

1R - 268

REPORTS

DATE:
2004



Tipperary CORPORATION

633 Seventeenth Street
Suite 1550
Denver, Colorado 80202-3622

March 23, 2004

VIA OVERNIGHT MAIL

Mr. Roger C. Anderson
New Mexico Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

**RE: Progress Report for Year 2003
Bagley Field
Pit Closure Project
Lea County, NM**

RECEIVED

MAR 24 2004

Oil Conservation Division
Environmental Bureau

Dear Mr. Anderson:

Please find enclosed the 2003 results from our monitor wells in the subject project area. This report summarizes the results from water samples taken on January 4, April 17, June 20, and October 30, 2003. These results represent 25 quarters of monitoring. In general, we are continuing to observe decreasing levels of BTEX in the monitor wells.

The Executive Summary section contains a general discussion and the following data:

- Map of pit reclamation locations.
- Survey coordinates of ten new monitor well locations.
- Cross reference listing of revised monitor well numbers.

A summary of investigation work and results to date for each pit closure site is included. The following data is presented for each site:

- Well site plat with monitor well locations.
- Ground water potentiometric map for each sampling event with the direction and magnitude of the hydraulic gradient.
- Table of ground water recovery volumes (where applicable).
- Well bailing log for each well.
- Summary table and chart of water quality results for each well.
- Geologic/lithologic log and well construction diagram for each well.

2003 Annual Report
Page 2.

A CD is enclosed and contains all of the laboratory analytical and quality assurance information for 2003. We will continue to sample the project quarterly and report the results to your office on an annual basis. If you have any questions, please call me at (303) 293-9379.

Very truly yours,

Tipperary Oil & Gas Corporation



Larry G. Sugano
Vice President - Engineering

Enclosures

cc: NMOCD Hobbs Office
Whole Earth Environmental

**Tipperary Oil & Gas Corporation
Bagley Field
2003 Annual Report**

Executive Summary

The 2003 Bagley Field monitor well survey project was especially busy. In addition to the installation of ten additional wells within the field, we made great strides in perfecting our bailing procedures to minimize any potential for cross contamination. Each well now has its own dedicated bailer used to obtain water samples after pumping an average of ten well volumes from each bore. New decontamination procedures and equipment blank analyses were instituted to insure the accuracy of the reported results.

We believe that all sites have been completely delineated. The outer ring of wells on each site have BTEX concentrations falling within NMOCD standards. A table of monitor well number revisions is attached for your reference. A table listing the surveyed locations of all recently installed monitor wells is attached. The following sections present the investigation work and results to date for each of the sites.

WHOLE EARTH ENVIROMENTAL, INC.

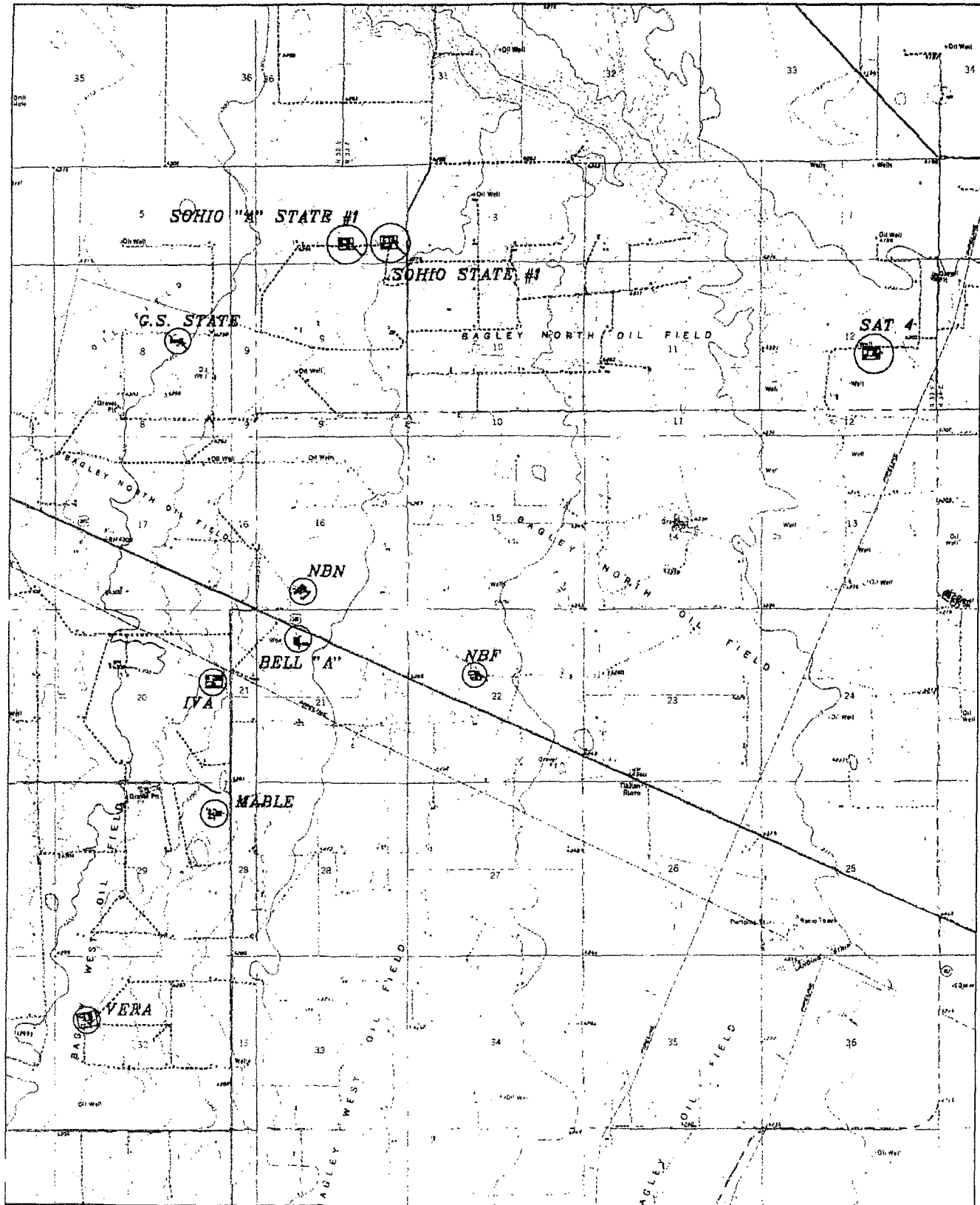


EXHIBIT 9

BASIN SURVEYS P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number: 9352

Drawn By: K. GOAD

Date: 10-21-99

Disk: KJG #122 - WE9352.DWG

WHOLEEARTH

SOHIO STATE 1

WELL	LATITUDE	LONGITUDE	ELEVATION
MW4	N 33 23' 22.56781"	W 103 36' 38.95930"	4282.71
MW8	N 33 23' 17.11074"	W 103 36' 42.59112"	4280.10

SOHIO A STATE 1

WELL	LATITUDE	LONGITUDE	ELEVATION
MW4	N 33 23' 22.80984"	W 103 36' 55.56751"	4285.06
MW6	N 33 23' 21.21826"	W 103 36' 54.49003"	4284.50
MW8	N 33 23' 16.75221"	W 103 36' 56.54969"	4283.84
MW10	N 33 23' 16.78983"	W 103 36' 49.48521"	4281.32
MW11	N 33 23' 14.05096"	W 103 36' 49.64146"	4280.55

COLLIER WELLS

WELL	LATITUDE	LONGITUDE	ELEVATION
MW1	N 33 22' 55.89915"	W 103 37' 14.87439"	4290.13
MW2	N 33 22' 56.31201"	W 103 37' 10.72284"	4286.90
MW5	N 33 22' 51.16167"	W 103 37' 15.53811"	4290.58

BELL A 1

WELL	LATITUDE	LONGITUDE	ELEVATION
MW6	N 33 21' 21.90236"	W 103 37' 14.63097"	4280.64

STATE NBF 1

WELL	LATITUDE	LONGITUDE	ELEVATION
MW6	N 33 21' 10.65698"	W 103 36' 08.88434"	4258.24

GS STATE 1

WELL	LATITUDE	LONGITUDE	ELEVATION
MW5	N 33 22' 50.08279"	W 103 37' 55.56043"	4302.52

HORIZONTAL DATUM NAD-83
VERTICAL DATUM NAVD-88

Tipperary - Bagley Field Well Number Revisions

	Original No.	New No.		Original No.	New No.
Iva COM	Source	Source	Sohio 1	10	1
	1	1		17	2
	2	2		18	3
Mable				East	4
	Source	Source		28	5
	3	1		30	6
	4	2		40	7
Bell	35	3			8
	6	1	Sohio A	11	1
	13	2		20	2
	14	3		19	3
	25	4		44	4
	36	5		27	5
NBF	41	6		45	6
	8	1		31	7
	15	2		46	8
	16	3		39	9
	26	4		47	10
	37	5			11
GS	42	6			
	Source	Source			
	12	1			
	22	2			
	21	3			
Collier	29	4			
	38	5			
	Source	Source			
	37	1			
	36	2			
	32	3			
	33	4			
	35	5			
	34	6			

