INTACT								
EFFLUENT	7/20/88		1.7	1.2	<1.0	<1.0	<1.0	<0.1	<1.0
<u>REMARKS</u>									
EFFLUENT	8/5/88		12.0	37.0		73.0			
<u>REMARKS</u>									
EFFLUENT	8/16/88		46.0	211.0	85.0	200.0	<1.0	<0.1	39.0
<u>REMARKS</u>									
EFFLUENT	8/29/88		15.0	36.0		120.0			
<u>REMARKS</u>									
EFFLUENT	9/26/88		1.9	2.6		1.8			
<u>REMARKS</u>									

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ORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>LAB</u>	<u>BENZENE</u>	<u>TOLUENE</u>	<u>ETHYLBENZENE</u>	<u>XYLENES</u>	<u>EDC</u>	<u>EDB</u>	<u>NAPHTHALENES</u>
EFFLUENT	10/11/88		7.2	29.0	10.0	30.0	<1.0	<0.1	<1.0
<u>REMARKS</u>		ND=1(EDB=0.1)							
EFFLUENT	10/26/88		<1.0	3.7		5.6			
<u>REMARKS</u>		ND=1							
EFFLUENT	11/30/88		<1.0	9.8	13.0	73.0			
<u>REMARKS</u>									
EFFLUENT	12/28/88		0.6	0.6	0.2	1.3			
<u>REMARKS</u>		ND=.1							
EFFLUENT	1/31/89		<1.0	<1.0	<1.0	2.9			
<u>REMARKS</u>									
EFFLUENT	2/8/89	ASG	<1.0	<1.0	<1.0	<1.0			
<u>REMARKS</u>									
EFFLUENT	2/18/89								
<u>REMARKS</u>		39 PSI							
EFFLUENT	2/27/89	ASG	<1.0	<1.0	<1.0	<1.0			
<u>REMARKS</u>									

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ORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>LAB</u>	<u>BENZENE</u>	<u>TOLUENE</u>	<u>ETHYLBENZENE</u>	<u>XYLENES</u>	<u>EDC</u>	<u>EDB</u>	<u>NAPHTHALENES</u>
EFFLUENT	3/9/89	ASG	<1.0	<1.0	<1.0	1.4			
<u>REMARKS</u>									
EFFLUENT	4/6/89	ASG	<1.0	<1.0	<1.0	<1.0			
<u>REMARKS</u>									
INFLUENT	6/10/86	STATE	660.0						
<u>REMARKS</u>									
INFLUENT	6/10/86	STATE	630.0						
<u>REMARKS</u>									
INFLUENT	1/15/87	WILSON	ND						
<u>REMARKS</u>									
INFLUENT	2/20/87	ANALYTICAL	120.0						
<u>REMARKS</u>									
INFLUENT	5/1/87	ANALYTICAL	4.0						
<u>REMARKS</u>									
INFLUENT	8/1/87	ANALYTICAL	407.0						
<u>REMARKS</u>									

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ORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>LAB</u>	<u>BENZENE</u>	<u>TOLUENE</u>	<u>ETHYLBENZENE</u>	<u>XYLENES</u>	<u>EDC</u>	<u>EDB</u>	<u>NAPHTHALENES</u>
INFLUENT	3/3/88		312.0	13.2	14.7	62.3	<1.0	<1.0	<1.0
	<u>REMARKS</u>	ND=1							
INFLUENT	3/30/88		248.0	14.2		36.3			
	<u>REMARKS</u>	ND=1							
INFLUENT	6/30/88		169.0	40.0		77.0			
	<u>REMARKS</u>								
INFLUENT	7/5/88								
	<u>REMARKS</u>								
INFLUENT	9/26/88		125.0	66.0		72.0			
	<u>REMARKS</u>								
INFLUENT	10/26/88		519.0	864.0		1456.0			
	<u>REMARKS</u>	ND=1							
INFLUENT	12/28/88		237.0	44.0	29.0	87.0			
	<u>REMARKS</u>	ND=.1							
INFLUENT	1/31/89		225.0	69.0	32.0	169.0			
	<u>REMARKS</u>								

