932001

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28 January 2005

Mr. Michael Resh
Manager of Environmental Remediation
BOC Gases
575 Mountain Avenue
Murray Hill, New Jersey 07974

RE: Bi-Annual 2004 Monitoring Event Letter Report, Site No. 932001, Airco Properties Inc., Airco Parcel, Niagara Falls, New York
EA Project No. 12040.87

Dear Mr. Resh:

EA Engineering, P.C. and its affiliate EA Science and Technology are pleased to provide this Bi-Annual 2004 Monitoring Event Letter Report. During December 2000, the post-closure monitoring and facility maintenance program was initiated at the Airco Parcel located in Niagara Falls, New York. Post-closure monitoring and facility maintenance is required by New York State Solid Waste Management Facilities Regulations (6 NYCRR Part 360-2.15[k][4]) and stipulated in Order on Consent No. B9-0470-94-12. The purpose of this Monitoring Event Letter Report is to summarize the analytical results of the second bi-annual 2004 groundwater monitoring event completed at this site in October 2004, and to summarize operations and maintenance activities completed from August through December 2004.

OBJECTIVES

In accordance with the Revision 1 Final Post-Closure Monitoring and Facility Maintenance Plan (EA 2004)[1], environmental monitoring points will be maintained and sampled during the post-closure monitoring period. This includes collection of groundwater, surface water, and leachate samples. The Post-Closure Monitoring and Facility Maintenance Plan documents sampling locations and sampling parameters and methods, in addition to other required maintenance activities, such as landfill cap inspections and the operations and maintenance plan for the groundwater collection and treatment system (GCTS). Following the first 5 years of post-closure monitoring, the original Revised Final Post-Closure Monitoring and Facility Maintenance Plan (EA 2001a)[2] plan was re-evaluated based on the data collected at the site so that the monitoring plan will be focused to address site-specific issues that may be identified.

In accordance with the updated Post-Closure Monitoring and Facility Maintenance Program, the following activities must be completed:

- Environmental monitoring points must be maintained and sampled during the post-closure period. Bi-annual summary reports must be submitted to the New York State Department of Environmental Conservation (NYSDEC) Division of Solid and Hazardous Materials, Region 9; the State of New York Department of Health in Albany, New York; the BOC Group; and the document repository located at the Town of Niagara Town's Clerk's Office.

1. EA Engineering, P.C. and its Affiliate EA Science and Technology. 2004. Revision 1, Post-Closure Monitoring and Facility Maintenance Plan for the Airco Parcel, Niagara Falls, New York. December.
2. EA Engineering, P.C. and its Affiliate EA Science and Technology. 2001a. Interim Remedial Measure Report Documenting Closure of the Witmer Road Landfill, Niagara Falls, New York. Appendix A – Revised Final Post-Closure Monitoring and Facility Maintenance Plan. January.

- Routine inspections conducted of sediment ponds and the engineered wetlands to assess the presence of mosquito larvae.

- Drainage structures and ditches must be maintained to prevent ponding of water and erosion of the landfill soil cap.

- Soil cover integrity, slopes, cover vegetation, drainage structures, and the perimeter road must be maintained during the post-closure monitoring and maintenance period.

- A vegetative cover must be maintained on all exposed final cover material, and adequate measures must be taken to ensure the integrity of the final vegetated cover, topsoil layer, and underlying barrier protection layer.

- The GCTS must be operated and maintained to effectively mitigate the discharge of groundwater to surface water in the southwest corner of the Airco Parcel.

- Records must be maintained of all sampling and analytical results.

As noted above, the results of the bi-annual sampling events will be summarized in a letter report detailing the findings of the environmental sampling. Monitoring event letter reports will be limited to documenting the results of each sampling round. This letter report summarizes the findings of the second bi-annual post-closure monitoring event completed at this site, along with a summary of operation and maintenance activities performed at the this site from August through December 2004.

BACKGROUND

The Airco Parcel is part of the Vanadium Corporation of America site that is located in the Town of Niagara Falls, New York (Figure 1). The Vanadium site is approximately 150 acres. This bi-annual sampling event focuses on the 25-acre Airco Parcel operated by the BOC Group. The site contains waste material from the operation of onsite and nearby production facilities.

An Immediate Investigative Work Assignment was conducted by NYSDEC for a portion of the 150-acre parcel in August 1997. Approximately 70 acres from the Niagara Mohawk Power Corporation and New York Power Authority parcel were investigated. During the investigation, NYSDEC determined that the site had been used by Vanadium Corporation of America (the owners of the site from 1924 to 1964) to dispose of wood, brick, ash, lime slag, ferrochromium silicon slag, and ferrochromium silicon dust. According to the Immediate Investigative Work Assignment, much of the surface material consisted of fill, including fly ash, dust, slag, and cinder materials.

Analysis of site groundwater during the Immediate Investigative Work Assignment indicated that surface water and groundwater standards were exceeded for hexavalent chromium and pH. Based on the Immediate Investigative Work Assignment and other investigations, the facility has been listed as a Class 2 Hazardous Waste Site in the New York State Registry of Inactive Hazardous Waste Sites (Site No. 932001). A Class 2 listing indicates a significant threat to public health and the environment, and requires remedial action.

The Airco site remedial measures were completed as a capped landfill in 2000. A complete description of the history of the site, and the construction details of the landfill capping system, can be found in

the Interim Remedial Measure Report (EA 2001b)[3]. During construction of the capping system, a relief pipe system was installed to allow perched water to exit from under the cap without causing slope instability. Flow monitoring and quarterly sampling were initiated as part of post-closure operations and facility maintenance. The data collected since December 2000 indicated that the leachate was actually shallow groundwater discharging to surface water. The data also indicated that the discharge of groundwater at the site was seasonal. The data further indicated that elevated hexavalent chromium (Cr^{6+}) concentrations and pH in groundwater, upon mixing with surface water, remained in excess of the ambient water quality criteria.

The GCTS was designed to implement additional remedial actions which have been deemed necessary to meet the goals of the interim remedial measures program. The main portion of the GCTS is located on the northwest corner of the site and contains the main control panel, carbon dioxide storage tank, carbon dioxide aeration system, two sediment ponds, duplex pump house, zero valence iron reaction tanks, manhole collection sump, engineered wetland, and an effluent pump station. At the southwest corner of the site, there is an influent wetwell pump station. The GCTS located at the site is presented in Figure 2.

MONITORING EVENT FIELD ACTIVITIES

Monitoring Well Gauging

The site monitoring wells (MW-1B through MW-8B) were gauged prior to sampling on 12-13 October 2004. The depth to water ranged from 4.08 ft at MW-6B to 14.48 ft at MW-2B. Gauging data are summarized in the table below:

Monitoring Well	Depth to Water (ft btoc)	Well Elevation (ft AMSL)	Water Elevation (ft AMSL)
MW-1B	12.95	617.77	604.82
MW-2B	14.48	615.88	601.40
MW-3B	8.92	611.22	602.30
MW-4B	11.48	606.68	595.20
MW-5B	8.40	605.48	597.08
MW-6B	4.08	603.47	599.39
MW-7B	9.72	609.48	599.76
MW-8B	8.28	611.62	603.34

NOTE: btoc = Below top of casing.
AMSL = Above mean sea level.

An interpretation of the water table surface is illustrated on Figure 3.

Groundwater Sampling Procedures

Monitoring wells were sampled on 12-13 October 2004. Eight groundwater samples were collected from the site monitoring wells. Monitoring wells MW-4B, MW-5B, and MW-7B were purged using dedicated bailers due to slow recharge and limited well volume. These wells were bailed dry and allowed to recharge prior to sample collection. Monitoring wells MW-1B, MW-2B, MW-3B, MW-6B, and MW-8B had adequate recharge rates; consequently, four well volumes were removed and water quality readings allowed to stabilize prior to sample collection. One surface water sample was also collected southwest of monitoring well MW-6B. Samples were submitted to Life Science Laboratories, Inc., of East Syracuse,

3. EA Engineering, P.C. and its Affiliate EA Science and Technology. 2001b. Interim Remedial Measure Report Documenting Closure of the Witmer Road Landfill, Niagara Falls, New York. January.

New York, for analysis of phenolics by U.S. Environmental Protection Agency (EPA) Method 420.2, sulfate by EPA Method 375.3, ammonia (expressed as nitrogen) by EPA Method 350.2, and Target Analyte List metals by EPA Series 6010/6020, including hexavalent chromium.

Groundwater sampling results were compared to NYSDEC Ambient Water Quality Standards (AWQS) (NYSDEC 1999)[4] and guidance values for Class GA waters. Class GA groundwater is used as a source of drinking water. Leachate samples were compared to NYSDEC AWQS for Class D surface waters. Class D waters are used for fishing but are not conducive to fish propagation. If no Class D standards were applicable for a particular compound, analytical results were compared to the more stringent Class C standards. Class C waters are suitable for fishing and fish propagation. Analytical results are summarized on the table provided in Attachment A. Copies of the field notebook, including the results for well gauging, purging, and sampling, are provided in Attachment B. Laboratory chain-of-custody records are provided in Attachment C. Laboratory Form I analytical results are included in Attachment D.

ANALYTICAL RESULTS

Based on the analytical results collected during the fourth quarter 2000 and first quarter 2001, NYSDEC approved a reduction in the sampling requirements. As per a letter to NYSDEC dated 5 June 2000, samples were analyzed for water quality parameters (ammonia, phenolics, and sulfate) and total (unfiltered) metals.

Summary tables listing analytical results compared to applicable NYSDEC AWQS are included in Attachment A, and a tag map is provided as Figure 4. Notable results of chemical analyses are as follows.

Metals

Unfiltered metals samples were collected from eight of the site monitoring wells. Notable results included the following:

- Cadmium, chromium, hexavalent chromium, iron, lead, magnesium, manganese, selenium, and sodium were detected in one or more of the groundwater samples at concentrations in excess of NYSDEC AWQS.

- Hexavalent chromium was detected in excess of the NYSDEC AWQS in MW-2B, MW-4B, and the surface water sample. Selenium was also detected in excess of the NYSDEC AWQS in MW-8B.

Water Quality Parameters

Water quality parameters, including pH, temperature, conductivity, dissolved oxygen, turbidity, and salinity, were collected in the field. In addition, water quality parameters, including ammonia (expressed as N), phenolics, and sulfate, were also analyzed by the laboratory. Notable results included the following:

4. New York State Department of Environmental Conservation. 1999. Water Quality Regulations – Surface Water and Groundwater Classifications and Standards New York State Codes, Rules and Regulations Title 6, Chapter X Parts 700-706.

- Sulfate was detected in excess of NYSDEC AWQS in the sample collected from monitoring well MW-8B.

- pH measurements exceeded the NYSDEC AWQS of 6.5-8.5 standard pH units in monitoring wells MW-2B (12.31-12.56), MW-3B (9.98-10.98), MW-5B (8.70-9.28), and MW-7B (8.94-10.32), as well as the surface water sample (12.70) (Attachment B).

LANDFILL INSPECTION

A landfill cap inspection was conducted on 13 October 2004. The Landfill Cap Inspection Checklist is provided in Attachment E. No deterioration, damage, or erosion to the landfill cap was noted during the engineering inspection. The access roads were in good order, and vegetation was observed growing in many areas of the road. A defoliant should be used to remove the vegetation in the roadways. Drainage swales are clear with the exception of the southwest swale where soil and vegetation covers the stone swale. The inspections suggest that the soil should be removed and new stone installed.

GCTS OPERATIONS AND MAINTENANCE MONITORING ACTIVITIES

The GCTS is part of the Airco Parcel located near Witmer Road in Niagara Falls, New York. The GCTS was designed to implement additional remedial actions which have been deemed necessary to meet the goals of the interim remedial measures program. The main portion of the GCTS is located on the northwest corner of the site and contains the main control panel, carbon dioxide storage tank, carbon dioxide aeration system, two sediment ponds, duplex pump house, zero valence iron reaction tanks, engineered wetland, and an effluent pump station. At the southwest corner of the site, there is an influent wetwell pump station. The GCTS located at the site is presented on Figure 2. The complete Operations and Maintenance Manual is presented as an appendix to the Post-Closure Monitoring and Facility Maintenance Plan (EA 2004).

System Operations and Maintenance

After completion of GCTS modifications and upgrades in July 2004, the GCTS began operating on 19 July 2004. System monitoring was conducted throughout the first 2 weeks of operations. The system operated on average at approximately 28 gpm during the period of 19-29 July 2004. The GCTS sampling occurred daily for the first 2 weeks of operation. Samples were collected at various locations to evaluate treatment system performance and compliance with discharge criteria. Samples were collected prior to (Sediment Pond A) and after treatment via the zero valence iron tank (Sediment Pond B), and after the engineered wetland (EFF7) during the first 2 weeks of GCTS operation. The samples were analyzed in the field for total chromium and hexavalent chromium using a HACH DR4000 spectrophotometer. The HACH DR4000 spectrophotometer is EPA approved for reporting water and wastewater analyses within a detection limit of 0.006 and 0.005 mg/L for hexavalent chromium, and 0.003 mg/L for total chromium. The engineered wetland discharge samples were analyzed in the field as well as separate samples taken for offsite laboratory analysis at Life Science Laboratories, East Syracuse, New York, for a full list of discharge criteria.

Field sampling results for total and hexavalent chromium are provided in Table 1, and results of the engineered wetland discharge samples are provided in Table 2. Hexavalent chromium removal rates were 99.9 percent and chromium removal rates were 99.7 percent during the 2-week monitoring period. Total suspended solids and iron analytical results were above NYSDEC discharge criteria throughout the monitoring period. The correlation between the two analyses indicates that the suspended solids were iron. Measures to reduce iron and total suspended solids in the effluent have been incorporated into the

system with the planting of the wetland in August 2004, as well as the addition of a regenerative blower in Sediment Pond B to reduce dissolved iron levels. The full set of laboratory analytical data for the GCTS discharge sampling are provided in Attachment F.