**Tipperary Oil & Gas Corporation
Bagley Field
2003 Annual Report**

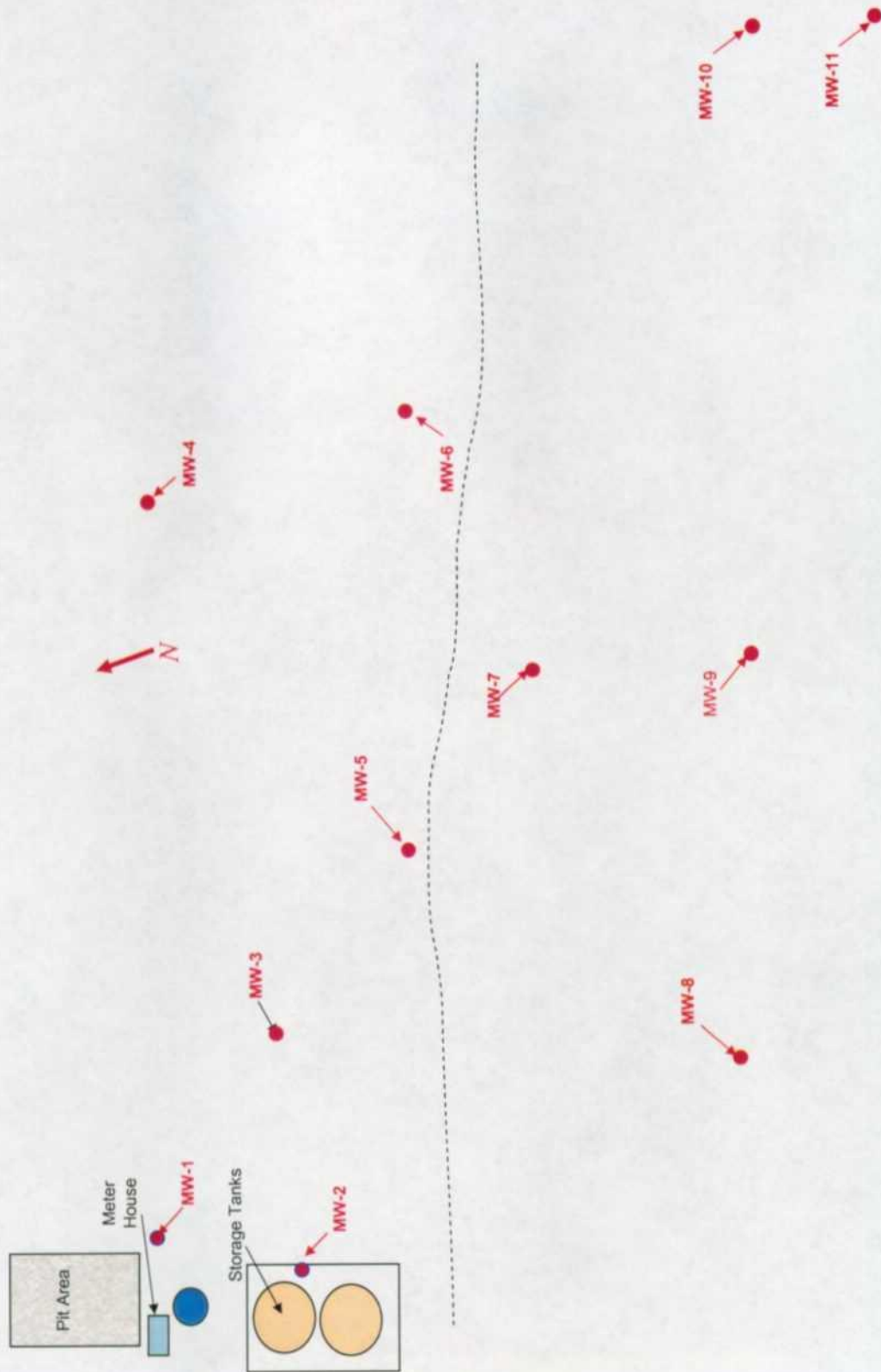
**Sohio State A
Section 40-T11S-R33E**

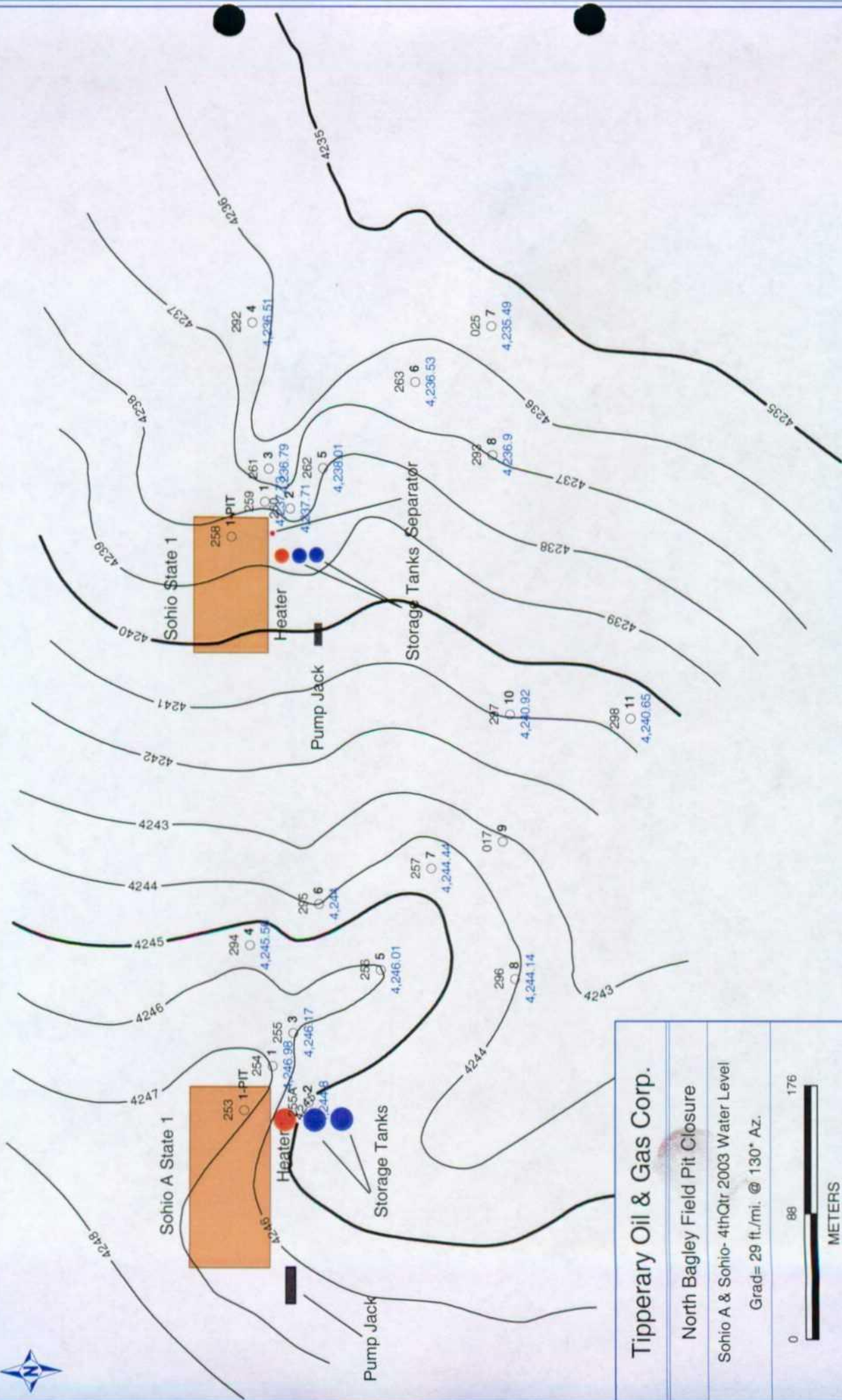
The Sohio A site consists of eleven monitor wells. The two nearest the pit show increasing BTEX concentrations and some minor amounts of free product and sulfides. Monitor wells no. 3 and 7 have slightly increased BTEX concentrations but no free product. Monitor well no. 4, drilled in June, 2003 shows acceptable results and effectively delineates the eastern edge of the plume. All other monitor wells show acceptable results.

Please find the following data:

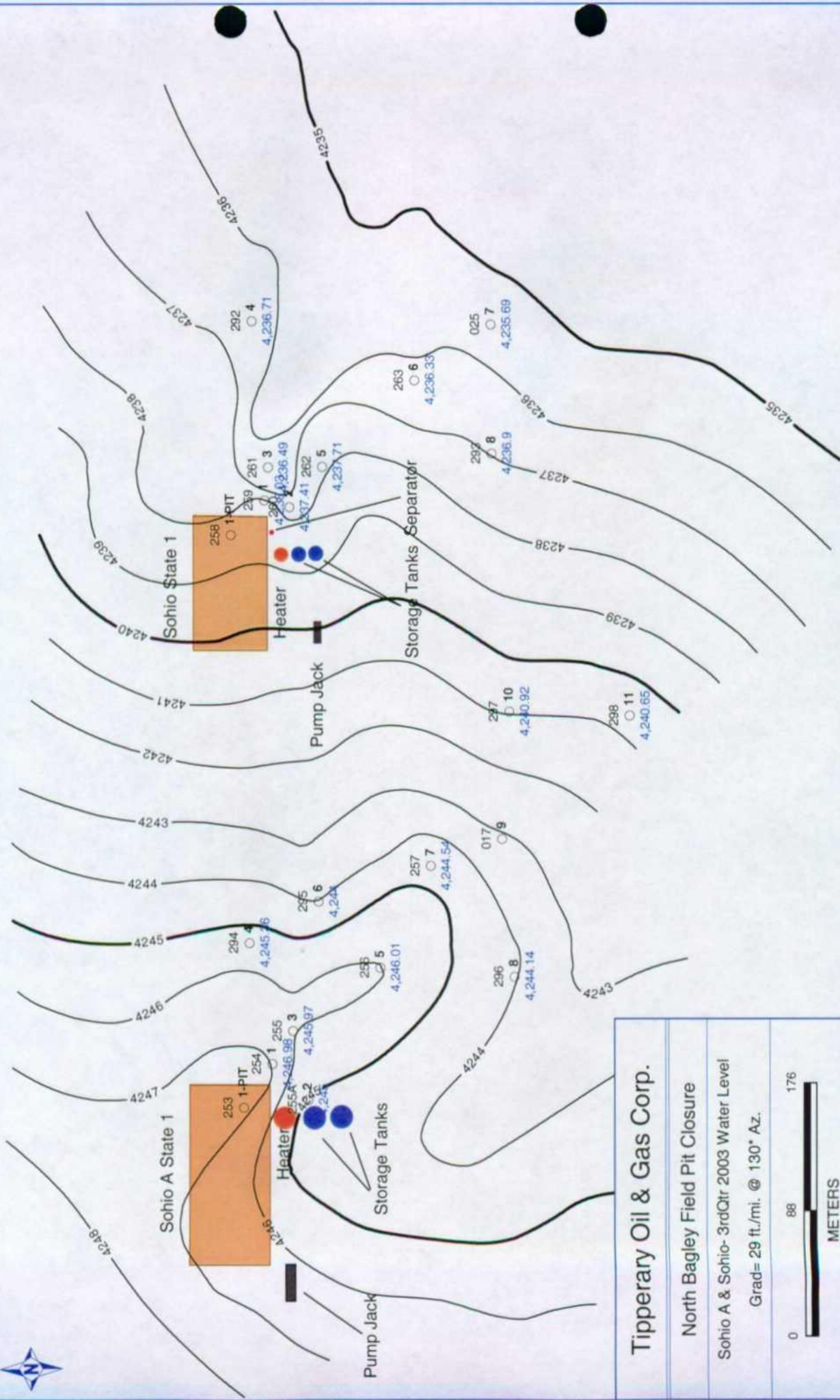
- Well-site plat with monitor well locations.
- Ground water potentiometric map for each sampling event with direction and magnitude of the hydraulic gradient.
- Well bailing log for each well.
- Summary table and chart of ground water quality results for each well.
- Well completion diagram for each well.

Tipperary Corporation
Sohio A #1
Monitor Well Locations

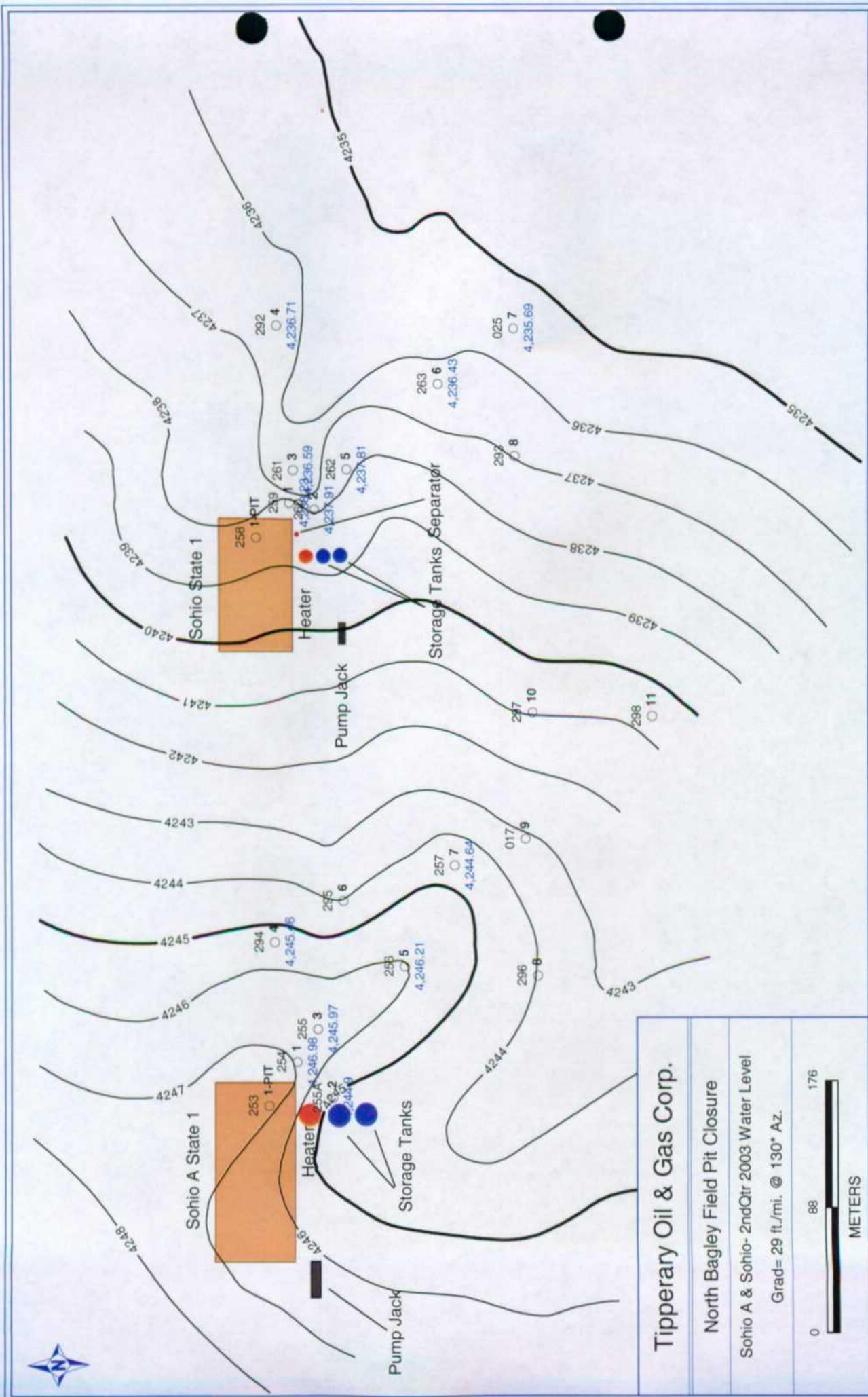




Tipperary Oil & Gas Corp.	
North Bagley Field Pit Closure	
Sohio A & Sohio- 4thQtr 2003 Water Level	
Grad= 29 ft./mi. @ 130° Az.	
0	88
176	
METERS	



Tipperary Oil & Gas Corp.
North Bagley Field Pit Closure
Sohio A & Sohio- 3rdQtr 2003 Water Level
Grad= 29 ft./mi. @ 130° Az.
0 88 176 METERS





Sohio A

Monitor Well Bailing Log

Sohio A MW #1

Lat: N33° 23.3662'
Long. W103° 36.9897'
Surf. Elev. 4,285.88 Ft.

