

FIELD REPORT

**SAMPLING OF GROUNDWATER
MONITORING WELLS
BUFFALO BUSINESS PARK
BUFFALO, NEW YORK**

MAY 2008

PREPARED FOR:

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PREPARED BY:

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1.0 INTRODUCTION

This report describes the sampling of three (3) groundwater monitoring wells at the Buffalo Business Park, located in Buffalo, New York. Sampling was performed on May 1, 2008 by Environmental Sampling & Services, Inc. (ES&S) personnel. Samples were collected for volatiles only. A round of water levels were also measured and included from all of the site wells on May 1, 2008 and May 22, 2008.

2.0 METHODOLOGIES

2.1 Water Level Measurements

Static water levels of all three (3) groundwater wells were measured from the top of the well casing/riser, with a weighted electronic water level indicator (QED). Well bottoms were sounded with a weighted tape measure. All measurements were recorded to the nearest hundredth of a foot (0.01 feet). The length of the measuring device, which contacted the water, was cleaned between wells with liquinox, deionized water rinse and paper towel wipe. The data for the wells sampled is presented on the Field Observation Forms.

2.2 Well Evacuation

Prior to evacuation, the volume of standing water was calculated by subtracting the depth to groundwater from the bottom of the well depth and multiplying that number by a constant for the corresponding size well. $V=H (.16)$ – 2 inch well, $V=H (.36)$ – 3 inch well, $V=H (.65)$ – 4 inch well, where H is the height of the water column and .16, .36, and .65 are volumetric constants.

Prior to sampling, three (3) times the standing water volume was purged from each well which exhibited a moderate to high recharge. Wells, which exhibited a low recharge rate, were evacuated to dryness.

The wells were evacuated using non-dedicated pumps. Data pertaining to each evacuation is presented on the Field Observation Forms.

3.0 SAMPLING

3.1 Monitoring Wells

After well purging, a second depth to water level measurement was taken at each well to insure there was sufficient recharge.

Wells were sampled using the dedicated PVC bailers. When using the dedicated PVC bailers for sampling, the bailer was slowly lowered into the water volume, to minimize agitation and devolatilization. Sample containers were then filled directly from the bailer.

An additional sample was collected from each well in order to facilitate the measurement of field parameters.

4.0 FIELD MEASUREMENT

On site field measurements include pH, specific conductivity, temperature, eH, and turbidity. This data is presented on the Field Observation Forms.

All instruments, which contacted groundwater and surface water, were cleaned after each measurement by rinsing with deionized water and wiping dry with paper towels.

5.0 EQUIPMENT CALIBRATION

Prior to mobilization, all field equipment and instrumentation were checked for condition. In field calibrations were done before field measurements were facilitated. A calibration check was performed at the start of the day and a recalibration of the field instruments was performed if necessary.

- pH / eH meters were two-point calibrated with 7.00 S.U. and 10.00 S.U. buffer solutions.
- Conductivity meters were three-point calibrated with 180, 1000 and 18000 umhos/cm buffer solutions.
- Turbidity meters were two-point calibrated with 1.0 NTU and 5.0 NTU standards.

6.0 SAMPLE CONTAINER PREPARATION

All containers used in the collection of samples for this project were provided new and clean from Test America Labs, Inc. These bottles were stored in a clean environment at ES&S prior to their use.

7.0 QUALITY ASSURANCE / QUALITY CONTROL

7.1 Field Duplicate

A field duplicate was collected at a frequency of one (1) per sampling event. The field duplicate consisted of a set of appropriate parameters and was obtained at the same time a well.

7.2 Trip Blank

Trip blanks were collected at a frequency of one (1) per sampling event. The trip blank was analyzed for volatiles only. The sample containers were filled at Test America Labs with deionized water and transported to the site, stored with field-collected samples, and submitted to Test America Labs for analysis.

8.0 SAMPLE CONTROL AND CHAIN OF CUSTODY

Sample containers were labeled with the following information:

- Project Number
- Sample Location
- Initials of Individual Collecting Samples
- Date / Time

A chain of custody manifest was initiated at the time of sample collection and accompanied the samples through delivery to Test America Labs in Amherst, New York.

