RECORD OF DECISION

Sewall's Island
Environmental Restoration Project
Watertown, Jefferson County
Site No. E623021
March 2013

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

DECLARATION STATEMENT - RECORD OF DECISION

Sewall's Island
Environmental Restoration Project
Watertown, Jefferson County
Site No. E623021
March 2013

Statement of Purpose and Basis

This document presents the remedy for the Sewall's Island site, an environmental restoration site. The remedial program was chosen in accordance with the 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 decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Sewall's Island site and the public's input to the proposed remedy presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per Department guidance, DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;

- Reducing direct and indirect greenhouse gas and other emissions; increasing energy efficiency and minimizing use of non-renewable energy;

- Conserving and efficiently managing resources and materials;

- Reducing waste, increasing recycling and increasing reuse of materials which will otherwise be considered a waste;

- Maximizing habitat value and creating habitat when possible;

- Fostering green and healthy communities and working landscapes which balance ecological,

economic and social goals; and

- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. A site cover will be required to allow for commercial use of the site. The site cover will be required on the main portion of the site located on Sewall's Island and on the parcels located to the north and south of the island along Water Street and Huntington Street. The cover will consist of either structures such as buildings, pavement or sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable SCOs. Where the soil cover is required it will be a minimum of one foot of soil, meeting the commercial SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d), placed over a demarcation layer.

3. 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 commercial and industrial use 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;

- prohibits agriculture or vegetable gardens on the controlled property; and

- requires compliance with the Department approved Site Management Plan.

4. A Site Management Plan is required, which includes the following:

a. 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 above; and

- Engineering Controls: The soil cover system discussed 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;

- descriptions of the provisions of the environmental easement including any land use and

groundwater use restrictions;

- a provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the island portion of the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;

- monitoring for vapor intrusion for any buildings occupied or developed on the island portion of the site, as may be required by the Institutional and Engineering Control Plan discussed above.

- 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/or engineering controls.

b. 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;

- a schedule of monitoring and frequency of submittals to the Department; and

- monitoring for vapor intrusion for any buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:

- compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;

- maintaining site access controls and Department notification; and

- providing the Department access to the site and O&M records.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy for this site is protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

March 26,2013

Date

Robert W. Schick, P.E., Director
Division of Environmental Remediation

RECORD OF DECISION

Sewall's Island
Watertown, Jefferson County
Site No. E623021
March 2013

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum. The remedy is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This Record of Decision (ROD) identifies the selected remedy, summarizes the other alternatives considered, and discusses the reasons for selecting the remedy.

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 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repository:

Roswell P. Flower Memorial Library

Attn: Document Repository
229 Washington Street
Watertown, NY 13601
Phone: 315-785-7705

A public meeting was also conducted. At the meeting, the findings of the remedial investigation (RI) and the alternatives analyses (AA) were presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period was held, during which verbal or written comments were accepted on the proposed remedy.

Comments on the remedy received during the comment period are summarized and addressed in the responsiveness summary section of the ROD.

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 http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Site Location: The site is primarily located on an island in the Black River near Pearl Street s in the City of Watertown, Jefferson County and includes parcels on the north and south banks as well. The site is approximately 15 acres in size and contains five parcels on Sewall Island, two parcels on Huntington Street to the south, and four parcels on Water Street to the north.

Site Features: The main site features include the concrete pads and foundations of industrial buildings that have been razed, fill, debris, driveways, and a railroad bed. The site is mostly level. The Black River divides at the eastern end of the island, flows around both the north and south sides and merges again to the west. The island is connected to the shore by two bridges at the north and south along Pearl Street.

Current Zoning and Use: The site is currently inactive and is zoned for commercial use. The surrounding properties are currently used for a combination of commercial and light industrial, road ways and utility right-of-ways. The nearest residential areas are located approximately 300 feet north and south of the site across the Black River.

Past Uses of the Site: The site was used as an industrial foundry from the mid-1800s until the early 1990s. Most recently the site was home to the Bagley and Sewall Company, a maker of paper manufacturing machines. Operations at the site which may have contributed to its contamination include iron, steel, and brass casting, pulp grinding, machining, painting, sanding

and paper milling. An on-site landfill for the disposal of foundry sand, with varying amounts of coke, slag, brick, metal, concrete and large pieces of the hardened impurities from the casting process was located southwest of the rail bed, and encompassed an approximately two acre area.

Site Geology and Hydrogeology: The site is comprised of fill overlying bedrock. Groundwater is found approximately 8-10 feet below grade and fluctuates with the Black River elevation. Groundwater flow is to the north and is consistent with the flow of the Black River.

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 commercial use (which allows for industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the RI 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.

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 Watertown will assist the state in its efforts by providing all information to the state which identifies PRPs. City of Watertown 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:

ACETONE
NAPHTHALENE
TOLUENE
PHENOL
BENZO(B)FLUORANTHENE
BENZO(A)PYRENE
BENZO[K]FLUORANTHENE
BENZ(A)ANTHRACENE
Chrysene
DIBENZ[A,H]ANTHRACENE
indeno(1,2,3-cd)pyrene
CHROMIUM
COPPER
LEAD
MERCURY
ZINC

1,2,4-TRIMETHYLBENZENE

As illustrated in Exhibit A, the contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil

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 and Drum Removal IRM

During the Remedial Investigation (RI) buried drums were identified in the on-site landfill. A total of 42 drums were removed that contained residual petroleum products, paint, solid waste, solvents and mineral spirits. In addition, mercury-contaminated soil was identified on the northern parcel between Water Street and the northern branch of the Black River. The IRM removed all drummed materials and the mercury-contaminated soils for proper disposal. Confirmatory soil sampling was conducted to verify that the soil cleanup objectives for the protection of groundwater were achieved. The work was conducted the fall of 2009.

Free Product Recovery IRM

During the Remedial Investigation (RI) a small area of free product petroleum was identified on the south side of the site, on the eastern side of the Pearl Street Bridge Crossing. The free product was found to have accumulated in a depression on top of the bedrock, ranging in thickness from less than an inch, up to several feet. During elevated groundwater periods, an oily sheen could be seen migrating out of the river bank into the Black River. Because this area was adjacent to a steep embankment of the Black River and the Pearl Street Bridge foundation, an excavation program was not possible. In the fall of 2011, the free product recovery IRM was implemented which included the installation of eight extraction wells and the use of a total fluid vacuum extraction system to extract groundwater and petroleum product. The extraction system operated from September to December 2011 and recovered 850 gallons of petroleum for proper disposal and treated 55,000 gallons of contaminated groundwater. The IRM reduced the free product levels to non-detect.