As Drilled	As Measured
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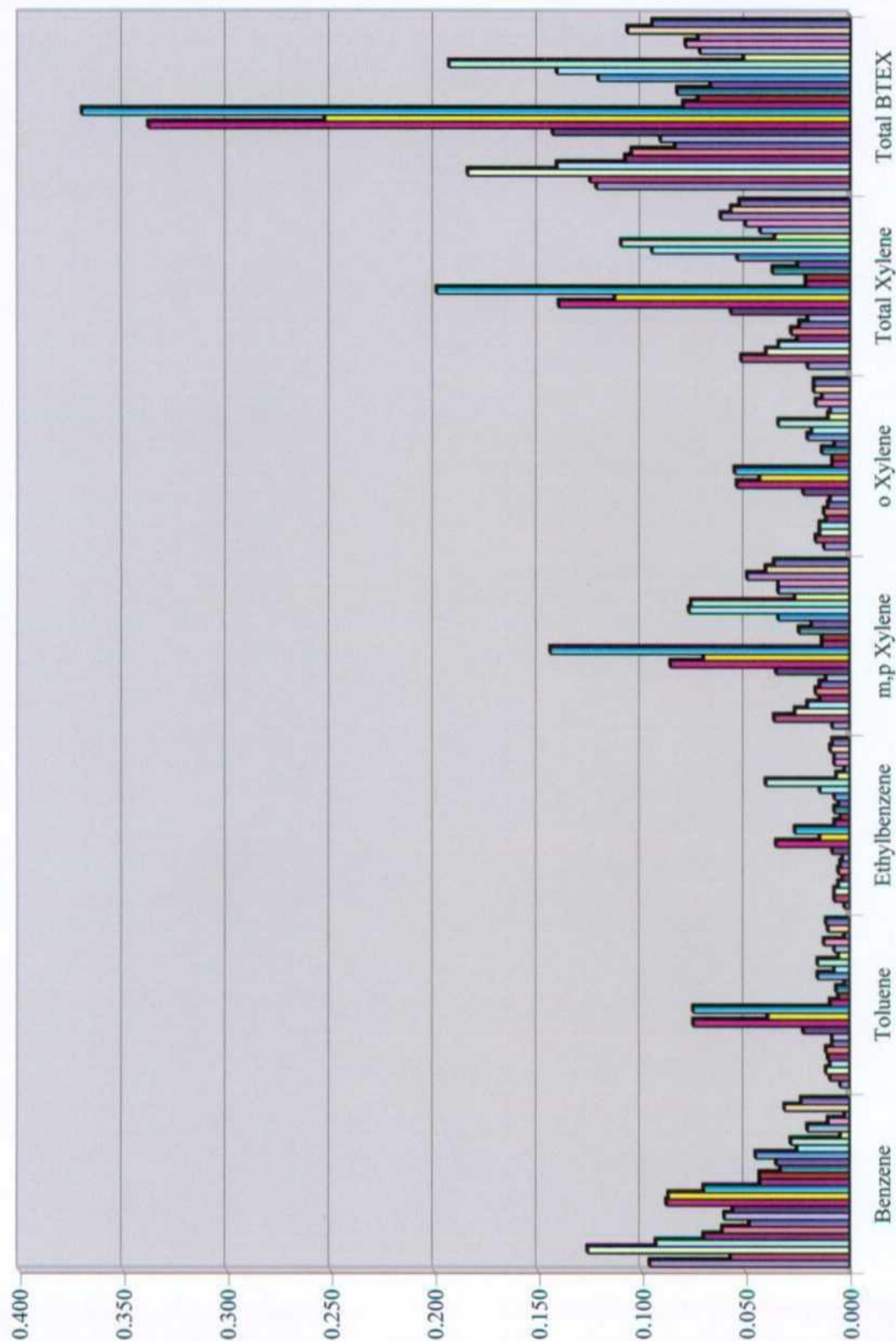
Date:		Date:	12/28/02	4/12/03	6/12/03	10/25/03	
Top of Water	Ft.	Top of Water	38.90	38.90	38.90	38.90	Ft.
Bottom of Bore	Ft.	Bottom of Bore	56.30	56.40	56.30	56.40	Ft.
		Bore Volume	2.81	2.82	2.81	2.82	Gal.
		LPNL Top	38.90	38.90	38.90	38.90	Ft.
		LPNL Bottom	?	?	?	?	Ft.
		DPNL Top	NA	NA	NA	NA	Ft.
		DPNL Bottom	NA	NA	NA	NA	Ft.
		Min. Bailing Vol.	8.42	8.47	8.42	8.47	Gal.
		Actual Bailing Vol.	15.00	25.00	20.00	10.00	Gal.

Comments

**Monitor Well # 1
Sohio State "A"
Sampling Results**

Lab. #	Sample Date	Benzene	Toluene	Ethylbenzene	m,p Xylene	o Xylene	Total Xylene	Total BTEX
12484	09/05/97	0.096	0.004	0.002	0.008	0.012	0.020	0.122
13132	12/03/97	0.057	0.009	0.007	0.036	0.016	0.052	0.125
14067	03/23/98	0.126	0.011	0.007	0.026	0.014	0.040	0.184
14666	06/25/98	0.093	0.009	0.005	0.020	0.014	0.034	0.141
15598	10/01/98	0.070	0.010	0.003	0.014	0.011	0.025	0.108
16605	01/06/99	0.061	0.011	0.005	0.016	0.012	0.028	0.105
17441	04/01/99	0.048	0.008	0.004	0.014	0.010	0.024	0.084
18596	07/14/99	0.060	0.008	0.003	0.011	0.009	0.020	0.091
20602	10/06/99	0.056	0.022	0.008	0.035	0.022	0.057	0.143
22763	01/08/00	0.088	0.075	0.035	0.086	0.054	0.140	0.338
25151	04/13/00	0.087	0.039	0.014	0.070	0.043	0.113	0.253
28422	07/20/00	0.070	0.075	0.026	0.144	0.055	0.199	0.370
31513	09/26/00	0.043	0.009	0.007	0.013	0.008	0.021	0.080
36142	01/05/01	0.043	0.005	0.004	0.013	0.008	0.021	0.073
38936	04/05/01	0.033	0.006	0.007	0.024	0.013	0.037	0.083
0101098-20	07/07/01	0.035	0.002	0.005	0.018	0.007	0.025	0.067
0101642-20	09/26/01	0.045	0.015	0.007	0.034	0.020	0.054	0.121
0101642-20	02/15/02	0.025	0.007	0.014	0.077	0.018	0.095	0.141
0203001-20	03/30/02	0.028	0.015	0.040	0.076	0.034	0.110	0.193
02033602-21	06/15/02	0.004	0.005	0.006	0.026	0.010	0.036	0.051
0204815-24	10/29/02	0.020	0.007	0.002	0.034	0.009	0.043	0.072
0205349-23	01/04/03	0.010	0.012	0.007	0.034	0.016	0.050	0.079
0306249-24	04/17/03	0.002	0.002	0.007	0.049	0.013	0.062	0.073
0306733-07	06/18/03	0.031	0.010	0.009	0.040	0.017	0.057	0.107
0307790-41	10/30/03	0.023	0.011	0.008	0.036	0.017	0.053	0.095

The chart displays the concentration of aromatic compounds in water samples over time. The Y-axis represents concentration from 0.000 to 0.400. The X-axis lists the compounds: Benzene, Toluene, Ethylbenzene, m,p Xylene, o Xylene, Total Xylene, and Total BTEX. The legend shows dates from 09/05/97 to 10/30/03. The concentrations are generally highest for Total BTEX and Total Xylene, and lowest for Benzene and Toluene.





Sohio 1

Monitor Well Bailing Log

Sohio A MW #2

Lat: _____
Long. _____
Surf. Elev. _____ Ft.

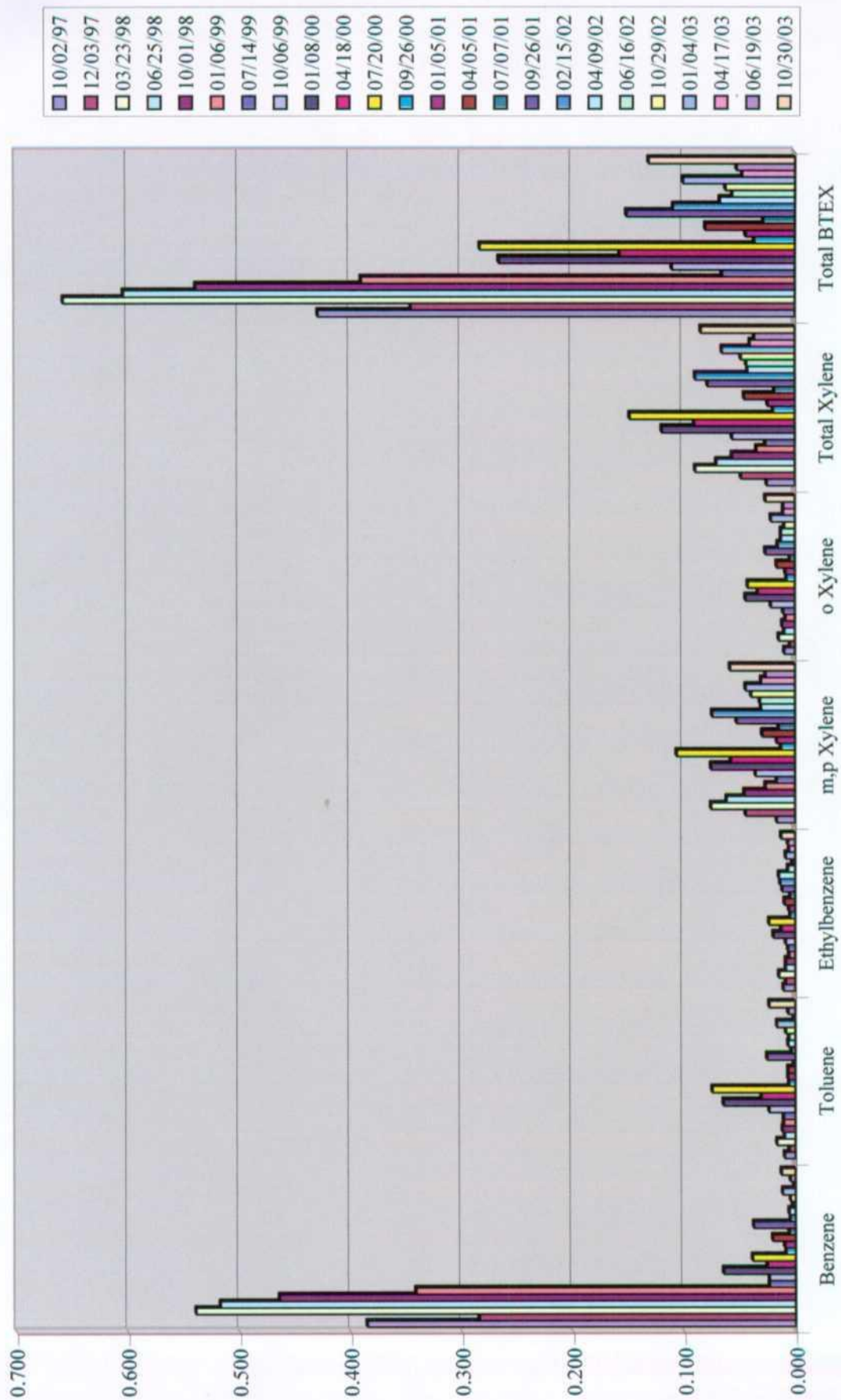
As Drilled	As Measured
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Date: 9/29/1997
Top of Water 48.68 Ft.
Bottom of Bore 60 Ft.

Date:	12/28/02	4/12/03	6/12/03	10/25/03	
Top of Water	38.80	38.60	38.50	38.70	Ft.
Bottom of Bore	55.70	55.60	55.60	55.90	Ft.
Bore Volume	2.73	2.74	2.76	2.77	Gal.
LPNL Top	54.00	54.00	54.00	54.00	Ft.
LPNL Bottom	?	?	?	?	Ft.
DPNL Top	NA	NA	NA	NA	Ft.
DPNL Bottom	NA	NA	NA	NA	Ft.
Min. Bailing Vol.	8.18	8.23	8.27	8.32	Gal.
Actual Bailing Vol.	15.00	25.00	25.00	10.00	Gal.

Comments

Sohio A MW #2





Sohio A

Monitor Well Bailing Log

Sohio A MW #3

Lat: N33° 23.3649'
Long. W103° 36.9759'
Surf. Elev. 4285.97 Ft.

As Drilled	As Measured
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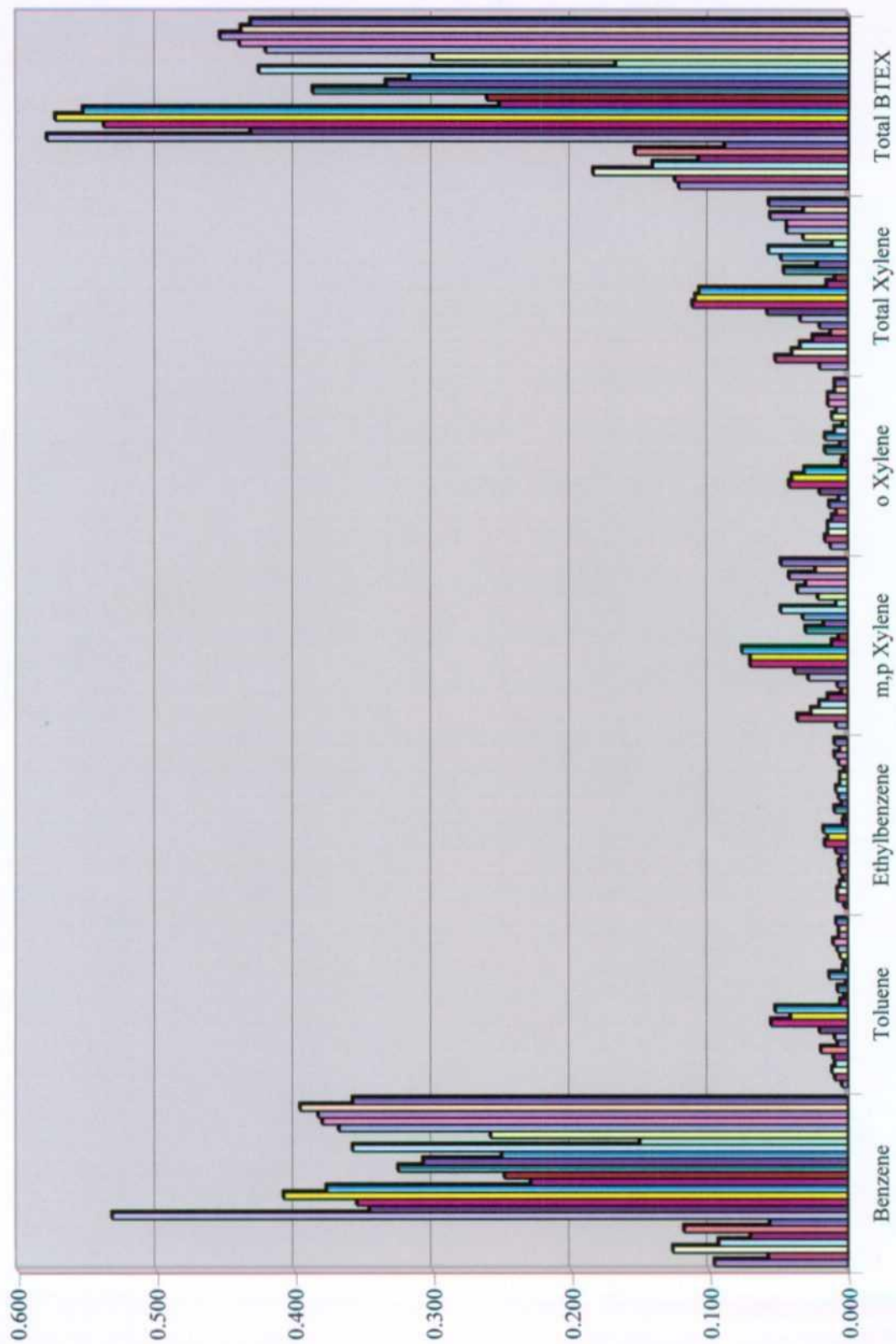
Date: 9/29/1997
Top of Water 49.5 Ft.
Bottom of Bore 60 Ft.

