

**1R - 0265**

**REPORTS**

**DATE:**

**2005**



**Whole Earth Environmental, Inc.**

2103 Arbor Cove  
Katy, Tx. 77494  
281.394.2050  
whearth@msn.com

November 7, 2005

Santos USA Corporation  
10111 Richmond  
Suite 500  
Houston, TX 77042

Attn: Tony Jones

Dear Tony:

Enclosed, please find an overview of the status of the remaining environmental defects within the Tipperary Bagley Field along with a brief summary of the remediation activities undertaken by Tipperary over the past ten years.

Thank you again for the opportunity of working with you on this especially challenging project.

Warmest personal regards,

Mike Griffin  
President  
Whole Earth Environmental, Inc.



## **Executive Summary**

### **Location**

The Bagley Field is located approximately twenty miles west of Tatum, Lea County, New Mexico on State lands. The surrounding terrain is essentially featureless with no surface streams or significant topographical variation present. The area is described as semi-arid with a net pan evaporation / precipitation value of  $-78''$  per year.

### **Land Use**

The land surface is primarily used for the grazing of cattle; however extensive oil and gas operations have been present since the 1960's.

### **Site History**

Tipperary Corporation's activities within the area consisted of a commercial brine collection and disposal system (Burro Pipeline) and a series of at least thirty-six oil wells. The production wells were sold to Phoenix Hydrocarbons in 2002 with Tipperary retaining the environmental liability relating to ten production pits. Two of the pits have been closed in accordance with NMOCD rules and eight sites remain under active remediation. In October 2005, Santos USA Corporation purchased the former Tipperary Burro Saltwater Disposal System along with certain environmental liabilities associated with the ten former production pits, the Lane Salt Lake Facility and a previously closed production station: Satellite 4.

### **Remediation Activities**

Of the eight remaining pit sites, four are under active remediation. Three sites are equipped with windmills and one is equipped with an electric submersible pump. In each case, the contaminated groundwater is pumped from the aquifer directly into the Burro Disposal System. All sites under active remediation have seen dramatic declines in criteria contaminants and each have predictable times to final closure.

Of the four remaining sites, Burro Pipeline proposes to conduct further investigations to include the installation of several temporary monitor wells to better define plume sources, geometry, and the most efficient active remediation plan. Details of the proposed investigations are included with the individual well sections of this report.

Burro anticipates completing the budgeting process for these investigations by January 31<sup>st</sup>, 2006 and will submit a detailed investigation plan to the NMOCD by February 15<sup>th</sup>, 2006.



**Burro Pipeline  
Bagley Field Pit Remediation Project  
Monitor Well Testing Summary**

Well Name	Benzene	Chlorides
<b>Iva</b>		
Source Well	<b>0.533</b>	<b>1330</b>
MW-1	0.000	92
MW-2	0.000	52

<b>Mable</b>		
Source Well	?	?
MW-1	<b>1.080</b>	45.1
MW-2	0.000	135
MW-3	0.000	187

<b>Bell State</b>		
MW-1	<b>0.025</b>	<b>312</b>
MW-2	<b>0.012</b>	<b>485</b>
MW-3	<b>0.056</b>	169
MW-4	0.000	797
MW-5	0.000	214
MW-6	<b>0.664</b>	191

<b>NBF</b>		
MW-1	0.007	94
MW-2	<b>0.074</b>	76
MW-3	<b>0.485</b>	99
MW-4	<b>0.014</b>	49
MW-5	0.006	55
MW-6	<b>0.010</b>	50

<b>Sohio 1</b>		
MW-1	<b>1.250</b>	<b>2310</b>
MW-2	<b>0.704</b>	<b>1520</b>
MW-3	<b>3.230</b>	<b>2970</b>
MW-4	0.001	39.1
MW-5	0.001	<b>928</b>
MW-6	0.001	185
MW-7	0.001	45
MW-8	0.001	<b>912</b>

Well Name	Benzene	Chlorides
<b>Sohio A</b>		
MW-1	0.000	<b>287</b>
MW-2	0.004	<b>3420</b>
MW-3	<b>0.056</b>	<b>5620</b>
MW-4	0.000	<b>316</b>
MW-5	<b>0.013</b>	<b>6739</b>
MW-6	0.000	<b>2550</b>
MW-7	<b>0.163</b>	<b>8680</b>
MW-8	0.000	<b>1920</b>
MW-9	0.000	<b>4390</b>
MW-10	0.000	<b>9640</b>

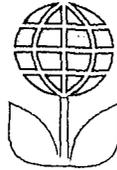
<b>G.S. State</b>		
Source Well	<b>0.413</b>	<b>1750</b>
MW-1	<b>1.580</b>	204
MW-2	0.003	35
MW-3	0.000	206
MW-4	0.000	191
MW-5	0.001	<b>368</b>

<b>Collier</b>		
Source Well	?	?
MW-1	<b>0.020</b>	<b>2680</b>
MW-2	0.000	<b>1800</b>
MW-3	0.001	<b>8430</b>
MW-4	0.000	<b>845</b>
MW-5	0.000	36
MW-6	0.000	30