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ORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>LAB</u>	<u>BENZENE</u>	<u>TOLUENE</u>	<u>ETHYLBENZENE</u>	<u>XYLENES</u>	<u>EDC</u>	<u>EDB</u>	<u>NAPHTHALENES</u>
INJ EAST	2/4/88		<1.0	<1.0		<1.0			
<u>REMARKS</u>	ND=1								
MW-1	6/7/84	STATE	4600.0						
<u>REMARKS</u>									
MW-1	7/19/84	STATE	2400.0						
<u>REMARKS</u>									
MW-1	7/24/84	STATE	2400.0						
<u>REMARKS</u>									
MW-1	11/1/84	STATE	8000.0						
<u>REMARKS</u>									
MW-1	11/4/86	WILSON	2300.0						
<u>REMARKS</u>									
MW-1	2/20/87	ROCKY	2600.0						
<u>REMARKS</u>									
MW-1	5/11/87	FOX'S QR	540.0						
<u>REMARKS</u>									

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ORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>LAB</u>	<u>BENZENE</u>	<u>TOLUENE</u>	<u>ETHYLBENZENE</u>	<u>XYLENES</u>	<u>EDC</u>	<u>EDB</u>	<u>NAPHTHALENES</u>
MW-1	8/31/87	ANALYTICAL	1600.0						
	<u>REMARKS</u>								
MW-1	12/21/87	ASG	2040.0	1480.0		1214.0			
	<u>REMARKS</u> ND=1								
MW-1	3/30/88	ASG	1880.0	750.0		1880.0			
	<u>REMARKS</u> ND=1								
MW-1	6/27/88	ASG	773.0	199.0		638.0			
	<u>REMARKS</u>								
MW-1	8/16/88	ASG	1830.0						
	<u>REMARKS</u>								
MW-1	12/28/88		1160.0	1310.0	256.0	3850.0			
	<u>REMARKS</u> ND=.1								
MW-1	3/9/89	ASG	1040.0	510.0	<50.0	2240.0			
	<u>REMARKS</u>								
MW-13	12/21/87		202.0	199.0		2411.0			
	<u>REMARKS</u> ND=1								

ATEX: ISLETA SITE

BILLINGS & ASSOCIATES, INC.

ORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>LAB</u>	<u>BENZENE</u>	<u>TOLUENE</u>	<u>ETHYLBENZENE</u>	<u>XYLENES</u>	<u>EDC</u>	<u>EDB</u>	<u>NAPHTHALENES</u>
MW-13	3/30/88		297.0	335.0		8584.0			
<u>REMARKS</u>	ND=1								
MW-14	1/8/88		1.2	1.1		1.5			
<u>REMARKS</u>	ND=1								
MW-14	3/30/88		<1.0	<1.0		<1.0			
<u>REMARKS</u>	ND=1								
MW-15	1/8/88		2.9	4.3		4.3			
<u>REMARKS</u>	ND=1								
MW-15	3/30/88		<1.0	<1.0		<1.0			
<u>REMARKS</u>	ND=1								
MW-16	1/8/88		1270.0	204.0		351.0			
<u>REMARKS</u>	ND=1								
MW-16	3/30/88		203.0	47.0		1046.0			
<u>REMARKS</u>	ND=1								
MW-17	1/8/88		1.5	2.4		4.0			
<u>REMARKS</u>	ND=1								

ATEX: ISLETA SITE
BILLINGS & ASSOCIATES, INC.

ORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>LAB</u>	<u>BENZENE</u>	<u>TOLUENE</u>	<u>ETHYLBENZENE</u>	<u>XYLENES</u>	<u>EDC</u>	<u>EDB</u>	<u>NAPHTHALENES</u>
MW-17	3/30/88		<1.0	<1.0		<1.0			
<u>REMARKS</u>	ND=1								
MW-18	1/8/88		7.4	5.3		35.0			
<u>REMARKS</u>	ND=1								
MW-18	3/30/88		<1.0	<1.0		<1.0			
<u>REMARKS</u>	ND=1								
MW-19	3/30/88		<1.0	<1.0		<1.0			
<u>REMARKS</u>	ND=1								
MW-2	12/21/87		1900.0	78.0		316.0			
<u>REMARKS</u>	ND=1								
MW-2	3/30/88		618.0	<1.0		<1.0			
<u>REMARKS</u>	ND=1								
MW-20	3/30/88		<1.0	<1.0		<1.0			
<u>REMARKS</u>	ND=1								
MW-21	3/30/88		<1.0	<1.0		<1.0			
<u>REMARKS</u>	ND=1								

ATEX: ISLETA SITE
BILLINGS & ASSOCIATES, INC.

ORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>LAB</u>	<u>BENZENE</u>	<u>TOLUENE</u>	<u>ETHYLBENZENE</u>	<u>XYLENES</u>	<u>EDC</u>	<u>EDB</u>	<u>NAPHTHALENES</u>
MW-22	3/30/88		<1.0	<1.0		<1.0			
	<u>REMARKS</u>	ND=1							
MW-23	3/30/88		<1.0	<1.0		<1.0			
	<u>REMARKS</u>	ND=1							
MW-24	6/27/88		7250.0	17500.0		17900.0			
	<u>REMARKS</u>								
MW-24	8/16/88		8660.0						
	<u>REMARKS</u>								
MW-25	6/27/88		23.0	<1.0		<1.0			
	<u>REMARKS</u>								
MW-25	8/16/88		<1.0						
	<u>REMARKS</u>								
MW-26	5/13/88		<1.0	<1.0		<1.0			
	<u>REMARKS</u>								
MW-26	6/27/88		<1.0	<1.0		<1.0			
	<u>REMARKS</u>								

ATEX: ISLETA SITE
BILLINGS & ASSOCIATES, INC.

ORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>LAB</u>	<u>BENZENE</u>	<u>TOLUENE</u>	<u>ETHYLBENZENE</u>	<u>XYLENES</u>	<u>EDC</u>	<u>EDB</u>	<u>NAPHTHALENES</u>
MW-26	8/16/88		<1.0						
			<u>REMARKS</u>						
MW-27	5/13/88		<1.0	<1.0		<1.0			
			<u>REMARKS</u>						
MW-27	6/27/88		9.8	<1.0		<1.0			
			<u>REMARKS</u>						
MW-27	8/16/88		6.4						
			<u>REMARKS</u>						
MW-28	5/13/88		<1.0	<1.0		<1.0			
			<u>REMARKS</u>						
MW-28	6/27/88		<1.0	<1.0		<1.0			
			<u>REMARKS</u>						
MW-28	8/16/88		9.5						
			<u>REMARKS</u>						
MW-29	6/27/88		<1.0	1.9		<1.0			
			<u>REMARKS</u>						

ATEX: ISLETA SITE
 BILLINGS & ASSOCIATES, INC.

ORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>LAB</u>	<u>BENZENE</u>	<u>TOLUENE</u>	<u>ETHYLBENZENE</u>	<u>XYLENES</u>	<u>EDC</u>	<u>EDB</u>	<u>NAPHTHALENES</u>
MW-29	8/16/88		<1.0						
			<u>REMARKS</u>						
MW-3	11/29/82	STATE	23216.0						
			<u>REMARKS</u>						
MW-3	6/7/84	STATE	25000.0						
			<u>REMARKS</u>						
MW-3	6/7/84	STATE	41000.0						
			<u>REMARKS</u>						
MW-3	7/24/84	STATE	17500.0						
			<u>REMARKS</u>						
MW-3	11/2/84	STATE	24000.0						
			<u>REMARKS</u>						
MW-3	6/10/85	FOX'S QR	3800.0						
			<u>REMARKS</u>						
MW-3	5/5/86	STATE	3800.0						
			<u>REMARKS</u>						

ATEX: ISLETA SITE
 BILLINGS & ASSOCIATES, INC.

ORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>LAB</u>	<u>BENZENE</u>	<u>TOLUENE</u>	<u>ETHYLBENZENE</u>	<u>XYLENES</u>	<u>EDC</u>	<u>EDB</u>	<u>NAPHTHALENES</u>
MW-3	1/15/87	WILSON	10000.0						
			<u>REMARKS</u>						
MW-3	2/20/87	ROCKY	16000.0						
			<u>REMARKS</u>						
MW-3	8/31/87	ANALYTICAL	12100.0						
			<u>REMARKS</u>						
MW-3	12/21/87	ASG	15350.0	19390.0		19530.0			
			<u>REMARKS</u> ND=1						
MW-3	3/30/88	ASG	17130.0	12150.0		19606.0			
			<u>REMARKS</u> ND=1						
MW-3	6/27/88	ASG	9530.0	11900.0		15600.0			
			<u>REMARKS</u>						
MW-3	8/16/88	ASG	5260.0						
			<u>REMARKS</u>						
MW-3	12/28/88		5760.0	10200.0	1210.0	18000.0			
			<u>REMARKS</u> ND=.1						

ATEX: ISLETA SITE
BILLINGS & ASSOCIATES, INC.

ORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>LAB</u>	<u>BENZENE</u>	<u>TOLUENE</u>	<u>ETHYLBENZENE</u>	<u>XYLENES</u>	<u>EDC</u>	<u>EDB</u>	<u>NAPTHALENES</u>
MW-3	3/9/89	ASG	2680.0	6130.0	1530.0	10500.0			
	<u>REMARKS</u>								
MW-30	8/16/88		<1.0						
	<u>REMARKS</u>								
MW-31	8/16/88		7.2						
	<u>REMARKS</u>								
MW-4	12/21/87		<1.0	<1.0		<1.0			
	<u>REMARKS</u> ND = 1								
MW-4	3/30/88		83.1	<1.0		<1.0			
	<u>REMARKS</u> ND = 1								
MW-5	7/24/84	STATE	3100.0						
	<u>REMARKS</u>								
MW-5	10/31/84	STATE	1250.0						
	<u>REMARKS</u>								
MW-5	1/15/87	WILSON	3800.0						
	<u>REMARKS</u>								

ATEX: ISLETA SITE
BILLINGS & ASSOCIATES, INC.

ORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>LAB</u>	<u>BENZENE</u>	<u>TOLUENE</u>	<u>ETHYLBENZENE</u>	<u>XYLENES</u>	<u>EDC</u>	<u>EDB</u>	<u>NAPHTHALENES</u>
MW-5	2/20/87	ROCKY	2100.0						
		<u>REMARKS</u>							
MW-5	5/11/87	FOX'S QR	3360.0						
		<u>REMARKS</u>							
MW-5	8/31/87	ANALYTICAL	4200.0						
		<u>REMARKS</u>							
MW-5	12/21/87	ASG	3630.0	3890.0		3560.0			
		<u>REMARKS</u>	ND=1						
MW-5	3/30/88	ASG	3480.0	2926.0		2675.0			
		<u>REMARKS</u>	ND=1						
MW-5	6/27/88	ASG	1400.0	2480.0		4600.0			
		<u>REMARKS</u>							
MW-5	8/16/88	ASG	1820.0						
		<u>REMARKS</u>							
MW-5	12/28/88		942.0	119.0	311.0	364.0			
		<u>REMARKS</u>	ND=.1						

ATEX: ISLETA SITE
 BILLINGS & ASSOCIATES, INC.

ORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>LAB</u>	<u>BENZENE</u>	<u>TOLUENE</u>	<u>ETHYLBENZENE</u>	<u>XYLENES</u>	<u>EDC</u>	<u>EDB</u>	<u>NAPHTHALENES</u>
MW-5	3/9/89	ASG	365.0	125.0	88.0	297.0			
	<u>REMARKS</u>								
MW-6	12/21/87		12590.0	12100.0		8080.0			
	<u>REMARKS</u> ND = 1								
MW-6	3/30/88		16100.0	3925.0		5925.0			
	<u>REMARKS</u> ND = 1								
MW-7	12/21/87		8950.0	11310.0		10660.0			
	<u>REMARKS</u> ND = 1								
MW-7	3/9/89	ASG	425.0	630.0	293.0	1090.0			
	<u>REMARKS</u>								
MW-8	12/21/87		5400.0	5050.0		6609.0			
	<u>REMARKS</u> ND = 1								
W-10	12/21/87		<1.0	150.0		174.0			
	<u>REMARKS</u> ND = 1								
W-10	3/30/88		<1.0	<1.0		<1.0			
	<u>REMARKS</u> ND = 1								

ATEX: ISLETA SITE

BILLINGS & ASSOCIATES, INC.

ORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>LAB</u>	<u>BENZENE</u>	<u>TOLUENE</u>	<u>ETHYLBENZENE</u>	<u>XYLENES</u>	<u>EDC</u>	<u>EDB</u>	<u>NAPHTHALENES</u>
W-11	12/21/87		<1.0	50.0		18.0			
	<u>REMARKS</u>	ND=1							
W-12	12/21/87		<1.0	330.0		143.0			
	<u>REMARKS</u>	ND=1							
W-12	3/30/88		<1.0	<1.0		<1.0			
	<u>REMARKS</u>	ND=1							
W-12	6/27/88		30.0	<1.0		<1.0			
	<u>REMARKS</u>								
W-12	8/16/88		<1.0						
	<u>REMARKS</u>								
W-15	12/21/87		<1.0	131.0		162.0			
	<u>REMARKS</u>	ND=1							
W-15	3/30/88		3.9	1.0		<1.0			
	<u>REMARKS</u>	ND=1							
W-7	11/2/84	STATE	330.0						
	<u>REMARKS</u>								

ATEX: ISLETA SITE
 BILLINGS & ASSOCIATES, INC.

ORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>LAB</u>	<u>BENZENE</u>	<u>TOLUENE</u>	<u>ETHYLBENZENE</u>	<u>XYLENES</u>	<u>EDC</u>	<u>EDB</u>	<u>NAPHTHALENES</u>
W-7	1/15/87	WILSON	1500.0						
			<u>REMARKS</u>						
W-7	2/20/87	ROCKY	2600.0						
			<u>REMARKS</u>						
W-7	5/11/87	FOX'S QR	1000.0						
			<u>REMARKS</u>						
W-7	8/31/87	ANALYTICAL	11.0						
			<u>REMARKS</u>						
W-7	12/21/87	ASG	1320.0	600.0		755.0			
			<u>REMARKS</u> ND=1						
W-7	3/30/88	ASG	2745.0	6.2		1940.0			
			<u>REMARKS</u> ND=1						
W-7	6/27/88	ASG	36.0	4.6		341.0			
			<u>REMARKS</u>						
W-7	8/16/88	ASG	49.0						
			<u>REMARKS</u>						

ATEX: ISLETA SITE
 BILLINGS & ASSOCIATES, INC.

ORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>LAB</u>	<u>BENZENE</u>	<u>TOLUENE</u>	<u>ETHYLBENZENE</u>	<u>XYLENES</u>	<u>EDC</u>	<u>EDB</u>	<u>NAPHTHALENES</u>
W-7	12/28/88		61.0	6.0	77.0	278.0			
<u>REMARKS</u>	ND=.1								
W-7	3/30/89	ASG	2.4	2.3	10.0	7.5			
<u>REMARKS</u>									

ATEX: ISLETA SITE
BILLINGS & ASSOCIATES, INC.

Appendix D

Inorganic Water Quality (all concentrations in ppm)



INORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>TIME</u>	<u>DISSOLVED OXYGEN</u>	<u>Fe TOTAL</u>
AS EFFLUENT <u>REMARKS</u> ND=0.10	11/15/88			0.728
AS EFFLUENT <u>REMARKS</u> ND=0.10	11/17/88			.344
AS INFLUENT <u>REMARKS</u> ND=0.10	11/17/88			.677
INFLUENT TO I-2 <u>REMARKS</u> ND=0.10	11/17/88			.254
MW-1 <u>REMARKS</u>	11/1/88	1008	0.65	
MW-1 <u>REMARKS</u>	4/14/89	1300	1.2	
MW-1 <u>REMARKS</u>	4/17/89		1.30	
MW-10 <u>REMARKS</u>	11/1/88	1421	0.15	

