

**1R - 264**

**ANNUAL  
MONITORING  
REPORT**

**4/05/2005**



**Tipperary**  
CORPORATION

633 Seventeenth Street  
Suite 1550  
Denver, Colorado 80202-3622

RECEIVED

APR 06 2005

Oil Conservation Division  
Environmental Bureau

April 5, 2005

VIA OVERNIGHT MAIL

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

IRP 263  
264 ✓  
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**RE: Progress Report for Year 2004  
Bagley Field  
Pit Closure Project  
Lea County, NM**

Dear Mr. Anderson:

Please find enclosed the 2004 results from our monitor wells in the subject project area. This report summarizes the results from water samples taken on October 1, 2004. These results represent seven years of monitoring. On April 19, 2004, the NMOCD modified the monitoring program for the project to allow sampling on an annual basis. In general, we are continuing to observe decreasing levels of BTEX in the monitor wells.

The Executive Summary section contains a general discussion of the project to date and a Location Map of the pit reclamation projects.

A summary of the 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 the 2004 sampling 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 new well.

We will continue to sample and prepare a progress report for 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  
2004 Annual Report**

**Executive Summary**

**Site History**

In response to a request by a 1996 request by the NMOCD, Tipperary Corporation began a program to close a series of ten surface impoundments located with their Bagley Field west of Tatum, New Mexico. The closure program consisted of excavating the impoundments and encapsulating the contaminant plume within high-density polyethylene. As part of the closure program, a groundwater investigation was conducted at each site. The investigation concluded that due to the relatively shallow depth to the surface of the aquifer, each site impacted the Ogallala Aquifer to varying degrees.

The remediation plan included passive monitoring of those sites showing no free product on the water table and active fluid removal by means of the erection of windmills at three sites found to have more significant concentrations. A series of water monitoring wells were placed down gradient of each location. Each such well has been sampled and tested on a quarterly basis with the results of each laboratory analyses provided to the NMOCD on an annual basis. To date, three sites have been remediated to final closure. On April 19, 2004, the NMOCD modified the monitoring program to allow sampling on an annual basis.

**Procedures**

Whole Earth employs a Grundfos electric submersible pump and individual bailers dedicated to each well. The well fluids are pumped into a trailer mounted storage tank and sent to disposal at the Burro Pipeline Station No. 1.

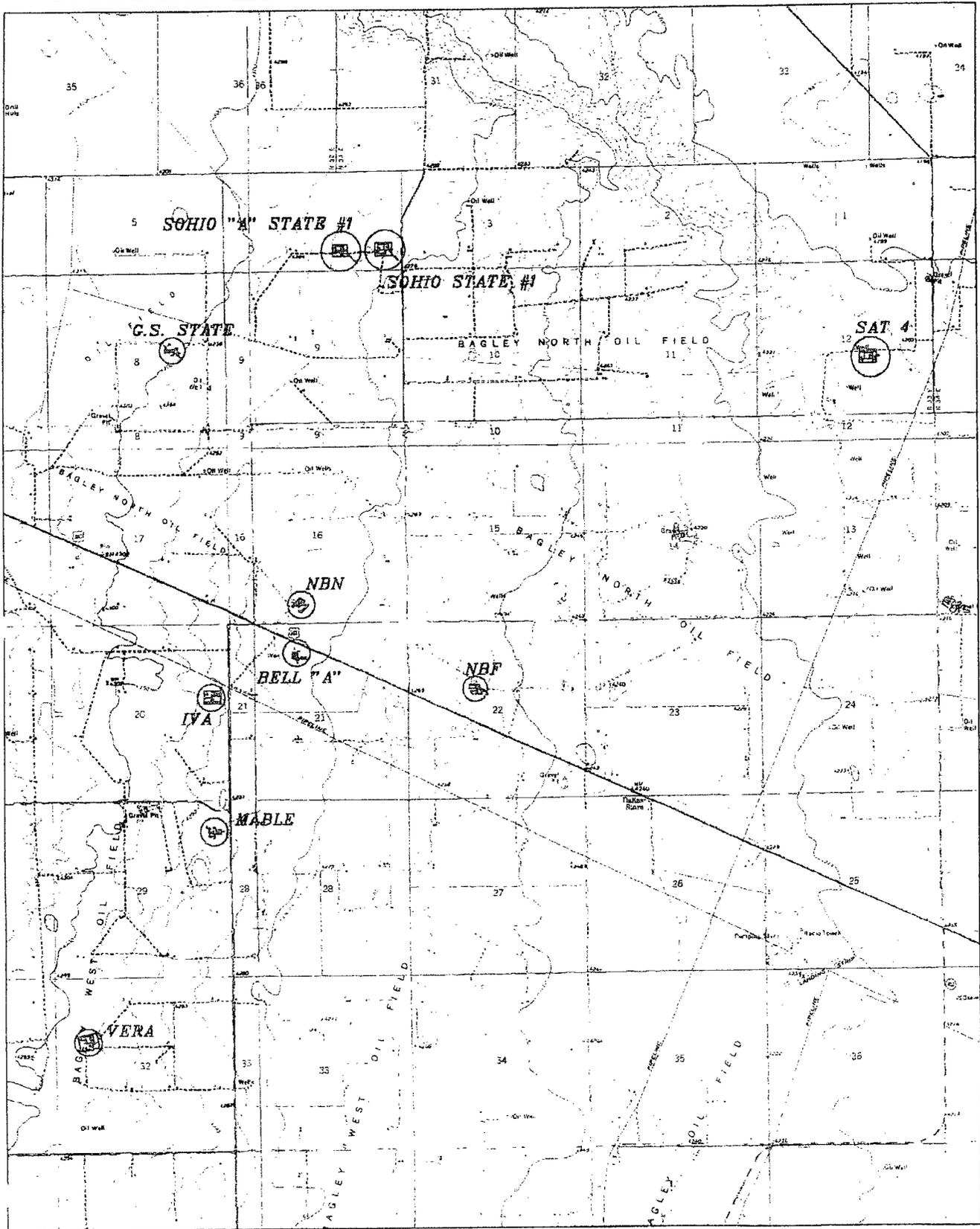
The submersible pump is thoroughly decontaminated between each well by spraying the exterior with detergent followed by a clear water rinse; the inside of the pump and hose assembly is cleaned by pumping a minimum volume of five gallons of Alquinox through the system between each well.