Order No.	Amnd #	Applicant	Facility	Notes	Intental Permi	Reviewer	County	Contact
260	0	TIPPERARY OIL & GAS CORP	BELL STATE "A"	wp-2/25/08-sold to Phoenix-Tipperary retained Envr Liability-Tipperary sold assits to Santos USA Corp. incl Envr Liability, WholeEarth acquired Burro Pipeline system previously owned by Tipperary..	A	Von Gonten Lea	Mike Griffin- 281-394-2050	
261	0	TIPPERARY OIL & GAS CORP	COLLIER #1	wp-2/25/08-sold to Phoenix-Tipperary retained Envr Liability-Tipperary sold assits to Santos USA Corp. incl Envr Liability, WholeEarth acquired Burro Pipeline system previously owned by Tipperary..	A	Von Gonten Lea	Mike Griffin- 281-394-2050 AP-32	
262	0	TIPPERARY OIL & GAS CORP	GULF STATE #1	wp-2/25/08-sold to Phoenix-Tipperary retained Envr Liability-Tipperary sold assits to Santos USA Corp. incl Envr Liability, WholeEarth acquired Burro Pipeline system previously owned by Tipperary..	A	Von Gonten Lea	Mike Griffin- 281-394-2050	
263	0	TIPPERARY OIL & GAS CORP	IVA COM #1	wp-2/25/08-sold to Phoenix-Tipperary retained Envr Liability-Tipperary sold assits to Santos USA Corp. incl Envr Liability, WholeEarth acquired Burro Pipeline system previously owned by Tipperary..	A	Von Gonten Lea	Mike Griffin- 281-394-2050	
264	0	TIPPERARY OIL & GAS CORP	MABEL COM #1	wp-2/25/08-sold to Phoenix-Tipperary retained Envr Liability-Tipperary sold assits to Santos USA Corp. incl Envr Liability, WholeEarth acquired Burro Pipeline system previously owned by Tipperary..	A	Von Gonten Lea	Mike Griffin- 281-394-2050	
265	0	TIPPERARY OIL & GAS CORP	NORTH BAGLEY FIELD PITS	wp-2/25/08-sold to Phoenix-Tipperary retained Envr Liability-Tipperary sold assits to Santos USA Corp. incl Envr Liability, WholeEarth acquired Burro Pipeline system previously owned by Tipperary..	A	Von Gonten Lea	Mike Griffin- 281-394-2050	
266	0	TIPPERARY OIL & GAS CORP	SATELLITE	wp-2/25/08-sold to Phoenix-Tipperary retained Envr Liability-Tipperary sold assits to Santos USA Corp. incl Envr Liability, WholeEarth acquired Burro Pipeline system previously owned by Tipperary..	C	Von Gonten Lea	Mike Griffin- 281-394-2050	
267	0	TIPPERARY OIL & GAS CORP	SOHIO STATE #1	wp-2/25/08-sold to Phoenix-Tipperary retained Envr Liability-Tipperary sold assits to Santos USA Corp. incl Envr Liability, WholeEarth acquired Burro Pipeline system previously owned by Tipperary..	A	Von Gonten Lea	Mike Griffin- 281-394-2050	
268	0	TIPPERARY OIL & GAS CORP	SOHIO STATE "A"	wp-2/25/08-sold to Phoenix-Tipperary retained Envr Liability-Tipperary sold assits to Santos USA Corp. incl Envr Liability, WholeEarth acquired Burro Pipeline system previously owned by Tipperary..	A	Von Gonten Lea	Mike Griffin- 281-394-2050	
269	0	TIPPERARY OIL & GAS CORP	STATE NBF #1	wp-2/25/08-sold to Phoenix-Tipperary retained Envr Liability-Tipperary sold assits to Santos USA Corp. incl Envr Liability, WholeEarth acquired Burro Pipeline system previously owned by Tipperary..	A	Von Gonten Lea	Mike Griffin- 281-394-2050	
270	0	TIPPERARY OIL & GAS CORP	STATE NBN #1	wp-2/25/08-sold to Phoenix-Tipperary retained Envr Liability-Tipperary sold assits to Santos USA Corp. incl Envr Liability, WholeEarth acquired Burro Pipeline system previously owned by Tipperary..	C	Von Gonten Lea	Mike Griffin- 281-394-2050	
271	0	TIPPERARY OIL & GAS CORP	VERA #1	wp-2/25/08-sold to Phoenix-Tipperary retained Envr Liability-Tipperary sold assits to Santos USA Corp. incl Envr Liability, WholeEarth acquired Burro Pipeline system previously owned by Tipperary..	C	Von Gonten Lea	Mike Griffin- 281-394-2050	

