STATEMENT OF BASIS
FINAL CORRECTIVE MEASURES SELECTION

Former Hampshire Chemical Corp. Facility
Operable Unit 02-Cayuga-Seneca Canal Sediment
Removal-AOC A
Waterloo, Seneca County
NYSDEC Site Number 850001A-OU2
EPA ID#NYD 002234763
March 2014

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

DECLARATION STATEMENT – STATEMENT OF BASIS
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Statement of Purpose and Basis

This document presents the selected final corrective measures for the Former Hampshire Chemical Corp. Facility's Area of Concern (AOC) A. The final corrective measures were selected in accordance with 6 NYCRR 373. This decision is based on the Administrative Record for the New York State Department of Environmental Conservation (the Department) for the Former Hampshire Chemical Corp. Facility (see Attachment B) and the public's input to the proposed corrective measures presented in the Statement of Basis (SB).

The proposed remedy selection was made available for public comment between December 3, 2013 and January 16, 2014. A public meeting was held on December 17, 2013 at the Seneca County Office Building, 1 DiPronio Drive, in Waterloo. The meeting was attended by a total of twenty people, including representative of NYSDEC, NYSDOH, NYSCC, CH2M HILL, and citizens. Comments were only received from the public on the corrective measures proposed in the draft SB during the public meeting. All comments and/or requests for public hearing were required to be submitted no later than January 16, 2014.

Comments received from the public on the corrective measures proposed in the SB together with the Department's responses are provided in Attachment A.

Description of Selected Remedy

The remedy proposed for AOC A includes the excavation of sediment from three deposit areas of the Cayuga-Seneca Canal that contain primarily metals at levels above the NYSDEC Guidance Screening Values. These contaminants are believed to be related to pre-1943 woolen mill operations and former wastewater discharges prior to 1975. The former Hampshire Chemical Corp. (HCC) has retained environmental liabilities for the facility.

The elements of the selected remedy are as follows:

1 – Source Removal – 4,500 to 7,200 cubic yards of soft sediment is to be excavated, staged, and transported. Before the sediment removal is conducted debris (timber, rocks, etc.) will be moved or removed from the work areas to allow for maximum exposure to the soft sediment. Work areas will be enclosed with turbidity or silt curtains to minimize transport of suspended sediment downstream. Sediment removal will be performed using mechanical dredging equipment. Collected water will be pumped to a temporary on-site water treatment system for removal of suspended solids and contaminants of concern before discharge to the canal.

2 – Transport/Disposal of Material – Excavated sediment will be transported to a staging pad area, allowed to cure, and transported in lined trucks to an appropriate disposal facility.

3 – Post Removal/Restoration – A Sediment Removal Verification Plan will be implemented to verify targeted sediment areas have been successfully removed. Bathymetric surveys will be used to verify that the target sediment areas have been successfully removed. No confirmation sampling is anticipated. Canal banks will be restored under the guidance of NYSDEC's Division of Fish, Wildlife, and Marine Resources, and the US Army Corp. of Engineers.

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 proposed corrective measure 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 5, 2014

Date

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

STATEMENT OF BASIS

Former Hampshire Chemical Corp. Facility
Waterloo, Seneca County
EPA No. NYD002234763 / Site No. 850001A
Operable Unit 02 – Cayuga-Seneca Canal Sediment Removal-AOC A

March 2014

SECTION 1: INTRODUCTION

The New York State Department of Environmental Conservation (the Department) has determined that hazardous wastes and/or hazardous constituents were released into the environment at the facility's Area of Concern (AOC) A – Cayuga-Seneca Canal. The Department has selected a remedy for the aforementioned facility's AOC A. The remedy is intended to attain the cleanup objectives for the protection of public health and the environment. This Statement of Basis (SB) identifies the selected remedy, summarizes the other alternatives considered, and discusses the reasons for selecting the remedy. Corrective Measures for three additional Areas of Concern will be addressed at a later date in a separate Statement of Basis (See Section 3 below).

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 considerd 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:

Waterloo Public Library
Attn: Brandi Rozelle
31 E. William Street
Waterloo, NY 13165
Phone: 315-539-3313

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: FACILITY BACKGROUND

Site Description

Location: The facility is located at 228 East Main Street, in the Village of Waterloo, which is located in the north-central portion of Seneca County, New York. The site is bordered to the north by East Main Street, to the east by Gorham Street, to the west by East Water Street, and to the south by the Cayuga-Seneca Canal.

Site Features: The facility consists of 8.3 acres of industrially developed land, containing several interconnected buildings which house offices; a quality control laboratory; manufacturing, maintenance, and shipping/receiving operations; and a wastewater treatment plant. The site also includes outside drum storage areas and several aboveground storage tanks.

Adjacent to the site is the Cayuga-Seneca Canal, a New York State Class "C" stream that supports fisheries and is suitable for noncontact activities. The canal is used primarily for pleasure craft and has a series of locks that maintain pool elevations between the locks and within Seneca and Cayuga Lake. The pool elevation at the site is approximately 429 feet above mean sea level. The canal ranges from approximately 130 to 150 feet wide, and has water depths in the center channel between 14 and 16 feet deep. The canal consists primarily of a bedrock/cobble substrate, but near the facility, the shoreline has been modified with riprap and other fill material.

Current Zoning/Use(s): This site is currently zoned for industrial use. The primary chemicals manufactured at the facility are thioglycolic (T-acid), thiodipropionate esters, and mercaptopropionic acid (MPA), divalent organic sulfur intermediates used for the cosmetic, pharmaceutical, and plastics industries.

The site is surrounded by residential properties (north, east, and southwest), commercial businesses (to the west), and the Cayuga-Seneca Canal (to the south). South of the canal are some residences, warehouses, and further downstream is the village wastewater treatment plant. Evans Chemetics also owns a vacant lot on the northern side of East Main Street and a property on the eastern side of Gorham Street that is used as a parking lot.

