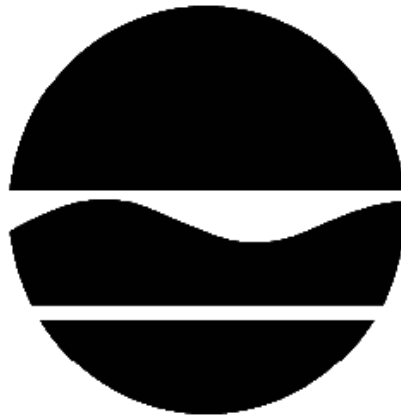


PROPOSED REMEDIAL ACTION PLAN

Former Karg Brothers Tannery
Environmental Restoration Project
Johnstown, Fulton County
Site No. E518022
February 2015



Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

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SECTION 1: SUMMARY AND PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), is proposing a remedy for the above referenced site. The disposal of contaminants at the site resulted in threats to public health and the environment that were addressed by actions known as interim remedial measures (IRMs), which were undertaken at the site. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation (RI) or feasibility study (FS). The IRMs undertaken at this site are discussed in Section 6.2. Contaminants include hazardous wastes and/or petroleum.

Based on the implementation of the IRM(s), the findings of the investigation of this site indicate that the site no longer poses a threat to human health or the environment. The IRM(s) conducted at the site attained the remediation objectives identified for this site, which are presented in Section 6.5, for the protection of public health and the environment. No Further Action is the remedy proposed by this Proposed Remedial Action Plan (PRAP). A No Further Action remedy may include continued operation of any remedial system installed during the IRM and the implementation of any prescribed institutional controls/engineering controls (ICs/ECs) that have been identified as being part of the proposed remedy for the site. This PRAP identifies the IRM(s) conducted and discusses the basis for No Further Action.

The 1996 Clean Water/ Clean Air Bond Act provides funding to municipalities for the investigation and cleanup of brownfields. Brownfields are abandoned, idled, or under-used properties where redevelopment is complicated by real or perceived environmental contamination. They typically are former industrial or commercial properties where operations may have resulted in environmental contamination. Brownfields often pose not only environmental, but legal and financial burdens on communities. Under the Environmental Restoration Program, the state provides grants to municipalities to reimburse up to 90 percent of eligible costs for site investigation and remediation activities. Once remediated, the property can then be reused.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375. This document is a summary of the information that can be found in the site-related reports and documents in the document repository identified below.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all PRAPs. This is an opportunity for public participation in the remedy selection process. The public is encouraged to review the reports and documents, which are available at the following repository:

A public comment period has been set from:

2/12/2015 to 3/29/2015

A public meeting is scheduled for the following date:

3/2/15 at 5:00 pm

Public meeting location:

City of Johnstown, Council Chambers, 33-41 East Main St, Johnstown, NY 12095

At the meeting, the findings of the remedial investigation (RI) will be presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period will be held, during which verbal or written comments may be submitted on the PRAP.

Written comments may also be sent through 3/29/2015 to:

Alicia Purzycki
NYS Department of Environmental Conservation
Division of Environmental Remediation
232 Golf Course Rd
Warrensburg, NY 12885
alicia.purzycki@dec.ny.gov

The Department may modify the proposed remedy presented in this PRAP based on new information or public comments. Therefore, the public is encouraged to review and comment on the proposed remedy identified herein. Comments will be summarized and addressed in the responsiveness summary section of the Record of Decision (ROD). The ROD is the Department's final selection of the remedy for this site.

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The site is a former tannery located in an urban setting of City of Johnstown, Fulton County. The site is bordered by Cayadutta Creek on the east, southeast and south; a residence and two abandoned gasoline stations to the west; and 13 residences to the north.

Site Features: The site consists of 6.5 acres of vacant property covered with light vegetation and concrete building foundations.

Current Use/Zoning: The site is currently vacant and owned by the City of Johnstown, which obtained it through tax foreclosure. The site is currently zoned restricted residential.

Historic Uses: The historic tanning operations required the use of acids, solvents, sulfonated oils, soaps, oil-based dyes, lacquered-based paints and pigments. Tanning operations ceased and the Karg Tannery went bankrupt in the mid-1990s. In 2001, the USEPA performed a removal action to remove the immediate hazards which included the removal of all containerized wastes, residues, liquids, and sludge; and the decontamination, demolition and disposal of contaminated building structures. The City of Johnstown entered the Environmental Restoration Program in 2004 to perform the required investigation of the site.