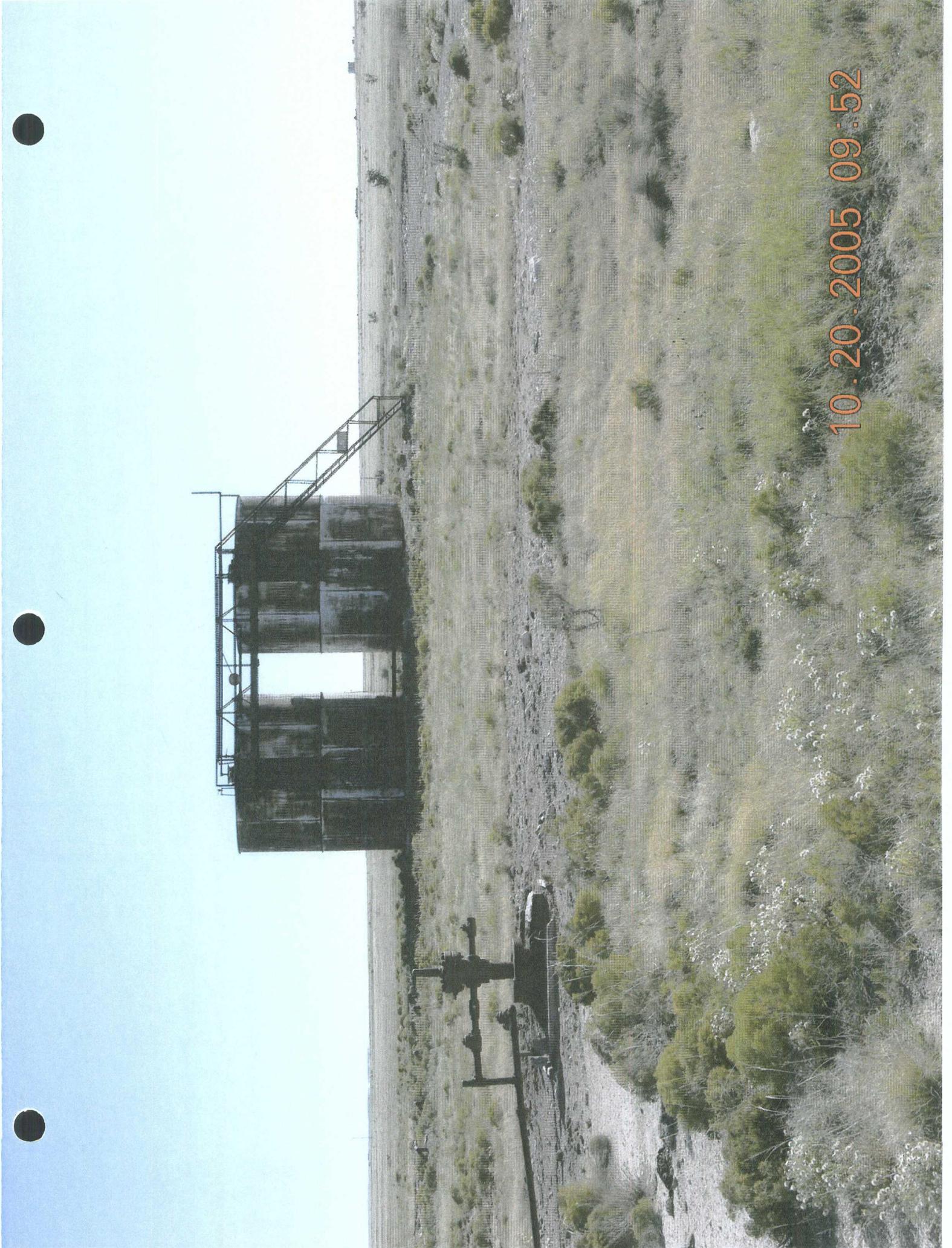
2/25/08  
 NOT REVENUE FACILITY  
 PIA M GRIFIN  
 2/25/08  
 UM-1-1  
 LAURE SALT (LATE)



**NBF**

The site presently consists of six monitor wells with no active recovery in progress. The monitor well nearest the pit shows benzene concentrations trending downward by 98% over eight years. Monitor well no. 2 is located immediately down gradient of the storage tanks and until recently has shown free product within the bore. Monitor well no. three is down gradient from monitor well no. 2 and the most recent tests indicate a reduction of 87% over the highest reading (approximately seven years). Monitor wells 4, 5 and 6 all have benzene concentrations hovering around acceptance standards. These are comparatively shallow wells (approx. 35' bgs) and the concentrations within the well bores seem to respond more to rainfall events than any actual migration from a point source. All monitor wells show acceptable chloride concentrations.

We believe that the high benzene concentrations are most probably emanating from leaking storage tanks rather than from the pit. The well is no longer active and the benzene concentrations have abated rather significantly. Again, due to the rather shallow depth of the water table, the benzene concentrations within the monitor wells change rather quickly. We recommend that we continue to monitor the progress of the change and do not recommend any further investigation at this time.



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**Monitor Well # 1  
State NBF # 1**

Lab. #	Sample Date	Benzene	Toluene	Ethylbenzene	m,p Xylene	o Xylene	Total Xylene	Total BTEX
12486	09/05/97	0.302	0.208	0.039	0.253	0.161	0.414	0.963
13175	12/03/97	0.017	0.002	0.001	0.001	0.002	0.003	0.023
14064	03/23/98	0.048	0.036	0.013	0.038	0.011	0.049	0.146
14663	06/25/98	0.034	0.003	0.007	0.011	0.003	0.014	0.058
15595	10/01/98	0.005	0.004	0.001	0.004	0.004	0.008	0.018
16602	01/06/99	0.028	0.001	0.003	0.003	0.001	0.004	0.036
17431	04/01/99	0.032	0.002	0.004	0.003	0.001	0.004	0.042
18594	07/14/99	0.023	0.001	0.001	0.002	0.001	0.003	0.028
20600	10/06/99	0.160	0.214	0.036	0.143	0.081	0.224	0.634
22761	01/08/00	0.007	0.008	0.007	0.015	0.008	0.023	0.045
25171	04/13/00	0.002	0.002	0.002	0.003	0.001	0.004	0.010
28463	07/20/00	0.002	0.003	0.002	0.002	0.003	0.011	0.018
31490	09/26/00	0.001	0.001	0.002	0.008	0.003	0.011	0.015
36147	01/05/01	0.001	0.001	0.002	0.005	0.002	0.007	0.011
38927	04/05/01	0.001	0.001	0.003	0.007	0.002	0.009	0.014
0101098-11	07/07/01	0.001	0.001	0.001	0.004	0.001	0.005	0.008
0101642-11	09/26/01	0.041	0.044	0.018	0.040	0.026	0.066	0.169
0202619-11	02/15/02	0.001	0.001	0.002	0.005	0.002	0.007	0.011
0203001-11	03/30/02	0.045	0.052	0.164	0.233	0.109	0.342	0.603
0203602-10	06/15/02	0.018	0.033	0.088	0.149	0.069	0.218	0.357
0204815-08	10/19/02	0.008	0.002	0.001	0.002	0.001	0.003	0.014
0205349-12	01/04/03	0.034	0.071	0.014	0.057	0.033	0.090	0.209
0306249-13	04/17/03	0.003	0.007	0.005	0.044	0.027	0.071	0.086
0306733-29	06/20/03	0.002	0.001	0.001	0.001	0.001	0.002	0.006
0307790-27	10/30/03	0.091	0.181	0.049	0.208	0.110	0.318	0.639
4A26008-01	01/23/04	0.001	0.001	0.001	0.001	0.001	0.002	0.005
4J04010-01	10/01/04	0.001	0.001	0.001	0.001	0.001	0.002	0.005
5J24004-01	10/21/05	0.007	0.018	0.019	0.075	0.052	0.127	0.171