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.

Based upon the remedial investigation conducted, the primary contaminants of concern in the soil and groundwater are volatile organic compounds, semi-volatile organic compounds and metals. Groundwater has been impacted with VOCs that include 1,2,4-trimethylbenzene, acetone , naphthalene and tolune; and SVOCs including 2-methylphenol, naphthalene and phenol. Surface soils exceed the commercial SCOs for SVOCs including benzo(a)pyrene, benzo(b)fluoranthene and dibenzo(a,h)anthracene; and metals including arsenic and copper. Subsurface soils show exceedence of the protection of groundwater SCOs for VOCs including 1,2,4-trimethylbenze, acetone and naphthalene; SVOCs including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene; and metals including arsenic, cadmium, chromium, copper, lead, mercury, nickel and selenium.

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.*

The island portion of the site is completely fenced, which restricts public access. However, if persons were to enter the site or were to use the unfenced Water Street parcel that has remaining contamination, they could come in contact with contaminants in the soil by walking on the site, 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. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Currently, there are no occupied buildings on the site. However, the potential may exist for the inhalation of site contaminants due to soil vapor intrusion for any future buildings developed and occupied on the island portion of the site.

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.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

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.
- Remove the source of ground or surface water contamination.

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.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

To be selected the remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. The remedy must also attain the remedial action objectives identified for the site, which are presented in Section 6.5. Potential remedial alternatives for the Site were identified, screened and evaluated in the alternatives analysis (AA) report.

A summary of the remedial alternatives that were considered for this site is presented in Exhibit B. Cost information is presented in the form of present worth, which represents the amount of money invested in the current year that would be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring would cease after 30 years if remediation goals are not achieved. A summary of the Remedial Alternatives Costs is included as Exhibit C.

The basis for the Department's remedy is set forth at Exhibit D.

The selected remedy is referred to as the Site Cover with Institutional Controls remedy.

The estimated present worth cost to implement the remedy is $625,000. The cost to construct the remedy is estimated to be $550,000 and the estimated average annual cost is $5,000.

The elements of the selected remedy are as follows:

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per Department guidance, DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;

- Reducing direct and indirect greenhouse gas and other emissions; increasing energy efficiency and minimizing use of non-renewable energy;

- Conserving and efficiently managing resources and materials;

- Reducing waste, increasing recycling and increasing reuse of materials which will otherwise be considered a waste;

- Maximizing habitat value and creating habitat when possible;

- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and

- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. A site cover will be required to allow for commercial use of the site. The site cover will be required on the main portion of the site located on Sewall's Island and on the parcels located to the north and south of the island along Water Street and Huntington Street. The cover will consist of either structures such as buildings, pavement or sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable SCOs. Where the soil cover is required it will be a minimum of one foot of soil, meeting the commercial SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d), placed over a demarcation layer.

3. 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 commercial and industrial use 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;

- prohibits agriculture or vegetable gardens on the controlled property; and

- requires compliance with the Department approved Site Management Plan.

4. A Site Management Plan is required, which includes the following:

a. 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 above; and

- Engineering Controls: The soil cover system discussed 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;

- descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;

- a provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the island portion of the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;

- monitoring for vapor intrusion for any buildings occupied or developed on the island portion of the site, as may be required by the Institutional and Engineering Control Plan discussed above.

- 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/or engineering controls.

b. 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;

- a schedule of monitoring and frequency of submittals to the Department; and

- monitoring for vapor intrusion for any buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:

- compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;

- maintaining site access controls and Department notification; and

- providing the Department access to the site and O&M records.

Exhibit A
Sewall Island Site
Site Number E623021

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, 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 volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides/ polychlorinated biphenyls (PCBs), and inorganics (metals and cyanide). 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 6.1.1 are also presented.

Waste/Source Areas

As described in the RI report, waste/source materials were identified at the site and are impacting groundwater, soil and soil vapor.

Wastes are defined in 6 NYCRR Part 375-1.2 (aw) and include solid, industrial and/or hazardous wastes. Source Areas are defined in 6 NYCRR Part 375 (au). Source areas are areas of concern at a site where substantial quantities of contaminants are found which can migrate and release significant levels of contaminants to another environmental medium.

Waste and source areas were identified at the site within the former landfill area and the petroleum impact area. During the RI buried drums were identified in an on-site landfill. The majority of the landfill is composed of foundry sand, with varying amounts of coke, slag, brick, metal, and concrete. The landfill area also contains large pieces of the hardened impurities from the molten metal that were used for casting at the site. A total of 42 drums were removed that contained residual petroleum products, paint, solid waste, solvents and mineral spirits. In addition, mercury-contaminated soil was identified on the northern parcel found between Water Street and the northern branch of the Black River. As part of the RI a small area of free product petroleum was identified. The free product was found to have accumulated in a depression on top of the bedrock, ranging in thickness from less than an inch, up to several feet. During elevated groundwater periods, an oily sheen was seen migrating out of the river bank into the Black River.

The buried drums and free product petroleum identified at the site were addressed by the IRM(s) described in Section 6.2.

Groundwater

The following summarizes the results of groundwater sampling of the nine (9) monitoring wells installed during the RI (Figure 3).

Table 1 - Groundwater

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
VOCs			
1,2,4-Trimethylbenzene	ND – 21	5	1 out of 9
Acetone	ND – 78	50	1 out of 9
Chloroform	ND – 8.3	7	1 out of 9
Isopropyl Benzene	ND – 11	5	1 out of 9
Naphthalene	ND - 22	10	1 out of 9
n-Butylbenzene	ND – 5.1	5	1 out of 9
n-Propylbenzene	ND – 13	5	1 out of 9
Sec-Butylbenzene	ND – 5.2	5	1 out of 9
Toluene	ND – 190	5	1 out of 9
SVOCs			
2-Methylphenol	ND – 51	1	1 out of 9
Naphthalene	ND – 16	10	1 out of 9
Phenol	ND – 4.8 J	1	1 out of 9
Inorganics			
Antimony	ND – 4.7 B	3	1 out of 9
Iron	ND – 14,300	300	6 out of 9
Manganese	7.6 B – 347	300	1 out of 9
Sodium	5,490 – 322,000	20,000	5 out of 9

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 Value
B=Compound detected below reporting limit

Based on the findings of the RI, the past disposal of hazardous waste has resulted in the contamination of groundwater. The site contaminants that are considered to be the primary contaminants of concern which will drive the remediation of groundwater to be addressed by the remedy selection process are: VOCs, SVOCs and metals.