Past Use of the Site:

1839 - 1936: Owned by Waterloo Woolen Manufacturing Company and operated the facility as a woolen textile mill until shut down in 1936

1943 – Present: Opened by Evans Chemetics and manufactures divalent organic sulfur chemical intermediates used for cosmetic, pharmaceutical, and plastic industries to this day

The facility has been the subject of several site investigations and as a result, a total of 46 Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) have been identified. The Department has determined that no further action is necessary for many of these SWMUs and AOCs, as documented in Attachment 3 – Table 1 of the Second Amended Order on Consent executed under Index No. 8-20000218-3281. The SWMUs and AOCs requiring further action are described below:

- AOC A – Cayuga-Seneca Canal – a manmade canal adjacent to the site. There are four major soft sediment (particles less than 2 millimeters in diameter – clays, silt, and sand) deposition areas – North Shore, South Shore, Gorham Street Bridge Area, and a Downstream Deposit. PAHs, PCBs, and metals were detected in the sediments above the NYSDEC Guidance Screening Values. AOC A is the focus of this Statement of Basis.
- AOC C – Gorham Street - located outside the facility boundary and includes some area within the street right-of-way. Early investigations were performed on the eastern and western side of the road (within grass areas). PCBs were detected on the western side of the road – 300 cubic yard (cy) of soil was removed in 2007. Several soil investigations have been performed from 2007 to 2012 as part of the RFI to determine the presence of arsenic and cadmium in soil on the eastern side of Gorham Street; underneath the facility employee parking lot which is northeast of the Gorham Street Bridge; on the off-site property along the edge of the canal just south of the Evans parking lot area owned by the NYS Canal Corporation (NYSCC) and within the portion of the NYSCC property east of the parking lot that abuts the canal; and on three of the residential properties to the north and east of the parking lot. Interim Corrective Measure activities are scheduled to begin in the Fall of 2013.
- AOC B – Building 4 - designated because of a former open pit in the building which had elevated PCBs prior to it being filled. It is located upgradient and north of the Cayuga-Seneca Canal. When the pit was in use, barrels were placed in the pit and chemicals were transferred into the barrels. Process tanks also were located within the pit. The western portion of the pit contained a sump that served as the collection point for the floor drains in the building and for spills within the pit. Before 1975, the sump drained to the canal. Contaminants of Concern (COCs) in soil include mercury and PCBs. COCs in groundwater include metals, semi-volatile organic compounds (SVOCs), and volatile organic compounds (VOCs). Information and data compiled from investigations and studies are being evaluated to determine corrective measure alternatives.
- AOC D – MW-11S - consists of monitoring wells (MW) MW-11S, MW-11I, MW-21, and MW-24, which are south of Building 3. Monitoring well MW-11S is known to have an elevated pH. RFIs have been performed to define the lateral and vertical extents of alkaline pH and elevated arsenic concentrations in soil and groundwater in the AOC D area. COCs in groundwater include metals – particularly arsenic, SVOCs, and VOCs. Data is presently being evaluated to determine corrective measure alternatives.
- SWMU No. 1 – former Village of Waterloo Landfill – a closed landfill which received municipal waste from the Village of Waterloo in the 1950's. Maps of the facility show the landfill to be approximately 300 feet by 400 feet, encompassing land presently owned by Evans Chemetics, NYSCC, and Dow. The former landfill is located in the southwest section of the Evans Chemetics facility. In December 1992 it was noted that most of the landfill area is covered with trees at least 30 feet high. There is a lack of information concerning design and maintenance of the unit; given its age it is unlikely to have a liner. Evans Chemetics purchased the land containing the landfill in 1952 to acquire water rights from the Cayuga-Seneca Canal. Current groundwater sampling has shown limited impacts from the landfill. Information on the landfill is presently being evaluated for determining corrective measure alternatives.

This Statement of Basis addresses Operable Unit 02 – Cayuga-Seneca Canal Sediment Removal – AOC A. Future Statement of Basis will address the remaining AOCs and SWMUs under Operable Unit 01 – Former Hampshire Chemical Corp. – Entire Site.

Site Geology and Hydrogeology: The site topography slopes gently southward toward the canal with elevations ranging from 457 to 429 feet above mean sea level (amsl) at the canal bank, and to 415 feet amsl at the bottom of the canal. South of the facility, the canal consists of steep rocky sides, with a

relatively flat bottom consisting largely of sand and rock. Riprap material also is present at some areas of the canal bank and bottom. The uplands portion of the site is underlain by historical man-made fill. Beneath the historical man-made fill, three distinct natural unconsolidated units are present: soft native deposits (silt and clay), glacial till (very hard silt and clay), and bedrock (Onondaga Limestone). Man-made fill was placed over the native deposits across most of the site. The fill material generally consists of silt, sand, and gravel with varying amounts of brick fragments, cinder, ash, ceramic, glass and plastic bottles, wood, shoes, copper wires, and tires.

The facility is within the watershed of the Seneca River, which is an easterly flowing New York State Class "C" stream. A New York State Class "C" stream supports fisheries and is suitable for noncontact activities. Sitewide groundwater measurements indicate groundwater flow is generally to the south toward the canal. Groundwater depths for on-site wells generally vary between 2 and 8 feet bgs (below ground surface).

A site location map is attached as Figure 1 and a facility map is attached as Figure 2.

SECTION 4: ENFORCEMENT STATUS

6NYCRR Part 373 Hazardous Waste Management regulations require owners and/or operators of hazardous waste treatment, storage and disposal facilities to investigate and, when appropriate, remediate releases of hazardous wastes and/or constituents to the environment. The former Hampshire Chemical Corp (HCC) is a wholly owned subsidiary of the Dow Chemical Company (Dow). HCC has retained environmental liabilities for the facility in accordance with the terms described in the purchase agreement between HCC and Bruno Bock, the current property owner. The Department issued an Order on Consent (OC) to HCC on August 12, 2011 (Index Number 8-20000218-3281) and all remedial actions described in this SB will be performed under the authority of the order.

SECTION 5: RCRA FACILITY INVESTIGATION (RFI)

The RCRA Corrective Action process began with investigations to evaluate potential areas of the facility that may have been impacted by hazardous wastes and/or hazardous constituents. Based on the results of these investigations, the Department has determined that hazardous wastes and/or hazardous constituents have been released at the facility. The impact of releases of hazardous wastes and/or hazardous constituents at the facility were characterized and evaluated.

The analytical data collected for the facility's AOC A – Cayuga-Seneca Canal includes data for:

- Target Compound List (TCL) volatile organic compounds (VOCs)
- TCL semivolatile organic compounds (SVOCs)
- Polychlorinated Biphenyls (PCBs)
- Target Analyte List Metals

The data have identified contaminants of concern. A "contaminant of concern" is a hazardous waste that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Based on the results, the Department determined that corrective measures were required to address some of the areas investigated. The RCRA Facility Investigation Report contains a full discussion of the data. The nature and extent of contamination and environmental media requiring action in AOC A are summarized in Exhibit A.