Geology/Hydrogeology: The area of the site is underlain by Ordovician shale. The surficial geology is generally silt and fine to medium sand with gravel and silty clay. While bedrock was not encountered during the RI, shale fragments were encountered during drilling activities, suggesting depth to bedrock is approximately 20 ft. Depth to groundwater is approximately 3 ft. Groundwater flow is generally to the southwest towards Cayadutta Creek which is consistent with surface topography.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives (or an alternative) that restrict(s) the use of the site to restricted-residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) is/are being evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the investigation to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is included in the Tables for the media being evaluated in Exhibit A.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a

site. This may include past or present owners and operators, waste generators, and haulers.

No PRPs have been documented to date.

Karg Brothers Tannery went bankrupt in the mid-1990s. No other PRPs have been documented to date.

Since no viable PRPs have been identified, there are currently no ongoing enforcement actions. However, legal action may be initiated at a future date by the state to recover state response costs should PRPs be identified. City of Johnstown will assist the state in its efforts by providing all information to the state which identifies PRPs. City of Johnstown will also not enter into any agreement regarding response costs without the approval of the Department.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

The analytical data collected on this site includes data for:

- groundwater
- soil

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. The tables found in Exhibit A list the applicable SCGs in the footnotes. For a full listing of all SCGs see: <http://www.dec.ny.gov/regulations/61794.html>

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

ARSENIC
CHROMIUM
COPPER
LEAD
MERCURY
BENZO(A)PYRENE

BENZO(B)FLUORANTHENE
BENZO(A)ANTHRACENE
Chrysene
DIBENZ[A,H]ANTHRACENE
Isopropylbenzene

Based on the investigation results, comparison to the SCGs, and the potential public health and environmental exposure routes, certain media and areas of the site required remediation. These media were addressed by the IRM(s) described in Section 6.2. More complete information can be found in the RI Report and the IRM Construction Completion Report.

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Record of Decision.

The following IRM(s) has/have been completed at this site based on conditions observed during the RI.

Soil Cover System IRM

The IRM Work Plan dated September 25, 2013 was approved on October 7, 2013. The approved IRM work plan consisted of a soil cover system to be placed on the site. A site cover already existed in portions of the site, including the paved access roads on-site, along with the existing building foundations on-site. The areas, as well as all remaining exposed surface soil on the site, were covered with a two foot soil cover to allow for restricted residential use of the site. The soil cover is a minimum of two feet of soil, which met the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted residential use. The soil cover was placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation

layer. A total of approximately 23,040 tons of clean fill was brought on-site for the soil cover system IRM.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water.

Based upon the resources and pathways identified and the toxicity of the contaminants of ecological concern at this site, a Fish and Wildlife Resources Impact Analysis (FWRIA) was deemed not necessary for OU 01.

Soil and groundwater samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), pesticides, and inorganics (metals). Off-site sampling did occur and detected contamination but was determined not to have migrated from the site, and will be addressed under a separate program as appropriate. As part of the EPA removal action, a follow-up assessment identified a potential release to the Cayadutta Creek that will be addressed by a regional study of all of the tanneries that may have impacted the creek.

Nature and Extent of Contamination

The RI included the collection of surface soil samples, subsurface soil samples. A preliminary screening of surface soils was conducted using a portable X-ray fluorescence (XRF) unit, of which 15 confirmatory surface soil samples were collected. Subsurface soil samples were collected from 24 soil borings on-site. In addition, the RI included the collection of 39 surface soil samples and the collection of subsurface soil samples from 9 soil borings off-site.

Soil

RI findings documented the presence of soil contamination on-site and surface soil contamination off-site on adjacent residences. The RI also included the collection of 5 background surface soil samples from off-site locations. The off-site surface soil contamination appears to be attributable to historical filling activities (i.e. not due to off-site migration), and unrelated to past site operations.

The main contaminants of concern are inorganic and SVOCs contaminants. The inorganic contaminants of concern include arsenic, chromium, copper, lead and mercury. The SVOC contaminants of concern include benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, and dibenzo(a,h)anthracene. The inorganic contaminant of arsenic was detected at the greatest frequency in the surface and subsurface soil, as high as 351, above its SCG of 16 ppm.

