

# Buffalo Avenue Site

NIAGARA COUNTY, NEW YORK

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## Site Management Plan

**NYSDEC Site Number: 932080A**

**Prepared for:**

Niagara Falls Water Board  
5815 Buffalo Ave, Niagara Falls, NY 14304

**Prepared by:**

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**Revisions to Final Approved Site Management Plan:**

Rev #	Submitted Date	Summary of Revision	DEC Approval Date

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# **SITE MANAGEMENT PLAN**

## **1.0 INTRODUCTION**

This document is an element of the Institutional Controls (IC) program at the Buffalo Avenue Site (hereinafter referred to as the “Site”) under the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program administered by New York State Department of Environmental Conservation (NYSDEC). A large portion of the Site was investigated by the City of Niagara Falls in accordance with requirements set forth in Addendum III of the Occidental (OCC) S-Area Judgment (the Eastern Portion Study), which was executed on January 10, 1984 and last amended on September 12, 1990 in accordance with the Requisite Remedial Technology (RRT) Stipulation.

### **1.1 General**

The RRT Stipulation required the City of Niagara Falls to investigate contaminated media on the eastern nine (9) acres of the City’s former Water Treatment Plant (WTP), referred to as the Eastern Area (Site No. 932080A). Additional investigations by the City and others on adjacent property to the east (former Site No. 932080B) and its subsequent delisting resulted in the annexation of one additional acre to the subject site in 1993. A figure showing the site location and boundaries of this 10-acre site is provided in Figure 1. The boundaries of the Buffalo Avenue site are more fully described in the metes and bounds site description that is part of the Deed Restriction.

Based on the site investigation findings, disposal of hazardous waste has occurred and contamination exists in both soil and groundwater beneath the site, which is hereafter referred to as “contaminated media.” A significant threat does not exist under current site use however. This Site Management Plan (SMP) was prepared to manage contaminated media at the site until the Deed Restriction is extinguished in accordance with ECL Article 71, Title 36. All reports associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

This SMP was prepared by the Division of Environmental Remediation, Remedial Bureau E on behalf of the City of Niagara Falls, in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation and the guidelines provided by NYSDEC.

## **1.2 Purpose**

The site is currently owned by the Niagara Falls Water Board which operates a sludge drying facility to manage water treatment plant residuals. The drying beds and related facilities have been incorporated into the site management strategy to control exposure to contaminated media during the use of the site to ensure protection of public health and the environment. A Deed Restriction, recorded with the Niagara County Clerk, will require compliance with this SMP and all institutional controls placed on the site which restrict site use. This SMP specifies the methods necessary to ensure compliance with all ICs required by the Deed Restriction for contamination that remains at the site. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Deed Restriction and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

## **1.3 Revisions**

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. In accordance with the Deed Restriction for the site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

## **2.0 SITE BACKGROUND**

### **2.1 Site Location and Description**

The Buffalo Avenue Site is located in the City of Niagara Falls, County of Niagara, New York and is comprised of portions of four adjoining parcels all owned by the Niagara Falls Water Board and identified as SBL 160.18-1-80.2, 160.18-1-81, 160.18-1-82, and 160.18-1-83.1 on the Niagara Falls Tax Map. . The site, which encompasses approximately 10 acres, is located in an urban area within the City of Niagara Falls Corporate Limits immediately south of Buffalo Avenue between 55th and 56th Streets. The Robert Moses Parkway is located to the south between the site and the Niagara River, which lies 400 feet south of the site (see Figure 1).

This site includes remnants of two former sites which have been combined: the 9-acre Eastern Area associated with the former City of Niagara Falls Water Treatment Plant (WTP) property (#932080A) and an adjoining 1 acre from the former Buffalo Avenue "B" Site (#932080B) to the east. The western portion of the former WTP property is controlled by the OCC S-Area RRT Stipulation and is being remediated the Responsible Party (Glenn Springs Holdings) under the joint oversight of EPA and the NYSDEC. Following the consolidation of the Eastern Area and the 1-acre parcel in 1993 and subsequent site redevelopment, a chain-link fence was installed around the site perimeter to prevent trespassing and provide security to the Water Treatment Plant property.

In 2004, three lined sludge drying (freeze/thaw) beds were constructed at the site within the 9-acre Eastern Area for the management of residuals from the new Niagara Falls WTP, which was constructed in 1997 immediately east of the site. The beds are constructed of a polyethylene geo-membrane liner sandwiched between two layers of geotextile. The beds have a stone base topped with asphalt pavement. Figure 2 shows the site in relation to adjacent facilities.

### **2.2 Disposal History**

The Buffalo Avenue Site was a former wetland area that was filled to reclaim land to facilitate construction. Filling activities have extended the shoreline of the Niagara River up to 1000 feet from its original location, with extension resulting from three different filling operations: (1) Disposal of refuse, incinerator residue and non-combustibles by the City of Niagara Falls from the 1930s to the 1950s; (2) Disposal of

dredged material from the construction of the Niagara River Ice Canal by the New York Power Authority (NYPA); and (3) Disposal of shot rock from the Niagara Power Project conduit excavations by NYPA from 1958 to 1963. The first filling operation extended the shoreline to a location just north of the present Robert Moses Parkway with the second and third filling operations extending the shoreline to its present position. All disposal activities are believed to have ceased by 1963.

### **2.3 Geologic Conditions**

The ground surface at the site is relatively flat-lying with a crowned area in the center and a low-lying area in the southwest corner. Ground elevations on site range from about 569 to 582 feet above mean sea level. The primary bedrock and unconsolidated deposits identified during site investigations from the base of the profile upward are: dolostone bedrock, till, lacustrine clay, alluvium, silty sand deposits, miscellaneous waste fill, and shot rock fill. In general, shallow ground water movement was to the south towards the Niagara River under a hydraulic gradient which ranged from 0.01 ft/ft to 0.05 ft/ft. A bedrock aquifer below the site flows to the west-northwest.

A geologic section, facing east through the center of the site, is shown in Figure 3. The cross-section shows the fill thickness and depth to the clay increasing toward the Niagara River.

A groundwater flow figure based on hydraulic gradient monitoring performed in 2013 as part of the S-Area Remedial Program (CRA, 2014) is shown in Figure 4.

## 3.0 SUMMARY OF SITE CONTAMINATION

### 3.1 Previous Investigations

Numerous investigations have been completed in the vicinity of this site: soil samples were collected by the U.S.G.S. in 1982 and 1983; a groundwater investigation was completed at the 9-acre site in 1983; a site investigation of former site #932080B (which included the 1-acre area) was completed in 1991 (O'Brien & Gere, 1991); separate Phase II investigations of the 1-acre parcel (O'Brien & Gere, 2002a) and the Eastern Area (O'Brien & Gere, 2002b) were completed in 1996, although the Phase II reports were not approved until 2002. Table 1 presents a summary of the soil and groundwater data generated during the Phase II investigations in the mid-1990s by O'Brien & Gere.

In addition, as part of the S-Area Remedial Program at the adjacent NPL site, periodic chemical monitoring of shallow overburden groundwater in the so-called "V-Area" is performed by Conestoga-Rovers & Associates (CRA), including sampling of several wells on the Buffalo Avenue site (CRA, 2014). Table 2 presents total organic chemical concentration data from several V-Area wells sampled over the previous 12 years. The reader is advised to contact the EPA Region 2 Western NY Public Information Office located at 186 Exchange Street in Buffalo to review available site investigation reports. Many site documents, including the most recent Five-Year Review report for the S-Area NPL site, are also available for review on-line using EPA's Superfund Site Information search page.

Generally, the investigations determined that site soils and groundwater are contaminated with both organic and inorganic compounds, including, but not limited to, chlorinated benzene compounds (indicative of S-Area materials), numerous polynuclear aromatic hydrocarbons (PAHs) and pesticides, as well as a few heavy metals. Soil cleanup guidance (i.e., TAGM 4046) and groundwater standards in effect at the time were exceeded for numerous contaminants. Evaluation of previous soil data using currently applicable Part 375 Soil Cleanup Objectives does not significantly alter the number of samples exceeding cleanup criteria and does not change the site management approach.

As indicated, contaminants associated with the OCC S-Area landfill have been documented in soil and groundwater samples located on the former Niagara Falls WTP. The following sections discuss the findings of the various soil and groundwater investigations to date.

### **3.2 Soil**

Below is a summary of surface and subsurface soil conditions when the investigations were performed in the early to mid-1990s (O'Brien & Gere, 2002a; 2002b). Figures 5 and 6 depict previous soil sample locations.

Total PAH concentrations in surface soil were within background ranges across the site. In the subsurface soil analyzed, S-Area related compounds were only detected in the southern portion of the site, with the majority detected in soil boring SB-40 where two compounds (hexachlorobenzene and 1,2,4-trichlorobenzene) exceeded TAGM 4046 levels.

