N00210.AR.000317
NTC GREAT LAKES
5090.3a

QUARTERLY O&M SAMPLING REPORT FOR SUPPLYSIDE LANDFILL MONITORING WELLS NAVAL TRAINING CENTER GREAT LAKES, ILLINOIS

ENVIRONMENTAL JOB ORDER CONTRACT (EJOC)
BPA MASTER NUMBER N68950-03-A-3018
BPA CALL NUMBER 0024
GAS PROJECT NO. 2005-0233.00

Submitted to:

Department of the Navy
Naval Training Center – Environmental Department
Building 1-A, 201 Decatur Avenue
Great Lakes, Illinois 60088-5600

Submitted by:

Graef, Anhalt, Schloemer & Associates, Inc.
125 S. 84th Street, Suite 401
Milwaukee, Wisconsin 53214
(414) 259-1500

5 July 2006

1.0 Introduction

Graef, Anhalt, Schloemer & Associates, Inc. has been retained by the Department of the Navy, Naval Facilities Engineering Command under ***BPA Master Number N68950-03-A-3018, BPA Call Number 0024*** to furnish the labor, transportation, supervision, material, and equipment in connection with the sampling, analysis, and reporting for the Supplyside Landfill monitoring wells located at the Great Lakes Naval Training Center (GLNTC) in Great Lakes, Illinois. The work is performed on a quarterly basis for one year.

This report document's the activities related to the 2006 fourth quarter sampling event for the groundwater monitoring wells located at the Supplyside Landfill (Figure 1). The purpose of the sampling event is to report the current groundwater quality conditions at the Supplyside Landfill to the Department of the Navy.

2.0 Field Activities

On May 26, 2006, depths to the static groundwater level were measured in monitoring wells MW-A, MW-B, MW-D and MW-E at the Supplyside Landfill utilizing a water level probe. Monitoring well MW-C was removed and MW-F was damaged during construction activities and will need to be repaired or replaced. The probe was decontaminated prior to each measurement by washing it with an Alconox soap solution and rinsing it with deionized water.

Following the measurement of the depth to static groundwater, groundwater samples were collected from monitoring wells MW-A, MW-B, MW-D and MW-E. Groundwater samples could not be collected from monitoring wells MW-G due to a bent well casing. Prior to collecting the groundwater samples, the wells were purged of three well volumes of water utilizing single use disposable polyethylene bailers. Purging was conducted to ensure the collection of a representative groundwater sample. After allowing sufficient time for recharge, groundwater samples were collected and transferred from the bailers to the appropriate laboratory-supplied sample containers. Samples for metal analysis were collected last and were filtered in the field utilizing a disposable in-line filtration module (0.45 micron filter).

The groundwater sample containers were placed in a cooler with ice and shipped to Test America, Inc. located in Watertown, Wisconsin using standard United States Environmental Protection Agency (USEPA) protocols.

3.0 Laboratory Analysis

The groundwater samples collected from the Supplyside Landfill's groundwater monitoring were analyzed for the following constituents in accordance with the Illinois Environmental Protection Agency (IEPA) protocols:

- Iron by Method 236.1;
- Lead by Method 239.2;
- Manganese by Method 243.1;
- Ammonia by Method 5M4500 NHH;
- Chloride by Method 325.2;
- Phenol by Method 420.2;
- Sulfate by Method 300.0;
- Total Dissolved Solids (TDS) by Method 160.1;
- Total Organic Carbon (TOC) by Method 415.1; and
- pH by Method 150.1;

The historical and current laboratory analytical results for the groundwater samples are summarized in Table 1 through Table 6 and a copy of the current laboratory analytical report is attached to this report.

Table 1
Analytical Results for Monitoring Well-A
Quartely O&M Sampling for
Supplyside Landfill Monitoring Wells

Monitoring Well	Sampling Round	Amonia	Chloride	PH	Sulfate	TDS	TOC	Phenolics	Iron	Lead	Manganese
MW-A	7/16/2003	14	17	7.0	150	750	16	<0.0056	2.4	<0.0014	0.49
MW-A	10/29/2003	11	58	6.9	130	740	14	<0.0056	8.0	<0.0014	0.42
MW-A	1/29/2004	0.48	48	6.9	310	990	9.6	0.0025	<0.0042	<0.0014	0.55
MW-A	4/28/2004	1.2	22	6.7	170	800	9.6	0.0042	<0.042	<0.0014	0.35
MW-A	7/23/2004	6.9	13	6.7	120	700	18	0.0082	9.2	<0.0014	0.45
MW-A	11/1/2004	5	36	7.6	99	760	14	0.0032	8.8	<0.0014	0.43
MW-A	1/25/2005	<0.10	14	7.0	230	670	10	<0.0022	0.26	<0.0014	0.31
MW-A	5/26/2005	3.5	22	6.8	320	990	22	0.0226	22	<0.0014	1.1
MW-A	8/25/2005	2.3	39	6.9	260	1100	18	0.012	8.1	<0.0014	0.80
MW-A	11/29/2005	3.1	49	6.9	240	990	20	0.0273	14	<0.0014	0.59
MW-A	2/28/2006	0.89	71	6.6	1000	1700	21	0.00578	0.18	<0.0014	0.66
MW-A	5/26/2006	7.2	32	6.3	460	1200	24.9	<0.000700	20.0	<0.0014	1.2
IEPA Groundwater Standards		N/A	200	6.5-8.5*	400	1,200	N/A	0.10	5	0.0075	0.15

Notes:
1. Concentrations are reported in milligrams per liter (mg/L).
2. Standards pertain to IEPA Class 1 Groundwater Quality Standards.
3. N/A - Not Applicable, IEPA or USEPA standards have not been established for these constituents.
4. * - Reported limit is fronm USEPA National Drinking Water Regulations since there is no IEPA standard.
5. Shaded = exceeded groundwater standard.

Table 1
Analytical Results for Monitoring Well-A
Quarterly O&M Sampling for
Supplyside Landfill Monitoring Wells

Monitoring Well	Sampling Round	Ammonia	Chloride	PH	Sulfate	TDS	TOC	Phenolics	Iron	Lead	Manganese
MW-A	Jul-99	12.8	55.2	6.9	50.8	683	22.8	<0.10	10.6	<0.001	0.53
	Oct-99	7.5	46.1	6.85	102	679	25.7	<0.10	4.25	<0.001	0.478
	Jan-00	8.86	47.9	6.91	112	414	13.5	0.27	1.01	0.003	0.517
	Apr-00	110	10.0	7.02	190	700	19.0	0.036	0.12	3.0	0.24
	Jul-00	0.40	4.94	7.0	50.5	717	34	<0.005	10.7	<5.00	0.642
	Oct-00	6.0	44.3	7.06	2.84	706	11	<0.005	9.98	<0.004	0.147
	Jan-01	13.9	61.2	7.01	12.6	778	12	<0.005	16.8	<5.00	0.883
	Apr-01	0.0336	53.2	7.0	135	823	15	<0.005	2.66	<0.004	1.02
	Jul-01	20.4	50.4	6.6	66.2	795	20	<0.1	17.6	<0.003	0.61
	Oct-01	14.0	12.1	6.76	106.0	509	16.0	<0.1	9.32	<0.171	0.53
	Jan-02	20.3	47.2	6.58	71	773	9	<0.005	20.3	<0.171	0.518
	Apr-02	31	35	6.8	92	780	14	<0.005	13,000	<1.0	520
	Jul-02	9.9	-	6.82	57	770	13	0.005	11	0.002	0.46
	Oct-02	17.0	63.0	7.01	110	740	13	0.005	25	0.002	0.51
	Jan-03	16.2	55	6.96	270	834	9.18	<0.005	11.8	<0.002	0.578
	Apr-03	Not Yet Sampled									
IEPA Groundwater Standards		N/A	200	6.5-8.5*	400	1,200	N/A	0.10	5	0.0075	0.15

Notes:
1. Concentrations are reported in milligrams per liter (mg/L).
2. Standards pertain to IEPA Class 1 Groundwater Quality Standards.
3. N/A - Not Applicable, IEPA or USEPA standards have not been established for these constituents.
4. * - Reported limit is from USEPA National Secondary Drinking Water Regulations since there is no IEPA standard.
5. Shaded = exceeds groundwater standard.

Table 1
Analytical Results for Monitoring Well-B
Quartely O&M Sampling for
Supplyside Landfill Monitoring Wells

Monitoring Well	Sampling Round	Amonia	Chloride	PH	Sulfate	TDS	TOC	Phenolics	Iron	Lead	Manganese
MW-B	7/16/2003	9.5	290	6.8	140	1,800	7.2	<0.0056	6.2	<0.0017	0.83
MW-B	10/29/2003	9.7	280	6.8	150	1,600	24	0.0062	6.5	0.0018	0.073
MW-B	1/29/2004	9.7	300	6.8	110	1,600	22	<0.0028	7.8	<0.0014	0.088
MW-B	4/28/2004	11	310	6.8	110	1,700	25	0.0037	7.5	<0.0014	0.091
MW-B	7/23/2004	9.9	380	6.8	120	1,800	27	0.0057	6.7	<0.0014	0.12
MW-B	11/1/2004	12	340	7.7	80	1,700	25	0.004	7.7	<0.0014	0.082
MW-B	1/25/2005	9.2	330	6.8	88	1,500	28	<0.0022	8.3	<0.0014	0.13
MW-B	5/26/2005	12	310	6.9	81	1,600	29	0.029	8.1	<0.0014	0.051
MW-B	8/25/2005	12	370	6.9	57	1,700	30	NA #	8.1	<0.0014	0.061
MW-B	11/29/2005	10	360	6.8	82	1500	34.4	0.00454	7.0	<0.0014	0.062
MW-B	2/28/2006	7.0	260	6.7	350	1600	27.5	0.0157	3.1	<0.0014	0.20
MW-B	5/26/2006	7.5	250	6.6	160	1700	23.7	<0.000700	7.7	<0.0014	0.19
IEPA Groundwater Standards		N/A	200	6.5-8.5*	400	1,200	N/A	0.10	5	0.0075	0.15

Notes:
1. Concentrations are reported in milligrams per liter (mg/L).
2. Standards pertain to IEPA Class 1 Groundwater Quality Standards.
3. N/A - Not Applicable, IEPA or USEPA standards have not been established for these constituents.
4. * - Reported limit is from USEPA National Drinking Water Regulations since there is no IEPA standard.
5. Shaded = exceeded groundwater standard.

NA # = Sample bottles were broken at the lab.