**Results and Conclusions**

Generally, the trend for each pit site is to show lower concentrations of BTEX within each recovery and monitor well bore. During this sampling round we noticed that those bores containing free products had increased volumes of hydrocarbons over all previous sampling rounds. We believe that this is due to the reduction of frequency in bailing the wells (once versus four times per year). In future bailings we will continue to pump sufficient volumes from each bore containing free product until such time as the oil is no longer visible within the discharge stream.

A map showing the project area is attached. The following sections present the investigation work 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

**Tipperary Oil & Gas Corporation  
Bagley Field  
2004 Annual Report**

**Mable COM  
Section 29A-T11S-R33E**

IRP 264

The Mable site consists of one recovery and three monitor wells. The recovery well continues to show reductions in BTEX over the eight years of operations with the latest results being less than 10% of the initial concentrations.

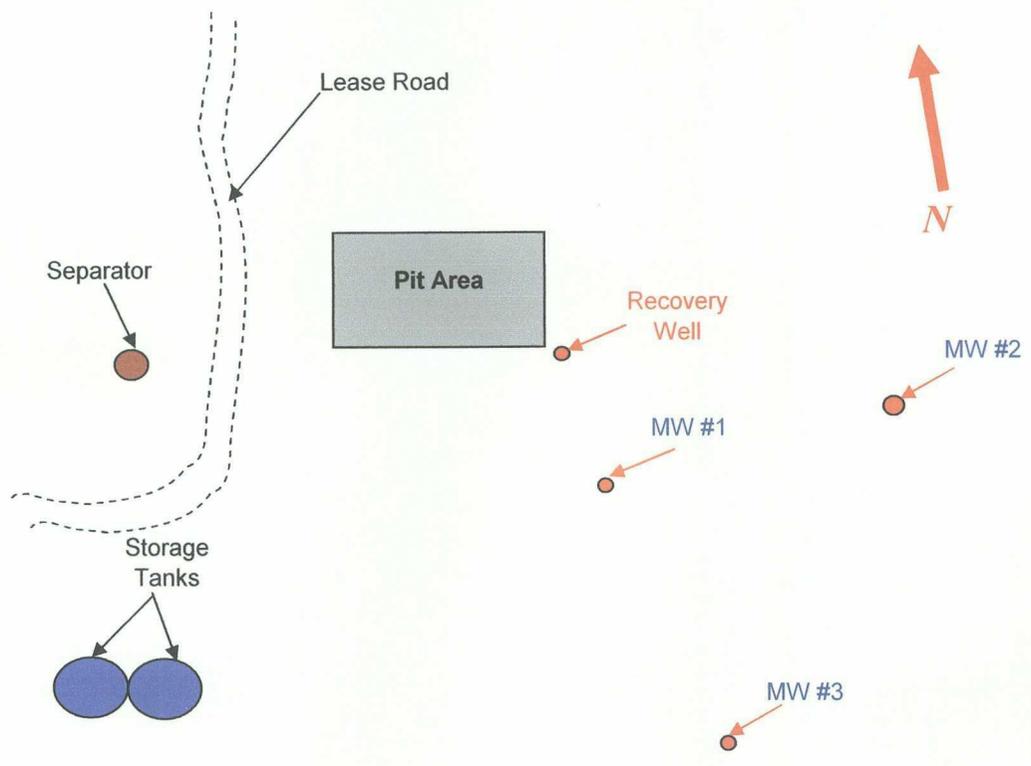
Monitor Well No. 1 showed dramatic improvement over previous results. The plume appears to have moved down to the location of MW 2. MW 3 continues to show non-detectable results.

We will continue to operate the recovery well and monitor the results on an annual basis.

Please find the following data:

- Well-site plat with monitor well locations.
- Ground water potentiometric map for 2004 sampling with direction and magnitude of the hydraulic gradient.
- Table of ground water recovery volumes from the recovery well.
- Well bailing log for each well.
- Summary table and chart of ground water quality results for each well.
- Copy of the recent laboratory sampling results with the QA/QC data.