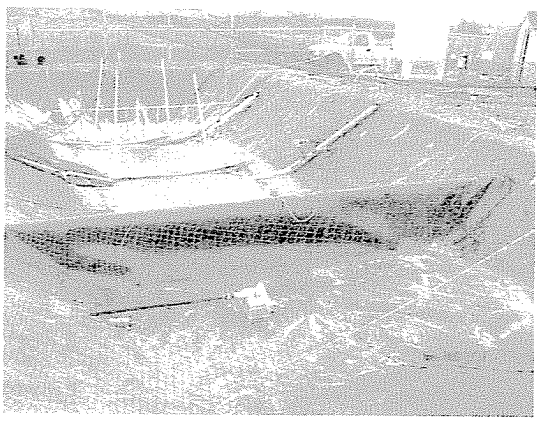
During the site visit on 5 August 2004, it was noted that the discharge rates from pump P4A had dropped significantly. EA technicians concluded that the 4-in. slotted screen bedded in the zero valence iron tanks had become fouled with calcium carbonate causing backpressure on the discharge from pump P4A. The 4-in. lines were uncovered and cut to reduce backpressure and permit the GCTS process collection water at the designed flow rate. In addition, a baffle system was placed in Sediment Pond A to increase the retention time of collection water to allow for an increase of settlement of the calcium carbonate precipitate generated during the pH reduction phase of the treatment process. The GCTS system was restarted on 24 August 2004.

On 10 September 2004, EA technicians noticed that the calcium carbonate precipitate began to carry over throughout the GCTS. The GCTS was shut down to evaluate alternatives for managing the excessive quantities of calcium carbonate being produced in Sediment Pond A. An EA wastewater engineer visited the site to provide design alternatives to reduce carryover of the precipitate. The GCTS was operated intermittently during September and October 2004 to continue to assess the GCTS conditions and provide further insight for design modifications. After determining current conditions, the appropriate modifications were designed for the GCTS. A letter dated 11 November 2004 was sent to NYSDEC to inform them of system modifications.

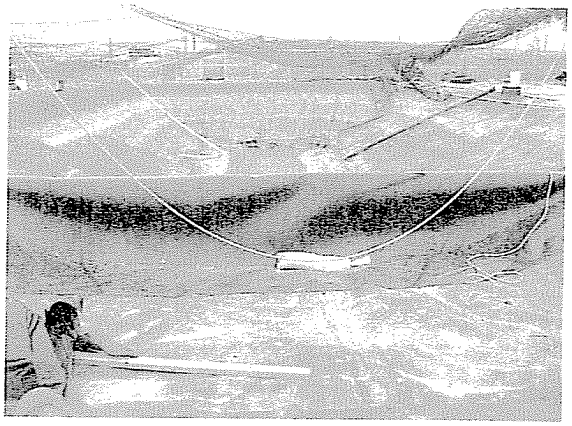
GCTS Modifications (November-December 2004)

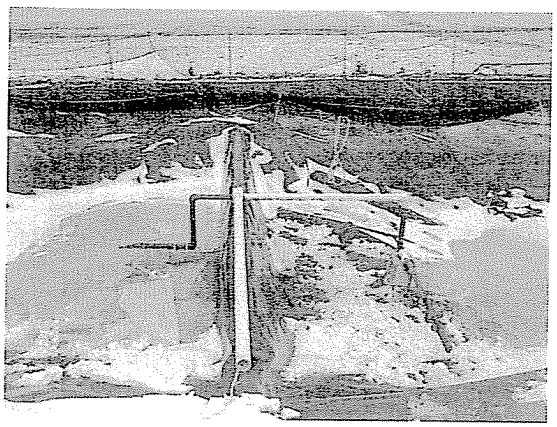
GCTS upgrades and modifications commenced on 19 November 2004. The flow/treatment process of the GCTS was not altered during the modification phase. The major system components that were modified were Sediment Pond A and Sediment Pond B. The following describes adjustments incorporated to manage increased quantities of calcium carbonate:

- ***Sediment Pond A***—A reinforced concrete weir was installed across the width of Sediment Pond A. The base of the concrete weir was constructed below the pond bottom at an elevation of 613.5 ft along the shallow end of the pond. The top elevation of the concrete is at 616.7 ft. Construction consisted of installing two reinforced jersey barriers. The barriers were covered with geotextile fabric and 40-mil low-density polyethylene geomembrane liner and welded, utilizing an extrusion welder, to bond the newly installed liner to the existing pond liner. The baffle system was kept in place to assist retention time.



- ***Sediment Pond B***—A reinforced concrete weir was installed across the width of Sediment Pond B. The based of the concrete weir was constructed below the pond bottom at an elevation of 613.5 ft) along the shallow end of the pond. The top elevation of the concrete is at 616.7 ft. Construction consisted of installing two reinforced jersey barriers. The barriers were covered with geotextile fabric and 40-mil low-density polyethylene geomembrane liner and welded, utilizing an extrusion welder, to bond the newly installed liner to the existing pond liner. The baffle system was kept in place to assist retention time.





- ***Regenerative Blower***—A blower system was installed in Sediment Pond B to aerate water and promote precipitation of dissolved phase iron.

The modifications and upgrades were completed during the period November-December 2004.

If you have any questions regarding the results of this Bi-Annual 2004 Monitoring Event Letter Report, please do not hesitate to contact Charles McLeod at (845) 565-8100, Ext. 1008.

Sincerely,

EA ENGINEERING, P.C.

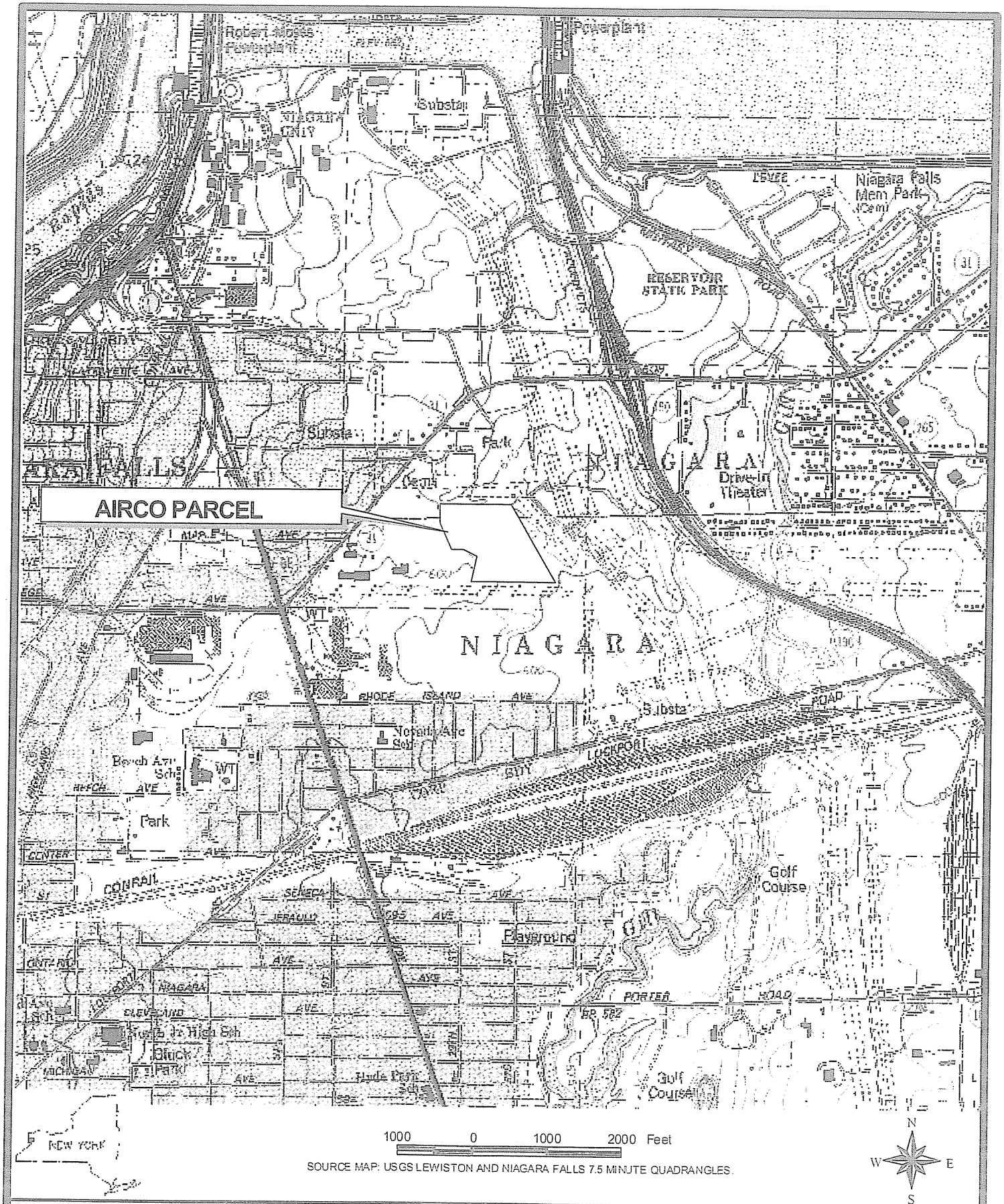
Charles E. McLeod, Jr., P.E.
Vice President

EA SCIENCE AND TECHNOLOGY

Scott Graham, CPG, P.G.
Project Geologist

CEM/cam
Attachments

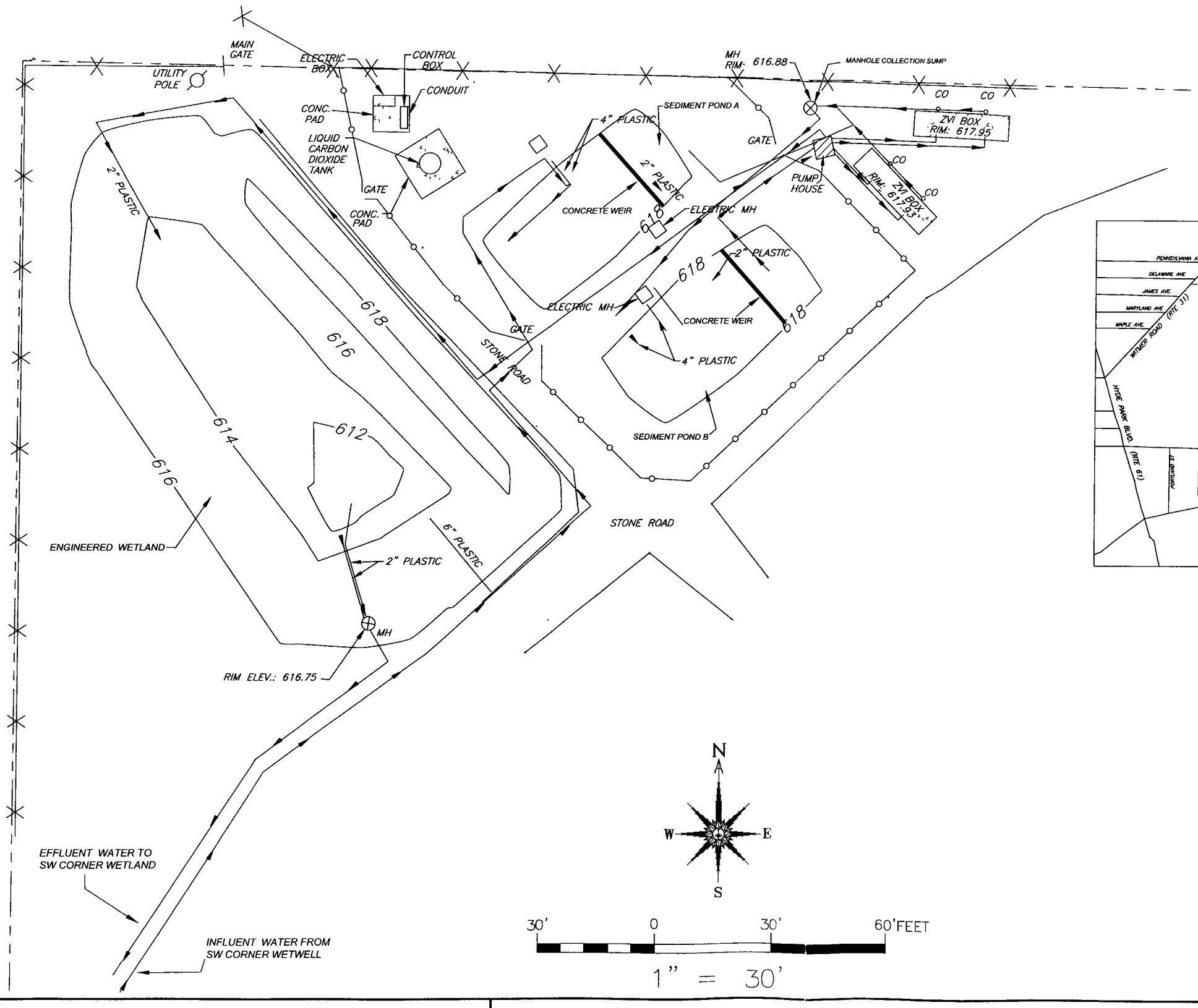
cc: M. Hinton (NYSDEC)
M. Van Valkenburg (NYSDOH)
Town of Niagara Falls (Town Clerk)

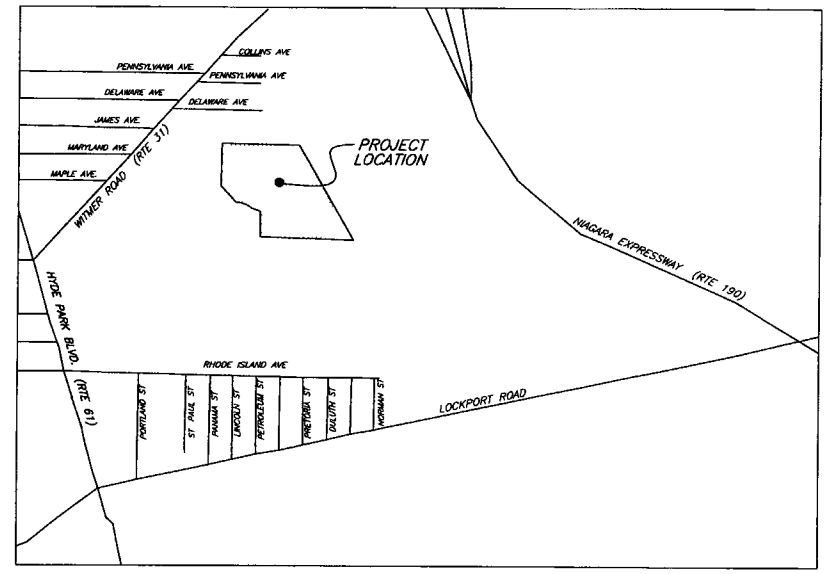


SOURCE MAP: USGS LEWISTON AND NIAGARA FALLS 7.5 MINUTE QUADRANGLES.

