DECISION DOCUMENT

Crucible Lake Pump Station Site
Geddes, Onondaga County, New York
Site No. 734078
November 2018

Statement of Purpose and Basis

This Decision Document presents the remedy selected by the Department of Environmental Conservation (NYSDEC) for the Crucible Lake Pump Station Site (site). This decision is based on the March 2018 Feasibility Study (performed by EnPro Holdings Inc. pursuant to the August 27, 2010 Order on Consent for the site) and the Proposed Decision Document that was issued for a 30-day public comment period on October 12, 2018. No comments were received during the public comment period.

Description of the Site

The site, which measures approximately 3.5 acres in size, is located to the northeast of Interstate 690 (see Figure 1). A former pump station operated by the Crucible Steel Company of America, which extracted water from Onondaga Lake, is located on the west side of the site. The pump station, which includes pumps, piping and a sump, has not been used since the 1970s and is in poor condition. The site is bound on the northeast by Onondaga Lake, to the south by the Interstate 690 Solvay exit ramp, to the west and northwest by lands owned by Onondaga County, and to the southwest by the Metropolitan Sewage Treatment Plant pump station property owned by Onondaga County. The site is owned by New York State and was historically used for parking and storage/staging of construction equipment for area highway construction projects.

Wastes from the operation of the Crucible Plant were placed within Onondaga Lake from approximately 1961 to 1967 and created the peninsula that is the landmass of the site. Based on available historical information, caustic-coated mill scale containing hexavalent chromium, grinding dust, slag, boiler ashes, coolant swarf (sludge) and construction and demolition (C&D) debris were likely disposed there.

As described further below, an Interim Remedial Measure (IRM) was performed to install a one-foot thick stone cover at the site to limit direct contact with the waste materials. Honeywell is currently using the site as an office and staging area for remediation efforts for Onondaga Lake, and in 2012 constructed an enclosed building that is used as a visitor center, a temporary office building, a boat dock and paved parking lot. Due to the completion of the Onondaga Lake remediation, the office building is anticipated to be removed in 2018. As part of an environmental benefit project, there are plans to construct a NYSDEC public boat launch on the site in the near future. In addition, a portion of the Onondaga County Loop the Lake trail is also planned to cross the site.

Nature and Extent of Contamination

Wastes were placed by Crucible at the site in the 1960s. Prior to the IRM and use of the site as an office and staging area for the Onondaga Lake cleanup, slag and waste materials were visible along the shoreline of the lake.

Preliminary Site Assessment field work was performed in 2001 and Remedial Investigation field work was performed in 2011. In addition, groundwater sampling and water and sediment sampling from a sump within the former pump station was performed in 2016. Based on these investigations:

- No hazardous waste was identified. This was based on Toxic Characteristic Leaching Procedure (TCLP) results for subsurface soil samples and visual examination of subsurface materials from the borings and trench excavations.
- Waste materials were identified at the site surface, as well as in the subsurface to depths as great as 26 feet below ground surface. The hardened waste materials, which include slag, steel and other debris, contain metals such as chromium, iron, nickel and lead. An estimated volume of 94,440 cubic yards of waste is present at the site.
- Surface (0-2 inches below ground surface) and subsurface soil samples detected several polycyclic aromatic hydrocarbons (PAHs) and inorganics (metals including barium, iron, chromium, nickel, and copper) above 6 NYCRR Part 375-6 Soil Cleanup Objectives (SCOs) for commercial use. Volatile organic compounds were not detected in surface or sub-surface soil. See attached tables.
- Groundwater, which is present at depths of 5 to 10 feet, flows northeast toward Onondaga Lake.
- In groundwater, benzene, several semi-volatile organic compounds (SVOCs), and poly chlorinated biphenyls (PCBs) were detected above the NYSDEC Class GA standards and guidance values. The benzene and SVOCs are not believed to be site-related. Groundwater analysis for inorganic contaminants was conducted on both filtered and unfiltered samples. For the filtered samples, the Class GA standards were only exceeded for selenium and sodium (in both the upgradient and downgradient wells). For the unfiltered samples, exceedances of the Class GA standards included chromium, iron, manganese, selenium and sodium, suggesting that these are present in particulate form.[1] See attached tables.
- Water and sediment within the pump station sump contains PCBs.

An Interim Remedial Measure (IRM) was completed in November 2011. The IRM included placement of a one-foot thick cover of stone over the site to provide a barrier and limit direct contact with the waste materials to allow for commercial use as per 6 NYCRR Part 375. Approximately 7,160 tons of stone were placed as part of the IRM.

During the construction of the Onondaga Lake visitor center, temporary office building and boat dock, Honeywell placed additional topsoil over the stone and vegetated the topsoil, installed a

[1] It should be noted that the turbidity was elevated during the 2001 samples and potentially in well MW-3 during the 2016 sampling, which could result in elevated concentrations in unfiltered samples.

paved parking lot, and covered the waste materials along the banks of the site with a minimum of one foot of rip rap and/or stone.

Description of the Remedy

1. The remedy for the site includes the installation of a minimum one-foot thick soil cover where shallow soil concentrations exceed SCOs for commercial use of the site, which includes passive recreational use such as walking trails, parking lots and a boat launch. This includes maintaining and/or supplementing (as needed) the cover that was placed as part of the IRM and the visitor center/office building construction; and repairing the cover along the banks of the site, adjacent to Onondaga Lake. If the use of the site, or portions of the site, is changed to restricted-residential, which includes active recreational uses such as picnic areas or playgrounds, a two-foot thick soil cover or pavement will be placed. The cover thickness will be confirmed (e.g., using survey information, test pits, coring) and additional material (e.g., gravel, topsoil) will be placed as necessary. In addition, cover areas will be seeded and/or planted, as appropriate, to establish vegetation. Structures, such as buildings, pavement, or sidewalks, would serve as acceptable substitutes for the covers.

2. Removal of any sediment and water from the former pump station (see Figure 2)[2].

3. Imposition of an institutional control in the form of an environmental notice for the controlled property, which will:

   - allow the use and development of the site for commercial use as defined by Part 375-1.8g, although land use is subject to local zoning laws;
   - restrict the use of groundwater on the site; and
   - require compliance with a NYSDEC-approved SMP.

4. A Site Management Plan (SMP) is required, which includes the following.

   An institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and engineering controls remain in place and are effective:

   - Institutional Controls: The environmental notice discussed above.

   - Engineering Controls:
     - site cover systems described above;
     - excavation plan which details the provisions for management of future excavations at the site;
     - descriptions of the provisions of the institutional controls including any land use restrictions;

[2]Removal of the pump station building needs to be performed prior to sediment and surface water removal due to the unsafe nature of the building.

- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and NYSDEC notification; and
- steps necessary for periodic reviews and certification of the institutional and/or engineering controls.