The contaminants of concern identified at this facility's AOC A are:

Total polychlorinated biphenyls (PCBs)
Total polycyclic aromatic hydrocarbons (PAHs)
Metals – arsenic, cadmium, copper, lead, mercury and zinc

As illustrated in Exhibit A, the following contaminant(s) of concern exceed the cleanup objectives for NYSDEC sediment quality values, specifically the Low Effects Level (LEL) –

Total polychlorinated biphenyls (PCBs)
Total polycyclic aromatic hydrocarbons (PAHs)
Metals – arsenic, cadmium, copper, lead, mercury and zinc

5.1: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site's AOC A. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RFI report presents a more detailed discussion of any existing and potential impacts from the site's AOC A.

Nature and Extent of Contamination in Sediments in AOC A – Cayuga-Seneca Canal

Based upon investigations to date, the primary contaminants of concern for AOC A – Cayuga-Seneca Canal include – PCBs, PAHs, and metals: arsenic, cadmium, copper, lead, mercury, and zinc. Sediments in AOC A have been impacted by these primary contaminants of concern in four deposit areas –

1 – North Shore Deposit (adjacent to the Evans facility) extends approximately 650 feet to the west from the Gorham Street Bridge and approximately 60 feet to the south or center of the canal. Soft sediment thickness ranges from less than 1 foot to approximately 5 feet bss (below sediment surface). The concentration range of arsenic in the surface and subsurface sediment was 2.9 – 42.8 mg/kg and 2.8 – 29.4 mg/kg, respectively. Four out of fourteen and nine out of twenty-eight samples exceeded the LEL (lowest effect level) of 9.6 mg/kg for arsenic. The concentration range of cadmium in the surface and subsurface sediment was 0.05 – 21.9 mg/kg and 0.12 – 3,660 mg/kg, respectively. Seven out of fourteen and twenty-six out of twenty-eight samples exceeded the LEL of 0.6 mg/kg for cadmium. The concentration range of mercury in the surface and subsurface sediment was 0.01 – 6.3 mg/kg and 0.06 – 15.1 mg/kg, respectively. Thirteen out of fourteen and nineteen out of twenty-eight samples exceeded the LEL of 0.2 mg/kg for mercury. The concentration range of Total PCBs in the surface and subsurface sediment was 0.03 – 2.39 mg/kg and 0.03 -34 mg/kg, respectively. Ten out of fourteen and eight out of twenty-eight samples exceeded the LEL of 0.074 mg/kg for Total PCBs. The concentration range of Total PAHs in the surface and subsurface sediment was 3.4 – 359.6 mg/kg and 0.10 – 214.5 mg/kg, respectively. Eight out of fourteen and twelve out of twenty-eight samples exceeded the LEL of 12.4 mg/kg for Total PAHs.

2 – Gorham Street Deposit begins at the Gorham Street Bridge and extends approximately 830 feet downstream from the Gorham Street Bridge. Sediment is localized along the northern bank with lateral extent of 830 feet and along southern bank with lateral extent of approximately 380 feet. Soft sediment extends 40 feet toward the center channel. Soft sediment thickness ranges from less than 1 foot to 7 feet bss. The concentration range of arsenic in the surface and subsurface sediment was 2.2 – 18.3 mg/kg and 1.7 – 21.7 mg/kg, respectively. Four out of fifteen and fifteen out of forty-three samples exceeded the

LEL (lowest effect level) of 9.6 mg/kg for arsenic. The concentration range of cadmium in the surface and subsurface sediment was 0.27 – 60.2 mg/kg and 0.23 – 41.7 mg/kg, respectively. Ten out of fifteen and thirty-four out of forty-three samples exceeded the LEL of 0.6 mg/kg for cadmium. The concentration range of mercury in the surface and subsurface sediment was 0.05 – 135 mg/kg and 0.01 – 8.2 mg/kg, respectively. Thirteen out of fifteen and twenty-four out of forty-three samples exceeded the LEL of 0.2 mg/kg for mercury. The concentration range of Total PCBs in the surface and subsurface sediment was 0.08 – 0.23 mg/kg and 0.02 - 0.27 mg/kg, respectively. Seven out of fifteen and three out of forty-three samples exceeded the LEL of 0.074 mg/kg for Total PCBs. The concentration range of Total PAHs in the surface and subsurface sediment was 1.0 – 106 mg/kg and 0.001 – 111.7 mg/kg, respectively. Four out of fifteen and nine out of forty-three samples exceeded the LEL of 12.4 mg/kg for Total PAHs.

3 – Downstream Deposit extends from just upstream of Silver Creek and extends downstream approximately 830 feet, covering most of the width of the canal. The area exceeding LELs extends 620 feet west from Silver Creek and approximately 90 feet toward the center of the channel from the northern bank. The concentration range of arsenic in the surface and subsurface sediment was 1.2 – 16.3 mg/kg and 1.5 – 5.6 mg/kg, respectively. One out of twenty-five and zero out of seventy-six samples exceeded the LEL (lowest effect level) of 9.6 mg/kg for arsenic. The concentration range of cadmium in the surface and subsurface sediment was 0.24 – 2.9 mg/kg and 0.27 – 14 mg/kg, respectively. Eleven out of twenty-five and thirty-five out of seventy-six samples exceeded the LEL of 0.6 mg/kg for cadmium. The concentration range of mercury in the surface and subsurface sediment was 0.02 – 0.95 mg/kg and 0.01 – 4.9 mg/kg, respectively. Six out of twenty-five and twenty-one out of seventy-six samples exceeded the LEL of 0.2 mg/kg for mercury. The concentration range of Total PCBs in the surface and subsurface sediment was 0.02 – 0.3 mg/kg and 0.01 - 0.46 mg/kg, respectively. Two out of twenty-five and four out of seventy-six samples exceeded the LEL of 0.074 mg/kg for Total PCBs. The concentration range of Total PAHs in the surface and subsurface sediment was 0.18 – 22.8 mg/kg and 0.002 – 27.4 mg/kg, respectively. One out of twenty-five and three out of seventy-six samples exceeded the LEL of 12.4 mg/kg for Total PAHs.