**Monitor Well # 2  
State NBF # 1  
Sampling Results**

Lab. #	Sample Date	Benzene	Toluene	Ethylbenzene	m,p Xylene	o Xylene	Total Xylene	Total BTEX
12729	10/02/97	1.9500	1.823	0.381	1.506	0.772	2.278	6.432
13133	12/03/97	2.2890	1.176	0.338	1.285	0.411	1.696	5.499
14049	03/23/98	1.4700	1.230	0.364	1.058	0.466	1.524	4.588
14669	06/25/98	1.4150	1.165	0.270	0.927	0.412	1.339	4.189
15600	10/01/98	3.0270	1.630	0.225	0.811	0.393	1.204	6.086
16608	01/06/99	1.6300	1.490	0.182	0.728	0.350	1.078	4.380
17435	04/01/99	3.1100	1.980	0.214	0.767	0.435	1.202	6.506
18602	07/14/99	3.9700	3.070	0.436	1.610	0.886	2.496	9.972
20612	10/06/99	2.8500	1.850	0.303	1.050	0.612	1.662	6.665
22759	01/08/00	3.2500	2.550	0.335	1.240	0.654	1.894	8.029
25140	04/13/00	2.4000	1.780	0.254	1.080	0.540	1.620	6.054
28445	07/20/00	2.6300	4.320	0.655	3.680	6.660	10.340	17.945
31491	09/26/00	2.8900	1.550	0.239	0.750	2.400	3.150	7.829
36145	01/05/01	2.7900	1.360	0.249	0.612	0.493	1.105	5.504
38928	04/05/01	2.5700	1.460	0.308	0.821	0.481	1.302	5.640
0101098-12	07/07/01	1.8000	0.948	0.250	0.598	0.409	1.007	4.005
0101642-12	09/26/01	2.5200	1.340	0.331	0.960	0.562	1.522	5.713
0202619-12	02/15/02	1.3100	1.070	1.060	3.920	2.100	6.020	9.460
0203001-12	03/30/02	6.820	0.770	1.590	2.280	1.330	3.610	12.790
0203602-11	06/15/02	5.050	0.822	5.340	3.590	1.790	5.380	16.592
0204815-14	10/19/02	1.930	0.569	2.280	2.210	1.220	3.430	8.209
0205349-13	01/04/03	1.440	1.360	0.281	1.000	0.587	1.587	4.668
0306249-14	04/17/03	1.690	1.580	0.504	1.880	0.993	2.873	6.647
0306733-30	06/20/03	3.900	5.140	1.150	4.740	2.380	7.120	17.310
0307790-28	10/30/03	816.000	1790.000	393.000	1170.000	446.000	1616.000	4615.000
4A26008-02	01/23/04	50.700	199.000	74.100	342.000	161.000	503.000	826.800
4J04010-02	10/01/04	3.310	8.820	3.830	16.900	6.980	23.880	39.840
5J24004-02	10/21/05	0.074	0.158	0.260	1.000	0.581	1.581	2.073

**Monitor Well # 3  
State NBF # 1  
Sampling Results**

Lab. #	Sample Date	Benzene	Toluene	Ethylbenzene	m,p Xylene	o Xylene	Total Xylene	Total BTEX
12730	10/02/97	0.836	0.111	0.090	0.224	0.089	0.313	1.350
13176	12/03/97	0.234	0.003	0.004	0.012	0.003	0.015	0.256
14050	03/23/98	1.029	0.086	0.084	0.173	0.047	0.220	1.419
14670	06/25/98	1.058	0.113	0.070	0.155	0.060	0.205	1.446
15608	10/01/98	1.046	0.065	0.037	0.100	0.039	0.139	1.287
16609	01/06/99	1.470	0.122	0.047	0.144	0.062	0.206	1.845
17436	04/01/99	3.150	0.164	0.078	0.219	0.098	0.317	3.709
18603	07/15/99	3.640	0.116	0.151	0.343	0.129	0.472	4.379
20613	10/06/99	3.220	0.776	0.179	0.576	0.265	0.841	5.016
22772	01/08/00	1.170	0.122	0.068	0.163	0.083	0.246	1.606
25141	04/13/00	3.050	0.226	0.153	0.473	0.203	0.676	4.105
28437	07/20/00	2.620	0.278	0.149	0.424	0.178	0.602	3.649
31492	09/26/00	2.120	0.092	0.099	0.143	0.063	0.206	2.517
36156	01/05/01	1.320	0.023	0.083	0.110	0.055	0.165	1.591
38929	04/05/01	1.550	0.005	0.101	0.104	0.039	0.143	1.799
0101098-13	07/07/01	1.650	0.026	0.097	0.159	0.069	0.228	2.001
0101642-13	09/26/01	1.390	0.001	0.058	0.041	0.005	0.046	1.495
0202619-13	02/15/02	0.484	0.032	0.043	0.080	0.038	0.118	0.677
0203001-13	03/30/02	1.230	0.092	0.075	0.160	0.064	0.224	1.621
0203602-12	06/15/02	0.388	0.005	0.006	0.039	0.020	0.059	0.458
0204815-15	10/19/02	0.308	0.038	0.013	0.021	0.008	0.029	0.388
0205349-14	01/04/03	0.293	0.023	0.044	0.034	0.017	0.051	0.411
0306249-15	04/17/03	0.448	0.014	0.068	0.086	0.017	0.103	0.633
0306733-31	06/20/03	0.747	0.120	0.097	0.207	0.069	0.276	1.240
0307790-29	10/30/03	0.163	0.070	0.048	0.081	0.041	0.122	0.403
4A26008-03	01/23/04	0.239	0.165	0.104	0.337	0.175	0.512	1.020
4J04010-03	10/01/04	0.060	0.002	0.007	0.006	0.005	0.011	0.080
5J24004-03	10/21/05	0.485	0.001	0.001	0.001	0.001	0.002	0.489