Several inorganic compounds (heavy metals) were detected in surface soil samples above the typical background range and TAGM 4046 cleanup levels. Exceedances of TAGM 4046 values occurred for several metals (copper, lead, magnesium, mercury, and zinc), however only mercury exceeded the current Part 375 SCOs.

Subsurface soil samples collected during the investigation (SB-38, SB-39 and SB-40) contained levels of copper, lead, mercury, nickel, and zinc above TAGM 4046 cleanup goals. TCLP results for subsurface soil samples contained lead and mercury at levels below the maximum allowable concentration as presented in 40 CFR, Part 261. The distribution of inorganics concentrations in both surface soil and subsurface soil was sporadic throughout the site and not indicative of a source.

In surface soils, the highest concentrations of pesticides were detected in the southern portion of the site. At surface soil sample SS-2, located in the southern portion of the site, two pesticide compounds exceeded TAGM 4046 cleanup objectives.

In the subsurface soil samples collected on the Eastern Area site during the Buffalo Avenue Site Investigation (1991), pesticides were detected in each boring. Total

concentrations were the highest in the southeast portion of the site. TAGM 4046 cleanup objectives were exceeded for at least one compound at each of the locations.

During construction of the freeze/thaw beds in 2004, an area of contaminated soil (“hotspot”) was encountered within the footprint of Bed 2. The hotspot was delineated, excavated, and disposed offsite. Other less contaminated soil was stockpiled and eventually utilized to construct 4-foot high earthen berms along the north end of the site inside the fence. The berms were covered with 6 inches of clean topsoil and seeded to establish a vegetative cover.

### **3.3 Site-Related Groundwater**

The data indicate that the highest concentrations of organic chemicals detected in the ground water during the 1991-95 investigations were at monitoring wells located in the southern and western portions of the site. Chlorobenzene compounds indicative of S-Area wastes accounted for the majority of the compounds detected with concentrations of some individual compounds above NYS Class GA standards. The S-Area constituents were found to be present exclusively in the southern half of the site. Low levels of PAHs were detected in groundwater samples collected in the western and southern portions of the site.

Results of total (unfiltered) sample analyses indicated elevated concentrations of ten inorganic constituents. Filtered sample analyses indicate only four metals were detected above Class GA standards suggesting that the inorganics found in the unfiltered samples were associated with suspended sediment. The four metals identified in the filtered samples included iron, magnesium, sodium and manganese. In general, higher concentrations of inorganics were detected in groundwater samples from monitoring wells screened in the fill material.

In the groundwater samples, fourteen pesticides were detected. The highest concentrations of these pesticides were detected in the southern and western portions of the site and were predominantly associated with delta BHC and its related isomers. Concentrations of at least one pesticide compound were above the groundwater standards in each of the wells with the exception of OBG-3.

Contaminated overburden groundwater flows toward the Niagara River; however, this water is captured by the overburden drain collection system installed by OCC as part of the S-Area remediation. Remedial activities at the adjacent OCC S-Area site was completed in 2002 and included a landfill cap, an overburden barrier wall and drain collection system, and a bedrock hydraulic containment system. The groundwater collection trench extends from the adjoining OCC S-Area site and runs along the southern boundary of the Buffalo Avenue site to the southeast corner. The trench is installed between 30 and 32 feet deep and intercepts shallow groundwater leaving the site where it is conveyed to the S-Area site for treatment. While no formal remedial measures have been implemented at the Buffalo Avenue site itself, contaminated overburden groundwater leaving the site is captured by the drain collection system installed as part of the S-Area remediation (CRA, 2014).

Periodic chemical monitoring of overburden groundwater beneath portions of the Buffalo Avenue site has been performed annually by CRA as part of the S-Area Remedial Program since 2002. Figure 7 shows the current network of monitoring wells. The 2013 sampling event included sample collection from 5 monitoring wells located on the Buffalo Avenue site. The concentrations of volatile organic compounds (VOC) in all wells were consistent with previous events with the exception of well OW597R, which was installed in 2004 by CRA along the southeastern side of the site. The total VOC concentration in this well increased two orders of magnitude between 2011 and 2012 and remained elevated during the 2013 sampling event. This well is 300 feet east of OBG-4R, which is adjacent to the S-Area landfill (and also has high VOC levels), and cross-gradient with respect to groundwater flow. For more information on the S-Area monitoring activities associated with the adjacent NPL site, the reader is encouraged to contact the EPA Region 2 Western NY Public Information Office in Buffalo or by searching EPA's Superfund Site Information database.

## **4.0 INSTITUTIONAL CONTROL PLAN**

Since contaminated soil and groundwater exist beneath the site, Institutional Controls (ICs) are required to protect human health and the environment.

### **4.1 Institutional Controls**

A series of Institutional Controls is required by the NYSDEC to: (1) prevent future exposure to contaminated media by controlling disturbances of the subsurface contamination; and, (2) limit the use and development of the site to Commercial or Industrial uses only. Adherence to these Institutional Controls on the site is required by the Deed Restriction and will be implemented under this Site Management Plan. These Institutional Controls are:

1. Compliance with the Deed Restriction and this SMP by the Grantor and the Grantor's successors and assigns;
2. Modifications to any sludge drying beds, roadways, or vegetated areas may not be performed without prior approval from the NYSDEC as specified in this SMP;
3. The Site owner will certify each IC in a manner defined in Section 4.3 of this SMP;
4. The property may only be used for Commercial or Industrial use provided that the long-term Institutional Controls included in this SMP are employed;
5. The property may not be used for a higher level of use, such as Unrestricted or Restricted Residential use, without additional remediation and amendment of the Deed Restriction, as approved by the NYSDEC;
6. Institutional Controls identified in the Deed Restriction may not be discontinued without an amendment to or extinguishment of the Deed Restriction.
7. All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP;
8. The potential for vapor intrusion must be evaluated for any buildings developed on the site and any potential impacts that are identified must be monitored or mitigated;
9. NYSDEC retains the right to access the Site at any time in order to evaluate site conditions;

#### 4.1.1 Excavation Work Plan

Any future intrusive work that will potentially disturb contaminated media, including any modifications or repairs to the existing sludge drying beds, roadways, and vegetated areas, will be performed in compliance with the Excavation Work Plan (EWP) that is attached as Appendix A to this SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) prepared for the site and provided in Appendix C.

#### 4.1.2 Soil Vapor Intrusion Evaluation

Prior to the construction of any enclosed structures located on the site, a soil vapor intrusion (SVI) evaluation will be performed to determine whether any mitigation measures are necessary to eliminate potential exposure to vapors in the proposed structure. Alternatively, an SVI mitigation system may be installed as an element of the building foundation without first conducting an investigation. This mitigation system will include a vapor barrier and passive sub-slab depressurization system that is capable of being converted to an active system.

Prior to conducting an SVI investigation or installing a mitigation system, a work plan will be developed and submitted to the NYSDEC and NYSDOH for approval. This work plan will be developed in accordance with the most recent NYSDOH “Guidance for Evaluating Vapor Intrusion in the State of New York.” Measures to be employed to mitigate potential vapor intrusion will be evaluated, selected, designed, installed, and maintained based on the SVI evaluation, the NYSDOH guidance, and construction details of the proposed structure.

### **4.2 Notifications**

Notifications will be submitted by the property owner to the NYSDEC contacts listed in Table 3 below for the following reasons:

- Written 60-day advance notice of any proposed changes in site use that are required under the terms of the Deed Restriction, 6NYCRR Part 375, and/or Environmental Conservation Law.
- Written 15-day advance notice of any proposed ground-intrusive activities pursuant to the Excavation Work Plan (EWP).

Any change in the ownership of the site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser has been provided with a copy of all approved work plans and reports, including this SMP

Within 15 days after the transfer of all or part of the site, the NYSDEC will be provided with the new owner's name, contact representative, and contact information will be confirmed in writing.

**Table 3: NYSDEC Contacts**

Greg Sutton, Regional Hazardous Waste Remediation Engineer	270 Michigan Avenue Buffalo, NY 14203-2915
Glenn May, Project Manager	270 Michigan Avenue Buffalo, NY 14203-2915
Kelly Lewandowski, Chief Site Control Section	625 Broadway, 12 <sup>th</sup> Floor Albany, NY 12233-7017

### **4.3 Certification of Institutional Controls**

Once every five years, or as otherwise directed by the NYSDEC, the Site owner or a qualified environmental professional will prepare and sign the following certification:

For each institutional control identified for the site, I certify that all of the following statements are true:

- The institutional control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;
- Nothing has occurred that would impair the ability of the control to protect the public health and environment;

- Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;
- Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;
- Use of the site is compliant with the deed restriction;
- The information presented in this report is accurate and complete.
- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class “A” misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business address], am certifying as [Owner or Owner’s Designated Site Representative] for the site.