- A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
  - monitoring of groundwater to assess the performance and effectiveness of the remedy; and
  - a schedule of monitoring and frequency of submittals to the NYSDEC.

5. Green remediation techniques, as detailed in NYSDEC's Green Remediation Program Policy - DER-31,[3] will be considered for the preferred alternative to reduce short-term environmental impacts. Green remediation best practices such as the following may be considered:

   - Use of renewable energy and/or purchase of renewable energy credits to power energy needs during construction and/or operation and maintenance of the remedy.
   - Reduction in vehicle idling, including both on and off road vehicles and construction equipment during construction and/or operation and maintenance of the remedy.
   - Beneficial reuse of material that will otherwise be considered a waste.
   - Use of Ultra Low Sulfur Diesel (ULSD).

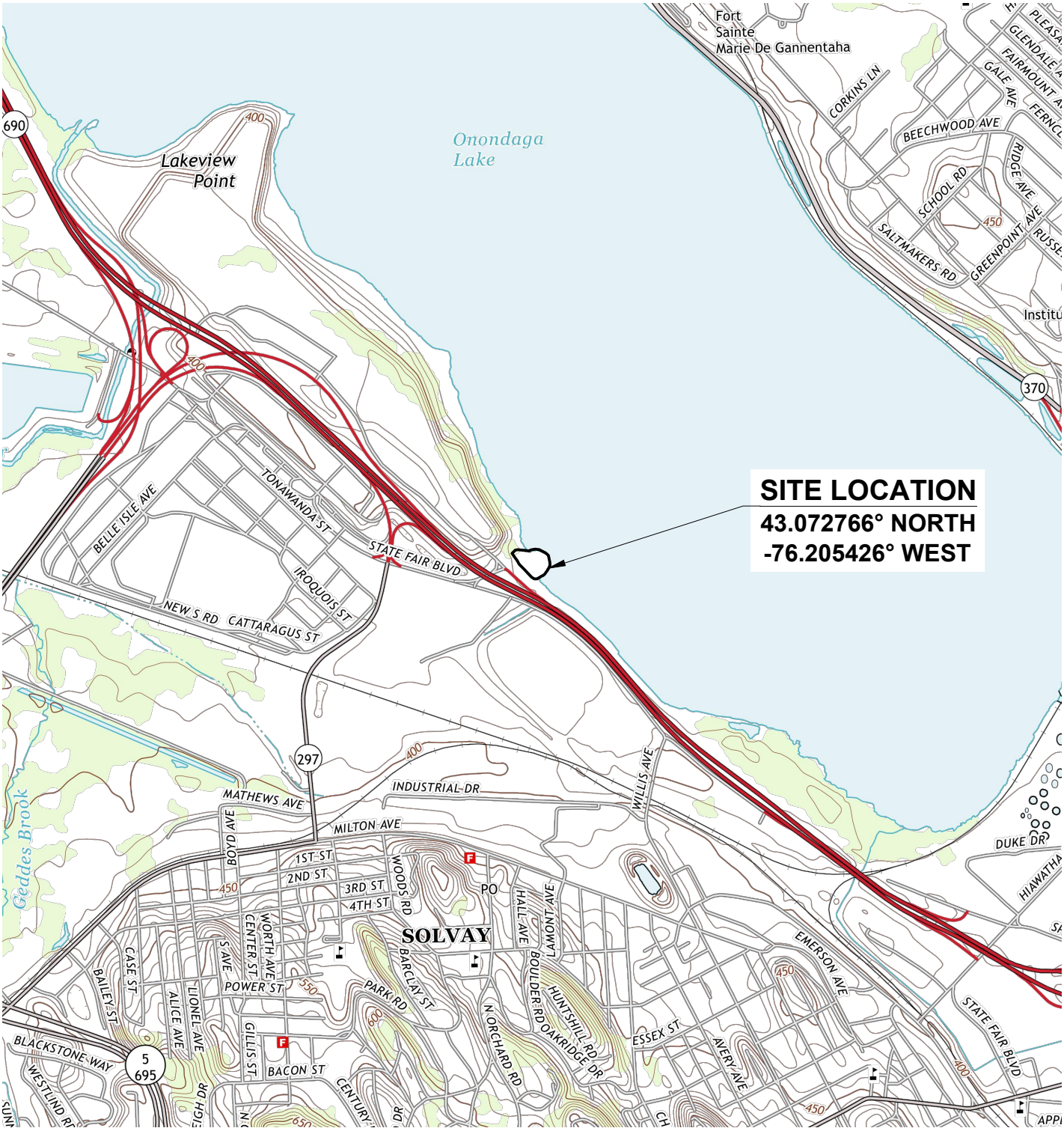
Declaration

The remedy is protective of human health and the environment consistent with the Order on Consent for the site. It complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action and will allow for the identified use of the site.

November 19, 2018
Date

Susan Edwards
Susan Edwards, P.E.
Director, Remedial Bureau D
Division of Environmental Remediation

[3] See http://www.dec.ny.gov/docs/remediation_hudson_pdf/der31.pdf.



CONTOUR INTERVAL: 10 FEET

MAP TAKEN FROM: USGS 7.5 MINUTE SERIES
TOPOGRAPHIC QUADRANGLE:
SYRACUSE WEST, NY (2013)
(U.S. GEOLOGICAL SURVEY WEBSITE)

0 1000 2000 3000 4000'