Groundwater

Groundwater samples were collected from 8 monitoring wells on-site. Several inorganic compounds were detected in the groundwater, including arsenic, iron, manganese and sodium. Arsenic was detected in only 1 of 8 groundwater samples, at 40 ppb, which is above its SCG of 25 ppb. The inorganic compounds of iron, manganese, and sodium are all naturally occurring and

not indicative of site contamination. Low level VOC contamination was detected in only 1 of 8 groundwater samples, isopropylbenzene at 31 ppb, above its SCG of 5.0 ppb.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure*.

Since the site is covered by a soil cover system, people will not come into contact with site-related soil and groundwater contamination unless they dig below the cover system. In adjacent off-site areas, people could contact contaminants in the soil by walking on the soil, digging or otherwise disturbing the soil. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. People may come in contact with contaminants present in the shallow creek sediments while entering or exiting the creek during recreational activities.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Prevent the discharge of contaminants to surface water.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

SECTION 7: SUMMARY OF PROPOSED REMEDY

Based on the results of the investigations at the site, the IRM that has been performed, and the evaluation presented here, the Department is proposing No Further Action as the remedy for the site. This No Further Action remedy includes the implementation of institutional controls in the form of an environmental easement of groundwater use restriction, environmental easement and site management plan as the proposed remedy for the site. The Department believes that this remedy is protective of human health and the environment and satisfies the remediation objectives described in Section 6.5.

The elements of the IRM already completed and the institutional and engineering controls are listed below:

1. Soil Cover System

A site cover currently exists as a result of the IRM completed by the City and will be maintained to allow for restricted residential use of the site. Any site redevelopment will maintain a site cover, which may consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is required it will be a minimum of two feet of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted residential use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

2. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property that:

- requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allows the use and development of the controlled property for restricted residential, commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
- requires compliance with the Department approved Site Management Plan.

3. Site Management Plan

A Site Management Plan 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/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed in Paragraph 2 above

Engineering Controls: The soil cover discussed in Paragraph 1 above.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and engineering controls.

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the Remedial Investigation for all environmental media that were evaluated. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium for which contamination was identified, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. The contaminants are arranged into three categories: volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and inorganics (metals). For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 4 and Section 6.1.1 are also presented. See Figure 2 for the sampling locations.

Groundwater

Groundwater samples were collected from eight overburden monitoring wells on-site. The samples were collected to assess groundwater conditions on the site. Table 1 presents a summary of the analytical data for groundwater along with a comparison of the analytical data to the SCGs. The results indicate that contamination in shallow groundwater at the site exceeds the SCGs for volatile organic compounds and inorganics.

Several inorganic compounds were detected in the groundwater, including arsenic, iron, manganese and sodium. The inorganic compounds of iron, manganese, and sodium are all naturally occurring and not indicative of site contamination. Arsenic was detected in only 1 of 8 groundwater samples, at 40 ppb, which is slightly above its SCG of 25 ppb. Low level VOC contamination was detected in only 1 of 8 groundwater samples, isopropylbenzene at 31 ppb, slightly above its SCG of 5.0 ppb. The arsenic detection above SCGs, although not indicative of site wide groundwater contamination, does constitute arsenic as a primary contaminant of concern.

Table 1 - Groundwater

Detected Constituents	Concentration Range Detected (ppb) ^a	SCG ^b (ppb)	Frequency Exceeding SCG
VOCs			
Isopropylbenzene	2 to 31	5	1 of 8
Inorganics			
Arsenic	5.62J to 40.1	25	1 of 8
Iron	742J to 4,130	300**	8 of 8
Manganese	36 to 387	300**	2 of 8
Sodium	9,180 to 222,000	20,000	6 of 8

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.

b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

J - Estimated in concentration below the reporting limit.

** Sum of these compounds cannot exceed 300 ug/L.

Groundwater contamination identified during the RI was addressed by reducing infiltration through the placement of the soil cover IRM.