The signed certification will be submitted electronically to the Region 9 Hazardous Waste Remediation Engineer with a copy to the Site Control Section Chief in Albany.

#### **4.4 Contingency Plan**

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions. Buried drums and underground storage tanks at the subject site have not been identified nor are expected to be present. If drums or tanks are found, excavation activities must cease and the site owner and/or remedial party, and NYSDEC will be notified within two hours of discovery. The drums and tanks shall be handled, removed and cleaned by appropriately trained personnel in accordance with all applicable federal, state and local regulations. Soils surrounding the tanks and drums shall be assessed for impacts in accordance with applicable guidance documents (i.e., PBS regulations, DER-10, etc.).

In the event of any environmentally related situation or unplanned occurrence requiring assistance the Owner or Owner’s representative(s) should contact the appropriate party from the contact list below. For emergencies, appropriate emergency response personnel should be contacted. These emergency contact lists must be maintained in an easily accessible location at the site.

**Table 4: Contact Numbers**

Medical, Fire, and Police:	911
One Call Center:	(800) 272-4480 (3 day notice required for utility markout)
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362
Property Owner: Niagara Water Board Richard Roll, P.E., DEE	(716) 283-9770 x-227
NYSDEC: Regional Hazardous Waste Remediation Engineer	(716) 851-7220

## **5.0 REFERENCES**

- Conestoga-Rovers & Associates, 2014. S-Area Remedial Program, 2013 Evaluation Report. Prepared for Glenn Springs Holdings, Inc., March 2014.
- Dames & Moore, 1988. Phase II Investigation Report, Buffalo Avenue Site, Registry Site No. 932080. Prepared for New York Power Authority. December 1988.
- Malcolm Pirnie, 1989. Alternate Water Treatment Plant Site Investigation, Phase I. Prepared for City of Niagara Falls. June 1989.
- Malcolm Pirnie, 1990. New Water Treatment Plant Preliminary Site Investigation, NYPA - Buffalo Avenue Site. Prepared for City of Niagara Falls. June 1990.
- O'Brien & Gere, 1991. Buffalo Avenue Site Investigation, Prepared for City of Niagara Falls. November 1991.
- O'Brien & Gere, 1995. Preliminary Investigation Water Treatment Plant - Eastern Area. Prepared for City of Niagara Falls. May 1995.
- O'Brien & Gere, 2002a. Phase II Investigation One-Acre Site. Prepared for City of Niagara Falls. April 2002.
- O'Brien & Gere, 2002b. Phase II Investigation Eastern Area. Prepared for City of Niagara Falls. April 2002.

## **TABLES**

**TABLE 1**  
**Summary of Phase II Site Assessment Soil and Groundwater Data**

MEDIA	PARAMETER	SCREENING LEVEL (ppm) *	NUMBER OF EXCEEDANCES	RANGE OF EXCEEDANCES (ppm) *
<b>EASTERN AREA</b>				
<b>Surface Soil</b>	SVOCs - total **	500	0 / 6	na
	SVOCs - total ***	50	0 / 6	na
	Hexachlorobenzene	0.41	3 / 6	0.84 - 2.4
	BHC - total	0.11	2 / 6	0.93 - 1.08
	Pb - total	400	0 / 6	na
	Cr - total	50	0 / 6	na
	As - total	7.5	0 / 6	na
	Hg - total	0.1	6 / 6	0.15 - 4.7
	Zn - total	20	6 / 6	78.1 - 264.0
<b>Subsurface Soil &amp; Fill</b>	SVOCs - total **	500	0 / 4	na
	SVOCs - total ***	50	0 / 4	na
	1,2,4-Trichlorobenzene	3.4	2 / 4	3.4 - 3.5
	Hexachlorobenzene	0.41	2 / 4	1.9 - 19.0
	Aldrin	0.041	2 / 4	0.52 - 0.75
	Heptachlor epoxide	0.02	2 / 4	0.05 - 1.4
	Pb - total	500	0 / 4	na
	Cr - total	50	0 / 4	na
	As - total	7.5	3 / 4	9.7 - 21.3
	Hg - total	0.1	3 / 4	0.91 - 2.1
	Zn - total	20	4 / 4	107.0 - 638.0
	Pb - TCLP	5	0 / 5	na
<b>Groundwater</b>	Benzene	1	2 / 6	2.0 - 2.0
	Toluene	5	1 / 6	5.0
	Chlorobenzene	5	3 / 6	21.0 - 130.0
	Xylenes - total	5	1 / 6	8.0
	Dichlorobenzene - total	5	2 / 6	55.0 - 55.0
	1,2,4-Trichlorobenzene	5	2 / 6	7.0 - 7.0
	1,2,3,4-Tetrachlorobenzene	5	2 / 6	15.0 - 15.0

TABLE 1 (cont.)

Summary of Phase II Site Assessment Soil and Groundwater Data

MEDIA	PARAMETER	SCREENING LEVEL (ppm) *	NUMBER OF EXCEEDANCES	RANGE OF EXCEEDANCES (ppm) *
<b>EASTERN AREA (CONTINUED)</b>				
<b>Groundwater (Continued)</b>	BHC - total	ND	5 / 6	0.006 - 0.34
	Lindane	ND	2 / 6	0.0052 - 0.0063
	Heptachlor	ND	2 / 6	0.0016 - 0.015
	As	25	3 / 6	29.0 - 215.0
	Cr	50	5 / 6	52.6 - 275.0
	Pb	25	6 / 7	28.7 - 5,470
	Zn	300	3 / 6	1,090 - 12,100
<b>ONE-ACRE AREA</b>				
<b>Surface Soil</b>	SVOCs - total **	500	0 / 2	na
	SVOCs - total ***	50	0 / 2	na
	Pb - total	400	1 / 10	527.0
	Cr - total	50	1 / 2	75.0
	As - total	7.5	0 / 2	na
	Hg - total	0.1	2 / 2	1.7 - 3.0
	Zn - total	20	2 / 2	150.0 - 220.0
	Pb - TCLP	5	1 / 7	21.0
<b>Subsurface Soil &amp; Fill</b>	Benzene	0.06	1 / 13	0.074
	SVOCs - total **	500	1 / 13	1,057
	SVOCs - total **	50	2 / 13	330.3 - 1,057
	Phenol	0.03	1 / 13	2.9
	BHC - total	0.11	2 / 13	2.21 - 2.93
	Dieldrin	0.044	1 / 13	0.056
	Pb - total	500	2 / 19	1,510 - 3,310
	Cr - total	50	3 / 13	57.0 - 708.0
	As - total	7.5	2 / 8	7.5 - 10.9
	Hg - total	0.1	7 / 8	0.4 - 5.1
	Zn - total	20	8 / 8	37.0 - 449.0
	Pb - TCLP	5	1 / 12	11.0

TABLE 1 (cont.)

Summary of Phase II Site Assessment Soil and Groundwater Data

MEDIA	PARAMETER	SCREENING LEVEL (ppm) *	NUMBER OF EXCEEDANCES	RANGE OF EXCEEDANCES (ppm) *
ONE-ACRE AREA (CONTINUED)				
Groundwater	Chlorobenzene	5	2 / 4	5.0 - 6.0
	Dichlorobenzene - total	5	1 / 2	6.0
	Aldrin	ND	1 / 3	0.071
	BHC - total	ND	2 / 3	0.064 - 0.92
	Endrin	ND	1 / 3	0.013
	Heptachlor epoxide	ND	1 / 3	0.008
	As	25	0 / 2	na
	Cr	50	3 / 4	67.6 - 1,940
	Pb	25	3 / 4	89.0 - 1,040
	Zn	300	1 / 2	1,540

\* Values for groundwater are in parts per billion (ppb).

\*\* Total SVOCs are screened at 500 ppm to assess compliance with the 500 ppm maximum in TAGM 4046 maximum.

\*\*\* Total SVOCs are also screened at 50 ppm to assess general compliance with the 50 ppm individual compound maximum in TAGM 4046.