SCALE 1"=2000' AT ORIGINAL SIZE

QUADRANGLE LOCATION

N

GHD

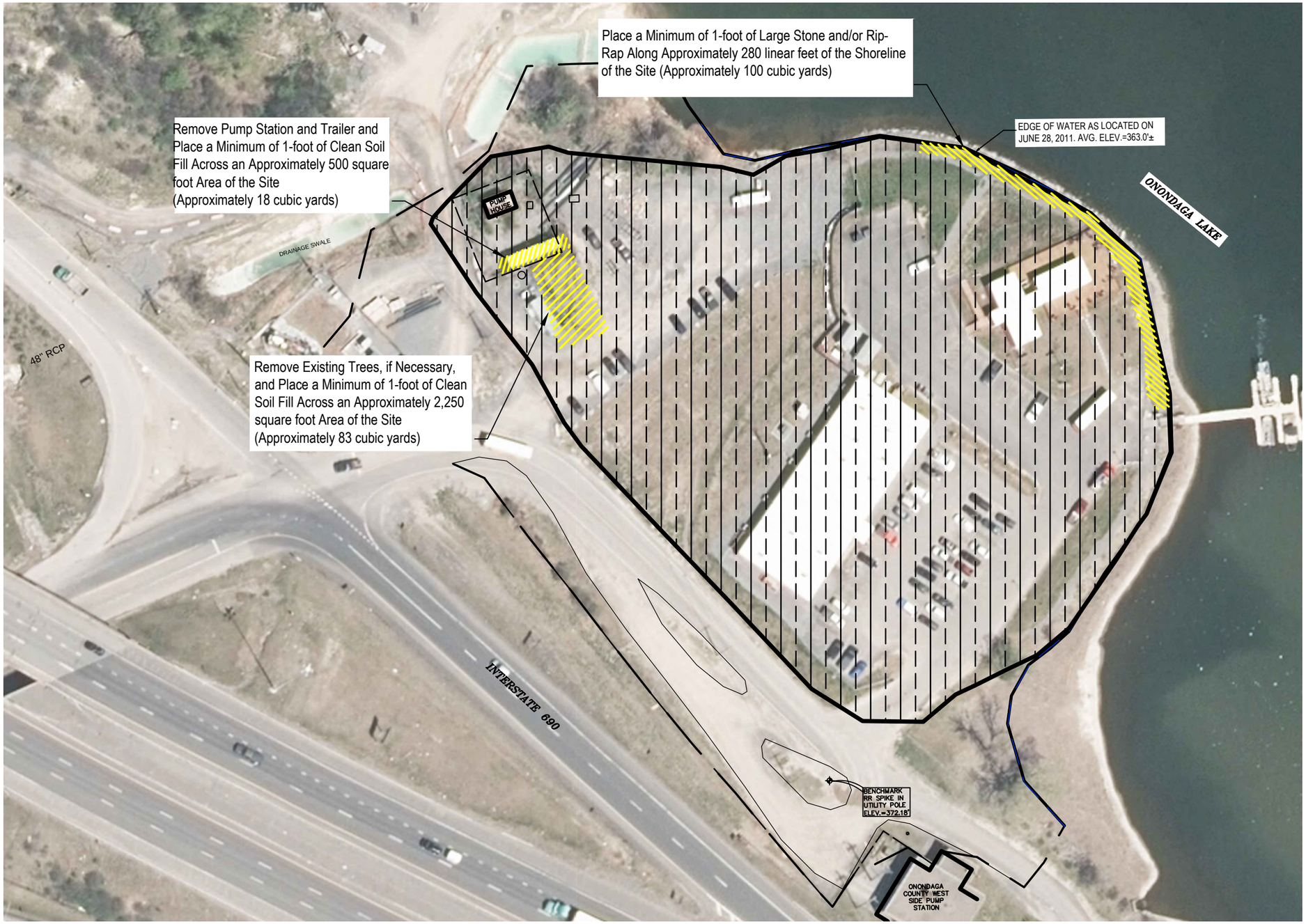
EnPro Holdings, Inc.
Feasibility Study
Lake Pump IHWDS 734078
Site Location Map

Job Number	11134433
Revision	A
Date	04.11.2017

Figure 1

One Remington Park Drive, Cazenovia NY 13035 USA **T** 1 315 679 5800 **F** 1 315 679 5801 **E** cazmail@ghd.com **W** www.ghd.com

Plot Date: 5 September 2017 - 2:25 PM Cad File No: G:\111\11134433 ENPRO INDUSTRIES LAKE PUMP SITE\Feasibility Study\Figures\Figure 1 - Site Location Map.dwg



LEGEND

- SITE BOUNDARY (APPROXIMATE)
- CHAIN LINK FENCE
- PROPERTY LINE (APPROXIMATE)
- AREAS TO RECEIVE ADDITIONAL SOIL COVER MATERIAL AND BE ESTABLISHED AS AN ENGINEERING CONTROL
- AREAS OF EXISTING SOIL COVER THAT WILL BE CONFIRMED AND ESTABLISHED AS AN ENGINEERING CONTROL

NOTES:

1. Remedy assumes restoration of the Site to commercial conditions, with discrete areas (future designated picnic areas to be identified at a later date) meeting restricted-residential conditions, with Site management.
2. The previously completed Interim Remedial Measure (IRM) resulted in approximately 3.15 acres of the Site being covered with a minimum of 1-foot of clean stone fill, which will be established as a soil cover engineering control in those areas of the Site.
3. Areas of the Site currently covered by temporary office facilities, the Visitor Center, asphalt pavement, and landscape berms will be established as soil cover engineering controls in those areas of the Site.
4. Two (2) discrete areas near the abandoned Pump House, one (1) approximately 2,250 square feet and one (1) approximately 500 square feet (total of approximately 100 cubic yards of material), would receive a minimum of 1-foot of stone cover that would be established as soil cover engineering controls in those areas of the Site.
5. Approximately 280 linear feet of the Site's Onondaga Lake shoreline would receive large stone and/or rip-rap cover (approximately 100 cubic yards of material) that would be established as a soil cover engineering control in that area of the Site.

0 25 50 75 100 125 150'

SCALE 1"=75' AT ORIGINAL SIZE

N

NOTES:

1. All Site features are taken from S&ME Northeast, P.C.'s Remedial Investigation Report (March 2013) and are approximate.
2. Aerial photographs are 1-foot resolution imagery dated 2015 and taken from the NYSGIS Clearinghouse website.

EnPro Holdings, Inc.
Feasibility Study
Lake Pump IHWDS 734078
Alternative 4 - Restoration to Commercial Conditions, with Discrete Restricted-Residential Areas, with Site Management

Job Number	11134433
Revision	A
Date	08.14.2017

Figure 2

One Remington Park Drive, Cazenovia NY 13035 USA **T** 1 315 679 5800 **F** 1 315 679 5801 **E** cazmail@ghd.com **W** www.ghd.com

Plot Date: 28 February 2018 - 3:53 PM Cad File No: G:\111\11134433 ENPRO INDUSTRIES LAKE PUMP SITE\Feasibility Study\Figures\Figure 6 - Alternative 4.dwg

Table 1: Summary of Soil Sample Laboratory Analytical Results. Lake Pump Site. Site #734078.