Surface Soil

Surface soil samples were collected from 0 to 2 inches below grade at forty-one (41) locations on the island and on the parcels along Water Street to the north and Huntington Street to the south. These samples were analyzed for semi-volatile organic compounds VOCs, SVOC, PCBs and metals (Figure 4). The results of the surface soil sampling program are presented below:

Table 2 - Soil

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCO[b] (ppm)	Frequency Exceeding Unrestricted SCO	Commercial Use SCO[c] (ppm)	Frequency Exceeding Restricted SCO
SVOCs					
Benzo(a)anthracene	0.16 J – 2.9	1	3 out of 41	5.6	0 out of 41
Benzo(a)pyrene	0.41 J – 6.2	1	4 out of 41	1	4 out of 41
Benzo(b)fluoranthene	0.27 J – 9	1	4 out of 41	1	4 out of 41
Benzo(k)fluoranthene	ND – 4.5	0.8	4 out of 41	56	0 out of 41
Chrysene	0.19 J – 4.9	1	4 out of 41	56	0 out of 41
Dibenzo(a,h)anthracene	ND – 2.7	0.33	3 out of 41	0.56	3 out of 41
Indeno(1,2,3-cd)pyrene	ND – 7	0.5	4 out of 41	11	0 out of 41
Inorganics					
Arsenic	1.5 -19.9	13	1 out of41	16	1 out of 41
Chromium	5.4 – 50.8	1	41 out of 41	400	0 out of 41
Copper	11 – 811	50	6 out of 41	270	1 out of 41
Lead	15.1 – 193E	63	8 out of 41	1,000	0 out of 41
Mercury	0.062 – 0.35	0.18	4 out of 41	2.8	0 out of 41
Nickel	4.3 – 41.7	30	2 out of 41	310	0 out of 41
Selenium	1.4 – 5.5	3.9	3 out of 41	1,500	0 out of 41
Zinc	27.2 – 543 E	109	6 out of 41	10,000	0 out of 41
Pesticides/PCBs					
Aroclor 1254	ND – 0.14	0.1	2 out of 41	1	0 out of 41

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), Commercial Use Soil Cleanup Objectives for the Protection of Public Health.

Based on the findings of the Remedial Investigation, the past disposal of hazardous waste has resulted in the contamination of soil. The site contaminants identified in surface soil which are considered to be the primary contaminants of concern, to be addressed by the remedy selection process are, SVOC and metals.

Sub-Surface Soil

Subsurface soil samples were collected from the ground surface to bedrock as part of the remedial investigation work plan. Thirty two (32) subsurface boring and fifty one (51) test pit subsurface soil samples were obtained for analysis (Figure 5).The results of the sub-surface soil investigation are presented below:

Table 3 - Soil

Detected Constituents	Concentration Range Detected (ppm)[a]	Protection of Groundwater SCO[b] (ppm)	Frequency Exceeding Unrestricted SCO	Commercial Use SCO[c] (ppm)	Frequency Exceeding Restricted SCO
VOCs					
1,2,4-Trimethylbenzene	ND – 5.5	3.6	1 out of 83	190	0 out of 83
Acetone	ND – 2.56	0.050	1 out of 83	500	0 out of 83
Naphthalene	ND – 55	12	1 out of 83	500	0 out of 83
SVOCs					
Benzo(a)anthracene	ND – 24	1	19 out of 83	5.6	7 out of 83
Benzo(a)pyrene	ND – 28	22	2 out of 83	1	18 out of 83
Benzo(b)fluoranthene	ND – 40	1.7	14 out of 83	1	21 out of 83
Benzo(k)fluoranthene	ND – 20	1.7	9 out of 83	56	0 out of 83
Chrysene	ND – 32	1	20 out of 83	56	0 out of 83
Dibenzo(a,h)anthracene	ND – 9.3	1,000	0 out of 83	0.56	13 out of 83
Indeno(1,2,3-cd)pyrene	ND – 24	8.2	2 out of 83	5.6	6 out of 83
Inorganics					
Arsenic	ND – 80.1	16	6 out of 83	16	6 out of 83
Barium	13.5E – 590	820	0 out of 83	400	2 out of 83
Cadmium	ND – 9.1	7.5	1 out of 83	9.3	0 out of 83
Chromium	4.0E – 267	19	5 out of 83	400	0 out of 83
Copper	8.8 – 6320	1,720	5 out of 83	270	16 out of 83
Lead	5.8 – 10,100	450	5 out of 83	1,000	4 out of 83
Mercury	ND – 714	0.73	21 out of 83	2.8	16 out of 83
Nickel	6.7E – 860	130	9 out of 83	310	1 out of 83
Selenium	1.4 – 5.5	3.9	3 out of 83	1,500	0 out of 83

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(a), Protection of groundwater Soil Cleanup Objectives.
c - SCG: Part 375-6.8(b), Commercial Use Soil Cleanup Objectives.

Based on the findings of the Remedial Investigation, the past disposal of hazardous waste has resulted in the contamination of soil. The site contaminants identified in sub-surface soil which are considered to be the primary contaminants of concern, to be addressed by the remedy selection process are SVOCs and metals.

Exhibit B
Sewall Island Site
Site Number E623021

Description of Remedial Alternatives

The following alternatives were considered based on the remedial action objectives (see Section 6.5) to address the contaminated media identified at the site as described in Exhibit A.

Alternative 1: No Further Action

The No Further Action Alternative recognizes the remediation of the site completed by the IRM(s) described in Section 6.2This alternative leaves the site in its present condition and does not provide any additional protection of the environment.

Alternative 2: Site Cover with Institutional Controls

The Site Cover with Institutional Controls alternative includes the installation of a site cover over all areas where soil contamination has been observed above commercial use SCOs, institutional controls (environmental easement) and development of a SMP.

Present Worth: $625,000
Capital Cost:..... $550,000
Annual Costs (0-30 years): $5,000

Alternative 3: Restoration to Pre-Disposal or Unrestricted Conditions

This alternative achieves all of the SCGs discussed in Section 6.1.1 and Exhibit A and soil meets the unrestricted use SCOs listed in Part 375-6.8 (a). Under this alternative, approximately 263,650 tons of soil that exceed the unrestricted use SCOs would be excavated for off-site disposal. The site would be dewatered during the removal to excavate in the dry and to control stormwater. Post remediation groundwater monitoring would be conducted for a period of time to demonstrate that groundwater standards were being achieved.