Table 2
Analytical Results for Monitoring Well-B
Quarterly O&M Sampling for
Supplyside Landfill Monitoring Wells

Monitoring Well	Sampling Round	Ammonia	Chloride	pH	Sulfate	TDS	TOC	Phenolics	Iron	Lead	Manganese
MW-B	Jul-99	5.5	254	7.02	122	<10.0	24.4	<0.10	5.85	<0.001	0.252
	Oct-99	6.38	331	6.93	161	1,340	38.8	<0.10	2.16	0.002	0.221
	Jan-00	4.95	425	6.93	147	1,470	25.8	<0.10	5.08	<0.001	0.163
	Apr-00	76	300	6.96	190	1,500	35	0.054	8.0	<3.0	0.32
	Jul-00	0.96	7.61	7.5	378	1,099	36	<0.005	8.36	<5.00	0.193
	Oct-00	10.8	152	7.14	8.82	1,800	19	38.1	5.21	<0.004	<0.0001
	Jan-01	5.60	292	6.97	9.98	1,630	28	0.0127	10.6	<5.00	0.117
	Apr-01	<0.0277	390	7.0	132	332	23	0.00794	8.87	<0.004	0.104
	Jul-01	8.7	360	6.64	127	1,560	21	<0.1	9.24	<0.003	0.145
	Oct-01	5.6	300	7.07	104	1,360	32	<0.1	8.86	<0.171	0.128
	Jan-02	97	382	6.62	113	1,500	20	0.01	9.44	<0.171	0.133
	Apr-02	2	200	6.7	160	1,500	23	<0.005	7,400	97	2.8
	Jul-02	8.7	-	6.87	150	1,700	21	0.005	3.9	0.002	0.11
	Oct-02	3.9	410	6.91	150	1,500	22	0.093	8	0.002	0.13
	Jan-03	18.6	360	6.90	330	1,410	16.6	<0.005	6.82	<0.002	0.129
	Apr-03	Not Yet Sampled									
IEPA Groundwater Standards		N/A	200	6.5-8.5*	400	1,200	N/A	0.10	5	0.0075	0.15

Notes:
1. Concentrations are reported in milligrams per liter (mg/L).
2. Standards pertain to IEPA Class 1 Groundwater Quality Standards.
3. N/A - Not Applicable, IEPA or USEPA standards have not been established for these constituents.
4. * - Reported limit is from USEPA National Secondary Drinking Water Regulations since there is no IEPA standard.
5. Shaded = exceeds groundwater standard.

Table 1
Analytical Results for Monitoring Well-C
Quartely O&M Sampling for
Supplyside Landfill Monitoring Wells

Monitoring Well	Sampling Round	Amonia	Chloride	PH	Sulfate	TDS	TOC	Phenolics	Iron	Lead	Manganese
MW-C	7/16/2003	9.5	74	6.8	260	1,300	5.1	<0.0056	0.065	<0.0014	0.12
MW-C	10/29/2003	<0.10	81	7.0	290	1,000	3.6	<0.0056	0.24	<0.0014	0.083
MW-C	1/29/2004	0.79	58	7.1	150	670	1.8	<0.0022	<0.042	<0.0014	0.045
MW-C	4/28/2004	0.27	80	6.9	300	1,100	2.5	<0.0022	<0.042	<0.0014	0.010
MW-C	7/23/2004	Well	damaged	no	Sample						
MW-C	11/1/2004	Well	damaged	no	Sample						
MW-C	1/25/2005	Well	damaged	no	Sample						
MW-C	5/26/2005	Well	damaged	no	Sample						
MW-C	8/25/2005	Well	damaged	no	Sample						
MW-C	11/29/2005	Well	damaged	no	Sample						
MW-C	2/28/2006	Well	damaged	no	Sample						
MW-C	5/26/2006	Well	damaged	no	Sample						
IEPA Groundwater Standards		N/A	200	6.5-8.5*	400	1,200	N/A	0.10	5	0.0075	0.15

Notes:
1. Concentrations are reported in milligrams per liter (mg/L).
2. Standards pertain to IEPA Class 1 Groundwater Quality Standards.
3. N/A - Not Applicable, IEPA or USEPA standards have not been established for these constituents.
4. * - Reported limit is fronm USEPA National Drinking Water Regulations since there is no IEPA standard.
5. Shaded = exceeded groundwater standard.

Table 3
Analytical Results for Monitoring Well-C
Quarterly O&M Sampling for
Supplyside Landfill Monitoring Wells

Monitoring Well	Sampling Round	Ammonia	Chloride	pH	Sulfate	TDS	TOC	Phenolics	Iron	Lead	Manganese
MW-C	Jul-99	0.14	138	7.28	342	1,150	5.5	<0.10	0.676	<0.001	0.19
	Oct-99	0.34	137	7.20	279	1,650	11.7	<0.10	<0.100	<0.001	0.170
	Jan-00	<0.10	175	7.26	291	1,040	5.5	<0.10	<0.100	<0.003	0.050
	Apr-00	48	150	7.19	380	1,100	5.6	0.078	0.21	<3	<0.10
	Jul-00	0.80	13.1	7.5	160	1,307	<9	<0.005	<0.0044	<5.00	<0.0001
	Oct-00	<0.0277	140	7.32	15.2	1,070	<6	<0.005	<0.0044	<0.004	<0.0001
	Jan-01	<0.0277	151	7.24	15.2	1,070	<9	<0.005	0.070	<5.00	<0.0001
	Apr-01	<0.0277	160	6.5	203	1,100	<6	<0.005	<0.0044	<0.004	<0.15
	Jul-01	<0.4	137	6.91	318	1,100	<6	<0.1	<0.075	<0.003	<0.042
	Oct-01	<0.4	123	7.48	340	1,160	<6	<0.1	<0.116	<0.171	<0.042
	Jan-02	<0.4	124	6.96	331	1,130	<6	<0.005	<0.116	<0.171	<0.042
	Apr-02	0.94	140	6.9	300	1,000	2.3	<0.005	<100	1.0	35
	Jul-02	0.08	-	7.06	300	1,100	3	0.005	0.25	0.002	0.07
	Oct-02	0.24	110	6.98	210	1,100	2.6	0.005	0.05	0.002	0.017
	Jan-03	2.38	100	7.08	340	1,000	3	<0.005	<0.05	<0.002	0.017
	Apr-03	Not Yet Sampled									
IEPA Groundwater Standards		N/A	200	6.5-8.5*	400	1,200	N/A	0.10	5	0.0075	0.15

Notes:
1. Concentrations are reported in milligrams per liter (mg/L).
2. Standards pertain to IEPA Class 1 Groundwater Quality Standards.
3. N/A - Not Applicable, IEPA or USEPA standards have not been established for these constituents.
4. * - Reported limit is from USEPA National Secondary Drinking Water Regulations since there is no IEPA standard.
5. Shaded = exceeds groundwater standard.

Table 1
Analytical Results for Monitoring Well-D
Quartely O&M Sampling for
Supplyside Landfill Monitoring Wells

Monitoring Well	Sampling Round	Amonia	Chloride	PH	Sulfate	TDS	TOC	Phenolics	Iron	Lead	Manganese
MW-D	7/16/2003	<0.10	36	6.9	100	690	3.9	<0.0064	0.050	<0.0014	0.18
MW-D	10/29/2003	<0.10	41	7.1	140	780	3.0	0.0076	0.15	<0.0014	0.23
MW-D	1/29/2004	0.79	58	7.1	150	670	1.8	<0.0022	<0.042	<0.0014	0.045
MW-D	4/28/2004	0.54	44	7.5	130	1,000	2.1	0.0081	<0.042	<0.0014	0.14
MW-D	7/23/2004	<0.10	43	7.0	120	710	6.5	0.0022	<0.042	<0.0014	0.10
MW-D	11/1/2004	0.1	40	7.8	110	640	2.7	<0.0022	0.069	<0.0014	0.10
MW-D	1/25/2005	<0.10	94	7.1	190	800	2.2	<0.0022	<0.042	<0.0014	0.032
MW-D	5/26/2005	0.25	56	7.3	130	620	2.6	<0.0022	<0.042	<0.0014	0.062
MW-D	8/25/2005	0.29	54	7.3	100	680	3.2	NA #	<0.042	<0.0014	0.024
MW-D	11/29/2005	<0.20	62	7.0	330	990	2.8	<0.00231	<0.042	<0.0014	0.14
MW-D	2/28/2006	0.21	420	6.8	360	1500	4.02	0.0112	0.11	<0.0014	0.17
MW-D	5/26/2006	0.14	230	6.7	750	1900	2.57	<0.000700	2.7	<0.0014	1.3
IEPA Groundwater Standards		N/A	200	6.5-8.5*	400	1,200	N/A	0.10	5	0.0075	0.15

Notes:
1. Concentrations are reported in milligrams per liter (mg/L).
2. Standards pertain to IEPA Class 1 Groundwater Quality Standards.
3. N/A - Not Applicable, IEPA or USEPA standards have not been established for these constituents.
4. * - Reported limit is fronm USEPA National Drinking Water Regulations since there is no IEPA standard.
5. Shaded = exceeded groundwater standard.

NA # =Sample bottles were broken at the lab.

Table 4
Analytical Results for Monitoring Well-D
Quarterly O&M Sampling for
Supplyside Landfill Monitoring Wells

Monitoring Well	Sampling Round	Ammonia	Chloride	pH	Sulfate	TDS	TOC	Phenolics	Iron	Lead	Manganese
MW-D	Jul-99	0.16	42.1	7.40	59.9	589	23.6	<0.10	<0.100	<0.001	0.214
	Oct-99	0.24	49.6	7.17	217	811	25.4	0.017	0.113	<0.001	0.119
	Jan-00	<0.10	38.1	7.20	286	1,130	9.5	0.20	0.399	<0.002	0.387
	Apr-00	44	90	7.15	310	940	3.7	<0.005	1.1	<3.0	0.77
	Jul-00	0.30	13.1	7.5	125	1,110	6	<0.005	0.580	<5.00	0.662
	Oct-00	<0.0277	74.5	7.26	11.3	1,019	<6	<0.005	0.592	<0.004	0.234
	Jan-01	<0.0277	50.5	7.30	8.09	3,000	<9	<0.005	1.21	<5.00	0.327
	Apr-01	<0.0277	31.9	7.0	58.1	429	<6	0.0381	1.78	<0.004	0.388
	Jul-01	0.8	61	7.03	92.8	602	<6	<0.1	0.61	<0.003	1.04
	Oct-01	<0.4	14.8	7.22	19.8	399	<6	<0.1	0.259	<0.171	0.054
	Jan-02	<0.4	39.2	7.04	52.6	515	<6	<0.005	1.36	<0.171	0.486
	Apr-02	0.92	30	7.0	110	490	1.7	0.002	260	<1.0	250
	Jul-02	0.05	-	-	-	-	-	-	0.05	0.002	0.13
	Oct-02	0.26	48	7.01	140	770	2	0.005	0.048	0.002	0.39
	Jan-03	0.970	55	7.16	630	658	2.8	<0.005	<0.05	0.00739	0.257
	Apr-03	Not Yet Sampled									
IEPA Groundwater Standards		N/A	200	6.5-8.5*	400	1,200	N/A	0.10	5	0.0075	0.15

Notes:
1. Concentrations are reported in milligrams per liter (mg/L).
2. Standards pertain to IEPA Class 1 Groundwater Quality Standards.
3. N/A - Not Applicable, IEPA or USEPA standards have not been established for these constituents.
4. * - Reported limit is from USEPA National Secondary Drinking Water Regulations since there is no IEPA standard.
5. Shaded = exceeds groundwater standard.

Table 1
Analytical Results for Monitoring Well-E
Quartely O&M Sampling for
Supplyside Landfill Monitoring Wells

Monitoring Well	Sampling Round	Amonia	Chloride	PH	Sulfate	TDS	TOC	Phenolics	Iron	Lead	Manganese
MW-E	7/16/2003	<0.10	26	6.9	64	690	2.9	<0.0056	0.83	<0.0014	0.19
MW-E	10/29/2003	<0.10	44	7.2	72	530	2.4	0.0083	0.95	<0.0014	0.23
MW-E	1/29/2004	<0.10	34	7.1	63	510	2.3	<0.0022	0.85	<0.0014	0.19
MW-E	4/28/2004	0.24	32	7.2	57	750	2.3	0.0031	0.35	<0.0014	0.18
MW-E	7/23/2004	<0.10	29	7.0	70	560	4.2	0.0046	0.33	<0.0014	0.16
MW-E	11/1/2004	0.18	49	7.9	51	550	2.9	<0.0022	0.83	<0.0014	0.21
MW-E	1/25/2005	<0.10	32	7.1	54	440	2.5	<0.0022	<0.042	<0.0014	0.10
MW-E	5/26/2005	<0.20	29	7.4	69	470	3.2	0.0024	0.33	<0.0014	0.23
MW-E	8/25/2005	0.13	66	7.3	57	630	3.8	0.0175	0.39	<0.0014	0.20
MW-E	11/29/2005	<0.20	150	7.2	46	680	2.65	<0.00228	0.5	<0.0014	0.22
MW-E	2/28/2006	<0.10	130	7.0	96	650	3.83	0.0212	0.44	<0.0014	0.17
MW-E	5/26/2006	<0.20	78	6.9	56	680	1.97	<0.000700	0.55	<0.0014	0.20
IEPA Groundwater Standards		N/A	200	6.5-8.5*	400	1,200	N/A	0.10	5	0.0075	0.15

Notes:
1. Concentrations are reported in milligrams per liter (mg/L).
2. Standards pertain to IEPA Class 1 Groundwater Quality Standards.
3. N/A - Not Applicable, IEPA or USEPA standards have not been established for these constituents.
4. * - Reported limit is fronm USEPA National Drinking Water Regulations since there is no IEPA standard.
5. Shaded = exceeded groundwater standard.