Analyte (mg/kg)	Soil Cleanup Objectives (SCOs)			Surface Soil Samples								Subsurface Soil Samples							
	Unrestricted Use/ Protection of Ecological Resources	Restricted-Residential Use	Commercial Use	SS-1		SS-2		SS-3		SS-4		Trench Sample		BR-1		BR-2		BR-3	
Percent Total Solids				8.15		84.6		75.6		69.4		84		84.4		84		78	
Metals																			
Aluminum				2480	E	3060	E	7270	E	4840	E	3120		4470	E	987	E	8470	E
Antimony				1.4	J	16.3	J	7.9	J	8.3	J	52.1	EJ	2.3	J	341	J	94.9	J
Arsenic	13	16	16	**15.5**		5.8		4.4		7.6		**31.5**		4.9		**38.5**		**14.7**	
Barium	350	400	400	**605**	**E**	191	E	61	E	148	E	**410**	**J**	81.2	E	65.3	E	222	E
Beryllium	7.2	72	590	0.34		0.3		0.38		0.42		0.4		0.36		0.28		0.53	
Cadmium	2.5	4.3	9.3	0.32		0.27		0.14		0.49		1.6		0.18		1.3		1	
Calcium				344000	E	129000	E	38300	E	217000	E	15000	E	224000	E	29300	E	56000	E
Chromium	31	290	1900	19.1	E	**1110**	**E**	**551**	**E**	**504**	**E**	**3130**	**E**	**118**	**E**	**26500**	**E**	**8440**	**E**
Cobalt				3.5	EJ	52.9	EJ	31.4	E	56.3	EJ	677	E	10.3	E	934	E	386	E
Copper	50	270	270	28.9		**56.1**	**E**	24.2	E	**68.4**	**E**	**588**		22.2	E	**569**	**E**	**277**	**E**
Iron				9520	E	17800	E	17500	E	13200	E	98600		10300	E	265000	E	142000	E
Lead	63	400	1000	11.2		**83.6**		16.5		**77.6**		**614**	**E**	22.3		**66.7**		**92.1**	
Magnesium				5890	E	12900	E	11500	E	12600	E	2120		16000	E	971	E	115000	E
Manganese	1600	2000	10000	495	EJ	475	EJ	382	EJ	527	EJ	941	E	315	E	**2390**	**E**	**6010**	**E**
Nickel	30	310	310	13	EJ	**521**	**EJ**	**217**	**EJ**	**257**	**EJ**	**4120**	**E**	**61.4**	**E**	**10900**	**EJ**	**3490**	**EJ**
Potassium				854	EJ	663	EJ	1310	EJ	642	EJ	314	E	898	E	120	E	1270	E
Selenium	3.9	180	1500		U	2.2		1.1		1.8		**12.3**			U	**14.6**	**J**	**14**	**J**
Silver	2	180	1500	0.22			U		U	0.17		0.95			U	1.1		1.3	
Mercury	0.18	0.81	2.8	**0.197**		0.123		0.082		**0.691**		**0.217**		**0.271**		0.018		0.032	
Sodium				250		177		109		689		100		385		230		910	
Thallium					U		U		U		U	4.6			U		U		U
Vanadium				7.6	E	63	E	38.5	E	45.4	E	709		17.4	E	829	E	772	E
Zinc	109	10000	10000	22.5	EJ	41	EJ	39.6	E	87.5	E	99.9	E	34.9	E	18.6	E	47.4	E
Hexavalent Chromium	1	110	400		UR		UR		UR	**2.6**	**R**		U		U	**1.6**			U

Soil Cleanup Objectives (SCOs) from 6 NYCRR Part 375-6.8(b) (December 2006) and Supplemental Soil Cleanup Objectives (October 2010)

Laboratory results reflect comments of data validator

U - non-detect

J or E - estimated value

RE - re-extraction

R - data flagged as unusable by data validator

Bold cell indicates an exceedance of the more restrictive of the Unrestricted Use or Protection of Ecological Resources SCOs

Bold and thick outlined cell indicates an exceedance of the more restrictive of the Unrestricted Use or Protection of Ecological Resources SCOs and the Restricted-Residential Use SCOs

Bold, thick outlined, and yellow highlighted cell indicates an exceedance of the more restrictive of the Unrestricted Use or Protection of Ecological Resources SCOs, the Restricted-Residential Use SCOs, and the Commercial Use SCOs

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Analyte (mg/kg)	Soil Cleanup Objectives (SCOs)			Surface Soil Samples				Subsurface Soil Samples			
	Unrestricted Use/ Protection of Ecological Resources	Restricted-Residential Use	Commercial Use	SS-1	SS-2	SS-3	SS-4	Trench Sample	BR-1	BR-2	BR-3
VOCs											
1,1,1-Trichloroethane	0.68	100	500	U	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane	2			U	U	U	U	U	U	U	U
1,1,2-Trichloroethane				U	U	U	U	U	U	U	U
1,1,2-Tricloro-1,2,2,-triflouroethane				U	U	U	U	U	U	U	U
1,1-dichloroethane	0.27	26	240	U	U	U	U	U	U	U	U
1,1-dichloroethene	0.33	100	500	U	U	U	U	U	U	U	U
1,2,4-Trichlorobenzene	20			U	U	U	U	U	U	U	0.003 J
1,2-Dibromo-3-chloropropane				U	U	U	U	U	U	U	U
1,2-Dibromoethane				U	U	U	U	U	U	U	U
1,2-Dichlorobenzene	1.1	100	500	U	U	U	U	U	U	U	U
1,2-dichloroethane	0.02	3.1	30	U	U	U	U	U	U	U	U
1,2-dichloropropane	700			U	U	U	U	U	U	U	U
1,3-Dichlorobenzene	2.4	49	280	U	U	U	U	U	U	U	U
1,4-Dichlorobenzene	1.8	13	130	U	U	U	U	U	U	U	U
2-Hexanone				U	U	U	U	U	U	U	U
Acetone	0.05	100	500	U	0.002 J	U	U	U	0.011 J	0.027 J	0.009 J
Benzene	0.06	4.8	44	U	U	U	U	U	U	U	U
Bromodichloromethane				U	U	U	U	U	U	U	U
Bromoform				U	U	U	U	U	U	U	U
Bromomethane				U	U	U	U	U	U	U	U
Carbon disulfide				U	U	U	U	0.005 J	U	U	0.002 J
Carbon tetrachloride	0.76	1.4	22	U	U	U	U	U	U	U	U
Chlorobenzene	1.1	100	500	U	U	U	U	U	U	U	U
Chloroethane				U	U	U	U	U	U	U	U
Chloroform	0.37	49	350	U	U	U	U	U	U	U	U
Chloromethane				U	U	U	U	U	U	U	U
cis-1,2-dichloroethene	0.25	100	500	U	U	U	U	U	U	U	U
cis-1,3-dichloropropene				UJ	UJ	UJ	UJ	UJ	UJ	UJ	UJ
Cyclohexane				U	U	U	U	U	U	U	U
Dibromochloromethane	10			U	U	U	U	U	U	U	U
Dichlorodifluoromethane				U	U	U	U	U	U	U	U
Ethylbenzene	1	41	390	U	U	U	U	U	U	U	U
Isopropylbenzene				U	U	U	U	U	U	U	U
MEK(2-Butanone)	0.12	100	500	U	U	U	U	U	U	U	U
Methyl acetate				U	U	U	U	U	U	U	U
Methyl tert butyl ether	0.93	100	500	U	U	U	U	U	U	U	U
Methylcyclohexane				U	U	U	U	U	U	U	U
Methylene chloride	0.05	100	500	U	U	U	U	U	U	U	U
MIBK(4-Methyl-2-pentanone)				U	U	U	U	U	U	U	U
Styrene	300			U	U	U	U	U	U	U	U
Tetrachloroethene	1.3	19	150	U	U	U	U	U	U	U	U
Toluene	0.7	100	500	U	U	U	U	U	U	U	U
Total Xylenes	0.26	100	500	U	U	U	U	U	U	U	U
trans-1,2-dichloroethene	0.19	100	500	U	U	U	U	U	U	U	U
trans-1,3-dichloropropene				U	U	U	U	U	U	U	U
Trichloroethene	0.47	21	200	U	U	U	U	U	U	U	U
Trichlorofluoromethane				U	U	U	U	U	U	U	U
Vinyl chloride	0.02	0.9	13	U	U	U	U	U	U	U	U