**Tipperary Corporation  
Mable COM  
Monitor Well Locations**

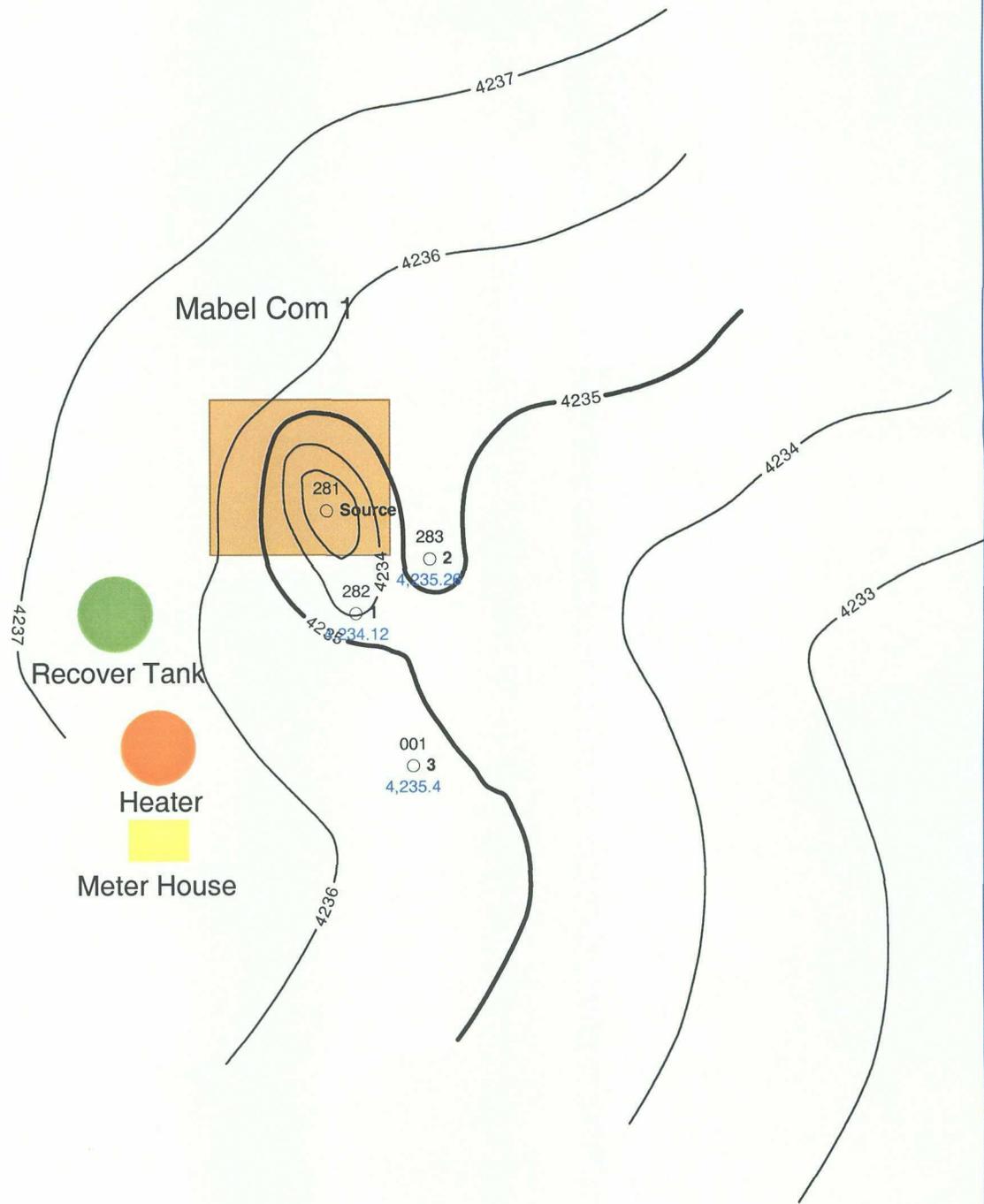
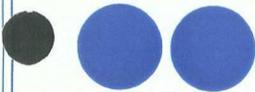




Pump Jack



Storage Tanks



Mabel Com 1

Recover Tank

Heater

Meter House

Tipperary Oil & Gas Corp.

North Bagley Field Pit Closure

Mabel Com 1 - 4thQtr 2004 Water Level

Grad= 20 ft./mi. @ 120\* Az.



Tipperary Corporation  
Mable Com Recovery Well  
Section 29A-T11S-R33E  
Lea County, NM

YEAR	ESTIMATED GROUND WATER RECOVERY (BBLs)	ESTIMATED PRODUCT RECOVERY (BBLs)
1997	1825	4.6
1998	3650	9.1
1999	3650	9.1
2000	3650	9.1
2001	3650	9.1
2002	3650	9.1
2003	3650	9.1
2004	3650	9.1
TOTAL	27375	68.4

All fluids pumped into the Burro Disposal System.  
Production rate estimated to be 10 bwpd





Mable

### Monitor Well Bailing Log

#### Mable MW #1

Lat: 33° 20.503'  
 Long. 103° 37.752'  
 Surf. Elev. 4287.22 Ft.

As Drilled	As Measured			
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Date: 8/27/1997  
 Top of Water 52 Ft.  
 Bottom of Bore 68 Ft.

	Date: 1/23/04	9/29/04			
Top of Water	53.10	52.20			Ft.
Bottom of Bore	62.90	65.90			Ft.
Bore Volumn	1.58	2.21			Gal.
LPNL Top	53.10	53.10			Ft.
LPNL Bottom	53.60	53.60			Ft.
DPNL Top	NA	NA			Ft.
DPNL Bottom	NA	NA			Ft.
Min. Bailing Vol.	4.74	6.63			Gal.
Actual Bailing Vol.	15.00	10.00			Gal.