Table 5
Analytical Results for Monitoring Well-E
Quarterly O&M Sampling for
Supplyside Landfill Monitoring Wells

Monitoring Well	Sampling Round	Ammonia	Chloride	pH	Sulfate	TDS	TOC	Phenolics	Iron	Lead	Manganese
MW-E	Jul-99	0.14	20.4	7.38	45.9	530	5.5	<0.10	0.478	<0.001	0.328
	Oct-99	0.24	40.8	7.27	61.3	<10.0	24.0	0.31	0.909	<0.001	0.332
	Jan-00	<0.10	136	7.34	65.2	652	5.8	0.32	0.788	<0.001	<0.001
	Apr-00	53	35	7.26	130	450	4.0	0.042	0.71	<3.0	0.17
	Jul-00	0.40	2.63	7.5	19.5	240	13	<0.005	3.67	<5.00	1.66
	Oct-00	<0.0277	23.0	7.41	4.73	518	<6	<0.005	0.619	<0.004	<0.0001
	Jan-01	<0.0277	37.2	7.31	5.78	529	<3	<0.005	0.878	<5.00	0.169
	Apr-01	<0.0277	31.0	7.0	81.7	488	<6	0.0984	1.09	<0.004	0.270
	Jul-01	0.6	26.6	7.0	54.5	489	<3	<0.1	0.841	<0.003	0.194
	Oct-01	0.6	14.4	7.27	45.6	352	7	7.27	<0.116	<0.171	<0.042
	Jan-02	<0.4	23.8	6.98	50.3	469	<6	<0.005	1.54	<0.171	0.166
	Apr-02	1.5	30	7.0	290	470		<0.171	560	<1.0	180
	Jul-02	0.17	-	7.11	72	750	2.4	0.005	0.84	0.002	0.25
	Oct-02	1.2	31	7.04	120	550	2	0.0035	0.88	0.002	0.22
	Jan-03	1.51	35	7.22	300	544	2.4	<0.005	1.2	<0.002	0.298
	Apr-03	Not Yet Sampled									
IEPA Groundwater Standards		N/A	200	6.5-8.5*	400	1,200	N/A	0.10	5	0.0075	0.15

Notes:
1. Concentrations are reported in milligrams per liter (mg/L).
2. Standards pertain to IEPA Class 1 Groundwater Quality Standards.
3. N/A - Not Applicable, IEPA or USEPA standards have not been established for these constituents.
4. * - Reported limit is from USEPA National Secondary Drinking Water Regulations since there is no IEPA standard.
5. Shaded = exceeds groundwater standard.

Table 1
Analytical Results for Monitoring Well-F
Quartely O&M Sampling for
Supplyside Landfill Monitoring Wells

Monitoring Well	Sampling Round	Amonia	Chloride	PH	Sulfate	TDS	TOC	Phenolics	Iron	Lead	Manganese
MW-F	7/16/2003	0.40	10	7.0	180	760	6.4	<0.0056	0.48	<0.0014	0.38
MW-F	10/29/2003	2.2	16	6.9	180	740	8.4	<0.0056	5.3	<0.0014	1.3
MW-F	1/29/2004	0.64	23	7.1	360	1,200	9.4	<0.0066	1.4	<0.0014	0.81
MW-F	4/28/2004	0.89	21	7.0	330	1,100	7	0.0028	<0.042	<0.0014	0.19
MW-F	7/23/2004	Well	damaged	no	sample						
MW-F	11/1/2004	Well	damaged	no	sample						
MW-F	1/25/2005	Well	damaged	no	sample						
MW-F	5/26/2005	Well	damaged	no	sample						
MW-F	8/25/2005	Well	damaged	no	sample						
MW-F	11/29/2005	Well	damaged	no	sample						
MW-F	2/28/2006	Well	damaged	no	sample						
MW-F	5/26/2006	Well	damaged	no	sample						
IEPA Groundwater Standards		N/A	200	6.5-8.5*	400	1,200	N/A	0.10	5	0.0075	0.15

Notes:
1. Concentrations are reported in milligrams per liter (mg/L).
2. Standards pertain to IEPA Class 1 Groundwater Quality Standards.
3. N/A - Not Applicable, IEPA or USEPA standards have not been established for these constituents.
4. * - Reported limit is fronm USEPA National Drinking Water Regulations since there is no IEPA standard.
5. Shaded = exceeded groundwater standard.

Table 6
Analytical Results for Monitoring Well-F
Quarterly O&M Sampling for
Supplyside Landfill Monitoring Wells

Monitoring Well	Sampling Round	Ammonia	Chloride	pH	Sulfate	TDS	TOC	Phenolics	Iron	Lead	Manganese
MW-F	Jul-99	1.93	18.7	7.13	129	750	22.6	<0.10	1.58	<0.001	1.5
	Oct-99	3.13	21.3	7.02	470	1,170	38.4	<0.10	2.68	<0.001	1.47
	Jan-00	2.13	32.8	7.42	688	1,540	21.2	0.29	0.271	<0.001	0.894
	Apr-00	77	10	7.13	290	1,100	11	0.078	0.11	<3.0	<0.10
	Jul-00	2.80	9.98	7.5	12.4	854	17	<0.005	0.663	<5.00	0.210
	Oct-00	<0.0277	24.8	7.21	15.2	1,063	<6	86.4	0.685	<0.004	0.372
	Jan-01	<0.0277	17.7	7.28	9.98	85.0	<3	<0.005	0.027	<5.00	<0.0001
	Apr-01	<0.0277	15.1	7.0	162	675	<6	0.171	0.101	<0.004	0.077
	Jul-01	2	60.2	6.78	142	735	10	<0.1	0.153	<0.003	0.722
	Oct-01	0.4	20.8	7.44	130	465	8	<0.1	<0.116	<0.171	<0.042
	Jan-02	1.8	34.7	6.88	249	880	<6	<0.005	2.15	<0.171	0.683
	Apr-02	1.9	36	6.9	310	860	5.9	0.011	200	<1.0	370
	Jul-02	1.6	-	7.01	250	840	7.0	0.005	1.0	0.002	1.0
	Oct-02	1.8	19	6.98	210	820	7.9	0.005	4.2	0.002	1.2
	Jan-03	2.43	20	7.05	330	996	6.14	<0.005	4.41	<0.002	1.57
	Apr-03	Not Yet Sampled									
IEPA Groundwater Standards		N/A	200	6.5-8.5*	400	1,200	N/A	0.10	5	0.0075	0.15

Notes:
1. Concentrations are reported in milligrams per liter (mg/L).
2. Standards pertain to IEPA Class 1 Groundwater Quality Standards.
3. N/A - Not Applicable, IEPA or USEPA standards have not been established for these constituents.
4. * - Reported limit is from USEPA National Secondary Drinking Water Regulations since there is no IEPA standard.
5. Shaded = exceeds groundwater standard.

GRAEF ANHALT SCHLOEMER and Associates Inc.

FIELD WATER QUALITY SAMPLING AND ANALYSIS LOG

PROJECT: Great Lakes Naval Base
PROJECT NO.: 2005-0233.00
LOCATION: Great Lakes Naval Base
LABORATORY: Test America
DATE SENT: 5/30/2006

INSTRUMENT IDENTIFICATION:
TEMPERATURE: KIT #1
CONDUCTIVITY: KIT #1
pH: KIT #1
PUMP: NA

SAMPLE LOCATION	MW-A	MW-B	MW-C	MW-D	MW-E
TYPE	Monitoring well	Monitoring well	Monitoring well	Monitoring well	Monitoring well
DATE/TIME	5/26/2006 12:10	5/26/2006 11:30	5/26/2006 0:00	5/26/2006 10:20	5/26/2006 9:30
WELL DEPTH (FT.)	14.70	17.00	17.20	17.90	17.70
DEPTH TO GW (FT.)	9.65	8.06		7.62	7.62
WATER COLUMN (FT.)	5.05	8.94		10.28	10.08
WELL VOLUME (GAL)	0.81	1.43		1.60	1.67
CALC. PURGE VOL. (GAL)	3.24	5.72		6.40	6.68
ACT. VOL. PURGED (GAL.)	2.50	6.00		6.50	7.00
MP ELEV. (FT. MSL)	676.92	676.11	680.19	675.38	674.92
GW ELEV. (FT. MSL)	667.27	668.05		667.76	667.30
SAMPLING DEVICE	Disposable Bailer	Disposable Bailer		Disposable Bailer	Disposable Bailer
TEMPERATURE (°C)	13.8	13.8		14.1	12.6
CONDUCTIVITY (µS/cm)					
(mS/cm)	1.396	2.050		1.934	0.771
pH	6.43	6.78		6.85	7.05
DISSOLVED OXYGEN (ppm)					
REDOX (mV)	32.2	12.7		8.6	-3.9
COLOR	Colorless	Colorless		Colorless	Light Brown
ODOR	None Noticed	None Noticed		None Noticed	None Noticed
CLARITY	Clear	Clear		Clear	Slightly Cloudy
SAMPLING PARAMETERS :	NO. OF CONTAINERS & CONTAINER TYPE - VOA, PLASTIC, AMB BTL PRESERVATIVE TYPE - FILTERED OR UNFILTERED				
Phenols	1-500 Ml amber, H2SO4, ice	1-500 Ml amber, H2SO4, ice		1-500 Ml amber, H2SO4, ice	1-500 Ml amber, H2SO4, ice
TOC	250 ml plastic, H2SO4, ice	250 ml plastic, H2SO4, ice		250 ml plastic, H2SO4, ice	250 ml plastic, H2SO4, ice
Ammonia as N	1-ltr plastic, H2SO4, ice	1-ltr plastic, H2SO4, ice		1-ltr plastic, H2SO4, ice	1-ltr plastic, H2SO4, ice
Fe, Mn, Pb	1 500 ml plastic, HNO3, field filtered, ice	1 500 ml plastic, HNO3, field filtered, ice		1 500 ml plastic, HNO3, field filtered, ice	1 500 ml plastic, HNO3, field filtered, ice
Chloride, PH, TDS, Sulfate	1 ltr plastic & 1-125 ml plastic, ice	1 ltr plastic & 1-125 ml plastic, ice		1 ltr plastic & 1-125 ml plastic, ice	1 ltr plastic & 1-125 ml plastic, ice
SAMPLED BY:	EGD	EGD	EGD	EGD	EGD
REMARKS :	Poor recharge.	Fair recharge.	Well damaged during capping work on landfill. Will need to be replaced.	Fair recharge.	Fair recharge.

WSL5-06A.XLS

GRAEF ANHALT SCHLOEMER
and Associates Inc.