EA®	AIRCO PARCEL NIAGARA FALLS, NEW YORK	FIGURE 1 SITE LOCATION MAP

PROJECT MGR	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	DATE	PROJECT No	FILE No
CEM	RSC	RSC	SG	AS SHOWN	11 JAN 2005	12040.87	I:\BOC-NIAGARA\FINAL.APR





LOCATION MAP: NOT TO SCALE

LEGEND

CO = CLEANOUT
DIA. = DIAMETER
CONC. = CONCRETE
ELEV. = ELEVATION
MH = MANHOLE

= MAJOR CONTOUR LINE (FINAL CONDITIONS 2003)
= MINOR CONTOUR LINE (FINAL CONDITIONS 2003)
= MAJOR CONTOUR LINE (FINAL CONDITIONS 2000)
= MINOR CONTOUR LINE (FINAL CONDITIONS 2000)
= CHAIN LINK FENCE (EXISTING)
= CHAIN LINK FNC. (NEW)
= PROPERTY LINE (APPROXIMATE)
= COLLECTION WATER FLOW DIRECTION

GENERAL NOTES:

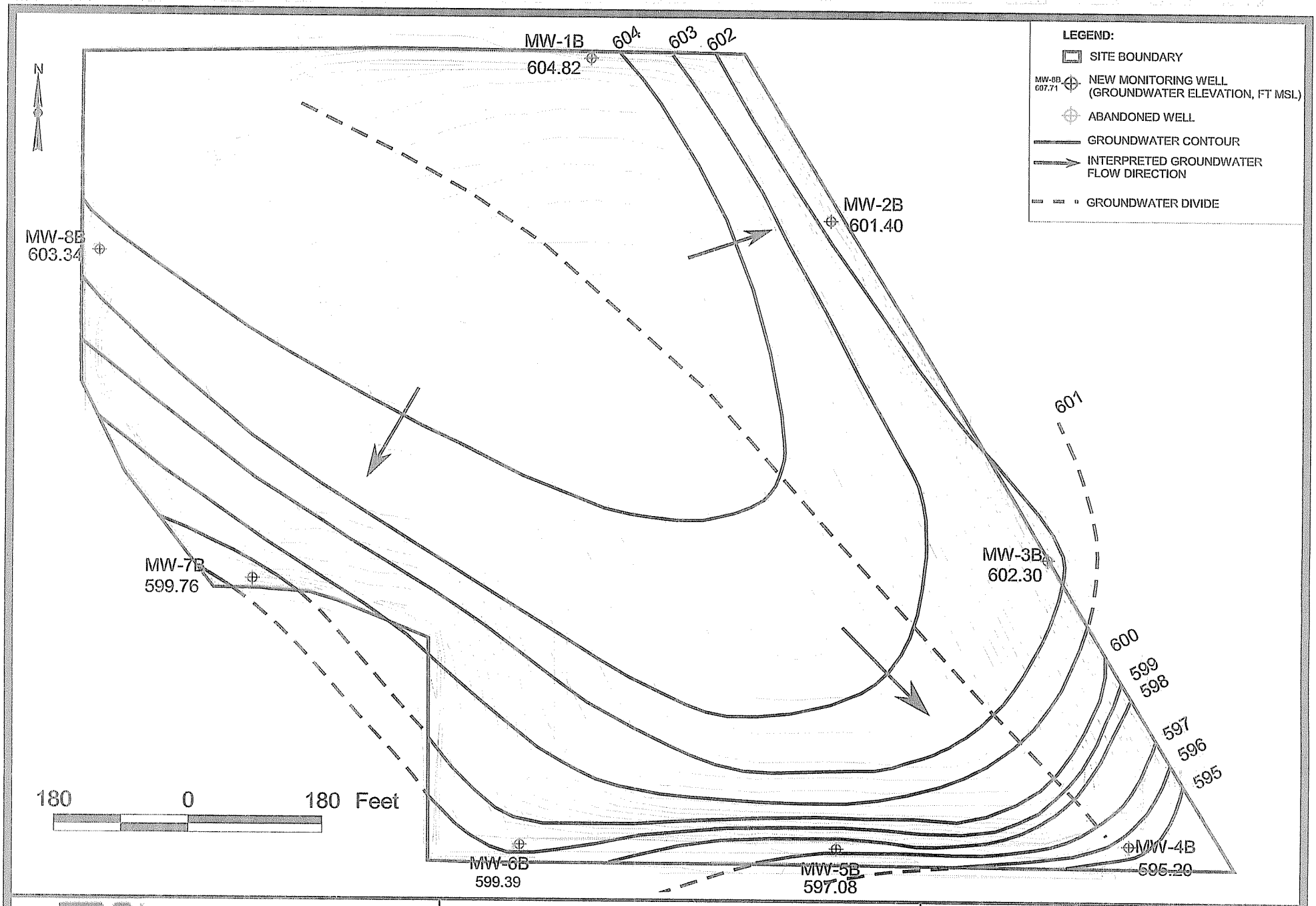
1.) HORIZONTAL DATUM: NEW YORK STATE PLANE COORDINATE SYSTEM NAD 1983, NEW YORK WEST ZONE
2.) VERTICAL DATUM: NGVD 1929
3.) VERTICAL AND HORIZONTAL DATUMS TIED INTO 1991 CITY OF NIAGARA FALLS GIS CONTROL PROJECT MONUMENTS SMC 20A AND SMC 45
4.) ALL UNITS MEASURED IN U.S. SURVEY FEET
5.) ALL DATA AND FEATURES PLOTTED IN GRAY IS FROM DATA DIGITIZED BY WENDEL DUCHSCHERER IN 2000.

EA ENGINEERING, P.C.
AND ITS AFFILIATE
EA SCIENCE AND TECHNOLOGY

FIGURE 2

GROUNDWATER COLLECTION AND TREATMENT SYSTEM
SITE LOCATION MAP
AIRCO PARCEL, NIAGARA FALLS, NEW YORK

DRAWN BY: RSC
CHECKED BY: CEM
DATE: 27 SEPTEMBER 2004
FILE PATH. SYR_FP/AIRCO PARCEL/O&M MANUAL



EA ENGINEERING P.C. AND ITS AFFLIATE EA SCIENCE AND TECHNOLOGY	AIRCO PARCEL NIAGARA FALLS, NEW YORK	FIGURE 3 INTERPRETED GROUNDWATER CONTOUR MAP OCTOBER 2004

PROJECT MGR	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	DATE	PROJECT No	FILE No
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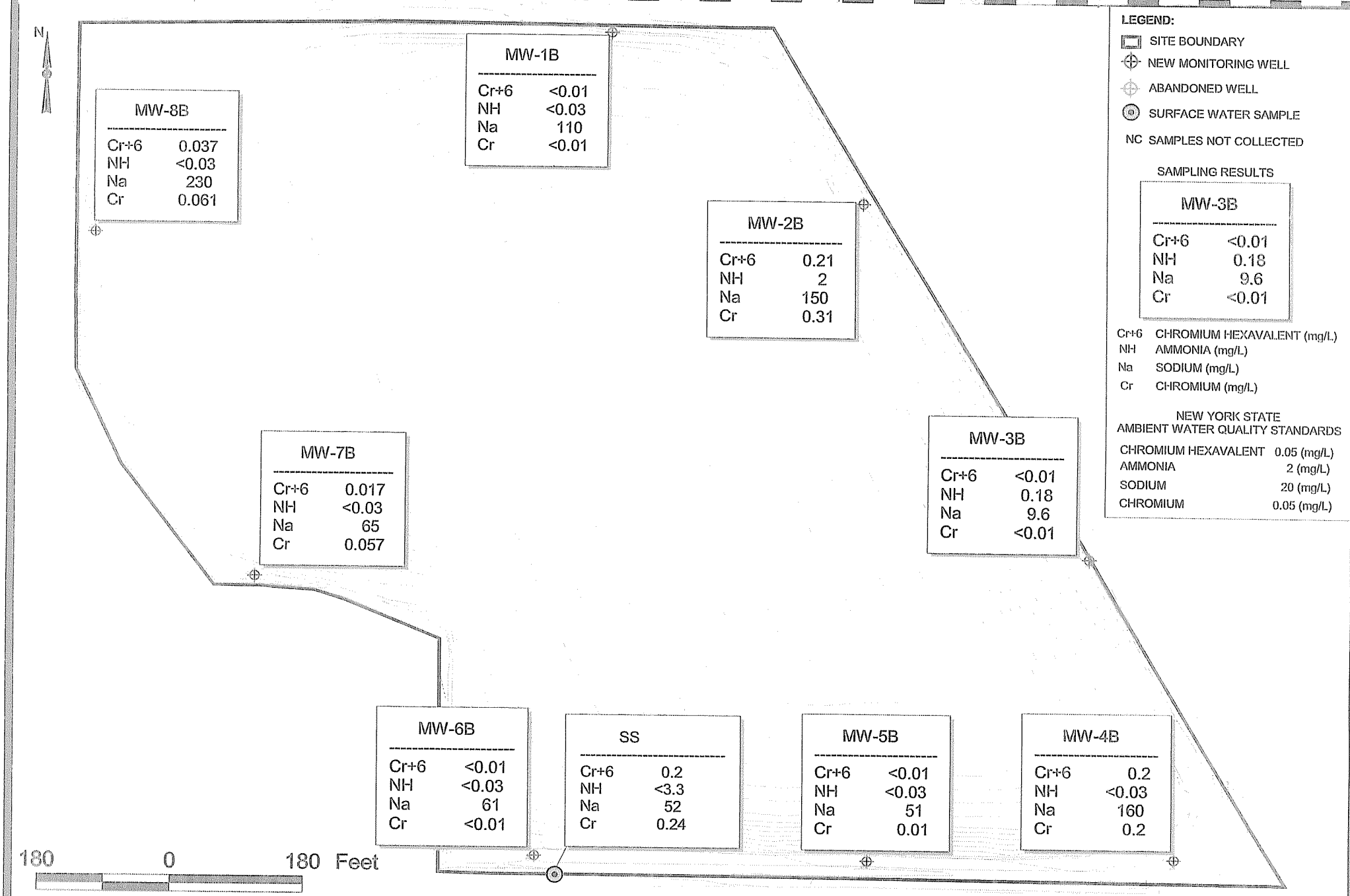

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AIRCO PARCEL
NIAGARA FALLS, NEW YORK

FIGURE 4
SAMPLE RESULTS TAG MAP
OCTOBER 2004

PROJECT MGR	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	DATE	PROJECT No	FILE No
CEM	RSC	RSC	SLG	AS SHOWN	12-13 OCTOBER 2004	12040.87.0004	I:\BOC-NIAGARA-GIS\FINAL.APR

TABLE 1 SUMMARY OF DAILY FIELD SAMPLING RESULTS
19-29 JULY 2004

Date	Sediment Pond A		Sediment Pond B		Wetland Discharge	
	Total Chromium	Hexavalent Chromium	Total Chromium	Hexavalent Chromium	Total Chromium	Hexavalent Chromium
19 JUL 04	174 µg/L	68 µg/L	NC	NC	NC	NC
20 JUL 04	180 µg/L	153 µg/L	0 µg/L	0 µg/L	NC	NC
21 JUL 04	293 µg/L	231 µg/L	0 µg/L	0 µg/L	0 µg/L	0 µg/L
22 JUL 04	273 µg/L	264 µg/L	0 µg/L	0 µg/L	3 µg/L	1 µg/L
23 JUL 04	271 µg/L	228 µg/L	1 µg/L	0 µg/L	2 µg/L	1 µg/L
26 JUL 04	234 µg/L	203 µg/L	1 µg/L	0 µg/L	0 µg/L	0 µg/L
27 JUL 04	218 µg/L	168 µg/L	0 µg/L	0 µg/L	0 µg/L	0 µg/L
28 JUL 04	224 µg/L	184 µg/L	2 µg/L	0 µg/L	0 µg/L	0 µg/L
29 JUL 04	216 µg/L	173 µg/L	1 µg/L	0 µg/L	0 µg/L	0 µg/L

NOTE: Field samples were analyzed using a HACH DR4000 Spectrophotometer, Methods 8023 (hexavalent chromium) and 8084 (total chromium).
NC = Samples not collected due to no wetland discharge.

TABLE 2 SUMMARY OF WEEKLY DISCHARGE SAMPLING 29 JULY AND 5 AUGUST 2004

Parameter	29 July 2004	5 August 2004	New York State Department of Environmental Conservation Discharge Criteria
pH	7.9	8.0	*6-8 NTU*
Total suspended solids	<4	**15**	*10 mg/L*
Ammonia as N	6.3	3.6	*9.2 mg/L*
Total Kjeldahl nitrogen	6.4	4.4	*Monitor*
Biochemical oxygen demand	<4	<4	*5.0 mg/L*
1,1-Dichloroethane	<1	<1	*5.0 µg/L*
Trichloroethane	<1	<1	*5.0 µg/L*
Nickel	<0.01	<0.01	*0.07 mg/L*
Copper	<0.01	<0.01	*0.0147 mg/L*
Barium	<0.2	<0.2	*2 mg/L*
Total chromium	<0.01	<0.01	*0.1 mg/L*
Hexavalent chromium	<0.01	<0.01	*0.011 mg/L*
Iron	**0.45**	**0.96**	*0.3 mg/L*
Selenium	<0.01	<0.01	*0.0046 mg/L*
Thallium	<0.01	<0.01	*0.004 mg/L*
Zinc	<0.01	<0.01	*0.115 mg/L*
Nitrate as N	<0.1	0.17	*Monitor*
Nitrite as N	<0.1	0.21	*Monitor*
Chemical oxygen demand	<2	11	*40 mg/L*
Total dissolved solids	460	450	*Monitor*

NOTE: Values in bold indicate an excess of discharge criteria.