BUFFALO BUS. PARK WATER LEVELS**MAY 1, 2008**

WELL NUMBER	RISER ELEVATION	DEPTH TO WATER	WATER LEVEL ELEVATION
MW-1 BR	624.44	5.70	618.74
MW-2 BR	625.04	5.76	619.28
MW-3 BR	623.99	7.20	616.79
MW-4 BR	623.74	6.65	617.09
MW-5 BR	622.42	4.92	617.50
MW-6 BR	623.57	10.45	613.12
MW-7 BR	623.34	6.20	617.14
MW-8 BR	625.87	7.08	618.79

BUFFALO BUS. PARK WATER LEVELS**MAY 22, 2008**

WELL NUMBER	RISER ELEVATION	DEPTH TO WATER	WATER LEVEL ELEVATION
MW-1 BR	624.44	5.89	618.55
MW-2 BR	625.04	5.90	619.14
MW-3 BR	623.99	6.28	617.71
MW-4 BR	623.74	5.95	617.79
MW-5 BR	622.42	4.99	617.43
MW-6 BR	623.57	10.45	613.12
MW-7 BR	623.34	5.81	617.53
MW-8 BR	625.87	7.26	618.61

FIELD INFORMATION LOG

SITE NAME: BUFFALO BUSINESS PARK

POINT ID: MW-5 BR

LOCATION: BUFFALO, NEW YORK

FIELD REPRESENTATIVE: E S & S - R. CHIODO

SAMPLE MATRIX: GROUNDWATER

LAB SAMPLE / PROJECT #: NA

EVACUATION INFORMATION

INITIAL WATER LEVEL (FEET) 4.92

DEPTH TO BOTTOM (FEET) 26.70

ELEVATION, MEAS.PT.(MSL): 622.42

ELEVATION, GW (MSL): 617.50

DATE 5 - 1 - 08

TIME: START/FINISH 9:06 / 9:17

METHOD OF EVACUATION:

() PVC BAILER () WELL WIZARD () OTHER-12V PUMP
 () S.S. BAILER (X) GRUNDFOS PUMP

EVACUATION EQUIPMENT DEDICATED:

() YES (X) NO

WELL RISER DIAMETER (IN.): (X) 2 () 3 () 4 () 6 () OTHER _____

ONE (1) RISER VOLUME (GAL) 3.48

WAS WELL PURGED TO DRYNESS () YES (X) NO

TOTAL VOLUME EVACUATED (GAL) 11.00

WATER LEVEL AFTER PURGE (FT.) 15.35

TURBIDITY OF PURGINGS: START CLEAR

FINISH CLEAR

EVACUATION STABILIZATION DATA

TIME	PURGE RATE (gpm/htz)	CUMULATIVE VOLUME	TEMP. (C)	pH (Std.Units)	SPECIFIC CONDUCT. (umhos/cm)	TURBIDITY (NTU)	OTHER [eh (mV)]

SAMPLING INFORMATION

DATE / TIME 5 - 1 - 08 / 11:30

WATER LEVEL PRIOR TO SAMLING (FT.) 5.77

METHOD OF SAMPLING:

(X) PVC BAILER () WELL WIZARD () OTHER
 () S.S. BAILER () GRUNDFOS PUMP

SAMPLING EQUIPMENT DEDICATED:

(X) YES
 () NO

SAMPLING FIELD MEASUREMENT DATA

TIME	pH (Std.Units)	SPEC. CONDUCT. (umhos/cm)	TEMP. (C)	TURBIDITY (NTU)	eH (mV)	DISS. OXY. (PPM)	OTHER ()
11:32	7.56	1312	12.0	13.70	-22.4	NA	NA