Date:	12/28/02	4/12/03	6/12/03	10/25/03	
Top of Water	39.10	40.00	40.00	39.80	Ft.
Bottom of Bore	54.60	54.60	54.80	54.70	Ft.
Bore Volume	2.50	2.35	2.39	2.40	Gal.
LPNL Top	NA	NA	NA	NA	Ft.
LPNL Bottom	NA	NA	NA	NA	Ft.
DPNL Top	NA	NA	NA	NA	Ft.
DPNL Bottom	NA	NA	NA	NA	Ft.
Min. Bailing Vol.	7.50	7.06	7.16	7.21	Gal.
Actual Bailing Vol.	15.00	20.00	20.00	10.00	Gal.

Comments

Monitor Well # 3
Sohio State "A"
Sampling Results

Lab. #	Sample Date	Benzene	Toluene	Ethylbenzene	m,p Xylene	o Xylene	Total Xylene	Total BTEX
12484	09/05/97	0.096	0.004	0.002	0.008	0.012	0.020	0.122
13132	12/03/97	0.057	0.009	0.007	0.036	0.016	0.052	0.125
14067	03/23/98	0.126	0.011	0.007	0.026	0.014	0.040	0.184
14666	06/25/98	0.093	0.009	0.005	0.020	0.014	0.034	0.141
15598	10/01/98	0.070	0.010	0.003	0.014	0.011	0.025	0.108
16605	01/06/99	0.118	0.019	0.005	0.004	0.008	0.012	0.154
17441	04/01/99	0.056	0.007	0.006	0.007	0.013	0.020	0.089
18596	07/14/99	0.532	0.009	0.004	0.028	0.006	0.034	0.579
20602	10/06/99	0.346	0.020	0.008	0.038	0.020	0.058	0.432
22763	01/08/00	0.355	0.055	0.016	0.070	0.042	0.112	0.538
25151	04/18/00	0.408	0.041	0.014	0.070	0.040	0.110	0.573
28422	07/20/00	0.377	0.052	0.017	0.076	0.031	0.107	0.553
31513	09/26/00	0.229	0.005	0.003	0.011	0.004	0.015	0.252
36142	01/05/01	0.248	0.002	0.002	0.006	0.003	0.009	0.261
38937	04/05/01	0.325	0.007	0.009	0.030	0.016	0.046	0.387
0101098-21	07/07/01	0.307	0.001	0.004	0.017	0.005	0.022	0.334
0101642-21	09/26/01	0.250	0.013	0.006	0.032	0.016	0.048	0.317
0202619-21	02/15/02	0.358	0.003	0.008	0.048	0.009	0.057	0.426
0203001-21	04/09/02	0.150	0.002	0.005	0.008	0.003	0.011	0.168
0203602-22	06/16/02	0.258	0.005	0.005	0.021	0.011	0.032	0.300
0204815-25	10/29/02	0.368	0.007	0.002	0.036	0.008	0.044	0.421
0205349-24	01/04/03	0.380	0.010	0.006	0.030	0.014	0.044	0.440
0306249-25	04/17/03	0.383	0.006	0.009	0.042	0.014	0.056	0.454
0306733-09	06/20/03	0.396	0.006	0.005	0.023	0.009	0.032	0.439
0307790-43	10/30/03	0.358	0.008	0.009	0.048	0.009	0.057	0.432





Sohio A

Monitor Well Bailing Log

Sohio A MW #4

Lat: N33° 23.38016'
Long. W103° 36.92613'
Surf. Elev. 4285.06 Ft.

As Drilled	As Measured
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Date: 9/29/1997
Top of Water 39 Ft.
Bottom of Bore 60 Ft.

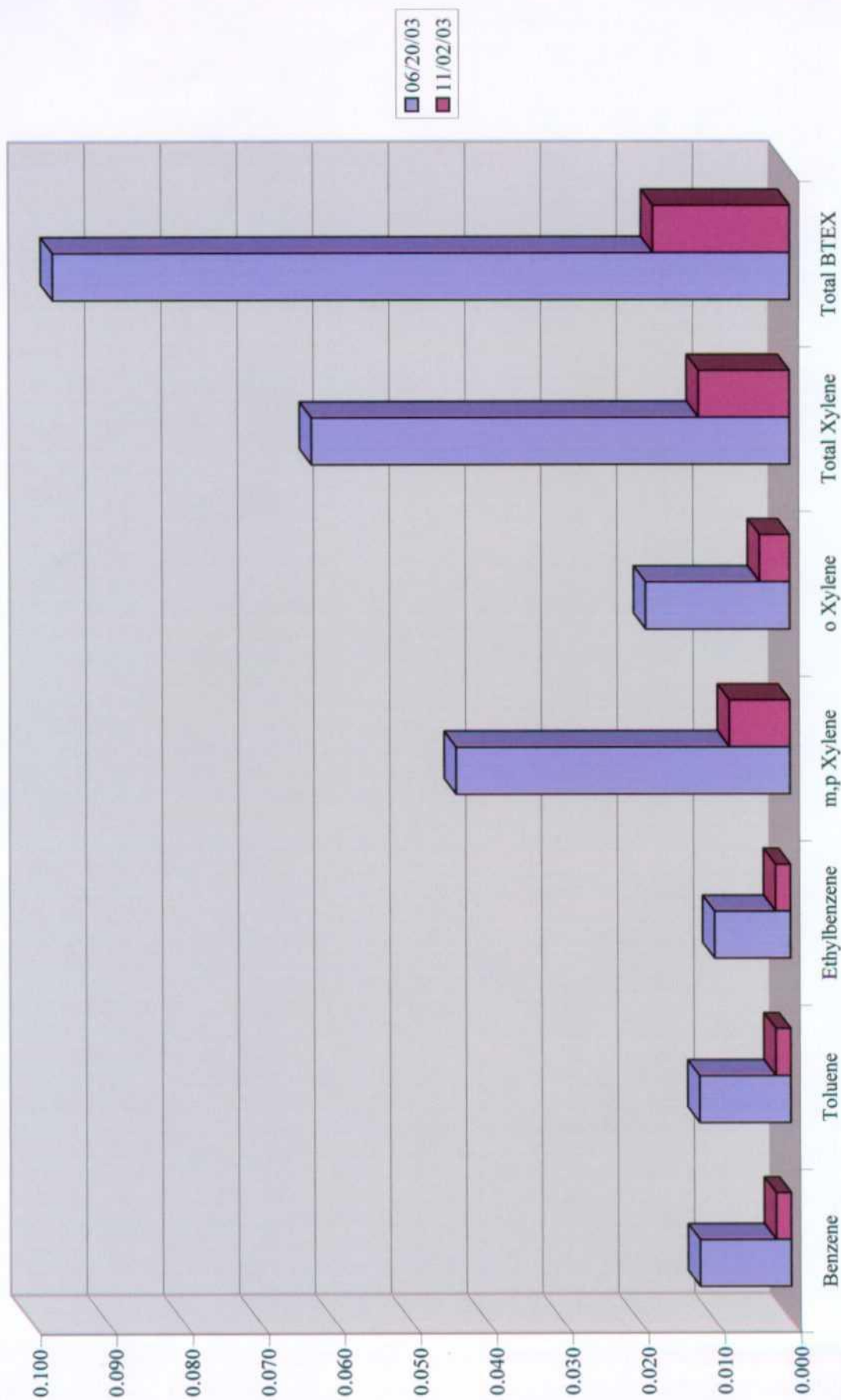
Date:	12/28/02	4/12/03	6/12/03	10/25/03	
Top of Water	39.50	39.60	39.70	39.50	Ft.
Bottom of Bore	57.70	57.90	60.00	59.40	Ft.
Bore Volumn	2.94	2.95	3.27	3.21	Gal.
LPNL Top	NA	NA	NA	NA	Ft.
LPNL Bottom	NA	NA	NA	NA	Ft.
DPNL Top	NA	NA	NA	NA	Ft.
DPNL Bottom	NA	NA	NA	NA	Ft.
Min. Bailing Vol.	8.81	8.85	9.82	9.63	Gal.
Actual Bailing Vol.	15.00	20.00	20.00	10.00	Gal.

Comments

Monitor Well # 4
Sohio State "A"
Sampling Results

Lab. #	Sample Date	Benzene	Toluene	Ethylbenzene	m,p Xylene	o Xylene	Total Xylene	Total BTEX
0306733-10	06/20/03	0.012	0.012	0.010	0.044	0.019	0.063	0.097
0307790-44	11/02/03	0.002	0.002	0.002	0.008	0.004	0.012	0.018

Sohio A MW #4





Sohio A

Monitor Well Bailing Log

Sohio A MW #5

Lat: _____
Long. _____
Surf. Elev. _____ Ft.

As Drilled	As Measured
------------	-------------

Date: 3/15/1999
Top of Water 46.25 Ft.
Bottom of Bore 55 Ft.

Date:	12/28/02	4/12/03	6/12/03	10/25/03	
Top of Water	39.50	39.40	39.60	39.60	Ft.
Bottom of Bore	49.70	49.80	49.90	50.10	Ft.
Bore Volume	1.65	1.68	1.66	1.69	Gal.
LPNL Top	NA	NA	NA	NA	Ft.
LPNL Bottom	NA	NA	NA	NA	Ft.
DPNL Top	NA	NA	NA	NA	Ft.
DPNL Bottom	NA	NA	NA	NA	Ft.
Min. Bailing Vol.	4.94	5.03	4.98	5.08	Gal.
Actual Bailing Vol.	15.00	20.00	20.00	10.00	Gal.

Comments

Monitor Well # 5
Sohio State "A"
Sampling Results

Lab. #	Sample Date	Benzene	Toluene	Ethylbenzene	m,p Xylene	o Xylene	Total Xylene	Total BTEX
17267	03/17/99	0.118	0.019	0.005	0.004	0.008	0.012	0.154
17444	04/01/99	0.056	0.007	0.006	0.007	0.013	0.020	0.089
18610	07/14/99	0.268	0.024	0.006	0.030	0.024	0.054	0.352
20621	10/06/99	0.265	0.014	0.006	0.029	0.017	0.046	0.331
22780	01/08/00	0.080	0.056	0.016	0.064	0.038	0.102	0.254
28456	07/20/00	0.385	0.048	0.017	0.092	0.038	0.130	0.580
31516	09/26/00	0.249	0.004	0.003	0.023	0.010	0.033	0.289
36153	01/05/01	0.355	0.004	0.003	0.020	0.009	0.029	0.391
38939	04/05/01	0.324	0.012	0.016	0.069	0.035	0.104	0.456
0101098-23	07/07/01	0.073	0.001	0.004	0.012	0.004	0.016	0.094
0101642-23	09/26/01	0.123	0.036	0.018	0.082	0.039	0.121	0.298
0202619-23	02/15/02	0.123	0.001	0.007	0.041	0.008	0.049	0.180
0203001-23	04/09/02	0.140	0.017	0.044	0.085	0.041	0.126	0.327
0203602-24	06/16/02	0.002	0.005	0.006	0.031	0.012	0.043	0.056
0204815-27	10/29/02	0.178	0.011	0.003	0.056	0.013	0.069	0.261
0205349-26	01/04/03	0.093	0.030	0.013	0.068	0.035	0.103	0.239
0306249-27	04/17/03	0.060	0.009	0.016	0.065	0.020	0.085	0.170
0306733-11	06/20/03	0.035	0.013	0.012	0.050	0.021	0.071	0.131
0307790-45	10/30/03	0.009	0.008	0.006	0.026	0.011	0.037	0.060



Atkins Engineering Associates, Inc.
P.O. Box 3156
Roswell, New Mexico 88202

LOG OF BORING Sohio State A MW 2
Formerly MW 20 (Page 1 of 1)