## TABLE 2

**TOTAL ORGANIC CHEMICAL CONCENTRATIONS  
V-AREA CHEMICAL MONITORING PROGRAM  
S-AREA REMEDIAL PROGRAM**

Well	Total Organic Concentration (µg/L)											
	June/July 2002	June 2003	May 2004	December 2005	September 2006	April/May 2007	April 2008	December 2009	December 2010	December 2011	January 2013	December 2013
CW13A	0.41	10.51	7.98	NS	NS	1.67	191	416	167	284	366	399
OBG-2 <sup>(1)</sup>	ND	ND	NS	-	-	-	-	-	-	-	-	-
OBG-3 <sup>(2)</sup>	ND	ND	NS	-	-	-	-	-	-	-	-	-
OBG-4 <sup>(2)</sup>	144/146	93.51	ND	-	-	-	-	-	-	-	-	-
OBG-5 <sup>(2)</sup>	2.00	12.72	51.83	-	-	-	-	-	-	-	-	-
OBG-6 <sup>(2)</sup>	868	504	590/582	-	-	-	-	-	-	-	-	-
OBG-2R <sup>(3)</sup>	-	-	-	ND/ND	ND	ND	ND	-	-	-	-	-
OBG-3R <sup>(4)</sup>	-	-	-	NS	NS	NS	NS	NS	NS	NS	NS	0.5
OBG-4R <sup>(4)</sup>	-	-	-	7,577/7,710	4,145	6,434	5,105	7,039	5,551	5,350	5,010	4791/4801
OBG-5R <sup>(4)</sup>	-	-	-	ND	1.37	ND	ND	0.52	0.46/ND	1.45/1.32	1.51/1.9	1.9
OBG-6R <sup>(4)</sup>	-	-	-	0.29	0.10	ND/ND	ND	-	-	-	-	-
OW260	ND	ND	ND/ND	ND	ND	ND/ND	0.77/0.81	ND	0.21	ND	ND	1.3
OW262	1.46	0.707	0.64	1.56	6.69	7.31	10.20	26.97/26.61	50.57	38.76	38.52	22
OW278	-	-	21.86	46.8	34.0	11.85	30.18	17.03	49.27	22.17	23.7	21
OW282	1.19	1.94/ND	2.68	1.23	0.67	0.49	8.36	1.76	21	5.67	9	5.2
OW290	6.91	9.22	NS	NS	NS	0.55	0.52	-	-	-	-	-
OW292	ND	0.51	ND	0.18	0.32	0.10	0.43	-	-	-	-	-
OW293	ND	0.77/ND	ND	ND	ND	0.42	0.98	-	-	-	-	-
OW312R	NS	NS	NS	NS	NS	0.11	ND	-	-	-	-	-
OW548	1.00	ND	NS	ND	ND	ND	ND	-	-	-	-	-
OW549	ND	ND	NS	2.20	1.30	0.59	0.27	ND	ND	ND	ND	ND
OW550	ND	NS	ND	NS	NS	NS	NS	-	-	-	-	-
OW595	NS	5,208	5,851	35.4	233	9.01	21.88	71.77	27.39	41.82	54.78	65
OW596	NS	0.29	ND	0.19	0.53	0.16	2.07	ND	0.18	0.22	ND	ND
OW597 <sup>(2)</sup>	ND	1.83	2.65	-	-	-	-	-	-	-	-	-
OW597R <sup>(4)</sup>	-	-	-	NS	NS	1.85	2.05	1.45	1.63	1.40	171	186
OW598	ND	ND	4.09	ND	1.29	24.42	1.12	-	-	-	-	-
OW599	ND/ND	ND	ND	2.90	1.20	1.16	1.70/1.59	0.89	0.84	1.46	1.3	1.9

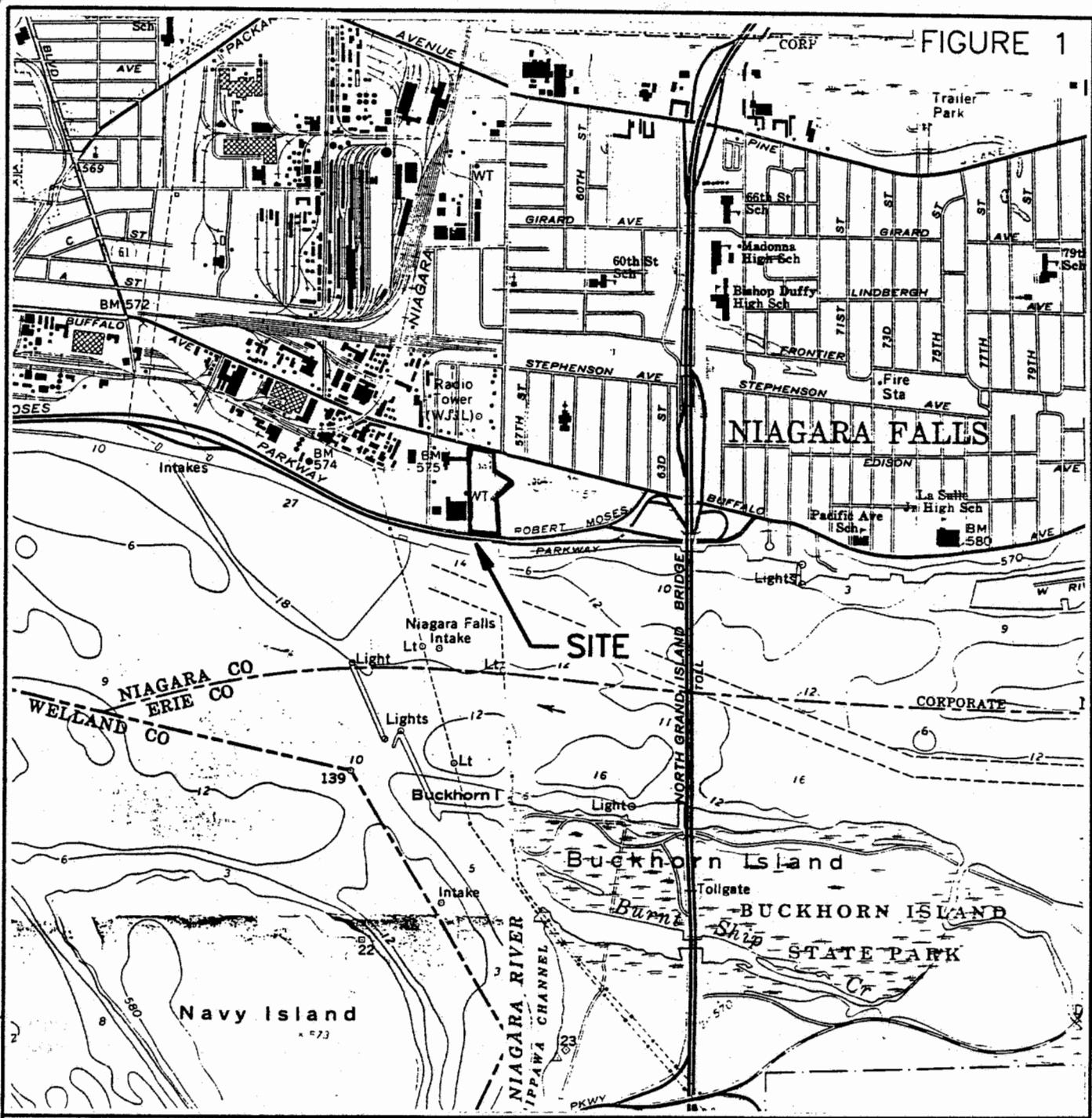
Notes:

- (1) Well buried by berm construction during the first quarter of 2005.
- (2) Well abandoned due to freeze/thaw sludge bed construction in May 2004.
- (3) Well installed to replace OBG-2 on May 20, 2005.
- (4) Well installed in October 2004.
- ND Not detected (NDs were assumed to be zero).
- NS Not sampled (due to insufficient water sample).
- Not part of program.
- µg/L Micrograms per liter.