FIELD WATER QUALITY SAMPLING AND ANALYSIS LOG

PROJECT:	Great Lakes Landfill
PROJECT NO.:	20050233
LOCATION:	Great Lakes Naval Base
LABORATORY:	Test America
DATE SENT:	5/30/2006

INSTRUMENT IDENTIFICATION:

TEMPERATURE:	KIT #1
CONDUCTIVITY:	KIT #1
pH:	KIT #1
PUMP:	NA

SAMPLE LOCATION	MW-F				
TYPE	Monitoring well				
DATE/TIME	5/26/2006 0:00				
WELL DEPTH (FT.)	17.10		0.00		
DEPTH TO GW (FT.)					
WATER COLUMN (FT.)					
WELL VOLUME (GAL)					
CALC. PURGE VOL. (GAL)					
ACT. VOL. PURGED (GAL.)					
MP ELEV. (FT. MSL)	681.74				
GW ELEV. (FT. MSL)	681.74	0.00	0.00	0.00	0.00
SAMPLING DEVICE					
TEMPERATURE (°C)					
CONDUCTIVITY (µS/cm)					
(mS/cm)					
pH					
DISSOLVED OXYGEN (ppm)					
REDOX (mV)					
COLOR					
ODOR					
CLARITY					
SAMPLING PARAMETERS	NO. OF CONTAINERS & CONTAINER TYPE - VOA, PLASTIC, AMB. BTL. PRESERVATIVE TYPE - FILTERED OR UNFILTERED				
Ammonia					
Chloride/ Sulfate/ TDS/ PH					
TOC					
Iron / Manganese / Lead					
Phenols					
SAMPLED BY:	EGD				
REMARKS :	Well damaged during construction. Bent cant get a bailer down it. Well could be repaired.				

Sampling Date: 5/26/2006

Well	A	B	C	D	E	F
Well Top	96.01	95.2	99.28	94.47	94.01	100.83
Ground Surface	93.69	92.31	96.47	91.44	91.12	97.58
Well Depth	14.7	17	17.2	17.9	17.7	17.1
Stickup	2.32	2.89	2.81	3.03	2.89	3.25
Depth to Water	**9.65**	**8.06**	**NA**	**7.62**	**7.08**	**NA**
Well Elevation	676.92	676.11	680.19	675.38	674.92	681.74
Ground Water Elevation	**667.27**	**668.05**	**#VALUE!**	**667.76**	**667.84**	**#VALUE!**
Bottom Elevation	**662.22**	**659.11**	**662.99**	**657.48**	**657.22**	**664.64**
Temperature (Degrees C)	**13.8**	**13.8**	**NA**	**14.1**	**12.6**	**NA**
Conductivity (mS/cm)	**1.396**	**2.05**	**NA**	**1.934**	**0.771**	**NA**
Depth To Water (bgs)	**7.33**	**5.17**	**#VALUE!**	**4.59**	**4.19**	**#VALUE!**

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND POLLUTION CONTROL
CHEMICAL ANALYSIS FORM

RECORD CODE: L P C S M 0 1 (1–7) TRANS CODE: A (8)

REPORT DUE DATE __/__/__ (36 M D Y 41)

FEDERAL ID NUMBER _____

SITE INVENTORY NUMBER 0 9 7 8 1 1 0 0 0 2 (9–18)

MONITOR POINT NUMBER (see Instructions) M W - A (19–22)

REGION 5 CO. GREAT LAKES

DATE COLLECTED 0 5 / 2 6 / 0 6 (23 M D Y 28)

FACILITY NAME U S NAVAL BASE # 2

FOR IEPA USE ONLY

LAB ____ (29)

DATE RECEIVED __/__/__ (42 M D Y 47)

BACKGROUND SAMPLE (X) ____ (54)

TIME COLLECTED (24 Hr. Clock) 1 2 : 1 0 (55 H H M 58)

UNABLE TO COLLECT SAMPLE (see Instructions) ____ (59)

MONITOR POINT SAMPLED BY (see Instructions) X (60) EGD OTHER (SPECIFY)

SAMPLE FIELD FILTERED — INORGANICS (X) X (61) ORGANICS (X) ____ (62)

SAMPLE APPEARANCE (63–102): C O L O R L E S S C L E A R

COLLECTOR COMMENTS (103–142): N O N E

LAB COMMENTS (150–199): N O N E

RECORD CODE L P C S M 0 2 (1–7) TRANS CODE A (8) (COLUMNS 9-29 FROM ABOVE)

	FIELD MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER (30–34)	Remarks See Inst. (35)	Replicate (36)	< or > (37)	VALUE (38–47)
Q	TEMP OF WATER (unfiltered °F)	0 0 0 1 1				5 6 . 8
Q	SPEC COND (unfiltered umhos)	0 0 0 9 4				1 3 9 6 . 0
Q	pH (unfilted units)	0 0 4 0 0				6 . 4 3
Q	ELEV OF GW SURF (ft ref MSL)	7 1 9 9 3				6 6 7 . 2 7
Q	DEPTH OF WATER (ft below LS)	7 2 0 1 9				7 . 3 3
A	BTM WELL ELEV (ft ref MSL)	7 2 0 2 0				6 6 2 . 2 2
Q	DEPTH TO WATER FR MEA PT (ft)	7 2 1 0 9				9 . 6 5
						.
						.

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1004 and 1021. Disclosure of this information is required. Failure to do so may result in a civil penalty up to $25,000 for each day the failure continues a fine up to $1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center. *Only Keypunch with Data in Column 35 or Columns 38-47*

IEPA/DLPC

CHEMICAL ANALYSIS FORM

RECORD CODE | L | P | C | S | M | 0 | 2 | (1–7) TRANS CODE | A | (8)

SITE INVENTORY NUMBER 0 9 7 8 1 1 0 0 0 2 (9–18)

MONITOR POINT NUMBER M W-A (19–22)

CO. GREAT LAKES REGION #5

DATE COLLECTED 05/26/06 (23 M D Y 28)

US NAVAL BASE #2
FACILITY NAME

LAB TEST AMERICA (29)

LAB MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER (30–34)	Remarks See Inst. (35)	Replicate (36)	< or > (37)	VALUE (38–47)
N-Ammonia (mg/L)	00608				7.2
Chloride (mg/L)	00941				32.
Sulfate (mg/L)	00946				460.
TDS (mg/L)	70300				1200.
TOC (mg/L)	00680				24.9
Phenolics (mg/L)	32730				<0.00070
Iron (mg/L)	01046				20.
Lead (mg/L)	01049				<0.0014
Manganese (mg/L)	01056				1.2

All analytical procedures must be performed in accordance with the methods contained in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846, 3rd Edition, September 1986 or equivalent methods approved by the Agency. Proper sample chain of custody control and quality assurance/quality control procedures must be maintained in accordance with the facility sampling and analysis plan.

*Only Keypunch with Data in Column 35 or Columns 38-47

Printed on Recycled Paper

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND POLLUTION CONTROL
CHEMICAL ANALYSIS FORM

RECORD CODE: L P C S M 0 1 (1–7) TRANS CODE: A (8)

REPORT DUE DATE ___/___/___ (36 M D Y 41)

FEDERAL ID NUMBER _____

SITE INVENTORY NUMBER 0 9 7 8 1 1 0 0 0 2 (9–18)

MONITOR POINT NUMBER (see Instructions) N W - B (19–22)

REGION 5 CO. GREAT LAKES

DATE COLLECTED 05/26/06 (23 M D Y 28)

FACILITY NAME U S NAVAL BASE #2

FOR IEPA USE ONLY

LAB ____ (29)

DATE RECEIVED ___/___/___ (42 M D Y 47)

BACKGROUND SAMPLE (X) ____ (54)

TIME COLLECTED (24 Hr. Clock) 1 1 : 3 0 (55 H M 58)

UNABLE TO COLLECT SAMPLE (see Instructions) ____ (59)

MONITOR POINT SAMPLED BY (see Instructions) X (60) EGD OTHER (SPECIFY)

SAMPLE FIELD FILTERED — INORGANICS (X) X (61) ORGANICS (X) ____ (62)

SAMPLE APPEARANCE (63–102): COLORLESS CLEAR

COLLECTOR COMMENTS (103–142): NONE

LAB COMMENTS (150–199): NONE

RECORD CODE L P C S M 0 2 (1–7) TRANS CODE A (8) (COLUMNS 9-29 FROM ABOVE)

	FIELD MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER	Remarks See Inst.	Replicate	< or >	VALUE
Q	TEMP OF WATER (unfiltered °F)	00011				56.8
Q	SPEC COND (unfiltered umhos)	00094				2050.
Q	pH (unfilted units)	00400				6.78
Q	ELEV OF GW SURF (ft ref MSL)	71993				668.05
Q	DEPTH OF WATER (ft below LS)	72019				5.17
A	BTM WELL ELEV (ft ref MSL)	72020				659.11
Q	DEPTH TO WATER FR MEA PT (ft)	72109				5.17

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1004 and 1021. Disclosure of this information is required. Failure to do so may result in a civil penalty up to $25,000 for each day the failure continues a fine up to $1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center. *Only Keypunch with Data in Column 35 or Columns 38-47*

IL 532 1213
IEPA 01/90

IEPA/DLPC

CHEMICAL ANALYSIS FORM

RECORD CODE | L | P | C | S | M | 0 | 2 | (1–7) TRANS CODE | A | (8)

SITE INVENTORY NUMBER 0 9 7 8 1 1 0 0 0 2 (9–18)

MONITOR POINT NUMBER M W-B (19–22)

CO. GREAT LAKES REGION #5

DATE COLLECTED 05/26/06 (23 M D Y 28)

US NAVAL BASE #2
FACILITY NAME

LAB TEST AMERICA (29)

LAB MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER (30–34)	Remarks See Inst. (35)	Replicate (36)	< or > (37)	VALUE (38–47)
N-Ammonia (mg/L)	00608				7.5
Chloride (mg/L)	00941				250.
Sulfate (mg/L)	00946				160.
TDS (mg/L)	70300				1700.
TOC (mg/L)	00680				23.7
Phenolics (mg/L)	32730				<0.00070
Iron (mg/L)	01046				7.7
Lead (mg/L)	01049				<0.0014
Manganese (mg/L)	01056				0.19

All analytical procedures must be performed in accordance with the methods contained in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846, 3rd Edition, September 1986 or equivalent methods approved by the Agency. Proper sample chain of custody control and quality assurance/quality control procedures must be maintained in accordance with the facility sampling and analysis plan.