Capital Cost:..... $2,154,000
Annual Costs (0-3 years): $5,000

Exhibit C
Sewall Island Site
Site Number E623021

Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
No Action	0	0	0
Site Cover with Institutional Controls	550,000	5,000	625,000
Restoration to Pre-Disposal or Unrestricted Conditions	2,154,000	5,000	2,154,000

Exhibit D
Sewall Island Site
Site Number E623021

SUMMARY OF THE PROPOSED REMEDY

The Department is proposing Alternative 2, Site Cover with Institutional Controls, as the remedy for this site. Alternative 2 would achieve the remediation goals for the site by developing institutional and engineering controls to control future use of the site through an environmental easement, site management plan and cover system. The elements of this remedy are described in Section 7.

Basis for Selection

The proposed remedy is based on the results of the RI and the evaluation of alternatives. The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375. A detailed discussion of the evaluation criteria and comparative analysis is included in the AA report.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

The proposed remedy Alternative #2 would satisfy this criterion by covering all soils that exceed the commercial SCOs, restricting the use of groundwater and addressing the potential for human exposure related to soil vapor intrusion. Alternative 1 (No Further Action) does not provide any additional protection to public health and the environment and will not be evaluated further. Alternative 3, by removing all soil contaminated above the unrestricted soil cleanup objectives, meets the threshold criteria.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

Alternative 2 complies with SCGs to the extent practicable. It addresses source areas of contamination and complies with the restricted use soil cleanup objectives at the surface through construction of a cover system and implementation of institutional controls. Alternative 3 also complies with this criterion. Because Alternatives 2 and 3 satisfy the threshold criteria, the remaining criteria are particularly important in selecting a final remedy for the site.

The next six "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of

these controls.

Long-term effectiveness is best accomplished by those alternatives involving excavation of the contaminated overburden soils (Alternative 3). Alternative 2 does not require any further soil removal beyond the IRMs already performed. Although Alternative 2 is not permanent, placement of a soil cover with Site Management and institutional controls will be effective in the long-term.

4. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

Alternative 2 would control migration of contaminants to the surrounding surface waters with a soil cover, but will not reduce the toxicity, or volume of contaminants remaining. Alternative 3, excavation and off-site disposal, reduces the toxicity, mobility and volume of on-site waste by transferring the material to an approved off-site location.

5. Short-term Impacts and Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

Alternatives 2 and 3 both have short-term impacts which could be controlled (e.g. air monitoring, dust control, green technologies). Alternative 2 is considered more sustainable because there are less environmental impacts caused by the trucking and equipment emissions. However, these can be minimized with engineering controls. Alternative 3 would have significant short-term impacts such as traffic, noise and dust associated with large-scale excavation, trucking and backfill activities. The time needed to achieve the remediation goals is the shortest for Alternative 2 and longer for Alternative 3.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

Alternative 2 is very implementable. There are concerns with the implementability of Alternative 3, including excavation of soils along the banks of the Black River and near the Pearl Street Bridges. Excavation near the bridge abutments may be structurally difficult if not prohibited.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth cost basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

The costs of the alternatives vary significantly. Alternative 2 has a low cost and contaminated soil would be addressed by institutional and engineering controls. With its large volume of soil to be handled, Alternative 3 (excavation and off-site disposal) would have the highest total cost.

8. Land Use. When cleanup to pre-disposal conditions is determined to be infeasible, the Department may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings in the

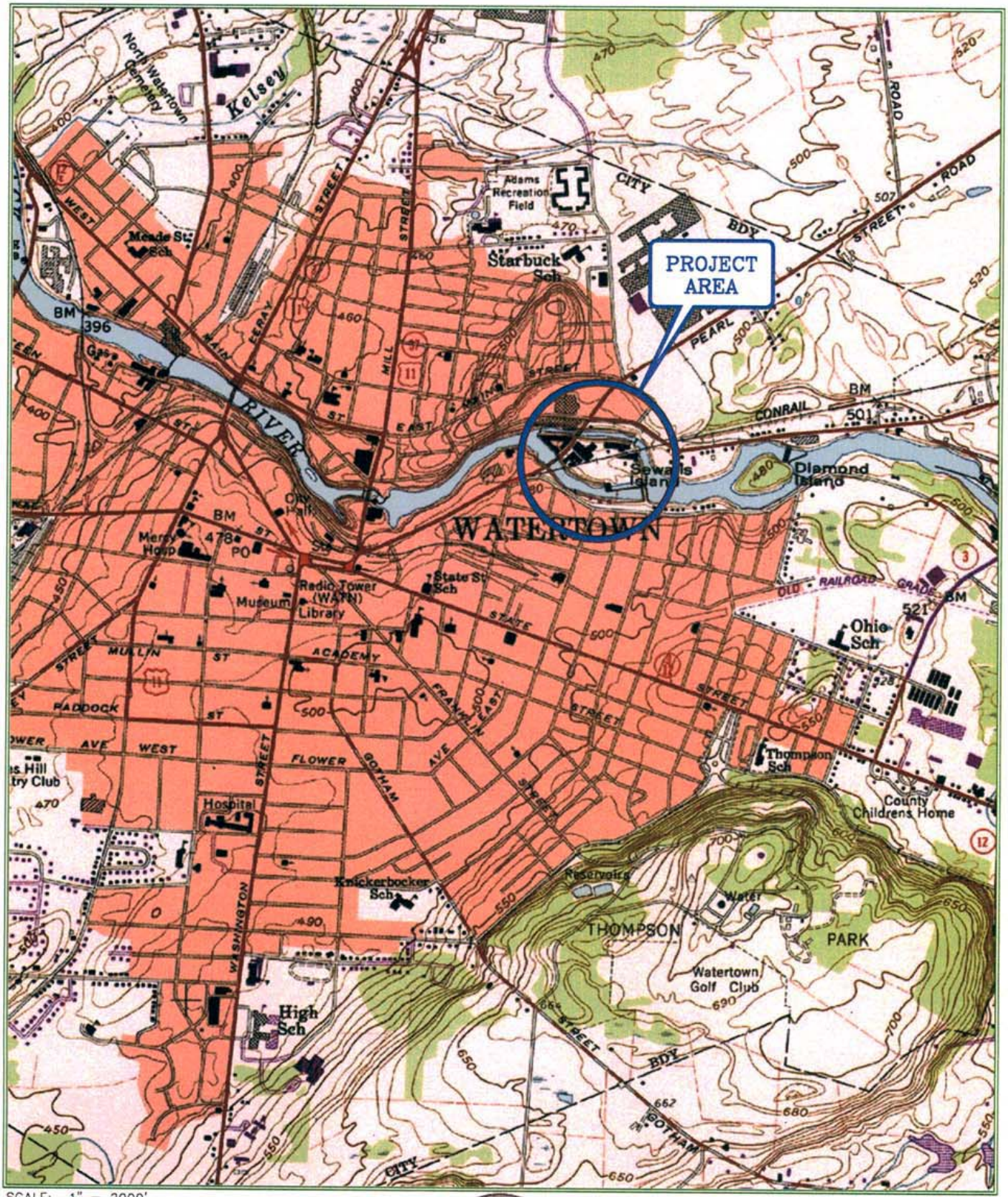
selection of the soil remedy.