Soil

Surface and subsurface soil samples were collected at the site during the RI. Surface soil samples were collected from a depth of 0-2 inches to assess direct human exposure. Subsurface soil samples were collected from a depth of 1 - 12 feet to assess soil contamination impacts to groundwater. RI findings documented the presence of inorganic and SVOC soil contamination above SCGs on-site, and inorganic surface and subsurface soil contamination above SCGs off-site. The off-site soil contamination will be further evaluated by NYSDEC and NYSDOH. The RI provides additional details regarding the off-site sampling results.

A preliminary screening of surface soils was conducted using a portable X-ray fluorescence (XRF) unit, based on a 40 ft grid, with 10% laboratory confirmatory sample verification, of which 15 confirmatory surface soil samples were collected. Subsurface soil samples were collected from 24 soil borings on-site which resulted in the collection of 26 subsurface soil samples. In addition, 39 off-site soil samples were collected, and 36 off-site soil boring samples were collected.

The main contaminants of concern on-site include inorganic and SVOC contamination. The inorganic contamination detected in the surface soil includes arsenic, chromium, lead and mercury. Arsenic was detected in 7 of the 15 surface soil samples above the restricted SCG of 16 ppm as high as 68.6 ppm. Chromium was also detected in 14 of the 15 surface soil samples above its respective SCG of 180 ppm as high as 707 ppm. The subsurface inorganic soil contamination included arsenic, chromium, lead, mercury and copper also. Arsenic was detected at the greatest frequency in the subsurface in 9 of 26 subsurface samples, as high as 361 ppm, which is above its SCG of 16 ppm. At a lesser frequency, SVOC contamination was detected in the subsurface soil. SVOC contaminants of concern include benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene.

Table 2 below presents a summary of the surface soil analytical data that exceed the Unrestricted Use SCOs found in Part 375-6.8 (a) along with a comparison of the analytical data to the Restricted Residential SCOs found in Part 375-6.8 (b) for each individual contaminant. Table 3 presents a summary of the subsurface soil analytical data that exceed the Unrestricted SCOs found in Part 375-6.8 (a) along with a comparison of the analytical data to the Restricted Residential SCOs found in Part 375-6.8 (b) for each individual contaminant.

Table 2 – Surface Soil

Detected Constituents	Concentration Range Detected (ppm) ^a	Unrestricted SCG ^b (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG ^c (ppm)	Frequency Exceeding Restricted SCG
Inorganics					
Arsenic	1.32 to 68.6	13	7 of 15	16	5 of 15
Chromium	18.9J to 707J	30	14 of 15	180	5 of 15
Lead	8.94 to 1,520	63	8 of 15	400	3 of 15
Mercury	0.023 to 2.3D	0.18	9 of 15	0.81	2 of 15