GENERAL INFORMATION

WEATHER CONDITIONS AT TIME OF SAMPLING: SUNNY, 60 F

SAMPLE CHARACTERISTICS: CLEAR

COMMENTS: VOA ONLY

SAMPLE COLLECTION NUMBER 1

FIELD INFORMATION LOG

SITE NAME: BUFFALO BUSINESS PARK

POINT ID: MW-3 BR

LOCATION: BUFFALO, NEW YORK

FIELD REPRESENTATIVE: E S & S - R.CHiodo

SAMPLE MATRIX: GROUNDWATER

LAB SAMPLE / PROJECT #: NA

EVACUATION INFORMATION

INITIAL WATER LEVEL (FEET) 7.20

DEPTH TO BOTTOM (FEET) 28.60

ELEVATION, MEAS.PT.(MSL): 623.99

ELEVATION, GW (MSL): 616.79

DATE 5 - 1 - 08

TIME: START/FINISH 9:36 / 10:00

METHOD OF EVACUATION:

() PVC BAILER () WELL WIZARD () OTHER-12V PUMP
 () S.S. BAILER (X) GRUNDFOS PUMP

EVACUATION EQUIPMENT DEDICATED:

() YES (X) NO

WELL RISER DIAMETER (IN.): () 2 (X) 3 () 4 () 6 () OTHER _____

ONE (1) RISER VOLUME (GAL) 7.70

WAS WELL PURGED TO DRYNESS () YES (X) NO

TOTAL VOLUME EVACUATED (GAL) 24.00

WATER LEVEL AFTER PURGE (FT.) 11.95

TURBIDITY OF PURGINGS: START TURBID - BLACK FINISH CLEAR-BLACK TINT

EVACUATION STABILIZATION DATA

TIME	PURGE RATE (gpm/htz)	CUMULATIVE VOLUME	TEMP. (C)	pH (Std.Units)	SPECIFIC CONDUCT. (umhos/cm)	TURBIDITY (NTU)	OTHER [eh (mV)]

SAMPLING INFORMATION

DATE / TIME 5 - 1 - 08 / 11:45

WATER LEVEL PRIOR TO SAMLING (FT.) 7.71

METHOD OF SAMPLING:

(X) PVC BAILER () WELL WIZARD () OTHER
 () S.S. BAILER () GRUNDFOS PUMP

SAMPLING EQUIPMENT DEDICATED:

(X) YES
 () NO

SAMPLING FIELD MEASUREMENT DATA

TIME	pH (Std.Units)	SPEC. CONDUCT. (umhos/cm)	TEMP. (C)	TURBIDITY (NTU)	eH (mV)	DISS. OXY. (PPM)	OTHER ()
11:47	7.65	1109	11.8	13.00	-26.8	NA	NA

GENERAL INFORMATION

WEATHER CONDITIONS AT TIME OF SAMPLING: SUNNY, 60 F

SAMPLE CHARACTERISTICS: CLEAR - BLACK TINT

COMMENTS: VOA ONLY

SAMPLE COLLECTION NUMBER 2

FIELD INFORMATION LOG

SITE NAME: BUFFALO BUSINESS PARK POINT ID: MW-4 BR

LOCATION: BUFFALO, NEW YORK FIELD REPRESENTATIVE: E S & S - R.CHIDO

SAMPLE MATRIX: GROUNDWATER LAB SAMPLE / PROJECT #: NA

EVACUATION INFORMATION

INITIAL WATER LEVEL (FEET) 6.65 DEPTH TO BOTTOM (FEET) 28.70

ELEVATION, MEAS.PT.(MSL): 623.74 ELEVATION, GW (MSL): 614.09

DATE 5 - 1 - 08 TIME: START/FINISH 10:12 / 10:39

METHOD OF EVACUATION:

() PVC BAILER () WELL WIZARD () OTHER-12V PUMP
 () S.S. BAILER (X) GRUNDFOS PUMP

EVACUATION EQUIPMENT DEDICATED:

() YES (X) NO

WELL RISER DIAMETER (IN.): () 2 (X) 3 () 4 () 6 () OTHER _____

ONE (1) RISER VOLUME (GAL) 7.94 WAS WELL PURGED TO DRYNESS () YES (X) NO

TOTAL VOLUME EVACUATED (GAL) 24.00 WATER LEVEL AFTER PURGE (FT.) 18.30

TURBIDITY OF PURGINGS: START TURBID - BLACK FINISH CLEAR-BLACK TINT

EVACUATION STABILIZATION DATA

TIME	PURGE RATE (gpm/htz)	CUMULATIVE VOLUME	TEMP. (C)	pH (Std.Units)	SPECIFIC CONDUCT. (umhos/cm)	TURBIDITY (NTU)	OTHER [eh (mV)]