ATEX: ISLETA SITE
BILLINGS & ASSOCIATES, INC

INORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>TIME</u>	<u>DISSOLVED OXYGEN</u>	<u>Fe TOTAL</u>
MW-11	11/1/88			
<u>REMARKS</u>	NOT SAMPLED, DEBRIS IN WELL			
MW-12	11/1/88	1433	0.05	
<u>REMARKS</u>				
MW-13	11/1/88	1437	0.05	
<u>REMARKS</u>				
MW-14	11/1/88	1257	0.30	
<u>REMARKS</u>				
MW-15	11/1/88	1307	0.65	
<u>REMARKS</u>				
MW-16	11/1/88	1111	0.05	
<u>REMARKS</u>				
MW-17	11/1/88	1058	0.05	
<u>REMARKS</u>				
MW-18	11/1/88	1236	0.10	
<u>REMARKS</u>				

ATEX: ISLETA SITE
BILLINGS & ASSOCIATES, INC

INORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>TIME</u>	<u>DISSOLVED OXYGEN</u>	<u>Fe TOTAL</u>
MW-19	11/1/88	1227	0.40	
<u>REMARKS</u>				
MW-2	11/1/88	1356	0.10	
<u>REMARKS</u>				
MW-20	11/1/88	1148	0.1	
<u>REMARKS</u>				
MW-21	11/1/88	1207	7.6	
<u>REMARKS</u>				
MW-22	11/1/88	1243	0.2	
<u>REMARKS</u>				
MW-23	11/1/88	1249	0.5	
<u>REMARKS</u>				
MW-24	11/1/88	10.31	0.65	
<u>REMARKS</u>				
MW-25	11/1/88	10.45	2.6	
<u>REMARKS</u>				

ATEX: ISLETA SITE
BILLINGS & ASSOCIATES, INC

INORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>TIME</u>	<u>DISSOLVED OXYGEN</u>	<u>Fe TOTAL</u>
MW-26	11/1/88	1336	0.05	
<u>REMARKS</u>				
MW-27	11/1/88	1342	0.10	
<u>REMARKS</u>				
MW-28	11/1/88	1314	0.05	
<u>REMARKS</u>				
MW-29	11/1/88	1348	0.05	
<u>REMARKS</u>				
MW-3	11/1/88	1402	0.10	
<u>REMARKS</u>				
MW-3	4/14/89	1320	1.80	
<u>REMARKS</u>				
MW-3	4/17/89		1.75	
<u>REMARKS</u>				
MW-30	11/1/88	1129	0.10	
<u>REMARKS</u>				

ATEX: ISLETA SITE
BILLINGS & ASSOCIATES, INC

INORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>TIME</u>	<u>DISSOLVED OXYGEN</u>	<u>Fe TOTAL</u>
MW-31	11/1/88	1141	0.10	
<u>REMARKS</u>				
MW-4	11/2/88	1406	0.05	
<u>REMARKS</u>				
MW-5	11/2/88	1104	0.05	
<u>REMARKS</u>				
MW-6	11/2/88	1410	0.10	
<u>REMARKS</u>				
MW-7	11/2/88	1426	0.20	
<u>REMARKS</u>				
MW-8	11/2/88	1413	0.05	
<u>REMARKS</u>				
MW-9	4/14/89	1345	1.25	
<u>REMARKS</u>				
MW-9	4/17/89		1.30	
<u>REMARKS</u>				

ATEX: ISLETA SITE
BILLINGS & ASSOCIATES, INC

INORGANIC WATER QUALITY: MONITORING REPORT #1 1989

<u>WELL</u>	<u>DATE</u>	<u>TIME</u>	<u>DISSOLVED OXYGEN</u>	<u>Fe TOTAL</u>
TANK EFFLUENT <u>REMARKS</u> ND=0.10	11/15/88			1.05
TANK INFLUENT <u>REMARKS</u> ND=0.10	11/15/88			1.03
W-10 <u>REMARKS</u>	11/1/88	1024	0.75	
W-11 <u>REMARKS</u>	11/1/88	1302	0.05	
W-12 <u>REMARKS</u>	11/1/88	1156	0.05	
W-15 <u>REMARKS</u>	11/1/88	1217	0.1	
W-7 <u>REMARKS</u>	11/1/88	1118	0.05	

ATEX: ISLETA SITE
BILLINGS & ASSOCIATES, INC