Since the reasonably anticipated use of the site is commercial, Alternative 2 is compatible with this criterion, although some contaminated soil would remain on the property. Alternative 3 would achieve a higher level of cleanup that would be compatible with agriculture and single family homes.

The final criterion, Community Acceptance, is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

9. Community Acceptance. Concerns of the community regarding the investigation, the evaluation of alternatives, and the PRAP are evaluated. A responsiveness summary will be prepared that describes public comments received and the manner in which the Department will address the concerns raised. If the selected remedy differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

Alternative 2 is being proposed because, as described above, it satisfies the threshold criteria and provides the best balance of the balancing criterion.



SCALE: 1" = 2000'

N

THE CITY OF WATERTOWN NEW YORK

NEW YORK QUADRANGLE LOCATION

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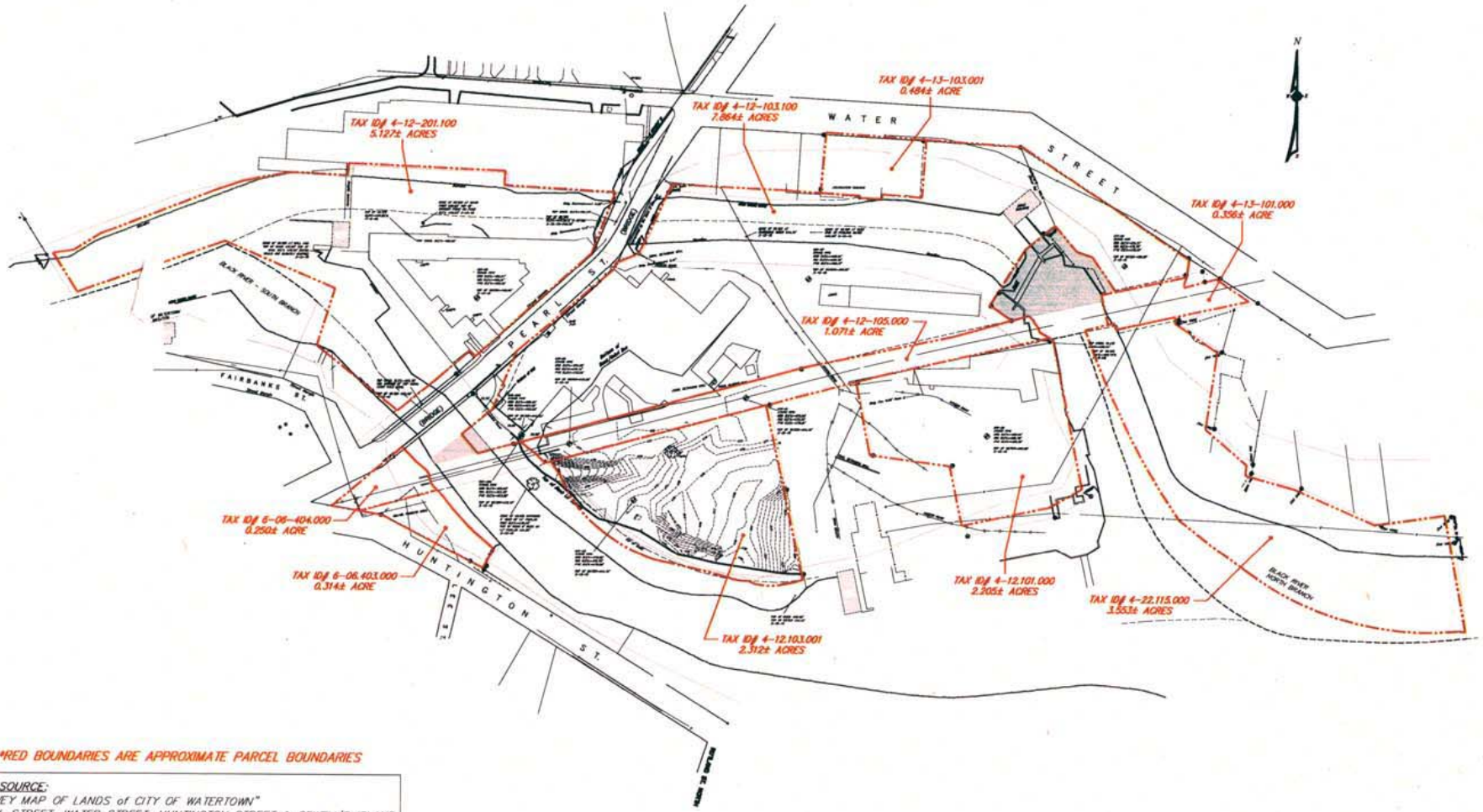
FIGURE 1. SITE LOCATION MAP

SEWALL'S ISLAND PROJECT
CITY OF WATERTOWN
JEFFERSON COUNTY NEW YORK

DATE:	MARCH 2012
SCALE:	1:24,000
DRAWN BY:	DLS
MAP SOURCE:	WATERTOWN QUADRANGLE NEW YORK – JEFFERSON COUNTY 7.5 MINUTE SERIES (TOPOGRAPHIC) 1959; PHOTOREVISED 1982



*RED BOUNDARIES ARE APPROXIMATE PARCEL BOUNDARIES

MAP SOURCE:
"SURVEY MAP OF LANDS of CITY OF WATERTOWN"
PEARL STREET, WATER STREET, HUNTINGTON STREET & SEWELL'S ISLAND
OCTOBER 27, 2008
CITY OF WATERTOWN | COUNTY OF JEFFERSON | STATE OF NEW YORK
GYMO ARCHITECTURE, ENGINEERING, LAND SURVEYING, P.C.
220 STERLING STREET, WATERTOWN, NEW YORK 13601

TOPO AND MONITORING WELLS SURVEYED AND ADDED
BY LU ENGINEERS, NOVEMBER 5, 2008.