SAMPLING INFORMATION

DATE / TIME 5 - 1 - 08 / 12:05 & 12:07 WATER LEVEL PRIOR TO SAMLING (FT.) 6.69

METHOD OF SAMPLING:

(X) PVC BAILER () WELL WIZARD () OTHER
 () S.S. BAILER () GRUNDFOS PUMP

SAMPLING EQUIPMENT DEDICATED:

(X) YES
 () NO

SAMPLING FIELD MEASUREMENT DATA

TIME	pH (Std.Units)	SPEC. CONDUCT. (umhos/cm)	TEMP. (C)	TURBIDITY (NTU)	eH (mV)	DISS. OXY. (PPM)	OTHER ()
12:09	7.57	1179	12.1	3.90	-22.6	NA	NA

GENERAL INFORMATION

WEATHER CONDITIONS AT TIME OF SAMPLING: SUNNY, 60 F

SAMPLE CHARACTERISTICS: CLEAR - BLACK TINT

COMMENTS: DUP TAKEN (#4 @ 12:07)

VOA ONLY

SAMPLE COLLECTION NUMBER 3 & 4

FIELD INFORMATION LOG

SITE NAME: BUFFALO BUSINESS PARK

POINT ID: TRIP BLANK

LOCATION: BUFFALO, NEW YORK

FIELD REPRESENTATIVE: E S & S - R. CHIODO

SAMPLE MATRIX: DEIONIZED WATER

LAB SAMPLE / PROJECT #: NA

EVACUATION INFORMATION

INITIAL WATER LEVEL (FEET) _____

DEPTH TO BOTTOM (FEET) _____

ELEVATION, MEAS.PT.(MSL): _____

ELEVATION, GW (MSL): _____

DATE _____

TIME: START/FINISH _____ / _____

METHOD OF EVACUATION:

() PVC BAILER () S.S. BAILER () GRUNDFOS PUMP
 () S.S. BAILER () WELL WIZARD () OTHER

EVACUATION EQUIPMENT DEDICATED:

() YES () NO

WELL RISER DIAMETER (IN.): () 2 () 3 () 4 () 6 () OTHER _____

ONE (1) RISER VOLUME (GAL) _____

WAS WELL PURGED TO DRYNESS () YES () NO

TOTAL VOLUME EVACUATED (GAL) _____

WATER LEVEL AFTER PURGE (FT.) _____

TURBIDITY OF PURGINGS: START _____ FINISH _____

EVACUATION STABILIZATION DATA

TIME	PURGE RATE (gpm/htz)	CUMULATIVE VOLUME	TEMP. (C)	pH (Std.Units)	SPEC. CONDUCTANCE (umhos/cm)	TURBIDITY (NTU)	OTHER [eh (mV)]

SAMPLING INFORMATION

DATE / TIME 5 - 1 - 08 / 12:15

WATER LEVEL PRIOR TO SAMLING (FT.) NA

METHOD OF SAMPLING:

() PVC BAILER () S.S. BAILER () GRUNDFOS PUMP
 () S.S. BAILER () WELL WIZARD (X) OTHER

SAMPLING EQUIPMENT DEDICATED:

() YES
 (X) NO

SAMPLING FIELD MEASUREMENT DATA

TIME	pH (Std.Units)	SPEC. CONDUCT. (umhos/cm)	TEMP. (C)	TURBIDITY (NTU)	eH (mV)	DISS. OXY. (PPM)	OTHER ()
NA	NA	NA	NA	NA	NA	NA	NA

GENERAL INFORMATION

WEATHER CONDITIONS AT TIME OF SAMPLING: SUNNY, 60 F

SAMPLE CHARACTERISTICS: CLEAR

COMMENTS: VOA ONLY

SAMPLE COLLECTION NUMBER 5