Only Keypunch with Data in Column 35 or Columns 38-47

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND POLLUTION CONTROL
CHEMICAL ANALYSIS FORM

RECORD CODE: L P C S M 0 1 (1–7) TRANS CODE: A (8)

REPORT DUE DATE ___/___/___ (36 M D Y 41)

FEDERAL ID NUMBER _____

SITE INVENTORY NUMBER 0 9 7 8 1 1 0 0 0 2 (9–18)

MONITOR POINT NUMBER M W - C (see Instructions) (19–22)

REGION 5 CO. GREAT LAKES

DATE COLLECTED 0 5 / 2 6 / 0 6 (23 M D Y 28)

FACILITY NAME U S NAVAL BASE # 2

FOR IEPA USE ONLY

LAB _____ (29)

DATE RECEIVED ___/___/___ (42 M D Y 47)

BACKGROUND SAMPLE (X) _____ (54)

TIME COLLECTED (24 Hr. Clock) __:__ (55 H M 58)

UNABLE TO COLLECT SAMPLE (see Instructions) X (59)

MONITOR POINT SAMPLED BY X (60) EGD OTHER (SPECIFY)

SAMPLE FIELD FILTERED — INORGANICS (X) _____ (61) ORGANICS (X) _____ (62)

SAMPLE APPEARANCE W E L L D A M A G E D N O S A M P L E (63–102)

COLLECTOR COMMENTS (103–142)

LAB COMMENTS (150–199)

RECORD CODE L P C S M 0 2 (1–7) TRANS CODE A (8) (COLUMNS 9-29 FROM ABOVE)

	FIELD MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER	Remarks See Inst.	Replicate	< or >	VALUE
Q	TEMP OF WATER (unfiltered °F)	0 0 0 1 1 (30–34)	(35)	(36)	(37)	(38–47)
Q	SPEC COND (unfiltered umhos)	0 0 0 9 4				
Q	pH (unfilted units)	0 0 4 0 0				
Q	ELEV OF GW SURF (ft ref MSL)	7 1 9 9 3				
Q	DEPTH OF WATER (ft below LS)	7 2 0 1 9				
A	BTM WELL ELEV (ft ref MSL)	7 2 0 2 0				
Q	DEPTH TO WATER FR MEA PT (ft)	7 2 1 0 9				

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1004 and 1021. Disclosure of this information is required. Failure to do so so may result in a civil penalty up to $25,000 for each day the failure continues a fine up to $1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center. *Only Keypunch with Data in Column 35 or Columns 38-47*

IEPA/DLPC

CHEMICAL ANALYSIS FORM

RECORD CODE | L | P | C | S | M | 0 | 2 | (1–7)

TRANS CODE | A | (8)

SITE INVENTORY NUMBER 0 9 7 8 1 1 0 0 0 2 (9–18)

MONITOR POINT NUMBER M W - C (19–22)

CO. GREAT LAKES REGION #5

DATE COLLECTED 0 5 / 2 6 / 0 8 (23 M D Y 28)

US NAVAL BASE #2
FACILITY NAME

LAB TEST AMERICA (29)

LAB MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER (30–34)	Remarks See Inst. (35)	Replicate (36)	< or > (37)	VALUE (38–47)
N-Ammonia (mg/L)	00608				
Chloride (mg/L)	00941				
Sulfate (mg/L)	00946				
TDS (mg/L)	70300				
TOC (mg/L)	00680				
Phenolics (mg/L)	32730				
Iron (mg/L)	01046				
Lead (mg/L)	01049				
Manganese (mg/L)	01056				
WELL DAMAGED NO Sample					

All analytical procedures must be performed in accordance with the methods contained in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846, 3rd Edition, September 1986 or equivalent methods approved by the Agency. Proper sample chain of custody control and quality assurance/quality control procedures must be maintained in accordance with the facility sampling and analysis plan.

Only Keypunch with Data in Column 35 or Columns 38-47

Printed on Recycled Paper

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND POLLUTION CONTROL
CHEMICAL ANALYSIS FORM

RECORD CODE: L P C S M 0 1 (1–7) TRANS CODE: A (8)

REPORT DUE DATE ___/___/___ (36 M D Y 41)

FEDERAL ID NUMBER _____

SITE INVENTORY NUMBER 0 9 7 8 1 1 0 0 0 2 (9–18)

MONITOR POINT NUMBER (see Instructions) M W - D (19–22)

REGION 5 CO. GREAT LAKES

DATE COLLECTED 0 5 / 2 6 / 0 8 (23 M D Y 28)

FACILITY NAME U S NAVAL BASE # 2

FOR IEPA USE ONLY

LAB _____ (29)

DATE RECEIVED ___/___/___ (42 M D Y 47)

BACKGROUND SAMPLE (X) _____ (54)

TIME COLLECTED (24 Hr. Clock) 1 0 : 2 0 (55 H M 58)

UNABLE TO COLLECT SAMPLE (see Instructions) _____ (59)

MONITOR POINT SAMPLED BY (see Instructions) X (60) EGD OTHER (SPECIFY)

SAMPLE FIELD FILTERED — INORGANICS (X) X (61) ORGANICS (X) _____ (62)

SAMPLE APPEARANCE (63–102) C O L O R L E S S C L E A R

COLLECTOR COMMENTS (103–142) N O N E

LAB COMMENTS (150–199) N O N E

RECORD CODE L P C S M 0 2 (1–7) TRANS CODE A (8) (COLUMNS 9-29 FROM ABOVE)

	FIELD MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER (30–34)	Remarks See Inst. (35)	Replicate (36)	< or > (37)	VALUE (38–47)
Q	TEMP OF WATER (unfiltered °F)	0 0 0 1 1				57.3
Q	SPEC COND (unfiltered umhos)	0 0 0 9 4				1934.
Q	pH (unfilted units)	0 0 4 0 0				6.8
Q	ELEV OF GW SURF (ft ref MSL)	7 1 9 9 3				667.76
Q	DEPTH OF WATER (ft below LS)	7 2 0 1 9				4.59
A	BTM WELL ELEV (ft ref MSL)	7 2 0 2 0				657.48
Q	DEPTH TO WATER FR MEA PT (ft)	7 2 1 0 9				7.62

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1004 and 1021. Disclosure of this information is required. Failure to do so so may result in a civil penalty up to $25,000 for each day the failure continues a fine up to $1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center. *Only Keypunch with Data in Columns 35 or Columns 38-47*

IL 532 1213
IEPA 01/90

IEPA/DLPC

CHEMICAL ANALYSIS FORM

RECORD CODE | L | P | C | S | M | 0 | 2 | (1–7)

TRANS CODE | A | (8)

SITE INVENTORY NUMBER 0 9 7 8 1 1 0 0 0 2 (9–18)

MONITOR POINT NUMBER M W-D (19–22)

CO. GREAT LAKES REGION #5

US NAVAL BASE #2

FACILITY NAME

DATE COLLECTED 05/26/06 (23 M D Y 28)

LAB TEST AMERICA (29)

LAB MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER (30–34)	Remarks See Inst. (35)	Replicate (36)	< or > (37)	VALUE (38–47)
N-Ammonia (mg/L)	00608				0.14
Chloride (mg/L)	00941				230.
Sulfate (mg/L)	00946				750.
TDS (mg/L)	70300				1900.
TOC (mg/L)	00680				2.57
Phenolics (mg/L)	32730				<0.00070
Iron (mg/L)	01046				2.7
Lead (mg/L)	01049				<0.0014
Manganese (mg/L)	01056				1.3

All analytical procedures must be performed in accordance with the methods contained in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846, 3rd Edition, September 1986 or equivalent methods approved by the Agency. Proper sample chain of custody control and quality assurance/quality control procedures must be maintained in accordance with the facility sampling and analysis plan.

*Only Keypunch with Data in Column 35 or Columns 38-47

Printed on Recycled Paper

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND POLLUTION CONTROL
CHEMICAL ANALYSIS FORM

RECORD CODE: L P C S M 0 1 (1–7) TRANS CODE: A (8)

REPORT DUE DATE ___/___/___ (36 M D Y 41)

FEDERAL ID NUMBER _____

SITE INVENTORY NUMBER 0 9 7 8 1 1 0 0 0 2 (9–18)

MONITOR POINT NUMBER (see Instructions) M W - E (19–22)

REGION 5 CO. GREAT LAKES

DATE COLLECTED 0 5 / 2 6 / 0 6 (23 M D Y 28)

FACILITY NAME U S NAVAL BASE # 2

FOR IEPA USE ONLY

LAB ____ (29)

DATE RECEIVED ___/___/___ (42 M D Y 47)

BACKGROUND SAMPLE (X) ____ (54)

TIME COLLECTED (24 Hr. Clock) 9:30 (55 H H M 58)

UNABLE TO COLLECT SAMPLE (see Instructions) ____ (59)

MONITOR POINT SAMPLED BY (see Instructions) X (60) EGD OTHER (SPECIFY)

SAMPLE FIELD FILTERED — INORGANICS (X) X (61) ORGANICS (X) ____ (62)

SAMPLE APPEARANCE (63–102): LIGHT BROWN CLOUDY

COLLECTOR COMMENTS (103–142): NONE

LAB COMMENTS (150–199): NONE

RECORD CODE: L P C S M 0 2 (1–7) TRANS CODE: A (8) (COLUMNS 9-29 FROM ABOVE)

	FIELD MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER (30–34)	Remarks See Inst. (35)	Replicate (36)	< or > (37)	VALUE (38–47)
Q	TEMP OF WATER (unfiltered °F)	00011				54.6
Q	SPEC COND (unfiltered umhos)	00094				771.
Q	pH (unfilted units)	00400				7.05
Q	ELEV OF GW SURF (ft ref MSL)	71993				667.84
Q	DEPTH OF WATER (ft below LS)	72019				4.19
A	BTM WELL ELEV (ft ref MSL)	72020				657.22
Q	DEPTH TO WATER FR MEA PT (ft)	72109				7.08

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1004 and 1021. Disclosure of this information is required. Failure to do so may result in a civil penalty up to $25,000 for each day the failure continues a fine up to $1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center. *Only Keypunch with Data in Column 35 or Columns 38-47*

IEPA/DLPC

CHEMICAL ANALYSIS FORM

RECORD CODE | L | P | C | S | M | 0 | 2 | (1–7) TRANS CODE | A | (8)

SITE INVENTORY NUMBER 0 9 7 8 1 1 0 0 0 2 (9–18)

CO. GREAT LAKES REGION #5

US NAVAL BASE #2

FACILITY NAME

MONITOR POINT NUMBER M W-E (19–22)

DATE COLLECTED 0 5 / 2 6 / 0 6 (23 M D Y 28)

LAB TEST AMERICA (29)

	LAB MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER (30–34)	Remarks See Inst. (35)	Replicate (36)	< or > (37)	VALUE (38–47)
	N-Ammonia (mg/L)	00608				<0.20
	Chloride (mg/L)	00941				78.
	Sulfate (mg/L)	00946				56.
	TDS (mg/L)	70300				680.
	TOC (mg/L)	00680				1.97
	Phenolics (mg/L)	32730				<0.00070
	Iron (mg/L)	01046				0.55
	Lead (mg/L)	01049				<0.0014
	Manganese (mg/L)	01056				1.3

All analytical procedures must be performed in accordance with the methods contained in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846, 3rd Edition, September 1986 or equivalent methods approved by the Agency. Proper sample chain of custody control and quality assurance/quality control procedures must be maintained in accordance with the facility sampling and analysis plan.