Soil Cleanup Objectives (SCOs) from 6 NYCRR Part 375-6.8(b) (December 2006) and Supplemental Soil Cleanup Objectives (October 2010)

Laboratory results reflect comments of data validator

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	Unrestricted Use/ Protection of Ecological Resources	Restricted-Residential Use	Commercial Use	SS-1	SS-2	SS-3	SS-4	Trench Sample	BR-1	BR-2	BR-3
SVOCs											
Benzaldehyde				U	U	U	U	U	U	U	U
Phenol	0.33	100	500	U	U	U	U	U	U	U	U
Bis (2-chloroethyl) ether				U	U	U	U	U	U	U	U
2-Chlorophenol	0.8			U	U	U	U	U	U	U	U
2-Methylphenol	0.33	100	500	U	U	U	U	U	U	U	U
2,2'- Oxybis (1-Chloropropane)				U	U	U	U	U	U	U	U
Acetophenone				U	U	U	1.1 J	U	U	U	U
4-Methylphenol	0.33	100	500	U	U	U	U	U	U	U	U
N-Nitroso-di-n-propylamine				U	U	U	U	U	U	U	U
Hexachloroethane				U	U	U	U	U	U	U	U
Nitrobenzene	40	15	69	U	U	U	U	U	U	U	U
Isophorone				U	U	U	U	U	U	U	U
2-Nitrophenol	7			U	U	U	U	U	U	U	U
2,4-dimethylphenol				U	U	U	U	U	U	U	U
Naphthalene	12	100	500	U	U	U	1.7 J	U	U	0.3 J	0.11 J
4-Chloroaniline				U	U	U	U	U	U	U	U
Hexachlorobutadiene				U	U	U	U	U	U	U	U
Caprolactam				U	U	U	U	U	U	U	U
4-Chloro-3-methylphenol				U	U	U	U	U	U	U	U
2-Methylnaphthalene				U	U	U	U	U	U	0.32 J	0.085 J
Hexachlorocyclopentadiene				U	U	U	U	U	U	U	U
2,4,6-Trichlorophenol	10			U	U	U	U	U	U	U	U
2,4,5-Trichlorophenol	4			U	U	U	U	U	U	U	U
Biphenyl	60			U	U	U	U	U	U	0.027 J	U
2-Chloronaphthalene				U	U	U	U	U	U	U	U
2-Nilroaniline				U	U	U	U	U	U	U	U
Dimethyl phthalate	200			U	U	U	U	U	U	U	U
2,6-Dinitrotoluene				U	U	U	U	U	U	U	U
Acenaphthylene	100	100	500	U	U	U	1 J	U	U	U	U
3-Nitroaniline				U	U	U	U	U	U	U	U
Acenaphthene	20	100	500	U	U	0.069	U	0.025 J	U	0.22 J	0.21 J
2,4-dinitrophenol	20			U	U	U	U	U	U	U	U
4-Nitrophenol	7			U	U	U	U	U	U	U	U
Dibenzofuran				U	U	U	0.013 J	0.025 J	U	0.3 J	0.22 J
2,4-Dinitrotoluene				U	U	U	U	U	U	U	U
Diethyl phthalate	100			U	U	U	U	U	U	U	U
Fluorene	30	100	500	U	U	0.11 J	U	0.49 J	U	0.38 J	0.27 J
4-Chlorophenyl phenyl ether				U	U	U	U	U	U	U	U
4-Nitroaniline				U	U	U	U	U	U	U	U
4,6-Dinitro-2-methylphenol				U	U	U	U	U	U	U	U
N-nitrosodiphenylamine				U	U	U	U	U	U	U	U
4-Brornophenyl phenyl ether				U	U	U	U	U	U	U	U
Hexachlorobenzene				U	U	U	U	U	U	U	U
Atrazine				U	U	U	U	U	U	U	U
Pentachlorophenol	0.8	6.7	6.7	U	U	U	U	U	U	U	U
Phenanthrene	100	100	500	0.3 J	0.89 J	0.3 J	1 J	4.9 J	0.66 J	2.7 J	2.4 J
Anthracene	100	100	500	U	0.18 J	0.22 J	0.43 J	1.8 J	0.1 J	0.75 J	0.58 J
Carbazole				U	U	U	0.022 J	0.21 J	U	0.1 J	0.25 J
Di-n-butyl phthalate	0.014			U	U	U	U	0.028 J	U	0.018 J	U
Fluoranthene	100	100	500	0.68 J	1.5 J	1.8 J	3.3 J	7.6 J	0.94 J	3.4 J	2.2 J
Pyrene	100	100	500	0.61 J	1.3 J	1.9 J	3.8 J	6.5 J	0.82 J	2.9 J	2.1 J
Butyl benzyl phthalate				U	U	U	U	U	U	U	U
3,3'-dichlorobenzidine				U	U	U	U	U	U	U	U
Benzo(a)anthracene	1	1	5.6	0.38 J	0.83 J	0.63 J	**2.2 J**	**3.6 J**	0.41 J	**1.6 J**	0.93 J
Chyrsene	1	3.9	56	0.4 J	0.81 J	0.65 J	**2.3 J**	**3 J**	0.41 J	**1.4 J**	0.84 J
Bis(2-ethylhexyl)phthalate	239			0.036 J	U	U	U	U	0.23 J	0.24 J	0.086 J
Di-n-octyl phthalate				U	U	U	U	U	U	0.012 J	U
Benzo(b)fluoranthene	1	1	5.6	0.45 J	0.87 J	0.4 J	**2.5 J**	**2.6 J**	0.35 J	**1.1 J**	0.65 J
Benzo(k)fluoranthene	0.8	3.9	56	0.23 J	0.45 J	0.2 J	**1.9 J**	**1.5 J**	0.18 J	0.71 J	0.4 J
Benzo(a)pyrene	1	1	1	0.39 J	0.74 J	0.45 J	**1.4 J**	**2.5 J**	0.31 J	**1.1 J**	0.63 J
Indeno(1,2,3-cd)pyrene	0.5	0.5	5.6	0.26 J	**0.54 J**	0.21 J	**0.98 J**	**0.92 J**	0.13 J	0.42 J	0.24 J
Dibenzo(a,h)anthracene	0.33	0.33	0.56	0.053 J	0.15 J	U	0.28 J	0.26 J	0.013 J	0.2 J	0.08 J
Benzo(g,h,i)perylene	100	100	500	0.32 J	0.56 J	0.26 J	0.87 J	0.81 J	0.14 J	0.4 J	0.22 J