Attachment A

Summary of Analytical Results of Groundwater and Surface Water Samples October 2004

ATTACHMENT A
SUMMARY OF ANALYTICAL RESULTS OF GROUNDWATER, AND SURFACE WATER SAMPLES
COLLECTED IN OCTOBER 2004,
AIRCO PARCEL, NIAGARA FALLS, NEW YORK

Ground Water

Baseline Metals by EPA Method 6010/6020 (mg/L)

Total (Unfiltered)

		MW-1B	MW-2B	MW-3B	MW-4B	MW-5B	MW-6B	MW-6B (Dup)	MW-7B	MW-8B
Compound/Element	**AWQS**									
Cadmium	0.005	(<0.01U)	(<0.01U)	(<0.01U)	**0.013**	(<0.01U)	(<0.01U)	(<0.01U)	(<0.01U)	(<0.01U)
Chromium	0.05	(<0.01U)	**0.31**	(<0.01U)	**0.2**	0.01	(<0.01U)	(<0.01U)	**0.057**	**0.061**
Chromium, Hexavalent	0.05	(<0.01U)	**0.21**	(<0.01U)	**0.2**	(<0.01U)	(<0.01U)	(<0.01U)	0.017	0.037
Iron	0.3	**0.93**	**0.45**	(<0.05U)	**3.4**	**2.1**	**0.46**	**0.43**	**1.8**	**0.6**
Lead	0.025	(<0.01U)	(<0.01U)	(<0.01U)	**0.037**	0.016	(<0.01U)	(<0.01U)	(<0.01U)	(<0.01U)
Magnesium	35*	**65**	(<1U)	1.5	35	**71**	**70**	**67**	11	**37**
Manganese	0.3	**0.81**	0.05	(<0.01U)	**0.52**	0.19	0.12	0.11	0.091	0.26
Selenium	0.01	(<0.01U)	(<0.01U)	(<0.01U)	(<0.01U)	(<0.01U)	(<0.01U)	(<0.01U)	(<0.01U)	**0.043**
Silicon	---	8.1	8	1.8	10	11	6.3	6	7.1	7.4
Sodium	20	**110**	**150**	9.6	**180**	**51**	**61**	**58**	**65**	**230**
Zinc	2*	0.53	0.037	0.011	0.16	0.15	0.023	0.019	0.033	0.058

Water Quality Parameters (mg/L)

Total (Unfiltered)

		MW-1B	MW-2B	MW-3B	MW-4B	MW-5B	MW-6B	MW-6B (Dup)	MW-7B	MW-8B
Compound/Element	**AWQS**									
Ammonia (expressed as N)	2	(<0.03U)	2	0.18	(<0.03U)	(<0.03U)	(<0.03U)	0.077	(<0.03U)	(<0.03U)
Sulfate	250	210	26	100	160	130	220	230	34	**280**

Surface Water

Baseline Metals by EPA Method 6010/6020 (mg/L)

Total (Unfiltered)

Compound/Element	AWQS	SS
Cadmium	---	(<0.01U)
Chromium	---	0.24
Chromium, Hexavalent	0.016	**0.2**
Iron	0.3	(<0.5U)
Lead	---	(<0.01U)
Magnesium	---	(<10U)
Manganese	---	(<0.01U)
Selenium	0.0046	(<0.01U)
Silicon	---	0.43
Sodium	---	52
Zinc	---	(<0.01U)

Water Quality Parameters (mg/L)

Total (Unfiltered)

Compound/Element	AWQS	SS
Ammonia (expressed as N)	---	(<3.3U)
Sulfate	---	9.9

QA/QC

Baseline Metals by EPA Method 6010/6020 (mg/L)

Total (Unfiltered)

		Rinse Blank	Source Water Blank
Compound/Element	**AWQS**		
Cadmium	---	(<0.01U)	(<0.01U)
Chromium	---	(<0.01U)	(<0.01U)
Chromium, Hexavalent	---	(<0.01U)	(<0.01U)
Iron	---	(<0.05U)	(<0.05U)
Lead	---	(<0.01U)	(<0.01U)
Magnesium	---	(<1U)	(<1U)
Manganese	---	0.016	0.017
Selenium	---	(<0.01U)	(<0.01U)
Silicon	---	0.034	0.037
Sodium	---	1.2	1.3
Zinc	---	(<0.01U)	(<0.01U)

Water Quality Parameters (mg/L)

Total (Unfiltered)

		Rinse Blank	Source Water Blank
Compound/Element	**AWQS**		
Ammonia (expressed as N)	---	(<0.03U)	(<0.03U)
Sulfate	---	1.6	1.8

TABLE NOTES

AWQS	=	New York State Ambient Water Quality Standards and Guidance Values from Water Quality Regulations, Title 6, Chapter X Parts 700-706 August 1999.
*	=	Indicates guidance value.
---	=	Indicates no standard or guidance value exists.
U	=	Not detected. Sample quantitation limits shown as (<__U).

Only those analytes detected in at least one of the samples is shown on this table.
Results shaded and in boldface indicate concentrations in excess of New York State Ambient Water Quality Standards or Guidance Values.

Analytical Methods for Water Quality Parameters

Ammonia (expressed as Nitrogen)	=	EPA 350.2
Phenolics	=	EPA 420.2
Sulfate	=	EPA 375.3

Attachment B

Groundwater Sampling
Purge Forms and Field Notes
October 2004

EA Engineering PC and its Affliate,
EA Science and Technology

GROUNDWATER SAMPLING
PURGE FORM

Well I.D.:	EA Personnel:	Client:
AP-MW1B	R.CASEY	BOC GASES
Location:	**Well Condition:**	**Weather:**
NIAGARA FALLS	LOCKED	CLEAR, MID 50s
Sounding Method:	**Gauge Date:**	**Measurement Ref:**
WLI	10/12/2004	TOC
Stick Up/Down (ft):	**Gauge Time:**	**Well Diameter (in):**
UP		4"

Purge Date:	10/12/2004	**Purge Time:**	1215
Purge Method:	2" SUB/LOW FLOW	**Field Technician:**	R.CASEY

Well Volume

A. Well Depth (ft):	**D. Well Volume (ft):**	**Depth/Height of Top of PVC:**
B. Depth to Water (ft): 12.95	**E. Well Volume (gal) C*D):**	**Pump Type:** GRUNDFOS REDI-FLO 2
C. Liquid Depth (ft) (A-B):	**F. Five Well Volumes (gal) (E3):**	**Pump Designation:**

Water Quality Parameters

Time (hrs)	DTW (ft btoc)	Volume (liters)	Rate (Lpm)	pH (pH units)	ORP (mV)	Temperature (oC)	Conductivity (uS/cm)	DO (ug/L)	Turbidity (ntu)
1226	12.94	0	0.25	6.72	298	11.43	1.72	2.41	405
1230	13.87	1	0.25	6.92	178	12.23	1.72	0.94	418
1234	13.87	2	0.25	6.98	108	13.08	1.72	1.18	203
1238	13.87	3	0.25	7.00	72	13.18	1.71	0.56	129
1242	13.87	4	0.25	7.02	40	13.31	1.70	0.49	78.8
1246	13.87	5	0.25	7.02	30	13.35	1.70	0.61	68.2
1250	13.87	6	0.25	7.02	28	13.33	1.69	0.61	53.8
1254	13.87	7	0.25	7.02	29	13.38	1.69	0.62	41.2

Total Quantity of Water Removed (gal): ~2 gal
Samplers: R.CASEY
Sampling Date: 12-Oct-04

Sampling Time: 1255
Split Sample With:
Sample Type: GRAB

COMMENTS AND OBSERVATIONS:

C:\Forms\Lowflow.xls

EA Engineering PC and its Affliate,
EA Science and Technology

GROUNDWATER SAMPLING
PURGE FORM

Well I.D.: AP-MW2B	**EA Personnel:** R.CASEY	**Client:** BOC GASES
Location: NIAGARA FALLS	**Well Condition:** LOCKED	**Weather:** OVERCAST, RAINY, MID 30s
Sounding Method: WLI	**Gauge Date:** 10/12/2004	**Measurement Ref:** TOC
Stick Up/Down (ft): UP	**Gauge Time:**	**Well Diameter (in):** 4"

Purge Date:	12/20/2004	**Purge Time:**	1345
Purge Method:	HAND BAIL	**Field Technician:**	R.CASEY

Well Volume

A. Well Depth (ft):	**D. Well Volume (ft):**	**Depth/Height of Top of PVC:**
B. Depth to Water (ft): 14.48	**E. Well Volume (gal) C*D):**	**Pump Type:** PENCIL BAILER
C. Liquid Depth (ft) (A-B):	**F. Five Well Volumes (gal) (E3):**	**Pump Designation:**

Water Quality Parameters

Time (hrs)	DTW (ft btoc)	Volume (liters)	Rate (Lpm)	pH (pH units)	ORP (mV)	Temperature (oC)	Conductivity (uS/cm)	DO (ug/L)	Turbidity (ntu)
INITIAL	11.41			12.31	-119	8.48	4.01	4.87	34
ENDING	11.78	~6		12.56	-134	7.80	5.43	1.15	354

Total Quantity of Water Removed (gal): ~1.5 gal.
Samplers: R.CASEY
Sampling Date: 21-Dec-04

Sampling Time: 1515
Split Sample With:
Sample Type: GRAB

COMMENTS AND OBSERVATIONS:

EA Engineering PC and its Affliate,
EA Science and Technology

GROUNDWATER SAMPLING
PURGE FORM

Well I.D.:	EA Personnel:	Client:
AP-MW3B	R.CASEY	BOC GASES
Location:	**Well Condition:**	**Weather:**
NIAGARA FALLS	LOCKED	CLEAR, MID 50s
Sounding Method:	**Gauge Date:**	**Measurement Ref:**
WLI	10/12/2004	TOC
Stick Up/Down (ft):	**Gauge Time:**	**Well Diameter (in):**
UP		4"

Purge Date:	10/12/2004	**Purge Time:**	1340
Purge Method:	2" SUB/LOW FLOW	**Field Technician:**	R.CASEY

Well Volume

A. Well Depth (ft): 8.92	**D. Well Volume (ft):**	**Depth/Height of Top of PVC:**
B. Depth to Water (ft):	**E. Well Volume (gal) C*D):**	**Pump Type:** GRUNDFOS REDI-FLO 2
C. Liquid Depth (ft) (A-B):	**F. Five Well Volumes (gal) (E3):**	**Pump Designation:**

Water Quality Parameters

Time (hrs)	DTW (ft btoc)	Volume (liters)	Rate (Lpm)	pH (pH units)	ORP (mV)	Temperature (oC)	Conductivity (uS/cm)	DO (ug/L)	Turbidity (ntu)
1350	8.92	0	0.25	9.98	173	13.75	0.558	7.47	43
1354	10.43	1	0.25	10.98	148	14.24	0.586	3.06	19.4
1358	10.86	2	0.25	10.97	112	15.96	0.555	2.07	15.4
1402	10.86	3	0.25	10.90	95	15.98	0.542	2.41	13.6
1406	10.86	4	0.25	10.92	75	16.22	0.542	4.06	12
1410	10.86	5	0.25	10.88	69	16.23	0.542	3.97	12.6
1414	10.86	6	0.25	10.88	71	16.25	0.542	3.98	11.8
1418	10.86	7	0.25	10.91	73	16.25	0.542	4.02	12.1

Total Quantity of Water Removed (gal):	~2 gal	**Sampling Time:**	1420
Samplers:	R.CASEY	**Split Sample With:**	
Sampling Date:	12-Oct-04	**Sample Type:**	GRAB

COMMENTS AND OBSERVATIONS:

EA Engineering PC and its Affliate,
EA Science and Technology

GROUNDWATER SAMPLING
PURGE FORM

Well I.D.:	EA Personnel:	Client:
AP-MW4B	R.CASEY	BOC GASES
Location:	**Well Condition:**	**Weather:**
NIAGARA FALLS	LOCKED	CLEAR, MID 50s
Sounding Method:	**Gauge Date:**	**Measurement Ref:**
WLI	10/12/2004	TOC
Stick Up/Down (ft):	**Gauge Time:**	**Well Diameter (in):**
UP		4"

Purge Date:	10/12/2004	**Purge Time:**	1440
Purge Method:	HAND BAIL	**Field Technician:**	R.CASEY

Well Volume		
A. Well Depth (ft):	**D. Well Volume (ft):**	**Depth/Height of Top of PVC:**
B. Depth to Water (ft): 11.48	**E. Well Volume (gal) C*D):**	**Pump Type:** DEDICATED BAILER
C. Liquid Depth (ft) (A-B):	**F. Five Well Volumes (gal) (E3):**	**Pump Designation:**

Water Quality Parameters

Time (hrs)	DTW (ft btoc)	Volume (liters)	Rate (Lpm)	pH (pH units)	ORP (mV)	Temperature (oC)	Conductivity (uS/cm)	DO (ug/L)	Turbidity (ntu)
INITIAL	11.48	0		8.54	167	13.31	0.019	10.99	476
ENDING		8		8.37	170	12.93	0.806	11.23	999

Total Quantity of Water Removed (gal): ~2 gal
Samplers: R.CASEY
Sampling Date: 13-Oct-04

Sampling Time: 1105
Split Sample With:
Sample Type: GRAB

COMMENTS AND OBSERVATIONS:

EA Engineering PC and its Affliate,
EA Science and Technology

GROUNDWATER SAMPLING
PURGE FORM

Well I.D.: AP-MW5B	**EA Personnel:** R.CASEY	**Client:** BOC GASES
Location: NIAGARA FALLS	**Well Condition:** LOCKED	**Weather:** CLEAR, MID 50s
Sounding Method: WLI	**Gauge Date:** 10/12/2004	**Measurement Ref:** TOC
Stick Up/Down (ft): UP	**Gauge Time:**	**Well Diameter (in):** 4"

Purge Date:	10/12/2004	**Purge Time:**	1500
Purge Method:	HAND BAIL	**Field Technician:**	R.CASEY

Well Volume

A. Well Depth (ft):	**D. Well Volume (ft):**	**Depth/Height of Top of PVC:**
B. Depth to Water (ft): 8.40	**E. Well Volume (gal) C*D):**	**Pump Type:** DEDICATED BAILER
C. Liquid Depth (ft) (A-B):	**F. Five Well Volumes (gal) (E3):**	**Pump Designation:**

Water Quality Parameters

Time (hrs)	DTW (ft btoc)	Volume (liters)	Rate (Lpm)	pH (pH units)	ORP (mV)	Temperature (oC)	Conductivity (uS/cm)	DO (ug/L)	Turbidity (ntu)
INITIAL	8.4			9.28	228	15.89	0.806	10.05	7.8
ENDING		~7		8.7	203	14.49	0.010	10.81	999

Total Quantity of Water Removed (gal): ~2 gal
Samplers: R.CASEY
Sampling Date: 13-Oct-04

Sampling Time: 1040
Split Sample With:
Sample Type: GRAB

COMMENTS AND OBSERVATIONS:

EA Engineering PC and its Affliate,
EA Science and Technology

GROUNDWATER SAMPLING
PURGE FORM

Well I.D.: AP-MW6B	**EA Personnel:** R.CASEY	**Client:** BOC GASES
Location: NIAGARA FALLS	**Well Condition:** LOCKED	**Weather:** CLEAR, MID 50s
Sounding Method: WLI	**Gauge Date:** 10/12/2004	**Measurement Ref:** TOC
Stick Up/Down (ft): UP	**Gauge Time:**	**Well Diameter (in):** 4"

Purge Date:	10/12/2004	**Purge Time:**	1505
Purge Method:	2" SUB/LOW FLOW	**Field Technician:**	R.CASEY

Well Volume

A. Well Depth (ft):	**D. Well Volume (ft):**	**Depth/Height of Top of PVC:**
B. Depth to Water (ft): 4.08	**E. Well Volume (gal) C*D):**	**Pump Type:** GRUNDFOS REDI-FLO 2
C. Liquid Depth (ft) (A-B):	**F. Five Well Volumes (gal) (E3):**	**Pump Designation:**

Water Quality Parameters

Time (hrs)	DTW (ft btoc)	Volume (liters)	Rate (Lpm)	pH (pH units)	ORP (mV)	Temperature (oC)	Conductivity (uS/cm)	DO (ug/L)	Turbidity (ntu)
1515	3.35	0	0.25	7.90	5	15.06	0.976	4.40	28.8
1519	5.99	1	0.25	7.66	-28	15.78	0.963	1.98	30
1523	6.56	2	0.25	7.64	6	16.76	0.947	1.65	26.1
1527	6.59	3	0.25	7.60	-2	17.43	0.943	1.71	17.1
1531	6.71	4	0.25	7.57	0	17.56	0.953	1.95	17.1
1535	6.71	5	0.25	7.54	0	17.70	0.956	1.78	14.5
1539	6.71	6	0.25	7.55	0	17.72	0.957	1.71	14.8
1543	6.71	7	0.25	7.57	0	17.75	0.953	1.73	12.2

Total Quantity of Water Removed (gal):	~2 gal	**Sampling Time:**	1545
Samplers:	R.CASEY	**Split Sample With:**	
Sampling Date:	12-Oct-04	**Sample Type:**	GRAB

COMMENTS AND OBSERVATIONS: AP-DUP-1004 ALSO COLLECTED FROM MW6B.