Only Keypunch with Data in Column 35 or Columns 38-47

Printed on Recycled Paper

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND POLLUTION CONTROL
CHEMICAL ANALYSIS FORM

RECORD CODE: L P C S M 0 1 (1–7) TRANS CODE: A (8)

REPORT DUE DATE ___/___/___ (36 M D Y 41)

FEDERAL ID NUMBER _____

SITE INVENTORY NUMBER 0 9 7 8 1 1 0 0 0 2 (9–18)

MONITOR POINT NUMBER (see Instructions) M W - F (19–22)

REGION 5 CO. GREAT LAKES

DATE COLLECTED 0 5 / 2 6 / 0 6 (23 M D Y 28)

FACILITY NAME U S NAVAL BASE # 2

FOR IEPA USE ONLY

LAB ____ (29)

DATE RECEIVED ___/___/___ (42 M D Y 47)

BACKGROUND SAMPLE (X) ____ (54)

TIME COLLECTED (24 Hr. Clock) __ __ : __ __ (55 H M 58)

UNABLE TO COLLECT SAMPLE (see Instructions) X (59)

MONITOR POINT SAMPLED BY (see Instructions) ____ (60) EGD OTHER (SPECIFY)

SAMPLE FIELD FILTERED — INORGANICS (X) ____ (61) ORGANICS (X) ____ (62)

SAMPLE APPEARANCE (63–102): WELL DAMAGED NO SAMPLE

COLLECTOR COMMENTS (103–142):

LAB COMMENTS (150–199):

RECORD CODE L P C S M 0 2 (1–7) TRANS CODE A (8) (COLUMNS 9-29 FROM ABOVE)

	FIELD MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER (30–34)	Remarks See Inst. (35)	Replicate (36)	< or > (37)	VALUE (38–47)
Q	TEMP OF WATER (unfiltered °F)	0 0 0 1 1				
Q	SPEC COND (unfiltered umhos)	0 0 0 9 4				
Q	pH (unfilted units)	0 0 4 0 0				
Q	ELEV OF GW SURF (ft ref MSL)	7 1 9 9 3				
Q	DEPTH OF WATER (ft below LS)	7 2 0 1 9				
A	BTM WELL ELEV (ft ref MSL)	7 2 0 2 0				
Q	DEPTH TO WATER FR MEA PT (ft)	7 2 1 0 9				

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1004 and 1021. Disclosure of this information is required. Failure to do so may result in a civil penalty up to $25,000 for each day the failure continues a fine up to $1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center. *Only Keypunch with Data in Column 35 or Columns 38-47*

IEPA/DLPC

CHEMICAL ANALYSIS FORM

RECORD CODE | L | P | C | S | M | 0 | 2 | (1–7) TRANS CODE | A | (8)

SITE INVENTORY NUMBER 0 9 7 8 1 1 0 0 0 2 (9–18)

CO. GREAT LAKES REGION #5

US NAVAL BASE #2

FACILITY NAME

MONITOR POINT NUMBER M W-F (19–22)

DATE COLLECTED 0 5 / 2 6 / 0 6 (23 M D Y 28)

LAB TEST AMERICA (29)

LAB MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER (30–34)	Remarks See Inst. (35)	Replicate (36)	< or > (37)	VALUE (38–47)
N-Ammonia (mg/L)	00608				
Chloride (mg/L)	00941				
Sulfate (mg/L)	00946				
TDS (mg/L)	70300				
TOC (mg/L)	00680				
Phenolics (mg/L)	32730				
Iron (mg/L)	01046				
Lead (mg/L)	01049				
Manganese (mg/L)	01056				
WELL DAMAGED NO SAMPLE					

All analytical procedures must be performed in accordance with the methods contained in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846, 3rd Edition, September 1986 or equivalent methods approved by the Agency. Proper sample chain of custody control and quality assurance/quality control procedures must be maintained in accordance with the facility sampling and analysis plan.

Only Keypunch with Data in Column 35 or Columns 38-47

Printed on Recycled Paper

TestAmerica
ANALYTICAL TESTING CORPORATION
602 Commerce Drive Watertown, WI 53094 * 800-833-7036 * Fax 920-261-8120

June 12, 2006

Client:	GRAEF, ANHALT, SCHLOEMER & ASSOC., IN 125 S. 84th St. Suite 401 Milwaukee, WI 53214-1470	Work Order: Project Name: Project Number:	WPE1163 Great Lakes Naval Base 0978110002
Attn:	Mr. Ed Diesch	Date Received:	05/30/06

An executed copy of the chain of custody is also included as an addendum to this report

If you have any questions relating to this analytical report please contact your Laboratory Project Manager at 1-800-833-7036

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
MW-A	WPE1163-01	05/26/06 12:10
MW-B	WPE1163-02	05/26/06 11:30
MW-D	WPE1163-03	05/26/06 10:20
MW-E	WPE1163-04	05/26/06 09:30

EPA 420.2, SW 9060 analysis performed at Lab ID: 000668

Samples were received into laboratory on ice.

The reported results were obtained in compliance with the 2003 NELAC standards unless otherwise noted.

Illinois Certification Number: 100453, IDPH #1755266

The Chain of Custody, 1 page, is included and is an integral part of this report.

Unless subcontracted, volatiles analyses (including VOC, PVOC, GRO, BTEX, and TPH gasoline) performed by TestAmerica Watertown at 1101 Industrial Drive, Units 9&10. All other analyses performed at the address shown in the heading of this report.

Approved By:

TestAmerica Analytical - Watertown
David W. Havick For Warren L. Topel
Project Manager

TestAmerica
ANALYTICAL TESTING CORPORATION
602 Commerce Drive Watertown, WI 53094 * 800-833-7036 * Fax 920-261-8120

GRAEF, ANHALT, SCHLOEMER & ASSOC., INC.
125 S. 84th St. Suite 401
Milwaukee, WI 53214-1470
Mr. Ed Diesch

Work Order: WPE1163
Project: Great Lakes Naval Base
Project Number: 0978110002

Received: 05/30/06
Reported: 06/12/06 10:36

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	MRL	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: WPE1163-01 (MW-A - Ground Water)							**Sampled: 05/26/06 12:10**			
Sample Location: 0978110002										
General Chemistry Parameters										
Ammonia as N	**7.2**	L4, B	mg/L	0.10	0.33	1	06/05/06 13:41	TDS	6060035	SM 4500NHH
Chloride	**32**		mg/L	1.0	3.3	1	06/05/06 10:12	gaf	6060071	EPA 325.2
pH	**6.30**		pH Units	NA	NA	1	06/05/06 12:48	kls	6060115	EPA 150.1
Sulfate	**460**		mg/L	2.0	6.7	5	06/05/06 18:16	tds	6060099	EPA 300.0
Total Dissolved Solids	**1200**		mg/L	1.0	3.3	1	06/02/06 23:59	ecl	6060081	EPA 160.1
Metals Dissolved										
Iron	**20**		mg/L	0.042	0.14	1	05/31/06 13:20	gaf	6050989	EPA 236.1
Lead	<0.0014		mg/L	0.0014	0.0051	1	06/06/06 14:27	gaf	6060164	EPA 239.2
Manganese	**1.2**		mg/L	0.0018	0.0063	1	06/07/06 14:09	gaf	6060200	EPA 243.1
Field Sampling Parameters										
pH	**6.43**		pH Units	NA	NA	1	05/26/06 12:10	pam	6060095	EPA 150.1
Temperature	**13.8**		°C	NA	NA	1	05/26/06 12:10	pam	6060095	EPA 170.1
Bottom Elevation	**662.22**		Feet	NA	NA	1	05/26/06 12:10	pam	6060095	NA
Color	No		YesNo	NA	NA	1	05/26/06 12:10	pam	6060095	NA
Depth to GW	**9.65**		Feet	NA	NA	1	05/26/06 12:10	pam	6060095	NA
Depth to Water below LS	**7.33**		Feet	NA	NA	1	05/26/06 12:10	pam	6060095	NA
Field Conductivity @ 25 C	**1396.0**		umhos/cm	NA	NA	1	05/26/06 12:10	pam	6060095	EPA 120.1
Groundwater Elev.	**667.27**		MSL	NA	NA	1	05/26/06 12:10	pam	6060095	NA
Odor	No		YesNo	NA	NA	1	05/26/06 12:10	pam	6060095	NA
Turbidity	No		YesNo	NA	NA	1	05/26/06 12:10	pam	6060095	NA
General Chemistry Parameters										
Total Organic Carbon	**24.9**		mg/L	0.22	1.00	4	06/07/06 23:37	jcf	6060237	SW 9060
Phenol	<0.000700		mg/L	0.00070	0.020	0.984	06/07/06 13:26	jcf	6060273	EPA 420.2
Sample ID: WPE1163-02 (MW-B - Ground Water)							**Sampled: 05/26/06 11:30**			
Sample Location: 0978110002										
General Chemistry Parameters										
Ammonia as N	**7.5**	L4, B	mg/L	0.10	0.33	1	06/05/06 13:42	TDS	6060035	SM 4500NHH
Chloride	**250**		mg/L	1.0	3.3	1	06/05/06 10:12	gaf	6060071	EPA 325.2
pH	**6.60**		pH Units	NA	NA	1	06/05/06 12:48	kls	6060115	EPA 150.1
Sulfate	**160**		mg/L	2.0	6.7	5	06/05/06 18:35	tds	6060099	EPA 300.0
Total Dissolved Solids	**1700**		mg/L	1.0	3.3	1	06/02/06 23:59	ecl	6060081	EPA 160.1
Metals Dissolved										
Iron	**7.7**		mg/L	0.042	0.14	1	05/31/06 13:20	gaf	6050989	EPA 236.1
Lead	<0.0014		mg/L	0.0014	0.0051	1	06/06/06 14:27	gaf	6060164	EPA 239.2
Manganese	**0.19**		mg/L	0.0018	0.0063	1	06/07/06 14:09	gaf	6060200	EPA 243.1
Field Sampling Parameters										
pH	**6.78**		pH Units	NA	NA	1	05/26/06 11:30	pam	6060095	EPA 150.1
Temperature	**13.8**		°C	NA	NA	1	05/26/06 11:30	pam	6060095	EPA 170.1
Bottom Elevation	**659.11**		Feet	NA	NA	1	05/26/06 11:30	pam	6060095	NA
Color	No		YesNo	NA	NA	1	05/26/06 11:30	pam	6060095	NA
Depth to GW	**8.06**		Feet	NA	NA	1	05/26/06 11:30	pam	6060095	NA
Depth to Water below LS	**5.17**		Feet	NA	NA	1	05/26/06 11:30	pam	6060095	NA
Field Conductivity @ 25 C	**2050.0**		umhos/cm	NA	NA	1	05/26/06 11:30	pam	6060095	EPA 120.1
Groundwater Elev.	**668.05**		MSL	NA	NA	1	05/26/06 11:30	pam	6060095	NA
Odor	No		YesNo	NA	NA	1	05/26/06 11:30	pam	6060095	NA
Turbidity	No		YesNo	NA	NA	1	05/26/06 11:30	pam	6060095	NA
General Chemistry Parameters										

GRAEF, ANHALT, SCHLOEMER & ASSOC., INC.
125 S. 84th St. Suite 401
Milwaukee, WI 53214-1470
Mr. Ed Diesch