**Monitor Well # 4  
State NBF # 1  
Sampling Results**

Lab. #	Sample Date	Benzene	Toluene	Ethylbenzene	m,p Xylene	o Xylene	Total Xylene	Total BTEX
17266	04/01/99	0.002	0.003	0.001	0.002	0.001	0.003	0.009
18610	07/14/99	0.030	0.024	0.027	0.006	0.019	0.025	0.106
20614	10/06/99	0.066	0.059	0.016	0.037	0.031	0.088	0.229
22788	01/08/00	0.140	0.158	0.030	0.119	0.064	0.183	0.511
25142	04/13/00	0.092	0.108	0.024	0.090	0.048	0.138	0.362
28455	07/20/00	0.177	0.230	0.036	0.128	0.075	0.203	0.646
31493	09/26/00	0.053	0.022	0.008	0.019	0.010	0.029	0.112
36146	01/05/01	0.044	0.016	0.006	0.012	0.009	0.021	0.087
38930	04/05/01	0.001	0.003	0.009	0.003	0.009	0.012	0.025
0101098-14	07/07/01	0.001	0.001	0.002	0.003	0.001	0.005	0.009
0101098-14	09/26/01	0.027	0.002	0.003	0.008	0.003	0.011	0.043
0202619-14	02/15/02	0.008	0.008	0.010	0.033	0.015	0.049	0.075
0203001-14	03/30/02	0.009	0.012	0.029	0.073	0.034	0.107	0.157
0203602-13	06/15/02	0.001	0.001	0.001	0.001	0.001	0.002	0.005
0204815-12	10/19/02	0.028	0.024	0.030	0.117	0.053	0.170	0.252
0205349-15	01/04/03	0.001	0.001	0.001	0.004	0.001	0.005	0.008
0306249-16	04/17/03	0.001	0.001	0.001	0.004	0.002	0.006	0.009
0306733-32	06/20/03	0.001	0.001	0.001	0.003	0.002	0.006	0.009
0307790-30	10/30/03	0.003	0.005	0.005	0.024	0.012	0.036	0.049
4A26008-04	01/23/04	0.001	0.001	0.001	0.001	0.001	0.002	0.005
4J04010-04	10/01/04	0.001	0.001	0.001	0.001	0.001	0.002	0.005
5J24004-04	10/21/05	0.014	0.001	0.001	0.012	0.001	0.013	0.029