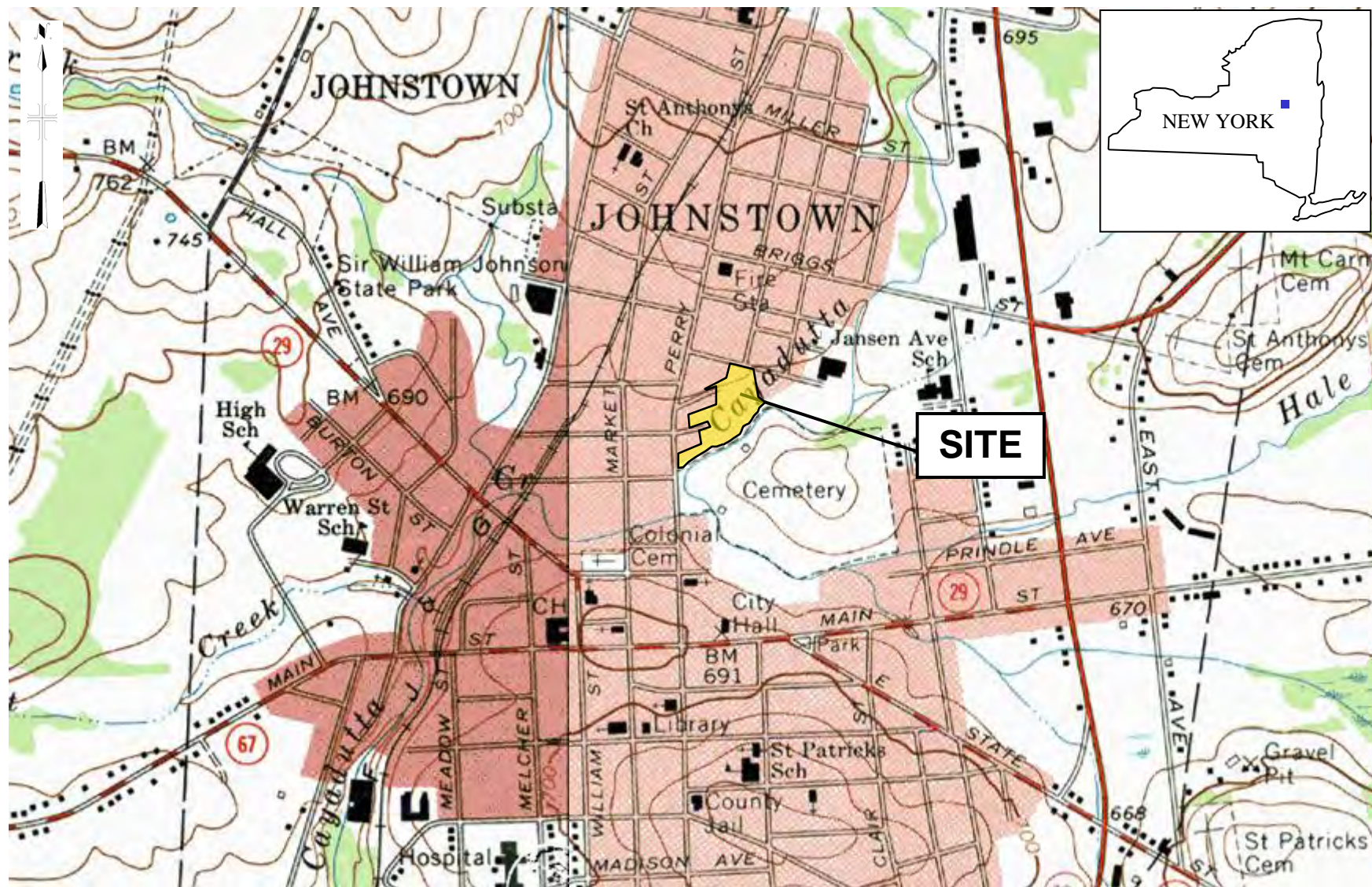
a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.
c - SCG: Part 375-6.8(b), Restricted-Residential Soil Cleanup Objectives.
J – Estimated concentration below the reporting limit.
N – Spike sample recovery is not within control limits.
D – Concentration obtained from a dilution.

Table 3 – Subsurface Soil

Detected Constituents	Concentration Range Detected (ppm) ^a	Unrestricted SCG ^b (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG ^c (ppm)	Frequency Exceeding Restricted SCG
SVOCs					
Benzo(a)anthracene	0.070J to 7.1	1	3 of 26	1	3 of 26
Benzo(a)pyrene	0.062J to 5.7	1	4 of 26	1	4 of 26
Benzo(b)fluoranthene	0.057J to 6	1	4 of 26	1	4 of 26
Chrysene	0.067J to 7.9	1	3 of 26	3.9	3 of 26
Dibenzo(a,h)anthracene	0.2J to .54J	0.33	3 of 26	.33	3 of 26
Indeno(1,2,3-cd)pyrene	0.085J to 1.8J	0.5	4 of 26	0.5	4 of 26
Inorganics					
Arsenic	1.22 to 361	13	9 of 26	16	7 of 26
Chromium	3.81NJ to 1,520NJ	30	14 of 26	180	1 of 26
Copper	3.73NJ to 566J	50	5 of 26	270	1 of 26
Lead	1.47 to 1,920	63	10 of 26	400	1 of 26
Mercury	0.005J to 8.4D	0.18	9 of 26	.81	2 of 26

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.
c - SCG: Part 375-6.8(b), Restricted-Residential Soil Cleanup Objectives.
J – Estimated concentration below the reporting limit.
N – Spike sample recovery is not within control limits.
D – Concentration obtained from a dilution.

Soil contamination identified during the RI was addressed during the IRM described in Section 6.2.



SOURCE: U.S.G.S 7.5 MIN. PECK LAKE
AND GLOVERSVILLE QUADS



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