Work Order: WPE1163
Project: Great Lakes Naval Base
Project Number: 0978110002

Received: 05/30/06
Reported: 06/12/06 10:36

Analyte	Sample Result	Data Qualifiers	Units	MDL	MRL	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: WPE1163-02 (MW-B - Ground Water) - cont.							**Sampled: 05/26/06 11:30**			
Sample Location: 0978110002										
General Chemistry Parameters - cont.										
Total Organic Carbon	**23.7**		mg/L	0.22	1.00	4	06/08/06 23:13	jcf	6060306	SW 9060
Phenol	<0.000700		mg/L	0.00070	0.020	1	06/07/06 13:27	jcf	6060273	EPA 420.2
Sample ID: WPE1163-03 (MW-D - Ground Water)							**Sampled: 05/26/06 10:20**			
Sample Location: 0978110002										
General Chemistry Parameters										
Ammonia as N	**0.14**	L4, J, B	mg/L	0.10	0.33	1	06/05/06 13:42	TDS	6060035	SM 4500NHH
Chloride	**230**		mg/L	1.0	3.3	1	06/05/06 10:12	gaf	6060071	EPA 325.2
pH	**6.70**		pH Units	NA	NA	1	06/05/06 12:48	kls	6060115	EPA 150.1
Sulfate	**750**		mg/L	2.0	6.7	50	06/06/06 12:09	tds	6060154	EPA 300.0
Total Dissolved Solids	**1900**		mg/L	1.0	3.3	1	06/02/06 23:59	ecl	6060081	EPA 160.1
Metals Dissolved										
Iron	**2.7**		mg/L	0.042	0.14	1	05/31/06 13:20	gaf	6050989	EPA 236.1
Lead	<0.0014		mg/L	0.0014	0.0051	1	06/06/06 14:27	gaf	6060164	EPA 239.2
Manganese	**1.3**		mg/L	0.0018	0.0063	1	06/07/06 14:09	gaf	6060200	EPA 243.1
Field Sampling Parameters										
pH	**6.85**		pH Units	NA	NA	1	05/26/06 10:20	pam	6060095	EPA 150.1
Temperature	**14.1**		°C	NA	NA	1	05/26/06 10:20	pam	6060095	EPA 170.1
Bottom Elevation	**657.48**		Feet	NA	NA	1	05/26/06 10:20	pam	6060095	NA
Color	No		YesNo	NA	NA	1	05/26/06 10:20	pam	6060095	NA
Depth to GW	**7.62**		Feet	NA	NA	1	05/26/06 10:20	pam	6060095	NA
Depth to Water below LS	**4.59**		Feet	NA	NA	1	05/26/06 10:20	pam	6060095	NA
Field Conductivity @ 25 C	**1934.0**		umhos/cm	NA	NA	1	05/26/06 10:20	pam	6060095	EPA 120.1
Groundwater Elev.	**667.76**		MSL	NA	NA	1	05/26/06 10:20	pam	6060095	NA
Odor	No		YesNo	NA	NA	1	05/26/06 10:20	pam	6060095	NA
Turbidity	No		YesNo	NA	NA	1	05/26/06 10:20	pam	6060095	NA
General Chemistry Parameters										
Total Organic Carbon	**2.57**		mg/L	0.22	1.00	1	06/08/06 00:26	jcf	6060237	SW 9060
Phenol	<0.000700		mg/L	0.00070	0.020	0.992	06/07/06 13:27	jcf	6060273	EPA 420.2
Sample ID: WPE1163-04 (MW-E - Ground Water)							**Sampled: 05/26/06 09:30**			
Sample Location: 0978110002										
General Chemistry Parameters										
Ammonia as N	<0.20	L2	mg/L	0.10	0.33	2	06/05/06 13:44	TDS	6060035	SM 4500NHH
Chloride	**78**		mg/L	1.0	3.3	1	06/05/06 10:12	gaf	6060071	EPA 325.2
pH	**6.90**		pH Units	NA	NA	1	06/05/06 12:48	kls	6060115	EPA 150.1
Sulfate	**56**		mg/L	2.0	6.7	5	06/05/06 19:13	tds	6060099	EPA 300.0
Total Dissolved Solids	**680**		mg/L	1.0	3.3	1	06/02/06 23:59	ecl	6060081	EPA 160.1
Metals Dissolved										
Iron	**0.55**		mg/L	0.042	0.14	1	05/31/06 13:20	gaf	6050989	EPA 236.1
Lead	<0.0014		mg/L	0.0014	0.0051	1	06/06/06 14:27	gaf	6060164	EPA 239.2
Manganese	**0.20**		mg/L	0.0018	0.0063	1	06/07/06 14:09	gaf	6060200	EPA 243.1
Field Sampling Parameters										
pH	**7.05**		pH Units	NA	NA	1	05/26/06 09:30	pam	6060095	EPA 150.1
Temperature	**12.6**		°C	NA	NA	1	05/26/06 09:30	pam	6060095	EPA 170.1
Bottom Elevation	**657.22**		Feet	NA	NA	1	05/26/06 09:30	pam	6060095	NA
Color	**Yes**		YesNo	NA	NA	1	05/26/06 09:30	pam	6060095	NA
Depth to GW	**7.62**		Feet	NA	NA	1	05/26/06 09:30	pam	6060095	NA
Depth to Water below LS	**4.19**		Feet	NA	NA	1	05/26/06 09:30	pam	6060095	NA
Field Conductivity @ 25 C	**771.0**		umhos/cm	NA	NA	1	05/26/06 09:30	pam	6060095	EPA 120.1

GRAEF, ANHALT, SCHLOEMER & ASSOC., INC.
125 S. 84th St. Suite 401
Milwaukee, WI 53214-1470
Mr. Ed Diesch

Work Order: WPE1163
Project: Great Lakes Naval Base
Project Number: 0978110002

Received: 05/30/06
Reported: 06/12/06 10:36

Analyte	Sample Result	Data Qualifiers	Units	MDL	MRL	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: WPE1163-04 (MW-E - Ground Water) - cont.							**Sampled: 05/26/06 09:30**			
Sample Location: 0978110002										
Field Sampling Parameters - cont.										
Groundwater Elev.	**667.30**		MSL	NA	NA	1	05/26/06 09:30	pam	6060095	NA
Odor	No		YesNo	NA	NA	1	05/26/06 09:30	pam	6060095	NA
Turbidity	**Yes**		YesNo	NA	NA	1	05/26/06 09:30	pam	6060095	NA
General Chemistry Parameters										
Total Organic Carbon	**1.97**		mg/L	0.22	1.00	1	06/08/06 00:44	jcf	6060237	SW 9060
Phenol	<0.000700		mg/L	0.00070	0.020	0.976	06/07/06 13:28	jcf	6060273	EPA 420.2

TestAmerica
ANALYTICAL TESTING CORPORATION
602 Commerce Drive Watertown, WI 53094 * 800-833-7036 * Fax 920-261-8120

GRAEF, ANHALT, SCHLOEMER & ASSOC., INC.
125 S. 84th St. Suite 401
Milwaukee, WI 53214-1470
Mr. Ed Diesch

Work Order: WPE1163
Project: Great Lakes Naval Base
Project Number: 0978110002

Received: 05/30/06
Reported: 06/12/06 10:36

LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
General Chemistry Parameters														
Ammonia as N	6060035			mg/L	0.10	0.33	0.231							J
Sulfate	6060099			mg/L	2.0	6.7	<2.0							
Sulfate	6060154			mg/L	2.0	6.7	<2.0							
General Chemistry Parameters														
Total Organic Carbon	6060237			mg/L	0.22	1.00	<0.220							
Phenol	6060273			mg/L	0.00070	0.020	<0.00070C							
Total Organic Carbon	6060306			mg/L	0.22	1.00	<0.220							

TestAmerica
ANALYTICAL TESTING CORPORATION
602 Commerce Drive Watertown, WI 53094 * 800-833-7036 * Fax 920-261-8120

GRAEF, ANHALT, SCHLOEMER & ASSOC., INC.
125 S. 84th St. Suite 401
Milwaukee, WI 53214-1470
Mr. Ed Diesch

Work Order: WPE1163
Project: Great Lakes Naval Base
Project Number: 0978110002

Received: 05/30/06
Reported: 06/12/06 10:36

CCV QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
General Chemistry Parameters														
pH	6060115		7.00	pH Units	N/A	N/A	6.98		100		98.6-101.4			
pH	6060115		7.00	pH Units	N/A	N/A	7.04		101		98.6-101.4			

TestAmerica
ANALYTICAL TESTING CORPORATION
602 Commerce Drive Watertown, WI 53094 * 800-833-7036 * Fax 920-261-8120

GRAEF, ANHALT, SCHLOEMER & ASSOC., INC.
125 S. 84th St. Suite 401
Milwaukee, WI 53214-1470
Mr. Ed Diesch

Work Order: WPE1163
Project: Great Lakes Naval Base
Project Number: 0978110002

Received: 05/30/06
Reported: 06/12/06 10:36

LABORATORY DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
General Chemistry Parameters													
QC Source Sample: WPE1060-02													
Ammonia as N	6060035	0.92		mg/L	0.10	0.33	0.789				15	22	L4,B
QC Source Sample: WPE1078-04													
Chloride	6060071	180		mg/L	1.0	3.3	184				2	19	
QC Source Sample: WPF0075-06													
Chloride	6060071	1200		mg/L	1.0	3.3	1300				8	19	
QC Source Sample: WPE1163-04													
Total Dissolved Solids	6060081	680		mg/L	1.0	3.3	710				4	10	
QC Source Sample: WPE1137-06													
Sulfate	6060099	12		mg/L	2.0	6.7	10.9				10	22	J
QC Source Sample: WPF0015-01													
pH	6060115	8.20		pH Units	N/A	N/A	8.17				0	200	
QC Source Sample: WPE1075-05													
Sulfate	6060154	680		mg/L	2.0	6.7	601				12	22	
Metals Dissolved													
QC Source Sample: WPE1163-03													
Iron	6050989	2.7		mg/L	0.042	0.14	2.71				0	23	
QC Source Sample: WPE1187-01													
Lead	6060164	<0.0014		mg/L	0.0014	0.0051	<0.0014					10	
QC Source Sample: WPF0128-03													
Manganese	6060200	<0.0018		mg/L	0.0018	0.0063	<0.0018					15	

TestAmerica
ANALYTICAL TESTING CORPORATION
602 Commerce Drive Watertown, WI 53094 * 800-833-7036 * Fax 920-261-8120

GRAEF, ANHALT, SCHLOEMER & ASSOC., INC.
125 S. 84th St. Suite 401
Milwaukee, WI 53214-1470
Mr. Ed Diesch

Work Order: WPE1163
Project: Great Lakes Naval Base
Project Number: 0978110002

Received: 05/30/06
Reported: 06/12/06 10:36

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
General Chemistry Parameters														
Ammonia as N	6060035		10.0	mg/L	0.10	0.33	7.69		77		90-110			L4,B
General Chemistry Parameters														
Total Organic Carbon	6060237		48.5	mg/L	0.22	1.00	43.8		90		80-120			
Phenol	6060273		0.160	mg/L	0.00070	0.020	0.154		96		90-110			
Total Organic Carbon	6060306		48.5	mg/L	0.22	1.00	45.3		93		80-120			

TestAmerica
ANALYTICAL TESTING CORPORATION
602 Commerce Drive Watertown, WI 53094 * 800-833-7036 * Fax 920-261-8120

GRAEF, ANHALT, SCHLOEMER & ASSOC., INC.
125 S. 84th St. Suite 401
Milwaukee, WI 53214-1470
Mr. Ed Diesch

Work Order: WPE1163
Project: Great Lakes Naval Base
Project Number: 0978110002

Received: 05/30/06
Reported: 06/12/06 10:36

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
General Chemistry Parameters														
QC Source Sample: WPE1169-02														
Ammonia as N	6060035	4.6	10.0	mg/L	0.10	0.33	13.4		88		60-136			L4,B
QC Source Sample: WPF0075-07														
Chloride	6060071	170	200	mg/L	1.0	3.3	352	334	91	82	64-132	5	19	
Metals Dissolved														
QC Source Sample: WPE1163-04														
Iron	6050989	0.55	2.50	mg/L	0.042	0.14	2.92	2.95	95	96	73-120	1	23	
QC Source Sample: WPF0091-01														
Lead	6060164	<0.0014	0.0200	mg/L	0.0014	0.0051	0.0138	0.0119	69	60	73-122	15	10	M12
QC Source Sample: WPF0128-04														
Manganese	6060200	0.0040	0.500	mg/L	0.0018	0.0063	0.496	0.500	98	99	81-116	1	15	
General Chemistry Parameters														
QC Source Sample: CPF0078-02														
Total Organic Carbon	6060237	8.48	5.00	mg/L	0.22	1.00	13.2	13.6	94	102	75-125	3	20	
QC Source Sample: CPF0040-01														
Phenol	6060273	<0.00070	0.160	mg/L	0.00070	0.020	0.154	0.153	96	96	90-110	1	20	
QC Source Sample: CPF0179-04														
Total Organic Carbon	6060306	1.31	5.00	mg/L	0.22	1.00	5.98	5.89	93	92	75-125	2	20	

GRAEF, ANHALT, SCHLOEMER & ASSOC., INC.
125 S. 84th St. Suite 401
Milwaukee, WI 53214-1470
Mr. Ed Diesch