#### Comments

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1-23 Free Product in Bore

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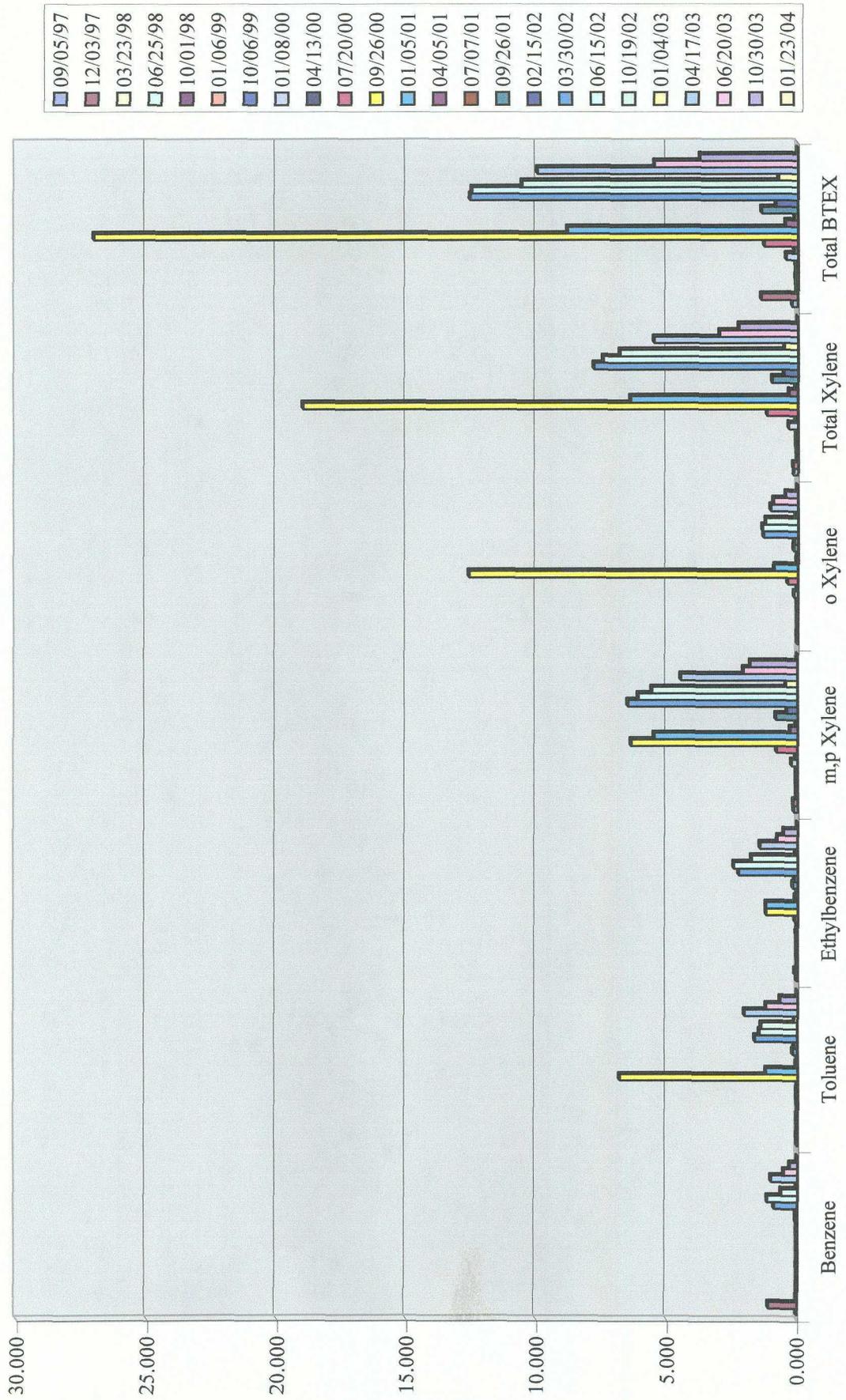
**Mable COM  
Source Well**

Lab. #	Sample Date	Benzene	Toluene	Ethylbenzene	m,p Xylene	o Xylene	Total Xylene	Total BTEX
17429	04/01/99	0.486	0.432	0.066	1.000	0.713	9.300	11.997
18591	07/14/99	0.568	0.378	0.068	1.230	0.908	13.730	3.152
20608	10/06/99	0.467	0.395	0.094	0.868	0.685	2.450	2.509
22775	01/08/00	0.534	0.548	0.136	1.030	0.946	5.120	3.194
25161	04/13/00	0.485	0.342	0.048	0.978	0.685	1.663	2.538
28465	07/20/00	0.552	0.622	0.166	1.670	1.010	2.680	4.020
31495	09/26/00	0.980	1.450	0.141	2.360	1.530	3.890	6.461
36137	01/05/01	0.590	0.475	0.127	0.927	0.768	1.695	2.887
38920	04/05/01	0.509	0.435	0.128	1.090	0.816	1.906	2.978
0101098-04	07/07/01	0.459	0.343	0.118	0.929	0.735	1.664	2.584
0101642-04	09/26/01	0.550	0.425	0.018	1.360	0.904	2.264	3.257
0202619-04	02/15/02	0.485	0.418	0.149	1.140	0.801	1.941	2.993
0001112-02	03/30/02	0.531	0.156	0.456	1.300	0.909	2.209	3.352
0203602-01	06/15/02	0.429	0.113	0.348	1.070	0.782	1.852	2.742
0204815-04	10/19/02	0.272	0.093	0.216	0.878	0.649	1.527	2.108
0306249-04	04/17/03	0.330	0.190	0.126	0.951	0.684	1.635	2.281
0306733-20	06/20/03	0.189	0.096	0.084	0.774	0.555	1.329	1.698
0307790-23	10/30/03	0.193	0.038	0.053	0.469	0.304	0.773	1.057
4J04008-01	10/01/04	0.175	0.049	0.051	0.423	0.258	0.681	0.956