Soil Cleanup Objectives (SCOs) from 6 NYCRR Part 375-6.8(b) (December 2006) and Supplemental Soil Cleanup Objectives (October 2010)

Laboratory results reflect comments of data validator

U - non-detect

J or E - estimated value

RE - re-extraction

R - data flagged as unusable by data validator

Bold cell indicates an exceedance of the more restrictive of the Unrestricted Use or Protection of Ecological Resources SCOs

Bold and thick outlined cell indicates an exceedance of the more restrictive of the Unrestricted Use or Protection of Ecological Resources SCOs and the Restricted-Residential Use SCOs

Bold, thick outlined, and yellow highlighted cell indicates an exceedance of the more restrictive of the Unrestricted Use or Protection of Ecological Resources SCOs, the Restricted-Residential Use SCOs, and the Commercial Use SCOs

Table 1: Summary of Soil Sample Laboratory Analytical Results. Lake Pump Site. Site #734078.

Analyte (mg/kg)	Soil Cleanup Objectives (SCOs)			Surface Soil Samples				Subsurface Soil Samples			
	Unrestricted Use/ Protection of Ecological Resources	Restricted-Residential Use	Commercial Use	SS-1	SS-2	SS-3	SS-4	Trench Sample	BR-1	BR-2	BR-3
Pesticides											
alpha-BHC	0.02	0.48	3.4	UJ	UJ	UJ	UJ	U	U	U	UJ
beta-BHC	0.036	0.36	3	UJ	UJ	UJ	UJ	U	U	U	UJ
delta-BHC	0.04	100	500	UJ	UJ	UJ	UJ	U	U	U	UJ
Lindane (gamma-BHC)	0.1	1.3	9.2	UJ	UJ	UJ	UJ	U	U	U	UJ
Heptachlor	0.042	2.1	15	UJ	UJ	UJ	UJ	U	U	U	UJ
Aldrin	0.005	0.097	0.68	UJ	UJ	UJ	UJ	U	U	U	UJ
Heptachlor epoxide				UJ	UJ	UJ	UJ	U	U	U	UJ
Endosulfan I	2.4	24	200	UJ	UJ	UJ	UJ	U	U	U	UJ
Dieldrin	0.005	0.2	1.4	UJ	UJ	UJ	UJ	U	U	U	UJ
4,4'-DDE	0.0033	8.9	62	UJ	UJ	UJ	UJ	**0.0059**	U	U	UJ
Endrin	0.014	11	89	UJ	UJ	UJ	UJ	U	U	U	UJ
Endosulfan II	2.4	24	200	UJ	UJ	UJ	UJ	U	U	U	UJ
4,4'-DDD	0.0033	13	92	UJ	UJ	UJ	UJ	U	U	U	UJ
Endosulfan sulfate	2.4	24	200	UJ	UJ	UJ	UJ	U	U	U	UJ
4,4'-DDT	0.0033	7.9	47	UJ	UJ	UJ	**0.007**	**0.011**	U	UJ	UJ
Methoxychlor	1.2			UJ	UJ	UJ	UJ	U	U	U	UJ
Endrin ketone				UJ	UJ	UJ	UJ	U	U	U	UJ
Endrin aldehyde				UJ	UJ	UJ	UJ	U	U	U	UJ
alpha-Chlordane	0.094	4.2	24	UJ	UJ	UJ	UJ	U	U	U	UJ
gamma-Chlordane				UJ	UJ	UJ	UJ	U	U	U	UJ
Toxaphene				UJ	UJ	UJ	UJ	U	U	U	UJ
PCBs											
Aroclor 1016				UJ	UJ	UJ	UJ	U	U	U	UJ
Aroclor 1221				UJ	UJ	UJ	UJ	U	U	U	UJ
Aroclor 1232				UJ	UJ	UJ	UJ	U	U	U	UJ
Aroclor 1242				UJ	UJ	UJ	UJ	U	U	U	0.046 J
Aroclor 1248				UJ	UJ	UJ	UJ	0.2 J	U	U	UJ
Aroclor 1254				UJ	UJ	UJ	UJ	0.14	U	0.61	UJ
Aroclor 1260				UJ	UJ	UJ	UJ	U	U	U	UJ
Total PCBs	0.1	1	1					**0.34**		**0.61**	0.046

Soil Cleanup Objectives (SCOs) from 6 NYCRR Part 375-6.8(b) (December 2006) and Supplemental Soil Cleanup Objectives (October 2010)
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Table 2: Summary of Groundwater Sample Laboratory Analytical Results. Lake Pump Site. Site #734078.

Analyte	GW Std^ (ug/L)	Sample Identification															
		MW-1															
Date Sampled		11/19/2001						6/29/2005					6/2/2016				
		Total			Dissolved (Filtered)			Total			Dissolved (Filtered)		Total			Dissolved (Filtered)		
Metals by EPA Methods 6020A and 7470A				R.L.			R.L.			R.L.		R.L.			R.L.			R.L.
Aluminum	-	214		-	43.6		-	1,390	E	-	-			U	50	4	J	10
Antimony	3		UJ	-		U	-	**4.1**	**B**	-	-		2.7		10	**3.2**		2
Arsenic	25		UJ	-		U	-	12.1	B	-	-			U	2.5	0.5	J	0.5
Barium	1,000	123	E	-	121		-	158	BE	-	-		233.2		2.5	231.6		0.5
Beryllium	3 (G)	0.8		-	0.59		-	0.15	U	-	-			U	2.5		UJ	0.5
Cadmium	5		U	-		U	-		U	0.1	-			U	1		U	0.2
Calcium	-	821,000	J	-	932,000	EJ	-	1,410,000		-	-		1,470,000		20000	1,890,000	J	20000
Chromium	50		UE	-		U	-	2.7	B	-	-			U	5		U	3
Cobalt	-		UEJ	-		U	-	1.8	B	-	-			U	1	0.1	J	0.2
Copper	200		U	-		U	-	6.5	B	-	-		12.8	J+	25		U	10
Iron	300	**6,130**	**J**	-	**7,140**	**J**	-	**10,500**	**E**	-	-		**15,300**		250	**17,400**		50
Lead	25		UEJ	-		U	-	12.9		-	-			U	5	0.4	J	1
Magnesium	35,000 (G)	**62,500**	**E**	-	**65,800**		-	**75,000**	**E**	-	-		**101,000**		350	**98,500**	**J**	1400
Manganese	300	276	EJ	-	**322**	**J**	-	**460**	**E**	-	-		**592.1**	**J**	5	**583.5**	**J**	20
Mercury	0.7		U	-		U	-		U	0.064	-			U	0.2		U	0.2
Nickel	100		UE	-		U	-	3.9	B		-			U	2.5		U	2
Potassium	-	30,800	EJ	-	35,600	EJ	-	27,200			-		30,400	J+	500	36,300	J	100
Selenium	10		U	-		U	-	**13.8**	**B**		-			U	25		U	5
Silver	50		U	-		U	-		U	0.91	-			U	2	0.2	J	0.4
Sodium	20,000	**1,140,000**	**E**	-	**1,210,000**		-	**1,580,000**			-		**1,830,000**	**J**	20000	**2,280,000**	**J**	20000
Thallium	0.5 (G)	**5.7**		-		U	-	**28.3**			-			U	2.5		U	0.5
Vanadium	-		UEJ	-		U	-	1.4	B		-			U	25		U	5
Zinc	2,000 (G)		U	-		U	-	11.1	B		-		13.1	J	50	3.9	J	10
Hexavalent Chromium	50		UJ	-		UJ	-	-			-		-			-		