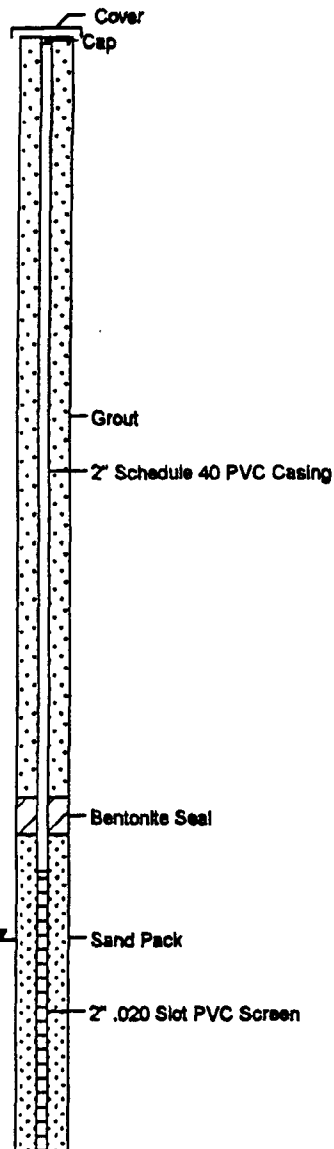
Tipperary Corp. (Whole Earth Environmental)
633 17th Street
Denver, CO 80202

Date Completed : September 29, 1997 Site Location : 14 miles W. of Tatum
Drill Start : 11:10 a.m. Auger Type : Hollow Stem
Drill End : 2:00 p.m. Logged By : Mort Bates
Boring Location : Sohio State A, Sec. 4; 150 ft. S. SE. of Ctr of Plt

Job #97260

Depth in feet	GRAPHIC	USCS	DESCRIPTION
0		CL	Silty Clay w/Caliche Rock, Brown, Stiff, Damp
5			Silty Clay w/Caliche, Tan, Stiff, Dry
10			
15			
20		CL	
25			
30			
35			Silty Sandy Clay, Tan, Stiff, Damp
40		CL	
45			
45		GP	Gravel w/Sandy Clay, Hard
50			Silty Sandy Clay, Tan, Loose, Wet to Saturated WL = 48.68 ft.
55		CL	
60			TD = 60 ft.
65			Bailed well for 45 mins

Well: MW #2
Elev.:



Atkins Engineering Associates, Inc.
P.O. Box 3156
Roswell, New Mexico 88202

LOG OF BORING Sohio State A MW 3 Formerly MW 19

(Page 1 of 1)

Tipperary Corp. (Whole Earth Environmental)
633 17th Street
Denver, CO 80202

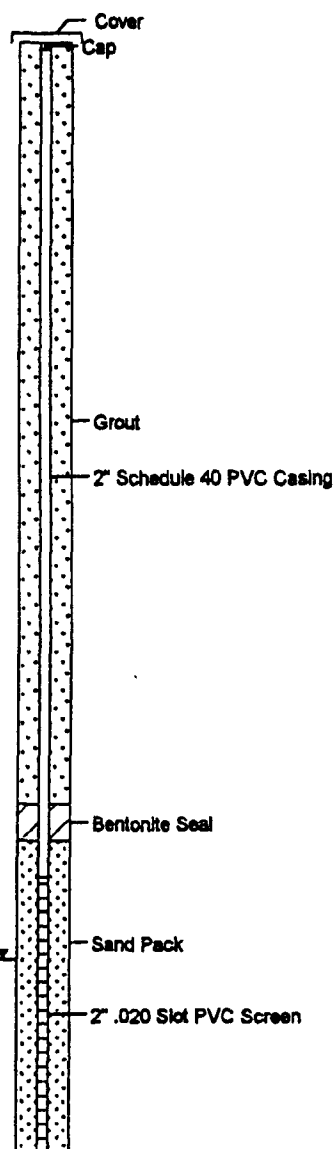
Date Completed : September 29, 1987 Site Location : 14 miles W. of Tatum
Drill Start : 2:05 p.m. Auger Type : Hollow Stem
Drill End : 4:20 p.m. Logged By : Mort Bates
Boring Location : Sohio State A, Sec. 4; 150 ft. E. SE. of Center of Pit

Job #97260

Depth in feet	GRAPHIC	USCS	DESCRIPTION
0		CL	Silty Clay w/Caliche, Brown, Stiff, Damp
5		CL	Silty Clay w/Caliche, Tan, Stiff, Dry
10			Caliche Rock w/Clay, Tan, Hard, Dry
15			Caliche w/Clay, Tan, Stiff, Dry
20		CL	Silty Sandy Clay w/Caliche, Tan, Stiff, Dry
25			
30			Silty Sandy Clay, Tan, Stiff, Dry
35		CL	
40			
45		CL	Silty Sandy Clay, Tan, Stiff, Moist
50			Silty Sandy Clay, Tan, Wet to Saturated WL = 49.5 ft.
55		CL	
60			TD = 60 ft.
65			Bailed well for 45 mins

Well: MW #3

Elev.:



Atkins Engineering
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2904 W. 2nd St., Roswell, NM 88202-3156

LOG OF BORING MW-4
Formerly MW44

(Page 1 of 1)

Whole Earth Environmental

19606 San Gabriel

Houston, TX 77084

Contact: Mike Griffin

Job#: WHOLENV.DRL.03

Date : 6/09/03

Drill Start/Drill End :

Boring Location :

Site Location

: SOHIO A State 1 SW, SE

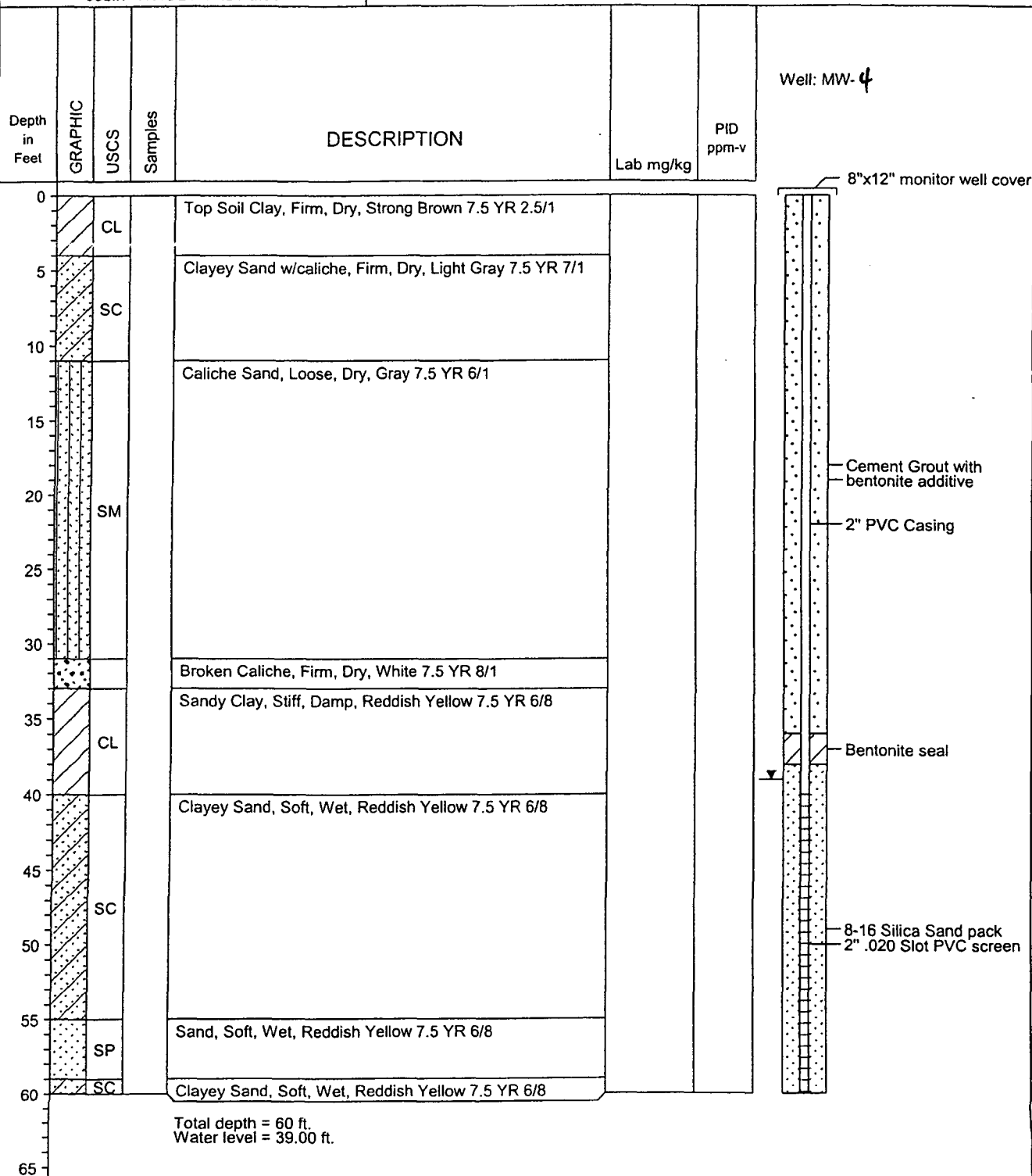
: Sec. 12, T11S., R33E.

Auger Type

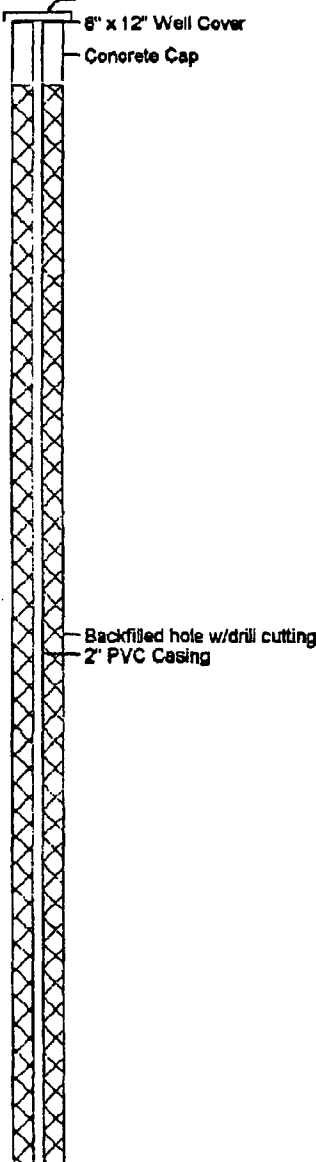
: Hollow stem

Logged By

: Mort Bates



Atkins Engineering Associates, Inc. P.O. Box 3156 Roswell, New Mexico 88202				LOG OF BORING Sohio State A MW 5 Formerly MW 27		(Page 1 of 2)
Tipperary Corporation 633 17th Street, Suite 1550 Denver, CO 80202				Date : 3-15-99 Drill Start : 4:10 P.M. Drill End : 5:45 P.M. Boring Location : 100 ft. SE of Center Line	Site Location : Lea County, NM Auger Type : Hollow Stem Logged By : Mont Bates	
Contact: Mike Griffin Job #89174.00						

Depth in feet	GRAPHIC	USCS	Samples	DESCRIPTION	
0				Silty Clay w/Caliche Clay, Brown, Firm, Dry	Well: MW- 5 Elev.:  6" x 12" Well Cover Concrete Cap Backfilled hole w/drill cutting 2" PVC Casing
5		CL			
10				Caliche w/Silty Clay, Tan, Firm, Dry	
15				Caliche, Chalky, Tan, Hard, Dry	
20				Caliche w/Silty Clay, Tan, Firm, Dry	
25					
30					
35		SP		Sand, Tan, Firm, Damp	

Atkins Engineering Associates, Inc. P.O. Box 3156 Roswell, New Mexico 88202				LOG OF BORING Sohio State A MW 5 <i>Formerly MW 27</i>		(Page 2 of 2)
Tipperary Corporation 633 17th Street, Suite 1550 Denver, CO 80202 Contact: Mike Griffin Job #99174.00				Date : 3-18-99 Drill Start : 4:10 P.M. Drill End : 5:45 P.M. Boring Location : 100 ft. SE of Center Line	Site Location : Lea County, NM Auger Type : Hollow Stem Logged By : Mort Bates	

Depth in feet	GRAPHIC	USCS	Samples	DESCRIPTION	
35	SP				Well: MW: 5 Elev.: Backfilled hole w/drill cutting 2 ft. Bentonite Plug 2" PVC Casing 8/16" Sand Pack 2" PVC .020 Slot Screen
40					
45					
50	SP			Sand, Tan, Loose, Moist WL @ 46.25 ft.	
55					
60				TD = 55 ft.	
65					
70					



Sohio A

Monitor Well Bailing Log

Sohio A MW #6

Lat: N33° 23.35364'
Long. W103° 36.90817'
Surf. Elev. 4284.5 Ft.

As Drilled	As Measured
------------	-------------

Date: 6/9/2003
Top of Water 39.62 Ft.
Bottom of Bore 60 Ft.