EA Engineering PC and its Affiliate,
EA Science and Technology

GROUNDWATER SAMPLING
PURGE FORM

Well I.D.: AP-MW7B	**EA Personnel:** R.CASEY	**Client:** BOC GASES
Location: NIAGARA FALLS	**Well Condition:** LOCKED	**Weather:** CLEAR, MID 50s
Sounding Method: WLI	**Gauge Date:** 10/12/2004	**Measurement Ref:** TOC
Stick Up/Down (ft): UP	**Gauge Time:**	**Well Diameter (in):** 4"

Purge Date:	10/12/2004	**Purge Time:**	1600
Purge Method:	HAND BAIL	**Field Technician:**	R.CASEY

Well Volume

A. Well Depth (ft):	**D. Well Volume (ft):**	**Depth/Height of Top of PVC:**
B. Depth to Water (ft): 9.72	**E. Well Volume (gal) C*D):**	**Pump Type:** DEDICATED BAILER
C. Liquid Depth (ft) (A-B):	**F. Five Well Volumes (gal) (E3):**	**Pump Designation:**

Water Quality Parameters

Time (hrs)	DTW (ft btoc)	Volume (liters)	Rate (Lpm)	pH (pH units)	ORP (mV)	Temperature (oC)	Conductivity (uS/cm)	DO (ug/L)	Turbidity (ntu)
INITIAL	9.72			10.32	34	14.89	0.001	11.75	30.1
ENDING		~8		8.94	28	14.56	0.342	9.67	999

Total Quantity of Water Removed (gal): ~2.5 gal
Samplers: R.CASEY
Sampling Date: 13-Oct-04

Sampling Time: 1025
Split Sample With:
Sample Type: GRAB

COMMENTS AND OBSERVATIONS:

EA Engineering PC and its Affliate,
EA Science and Technology

GROUNDWATER SAMPLING
PURGE FORM

Well I.D.: AP-MW8B	**EA Personnel:** R.CASEY	**Client:** BOC GASES
Location: NIAGARA FALLS	**Well Condition:** LOCKED	**Weather:** CLEAR, MID 60s
Sounding Method: WLI	**Gauge Date:** 10/12/2004	**Measurement Ref:** TOC
Stick Up/Down (ft): UP	**Gauge Time:**	**Well Diameter (in):** 4"

Purge Date: 10/13/2004	**Purge Time:** 930
Purge Method: 2" SUB/LOW FLOW	**Field Technician:** R.CASEY

Well Volume

A. Well Depth (ft):	**D. Well Volume (ft):**	**Depth/Height of Top of PVC:**
B. Depth to Water (ft): 8.28	**E. Well Volume (gal) C*D):**	**Pump Type:** GRUNDFOS REDI-FLO 2
C. Liquid Depth (ft) (A-B):	**F. Five Well Volumes (gal) (E3):**	**Pump Designation:**

Water Quality Parameters

Time (hrs)	DTW (ft btoc)	Volume (liters)	Rate (Lpm)	pH (pH units)	ORP (mV)	Temperature (oC)	Conductivity (uS/cm)	DO (ug/L)	Turbidity (ntu)
938	6.92	0	0.25	8.68	184	12.39	1.40	6.21	682
942	8.17	1	0.25	8.10	177	12.70	1.46	9.36	828
946	9.08	2	0.25	7.91	122	13.02	1.44	8.83	683
950	9.49	3	0.25	7.84	121	15.24	1.43	7.45	502
954	9.67	4	0.25	7.80	119	15.04	1.47	7.82	279
958	9.69	5	0.25	7.81	120	15.11	1.48	7.87	103
1002	9.69	6	0.25	7.82	118	15.13	1.45	7.81	56

Total Quantity of Water Removed (gal): ~1.5 gal
Samplers: R.CASEY
Sampling Date: 13-Oct-04

Sampling Time: 1005
Split Sample With:
Sample Type: GRAB

COMMENTS AND OBSERVATIONS:

T12OCT2004

R. CASEY

BI-ANNUAL SAMPLING

- R CASEY ONSITE @ 1000 FOR SAMPLING AND ENGINEERING INSPECTION.
- GAUGING DATA

	DTW	PURGE METHOD
MW-1B	12.95	PUMP
MW-2B	14.48	~~BAIL~~ PUMP
MW-3B	8.92	PUMP
MW-4B	11.48	BAIL
MW-5B	8.40	BAIL
MW-6B	4.08	PUMP
MW-7B	9.72	~~PUMP~~ BAIL
MW-8B	8.20	PUMP

- HORIBA CALIBRATION

  PINE ID #: 01195

  pH : 4.02
  COND : 4.77
  DO : 9.07
  TURB : 0

T12 OCT 2004 R CASEY

AP-MW1B-1004

	①	①	②	③	④	⑤	⑥	⑦	⑧
Time	1226	1230	1234	1238	1242	1246	1250	1254	1258
rate	0.25								
vol	—	1	2	3	4	5	6	7	8
pH	6.72	6.92	6.98	7.00	7.02	7.02	7.02	7.02	
COND	1.72	1.72	1.72	1.71	1.70	1.70	1.69	1.69	
TURB	405	418	203	129	78.8	68.2	53.8	41.2	
DO	2.41	0.94	1.18	0.56	0.49	0.61	0.61	0.62	
TEMP	11.43	12.23	13.08	13.18	13.31	13.35	13.33	13.38	
ORP	298	178	108	72	40	30	20	29	
DTW	12.44	13.87	13.87	13.87	13.87	13.87	13.87	13.87	

*AP-MW1B-1004 SAMPLE COLLECTION TIME 1255

T12OCT2004 R CASEY

AP-MW2B-1004 ✱

	①	①	②	③	④	⑤	⑥	⑦	⑧
time	1312	1316	1320	1324	1328	1332			
rate	0.25								
vol	—	1	2	3	4	5			
pH									
COND									
TURB									
DO									
TEMP									
ORP									
DTW	14.48								

*AP-MW2B-1004 SAMPLE COLLECTION TIME ____

✱ NO SAMPLE COLLECTED / NEED A PERISTALTIC

T 12OCT2004 R.CASEY

AP-MW3B-1004

	①	②	③	④	⑤	⑥	⑦	⑧
time	1350	1354	1358	1402	1406	1410	1414	1418
rate	0.25							
vol	–		2	3	4	5	6	7
pH	9.98	10.98	10.97	10.90	10.92	10.88	10.88	10.91
COND	0.558	0.586	0.555	0.542	0.542	0.542	0.542	0.542
TURB	43.0	19.4	15.4	13.6	12.0	12.6	11.8	12.1
DO	7.47	3.06	2.07	2.41	4.06	3.97	3.98	4.02
TEMP	13.75	14.24	15.96	15.98	16.22	16.23	16.25	16.25
ORP	173	148	112	95	75	69	71	73
DTW	8.92	10.43	10.86	10.86	10.86	10.86	10.86	10.86

AP-MW3B-1004 SAMPLE COLLECTION TIME 1420.

T 12OCT2004 R.CASEY

AP-MW4B-1004

	⑦	⑧
time	1440	1453
pH	8.54	8.37
COND	0.819	0.806
turb	476	999
DO	10.99	11.23
Temp	13.31	12.93
ORP	167	170

AP-MW4B-1004 SAMPLE COLLECTION TIME 1105.

ON 10/13/2004

T12Oct2004 R.CASEY

AP-MW5B-1004

	①	②
time	1500	1508
pH	9.28	8.70
COND	0.806	0.010
TURB	7.8	999
DO	10.05	10.81
TEMP	15.89	14.49
ORP	228	203

AP-MW5B-1005 SAMPLE COLLECTION TIME
1040
ON 10/13/2004

T12Oct2004 R.CASEY

AP-MW6B-1004

	①	②	③	④	⑤	⑥	⑦	⑧
time	1515	1519	1523	1527	1531	1535	1539	1543
rate	0.25	→	→	→	→	→	→	→
vol	–	1	2	3	4	5	6	7
pH	7.90	7.66	7.64	7.60	7.57	7.54	7.55	7.57
COND	0.976	0.963	0.947	0.943	0.953	0.956	0.957	0.953
TURB	28.8	30	26.	17.1	17.1	14.5	14.8	12.2
DO	4.40	1.98	1.65	1.71	1.95	1.78	1.71	1.73
TEMP	15.06	15.78	16.76	17.43	17.56	17.70	17.72	17.75
ORP	5	-28	6	-2	0	0	0	0
DTW	3.35	5.49	6.56	6.59	6.71	6.71	6.71	6.71

AP-MW6B-1004 SAMPLE COLLECTION TIME
1545

AP-DUP-1004 COLLECTED HERE.

T12OCT2004 R:CASEY

AP-MW7B-1004

	(1)	(2)
TIME	1605	1613
pH	10.32	8.94
COND	0.001	0.342
TURB	30.1	999
DO	11.75	9.67
TEMP	14.89	14.56
ORP	34	28

AP-MW7B-1004 SAMPLE COLLECTION TIME 1025 ON 10/13/2004

T12~~28~~OCT2004 R CASEY

AP-SS-1004

WATER QUALITY

TIME	1550
pH	12.70
COND	6.48
TURB	382
DO	12.60
TEMP	14.21
ORP	-6

AP-SS-1004 SAMPLE COLLECTION TIME 1555.

COLLECTED SE OF MW-6B

W13 OCT 2004 R. CASEY

AP-MW8B-1004

	ⓔ	①	②	③	④	⑤	⑥	⑦	⑧
time	938	942	946	950	954	958	1002		
rate	0.25	→	→	→	→	→	→		
vol	-	1	2	3	4	5	6		
pH	8.68	8.10	7.91	7.84	7.80	7.81	7.82		
COND	1.40	1.46	1.44	1.43	1.47	1.48	1.45		
TURB	682	828	683	502	279	103	56		
DO	6.21	9.36	8.83	7.45	7.82	7.87	7.81		
Temp	12.39	12.70	13.02	15.24	15.04	15.11	15.13		
ORP	184	177	122	121	119	120	118		
DTW	6.92	8.17	9.08	9.49	9.67	9.64	9.69		

AP-MW8B-1004 SAMPLE COLLECTION TIME 1005.

W13 OCT 2004 R. CASEY

AP-RB-1004

- WLI USED FOR RINSATE BLANK SAMPLE.
- AP-RB-1004 SAMPLE COLLECTED @ 1015.

Attachment C

Chain-of-Custody Records
October 2004

Life Science Laboratories, Inc.

CHAIN OF CUSTODY RECORD

LSL Central Lab
5854 Butternut Drive
E. Syracuse, N.Y. 13057
Phone: (315)445-1105
Fax: (315)445-1301

LSL North Lab
131 St. Lawrence Ave.
Waddington, N.Y. 13694
Phone: (315)388-4476
Fax: (315)388-4061

LSL Fin
16 N. Ma
Wayland,
Phone: (
Fax: (

0418145
EAEng

ıern Tier Lab
ıln St.
14727
...5)968-2640
Fax: (585)968-0906

Report Address:
Name: ROBERT CASEY
Company: EA SCIENCE & TECHNOLOGY
Street: 6731 COLLAMER ROAD
City/State: E. SYRACUSE, NY
Zip: 13057
Phone: 431. 4610
Fax: 431 4280
Email: rcasey@eaest.com

Client Project ID/Client Site ID

Turnaround Time
Normal: 14 DAY [X]
Pre-Authorized: Next Day* [ ] 2-Day * [ ] 3-Day * [ ] 7-Day* [ ]
*Additional Charges may apply

Date Needed or Special Instructions:

Authorization or P.O. #
12040.87.0003

LSL Project Number:

Client's Sample Identifications	Sample Date	Sample Time	Type grab/comp	Matrix	Preserv Added	Containers #	Containers size/type	Analyses	Preserv Check	LSL ID#
AP-MW1B-1004	12 Oct 2004	1255	GRAB	GW		4		T. Phenols, Metals, Sulfate, Cr+6 NH		001 ABC DE
AP-MW3B-1004	↓	1420	↓	↓	↓	↓	↓	↓	↓	002
AP-MW6B-1004	↓	1545	↓	↓	↓	↓	↓	↓	↓	003
AP-SS-1004	↓	1555	↓	↓	↓	↓	↓	↓	↓	004
AP-DUP-1004	↓	—	↓	↓	↓	↓	↓	↓	↓	005

LSL use only:

Containers this C-O-C

Custody Transfers

		Date	Time
Sampled By: Robert S. Casey	Received By:		
Relinquished By:	Received By:		
Relinquished By: Robert S. Casey	Rec'd for Lab By: M.A. Le	10-13-04	10:10 RCVD
Shipment Method: UPS	Received Intact: Y N 4.1°C on ice	Sample Temp	

*** All areas of this Chain of Custody Record MUST be filled out in order to process samples in a timely manner IN PEN ONLY ***

Life Science Laboratories, Inc.