## **FIGURES**

H:\PROJECTS\111111\76\BX11 SF: 1-1

FIGURE 1



PHASE II INVESTIGATION  
 WATER TREATMENT PLANT—EASTERN AREA  
 NIAGARA FALLS, NEW YORK

SITE LOCATION MAP

0 2000 4000



APPROX. SCALE IN FEET



ADAPTED FROM USGS NIAGARA FALLS, NEW YORK AND TONAWANDA WEST QUADRANGLE  
 7.5 MINUTE SERIES

1736.078.001F  
 APRIL/18/95



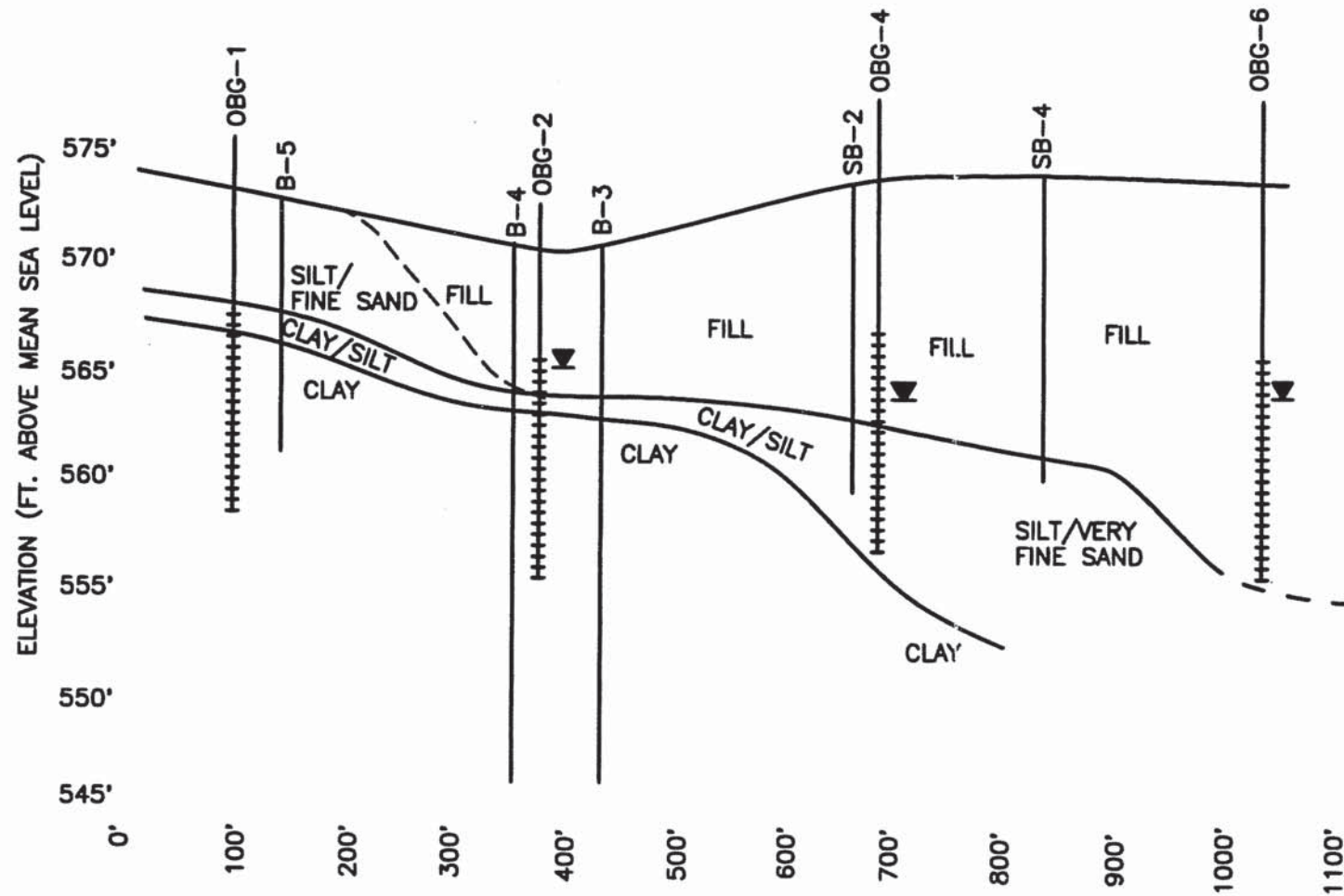
LAYER ON 1:2.3



Google earth



FIGURE 2 - SITE PLAN  
BUFFALO AVENUE SITE  
SITE NO. 932080A



SECTION A  
N.T.S. FIG 3

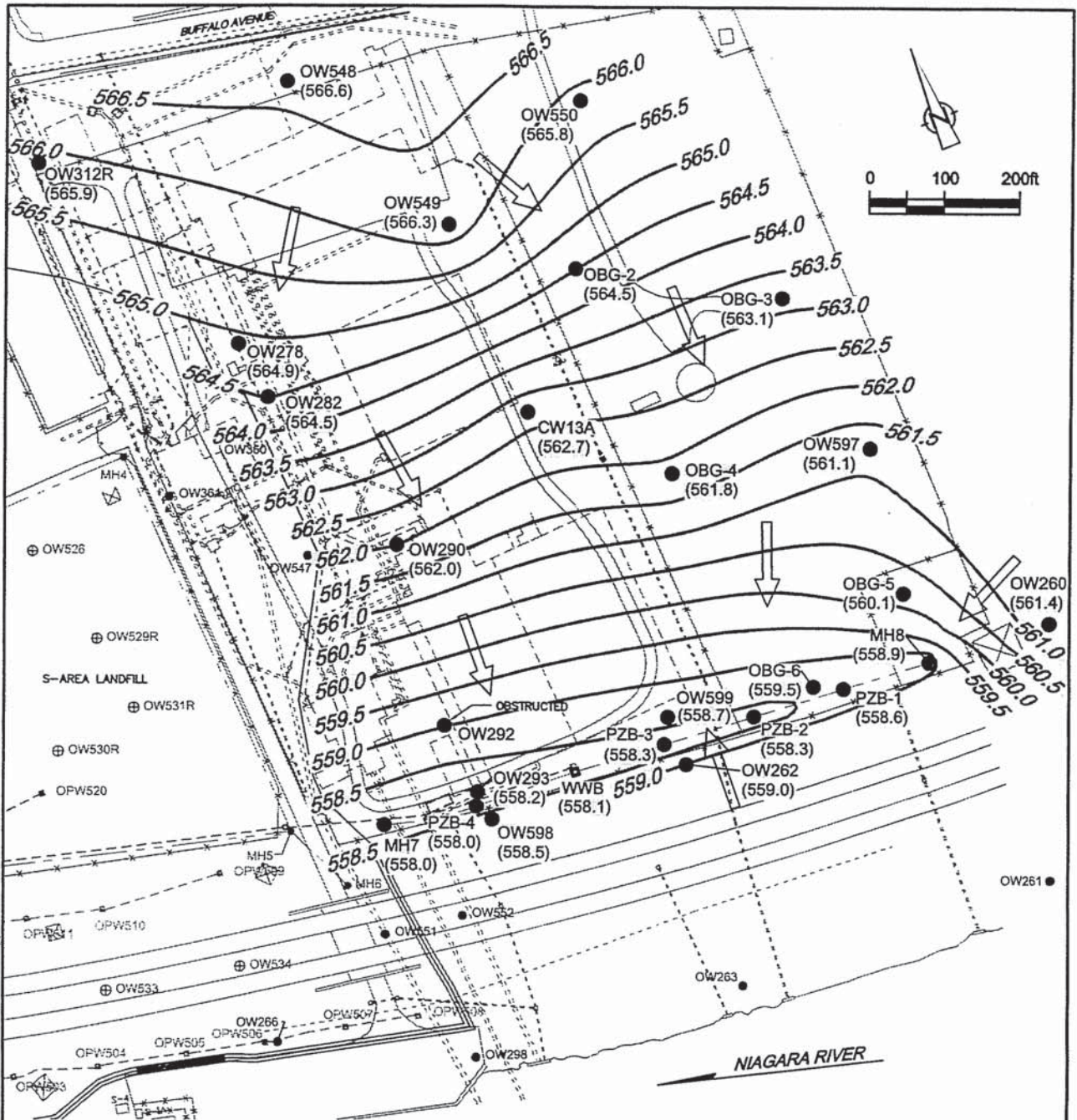
**LEGEND:**  
 GROUND WATER ELEVATION (9/18/96)