DATE: MARCH 2012
SCALE: 1" = 200'-0"
DESIGNED/DRAWN/CHECKED: LMN/DLS/DLA
MAP SOURCE: "SURVEY MAP of LANDS of CITY OF WATERTOWN - PEARL STREET, WATER STREET, HUNTINGTON STREET & SEWALL'S ISLAND

FIGURE 2. SITE PLAN
CITY OF WATERTOWN
SEWALL'S ISLAND
WATERTOWN, NEW YORK

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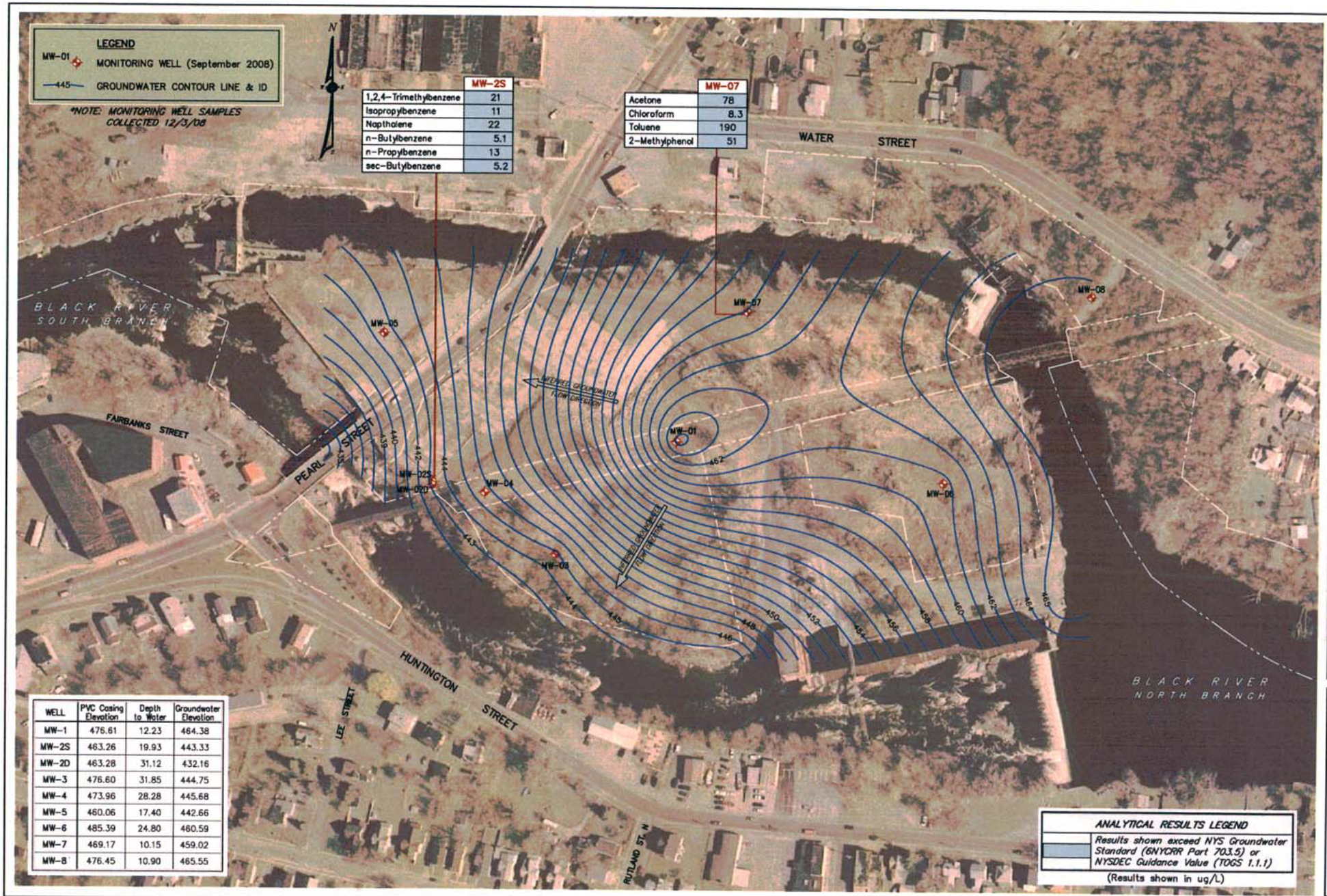

WELL	PVC Casing Elevation	Depth to Water	Groundwater Elevation
MW-1	476.61	12.23	464.38
MW-2S	463.26	19.93	443.33
MW-2D	463.28	31.12	432.16
MW-3	476.60	31.85	444.75
MW-4	473.96	28.28	445.68
MW-5	460.06	17.40	442.66
MW-6	485.39	24.80	460.59
MW-7	469.17	10.15	459.02
MW-8	476.45	10.90	465.55