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(-) - No standard established or no sample analyzed for specific analyte

R.L. - Laboratory Reporting Limit

Bold and boxed results indicate an exceedance of Groundwater Standards

Table 2: Summary of Groundwater Sample Laboratory Analytical Results. Lake Pump Site. Site #734078.

Analyte	GW Std^ (ug/L)	Sample Identification															
		MW-2															
Date Sampled		11/19/2001						6/29/2005						6/2/2016			
		Total			Dissolved (Filtered)			Total			Dissolved (Filtered)			Total			Dissolved (Filtered)		
Metals by EPA Methods 6020A and 7470A				R.L.			R.L.			R.L.			R.L.			R.L.			R.L.
Aluminum	-	12,000			39.1			1,020	E		-			688		200	480		10
Antimony	3	**231**	**J**			U			U	1.2	-				U	2	2.6		2
Arsenic	25	**101**				U			U	1.6	-			4.2		0.5	5.1		0.5
Barium	1,000	**1,280**	**EJ**		183			158	BE		-			400.6		0.5	452.7	J	0.5
Beryllium	3 (G)	1.8			0.53				U	0.15	-				U	0.5		U	0.5
Cadmium	5	3.9				U			U	0.1	-			0.8		0.2	0.7		0.2
Calcium	-	985,000			840,000	E		179,000			-			298,000	J	2000	344,000		2000
Chromium	50	**10,700**	**EJ**			U		**102**			-			18.8		1		U	3
Cobalt	-	1,280	EJ		10.4				U	0.15	-			2.6		0.2	0.19	J	0.2
Copper	200	**2,140**				U		16.4	BE		-				U	11		U	10
Iron	300	**402,000**			**29,600**			**1,460**	**E**		-			270		50	29	J	50
Lead	25	**1,110**	**EJ**			U			U	0.46	-			3.7		1		U	1
Magnesium	35,000 (G)	**72,800**	**EJ**		**59,100**				UE	20	-			321		70	138		70
Manganese	300	**3,500**	**EJ**		**771**			99.4	E		-			46		1	1		1
Mercury	0.7	**0.743**				U			U	0.062	-				U	0.2		U	0.2
Nickel	100	**7,230**	**EJ**		9.2			46.7	B		-			16.1		0.5	11.2		2
Potassium	-	44,000	EJ		41,600	E		75,800			-			47,400		100	52,600		2000
Selenium	10	**34.9**				U		**90.3**			-			**13**	**J+**	5	**12**		5
Silver	50	2.4				U			U	0.91	-				U	0.4		U	0.4
Sodium	20,000	**1,600,000**	**EJ**		**1,540,000**			**665,000**			-			**632,000**	**J**	2000	**703,000**		2000
Thallium	0.5 (G)		U			U			U	1.2	-				U	0.5		U	0.5
Vanadium	-	1,560	EJ			U		123			-			112		5	117.8		5
Zinc	2,000 (G)	253	EJ			U		34.1	B		-				U	10	3.6	J	10
Hexavalent Chromium	50		UR		0.015	J		-			-			-			-		

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Table 2: Summary of Groundwater Sample Laboratory Analytical Results. Lake Pump Site. Site #734078.

Analyte	GW Std^ (ug/L)	Sample Identification											
		MW-3											
Date Sampled		11/19/2001				6/29/2005				6/2/2016			
		Total		Dissolved (Filtered)		Total			Dissolved (Filtered)	Total		Dissolved (Filtered)	
Metals by EPA Methods 6020A and 7470A			R.L.		R.L.			R.L.	R.L.		R.L.		R.L.
Aluminum	-	4,820		679		143	BE		-	17,600	2000	475 J	200
Antimony	3	UJ		U		U		1.2	-	**5.6**	2	2.7	2
Arsenic	25	9.6		U		10.2	B		-	17.6	0.5	3.3	0.5
Barium	1,000	391		349		139	BE		-	**1,216**	10	358.4	0.5
Beryllium	3 (G)	0.31		0.28			U	0.15	-	0.7	0.5	UJ	0.5
Cadmium	5	0.3		U			U	0.1	-	1.3	0.2	0.7	0.2
Calcium	-	281,000		274,000		810,000			-	625,000	2000	380,000 J	2000
Chromium	50	**940**		U		**113**			-	**5,764**	20	U	3
Cobalt	-	75.6 J		U		26.6	B		-	341.6	0.2	0.18 J	0.2
Copper	200	77.5		U		20.5	B		-	**255.8**	11	U	10
Iron	300	**16,500**		20.7		**31,200**	**E**		-	**68,800**	1000	25 J	50
Lead	25	**66.7**	**J**	U		10.6			-	**299.3**	1	U	1
Magnesium	35,000 (G)	3,800		127		**50,400**	**E**		-	24,700	70	100 J	70
Manganese	300	**1,230**		1.3		**357**	**E**		-	**9,093**	20	0.6 J	1
Mercury	0.7	U		U		U		0.064	-	U	0.2	U	0.2
Nickel	100	**477**		5		**104**			-	**2,628**	10	5.6	2
Potassium	-	119,000 E		115,000 E		20,000			-	121,000	2000	98,300 J	2000
Selenium	10	**33.1**	**J**	**44.4**	**J**	9.9	B		-	7.43	5	6	5
Silver	50	1.1		U		U		0.91	-	1.4	0.4	U	0.4
Sodium	20,000	**1,070,000**		**1,130,000**		**1,300,000**			-	**1,080,000**	20000	**1,260,000**	20000
Thallium	0.5 (G)	U		U		**18**	**B**		-	0.3 J	0.5	U	0.5
Vanadium	-	158 J		88.2		1.9	B		-	966.4	100	141.8	5
Zinc	2,000 (G)	25.4		U		5.4	B		-	80.8	10	2.6 J	10
Hexavalent Chromium	50	0.03 J		0.016 J		-			-	-		-	

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Table 2: Summary of Groundwater Sample Laboratory Analytical Results. Lake Pump Site. Site #734078.