4 – South Shore Deposit is on the southern shore of the canal, across from the facility, and extends approximately upstream the extent of the North Shore downstream to the Gorham Street Bridge. It extends laterally approximately one-third the width of the canal. The concentration range of arsenic in the surface and subsurface sediment was 1.3 – 10.6 mg/kg and 1.3 – 33 mg/kg, respectively. One out of sixteen and three out of thirty-three samples exceeded the LEL (lowest effect level) of 9.6 mg/kg for arsenic. The concentration range of cadmium in the surface and subsurface sediment was 0.1 – 0.74 mg/kg and 0.03 – 2.7 mg/kg, respectively. One out of sixteen and twelve out of thirty-three samples exceeded the LEL of 0.6 mg/kg for cadmium. The concentration range of mercury in the surface and subsurface sediment was 0.04 – 0.81 mg/kg and 0.01 – 0.78 mg/kg, respectively. Five out of sixteen and fourteen out of thirty-three samples exceeded the LEL of 0.2 mg/kg for mercury. The concentration range of Total PCBs in the surface and subsurface sediment was 0.04 – 0.51 mg/kg and 0.01 - 0.04 mg/kg, respectively. One out of sixteen and zero out of thirty-three samples exceeded the LEL of 0.074 mg/kg for Total PCBs. The concentration range of Total PAHs in the surface and subsurface sediment was 0.41 – 5.7 mg/kg and 0.18 – 25.4 mg/kg, respectively. Zero out of sixteen and one out of thirty-three samples exceeded the LEL of 12.4 mg/kg for Total PAHs. Based on site-specific chemical and toxicity data collected during the Sediment Investigation and Ecological Impact Assessment conducted in August 2011, it was concluded that sediments in the South Shore Deposit did not cause adverse biological effects compared to the upstream reference conditions. Soft sediment in the South Shore Deposit has not been targeted for remediation.

A summary of the nature and extent of contamination in the four sediment deposits can be found in Exhibit A – Tables 1A – 4A.

Potential risks to upper and lower trophic level ecological receptors may be present in portions of the canal adjacent and downstream to the main production area of the facility due primarily to metals – arsenic, cadmium, mercury, copper, lead, and zinc; PCB; and PAH exposures from the sediments.

5.2: 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.*

People are not coming into contact with the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Fencing exists in portions of the site to restrict public access, but person who enter the site in unfenced areas could contact contaminants in the soil by walking on the soil, digging or otherwise disturbing the soil. People may come into contact with contaminants present in shallow sediments in the Cayuga-Seneca Canal while entering or exiting the canal during recreational activities. Volatile organic compounds in the groundwater may move into the soil vapor (air between soil particles), 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. The potential for soil vapor intrusion to occur in on-site buildings is being evaluated as part of the site's ongoing investigation.

Potentially complete exposure pathways exist for human receptors – Recreational Users of Canal – by ingestion of fish and occasional dermal contact with the sediment.

5.3: Summary of the Remediation Objectives

The objectives for the corrective measures have been established through the remedy selection process. The Remedial Action Objectives (RAOs) are operable-unit-specific objectives for the protection of public health and the environment and are developed based on contaminated-specific standards, criteria, and guidance (SCGs) to address the contamination identified at the site.

The remedial action objectives for this site's AOC A are:

Sediment
- Human Health
  - Prevent direct contact with contaminated sediments.
  - Prevent surface water contamination which may result in fish advisories
- Environment
  - Prevent impacts to biota from ingestion/direct contact with sediments causing toxicity or impacts from bioaccumulations through the marine or aquatic food chain.

The RAO for AOC A is to remove the impacted soft sediment from the North Shore and Gorham Street Deposits, and a limited area west of Silver Creek in the Downstream Deposit.

SECTION 6: INTERIM CORRECTIVE MEASURES

If at any time during an investigation, it becomes apparent that corrective actions should be taken to immediately address the spread of contamination, interim corrective measures must be taken. The design emphasis is to construct an Interim Corrective Measure (ICM) as close to a permanent system or final

remedy as possible. The Department has determined that the ICM(s) is/are protective to human health and the environment, and could serve as part of the Final Corrective Measures at the facility.

No ICM(s) have been completed in association with AOC A.

SECTION 7: CORRECTIVE MEASURES STUDY (CMS)

Potential final corrective action measures for the facility's AOC A were identified, screened, and evaluated in the CMS report. To be selected, the proposed final corrective measure 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 final corrective action measures for AOC A must address potential routes of exposure to humans and the environment and attain the cleanup objectives identified for the AOC, which are presented in Exhibit B.

A summary of the corrective measure alternatives that were considered for AOC A is presented in Exhibit C**.** 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 maintenance. Monitoring would cease after 30 years if cleanup objectives are not achieved. A summary of the Proposed Corrective Measure Alternatives Costs is included as Exhibit C**.**

7.1: Evaluation of Corrective Measure Alternatives

A detailed discussion of the evaluation criteria and comparative analysis is included in the final CMS report.

The general performance standards for corrective measures that must be satisfied in order for an alternative to be considered for selection are listed below.

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.

2. Achieve Cleanup Objectives for the Contaminated Media. – This criterion evaluates the ability of alternatives to achieve the cleanup objectives established for the facility.

3. Remediate the Sources of Releases. – This criterion evaluates the ability of the alternatives to reduce or eliminate to the maximum extent possible further releases.

4. Comply with Standards for Management of Wastes. – This criterion evaluates how alternatives assure that management of wastes during corrective measures is conducted in a protective manner.

The next five selection criteria are used to compare the positive and negative aspects of each of the remedial alternatives.

5. 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.

6. 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 facility.

7. 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 cleanup objectives is also estimated and compared against the other alternatives.

8. 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.

9. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth 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.

SECTION 8: ELEMENTS of the PROPOSED CORRECTIVE MEASURE(S)

The basis for the Department's proposed corrective measures is set forth in Exhibit D**.**

The estimated present worth cost to implement the remedy is $5,808,000. The cost to construct the remedy is estimated to be $5,808,000, which includes waste disposal. Thirty year net worth is not applicable due to no O&M.

The elements of the proposed corrective measure are as follows:

1. Remedial Design. A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, 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 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 gases 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 would 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. Source Removal/Treatment Elements. Approximately 4,500 to 7,200 cubic yards of soft sediment is anticipated to be excavated from three remedial target areas, and transported off-site for disposal. The range of removal volumes are as follows:

- North Shore Deposit Area - Removal of all soft sediments – 530 to 1000 cy (cubic yards) – thickness range from less than 1 foot to 5 feet bss (below sediment surface)
- Gorham Street Deposit Area - Removal of all soft sediments – 3,300 to 5,000 cy – thickness range from less than 1 foot to 5 feet bss
- Downstream Deposit Area - Removal of a targeted area of soft sediment – 670 to 1,200 cy

Before sediment removal is conducted in the sediment deposit areas, debris (timber, rocks, etc.) will be moved or removed from the work areas to allow for maximum exposure to soft sediment. Work areas will be enclosed with a turbidity or silt curtain to minimize transport of suspended sediment downstream. The impacted soft sediments will be excavated, to the extent practical, to the till layer or bedrock, whichever is encountered first. For the Downstream Deposit, a section of the soft sediment west of Silver Creek will be removed to a depth of up to 1 foot in one section and up to 2 feet in another section only. Sediment removal will be performed using mechanical dredging equipment. Hand shovels, power washers, or vacuum trucks will not be used to remove any de minimis amounts of sediment remaining.