CHAIN OF CUSTODY RECORD

LSL Central Lab
5854 Butternut Drive
E. Syracuse, N.Y. 13057
Phone: (315)445-1105
Fax: (315)445-1301

LSL North Lab
131 St. Lawrence Ave.
Waddington, N.Y. 13694
Phone: (315)388-4476
Fax: (315)388-4061

LSL Finger Lakes Lab
16 N. Main St.
Wayland, N.Y. 14572
Phone: (585)728-3320
Fax: (585)728-2711

LSL Southern Tier Lab
30 East Main St.
Cuba, N.Y. 14727
Phone: (585)968-2640
Fax: (585)968-0906

Report Address:
Name: Robert S. Casey
Company: EA Science & Tech
Street: 6731 COLLAMER ROAD
City/State: E SYRACUSE NY
Zip: 13057
Phone: 431 4610
Fax: 431 4280
Email: rcasey@eacst.com

Client Project ID/Client Site ID

Turnaround Time
Normal: 14 DAY ☑
Pre-Authorized: Next Day* ☐ 2-Day* ☐ 3-Day* ☐ 7-Day* ☐
*Additional Charges may apply

Date Needed or Special Instructions:

Authorization or P.O. # 120480.87-0003

LSL Project Number:

Client's Sample Identifications	Sample Date	Sample Time	Type grab/comp	Matrix	Preserv Added	Containers #	Containers size/type	Analyses	Preserv Check	LSL ID#
AP-MW8B-1004	13 Oct 2004	1005	GRAB	GW		5		T. Phenols, Sulfate, Cr+6, NH Metals		
AP-MW7B-1004	↓	1025	↓	↓	↓	↓	↓	↓	↓	↓
AP-MW4B-1004	↓	1040	↓	↓	↓	↓	↓	↓	↓	↓
AP-MW5B-1004	↓	1050	↓	↓	↓	↓	↓	↓	↓	↓
AP-RB-1004	↓	1015	↓	↓	↓	↓	↓	↓	↓	↓

LSL use only:

Containers this C-O-C

Custody Transfers

		Date	Time
Sampled By:	Received By:		
Relinquished By:	Received By:		
Relinquished By:	Rec'd for Lab By:	10-13-04	14:58
Shipment Method:	Received Intact: Y N	Sample Temp	

*** All areas of this Chain of Custody Record MUST be filled out in order for samples to be logged in and analyzed ***

CV9

Life Science Laboratories, Inc.

CHAIN OF CUSTODY RECORD

LSL Central Lab
5854 Butternut Drive
E. Syracuse, N.Y. 13057
Phone: (315)445-1105
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LSL North Lab
131 St. Lawrence Ave.
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Phone: (315)388-4476
Fax: (315)388-4061

LSL Finger Lakes Lab
16 N. Main St.
Wayland, N.Y. 14572
Phone: (585)728-3320
Fax: (585)728-2711

LSL Southern Tier Lab
30 East Main St.
Cuba, N.Y. 14727
Phone: (585)968-2640
Fax: (585)968-0906

Turnaround Time

Normal: 14 DAY [X]
Pre-Authorized: Next Day* [ ] 2-Day* [ ] 3-Day* [ ] 7-Day* [ ]
*Additional Charges may apply

Report Address:

Name: Robert Casey
Company: EA Science & Technology
Street: 6721 Collamer Road
City/State: E. Syracuse NY
Zip: 13057
Phone: 315 431 4610
Fax: 315 431 4280
Email: rsc rcasey@eaest.com

Date Needed or Special Instructions:

Authorization or P.O. #: 12040.87.

Client Project ID/Client Site ID

LSL Project Number:

Client's Sample Identifications	Sample Date	Sample Time	Type grab/comp	Matrix	Preserv Added	Containers #	Containers size/type	Analyses	Preserv Check	LSL ID#
AP-MW2B-180Y	12/21/04	1515	grab	GW	H_2SO_4	1	liter	T. Phenols		
					HNO_3	1	8 oz	Metal		
					NONE	1	8 oz	Sulfate		
					NONE	1	8 oz	Cr+6		
					H_2SO_4	1	8 oz	NH		

LSL use only:

Containers this C-O-C

Custody Transfers

		Date	Time
Sampled By: Robert Casey	Received By:		
Relinquished By:	Received By:		
Relinquished By:	Rec'd for Lab By: K. Dunbar	12-22-04	10:27 IN
Shipment Method: DROP-OFF	Received Intact: Y N	Sample Temp	

*** All areas of this Chain of Custody Record MUST be filled out in order to process samples in a timely manner IN PEN ONLY***

Reg COC

Life Science Laboratories, Inc.
5854 Butternut Drive
East Syracuse, NY 13057
Phone # (315) 445-1105 Telefax # (315) 445-1301

Chain of Custody Record • 7 day turn around.

Client: EA Engineering Science & Tech. Phone # 431-4610
Address: 6731 Collamer Rd. Telefax # 431-4280
E. Syracuse, NY 13057

Contact Person: Scott Graham

LSL Project #: [illegible]

Client's Site I.D.: Witmer Rd. La[illegible]

Client's Project I.D.:

Authorization:

LSL Sample Number	Client's Sample Identifications	Sample Date	Sample Time	Type grab	Type comp.	Matrix	Preserv. Added	Containers #	Containers size/type	Analyses	Preserv. Check
001 A	AP-P7-080504	5AUG04	1150	X		GW	H_2SO_4	1	500 ml	TKN,NH3,COD	
001 B	↓	↓	↓	↓		↓	None	1	500 ml	BOD,TSS,pH,NO3,NO2,Cr+6 TDS	
C							HNO_3	1	500 ml	Ba,Cr,Cu,Fe,Ni,Ni,Se,Tl,Zn	
D E							HCL	2	40 ml	601/602	
F							H_2SO_4	1	Liter(g)	Phenols	
002											
							HCL	2	40 ml	Trip Blank	

Notes and Hazard identifications:

Custody Transfers

		Date	Time
Sampled By: ROBERT S. CASEY	Received By:		
Relinquished By:	Received By:		
Relinquished By:	Received for Lab By:	08-06-04	08:23 RCVD

[illegible] DR [illegible]

Attachment D

Laboratory Analytical Results
October 2004

Robert Casey
EA Engineering, Science and Technology
6731 Collamer Road
East Syracuse, NY 13057-9759

Phone: (315) 431-4610
FAX: (315) 431-4280
Authorization: 12040.87.0003

Laboratory Analysis Report

For

EA Engineering, Science and Technology

LSL Project ID: 0418145

Receive Date/Time: 10/13/04 10:10

Project Received by: MW

Life Science Laboratories, Inc.

LSL Central Lab
5854 Butternut Drive
East Syracuse, NY 13057
Tel. (315) 445-1105
Fax (315) 445-1301
NYS DOH ELAP #10248
PA DEP #68-2556

LSL North Lab
131 St. Lawrence Avenue
Waddington, NY 13694
Tel. (315) 388-4476
Fax (315) 388-4061
NYS DOH ELAP #10900

LSL Finger Lakes Lab
16 N. Main St., PO Box 424
Wayland, NY 14572
Tel. (585) 728-3320
Fax (585) 728-2711
NYS DOH ELAP #11667

LSL Southern Tier Lab
30 East Main Street
Cuba, NY 14727
Tel. (585) 968-2640
Fax (585) 968-0906
NYS DOH ELAP #10760

LSL MidLakes Lab
699 South Main Street
Canandaigua, NY 14424
Tel. (585) 396-0270
Fax (585) 396-0377
NYS DOH ELAP #11369

This report was reviewed by: Linda Waters QC *Date:* 11/3/04

Life Science Laboratories, Inc.

A copy of this report was sent to:

Date Printed: 11/3/04

-- LABORATORY ANALYSIS REPORT --

EA Engineering, Science and Technology *East Syracuse, NY*

Sample ID:	AP-MW1B-1004	**LSL Sample ID:**	0418145-001
Location:	Grab		
Sampled:	10/12/04 12:55	**Sampled By:** RC	
Sample Matrix:	NPW		

Analytical Method / Analyte	Result	Units	Prep Date	Analysis Date & Time	Analyst Initials
(1) EPA 350.1 Ammonia					
Ammonia as N	<0.03	mg/l		10/22/04	DRB
(1) EPA 420.1 Recoverable Phenolics ML					
Phenolics, Total Recoverable	<0.05	mg/l	10/19/04	10/20/04	JN
(1) EPA 6010 Total Metals					
Cadmium	<0.01	mg/l		10/29/04	TER
Chromium	<0.01	mg/l		10/29/04	TER
Iron	0.93	mg/l		10/29/04	TER
Lead	<0.01	mg/l		10/29/04	TER
Magnesium	65	mg/l		10/29/04	TER
Manganese	0.81	mg/l		10/29/04	TER
Selenium	<0.01	mg/l		10/29/04	TER
Silicon	8.1	mg/l		10/29/04	TER
Sodium	110	mg/l		10/29/04	TER
Thallium	<0.01	mg/l		10/29/04	TER
Zinc	0.53	mg/l		10/29/04	TER
(1) EPA Method 300.0 A					
Sulfate	210	mg/l		10/26/04	RAF
(1) SM 18 3500Cr-D Hexavalent Chromium					
Chromium, Hexavalent	<0.01	mg/l		10/13/04 12:48	JN

-- LABORATORY ANALYSIS REPORT --

EA Engineering, Science and Technology *East Syracuse, NY*

Sample ID: AP-MW3B-1004 **LSL Sample ID:** 0418145-002

Location: Grab

Sampled: 10/12/04 14:20 **Sampled By:** RC

Sample Matrix: NPW

Analytical Method / Analyte	Result	Units	Prep Date	Analysis Date & Time	Analyst Initials
(1) EPA 350.1 Ammonia					
Ammonia as N	0.18	mg/l		10/22/04	DRB
(1) EPA 420.1 Recoverable Phenolics ML					
Phenolics, Total Recoverable	<0.05	mg/l	10/19/04	10/20/04	JN
(1) EPA 6010 Total Metals					
Cadmium	<0.01	mg/l		10/29/04	TER
Chromium	<0.01	mg/l		10/29/04	TER
Iron	<0.05	mg/l		10/29/04	TER
Lead	<0.01	mg/l		10/29/04	TER
Magnesium	1.5	mg/l		10/29/04	TER
Manganese	<0.01	mg/l		10/29/04	TER
Selenium	<0.01	mg/l		10/29/04	TER
Silicon	1.8	mg/l		10/29/04	TER
Sodium	9.6	mg/l		10/29/04	TER
Thallium	<0.01	mg/l		10/29/04	TER
Zinc	0.011	mg/l		10/29/04	TER
(1) EPA Method 300.0 A					
Sulfate	100	mg/l		10/26/04	RAF
(1) SM 18 3500Cr-D Hexavalent Chromium					
Chromium, Hexavalent	<0.01	mg/l		10/13/04 12:50	JN

-- LABORATORY ANALYSIS REPORT --

EA Engineering, Science and Technology *East Syracuse, NY*

Sample ID: AP-MW6B-1004 **LSL Sample ID:** 0418145-003

Location: Grab

Sampled: 10/12/04 15:45 **Sampled By:** RC

Sample Matrix: NPW

Analytical Method / Analyte	Result	Units	Prep Date	Analysis Date & Time	Analyst Initials
(1) EPA 350.1 Ammonia					
Ammonia as N	<0.03	mg/l		10/22/04	DRB
(1) EPA 420.1 Recoverable Phenolics ML					
Phenolics, Total Recoverable	<0.05	mg/l	10/19/04	10/20/04	JN
(1) EPA 6010 Total Metals					
Cadmium	<0.01	mg/l		10/29/04	TER
Chromium	<0.01	mg/l		10/29/04	TER
Iron	0.46	mg/l		10/29/04	TER
Lead	<0.01	mg/l		10/29/04	TER
Magnesium	70	mg/l		10/29/04	TER
Manganese	0.12	mg/l		10/29/04	TER
Selenium	<0.01	mg/l		10/29/04	TER
Silicon	6.3	mg/l		10/29/04	TER
Sodium	61	mg/l		10/29/04	TER
Thallium	<0.01	mg/l		10/29/04	TER
Zinc	0.023	mg/l		10/29/04	TER
(1) EPA Method 300.0 A					
Sulfate	220	mg/l		10/26/04	RAF
(1) SM 18 3500Cr-D Hexavalent Chromium					
Chromium, Hexavalent	<0.01	mg/l		10/13/04 12:51	JN

-- LABORATORY ANALYSIS REPORT --

EA Engineering, Science and Technology *East Syracuse, NY*

Sample ID: AP-SS-1004 **LSL Sample ID:** 0418145-004

Location: Grab

Sampled: 10/12/04 15:55 **Sampled By:** RC

Sample Matrix: NPW

Analytical Method / Analyte	Result	Units	Prep Date	Analysis Date & Time	Analyst Initials
(1) EPA 350.1 Ammonia					
Ammonia as N	3.3	mg/l		10/22/04	DRB
(1) EPA 420.1 Recoverable Phenolics ML					
Phenolics, Total Recoverable	<0.05	mg/l	10/19/04	10/20/04	JN
(1) EPA 6010 Total Metals					
Cadmium	<0.1	mg/l		11/2/04	TER
Chromium	0.24	mg/l		11/2/04	TER
Iron	<0.5	mg/l		11/2/04	TER
Lead	<0.1	mg/l		11/2/04	TER
Magnesium	<10	mg/l		11/2/04	TER
Manganese	<0.1	mg/l		11/2/04	TER
Selenium	<0.1	mg/l		11/2/04	TER
Silicon	0.43	mg/l		11/2/04	TER
Sodium	52	mg/l		11/2/04	TER
Thallium	<0.1	mg/l		11/2/04	TER
Zinc	<0.1	mg/l		11/2/04	TER
(1) EPA Method 300.0 A					
Sulfate	9.9	mg/l		10/26/04	RAF
(1) SM 18 3500Cr-D Hexavalent Chromium					
Chromium, Hexavalent	0.20	mg/l		10/13/04 12:51	JN