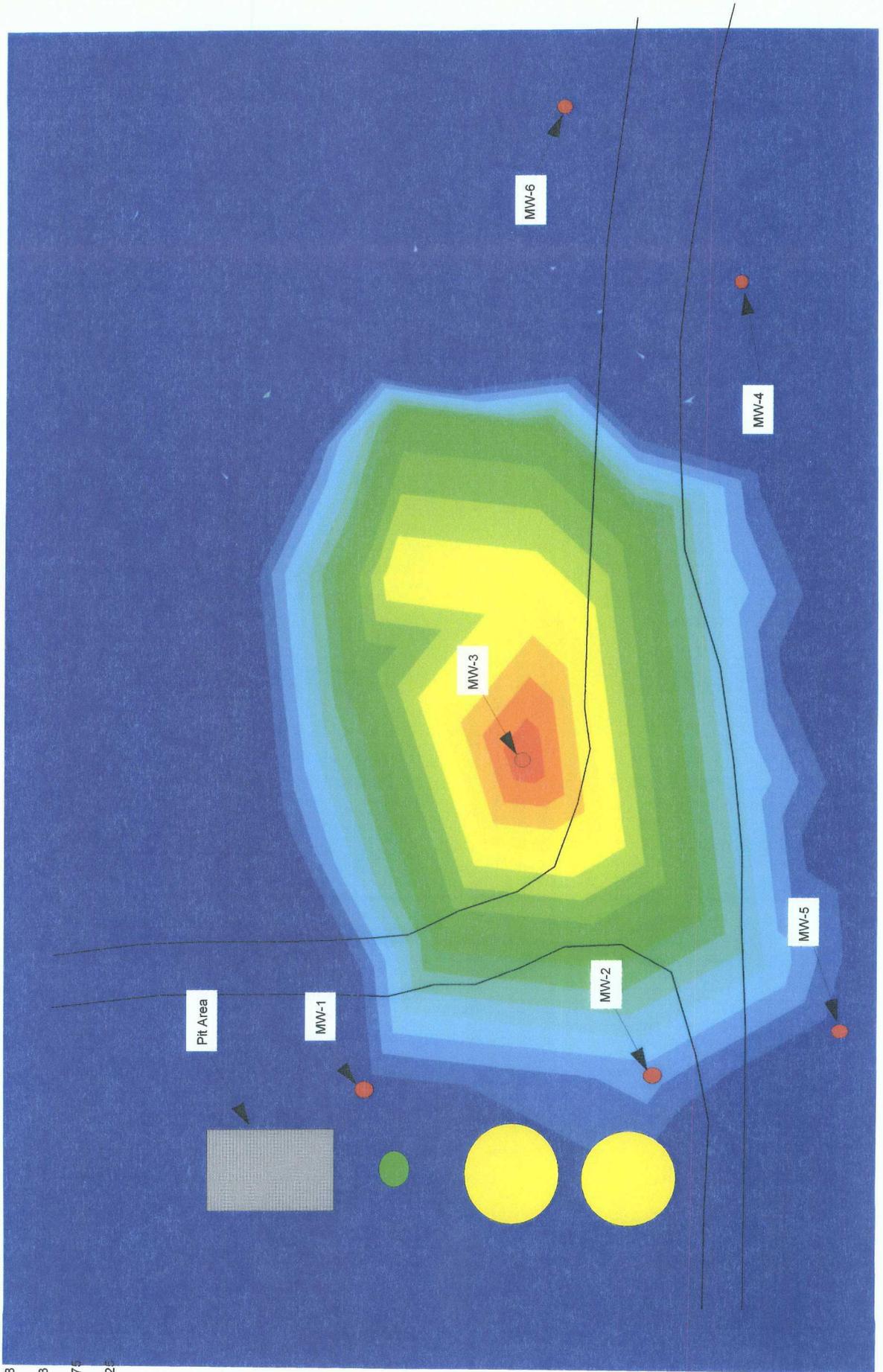
**Monitor Well # 5  
State NBF # 1  
Sampling Results**

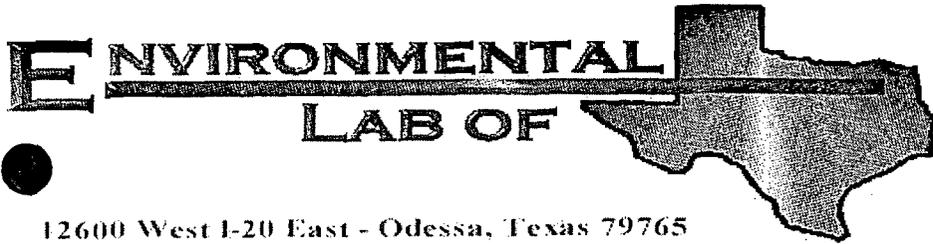
Lab. #	Sample Date	Benzene	Toluene	Ethylbenzene	m,p Xylene	o Xylene	Total Xylene	Total BTEX
0203602-14	06/15/02	0.001	0.001	0.001	0.001	0.001	0.002	0.005
0204815-17	10/19/02	0.001	0.001	0.001	0.001	0.001	0.002	0.005
0205349-16	01/04/03	0.001	0.001	0.002	0.005	0.002	0.007	0.011
0306249-17	04/17/03	0.001	0.001	0.002	0.005	0.002	0.007	0.011
0306733-33	06/20/03	0.001	0.001	0.001	0.003	0.002	0.005	0.008
0307790-31	10/30/03	0.001	0.001	0.001	0.001	0.001	0.002	0.005
4A26008-05	01/23/04	0.001	0.001	0.001	0.001	0.001	0.002	0.005
4J04010-05	10/01/04	0.001	0.001	0.001	0.001	0.001	0.002	0.005
5J24004-05	10/21/05	0.006	0.001	0.001	0.003	0.002	0.005	0.013

**Monitor Well # 6  
State NBF # 1  
Sampling Results**

Lab. #	Sample Date	Benzene	Toluene	Ethylbenzene	m,p Xylene	o Xylene	Total Xylene	Total BTEX
0306748-01	06/21/03	0.008	0.007	0.007	0.024	0.009	0.033	0.055
0307790-32	10/30/03	0.001	0.001	0.001	0.002	0.001	0.003	0.006
4A26008-06	01/23/04	0.001	0.001	0.001	0.001	0.001	0.002	0.005
4J04010-06	10/01/04	0.001	0.001	0.001	0.001	0.001	0.002	0.005
5J24004-06	10/21/05	0.010	0.001	0.002	0.006	0.003	0.009	0.022

Tipperary Corporation  
State NBF  
Benzene Concentrations





12600 West I-20 East - Odessa, Texas 79765

# Analytical Report

**Prepared for:**

Mike Griffin

WHOLE EARTH ENVIRONMENTAL

2103 Arbor Cove

Katy, TX 77494

Project: NBF

Project Number: None Given

Location: Lea County, New Mexico

Lab Order Number: 5J24004

Report Date: 10/31/05

WHOLE EARTH ENVIRONMENTAL  
2103 Arbor Cove  
Katy TX, 77494

Project: NBF  
Project Number: None Given  
Project Manager: Mike Griffin

Fax: (281) 394-2051

**Reported:**  
10/31/05 14:02

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
NBF MW #1	5J24004-01	Water	10/20/05 13:45	10/23/05 15:40
NBF MW #2	5J24004-02	Water	10/20/05 13:35	10/23/05 15:40
NBF MW #3	5J24004-03	Water	10/20/05 13:55	10/23/05 15:40
NBF MW #4	5J24004-04	Water	10/20/05 13:15	10/23/05 15:40
NBF MW #5	5J24004-05	Water	10/20/05 13:25	10/23/05 15:40
NBF MW #6	5J24004-06	Water	10/20/05 00:00	10/23/05 15:40