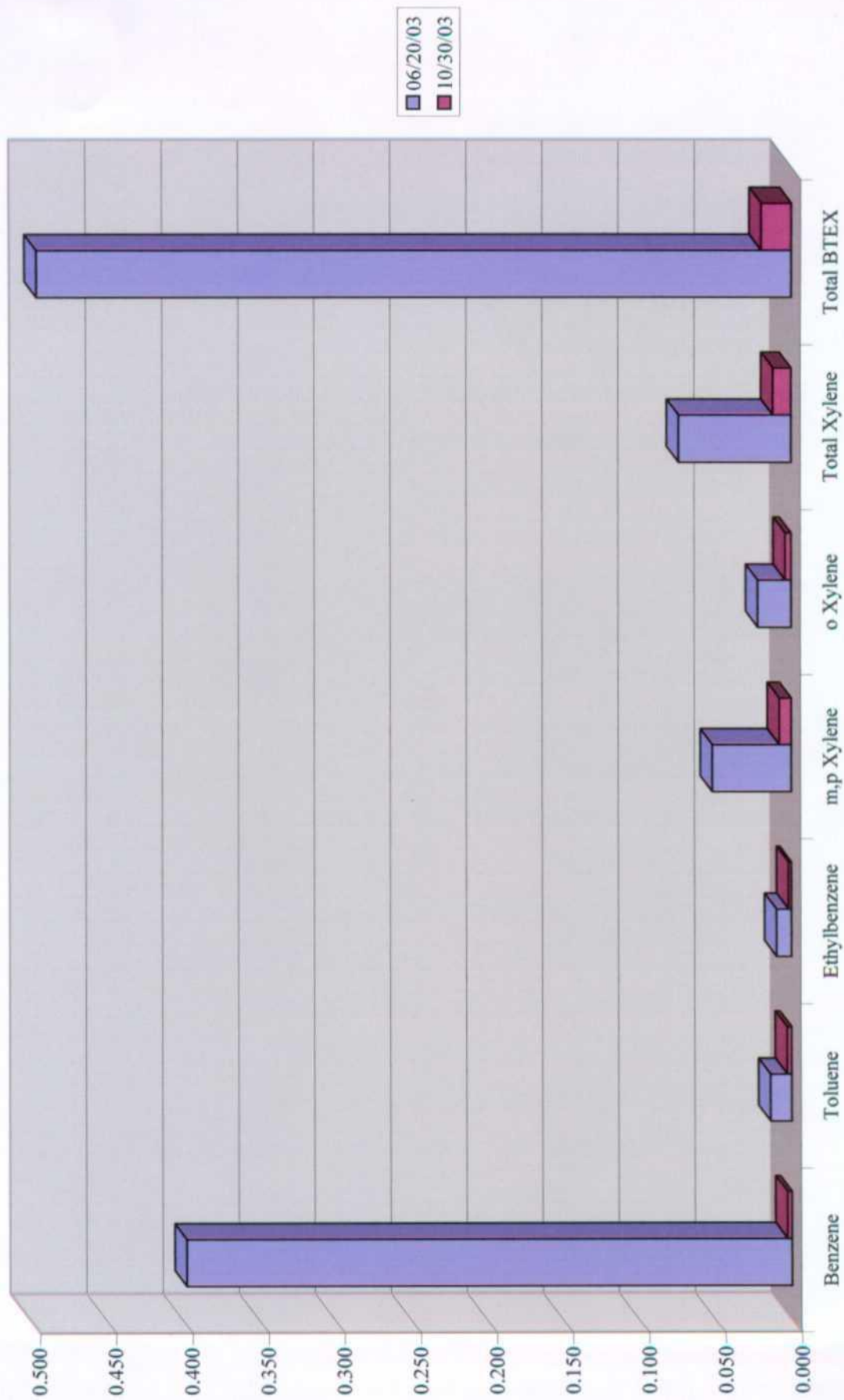
Date:			6/12/03	10/25/03	
Top of Water			40.50	40.50	Ft.
Bottom of Bore			59.70	59.80	Ft.
Bore Volumn			3.10	3.11	Gal.
LPNL Top			NA	NA	Ft.
LPNL Bottom			NA	NA	Ft.
DPNL Top			NA	NA	Ft.
DPNL Bottom			NA	NA	Ft.
Min. Bailing Vol.			9.29	9.34	Gal.
Actual Bailing Vol.			20.00	10.00	Gal.

Comments

Monitor Well # 6
Sohio State "A"
Sampling Results

Lab. #	Sample Date	Benzene	Toluene	Ethylbenzene	m,p Xylene	o Xylene	Total Xylene	Total BTEX
0306733-12	06/20/03	0.398	0.014	0.010	0.052	0.022	0.074	0.496
0307790-46	10/30/03	0.003	0.003	0.002	0.008	0.004	0.012	0.020

Sohio A MW #6





Sohio A

Monitor Well Bailing Log

Sohio A MW #7

Lat: N33° 23.3140'
Long. W103° 36.9277'
Surf. Elev. 4283.54 Ft.

As Drilled	As Measured
------------	-------------

Date: 8/9/1999
Top of Water 37.45 Ft.
Bottom of Bore 62 Ft.

Date:	12/28/02	4/12/03	6/12/03	10/25/03	
Top of Water	39.30	38.90	39.00	39.10	Ft.
Bottom of Bore	55.80	55.80	54.00	54.20	Ft.
Bore Volume	2.66	2.73	2.42	2.44	Gal.
LPNL Top	NA	NA	NA	NA	Ft.
LPNL Bottom	NA	NA	NA	NA	Ft.
DPNL Top	NA	NA	NA	NA	Ft.
DPNL Bottom	NA	NA	NA	NA	Ft.
Min. Bailing Vol.	7.98	8.18	7.26	7.31	Gal.
Actual Bailing Vol.	15.00	20.00	20.00	10.00	Gal.

Comments

Monitor Well # 7
Sohio State "A"
Sampling Results

Lab. #	Sample Date	Benzene	Toluene	Ethylbenzene	m,p Xylene	o Xylene	Total Xylene	Total BTEX
19166	08/13/99	0.396	0.004	0.001	0.017	0.012	0.029	0.430
20622	10/06/99	0.362	0.015	0.006	0.039	0.022	0.061	0.444
22787	01/08/00	0.383	0.044	0.013	0.720	0.040	0.760	1.200
25153	04/18/00	0.602	0.067	0.020	0.121	0.070	0.191	0.880
28460	07/20/00	0.137	0.046	0.017	0.078	0.032	0.110	0.310
31517	09/26/00	0.820	0.066	0.354	1.480	0.365	1.845	3.085
36162	01/05/01	0.130	0.004	0.003	0.010	0.005	0.015	0.152
38940	04/05/01	0.105	0.008	0.013	0.042	0.023	0.065	0.191
0101098-24	07/07/01	0.275	0.003	0.007	0.039	0.014	0.053	0.338
0101642-24	09/26/01	0.406	0.038	0.014	0.083	0.040	0.123	0.581
0202619-24	02/15/02	0.325	0.003	0.007	0.056	0.015	0.071	0.406
0203001-24	04/09/02	0.402	0.003	0.009	0.029	0.013	0.042	0.456
0203602-25	06/16/02	0.001	0.006	0.001	0.019	0.001	0.020	0.028
0204815-28	10/29/02	0.322	0.011	0.004	0.068	0.018	0.086	0.423
0205349-27	01/04/03	0.320	0.032	0.012	0.074	0.037	0.111	0.475
0306249-28	04/17/03	0.290	0.010	0.012	0.066	0.022	0.088	0.400
0306733-17	06/20/03	0.282	0.011	0.009	0.047	0.020	0.067	0.369
0307790-47	10/30/03	0.176	0.006	0.003	0.021	0.010	0.031	0.216



Sohio A

Monitor Well Bailing Log

Sohio A MW #8

Lat: N33° 23.2792'
Long. W103° 36.9425'
Surf. Elev. 4283.84 Ft.

As Drilled	As Measured
------------	-------------

Date: 6/10/2003
Top of Water 39 Ft.
Bottom of Bore 60 Ft.

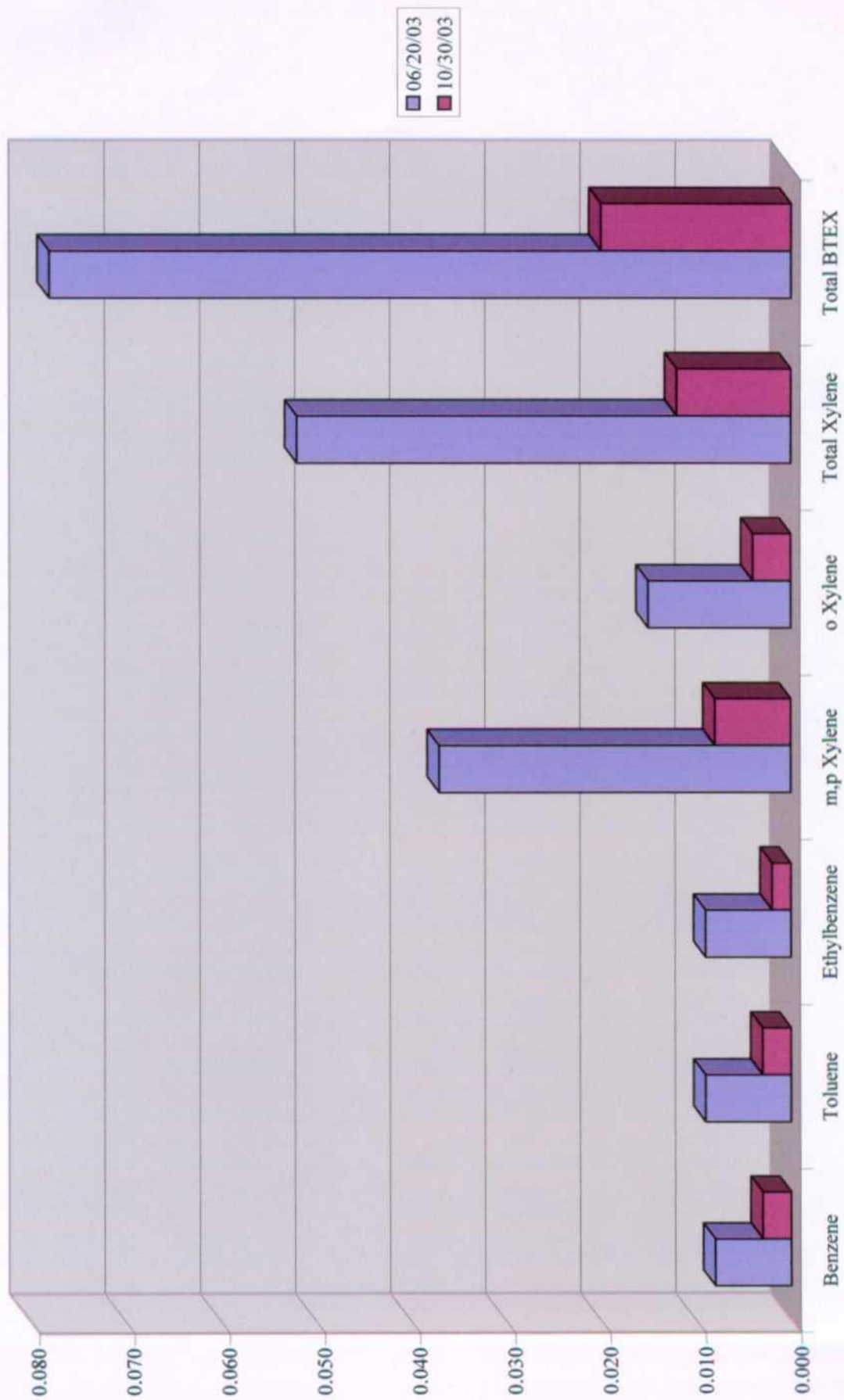
Date:			6/12/03	10/25/03	
Top of Water			39.70	39.70	Ft.
Bottom of Bore			55.90	56.00	Ft.
Bore Volumn			2.61	2.63	Gal.
LPNL Top			NA	NA	Ft.
LPNL Bottom			NA	NA	Ft.
DPNL Top			NA	NA	Ft.
DPNL Bottom			NA	NA	Ft.
Min. Bailing Vol.			7.84	7.89	Gal.
Actual Bailing Vol.			20.00	10.00	Gal.

Comments

Monitor Well # 8
Sohio State "A"
Sampling Results

Lab. #	Sample Date	Benzene	Toluene	Ethylbenzene	m,p Xylene	o Xylene	Total Xylene	Total BTEX
0306733-14	06/20/03	0.008	0.009	0.009	0.037	0.015	0.052	0.078
0307790-48	10/30/03	0.003	0.003	0.002	0.008	0.004	0.012	0.020

Sohio A MW #8





Sohio A

Monitor Well Bailing Log

Sohio A MW #9

Lat: _____
Long. _____
Surf. Elev. _____ Ft.

As Drilled	As Measured
------------	-------------

Date: 6/5/2002
Top of Water 38.95 Ft.
Bottom of Bore 51 Ft.