-- LABORATORY ANALYSIS REPORT --

EA Engineering, Science and Technology *East Syracuse, NY*

Sample ID: AP-DUP-1004 **LSL Sample ID:** 0418145-005

Location: Grab

Sampled: 10/12/04 0:00 **Sampled By:** RC

Sample Matrix: NPW

Analytical Method / Analyte	Result	Units	Prep Date	Analysis Date & Time	Analyst Initials
(1) EPA 350.1 Ammonia					
Ammonia as N	0.077	mg/l		10/22/04	DRB
(1) EPA 420.1 Recoverable Phenolics ML					
Phenolics, Total Recoverable	<0.05	mg/l	10/19/04	10/20/04	JN
(1) EPA 6010 Total Metals					
Cadmium	<0.01	mg/l		10/29/04	TER
Chromium	<0.01	mg/l		10/29/04	TER
Iron	0.43	mg/l		10/29/04	TER
Lead	<0.01	mg/l		10/29/04	TER
Magnesium	67	mg/l		10/29/04	TER
Manganese	0.11	mg/l		10/29/04	TER
Selenium	<0.01	mg/l		10/29/04	TER
Silicon	6.0	mg/l		10/29/04	TER
Sodium	58	mg/l		10/29/04	TER
Thallium	<0.01	mg/l		10/29/04	TER
Zinc	0.019	mg/l		10/29/04	TER
(1) EPA Method 300.0 A					
Sulfate	230	mg/l		10/26/04	RAF
(1) SM 18 3500Cr-D Hexavalent Chromium					
Chromium, Hexavalent	<0.01	mg/l		10/13/04 12:52	JN

-- LABORATORY ANALYSIS REPORT --

EA Engineering, Science and Technology *East Syracuse, NY*

Sample ID: AP-MW-8B-1004 **LSL Sample ID:** 0418221-001

Location: Grab

Sampled: 10/13/04 10:05 **Sampled By:**

Sample Matrix: NPW

Analytical Method / Analyte	Result	Units	Prep Date	Analysis Date & Time	Analyst Initials
(1) EPA 350.1 Ammonia					
Ammonia as N	<0.03	mg/l		10/22/04	DRB
(1) EPA 420.1 Recoverable Phenolics ML					
Phenolics, Total Recoverable	<0.05	mg/l	10/26/04	10/29/04	JN
(1) EPA 6010 Total Metals					
Cadmium	<0.01	mg/l		10/15/04	TER
Chromium	0.061	mg/l		10/15/04	TER
Iron	0.60	mg/l		10/15/04	TER
Lead	<0.01	mg/l		10/15/04	TER
Magnesium	37	mg/l		10/15/04	TER
Manganese	0.26	mg/l		10/15/04	TER
Selenium	0.043	mg/l		10/15/04	TER
Silicon	7.4	mg/l		10/15/04	TER
Sodium	230	mg/l		10/15/04	TER
Thallium	<0.01	mg/l		10/15/04	TER
Zinc	0.058	mg/l		10/15/04	TER
(1) EPA Method 300.0 A					
Sulfate	280	mg/l		10/26/04	RAF
(1) SM 18 3500Cr-D Hexavalent Chromium					
Chromium, Hexavalent	.037	mg/l		10/14/04 09:57	JN

-- LABORATORY ANALYSIS REPORT --

EA Engineering, Science and Technology *East Syracuse, NY*

Sample ID:	AP-MW-7B-1004	**LSL Sample ID:**	0418221-002
Location:	Grab		
Sampled:	10/13/04 10:25	**Sampled By:**	
Sample Matrix:	NPW		

Analytical Method / Analyte	Result	Units	Prep Date	Analysis Date & Time	Analyst Initials
(1) EPA 350.1 Ammonia					
Ammonia as N	<0.03	mg/l		10/22/04	DRB
(1) EPA 420.1 Recoverable Phenolics ML					
Phenolics, Total Recoverable	<0.05	mg/l	10/26/04	10/29/04	JN
(1) EPA 6010 Total Metals					
Cadmium	<0.01	mg/l		10/15/04	TER
Chromium	0.057	mg/l		10/15/04	TER
Iron	1.8	mg/l		10/15/04	TER
Lead	<0.01	mg/l		10/15/04	TER
Magnesium	11	mg/l		10/15/04	TER
Manganese	0.091	mg/l		10/15/04	TER
Selenium	<0.01	mg/l		10/15/04	TER
Silicon	7.1	mg/l		10/15/04	TER
Sodium	65	mg/l		10/15/04	TER
Thallium	<0.01	mg/l		10/15/04	TER
Zinc	0.033	mg/l		10/15/04	TER
(1) EPA Method 300.0 A					
Sulfate	34	mg/l		10/26/04	RAF
(1) SM 18 3500Cr-D Hexavalent Chromium					
Chromium, Hexavalent	0.017	mg/l		10/14/04 09:59	JN

-- LABORATORY ANALYSIS REPORT --

EA Engineering, Science and Technology *East Syracuse, NY*

Sample ID: AP-MW-4B-1004 **LSL Sample ID:** 0418221-003

Location: Grab

Sampled: 10/13/04 10:40 **Sampled By:**

Sample Matrix: NPW

Analytical Method / Analyte	Result	Units	Prep Date	Analysis Date & Time	Analyst Initials
(1) EPA 350.1 Ammonia					
Ammonia as N	<0.03	mg/l		10/22/04	DRB
(1) EPA 420.1 Recoverable Phenolics ML					
Phenolics, Total Recoverable	<0.05	mg/l	10/26/04	10/29/04	JN
(1) EPA 6010 Total Metals					
Cadmium	0.013	mg/l		10/15/04	TER
Chromium	0.20	mg/l		10/15/04	TER
Iron	3.4	mg/l		10/15/04	TER
Lead	0.037	mg/l		10/15/04	TER
Magnesium	35	mg/l		10/15/04	TER
Manganese	0.52	mg/l		10/15/04	TER
Selenium	<0.01	mg/l		10/15/04	TER
Silicon	10	mg/l		10/15/04	TER
Sodium	180	mg/l		10/15/04	TER
Thallium	<0.01	mg/l		10/15/04	TER
Zinc	0.16	mg/l		10/15/04	TER
(1) EPA Method 300.0 A					
Sulfate	160	mg/l		10/26/04	RAF
(1) SM 18 3500Cr-D Hexavalent Chromium					
Chromium, Hexavalent	0.20	mg/l		10/14/04 09:59	JN

-- LABORATORY ANALYSIS REPORT --

EA Engineering, Science and Technology *East Syracuse, NY*

Sample ID: AP-MW-5B-1004 **LSL Sample ID:** 0418221-004

Location: Grab

Sampled: 10/13/04 11:05 **Sampled By:**

Sample Matrix: NPW

Analytical Method / Analyte	Result	Units	Prep Date	Analysis Date & Time	Analyst Initials
(1) EPA 350.1 Ammonia					
Ammonia as N	<0.03	mg/l		10/22/04	DRB
(1) EPA 420.1 Recoverable Phenolics ML					
Phenolics, Total Recoverable	<0.05	mg/l	10/26/04	10/29/04	JN
(1) EPA 6010 Total Metals					
Cadmium	<0.01	mg/l		10/15/04	TER
Chromium	0.010	mg/l		10/15/04	TER
Iron	2.1	mg/l		10/15/04	TER
Lead	0.016	mg/l		10/15/04	TER
Magnesium	71	mg/l		10/15/04	TER
Manganese	0.19	mg/l		10/15/04	TER
Selenium	<0.01	mg/l		10/15/04	TER
Silicon	11	mg/l		10/15/04	TER
Sodium	51	mg/l		10/15/04	TER
Thallium	<0.01	mg/l		10/15/04	TER
Zinc	0.15	mg/l		10/15/04	TER
(1) EPA Method 300.0 A					
Sulfate	130	mg/l		10/26/04	RAF
(1) SM 18 3500Cr-D Hexavalent Chromium					
Chromium, Hexavalent	<0.01	mg/l		10/14/04 10:00	JN

-- LABORATORY ANALYSIS REPORT --

EA Engineering, Science and Technology *East Syracuse, NY*

Sample ID: AP-RB-1004 **LSL Sample ID:** 0418221-005

Location: Grab

Sampled: 10/13/04 10:15 **Sampled By:**

Sample Matrix: NPW

Analytical Method / Analyte	Result	Units	Prep Date	Analysis Date & Time	Analyst Initials
(1) EPA 350.1 Ammonia					
Ammonia as N	<0.03	mg/l		10/22/04	DRB
(1) EPA 420.1 Recoverable Phenolics ML					
Phenolics, Total Recoverable	<0.05	mg/l	10/26/04	10/29/04	JN
(1) EPA 6010 Total Metals					
Cadmium	<0.01	mg/l		10/15/04	TER
Chromium	<0.01	mg/l		10/15/04	TER
Iron	<0.05	mg/l		10/15/04	TER
Lead	<0.01	mg/l		10/15/04	TER
Magnesium	<1	mg/l		10/15/04	TER
Manganese	0.016	mg/l		10/15/04	TER
Selenium	<0.01	mg/l		10/15/04	TER
Silicon	0.034	mg/l		10/15/04	TER
Sodium	1.2	mg/l		10/15/04	TER
Thallium	<0.01	mg/l		10/15/04	TER
Zinc	<0.01	mg/l		10/15/04	TER
(1) EPA Method 300.0 A					
Sulfate	1.6	mg/l		10/26/04	RAF
(1) SM 18 3500Cr-D Hexavalent Chromium					
Chromium, Hexavalent	<0.01	mg/l		10/14/04 10:01	JN

-- LABORATORY ANALYSIS REPORT --

EA Engineering, Science and Technology *East Syracuse, NY*

Sample ID: AP-MW2B-1804 **LSL Sample ID:** 0422436-001

Location:

Sampled: 12/21/04 15:15 **Sampled By:** RC

Sample Matrix: NPW

Analytical Method / Analyte	Result	Units	Prep Date	Analysis Date & Time	Analyst Initials
(1) EPA 350.1 Ammonia					
Ammonia as N	2.0	mg/l		12/31/04	DRB
(1) EPA 420.1 Recoverable Phenolics ML					
Phenolics, Total Recoverable	<0.05	mg/l	12/23/04	12/24/04	JN
(1) EPA 6010 Total Metals					
Cadmium	<0.01	mg/l		12/23/04	TER
Chromium	0.31	mg/l		12/23/04	TER
Iron	0.45	mg/l		12/23/04	TER
Lead	<0.01	mg/l		12/23/04	TER
Magnesium	<1	mg/l		12/23/04	TER
Manganese	0.050	mg/l		12/23/04	TER
Selenium	<0.01	mg/l		12/23/04	TER
Silicon	8.0	mg/l		12/23/04	TER
Sodium	150	mg/l		12/23/04	TER
Thallium	<0.01	mg/l		12/23/04	TER
Zinc	0.037	mg/l		12/23/04	TER
(1) EPA Method 300.0 A					
Sulfate	26	mg/l		12/24/04	RAF
(1) SM 18 3500Cr-D Hexavalent Chromium					
Chromium, Hexavalent	0.21	mg/l		12/22/04	DRB

Attachment E

Landfill Cap Inspection Checklist
October 2004

LANDFILL CAP INSPECTION CHECKLIST
AIRCO PARCEL, NIAGARA FALLS, NEW YORK

EA Personnel:	Robert Casey
Date:	13 October 2004
Weather:	Clear, mid 50's

1. **Inspection of ground surface for exposure of geotextile cover (cap erosion):**
   No erosion observed.
2. **Inspection of ground surface for differential settlement resulting in soil cracking or ponded water:**
   No deficiencies observed.
3. **Identification of stressed vegetation:**
   Vegetation on landfill (grass), ~1/2 ft. high, No stressed vegetation observed.
4. **Identification of seeps, rooted vegetation (trees), and/or animal burrows:**
   Observed some small rodent burrows in topsoil throughout the site. Rodents are most likely a type of field mice. Groundwater flow structure located along the southwest side of Landfill.
5. **Identification of deteriorating equipment (i.e., monitoring wells, fencing, or drainage structures):**
   Monitoring wells show some rusting of the steel protective casings. May choose to grind rust, prime and paint before rust gets too far into the metal.
6. **Inspection of stormwater drainage swales for erosion, sloughing, or flow-through:**
   Drainage swales are clear with the exception of the one located at the southwest edge, where soils and vegetation have covered the stone swale. Should be cleaned and new stone installed.
7. **Inspection of east side of the landfill (Niagara Mohawk Power Corporation parcel) along the intermittent stream for the presence of erosion or sloughing:**
   No deficiencies observed.
8. **Inspection of access roads:**
   Access roads were in good shape. Vegetation was observed growing in many areas of the road. Defoliant should be used to remove the vegetation in the roadways.

Attachment F

Laboratory Analytical Results for GCTS Discharge Sampling

Scott Graham
EA Engineering, Science and Technology
6731 Collamer Road
East Syracuse, NY 13057-9759

Phone: (315) 431-4610
FAX: (315) 431-4280

Laboratory Analysis Report

For

EA Engineering, Science and Technology

Client Project ID:

12040.87.0003

LSL Project ID: **0412658**

Receive Date/Time: 07/29/04 16:03

Project Received by: MW

Life Science Laboratories, Inc.

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NYS DOH ELAP #11369

This report was reviewed by: Alee Sutton QAO *Date:* 8-11-04

Life Science Laboratories, Inc.