Pre- and post-removal bathymetric surveys will be conducted in accordance with a Sediment Removal Verification Plan.

Collected water will be pumped to a temporary on-site water treatment system for treatment of suspended solids and contaminants of concern and the treated water sampled before direct discharge to the canal. Discharge water quality will meet the requirements that will not cause deposition or impair the waters for their best usages (SPDES equivalency requirements). Discharge will be stopped if Total Suspended Solids (TSS) and/or contaminants of concern exceed the target discharge limits.

3. Transport/Disposal of Material.

- Excavated sediment will be loaded into watertight scow barges and transported to a staging pad area
- Free water on top of the dredged sediment in the scow will be pumped out to a temporary water treatment system located in the staging pad area.
- The sediment will be allowed to cure until the sediment meets the disposal facility's requirements.
- Sediments will be transported in lined trucks and managed to avoid spills or leakage onto public roadways. It will be transported and disposed of at an appropriate disposal facility approved by HCC and the Department.

4. Post Removal/Restoration.

- The Sediment Removal Verification Plan is intended to guide the assessment of sediment removal activities by establishing and documenting conditions pre- and post-removal and by defining the criteria and conditions for determining when sediment removal has been adequately completed. Bathymetric surveys will be used to verify that the targeted sediment areas have

been successfully removed. No confirmation sampling is anticipated with this plan as existing toxicity data adequately defines the required horizontal and vertical extent of the removal.

- Under the guidance of NYSDEC's Division of Fish, Wildlife, and Marine Resources, and the US Army Corps of Engineers Nationwide Permit No. 38, the canal bank will be restored using a combination of riprap filled gabions, riprap, seeding with erosion matting and utilization of existing vegetation. Areas along the bank above the water surface elevation with existing natural vegetation on the slopes will be maintained in its current state or be improved with grass seed mixtures, topsoil, and erosion matting.

STATEMENT OF BASIS

Exhibits A through E

Former Hampshire Chemical Corp. Facility
Waterloo, Seneca County
EPA No. NYD002234763 / Site No. 850001A
Operable Unit 02 – Cayuga-Seneca Canal Sediment Removal-AOC

March 2014

Exhibit A – Nature and Extent of Contamination

Data has identified contaminants of concern. A "contaminant of concern" is a hazardous waste that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action.

The RCRA Corrective Action process began with investigations to evaluate potential areas of the facility that may have been impacted by hazardous wastes and/or hazardous constituents. Based on the results of investigations, the Department has determined that hazardous wastes and/or hazardous constituents have been released at the facility. The impact of releases of hazardous wastes and/or hazardous constituents at the facility were characterized and evaluated in several phases of RFIs that have been performed at the site. The RCRA Facility Investigation Report, the Phase I Sediment Investigation Report, the Phase II Sediment Investigation Report, the Phase III Sediment Investigation Report, and the Ecological Impact Assessment Investigation Report contain a full discussion of the data. This Statement of Basis summarizes the results of the RFI activities performed at Area of Concern (AOC) A – Cayuga-Seneca Canal.

A series of four sediment characterization studies have been completed in the Cayuga-Seneca Canal in the area of the site. These investigations delineated the extent of depositional sediment in the canal near the facility and then characterized the nature and extent of chemical contamination in that sediment. The overall study area has been defined as four depositional areas:

- North Shore Deposit
- Gorham Street Deposit
- South Shore Deposit
- Downstream Deposit

The data from all phases of investigation were compared to NYSDEC sediment quality values (NYSDEC 1999), specifically the low effects level (LEL) and severe effects level (SEL). An ecological impact assessment was performed in portions of two of the deposit areas – South Shore Deposit and Downstream Deposit.

The analytical data collected for the facility's AOC A – Cayuga-Seneca Canal includes data for:

Target Compound List (TCL) volatile organic compounds (VOCs)
TCL semivolatile organic compounds (SVOCs)
Polychlorinated Biphenyls (PCBs)
Target Analyte List Metals

The data indicated sediment was impacted primarily with PCBs, Polycyclic Aromatic Hydrocarbons (PAHs), and metals – arsenic, cadmium, copper, lead, mercury, and zinc.

The nature and extent of contamination and environmental media requiring action are summarized in Exhibit A – Tables 1A – 4A.

Table 1A - Nature and Extent of Contamination in the North Shore Deposits

Detected Constituents	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)	Frequency Exceeding SCG	Site Derived Value (ppm)	Frequency Exceeding Site Derived Value
Arsenic					
Surface Sediment	2.9 – 42.8	LEL: 9.6	4 out of 14	NA	NA
		SEL: 33	1 out of 14		
Subsurface Sediment	2.8 - 29.4	LEL: 9.6	9 out of 28	NA	NA
		SEL: 33	0 out of 28		
Cadmium					
Surface Sediment	0.05 - 21.9	LEL: 0.6	7 out of 14	NA	NA
		SEL: 9	1 out of 14		
Subsurface Sediment	0.12 – 3,660	LEL: 0.6	26 out of 28	NA	NA
		SEL: 9	9 out of 28		
Mercury					
Surface Sediment	0.01 - 6.3	LEL: 0.2	13 out of 14	NA	NA
		SEL: 1.3	5 out of 14		
Subsurface Sediment	0.06 - 15.1	LEL: 0.2	19 out of 28	NA	NA
		SEL: 1.3	13 out of 28		
Copper					
Surface Sediment	14.8 – 1,340	LEL: 91	5 out of 14	NA	NA
		SEL: 110	5 out of 14		
Subsurface Sediment	10.7 – 3,000	LEL: 91	14 out of 28	NA	NA
		SEL: 110	12 out of 28		
Lead					
Surface Sediment	6.5 – 1,470	LEL: 123	4 out of 14	NA	NA
		SEL: 123	4 out of 14		
Subsurface Sediment	11.6 – 5,950	LEL: 123	11 out of 28	NA	NA
		SEL: 123	11 out of 28		
Zinc					
Surface Sediment	121 – 1,660	LEL: 120	14 out of 14	NA	NA
		SEL: 270	9 out of 14		
Subsurface Sediment	54.1 – 342,000	LEL: 120	26 out of 28	NA	NA