Analyte	GW Std^ (ug/L)	Sample Identification															
		Duplicate															
Date Sampled		6/29/2005								6/2/2016							
		Total (MW-3)				Dissolved (Filtered) (MW-3)				Total (MW-3)				Dissolved (Filtered) (MW-3)			
Metals by EPA Methods 6020A and 7470A				R.L.	RPD		R.L.	RPD				R.L.	RPD			R.L.	RPD
Aluminum	-	119	BE		18.32%	-				13,500	J+	2000	26.37%	537	J	200	12.25%
Antimony	3		U	1.2	-	-				**5.1**		2	9.35%	2.6	J	2	3.77%
Arsenic	25	9.2	B		10.31%	-				13.3		0.5	27.83%	3.3	J	0.5	0.00%
Barium	1,000	140	BE		0.72%	-				**1,314**		10	7.75%	369.2	J	0.5	2.97%
Beryllium	3 (G)		U	0.15	-	-				0.7	J+	0.5	0.00%		UJ	0.5	-
Cadmium	5		U	0.1	-	-				1.2		0.2	8.00%	0.8	J	0.2	13.33%
Calcium	-	825,000			1.83%	-				721,000		2000	14.26%	420,000	J	2000	10.00%
Chromium	50	**82.2**			31.56%	-				**6,053**		20	4.89%		UJ	3	-
Cobalt	-	20.6	B		25.42%	-				288		0.2	17.03%	0.1	J	0.2	57.14%
Copper	200	15.7	B		26.52%	-				**228.8**		5	11.14%		UJ	10	-
Iron	300	**28,800**	**E**		8.00%	-				**68,600**		1000	0.29%	29	J	50	14.81%
Lead	25	8.9	B		17.44%	-				**258.4**		1	14.67%	0.6	J	1	50.00%
Magnesium	35,000 (G)	**51,400**	**E**		1.96%	-				23,900		70	3.29%	109	J	70	8.61%
Manganese	300	**347**	**E**		2.84%	-				**9,042**		20	0.56%	0.5	J	1	18.18%
Mercury	0.7		U	0.061	-	-					U	0.2	200.00%		U	0.2	-
Nickel	100	75.2			32.14%	-				**2,255**		10	15.28%	5.2	J	2	7.41%
Potassium	-	20,500			2.47%	-				137,000		2000	12.40%	102,000	J	2000	3.69%
Selenium	10	8.6	B		14.05%	-				8		5	7.39%	6	J	5	0.00%
Silver	50		U	0.91	-	-				1.5		0.3	6.90%		UJ	0.4	-
Sodium	20,000	**1,310,000**			0.77%	-				**871,000**		20000	21.42%	**1,260,000**	**J**	20000	0.00%
Thallium	0.5 (G)	**17.5**	**B**		2.82%	-				0.2		0.2	40.00%		U	0.5	-
Vanadium	-		U	0.47	120.68%	-				954.7		100	1.22%	139.1	J	5	1.92%
Zinc	2,000 (G)	11.6	B		72.94%	-				75.5		10	6.78%		UJ	10	117.46%
Hexavalent Chromium	50	-				-				-			-	-			-

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^ - GW Std - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

U - Analyzed for but Not Detected

UJ - Analyzed for but Not Detected. The reported laboratory reporting limit is approximate and may be inaccurate or imprecise

J - Indicates an estimated value

J+ - Indicates an estimated value, but the result may be biased high

E - Indicates an estimated value

R - Indicates data flagged as unusable by data validator

(-) - No standard established or no sample analyzed for specific analyte

R.L. - Laboratory Reporting Limit

RPD - Relative Percent Difference between the duplicate and parent sample concentrations. When one sample is non-detect, the laboratory detection limit is used as the concentration for the calculation.

$$RPD = \frac{2(\text{Sample Value} - \text{Duplicate Sample Value})}{(\text{Sample Value} + \text{Duplicate Sample Value})}$$

Bold and boxed results indicate an exceedance of Groundwater Standards

Table 2: Summary of Groundwater Sample Laboratory Analytical Results. Lake Pump Site. Site #734078.

Analyte	GW Std^ (ug/L)	Sample Identification																
		MW-1				MW-2				MW-3				Duplicate				
Date Sampled		11/19/2001		6/2/2016		11/19/2001		6/2/2016		11/19/2001		6/2/2016		6/2/2016 (MW-3)				
PCBs by EPA Method 8082A			R.L.		R.L.		R.L.		R.L.		R.L.		R.L.		R.L.		R.L.	RPD
Aroclor 1016		U	-	U	0.083	U	-	U	0.083	U	-	U	0.083	U	0.083			
Aroclor 1221		U	-	U	0.083	U	-	U	0.083	U	-	U	0.083	U	0.083			
Aroclor 1232		U	-	U	0.083	U	-	U	0.083	U	-	U	0.083	U	0.083			
Aroclor 1242		U	-	U	0.083	U	-	1.26	0.083	U	-	0.197	0.083	0.218	0.083			
Aroclor 1248		U	-	U	0.083	U	-	U	0.083	U	-	U	0.083	U	0.083			
Aroclor 1254		U	-	U	0.083	1.7	-	U	0.083	1.9 J	-	0.176	0.083	0.251	0.083			
Aroclor 1260		U	-	U	0.083	U	-	U	0.083	U	-	U	0.083	0.086 J	0.083			
Aroclor 1262		-	-	U	0.083	-	-	U	0.083	-	-	U	0.083	U	0.083			
Aroclor 1268		-	-	U	0.083	-	-	U	0.083	-	-	U	0.083	U	0.083			
Total PCBs	0.09	ND		ND		**1.7**		**1.26**		**1.9 J**		**0.373**		**0.555**				39.22%

All values reported as ug/L (parts per billion)

^ - GW Std - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

U - Analyzed for but Not Detected

J - Indicates an estimated value

(-) - No value reported or no sample analyzed for specific analyte

ND - Analyzed for but Not Detected above laboratory detection limits

R.L. - Laboratory Reporting Limit

RPD - Relative Percent Difference between the duplicate and parent sample concentrations. When one sample is non-detect, the laboratory detection limit is used as the concentration for the calculation.

$$RPD = \frac{2(\text{Sample Value} - \text{Duplicate Sample Value})}{(\text{Sample Value} + \text{Duplicate Sample Value})}$$

Bold and boxed results indicate an exceedance of Groundwater Standards