A copy of this report was sent to:

Date Printed: 8/11/04

-- LABORATORY ANALYSIS REPORT --

EA Engineering, Science and Technology *East Syracuse, NY*

Sample ID: AP-P7-072904 **LSL Sample ID:** 0412658-001

Location: Witmer Rd. Landfill

Sampled: 07/29/04 12:45 **Sampled By:** RC

Sample Matrix: NPW

Analytical Method / Analyte	Result	Units	Prep Date	Analysis Date & Time	Analyst Initials
(1) Electronic Report Generation					
Report Fee					
(1) EPA 150.1 pH					
pH	7.8	Std. Units		8/3/04 17:08	GIS
pH Measurement Temperature	25	Degrees C.		8/3/04 17:08	GIS
(1) EPA 160.2 Total Suspended Solids					
Total Suspended Solids @ 103-105 C	<4	mg/l		7/30/04	MM
(1) EPA 200.7 Total Metals					
Barium	<0.2	mg/l	8/2/04	8/5/04	TER
Chromium	<0.01	mg/l	8/2/04	8/5/04	TER
Copper	<0.01	mg/l	8/2/04	8/5/04	TER
Iron	0.45	mg/l	8/2/04	8/5/04	TER
Nickel	<0.01	mg/l	8/2/04	8/5/04	TER
Selenium	<0.01	mg/l	8/2/04	8/5/04	TER
Thallium	<0.01	mg/l	8/2/04	8/5/04	TER
Zinc	<0.01	mg/l	8/2/04	8/5/04	TER
(1) EPA 350.1 Ammonia					
Ammonia as N	6.3	mg/l		8/4/04	DRB
(1) EPA 351.2 TKN as N					
Total Kjeldahl Nitrogen	6.4	mg/l	8/4/04	8/5/04	DRB
(1) EPA 405.1 BOD-5					
Biochemical Oxygen Demand, 5 Day	<4	mg/l		7/30/04 21:08	MM/KB B
(1) EPA 420.1 Recoverable Phenolics LL					
Phenolics, Total Recoverable	<0.002	mg/l	8/4/04	8/4/04	JN
(1) EPA 601 Halocarbons by 624(Partial List)					
1,1-Dichloroethane	<1	ug/l		8/5/04	LEF
Trichloroethene	<1	ug/l		8/5/04	LEF
Surrogate (Tol-d8)	97	%R		8/5/04	LEF
Surrogate (4-BFB)	102	%R		8/5/04	LEF
Surrogate (1,2-DCA-d4)	106	%R		8/5/04	LEF
(1) EPA Method 300.0 A					
Nitrate as N	<0.1	mg/l		7/29/04 19:24	RAF
Nitrite as N	<0.1	mg/l		7/29/04 19:24	RAF
(1) HACH 8000 COD					
Chemical Oxygen Demand	<2	mg/l		8/5/04	JN
(1) SM 18 3500Cr-D Hexavalent Chromium					
Chromium, Hexavalent	<0.01	mg/l		7/30/04 08:04	JN
(1) SM18-2540C Total Dissolved Solids					
Total Dissolved Solids @ 180 C	460	mg/l		8/3/04	MM

-- LABORATORY ANALYSIS REPORT --

EA Engineering, Science and Technology *East Syracuse, NY*

Sample ID: Trip Blank **LSL Sample ID:** 0412658-002

Location:

Sampled: 07/29/04 0:00 **Sampled By:**

Sample Matrix: TB

Analytical Method / Analyte	Result	Units	Prep Date	Analysis Date & Time	Analyst Initials
(1) EPA 601 Halocarbons by 624(Partial List)					
1,1-Dichloroethane	<1	ug/l		8/5/04	LEF
Trichloroethene	<1	ug/l		8/5/04	LEF
Surrogate (Tol-d8)	98	%R		8/5/04	LEF
Surrogate (4-BFB)	104	%R		8/5/04	LEF
Surrogate (1,2-DCA-d4)	104	%R		8/5/04	LEF

SURROGATE RECOVERY CONTROL LIMITS FOR ORGANIC METHODS

Method	Surrogate(s)	Water Limits, %R	SHW Limits, %R
EPA 504	TCMX	80-120	NA
EPA 508	DCB	70-130	NA
EPA 515.4	DCAA	70-130	NA
EPA 524.2	1,2-DCA-d4, 4-BFB	80-120	NA
EPA 525.2	1,3-DM-2-NB, TPP, Per-d12	70-130	NA
EPA 526	1,3-DM-2-NB, TPP	70-130	NA
EPA 528	2-CP-3,4,5,6-d4, 2,4,6-TBP	70-130	NA
EPA 551.1	Decafluorobiphenyl	80-120	NA
EPA 552.2	2,3-DBPA	80-120	NA
EPA 601	1,2-DCA-d4, Tol-d8, 4-BFB	70-130	NA
EPA 602	1,2-DCA-d4, Tol-d8, 4-BFB	70-130	NA
EPA 608	DCB	30-150	NA
EPA 624	1,2-DCA-d4, Tol-d8, 4-BFB	70-130	NA
EPA 625, AE	2-Fluorophenol	21-110	NA
EPA 625, AE	Phenol-d5	10-110	NA
EPA 625, AE	2,4,6-Tribromophenol	10-123	NA
EPA 625, BN	Nitrobenzene-d5	35-114	NA
EPA 625, BN	2-Fluorobiphenyl	43-116	NA
EPA 625, BN	Terphenyl-d14	33-141	NA
EPA 8010	1,2-DCA-d4, Tol-d8, 4-BFB	70-130	70-130
EPA 8020	1,2-DCA-d4, Tol-d8, 4-BFB	70-130	70-130
EPA 8021	1,2-DCA-d4, Tol-d8, 4-BFB	70-130	70-130
EPA 8081	TCMX, DCB	30-150	30-150
EPA 8082	DCB	30-150	30-150
EPA 8151	DCAA	30-130	30-120
EPA 8260	1,2-DCA-d4, Tol-d8, 4-BFB	70-130	70-130
EPA 8270, AE	2-Fluorophenol	21-110	25-121
EPA 8270, AE	Phenol-d5	10-110	24-113
EPA 8270, AE	2,4,6-Tribromophenol	10-123	19-122
EPA 8270, BN	Nitrobenzene-d5	35-114	23-120
EPA 8270, BN	2-Fluorobiphenyl	43-116	30-115
EPA 8270, BN	Terphenyl-d14	33-141	18-137
DOH 310-13	Dodecane	40-110	40-110
DOH 310-14	Dodecane	40-110	40-110
DOH 310-15	Dodecane	40-110	40-110
DOH 310-34*	4-BFB	50-150	50-150
8015M_GRO*	4-BFB	50-150	50-150
8015M_DRO	Terphenyl-d14	50-150	50-150

*Run by GC/MS.

Units Key:	ug/l = microgram per liter ug/kg = microgram per kilogram mg/l = milligram per liter mg/kg = milligram per kilogram %R = Percent Recovery

Life Science Laboratories, Inc.

5854 Butternut Drive
East Syracuse, NY 13057

Phone # (315) 445-1105 Telefax # (315) 445-1301

Chain of Custody Record

7 day TAT

Client:	EA Engineering Science & Tech.	Phone #	431-4610
Address:	6731 Collamer Rd.	Telefax #	431-4280
	E. Syracuse, NY 13057		

Contact Person: Scott Graham

LSL Project #:

Client's Site I.D.: Witmer Rd. Lancaster

Client's Project I.D.: 12040.87.0003

Authorization:

LSL Sample Number	Client's Sample Identifications	Sample Date	Sample Time	Type grab	Type comp.	Matrix	Preserv. Added	Containers #	Containers size/type	Analyses	Preserv. Check
	AP-P7-072904	29 Jul 04	1245	x		GW	H_2SO_4	1	500 ml	TKN,NH3,COD	001 A
	AP-P7-072904	29 Jul 04	1245				None	1	500 ml	BOD,TSS,pH,NO3,NO2,Cr+6 TDS	001 B
	AP-P7-072904	29 Jul 04	1245				HNO_3	1	500 ml	Ba,Cr,Cu,Fe,Ni,Ni,Se,Tl,Zn	001 C
	AP-P7-072904	29 Jul 04	1245				HCL	2	40 ml	601/602	001 DE
	AP-P7-072904	29 Jul 04	1245	↓		↓	H_2SO_4	1	Liter(g)	Phenols	001 F
							HCL	2	40 ml	Trip Blank	002 AB

Notes and Hazard identifications:

Custody Transfers

		Date	Time
Sampled By: Robert S Casey	Received By:		
Relinquished By:	Received By:		
Relinquished By:	Received for Lab By: Matt V	07-29-04	16:03

CVD

LSL

Scott Graham
EA Engineering, Science and Technology
6731 Collamer Road
East Syracuse, NY 13057-9759

Phone: (315) 431-4610
FAX: (315) 431-4280

Laboratory Analysis Report

For

EA Engineering, Science and Technology

Client Project ID:

Witmer Rd. Landfill

LSL Project ID: **0413276**

Receive Date/Time: 08/06/04 8:23

Project Received by: GS

Life Science Laboratories, Inc.

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NYS DOH ELAP #11667

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NYS DOH ELAP #10760

LSL MidLakes Lab
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NYS DOH ELAP #11369

This report was reviewed by: Linda Waters QC *Date:* 8/19/04

Life Science Laboratories, Inc.

A copy of this report was sent to:

Date Printed: 8/18/04

-- LABORATORY ANALYSIS REPORT --

EA Engineering, Science and Technology *East Syracuse, NY*

Sample ID: AP-P7-080504 **LSL Sample ID:** 0413276-001

Location:

Sampled: 08/05/04 11:50 **Sampled By:** RC

Sample Matrix: NPW

Analytical Method / Analyte	Result	Units	Prep Date	Analysis Date & Time	Analyst Initials
(1) EPA 150.1 pH					
pH	8.0	Std. Units		8/6/04 16:30	GIS
pH Measurement Temperature	25	Degrees C.		8/6/04 16:30	GIS
(1) EPA 160.2 Total Suspended Solids					
Total Suspended Solids @ 103-105 C	15	mg/l		8/12/04	MM
(1) EPA 200.7 Total Metals					
Barium	<0.2	mg/l		8/6/04	TER
Chromium	<0.01	mg/l		8/6/04	TER
Copper	<0.01	mg/l		8/6/04	TER
Iron	0.96	mg/l		8/6/04	TER
Nickel	<0.01	mg/l		8/6/04	TER
Selenium	<0.01	mg/l		8/6/04	TER
Thallium	<0.01	mg/l		8/6/04	TER
Zinc	<0.01	mg/l		8/6/04	TER
(1) EPA 350.1 Ammonia					
Ammonia as N	3.6	mg/l		8/12/04	DRB
(1) EPA 351.2 TKN as N					
Total Kjeldahl Nitrogen	4.4	mg/l	8/11/04	8/12/04	DRB
(1) EPA 405.1 BOD-5					
Biochemical Oxygen Demand, 5 Day	<4	mg/l		8/6/04 12:21	MM
(1) EPA 420.1 Recoverable Phenolics LL					
Phenolics, Total Recoverable	<0.002	mg/l	8/16/04	8/17/04	JN
(1) EPA 601 Halocarbons by 624(Partial List)					
1,1-Dichloroethane	<1	ug/l		8/7/04	BD
Trichloroethene	<1	ug/l		8/7/04	BD
Surrogate (Tol-d8)	110	%R		8/7/04	BD
Surrogate (4-BFB)	101	%R		8/7/04	BD
Surrogate (1,2-DCA-d4)	91	%R		8/7/04	BD
(1) EPA Method 300.0 A					
Nitrate as N	0.17	mg/l		8/6/04 19:35	AMW
Nitrite as N	0.21	mg/l		8/6/04 19:35	AMW
(1) HACH 8000 COD					
Chemical Oxygen Demand	11	mg/l		8/11/04	JN
(1) SM 18 3500Cr-D Hexavalent Chromium					
Chromium, Hexavalent	<0.01	mg/l		8/6/04 09:41	JN
(1) SM18-2540C Total Dissolved Solids					
Total Dissolved Solids @ 180 C	450	mg/l		8/12/04	MM

-- LABORATORY ANALYSIS REPORT --

EA Engineering, Science and Technology *East Syracuse, NY*

Sample ID:	Trip Blank	**LSL Sample ID:**	0413276-002
Location:			
Sampled:	08/05/04 0:00	**Sampled By:**	RC
Sample Matrix:	TB		

Analytical Method / Analyte	Result	Units	Prep Date	Analysis Date & Time	Analyst Initials
(1) EPA 601 Halocarbons by 624(Partial List)					
1,1-Dichloroethane	<1	ug/l		8/7/04	BD
Trichloroethene	<1	ug/l		8/7/04	BD
Surrogate (Tol-d8)	110	%R		8/7/04	BD
Surrogate (4-BFB)	101	%R		8/7/04	BD
Surrogate (1,2-DCA-d4)	91	%R		8/7/04	BD

SURROGATE RECOVERY CONTROL LIMITS FOR ORGANIC METHODS

Method	Surrogate(s)	Water Limits, %R	SHW Limits, %R
EPA 504	TCMX	80-120	NA
EPA 508	DCB	70-130	NA
EPA 515.4	DCAA	70-130	NA
EPA 524.2	1,2-DCA-d4, 4-BFB	80-120	NA
EPA 525.2	1,3-DM-2-NB, TPP, Per-d12	70-130	NA
EPA 526	1,3-DM-2-NB, TPP	70-130	NA
EPA 528	2-CP-3,4,5,6-d4, 2,4,6-TBP	70-130	NA
EPA 551.1	Decafluorobiphenyl	80-120	NA
EPA 552.2	2,3-DBPA	80-120	NA
EPA 601	1,2-DCA-d4, Tol-d8, 4-BFB	70-130	NA
EPA 602	1,2-DCA-d4, Tol-d8, 4-BFB	70-130	NA
EPA 608	DCB	30-150	NA
EPA 624	1,2-DCA-d4, Tol-d8, 4-BFB	70-130	NA
EPA 625, AE	2-Fluorophenol	21-110	NA
EPA 625, AE	Phenol-d5	10-110	NA
EPA 625, AE	2,4,6-Tribromophenol	10-123	NA
EPA 625, BN	Nitrobenzene-d5	35-114	NA
EPA 625, BN	2-Fluorobiphenyl	43-116	NA
EPA 625, BN	Terphenyl-d14	33-141	NA
EPA 8010	1,2-DCA-d4, Tol-d8, 4-BFB	70-130	70-130
EPA 8020	1,2-DCA-d4, Tol-d8, 4-BFB	70-130	70-130
EPA 8021	1,2-DCA-d4, Tol-d8, 4-BFB	70-130	70-130
EPA 8081	TCMX, DCB	30-150	30-150
EPA 8082	DCB	30-150	30-150
EPA 8151	DCAA	30-130	30-120
EPA 8260	1,2-DCA-d4, Tol-d8, 4-BFB	70-130	70-130
EPA 8270, AE	2-Fluorophenol	21-110	25-121
EPA 8270, AE	Phenol-d5	10-110	24-113
EPA 8270, AE	2,4,6-Tribromophenol	10-123	19-122
EPA 8270, BN	Nitrobenzene-d5	35-114	23-120
EPA 8270, BN	2-Fluorobiphenyl	43-116	30-115
EPA 8270, BN	Terphenyl-d14	33-141	18-137
DOH 310-13	Dodecane	40-110	40-110
DOH 310-14	Dodecane	40-110	40-110
DOH 310-15	Dodecane	40-110	40-110
DOH 310-34*	4-BFB	50-150	50-150
8015M_GRO*	4-BFB	50-150	50-150
8015M_DRO	Terphenyl-d14	50-150	50-150

*Run by GC/MS.

Units Key:	ug/l = microgram per liter ug/kg = microgram per kilogram mg/l = milligram per liter mg/kg = milligram per kilogram %R = Percent Recovery