Detected Constituents	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)	Frequency Exceeding SCG	Site Derived Value (ppm)	Frequency Exceeding Site Derived Value
		SEL: 270	24 out of 28		
Total PCBs					
Surface Sediment	0.03 - 2.39	LEL: 0.074	10 out of 14	NA	NA
		SEL: 1.021	2 out of 14		
Subsurface Sediment	0.03 - 34	LEL: 0.074	8 out of 28	NA	NA
		SEL: 1.021	2 out of 28		
Total PAHs					
Surface Sediment	3.4 - 359.6	LEL: 12.4	8 out of 14	NA	NA
		SEL: 35	4 out of 14		
Subsurface Sediment	0.10 – 214.5	LEL: 12.4	12 out of 28	NA	NA
		SEL: 35	6 out of 28		

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in sediment
b - SCG: The Department's Technical Guidance for Screening Contaminated Sediments

NA: Not Applicable

Note: Data used was obtained from the following sampling events:

1. AOC A - RFI and Pre-RFI Sediment sampling events (conducted in 12/4/2001, 11/30/2004 and 12/01/2004)
2. AOC A Sediment sampling events (conducted between 10/20/2009 and 10/26/2009)
3. 2011 Impact Assessment sampling events (Metals, PAHs, and PCBs) (conducted between 8/23/2011 and 8/30/2011)

Table 2A - Nature and Extent of Contamination in the Gorham Street Deposits

Detected Constituents	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)	Frequency Exceeding SCG	Site Derived Value (ppm)	Frequency Exceeding Site Derived Value
Arsenic					
Surface Sediment	2.2 - 18.3	LEL: 9.6	4 out of 15	NA	NA
		SEL: 33	0 out of 15		
Subsurface Sediment	1.7 - 21.7	LEL: 9.6	15 out of 43	NA	NA
		SEL: 33	0 out of 43		
Cadmium					
Surface Sediment	0.27 - 60.2	LEL: 0.6	10 out of 15	NA	NA
		SEL: 9	2 out of 15		
Subsurface Sediment	0.23 - 41.7	LEL: 0.6	34 out of 43	NA	NA
		SEL: 9	4 out of 43		
Mercury					
Surface Sediment	0.05 - 135	LEL: 0.2	13 out of 15	NA	NA
		SEL: 1.3	5 out of 15		
Subsurface Sediment	0.01 - 8.2	LEL: 0.2	24 out of 43	NA	NA
		SEL: 1.3	12 out of 43		
Copper					
Surface Sediment	23.2 - 156	LEL: 91	4 out of 15	NA	NA
		SEL: 110	4 out of 15		
Subsurface Sediment	9.2 - 698	LEL: 91	8 out of 43	NA	NA
		SEL: 110	5 out of 43		
Lead					
Surface Sediment	28.6 - 425	LEL: 123	6 out of 15	NA	NA
		SEL: 123	6 out of 15		
Subsurface Sediment	8.4 – 12,700	LEL: 123	7 out of 43	NA	NA
		SEL: 123	7 out of 43		
Zinc					
Surface Sediment	92.7 – 4,190	LEL: 120	12 out of 15	NA	NA
		SEL: 270	7 out of 15		
Subsurface Sediment	50.8 – 4,850	LEL: 120	36 out of 43	NA	NA

Detected Constituents	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)	Frequency Exceeding SCG	Site Derived Value (ppm)	Frequency Exceeding Site Derived Value
		SEL: 270	24 out of 43		
Total PCBs					
Surface Sediment	0.08 – 0.23	LEL: 0.074	7 out of 15	NA	NA
		SEL: 1.021	0 out of 15		
Subsurface Sediment	0.02 – 0.27	LEL: 0.074	3 out of 43	NA	NA
		SEL: 1.021	0 out of 43		
Total PAHs					
Surface Sediment	1 – 106	LEL: 12.4	4 out of 15	NA	NA
		SEL: 35	1 out of 15		
Subsurface Sediment	0.001 – 111.7	LEL: 12.4	9 out of 43	NA	NA
		SEL: 35	1 out of 43		

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in sediment
b - SCG: The Department's Technical Guidance for Screening Contaminated Sediments

NA: Not Applicable

Note: Data used was obtained from the following sampling events:

1. AOC A - RFI and Pre-RFI Sediment sampling events (conducted in 12/4/2001, 11/30/2004 and 12/01/2004) – not applicable as no data was collected in the Gorham Street area during these sampling events
2. AOC A Sediment sampling events (conducted between 10/20/2009 and 10/26/2009)
3. 2011 Impact Assessment sampling events (Metals, PAHs, and PCBs) (conducted between 8/23/2011 and 8/30/2011) – not applicable as no data was collected in the Gorham Street area during these sampling events

Table 3A - Nature and Extent of Contamination in the Downstream Deposits

Detected Constituents	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)	Frequency Exceeding SCG	Site Derived Value (ppm)	Frequency Exceeding Site Derived Value
Arsenic					
Surface Sediment	1.2 - 16.3	LEL: 9.6	1 out of 25	NA	NA
		SEL: 33	0 out of 25		
Subsurface Sediment	1.5 - 5.6	LEL: 9.6	0 out of 76	NA	NA
		SEL: 33	0 out of 76		
Cadmium					
Surface Sediment	0.24 - 2.9	LEL: 0.6	11 out of 25	NA	NA
		SEL: 9	0 out of 25		
Subsurface Sediment	0.27 - 14	LEL: 0.6	35 out of 76	NA	NA
		SEL: 9	1 out of 76		
Mercury					
Surface Sediment	0.02 - 0.95	LEL: 0.2	6 out of 25	NA	NA
		SEL: 1.3	0 out of 25		
Subsurface Sediment	0.01 - 4.9	LEL: 0.2	21 out of 76	NA	NA
		SEL: 1.3	1 out of 76		
Copper					
Surface Sediment	4.1 - 72.2	LEL: 91	0 out of 25	NA	NA
		SEL: 110	0 out of 25		
Subsurface Sediment	5.1 - 125	LEL: 91	1 out of 76	NA	NA
		SEL: 110	1 out of 76		
Lead					
Surface Sediment	3.1 - 120	LEL: 123	0 out of 25	NA	NA
		SEL: 123	0 out of 25		
Subsurface Sediment	2.4 - 134	LEL: 123	2 out of 76	NA	NA
		SEL: 123	2 out of 76		
Zinc					
Surface Sediment	15.5 - 434	LEL: 120	9 out of 25	NA	NA
		SEL: 270	3 out of 25		
Subsurface Sediment	14.4 – 1,100	LEL: 120	39 out of 76	NA	NA