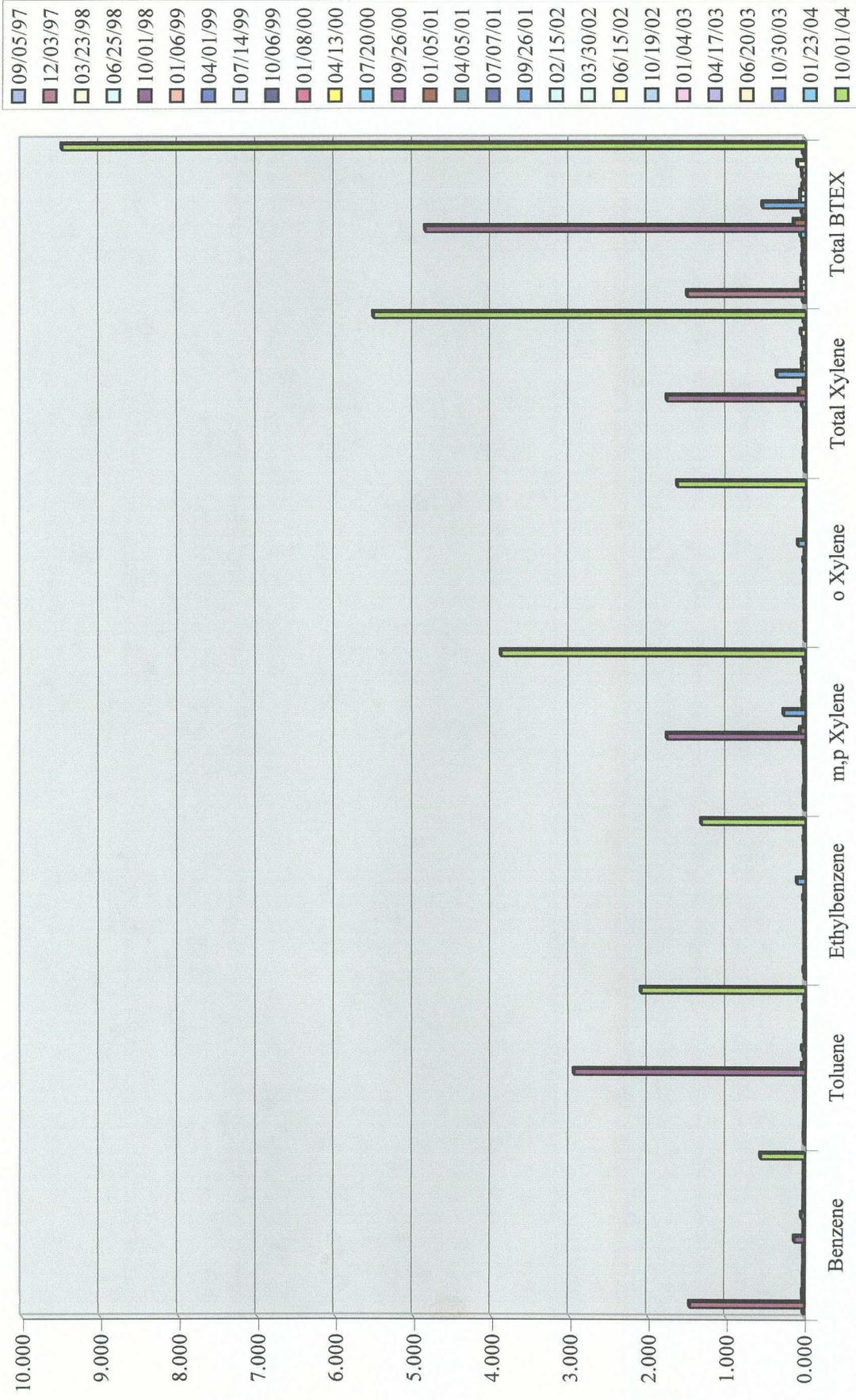
Mable MW #1



**Monitor Well # 2  
Mable COM  
Sampling Results**

Lab. #	Sample Date	Benzene	Toluene	Ethylbenzene	m,p Xylene	o Xylene	Total Xylene	Total BTEX
12489	09/05/97	0.015	0.002	0.002	0.010	0.002	0.012	0.031
13178	12/03/97	1.465	0.007	0.017	0.010	0.002	0.012	1.501
14060	03/23/98	0.019	0.004	0.002	0.019	0.003	0.022	0.047
14659	06/25/98	0.020	0.006	0.003	0.015	0.005	0.020	0.049
15606	10/01/98	0.007	0.002	0.001	0.002	0.001	0.003	0.013
16598	01/06/99	0.007	0.002	0.002	0.006	0.002	0.008	0.019
17430	04/01/99	0.012	0.008	0.002	0.010	0.006	0.016	0.038
18592	07/14/99	0.008	0.006	0.002	0.012	0.006	0.018	0.034
20607	10/06/99	0.002	0.005	0.002	0.010	0.006	0.016	0.025
22768	01/08/00	0.004	0.004	0.004	0.011	0.004	0.015	0.027
25163	04/13/00	0.006	0.009	0.004	0.011	0.005	0.016	0.035
28435	07/20/00	0.002	0.006	0.008	0.028	0.016	0.044	0.060
31506	09/26/00	0.129	2.950	0.005	1.760	0.005	1.765	4.849
36135	01/05/01	0.001	0.038	0.020	0.063	0.021	0.084	0.143
38922	04/05/01	0.001	0.001	0.006	0.015	0.004	0.019	0.027
0101098-06	07/07/01	0.004	0.014	0.006	0.014	0.005	0.019	0.043
0101642-06	09/26/01	0.039	0.038	0.102	0.273	0.091	0.364	0.543
0202619-06	02/15/02	0.007	0.003	0.009	0.028	0.012	0.040	0.059
001159-02	03/30/02	0.006	0.009	0.003	0.030	0.013	0.043	0.061
0203602-03	06/15/02	0.004	0.006	0.001	0.016	0.007	0.023	0.034
0204815-06	10/19/02	0.002	0.004	0.001	0.007	0.004	0.011	0.018
0205349-05	01/04/03	0.004	0.002	0.006	0.016	0.008	0.024	0.036
0306249-06	04/17/03	0.001	0.002	0.008	0.021	0.011	0.032	0.043
0306733-22	06/20/03	0.006	0.02	0.016	0.038	0.019	0.057	0.099
0307790-25	10/30/03	0.001	0.001	0.001	0.002	0.001	0.003	0.006
4A26005-02	01/23/04	0.001	0.002	0.005	0.013	0.008	0.021	0.029
4J04008-02	10/01/04	0.563	2.09	1.32	3.88	1.63	5.51	9.483