WHOLE EARTH ENVIRONMENTAL  
2103 Arbor Cove  
Katy TX, 77494

Project: NBF  
Project Number: None Given  
Project Manager: Mike Griffin

Fax: (281) 394-2051

Reported:  
10/31/05 14:02

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>NBF MW #1 (5J24004-01) Water</b>									
Benzene	0.00744	0.00100	mg/L	1	EJ52623	10/26/05	10/27/05	EPA 8021B	
Toluene	0.0175	0.00100	"	"	"	"	"	"	
Ethylbenzene	0.0194	0.00100	"	"	"	"	"	"	
Xylene (p/m)	0.0751	0.00100	"	"	"	"	"	"	
Xylene (o)	0.0519	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		89.5 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %	80-120		"	"	"	"	
<b>NBF MW #2 (5J24004-02) Water</b>									
Benzene	0.0736	0.0100	mg/L	10	EJ52623	10/26/05	10/31/05	EPA 8021B	
Toluene	0.158	0.0100	"	"	"	"	"	"	
Ethylbenzene	0.260	0.0100	"	"	"	"	"	"	
Xylene (p/m)	1.00	0.0100	"	"	"	"	"	"	
Xylene (o)	0.581	0.0100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		109 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		131 %	80-120		"	"	"	"	S-04
<b>NBF MW #3 (5J24004-03) Water</b>									
Benzene	0.485	0.0500	mg/L	50	EJ52623	10/26/05	10/31/05	EPA 8021B	
Toluene	ND	0.0500	"	"	"	"	"	"	
Ethylbenzene	J [0.0359]	0.0500	"	"	"	"	"	"	
Xylene (p/m)	J [0.0272]	0.0500	"	"	"	"	"	"	
Xylene (o)	ND	0.0500	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		82.5 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		80.0 %	80-120		"	"	"	"	
<b>NBF MW #4 (5J24004-04) Water</b>									
Benzene	0.0149	0.0100	mg/L	10	EJ52623	10/26/05	10/31/05	EPA 8021B	
Toluene	J [0.00322]	0.0100	"	"	"	"	"	"	
Ethylbenzene	J [0.00340]	0.0100	"	"	"	"	"	"	
Xylene (p/m)	0.0119	0.0100	"	"	"	"	"	"	
Xylene (o)	J [0.00363]	0.0100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		83.2 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	80-120		"	"	"	"	

WHOLE EARTH ENVIRONMENTAL  
2103 Arbor Cove  
Katy TX, 77494

Project: NBF  
Project Number: None Given  
Project Manager: Mike Griffin

Fax: (281) 394-2051

Reported:  
10/31/05 14:02

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>NBF MW #5 (5J24004-05) Water</b>									
Benzene	0.00588	0.00100	mg/L	1	EJ52623	10/26/05	10/27/05	EPA 8021B	
Toluene	J [0.000541]	0.00100	"	"	"	"	"	"	
Ethylbenzene	0.00167	0.00100	"	"	"	"	"	"	
Xylene (p/m)	0.00346	0.00100	"	"	"	"	"	"	
Xylene (o)	0.00207	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		104 %	80-120	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		118 %	80-120	"	"	"	"	"	

**NBF MW #6 (5J24004-06) Water**

Benzene	0.0101	0.00100	mg/L	1	EJ52623	10/26/05	10/27/05	EPA 8021B	
Toluene	J [0.000481]	0.00100	"	"	"	"	"	"	
Ethylbenzene	0.00264	0.00100	"	"	"	"	"	"	
Xylene (p/m)	0.00607	0.00100	"	"	"	"	"	"	
Xylene (o)	0.00340	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		102 %	80-120	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	80-120	"	"	"	"	"	

WHOLE EARTH ENVIRONMENTAL  
2103 Arbor Cove  
Katy TX, 77494

Project: NBF  
Project Number: None Given  
Project Manager: Mike Griffin

Fax: (281) 394-2051

Reported:  
10/31/05 14:02

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>NBF MW #1 (5J24004-01) Water</b>									
Chloride	94.0	5.00	mg/L	10	EJ52604	10/24/05	10/26/05	EPA 300.0	
<b>NBF MW #2 (5J24004-02) Water</b>									
Chloride	75.6	5.00	mg/L	10	EJ52604	10/24/05	10/26/05	EPA 300.0	
<b>NBF MW #3 (5J24004-03) Water</b>									
Chloride	98.9	5.00	mg/L	10	EJ52604	10/24/05	10/26/05	EPA 300.0	
<b>NBF MW #4 (5J24004-04) Water</b>									
Chloride	49.4	5.00	mg/L	10	EJ52604	10/24/05	10/26/05	EPA 300.0	
<b>NBF MW #5 (5J24004-05) Water</b>									
Chloride	55.5	5.00	mg/L	10	EJ52604	10/24/05	10/26/05	EPA 300.0	
<b>NBF MW #6 (5J24004-06) Water</b>									
Chloride	50.5	5.00	mg/L	10	EJ52605	10/25/05	10/26/05	EPA 300.0	