DATE: MARCH 2012
SCALE: 1" = 150'-0"
DESIGNED/DRAWN/CHECKED: ERD/DLS/GLA

Figure 3 GROUNDWATER CONTOUR MAP (February 12, 2010)
CITY OF WATERTOWN
SEWALL'S ISLAND
WATERTOWN, NEW YORK

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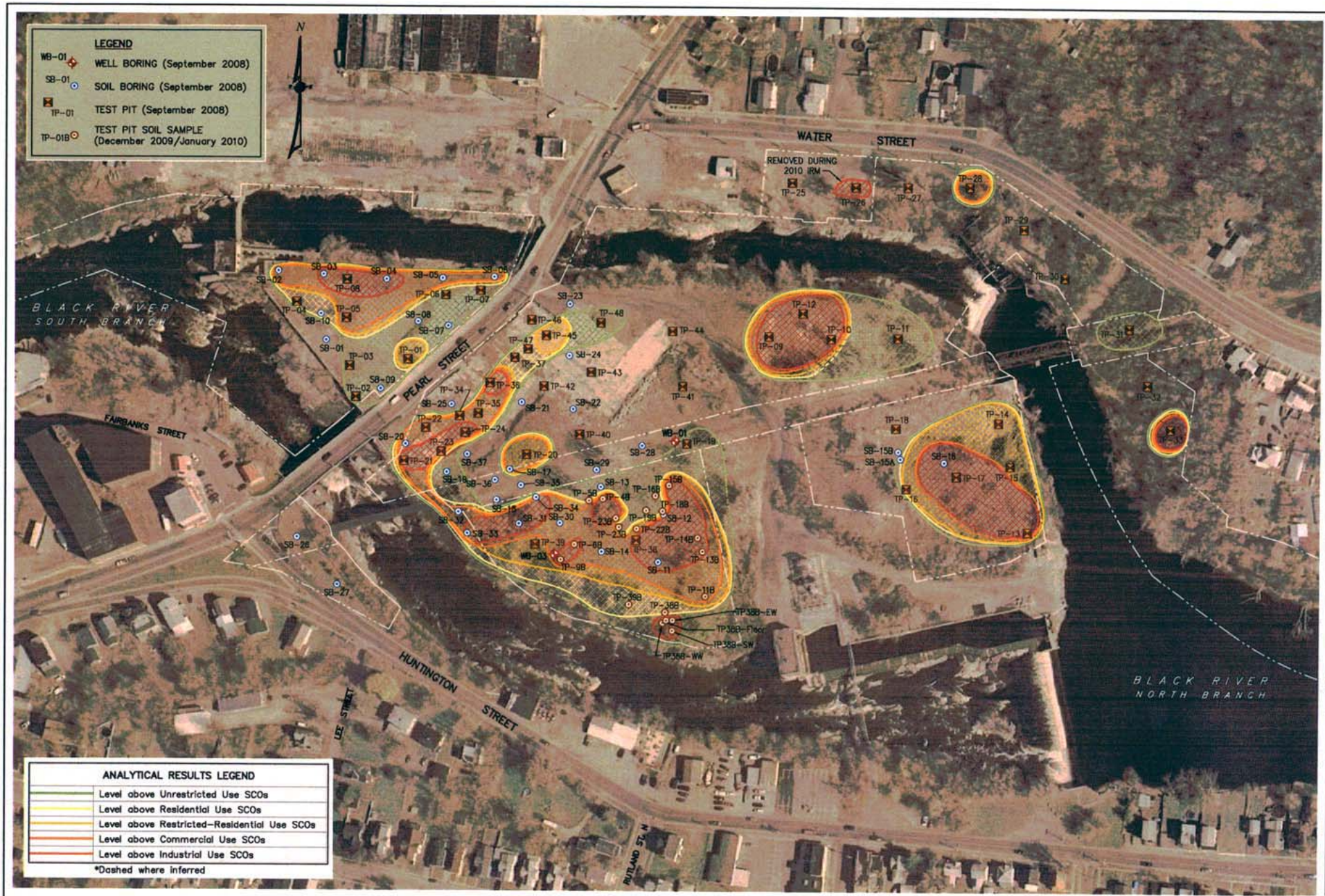
FIGURE 4. SURFACE SOIL SAMPLE RESULTS

CITY OF WATERTOWN
SEWALL'S ISLAND
WATERTOWN, NEW YORK

DATE: MARCH 2012
SCALE: 1" = 150'-0"
DESIGNED/DRAWN/CHECKED: CWK/DLS/DLA
IMAGE SOURCE
NEW YORK STATE DIGITAL ORTHOIMAGERY PROGRAM
GIS DATA - NEW RESOLUTION MAGERY, 2008



DATE: MARCH 2012
SCALE: 1" = 150'-0"
DESIGNED/DRAWN/CHECKED: CMK/DLS/GLA
IMAGE SOURCE
NEW YORK STATE DIGITAL ORTHOIMAGERY PROGRAM
GIS DATA - HIGH RESOLUTION IMAGERY, 2006

Figure 5 SUBSURFACE SOIL SAMPLE RESULTS

CITY OF WATERTOWN
SEWALL'S ISLAND
WATERTOWN, NEW YORK

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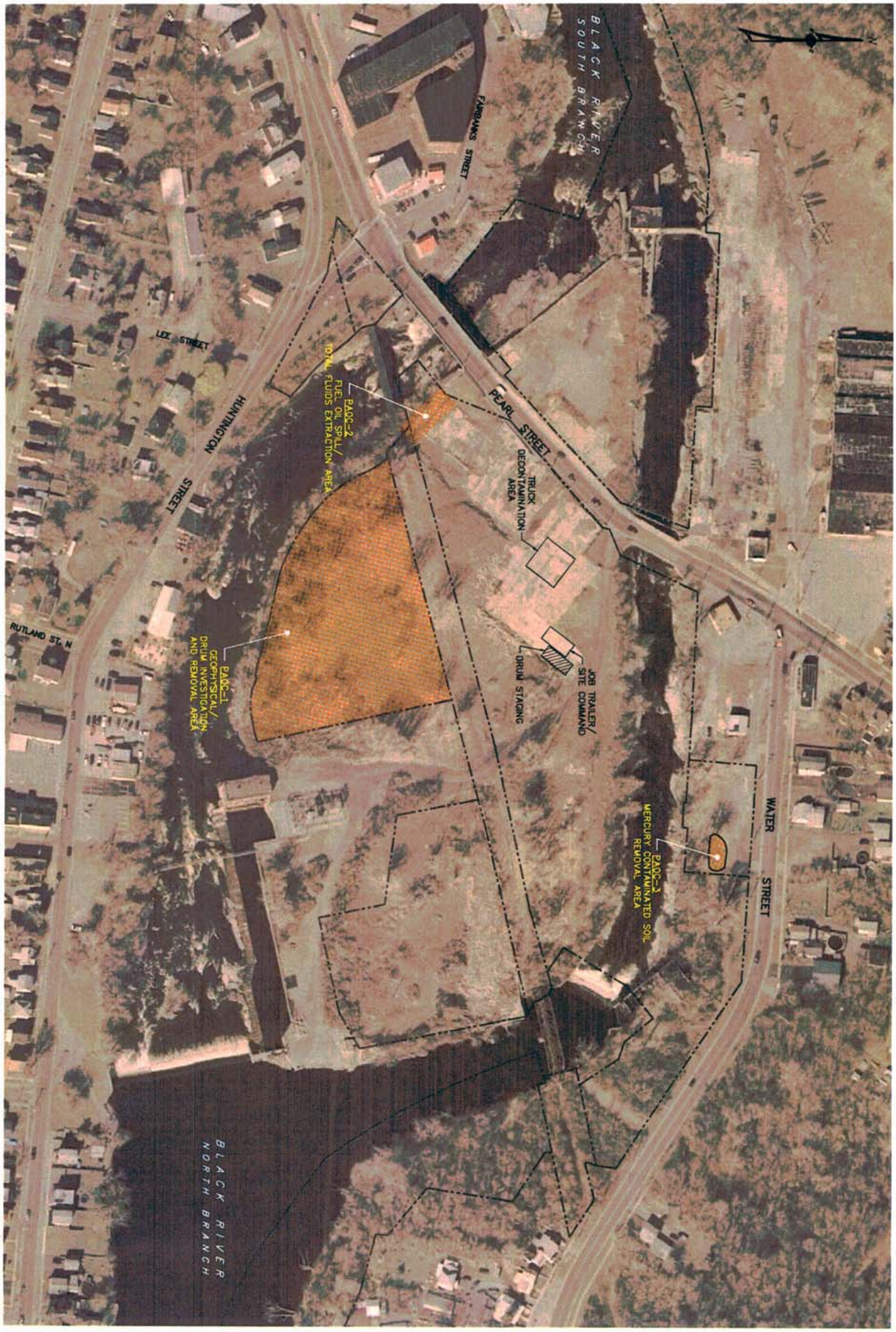