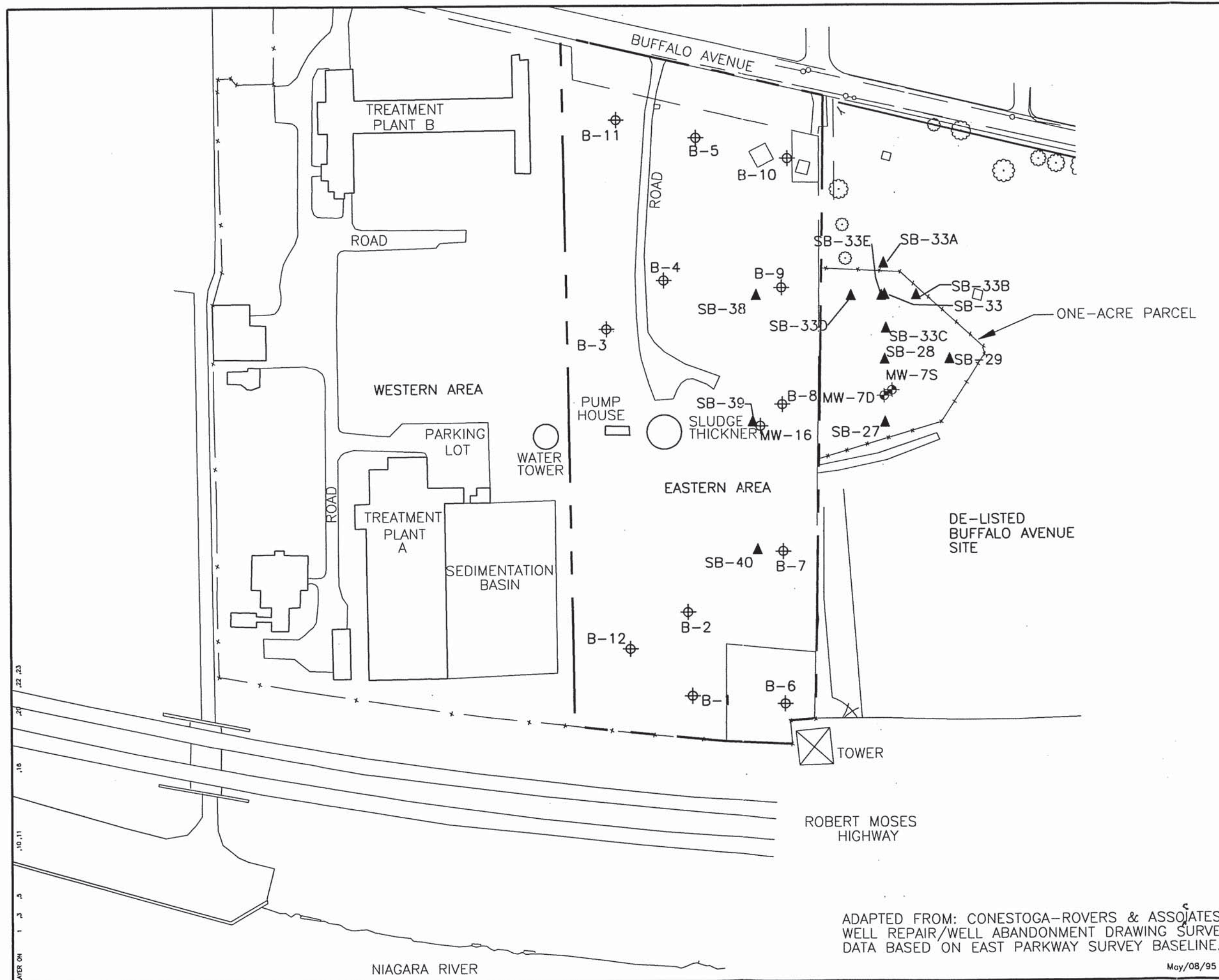
**FIGURE 3**  
 GEOLOGIC CROSS-SECTION  
 FACING EAST  
 PHASE II INVESTIGATION  
 (SOURCE: O'BRIEN & GERE, 2002)

100 0 100  
 APPROX. SCALE IN FEET  
 VERTICAL EXAGGERATION = 20X  
 1738.078-11F



I:\Projects\1738078\1738078.dwg 9/18/96

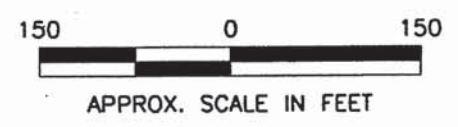




HA PROJECTS\11111\176\1726078\W422 SCALE FACTOR 1=150

**LEGEND**

- SITE BOUNDARY PER RRT STIPULATION
- x-x- FENCE
- ⊕ EXISTING MONITORING WELL
- ⊕ MONITORING WELL (OBG)
- ▲ SOIL BORING LOCATION



**FIGURE 5**

SAMPLE LOCATIONS (1991)  
PRELIMINARY SITE ASSESSMENT  
(SOURCE: O'BRIEN & GERE)

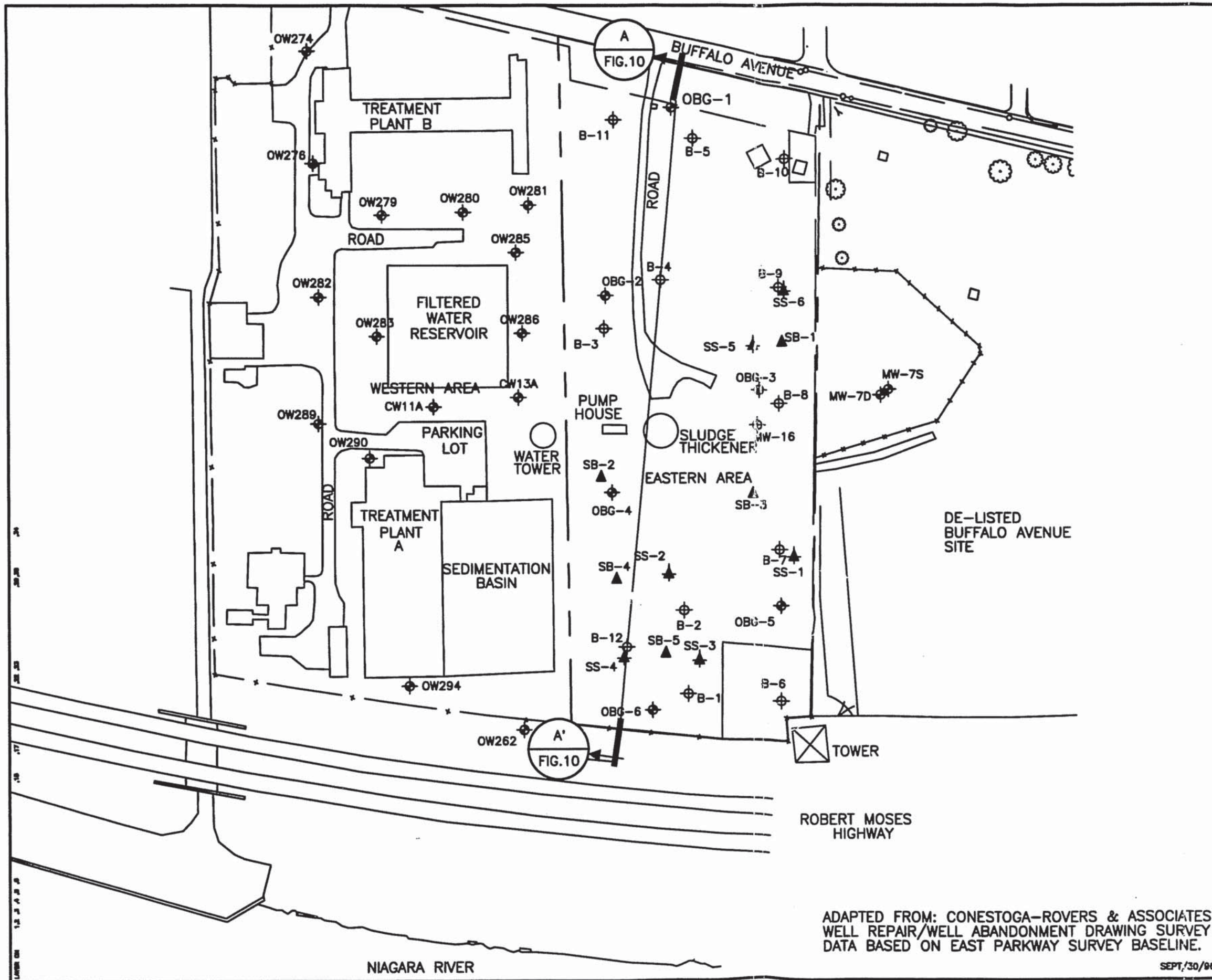
ADAPTED FROM: CONESTOGA-ROVERS & ASSOCIATES  
WELL REPAIR/WELL ABANDONMENT DRAWING SURVEY  
DATA BASED ON EAST PARKWAY SURVEY BASELINE.

May/08/95



LAYER ON 1 3 5 .10 .11 .16 .20 .22 .23

NIAGARA RIVER



DATE PLOTTED: 12/28/95 BY: J. B. ...

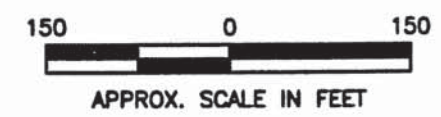
**LEGEND**

- SITE BOUNDARY PER RRT STIPULATION
- FENCE
- ⊕ EXISTING MONITORING WELL
- ⊕ MONITORING WELL (OBG)
- ▲ SOIL BORING LOCATION
- ★ SURFACE SOIL SAMPLE LOCATION



**FIGURE 6**

SAMPLE LOCATIONS (1995)  
PHASE II INVESTIGATION  
(SOURCE: O'BRIEN & GERE)