**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 EJ52623 - EPA 5030C (GC)**

**Blank (EJ52623-BLK1)**

Prepared & Analyzed: 10/26/05

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	32.2		ug/l	40.0		80.5	80-120			
Surrogate: 4-Bromofluorobenzene	32.4		"	40.0		81.0	80-120			

**LCS (EJ52623-BS1)**

Prepared & Analyzed: 10/26/05

Benzene	0.0534	0.00100	mg/L	0.0500		107	80-120			
Toluene	0.0523	0.00100	"	0.0500		105	80-120			
Ethylbenzene	0.0574	0.00100	"	0.0500		115	80-120			
Xylene (p/m)	0.109	0.00100	"	0.100		109	80-120			
Xylene (o)	0.0599	0.00100	"	0.0500		120	80-120			
Surrogate: a,a,a-Trifluorotoluene	36.7		ug/l	40.0		91.8	80-120			
Surrogate: 4-Bromofluorobenzene	40.1		"	40.0		100	80-120			

**Concentration Check (EJ52623-CCV1)**

Prepared: 10/26/05 Analyzed: 10/27/05

Benzene	47.4		ug/l	50.0		94.8	80-120			
Toluene	48.4		"	50.0		96.8	80-120			
Ethylbenzene	47.3		"	50.0		94.6	80-120			
Xylene (p/m)	88.4		"	100		88.4	80-120			
Xylene (o)	48.3		"	50.0		96.6	80-120			
Surrogate: a,a,a-Trifluorotoluene	32.1		"	40.0		80.2	80-120			
Surrogate: 4-Bromofluorobenzene	36.0		"	40.0		90.0	80-120			

**Matrix Spike (EJ52623-MS1)**

Source: 5J24001-01

Prepared: 10/26/05 Analyzed: 10/27/05

Benzene	0.0510	0.00100	mg/L	0.0500	0.000565	101	80-120			
Toluene	0.0520	0.00100	"	0.0500	ND	104	80-120			
Ethylbenzene	0.0508	0.00100	"	0.0500	ND	102	80-120			
Xylene (p/m)	0.0919	0.00100	"	0.100	ND	91.9	80-120			
Xylene (o)	0.0491	0.00100	"	0.0500	ND	98.2	80-120			
Surrogate: a,a,a-Trifluorotoluene	35.3		ug/l	40.0		88.2	80-120			
Surrogate: 4-Bromofluorobenzene	36.4		"	40.0		91.0	80-120			

WHOLE EARTH ENVIRONMENTAL  
 2103 Arbor Cove  
 Katy TX, 77494

Project: NBF  
 Project Number: None Given  
 Project Manager: Mike Griffin

Fax: (281) 394-2051

Reported:  
 10/31/05 14:02

**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 EJ52623 - EPA 5030C (GC)**

**Matrix Spike Dup (EJ52623-MSD1)**

Source: 5J24001-01

Prepared: 10/26/05 Analyzed: 10/27/05

Benzene	0.0548	0.00100	mg/L	0.0500	0.000565	108	80-120	6.70	20	
Toluene	0.0561	0.00100	"	0.0500	ND	112	80-120	7.41	20	
Ethylbenzene	0.0557	0.00100	"	0.0500	ND	111	80-120	8.45	20	
Xylene (p/m)	0.102	0.00100	"	0.100	ND	102	80-120	10.4	20	
Xylene (o)	0.0560	0.00100	"	0.0500	ND	112	80-120	13.1	20	
Surrogate: <i>a,a,a</i> -Trifluorotoluene	34.9		ug/l	40.0		87.2	80-120			
Surrogate: 4-Bromofluorobenzene	36.4		"	40.0		91.0	80-120			

WHOLE EARTH ENVIRONMENTAL  
2103 Arbor Cove  
Katy TX, 77494

Project: NBF  
Project Number: None Given  
Project Manager: Mike Griffin

Fax: (281) 394-2051

Reported:  
10/31/05 14:02

**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 EJ52604 - General Preparation (WetChem)**

**Blank (EJ52604-BLK1)** Prepared: 10/24/05 Analyzed: 10/26/05

Chloride ND 0.500 mg/L

**LCS (EJ52604-BS1)** Prepared: 10/24/05 Analyzed: 10/26/05

Chloride 8.18 mg/L 10.0 81.8 80-120

**Calibration Check (EJ52604-CCV1)** Prepared: 10/24/05 Analyzed: 10/26/05

Chloride 8.31 mg/L 10.0 83.1 80-120

**Duplicate (EJ52604-DUP1)** Source: 5J21008-01 Prepared: 10/24/05 Analyzed: 10/26/05

Chloride 66.7 5.00 mg/L 70.6 5.68 20

**Batch EJ52605 - General Preparation (WetChem)**

**Blank (EJ52605-BLK1)** Prepared: 10/25/05 Analyzed: 10/26/05

Chloride ND 0.500 mg/L

**LCS (EJ52605-BS1)** Prepared: 10/25/05 Analyzed: 10/26/05

Chloride 8.28 mg/L 10.0 82.8 80-120

**Calibration Check (EJ52605-CCV1)** Prepared: 10/25/05 Analyzed: 10/26/05

Chloride 8.19 mg/L 10.0 81.9 80-120

**Duplicate (EJ52605-DUP1)** Source: 5J24004-06 Prepared: 10/25/05 Analyzed: 10/26/05

Chloride 46.0 5.00 mg/L 50.5 9.33 20

### Notes and Definitions

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

Celey D. Keene

Date:

10/31/05

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

Jeanne Mc Murrey, Inorg. Tech Director  
LaTasha Cornish, Chemist  
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