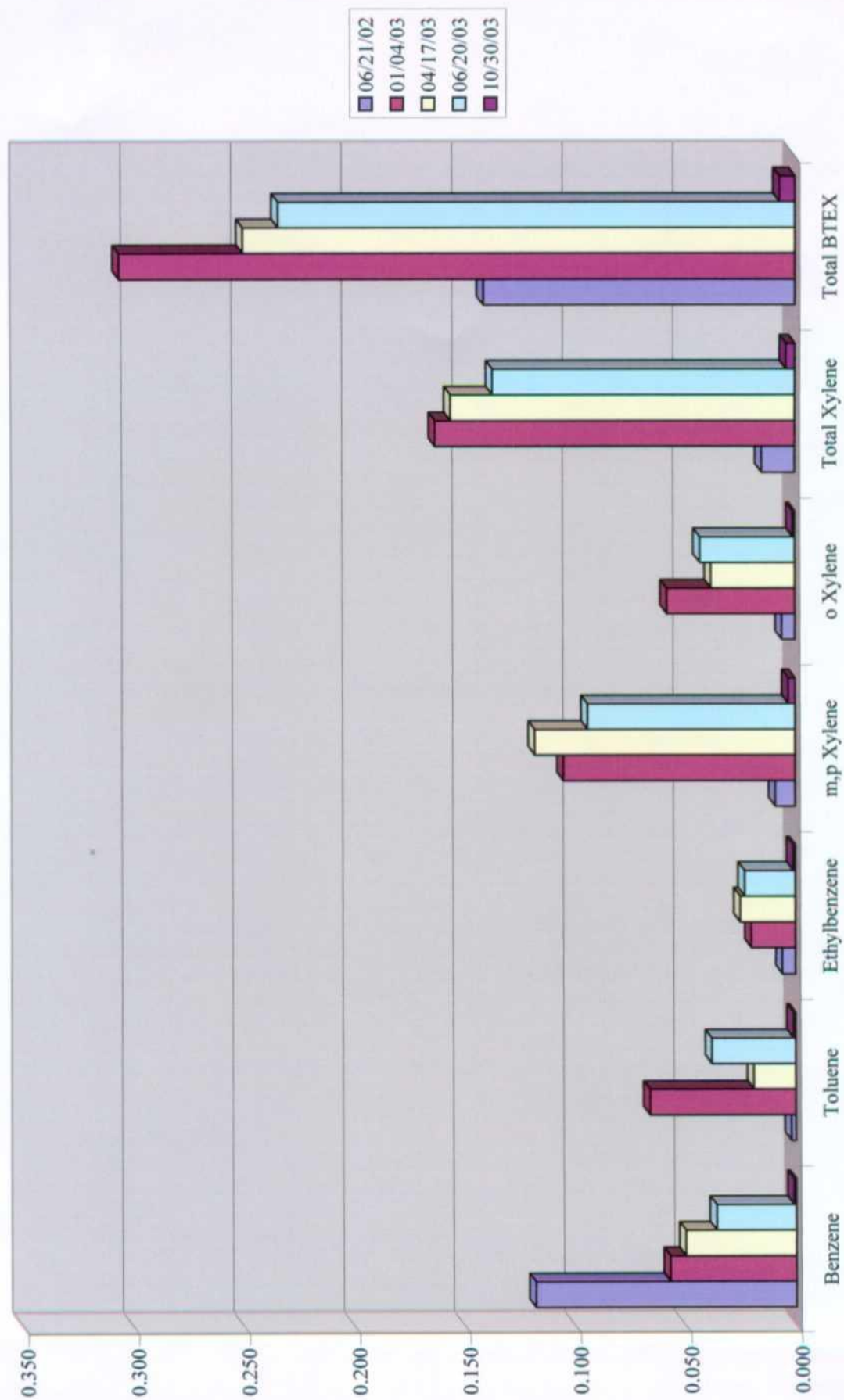
Date:	1/28/02	4/12/03	6/12/03	10/25/03	
Top of Water	39.60	39.70	39.90	39.60	Ft.
Bottom of Bore	50.50	50.50	54.40	50.40	Ft.
Bore Volume	1.76	1.74	2.34	1.74	Gal.
LPNL Top	NA	NA	NA	NA	Ft.
LPNL Bottom	NA	NA	NA	NA	Ft.
DPNL Top	NA	NA	NA	NA	Ft.
DPNL Bottom	NA	NA	NA	NA	Ft.
Min. Bailing Vol.	5.27	5.23	7.02	5.23	Gal.
Actual Bailing Vol.	15.00	20.00	20.00	10.00	Gal.

Comments

Monitor Well # 9
Sohio State "A"
Sampling Results

Lab. #	Sample Date	Benzene	Toluene	Ethylbenzene	m,p Xylene	o Xylene	Total Xylene	Total BTEX
0203719-02	06/21/02	0.118	0.002	0.006	0.009	0.006	0.015	0.141
0205349-28	01/04/03	0.057	0.066	0.020	0.105	0.058	0.163	0.306
0306249-29	04/17/03	0.050	0.019	0.025	0.118	0.038	0.156	0.250
0306733-15	06/20/03	0.036	0.038	0.023	0.094	0.043	0.137	0.234
0307790-49	10/30/03	0.001	0.001	0.001	0.003	0.001	0.004	0.007

Sohio A MW #9



Atkins Engineering
Associates, Inc.

2904 W. 2nd St., Roswell, NM 88202-3156

LOG OF BORING MW-6

(Page 1 of 1)

Whole Earth Environmental
19606 San Gabriel
Houston, TX 77084

Contact: Mike Griffin

Job#: WHOLENV.DRL.03

Date : 6/09/03

Drill Start/Drill End :

Boring Location :

Site Location

: SOHIO A State 1 SW,SE

: Sec. 12, T11S.,R33E.

Auger Type

: Hollow stem

Logged By

: Mort Bates

Depth in Feet	GRAPHIC	USCS	Samples	DESCRIPTION	Lab mg/kg	PID ppm-v
0		CL		Top Soil Clay, Firm, Dry, Strong Brown 7.5 YR 2.5/1		
5		SC		Clayey Sand w/caliche, Firm, Dry, Light Gray 7.5 YR 7/1		
10				Sand w/caliche, Loose, Damp, Gray 7.5 YR 6/1		
15		SM				
20				Caliche w/sand, Firm, Dry, White 7.5 YR 8/1		
25						
30				Caliche Rock, Hard, Dry, White 7.5 YR 8/1		
35				Broken Caliche, Firm, Dry, White 7.5 YR 8/1		
40						
45		SC		Clayey Sand, Stiff, Moist, Reddish Yellow 7.5 YR 6/8		
50						
55		SP		Sand, Soft, Wet, Reddish Yellow 7.5 YR 6/8		
60		CL		Sandy Clay, Soft, Wet, Reddish Yellow 7.5 YR 6/8		
65						

Total depth = 60 ft.
Water level = 39.62 ft.

Well: MW-6

8"x12" monitor well cover

Cement Grout with
bentonite additive

2" PVC Casing

Bentonite seal

8-16 Silica Sand pack

2" .020 Slot PVC screen

Atkins Engineering Associates, Inc.
P.O. Box 3156
Roswell, New Mexico 88202

LOG OF BORING Sohio State A MW 1 Formerly MW 31

(Page 1 of 2)

Tipperary Corporation
633 17th Street, Suite 1550
Denver, CO 80202

Date : 8-9-99
Drill Start : 1:45 P.M.
Drill End : 6:00 P.M.
Boring Location : 300 ft. S.E. of MW # 27

Site Location : SE/SE Section 4, T11S,
Auger Type : Hollow Stem R33E
Logged By : Mort Bates

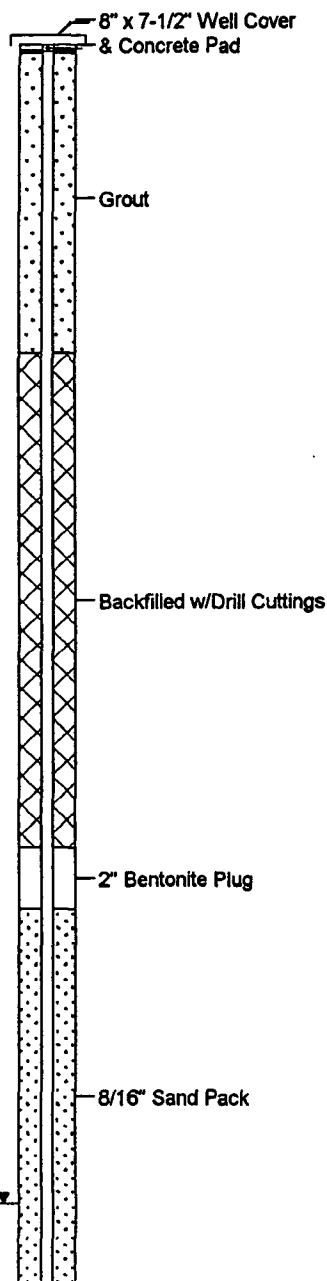
Job #99280.00

Depth in feet	GRAPHIC	USCS	Samples	DESCRIPTION
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Well: MW 31

Elev.:

0				Silty Clay, Brown, Firm, Damp
5		CL		Caliche Chalk, Tan, Firm, Dry
10				
15				
20				
25				Silty Sandy Clay, Tan, Firm, Damp
30		CL		
35				
40		SC		Clayey Sand, Yellow, Firm, Damp WL @ 37.45



Atkins Engineering Associates, Inc.
P.O. Box 3156
Roswell, New Mexico 88202

LOG OF BORING Sohio State A MW 7
Formerly MW 31

(Page 2 of 2)

Tipperary Corporation
633 17th Street, Suite 1550
Denver, CO 80202

Date : 8-9-99
Drill Start : 1:45 P.M.
Drill End : 6:00 P.M.
Boring Location : 300 ft. S.E. of MW 27

Site Location : SE/SE Section 4, T11S,
Auger Type : Hollow Stem R33E
Logged By : Mort Bates

Job #99280.00

Depth in feet	GRAPHIC	USCS	Samples	DESCRIPTION
---------------------	---------	------	---------	-------------

40

SC

Sandy Clay, Tan, Firm, Wet

45

50

CL

55

60

TD = 62 Ft.

65

70

75

80

Well: MW 7

Elev.:



8/16" Sand Pack

2" .020 Slot Screen

Atkins Engineering
Associates, Inc.

2904 W. 2nd St., Roswell, NM 88202-3156

LOG OF BORING MW-8
Formerly MW 46

(Page 1 of 1)

Whole Earth Environmental
19606 San Gabriel
Houston, TX 77084

Contact: Mike Griffin

Job#: WHOLENV.DRL.03

Date : 6/10/03
Drill Start/Drill End :
Boring Location :

Site Location : SOHIO A State 1 SW,SE
Sec. 12, T11S.,R33E.
Auger Type : Hollow stem
Logged By : Mori Bates

Depth in Feet	GRAPHIC	USCS	Samples	DESCRIPTION	Lab mg/kg	PID ppm-v
0		CL		Top Soil Clay, Firm, Dry, Strong Brown 7.5 YR 2.5/1		
5				Caliche Sand, Firm, Dry, Light Gray 7.5 YR 7/1		
10		SM				
15						
20				Broken Caliche, Firm, Dry, White 7.5 YR 8/1		
25						
30						
35						
40				Caliche Rock, Hard, Dry, White 7.5 YR 8/1		
45						
50		CL		Sandy Clay, Soft, Wet, Reddish Yellow 7.5 YR 6/8		
55						
60		SC		Clayey Sand, Soft, Wet, Reddish Yellow 7.5 YR 6/8		

Total depth = 60 ft.
Water level = 39.00 ft.

Well: MW-8

8"x12" monitor well cover

Cement Grout with
bentonite additive

2" PVC Casing

Bentonite seal

8-16 Silica Sand pack

2" .020 Slot PVC screen

Atkins Engineering
Associates, Inc.

2904 W. 2nd St., Roswell, NM 88202-3156

LOG OF BORING SOHIO A MW 19
Formerly MW 39

(Page 1 of 1)

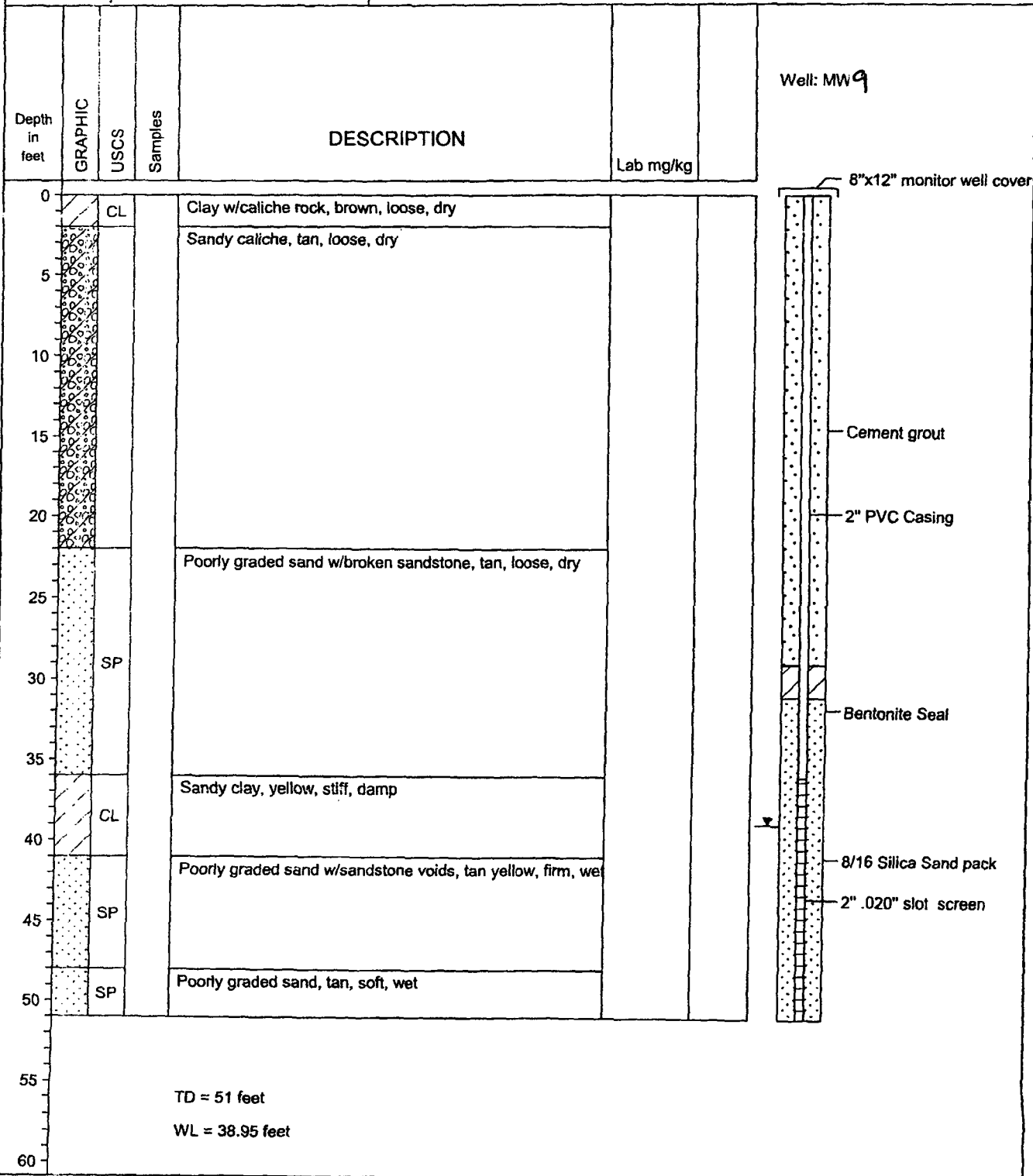
Whole Earth Environmental
19606 San Gabriel
Houston, Texas 77084

Contact Mike Griffin

Project # CALLIER.MWD.02

Date : 6/05/02
Drill Start : 1500
Drill End : 2030
Boring Location : SE of Pump site

Site Location : Caprock, NM
Auger Type : Hollow Stem
Logged By : Mort Bates



Atkins Engineering
Associates, Inc.