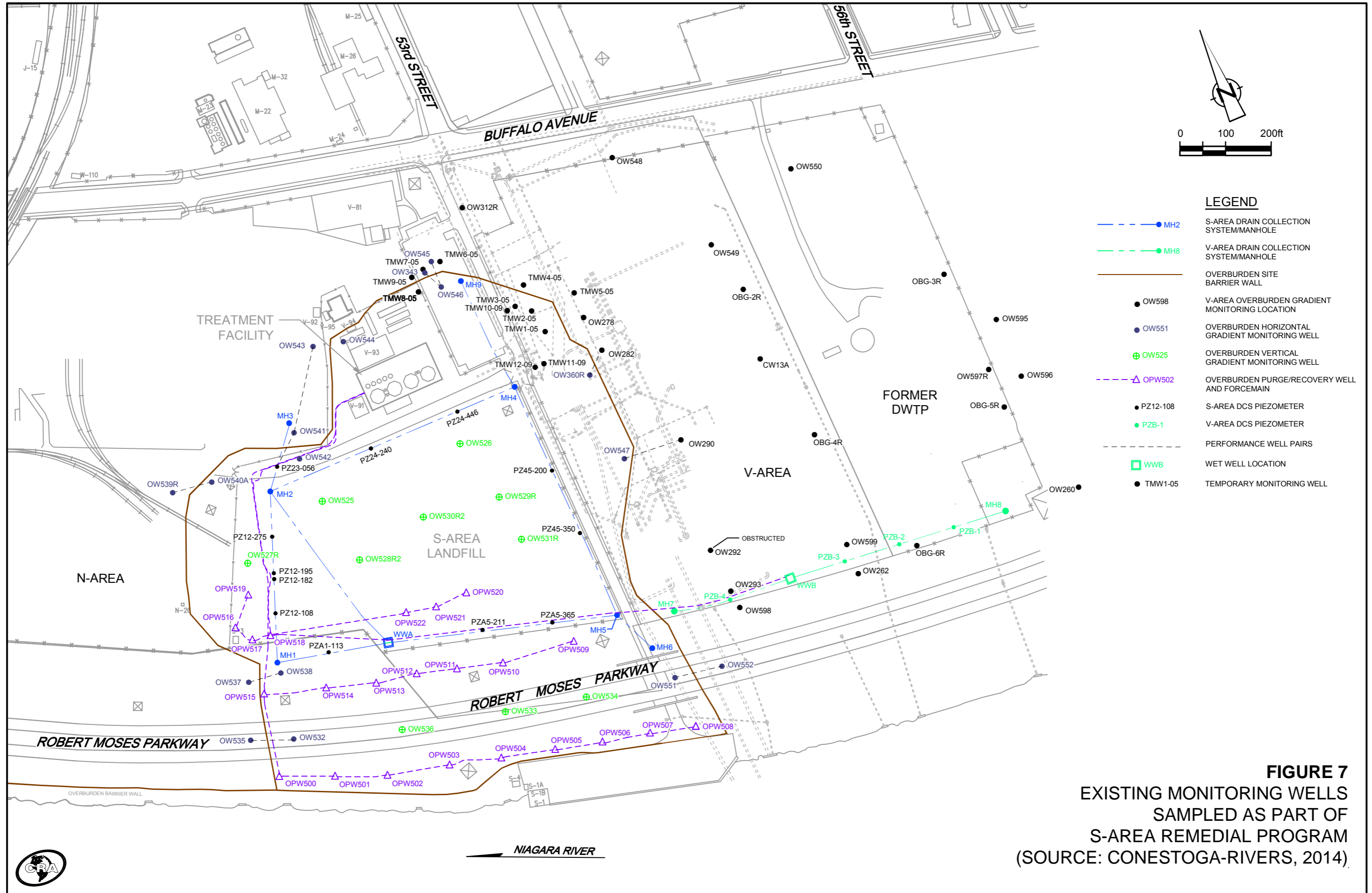


ADAPTED FROM: CONESTOGA-ROVERS & ASSOCIATES  
WELL REPAIR/WELL ABANDONMENT DRAWING SURVEY  
DATA BASED ON EAST PARKWAY SURVEY BASELINE.

SEPT./30/96

1736.078-00F





**FIGURE 7**  
**EXISTING MONITORING WELLS**  
**SAMPLED AS PART OF**  
**S-AREA REMEDIAL PROGRAM**  
**(SOURCE: CONESTOGA-RIVERS, 2014)**



LOCATION	SIZE	APPR. LENGTH	TYPE OF PIPE	TYPE OF JOINT	UPSTREAM INVERT	DOWNSTREAM INVERT
SW BED TO MH1	15-INCH	84 FEET	SDR-35	PUSH ON	571.41	570.97
SE BED TO MH1	15-INCH	43 FEET	SDR-35	PUSH ON	571.41	570.97
MH1 TO MH3	15-INCH	503 FEET	SDR-35	PUSH ON	570.72	567.20
MH3 TO MH2	15-INCH	120 FEET	SDR-35	PUSH ON	566.95	566.00
MH2 TO SOLIDS BLDG	15-INCH	25 FEET	SDR-35	PUSH ON	565.50	564.75
NE BED TO MH4	15-INCH	70 FEET	SDR-35	PUSH ON	571.41	570.64
MH4 TO MH3	15-INCH	300 FEET	SDR-35	PUSH ON	570.14	567.20

**NOTES:**

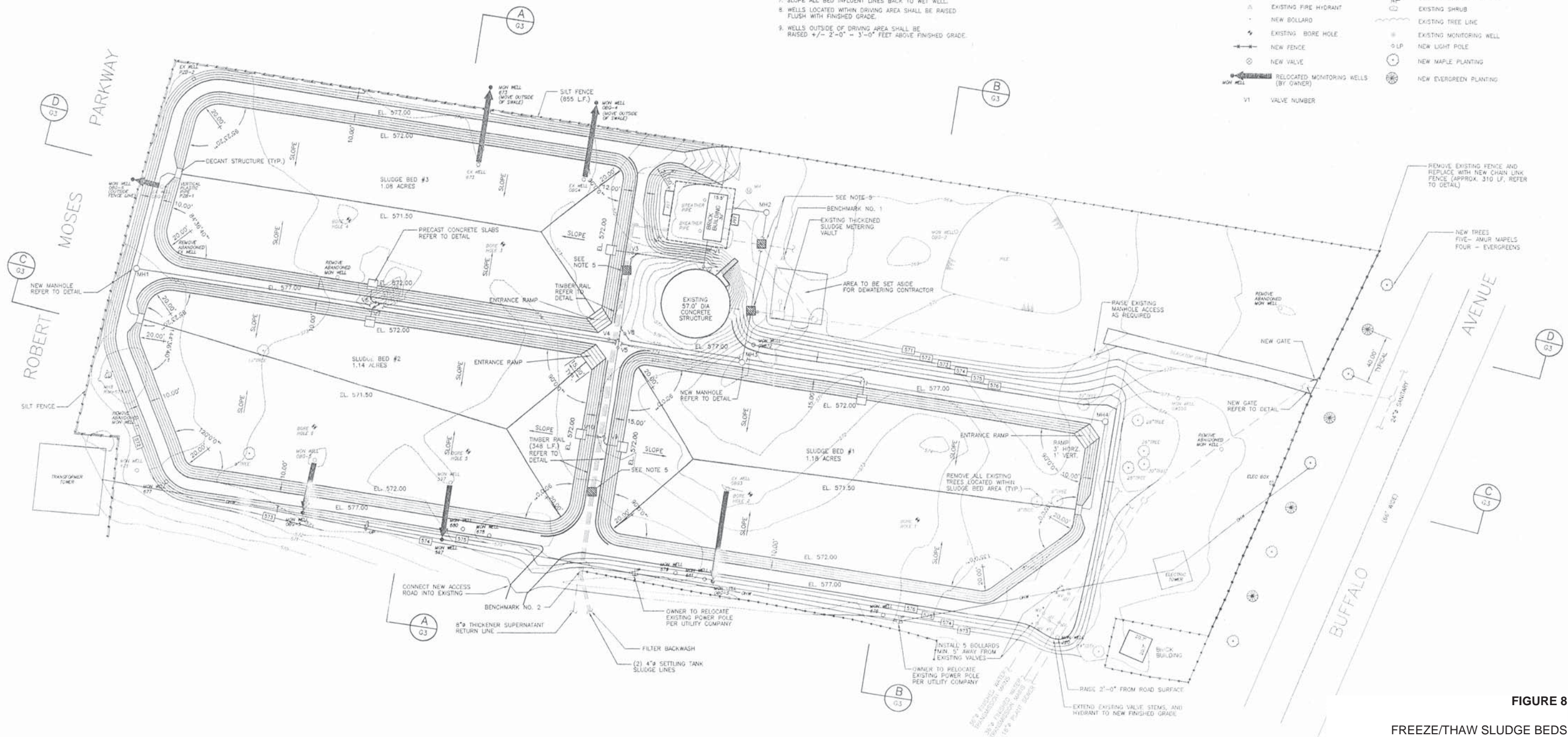
1. RAISE MANHOLE ACCESS TO EXISTING THICKENED SLUDGE METERING VAULT PER NEW CONTOUR ELEVATIONS (REF: NIAGARA BOUNDARY JOB NO. 3954-91)
2. RAISE EXISTING MANHOLE COVER PER NEW CONTOUR ELEVATIONS.
3. CONTRACTOR SHALL PROVIDE EXTENSIONS OR NEW VALVE STEMS FOR ALL EXISTING VALVES WITHIN CONTOUR LIMITS (MINIMUM EXTENSION - 8" ABOVE FINISHED GRADE)
4. CONTRACTOR SHALL PROVIDE EXTENSION ON ALL EXISTING MONITORING WELLS WITHIN NEW CONTOUR LIMITS. WELLS SHALL EXTEND TO A MINIMUM OF 2' ABOVE FINISHED GRADE
5. CONTRACTOR TO PERFORM EXPLORATORY EXCAVATIONS TO LOCATE EXISTING PIPELINES.
6. REFER TO DRAWING G5 FOR PIPING DETAILS.
7. SLOPE ALL BED INFLUENT LINES BACK TO WET WELL.
8. WELLS LOCATED WITHIN DRIVING AREA SHALL BE RAISED FLUSH WITH FINISHED GRADE.
9. WELLS OUTSIDE OF DRIVING AREA SHALL BE RAISED +/- 2'-0" - 3'-0" FEET ABOVE FINISHED GRADE.