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Figure 6 IRM SITE PLAN
POTENTIAL AREAS OF CONCERN (PAOC)

CITY OF WATERTOWN
SEWALL'S ISLAND
WATERTOWN, NEW YORK

DATE:	MARCH 2012
SCALE:	1" = 150'-0"
DESIGNED/DRAWN/CHECKED:	CMK/DLS/GLA

IMAGE SOURCE
NEW YORK STATE DIGITAL ORTHOIMAGERY PROGRAM
GIS DATA – HIGH RESOLUTION IMAGERY, 2008

APPENDIX A

Responsiveness Summary

Responsiveness Summary

Sewall's Island
Environmental Restoration Project
City of Watertown, Jefferson County, New York
Site No. E623021

The Proposed Remedial Action Plan (PRAP) for the Sewall's Island site was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on February 1, 2013. The PRAP outlined the remedial measure proposed for the contaminated soil and groundwater at the Sewall's Island site.

The release of the PRAP was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A public meeting was held on March 5, 2013, which included a presentation of the remedial investigation and alternative analysis (RI/AA) for the Sewall's Island site as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on March 18, 2013.

This responsiveness summary responds to all questions and comments raised during the public comment period. The following are the comments received, with the Department's responses:

COMMENT 1:
Can the site be used for something else besides commercial use, such as restricted residential?

RESPONSE 1:
Not in accordance with the selected remedy which, after the remedial actions identified by the ROD have been completed, requires an environmental easement to restrict the use of the site to commercial use, which would also allow the site to be used for industrial use. To allow the site to be used for restricted residential use additional remediation would be required. The City of Watertown, the ERP applicant, determined the land use they sought for the site.

COMMENT 2:
Were surface soil samples taken on the Brookfield Renewable Energy Group (Brookfield) site located on the southern end of Sewall's Island?

RESPONSE 2:
No, surface samples were not obtained from the Brookfield property. The Brookfield property is off-site and not part of the Sewall's Island ERP site. The work plan identified sample locations on the Brookfield site, however permission for access was not granted. Sampling around the perimeter of the Brookfield property did not identify any significant issues. In addition, there was no evidence of site contamination migrating toward or near the Brookfield Property.

COMMENT 3:
Is the red line on Figure 4 the limits of where the soil cover will be placed?

RESPONSE 3:
Figure 4 of the Proposed Remedial Action Plan and ROD depicts the surface soil impacts and compares the results to the unrestricted and industrial SCOs. The soil cover limit is depicted by the orange line. The red line identifies the areas in surface soils that exceed the industrial SCOs.

Brookfield Renewable Energy Group (Brookfield) submitted a letter dated March 18, 2013 which included the following comments:

COMMENT 4:
The City of Watertown should conduct remedial design phase soil sampling on the Brookfield parcel to confirm that the site has not impacted offsite properties. Brookfield requests that a draft soil sampling work plan be provided in advance for its review and input on proposed sampling locations. An access agreement between Brookfield, the City of Watertown and its engineers will be required for this sampling.

RESPONSE 4:
Sampling around the perimeter of the site did not indicate that contamination has migrated from the ERP site to the Brookfield property. While it is recognized that there is a history of industrial use at the Brookfield property, the obligations of the ERP do not extend to off-site properties, unless the ERP site is deemed to be the source of any off-site impacts. For these reasons, no sampling of the Brookfield property will be required as part of the ERP project.

COMMENT 5:
The component of the proposed remedy consisting of the one foot of soil cover in areas that exceed the commercial Soil Cleanup Objectives ("SCOs") should be extended to Brookfield's parcel if the soil sampling requested above confirms impacts exceeding the commercial SCOs. An access agreement will be required if placement of the soil cover is necessary.

RESPONSE 5:
See Response 4.

COMMENT 6:
Brookfield requests a copy of the final Site Management Plan.

RESPONSE 6: why they are not part of the site
A copy of the final Site Management Plan will be provided to Brookfield, when developed.

APPENDIX B

Administrative Record

Administrative Record

Sewall's Island
Environmental Restoration Project
City of Watertown, Jefferson County, New York
Site No. E623021

1. Proposed Remedial Action Plan for the Sewall's Island site, dated February 2013, prepared by the Department.

2. The Department and the City of Watertown entered into a State Assistance Contract, Contract No. C303560, dated April 22, 2008.

3. The Department and the City of Watertown entered into a State Assistance Contract, Contract No. C303560, Amendment No. 1, dated February 25, 1010.

4. The Department and the City of Watertown entered into a State Assistance Contract, Contract No. C303560, Amendment No. 2, dated April 6, 2011.

5. The Department and the City of Watertown entered into a State Assistance Contract, Contract No. C303560, Amendment No. 3, dated March 26, 2012.

6. The Department and the City of Watertown entered into a State Assistance Contract, Contract No. C303560, Amendment No. 4, dated October 10, 1010.

7. Remedial Investigation Work Plan, prepared by Lu Engineers, dated October 2007.

8. Interim Remedial Work Plan, prepared by Lu Engineers, dated August 31, 2009.

9. Interim Remedial Work Plan Pilot Test, prepared by Lu Engineers, dated September 3, 2010.

10. Final Engineering Report for Remedial Investigation, Interim Remedial Measures and Alternative Analysis, prepared by Lu Engineers, dated May 2012.