2904 W. 2nd St., Roswell, NM 88202-3156

LOG OF BORING MW-10

Formerly MW 47

(Page 1 of 1)

Whole Earth Environmental

19606 San Gabriel

Houston, TX 77084

Contact: Mike Griffin

Job#: WHOLENV.DRL.03

Date : 6/10/03

Drill Start/Drill End :

Boring Location :

Site Location

: SOHIO A State 1 SW, SE

: Sec. 12, T11S., R33E.

Auger Type

: Hollow stem

Logged By

: Mori Bates

Depth in Feet	GRAPHIC	USCS	Samples	DESCRIPTION	Lab mg/kg	PID ppm-v
0		CL		Top Soil Clay, Firm, Dry, Strong Brown 7.5 YR 2.5/1		
5				Caliche Sand, Firm, Dry, Light Gray 7.5 YR 7/1		
10		SM				
15						
20				Broken Caliche, Firm, Dry, White 7.5 YR 8/1		
25						
30						
35						
40				Caliche Rock, Hard, Dry, White 7.5 YR 8/1		
45				Sand, Soft, Wet, Reddish Yellow 7.5 YR 6/8		
50		SP				
55						
60		SC		Clayey Sand, Soft, Wet, Reddish Yellow 7.5 YR 6/8		
65						

Total depth = 60 ft.
Water level = 39.00 ft.

Well: MW-10

8"x12" monitor well cover

Cement Grout with
bentonite additive

2" PVC Casing

Bentonite seal

8-16 Silica Sand pack

2" .020 Slot PVC screen



Sohio A

Monitor Well Bailing Log

Sohio A MW #10

Lat: N33° 23.27983'
Long. W103° 36.8247'
Surf. Elev. 4281.32 Ft.

As Drilled	As Measured
------------	-------------

Date: 6/10/2003
Top of Water 39 Ft.
Bottom of Bore 60 Ft.

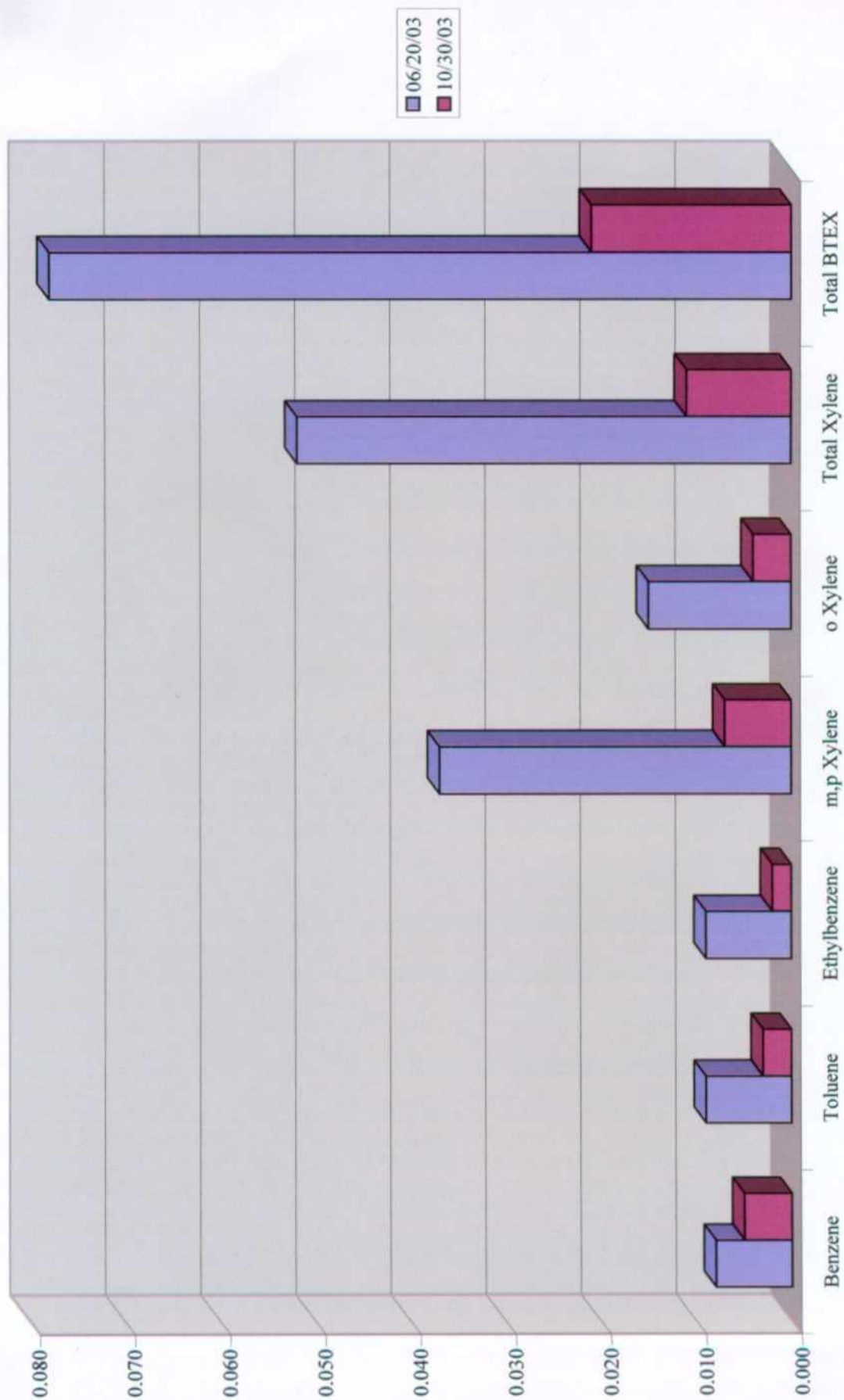
Date:			6/12/03	10/25/03	
Top of Water			40.40	40.40	Ft.
Bottom of Bore			62.50	62.40	Ft.
Bore Volume			3.56	3.55	Gal.
LPNL Top			NA	NA	Ft.
LPNL Bottom			NA	NA	Ft.
DPNL Top			NA	NA	Ft.
DPNL Bottom			NA	NA	Ft.
Min. Bailing Vol.			10.69	10.65	Gal.
Actual Bailing Vol.			20.00	10.00	Gal.

Comments

**Monitor Well # 10
Sohio State "A"
Sampling Results**

Lab. #	Sample Date	Benzene	Toluene	Ethylbenzene	m,p Xylene	o Xylene	Total Xylene	Total BTEX
0306733-14	06/20/03	0.008	0.009	0.009	0.037	0.015	0.052	0.078
0307790-50	10/30/03	0.005	0.003	0.002	0.007	0.004	0.011	0.021

Sohio A MW #10





Sohio A

Monitor Well Bailing Log

Sohio A MW #11

Lat: N33° 23.24183'
Long. W103° 36.8274'
Surf. Elev. 4280.55 Ft.

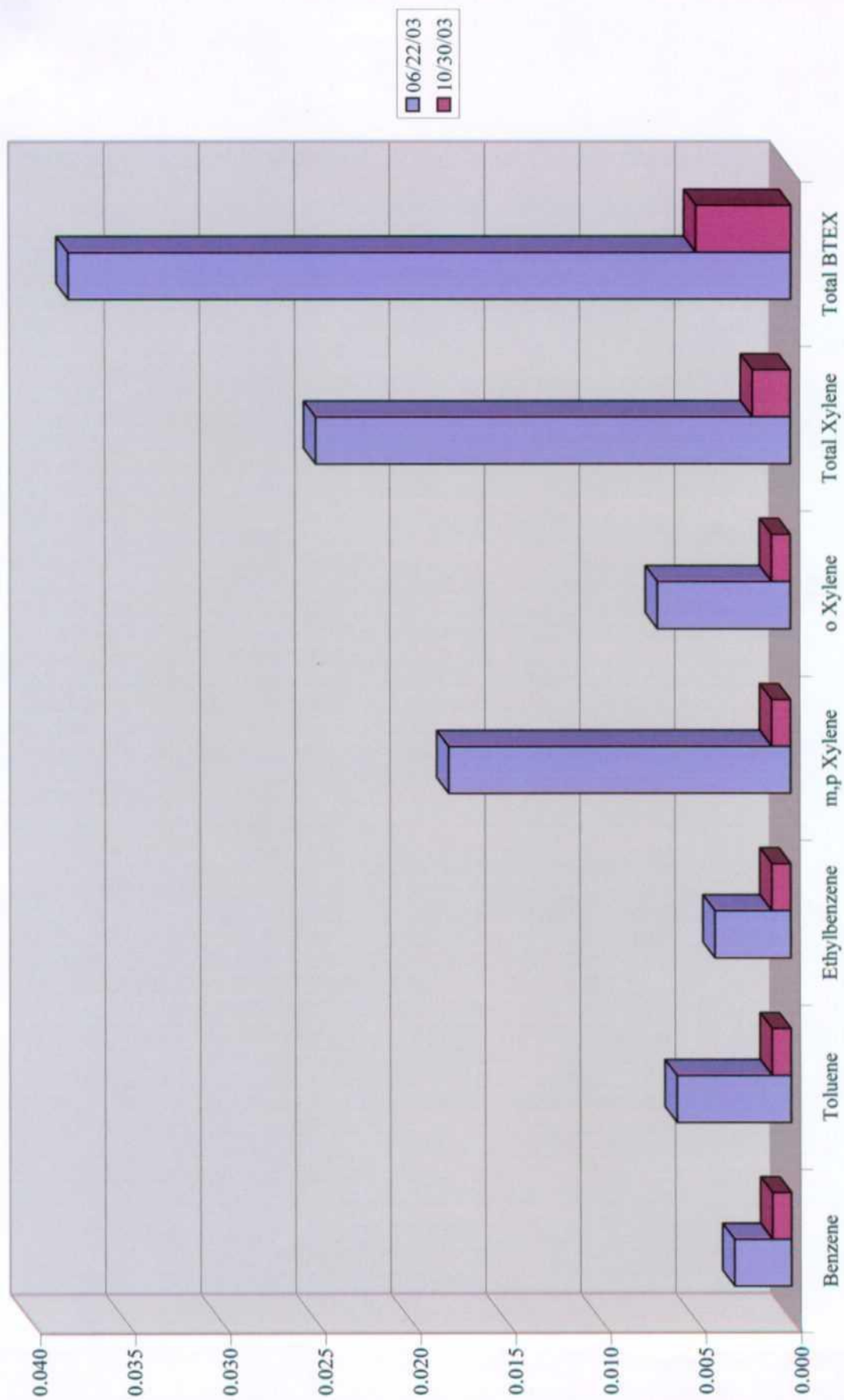
As Drilled	As Measured
------------	-------------

Date: 6/11/2003
Top of Water 39 Ft.
Bottom of Bore 60 Ft.

Date:			6/12/03	10/25/03	
Top of Water			39.90	39.90	Ft.
Bottom of Bore			56.70	56.80	Ft.
Bore Volumn			2.71	2.73	Gal.
LPNL Top			NA	NA	Ft.
LPNL Bottom			NA	NA	Ft.
DPNL Top			NA	NA	Ft.
DPNL Bottom			NA	NA	Ft.
Min. Bailing Vol.			8.13	8.18	Gal.
Actual Bailing Vol.			20.00	10.00	Gal.

Comments

Sohio A MW #11



Atkins Engineering
Associates, Inc.

2904 W. 2nd St., Roswell, NM 88202-3156

LOG OF BORING MW-11
Formerly MW48

(Page 1 of 1)

Whole Earth Environmental
19606 San Gabriel
Houston, TX 77084

Contact: Mike Griffin

Job#: WHOLENV.DRL.03

Date : 6/11/03
Drill Start/Drill End :
Boring Location :

Site Location : SOHIO A State 1 SW,SE
: Sec. 12, T11S.,R33E.
Auger Type : Hollow stem
Logged By : Mort Bates