Mable MW #2



Mable COM  
MW-3

Lab. #	Sample Date	Benzene	Toluene	Ethylbenzene	m,p Xylene	o Xylene	Total Xylene	Total BTEX
0203602-04	06/15/02	0.001	0.001	0.001	0.001	0.001	0.002	0.005
0204814-04	10/19/02	0.001	0.001	0.001	0.001	0.001	0.002	0.005
0205349-06	01/04/03	0.001	0.001	0.001	0.006	0.002	0.008	0.011
0306249-07	04/17/03	0.001	0.001	0.001	0.001	0.001	0.002	0.005
0306733-23	06/20/03	0.001	0.001	0.001	0.003	0.002	0.005	0.008
0307790-26	10/30/03	0.001	0.001	0.001	0.001	0.001	0.002	0.005
4A26005-03	01/23/04	0.001	0.001	0.001	0.001	0.001	0.002	0.005
4J04008-04	10/01/04	0.001	0.001	0.001	0.001	0.002	0.003	0.006





12600 West I-20 East - Odessa, Texas 79765

## Analytical Report

**Prepared for:**

Mike Griffin

WHOLE EARTH ENVIRONMENTAL

2103 Arbor Cove

Katy, TX 77494

Project: Mable COM

Project Number: None Given

Location: None Given

Lab Order Number: 4J04008

Report Date: 10/15/04

WHOLE EARTH ENVIRONMENTAL  
2103 Arbor Cove  
Katy TX, 77494

Project: Mable COM  
Project Number: None Given  
Project Manager: Mike Griffin

Fax: (281) 394-2051

**Reported:**  
10/15/04 16:51

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Source	4J04008-01	Water	10/01/04 00:00	10/03/04 13:00
MW-1	4J04008-02	Water	10/01/04 00:00	10/03/04 13:00
MW-2	4J04008-03	Water	10/01/04 00:00	10/03/04 13:00
MW-3	4J04008-04	Water	10/01/04 00:00	10/03/04 13:00

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Source (4J04008-01) Water</b>									
Benzene	0.175	0.00100	mg/L	1	EJ41205	10/11/04	10/11/04	EPA 8021B	
Toluene	0.0485	0.00100	"	"	"	"	"	"	
Ethylbenzene	0.0511	0.00100	"	"	"	"	"	"	
Xylene (p/m)	0.423	0.00100	"	"	"	"	"	"	
Xylene (o)	0.258	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		190 %		80-120	"	"	"	"	S-04
Surrogate: 4-Bromofluorobenzene		127 %		80-120	"	"	"	"	S-04
<b>MW-1 (4J04008-02) Water</b>									
Benzene	ND	0.00100	mg/L	1	EJ41205	10/11/04	10/11/04	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		88.4 %		80-120	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.9 %		80-120	"	"	"	"	
<b>MW-2 (4J04008-03) Water</b>									
Benzene	0.563	0.100	mg/L	100	EJ41205	10/11/04	10/11/04	EPA 8021B	
Toluene	2.09	0.100	"	"	"	"	"	"	
Ethylbenzene	1.32	0.100	"	"	"	"	"	"	
Xylene (p/m)	3.88	0.100	"	"	"	"	"	"	
Xylene (o)	1.63	0.100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		188 %		80-120	"	"	"	"	S-04
Surrogate: 4-Bromofluorobenzene		162 %		80-120	"	"	"	"	S-04
<b>MW-3 (4J04008-04) Water</b>									
Benzene	ND	0.00100	mg/L	1	EJ41205	10/11/04	10/12/04	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	0.00236	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		82.2 %		80-120	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %		80-120	"	"	"	"	