Work Order: WPE1163
Project: Great Lakes Naval Base
Project Number: 0978110002

Received: 05/30/06
Reported: 06/12/06 10:36

CERTIFICATION SUMMARY

TestAmerica Analytical - Watertown

Method	Matrix	Nelac	Illinois
EPA 120.1	Water - NonPotable		
EPA 150.1	Water - NonPotable	X	X
EPA 160.1	Water - NonPotable	X	X
EPA 170.1	Water - NonPotable		
EPA 236.1	Water - NonPotable		
EPA 239.2	Water - NonPotable	X	X
EPA 243.1	Water - NonPotable		
EPA 300.0	Water - NonPotable	X	X
EPA 325.2	Water - NonPotable	X	X
EPA 420.2	Water - NonPotable		
NA	Water - NonPotable		
SM 4500NHH	Water - NonPotable	X	X
SW 9060	Water - NonPotable		

Subcontracted Laboratories

TestAmerica Analytical - Cedar Falls NELAC Cert #000668, Wisconsin Cert #999917270, Illinois Cert #000668, Minnesota Cert #019-999-319, Iowa Cert #007
704 Enterprise Drive - Cedar Falls, IA 50613

Method Performed: EPA 420.2
Samples: WPE1163-01, WPE1163-02, WPE1163-03, WPE1163-04

Method Performed: SW 9060
Samples: WPE1163-01, WPE1163-02, WPE1163-03, WPE1163-04

DATA QUALIFIERS AND DEFINITIONS

B	Analyte was detected in the associated Method Blank.
J	Results reported between the Method Detection Limit (MDL) and Limit of Quantitation (LOQ) are less certain than results at or above the LOQ.
L2	Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was below acceptance limits
L4	Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was below the acceptance limits A low bias to sample results is indicated.
M12	The MS and/or MSD were below the acceptance limits. See calibration verification (CCV)

ADDITIONAL COMMENTS

TestAmerica Analytical - Watertown
David W. Havick For Warren L. Topel
Project Manager

WPE1163

CHAIN OF CUSTODY RECORD

GRAEF ANHALT SCHLOEMER and Associates Inc.
Engineers & Scientists
MILWAUKEE ENGINEERING CENTER
345 North 95th Street
Milwaukee, Wisconsin 53226
Telephone (414) 259-1500
FAX (414) 259-0037

GAS # 2005-0233.00

Project Number: 097811 0002

Laboratory: TEST AMERICA

Sample Collector(s): EGD

Property Owner: GREAT LAKES NAVAL BASE (Supplyside LANDFILL)

Property Address: GREAT LAKES, IL

Telephone Number (include area code):

I hereby certify that I received, properly handled, and disposed of these samples as noted below:

Relinquished By (Signature)	Date/Time/Temp.	Received By (Signature)
Edward G. Diesch	5/30/06 935 Ice	Roy Wolff
Roy Wolff	5/30/06 1330	
Relinquished By (Signature)	Date/Time/Temp.	Received for Laboratory By (Signature)
	5/30/06 2:19	Amanda Wolff

Sample Condition on Receipt by Laboratory
LABORATORY USE ONLY

Temperature of temperature blank: _____ Page 1 of 1

If samples were received on ice and there was ice remaining, you may report the temperature as "received on ice." If all of the ice was melted, the temperature of the melt may be substituted for a temperature blank.

Field ID Number[1]	Date Collected	Time Collected	Sample Type[2]	Sample Device[3]	Preserv. Type	Field Screening	Description	Analysis Type	No./Type of Containers	Lab ID Number	Cracked /Broken	Improperly Sealed	Good Condition	Other Comments
MW-A	5-26-06	12:10	Groundwater	Disposable Bailer	Hcl ice	NA	MW-A	Phenols	1-500 mL Amb					
					Hcl ice			TOC	1-100 mL					
					Hcl ice			Ammonia as N	1-250 mL					
								Fe, Mn, Pb	1-500 mL					
					Ice			Chloride, pH, TDS, Sulfate	1-1L PL					
MW-B		11:30					MW-B							
MW-D		10:20					MW-D							
MW-E		9:30					MW-E							

[1]Sample description must clearly correlate the sample ID to the sampling location shown on a map.
[2]Specify groundwater, surface water, soil, leachate, sludge, etc.
[3]Type of sampling device; split spoon, hand auger, metal spatula, soil syringe, etc.

Remarks: NORMAL TAT
* METAL SAMPLES FIELD FILTERED
SAME ANALYSIS on ALL Samples

Report Results to: ED DIESCH

DEPARTMENT USE/OPTIONAL FOR SOIL SAMPLERS

Disposition of unused portion of sample
Laboratory should:
☐ Dispose ☐ Retain for ____ days
☐ Return ☐ Other

DEPARTMENT USE ONLY

Split samples: Offered? ☐ Yes ☐ No (Check one)
Accepted? ☐ Yes ☐ No (Check one)

Accepted By: _____
Signature

White–Accompanies Shipment, Yellow–Laboratory Files, Pink–GAS

RV 5/30/06

GRAEF ANHALT SCHLOEMER and Associates Inc.

FIELD WATER QUALITY SAMPLING AND ANALYSIS LOG

PROJECT:	Great Lakes Naval Base
PROJECT NO.:	2005-0233.00
LOCATION:	Great Lakes Naval Base
LABORATORY:	Test America
DATE SENT:	5/30/2006

INSTRUMENT IDENTIFICATION:

TEMPERATURE:	KIT #1
CONDUCTIVITY:	KIT #1
pH:	KIT #1
PUMP:	NA

SAMPLE LOCATION	MW-A	MW-B	MW-C	MW-D	MW-E
TYPE	Monitoring well	Monitoring well	Monitoring well	Monitoring well	Monitoring well
DATE/TIME	5/26/2006 12:10	5/26/2006 11:30	5/26/2006 0:00	5/26/2006 10:20	5/26/2006 9:30
WELL DEPTH (FT.)	14.70	17.00	17.20	17.90	17.70
DEPTH TO GW (FT.)	9.65	8.06		7.62	7.62
WATER COLUMN (FT.)	5.05	8.94		10.28	10.08
WELL VOLUME (GAL)	0.81	1.43		1.60	1.67
CALC. PURGE VOL. (GAL)	3.24	5.72		6.40	6.68
ACT. VOL. PURGED (GAL.)	2.50	6.00		6.50	7.00
MP ELEV. (FT. MSL)	676.92	676.11	680.19	675.38	674.92
GW ELEV. (FT. MSL)	667.27	668.05		667.76	667.30
SAMPLING DEVICE	Disposable Bailer	Disposable Bailer		Disposable Bailer	Disposable Bailer
TEMPERATURE (°C)	13.8	13.8		14.1	12.6
CONDUCTIVITY (µS/cm)					
(mS/cm)	1.396	2.050		1.934	0.771
pH	6.43	6.78		6.85	7.05
DISSOLVED OXYGEN (ppm)					
REDOX (mV)	32.2	12.7		8.6	-3.9
COLOR	Colorless	Colorless		Colorless	Light Brown
ODOR	None Noticed	None Noticed		None Noticed	None Noticed
CLARITY	Clear	Clear		Clear	Slightly Cloudy
SAMPLING PARAMETERS:	NO. OF CONTAINERS & CONTAINER TYPE - VOA, PLASTIC, AMB. BTL. PRESERVATIVE TYPE - FILTERED OR UNFILTERED				
Phenols	1-500 Ml amber, H2SO4, ice	1-500 Ml amber, H2SO4, ice		1-500 Ml amber, H2SO4, ice	1-500 Ml amber, H2SO4, ice
TOC	250 ml plastic, H2SO4, ice	250 ml plastic, H2SO4, ice		250 ml plastic, H2SO4, ice	250 ml plastic, H2SO4, ice
Ammonia as N	1-ltr plastic, H2SO4, ice	1-ltr plastic, H2SO4, ice		1-ltr plastic, H2SO4, ice	1-ltr plastic, H2SO4, ice
Fe, Mn, Pb	1 500 ml plastic, HNO3, field filtered, ice	1 500 ml plastic, HNO3, field filtered, ice		1 500 ml plastic, HNO3, field filtered, ice	1 500 ml plastic, HNO3, field filtered, ice
Chloride, PH, TDS, Sulfate	1 ltr plastic & 1-125 ml plastic, ice	1 ltr plastic & 1-125 ml plastic, ice		1 ltr plastic & 1-125 ml plastic, ice	1 ltr plastic & 1-125 ml plastic, ice
SAMPLED BY:	EGD	EGD	EGD	EGD	EGD
REMARKS :	Poor recharge.	Fair recharge.	Well damaged during capping work on landfill. Will need to be replaced.	Fair recharge.	Fair recharge.

GRAEF ANHALT SCHLOEMER
and Associates Inc.

FIELD WATER QUALITY SAMPLING AND ANALYSIS LOG

PROJECT:	Great Lakes Landfill
PROJECT NO.:	20050233
LOCATION:	Great Lakes Naval Base
LABORATORY:	Test America
DATE SENT:	5/30/2006

INSTRUMENT IDENTIFICATION:

TEMPERATURE:	KIT #1
CONDUCTIVITY:	KIT #1
pH:	KIT #1
PUMP:	NA

SAMPLE LOCATION	MW-F				
TYPE	Monitoring well				
DATE/TIME	5/26/2006 0:00				
WELL DEPTH (FT.)	17.10		0.00		
DEPTH TO GW (FT.)					
WATER COLUMN (FT.)					
WELL VOLUME (GAL)					
CALC. PURGE VOL. (GAL)					
ACT. VOL. PURGED (GAL.)					
MP ELEV. (FT. MSL)	681.74				
GW ELEV. (FT. MSL)	681.74	0.00	0.00	0.00	0.00
SAMPLING DEVICE					
TEMPERATURE (°C)					
CONDUCTIVITY (µS/cm)					
(mS/cm)					
pH					
DISSOLVED OXYGEN (ppm)					
REDOX (mV)					
COLOR					
ODOR					
CLARITY					
SAMPLING PARAMETERS :	NO. OF CONTAINERS & CONTAINER TYPE - VOA, PLASTIC, AMB. BTL. PRESERVATIVE TYPE - FILTERED OR UNFILTERED				
Ammonia					
Chloride/ Sulfate/ TDS/ PH					
TOC					
Iron / Manganese / Lead					
Phenols					
SAMPLED BY:	EGD				

REMARKS : Well damaged during construction. Bent cant get a bailer down it. Well could be repaired.

Sampling Date: 5/26/2006

Well	A	B	C	D	E	F
Well Top	96.01	95.2	99.28	94.47	94.01	100.83
Ground Surface	93.69	92.31	96.47	91.44	91.12	97.58
Well Depth	14.7	17	17.2	17.9	17.7	17.1
Stickup	2.32	2.89	2.81	3.03	2.89	3.25
Depth to Water	**9.65**	**8.06**	**NA**	**7.62**	**7.08**	**NA**
Well Elevation	676.92	676.11	680.19	675.38	674.92	681.74
Ground Water Elevation	**667.27**	**668.05**	**#VALUE!**	**667.76**	**667.84**	**#VALUE!**
Bottom Elevation	**662.22**	**659.11**	**662.99**	**657.48**	**657.22**	**664.64**
Temperature (Degrees C)	**13.8**	**13.8**	**NA**	**14.1**	**12.6**	**NA**
Conductivity (mS/cm)	**1.396**	**2.05**	**NA**	**1.934**	**0.771**	**NA**
Depth To Water (bgs)	**7.33**	**5.17**	**#VALUE!**	**4.59**	**4.19**	**#VALUE!**