**BENCH TABLE**

ELEVATION	DESCRIPTION
571.93	TOP OF NORTH BOLT HYDRANT 454 NORTH OF BRICK BUILDING, 502' EAST OF WEST FENCE LINE.
576.12	1" HORIZONTAL CUT ON METAL FENCE POST 358' NORTH OF BLACKTOP ENTRANCE DRIVE ALONG EAST FENCE LINE.

**LEGEND**

- ⊙ EXISTING SANITARY MANHOLE
- ⊙ EXISTING MANHOLE
- ⊙ EXISTING TELEPHONE MANHOLE
- ⊙ EXISTING STORM MANHOLE
- ⊙ EXISTING CATCH BASIN
- EXISTING FENCE
- EXISTING GAS VALVE
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- NEW BOLLARD
- EXISTING BORE HOLE
- NEW FENCE
- NEW VALVE
- RELOCATED MONITORING WELLS (BY OWNER)
- MON WELLS
- VALVE NUMBER
- UTILITY POLE
- UTILITY POLE W/LIGHT
- GUY WIRE
- EXISTING SIGN
- LIGHT STANDARD
- RELOCATED OVERHEAD WIRES
- EXISTING DECIDUOUS TREE
- EXISTING CONIFEROUS TREE
- EXISTING SHRUB
- EXISTING TREE LINE
- EXISTING MONITORING WELL
- NEW LIGHT POLE
- NEW MAPLE PLANTING
- NEW EVERGREEN PLANTING



PARTIAL SITE PLAN  
SCALE: 1"=40'

FIGURE 8

FREEZE/THAW SLUDGE BEDS  
(SOURCE: STEARNS & WHEELER)



**NOTES:**  
Underground facilities, structures, and utilities have been plotted from available surveys and records, and therefore their locations must be considered approximate only. There may be others, the existence of which is presently not known.  
It is a violation of New York State Education Law for any person, unless acting under the direction of a licensed professional engineer, to alter an item on this drawing in any way, if an item is altered, the altering engineer shall affix to the item his/her seal and the notation "altered by" followed by his/her signature and the date of such alteration, and a specific description of the alteration.

3									
2	FOR CONSTRUCTION								
	S.HILL	1/04		SSH/AUL		RAA		1/04	
1	FOR APPROVAL								
	S.HILL	2/03		S.HILL		RAA		5/03	
ISSUE NO.	DRAWN	DATE	CHECKED	DESIGNER	APPROVED	DATE			
PROJECT SUPERVISOR				DEPARTMENT SUPERVISOR					



**Stearns & Wheeler, LLC**  
ENVIRONMENTAL ENGINEERS & SCIENTISTS

NIAGARA FALLS			
FREEZE/THAW SLUDGE BEDS			
SITE PLAN			
JOB NO.	20177	CONTRACT	1
SHEET			G-2

## **APPENDIX A – EXCAVATION WORK PLAN**

### **INTRODUCTION**

The Site owner and associated parties performing this work, are completely responsible for the safe performance of all intrusive work, the structural integrity of excavations, proper disposal of excavation water, control of runoff from open excavations into contaminated media, and for structures that may be affected by excavations (such as sheet piling and bridge foundations).

### **A-1 NOTIFICATION**

At least 15 days prior to the start of any activity that is anticipated to encounter contaminated media, the site owner or their representative will notify the Department. Currently, this notification will be made to:

Regional Hazardous Waste Remediation Engineer  
270 Michigan Avenue, Buffalo, NY 14203-2999  
(716) 851-7220

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent, plans for site re-grading, intrusive elements or utilities to be installed below the soil surface, estimated volumes of contaminated soil to be excavated, and any work that may encounter contaminated soil,
- A summary of environmental conditions anticipated in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work,
- A summary of the applicable components of this EWP,
- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120,

- A copy of the contractor's health and safety plan (HASP), in electronic format, if it differs from the HASP provided in Appendix C of this SMP,
- Identification of disposal facilities for potential waste streams,
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

## **A-2 SOIL SCREENING METHODS**

Visual, olfactory and instrument-based soil screening will be performed by a qualified environmental professional during all remedial and development excavations into known or potentially contaminated media. Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal, material that requires testing, material that can be returned to the subsurface, and material that can be used as cover soil.

## **A-3 STOCKPILE METHODS**

Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC.

## **A-4 MATERIALS EXCAVATION AND LOAD OUT**

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and its contractors are solely responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the site.

Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).

A truck wash will be operated on-site. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the site until the activities performed under this section are complete.

Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

#### **A-5 MATERIALS TRANSPORT OFF-SITE**

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

#### **A-6 MATERIALS DISPOSAL OFF-SITE**

All soil/fill/solid waste excavated and removed from the site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-site management of materials from this site will not occur without formal NYSDEC approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C/D recycling facility, etc. Actual disposal quantities and associated documentation will be provided to the NYSDEC upon request. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Track 1 unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

#### **A-7 MATERIALS REUSE ON-SITE**

Excavated material may be reused at the same location from which it was removed unless it exhibits signs of gross contamination. Assuming no signs of gross contamination, no laboratory analyses are required provided the material is placed back into the bottom of the excavation. Excavated material which is not reused at the same location shall be disposed off-site in accordance with the procedures described in Section A-6 of the EWP. The qualified environmental professional will be responsible for ensuring that procedures defined for material reuse in this SMP are followed and that unacceptable material will not remain on-site.

#### **A-8 FLUIDS MANAGEMENT**

All liquids to be removed from the site, including excavation dewatering and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the site, but will be managed off-site.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

## **A-9 SURFACE RESTORATION**

After the completion of soil removal and any other invasive activities the surface will be restored in a manner that complies with the Excavation Notification. If the type of cover changes from that which exists prior to the excavation (i.e., soil is replaced by asphalt), this will constitute a modification. A figure showing the modification will be included in any updates to the Site Management Plan.

## **A-10 BACKFILL FROM OFF-SITE SOURCES**

All materials proposed for import onto the site will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP prior to receipt at the site.

Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the site.

All imported soils will meet the backfill quality standards established in 6NYCRR 375-6.7(d). Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

## **A-11 STORMWATER POLLUTION PREVENTION**

For larger excavations, procedures for storm water pollution prevention should be specified. For construction projects exceeding 1 acre, this is required. A summary of the Storm Water Pollution Prevention Plan that conforms to the requirements of NYSDEC Division of Water guidelines and NYS regulations should be included here. This plan may be included as an Appendix. The following text should appear somewhere in this section:

Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC. All necessary repairs shall be made immediately.

Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.

All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.

Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters

Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

#### **A-12 CONTINGENCY PLAN**

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for full a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline.

### **A-13 ODOR CONTROL PLAN**

This odor control plan is capable of controlling emissions of nuisance odors off-site. If nuisance odors are identified at the site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the property owner's Remediation Engineer.

All necessary means will be employed to prevent on-site and off-site nuisances. At a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-site disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

#### **A-14 DUST CONTROL PLAN**

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

## **APPENDIX B – DEED RESTRICTION**

## **APPENDIX C – HEALTH AND SAFETY PLAN**

A Health and Safety plan (HASP) and associated Community Air Monitoring Plan (CAMP) will be prepared by a qualified person in accordance with the most recently adopted and applicable general industry (29 CFR 1910) and construction (29 CFR 1926) standards of OSHA, the U.S. Department of Labor, as well as any other federal, state or local applicable statutes or regulations. The CAMP must include the appropriate requirements identified by the NYSDOH. Both documents shall be prepared in accordance with NYSDEC's DER-10.

At a minimum, the HASP will include a description of the health and safety procedures associated with both performance monitoring of the remedial system(s) and effectiveness monitoring. A copy of the HASP will be available at the site during the conduct of all activities to which it is applicable.