Detected Constituents	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)	Frequency Exceeding SCG	Site Derived Value (ppm)	Frequency Exceeding Site Derived Value
		SEL: 270	20 out of 76		
Total PCBs					
Surface Sediment	0.02 – 0.3	LEL: 0.074	2 out of 25	NA	NA
		SEL: 1.021	0 out of 25		
Subsurface Sediment	0.01 – 0.46	LEL: 0.074	4 out of 76	NA	NA
		SEL: 1.021	0 out of 76		
Total PAHs					
Surface Sediment	0.18 – 22.8	LEL: 12.4	1 out of 25	NA	NA
		SEL: 35	0 out of 25		
Subsurface Sediment	0.002 – 27.4	LEL: 12.4	3 out of 76	NA	NA
		SEL: 35	0 out of 76		

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in sediment
b - SCG: The Department's Technical Guidance for Screening Contaminated Sediments

NA: Not Applicable

Data used was obtained from the following sampling events:

1. AOC A Sediment sampling events (conducted between 11/9/2010 and 11/12/2010)
2. 2011 Impact Assessment sampling events (Metals, PAHs, and PCBs) (conducted between 8/23/2011 and 8/29/2011)

Table 4A - Nature and Extent of Contamination in the South Shore Deposits

Detected Constituents	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)	Frequency Exceeding SCG	Site Derived Value (ppm)	Frequency Exceeding Site Derived Value
Arsenic					
Surface Sediment	1.3 - 10.6	LEL: 9.6	1 out of 16	NA	NA
		SEL: 33	0 out of 16		
Subsurface Sediment	1.3 - 33	LEL: 9.6	3 out of 33	NA	NA
		SEL: 33	1 out of 33		
Cadmium					
Surface Sediment	0.1 - 0.74	LEL: 0.6	1 out of 16	NA	NA
		SEL: 9	0 out of 16		
Subsurface Sediment	0.03 - 2.7	LEL: 0.6	12 out of 33	NA	NA
		SEL: 9	0 out of 33		
Mercury					
Surface Sediment	0.04 – 0.81	LEL: 0.2	5 out of 16	NA	NA
		SEL: 1.3	0 out of 16		
Subsurface Sediment	0.01 – 0.78	LEL: 0.2	14 out of 33	NA	NA
		SEL: 1.3	0 out of 33		
Copper					
Surface Sediment	7.1 – 267	LEL: 91	2 out of 16	NA	NA
		SEL: 110	1 out of 16		
Subsurface Sediment	5.8 - 190	LEL: 91	2 out of 33	NA	NA
		SEL: 110	2 out of 33		
Lead					
Surface Sediment	15 - 107	LEL: 123	0 out of 16	NA	NA
		SEL: 123	0 out of 16		
Subsurface Sediment	4.2 – 1,200	LEL: 123	5 out of 33	NA	NA
		SEL: 123	5 out of 33		
Zinc					
Surface Sediment	52 - 296	LEL: 120	7 out of 16	NA	NA
		SEL: 270	2 out of 16		
Subsurface Sediment	11 – 1,390	LEL: 120	16 out of 33	NA	NA

Detected Constituents	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)	Frequency Exceeding SCG	Site Derived Value (ppm)	Frequency Exceeding Site Derived Value
		SEL: 270	10 out of 33		
Total PCBs					
Surface Sediment	0.04 – 0.51	LEL: 0.074	1 out of 16	NA	NA
		SEL: 1.021	0 out of 16		
Subsurface Sediment	0.01 – 0.04	LEL: 0.074	0 out of 33	NA	NA
		SEL: 1.021	0 out of 33		
Total PAHs					
Surface Sediment	0.41 – 5.7	LEL: 12.4	0 out of 16	NA	NA
		SEL: 35	0 out of 16		
Subsurface Sediment	0.18 – 25.4	LEL: 12.4	1 out of 33	NA	NA
		SEL: 35	0 out of 33		

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in sediment
b - SCG: The Department's Technical Guidance for Screening Contaminated Sediments

NA: Not Applicable

Note: Data used was obtained from the following sampling events:

1. AOC A - RFI and Pre-RFI Sediment sampling events (conducted in 12/4/2001, 11/30/2004 and 12/01/2004)
2. AOC A Sediment sampling events (conducted between 10/20/2009 and 10/26/2009)
3. 2011 Impact Assessment sampling events (Metals, PAHs, and PCBs) (conducted between 8/23/2011 and 8/30/2011)

The primary sediment contamination is PCBs and metals – arsenic, cadmium, mercury, copper, lead, and zinc. Data from the overall sediment characterization for the North Shore and Gorham Street deposits indicate these areas have increased potential for toxicity and could potentially adversely affect benthic invertebrates.

Based on the review of the impact assessment for the Downstream Deposit, a 1- to 2-foot limited area from the western edge of the Downstream Deposit to Silver Creek has a slightly higher potential for adverse biological effects being observed in the surface or subsurface intervals of sediment.

The overall conclusion drawn from the impact assessment for the South Shore Deposit is that the site-specific chemical and toxicity test data indicate sediment in this deposit do not cause adverse biological effects compared to upstream reference conditions, and no corrective action is required.

Based on the findings of the RCRA Facility Investigation, the presence of site contaminants – PCBs, PAHs, and metals has resulted in the contamination of sediment. The site contaminants that are considered to be the primary contaminants of concern which will drive the remediation of sediment to be addressed by the remedy selection process are, metals – arsenic, cadmium, copper, lead, mercury, and zinc.

Exhibit B – <u>Summary of the Clean-up Objectives</u>

The goal for the corrective measure program is to restore the facility to pre-disposal conditions to the extent feasible. At a minimum, the corrective measure(s) shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the facility through the proper application of scientific and engineering principles.

More specifically, the goal is to successfully remove the sediments in the targeted areas, as described below:

- Removal of the soft sediment in the North Shore Deposit Area to the till layer or bedrock
- Removal of the soft sediment in the Gorham Street Deposit Area to the till layer or bedrock
- Removal of the soft sediment from the western edge of the Downstream Deposit Area to Silver Creek to a depth of 1 to 2 feet or to the till layer or bedrock, whichever is encountered first.

The horizontal and vertical extent of the areas targeted for sediment removal were based on the number of exceedances of the LELs as follows:

Compounds	*Low Effect Levels
Total PCBs	0.074 mg/kg
Total PAHs	12.4 mg/kg
Metals -	
Arsenic	9.6 mg/kg
Cadmium	0.6 mg/kg
Mercury	0.2 mg/kg
Copper	91 mg/kg
Lead	123 mg/kg
Zinc	120 mg/kg

mg/kg = milligrams per kilogram

*New York State Department of Environmental Conservation Sediment Quality Values – Low Effect Levels (LEL)

and the sediment's potential for adverse biological effects being observed in the surface or subsurface intervals.