**General Chemistry Parameters by EPA / Standard Methods**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Source (4J04008-01) Water</b>									
Carbonate Alkalinity	ND	0.200	mg/L	2	EJ40902	10/09/04	10/09/04	EPA 310.2M	O-04
<b>Bicarbonate Alkalinity</b>	<b>296</b>	4.00	"	"	"	"	"	"	O-04
Hydroxide Alkalinity	ND	0.200	"	"	"	"	"	"	O-04
<b>Chloride</b>	<b>771</b>	5.00	"	1	EJ40906	10/09/04	10/09/04	EPA 325.3M	
<b>Sulfate</b>	<b>114</b>	1.25	"	2.5	EJ40904	10/09/04	10/09/04	EPA 375.4	
<b>MW-1 (4J04008-02) Water</b>									
Carbonate Alkalinity	ND	0.200	mg/L	2	EJ40902	10/09/04	10/09/04	EPA 310.2M	O-04
<b>Bicarbonate Alkalinity</b>	<b>332</b>	4.00	"	"	"	"	"	"	O-04
Hydroxide Alkalinity	ND	0.200	"	"	"	"	"	"	O-04
<b>Chloride</b>	<b>124</b>	5.00	"	1	EJ40906	10/09/04	10/09/04	EPA 325.3M	
<b>Sulfate</b>	<b>20.6</b>	0.500	"	"	EJ40904	10/09/04	10/09/04	EPA 375.4	
<b>MW-2 (4J04008-03) Water</b>									
Carbonate Alkalinity	ND	0.200	mg/L	2	EJ40902	10/09/04	10/09/04	EPA 310.2M	O-04
<b>Bicarbonate Alkalinity</b>	<b>356</b>	4.00	"	"	"	"	"	"	O-04
Hydroxide Alkalinity	ND	0.200	"	"	"	"	"	"	O-04
<b>Chloride</b>	<b>46.1</b>	5.00	"	1	EJ40906	10/09/04	10/09/04	EPA 325.3M	
<b>Sulfate</b>	<b>82.2</b>	1.25	"	2.5	EJ40904	10/09/04	10/09/04	EPA 375.4	
<b>MW-3 (4J04008-04) Water</b>									
Carbonate Alkalinity	ND	0.200	mg/L	2	EJ40902	10/09/04	10/09/04	EPA 310.2M	O-04
<b>Bicarbonate Alkalinity</b>	<b>130</b>	4.00	"	"	"	"	"	"	O-04
Hydroxide Alkalinity	ND	0.200	"	"	"	"	"	"	O-04
<b>Chloride</b>	<b>142</b>	5.00	"	1	EJ40906	10/09/04	10/09/04	EPA 325.3M	
<b>Sulfate</b>	<b>225</b>	2.50	"	5	EJ40904	10/09/04	10/09/04	EPA 375.4	

WHOLE EARTH ENVIRONMENTAL  
2103 Arbor Cove  
Katy TX, 77494

Project: Mable COM  
Project Number: None Given  
Project Manager: Mike Griffin

Fax: (281) 394-2051

Reported:  
10/15/04 16:51

**Total Metals by EPA / Standard Methods**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Source (4J04008-01) Water</b>									
Calcium	139	1.00	mg/L	100	EJ41305	10/12/04	10/12/04	EPA 6010B	
Magnesium	27.3	0.0100	"	10	"	"	"	"	
Potassium	6.74	0.100	"	2	"	"	"	"	
Sodium	413	1.00	"	100	"	"	"	"	
<b>MW-1 (4J04008-02) Water</b>									
Calcium	125	1.00	mg/L	100	EJ41305	10/12/04	10/12/04	EPA 6010B	
Magnesium	18.8	0.0100	"	10	"	"	"	"	
Potassium	4.28	0.0500	"	1	"	"	"	"	
Sodium	49.7	0.100	"	10	"	"	"	"	
<b>MW-2 (4J04008-03) Water</b>									
Calcium	76.0	1.00	mg/L	100	EJ41305	10/12/04	10/12/04	EPA 6010B	
Magnesium	15.7	0.0100	"	10	"	"	"	"	
Potassium	3.26	0.0500	"	1	"	"	"	"	
Sodium	46.4	0.100	"	10	"	"	"	"	
<b>MW-3 (4J04008-04) Water</b>									
Calcium	115	1.00	mg/L	100	EJ41305	10/12/04	10/12/04	EPA 6010B	
Magnesium	19.4	0.0100	"	10	"	"	"	"	
Potassium	4.73	0.0500	"	1	"	"	"	"	
Sodium	70.3	1.00	"	100	"	"	"	"	

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EJ41205 - EPA 5030C (GC)**

**Blank (EJ41205-BLK1)**

Prepared & Analyzed: 10/11/04

Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: a,a,a-Trifluorotoluene	85.4		ug/l	100		85.4	80-120			
Surrogate: 4-Bromofluorobenzene	83.1		"	100		83.1	80-120			

**LCS (EJ41205-BS1)**

Prepared & Analyzed: 10/11/04

Benzene	91.9		ug/l	100		91.9	80-120			
Toluene	91.6		"	100		91.6	80-120			
Ethylbenzene	82.7		"	100		82.7	80-120			
Xylene (p/m)	176		"	200		88.0	80-120			
Xylene (o)	84.7		"	100		84.7	80-120			
Surrogate: a,a,a-Trifluorotoluene	104		"	100		104	80-120			
Surrogate: 4-Bromofluorobenzene	111		"	100		111	80-120			

**Calibration Check (EJ41205-CCV1)**

Prepared: 10/11/04 Analyzed: 10/12/04

Benzene	89.8		ug/l	100		89.8	80-120			
Toluene	91.6		"	100		91.6	80-120			
Ethylbenzene	82.5		"	100		82.5	80-120			
Xylene (p/m)	176		"	200		88.0	80-120			
Xylene (o)	83.6		"	100		83.6	80-120			
Surrogate: a,a,a-Trifluorotoluene	102		"	100		102	80-120			
Surrogate: 4-Bromofluorobenzene	117		"	100		117	80-120			

**Matrix Spike (EJ41205-MS1)**

Source: 4J04013-02

Prepared: 10/11/04 Analyzed: 10/12/04

Benzene	88.4		ug/l	100	ND	88.4	80-120			
Toluene	89.2		"	100	ND	89.2	80-120			
Ethylbenzene	80.4		"	100	ND	80.4	80-120			
Xylene (p/m)	165		"	200	ND	82.5	80-120			
Xylene (o)	80.4		"	100	ND	80.4	80-120			
Surrogate: a,a,a-Trifluorotoluene	101		"	100		101	80-120			
Surrogate: 4-Bromofluorobenzene	107		"	100		107	80-120			

WHOLE EARTH ENVIRONMENTAL  
 2103 Arbor Cove  
 Katy TX, 77494

Project: Mable COM  
 Project Number: None Given  
 Project Manager: Mike Griffin

Fax: (281) 394-2051

Reported:  
 10/15/04 16:51

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EJ41205 - EPA 5030C (GC)**

**Matrix Spike Dup (EJ41205-MSD1)**

Source: 4J04013-02

Prepared: 10/11/04 Analyzed: 10/12/04

Benzene	91.3		ug/l	100	ND	91.3	80-120	3.23	20	
Toluene	92.0		"	100	ND	92.0	80-120	3.09	20	
Ethylbenzene	82.3		"	100	ND	82.3	80-120	2.34	20	
Xylene (p/m)	174		"	200	ND	87.0	80-120	5.31	20	
Xylene (o)	83.2		"	100	ND	83.2	80-120	3.42	20	
Surrogate: a,a,a-Trifluorotoluene	103		"	100		103	80-120			
Surrogate: 4-Bromofluorobenzene	110		"	100		110	80-120			

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EJ40902 - General Preparation (WetChem)**

**Blank (EJ40902-BLK1)**

Prepared & Analyzed: 10/09/04

Carbonate Alkalinity	ND	0.200	mg/L							
Bicarbonate Alkalinity	ND	4.00	"							
Hydroxide Alkalinity	ND	0.200	"							

**Duplicate (EJ40902-DUP1)**

Source: 4J04007-02

Prepared & Analyzed: 10/09/04

Carbonate Alkalinity	0.00	0.200	mg/L		0.00				20	O-04
Bicarbonate Alkalinity	174	4.00	"		172			1.16	20	O-04
Hydroxide Alkalinity	0.00	0.200	"		0.00				20	O-04

**Reference (EJ40902-SRM1)**

Prepared & Analyzed: 10/09/04

Carbonate Alkalinity	0.0501		mg/L	0.0500		100	80-120			
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**Batch EJ40904 - General Preparation (WetChem)**

**Blank (EJ40904-BLK1)**

Prepared & Analyzed: 10/09/04

Sulfate	ND	0.500	mg/L							
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**Calibration Check (EJ40904-CCV1)**

Prepared & Analyzed: 10/09/04

Sulfate	48.9		mg/L	50.0		97.8	80-120			
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**Duplicate (EJ40904-DUP1)**

Source: 4J04004-01

Prepared & Analyzed: 10/09/04

Sulfate	168	1.25	mg/L		170			1.18	20	
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**Batch EJ40906 - General Preparation (WetChem)**

**Blank (EJ40906-BLK1)**

Prepared & Analyzed: 10/09/04

Chloride	ND	5.00	mg/L							
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WHOLE EARTH ENVIRONMENTAL  
 2103 Arbor Cove  
 Katy TX, 77494

Project: Mable COM  
 Project Number: None Given  
 Project Manager: Mike Griffin

Fax: (281) 394-2051

Reported:  
 10/15/04 16:51

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch EJ40906 - General Preparation (WetChem)</b>										
<b>Matrix Spike (EJ40906-MS1)</b>		<b>Source: 4J04003-01</b>			<b>Prepared &amp; Analyzed: 10/09/04</b>					
Chloride	1100	5.00	mg/L	500	603	99.4	80-120			
<b>Matrix Spike Dup (EJ40906-MSD1)</b>		<b>Source: 4J04003-01</b>			<b>Prepared &amp; Analyzed: 10/09/04</b>					
Chloride	1090	5.00	mg/L	500	603	97.4	80-120	0.913	20	
<b>Reference (EJ40906-SRM1)</b>		<b>Prepared &amp; Analyzed: 10/09/04</b>								
Chloride	4960		mg/L	5000		99.2	80-120			

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Project: Mable COM  
 Project Number: None Given  
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Reported:  
 10/15/04 16:51

**Total Metals by EPA / Standard Methods - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EJ41305 - 6010B/No Digestion**

**Blank (EJ41305-BLK1)**

Prepared & Analyzed: 10/12/04

Calcium	ND	0.0100	mg/L							
Magnesium	ND	0.00100	"							
Potassium	ND	0.0500	"							
Sodium	ND	0.0100	"							

**Calibration Check (EJ41305-CCV1)**

Prepared & Analyzed: 10/12/04

Calcium	2.18		mg/L	2.00		109	85-115			
Magnesium	2.25		"	2.00		112	85-115			
Potassium	1.84		"	2.00		92.0	85-115			
Sodium	1.89		"	2.00		94.5	85-115			

**Duplicate (EJ41305-DUP1)**

Source: 4J04009-02

Prepared & Analyzed: 10/12/04

Calcium	104	1.00	mg/L		102			1.94	20	
Magnesium	10.9	0.0100	"		10.7			1.85	20	
Potassium	33.9	0.500	"		36.4			7.11	20	
Sodium	79.8	1.00	"		79.8			0.00	20	

### Notes and Definitions

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

O-04 This sample was analyzed outside the EPA recommended holding time.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By: \_\_\_\_\_

*Raland K Tuttle*

Date: 10/15/04

Raland K. Tuttle, Lab Manager  
Celey D. Keene, Lab Director, Org. Tech Director  
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director  
James L. Hawkins, Chemist/Geologist  
Sandra Biezugbe, Lab Tech.

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