Exhibit C: Description of Remedial Alternatives

The following alternatives were considered based on the Remedial Action Objectives (RAOs) to address the contaminated media identified at the facility's AOC A as described in Exhibit A.

The detailed analysis of the alternatives is provided in the approved final Corrective Measures Study Report.

Proposed Alternatives:

Alternative 1: No Action: This alternative is evaluated as a baseline for other alternatives and does not involve any remedial actions or monitoring activities for the site. Natural processes, such as dilution, dispersion, and biodegradation would be expected to occur in the sediment with the potential to reduce constituent concentrations over time. Cost = None

Alternative 2: Mechanical Dredging with Select Landside or Waterside Removal: This alternative involves conventional mechanical dredging from a floating barge supporting an excavator equipped with an environmental bucket, or equivalent. Work areas will be enclosed with a turbidity or silt curtain to minimize transport of suspended sediment. This alternative also includes some sediment removal to be completed in the North Shore Deposit using a long-reach excavator before the beginning of the mechanical dredging phase of the removal. This landside or waterside removal while the canal water level is lowered approximately 5 feet (non-navigational season) will allow for a visual verification of removal in a near shore area of the North Shore Deposit that has been reported to contain high concentrations of site-specific COCs. The remaining sediment material outside the North Shore Deposit landside or waterside removal area, including the Gorham Street and Downstream deposit areas, will be excavated using a barge-mounted excavator. This phase will be completed during the non-navigation and navigation seasons after water level has returned to normal elevations (approximately 15 to 16 feet in center of canal). Additional verification of soft sediment removal in the remaining areas of the North Shore, Gorham Street, and Downstream deposits will be confirmed by comparing and evaluating pre-excavation and post-excavation bathymetric surveys. Cost = Medium to high

Alternative 3: Hydraulic Dredging with Select Landside or Waterside Removal: This alternative is the same phased approach for sediment removal as in Alternative 2, except the removal method is hydraulic dredging using a pontoon hydraulic dredge rather than mechanical dredge. Immediate work area will be enclosed with a turbidity or silt curtain to minimize transport of suspended sediments. This alternative also includes some select landside or waterside dredging to be completed in the North Shore Deposit using a long-reach excavator as in Alternative 2. The landside or waterside removal phase while the canal water level is lowered approximately 5 feet (non-navigation season, only) will allow for a visual verification of removal in a select near shore area of the North Shore Deposit that has been reported to contain high concentrations of site-specific COCs. The remaining sediment material outside the North Shore Deposit landside or waterside removal including the Gorham Street and Downstream deposit areas will be removed using a pontoon hydraulic dredge with a movable arm capable of being raised and lowered to the canal floor. The arm has an 8-inch cutter head for "vacuuming" sediments and then pumping the slurried sediment (1,000 to 1,500 gallons per minutes) to a sediment staging and dewatering area. Verification of soft sediment removal in the remaining areas of the North Shore, Gorham Street, and Downstream deposits will be confirmed by comparing and evaluating pre-excavation and post-excavation bathymetric surveys. Water generated during the hydraulic removal will be treated on-site at a temporary water treatment facility system for suspended solids and then discharged back to the canal (allowable by permit). Cost = Medium to high.

Alternative 4: Mechanical Excavation Following Isolation Using Portadam or Similar Water Divertment Structure Under Watered Conditions: This alternative involves installing a Portadam along the length of the canal from the western end of the North Shore Deposit to the eastern end of the Gorham Street Deposit, splitting the canal in the middle and enclosing the work areas up to the northern shoreline. Portadam is a type of cofferdam or water retaining system based on a temporary, watertight enclosure that would be installed in the canal allowing water depth conditions of 6 to 8 feet on one side of the barrier, and would support dry conditions within the work area on the other side of the barrier. The Portadam at the Downstream Deposit will either continue from the Gorham Street enclosure, or will be constructed as a separate enclosure. Cost = Medium to high. **Alternative 4 not considered for further evaluation. This alternative is infeasible due to the unsafe work conditions that would result from using the Portadams in 10 feet of water, and concerns over the installation of the Portadams with over 10 feet of water in the canal.**

Alternative 5: Mechanical Excavation in Dry Conditions Following Isolation with Sheet Piles: This alternative would involve the use of sheet pile cofferdam technology which uses wood, steel, or concrete sheet piling to construct a reusable watertight enclosure. The sheet piles would need to be driven into bedrock because the sediment layer will not be able to hold up the structure. Cost = Very High. **Alternative 5 not considered for further evaluation due to technical infeasibility. The limitations of installing the sheet piles in the canal bottom, the length of time required for the entire corrective measure to be performed, and technical limitations of the sealing of the sheet piling make this alternative technically infeasible.**

Alternative 6: Mechanical Excavation with Upstream and Downstream Dam and Bypass Pumping: This alternative requires creating a dry canal by building an upstream and downstream dam with H-type sheet piles across the width of the canal, and then pumping water from the canal area enclosed by the dam structure south of the downstream dam. Cost = High. **Alternative 6 not considered for further evaluation. This alternative is infeasible due to the safety factor needed for the dams during wet weather conditions and the large volume of water to pump over the work area.**

Exhibit D: Corrective Measure Alternative Costs

Summary of Estimated Costs for Focused Corrective Measure Alternatives

Alternative Description	Capital Costs	Present Worth Costs	Total Cost
1. No Action	$0	$0	$0
2.Mechanical Dredging with Select Landside Removal	$5,808,000 (includes waste disposal)	$5,808,000	$5,808,000
3. Hydraulic Dredging with Select Landside Removal	$6,189,000 (includes waste disposal)	$6,189,000	$6,189,000

***There are no Operation & Maintenance (O&M) costs associated with these alternatives.**

Exhibit E: Summary of the Selected Final Corrective Measure

The Department has selected Alternative #2 - Mechanical Dredging with Select Landside or Waterside Removal, as the final corrective measure for this facility's AOC A. The elements of this alternative are described in Section 7. The selected final corrective measure is depicted in Figure #5.

Basis for Selection

The selected final corrective measure is based on the results of the RFI, CMS and the evaluation of alternatives.

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 established for the facility's AOC A. Potential remedial alternatives for the facility's AOC A were identified, screened and evaluated in the CMS report.

In evaluating the remedial alternatives for the CMS, the Department has selected Alternative 2 as the remedy. It targets removal of sediment from the remedial target areas (RTAs) and is cost-effective. It will be protective of Human Health because Remedial Action Objectives will be achieved by removal of impacted sediment from the RTAs; and the mechanical excavation of impacted areas will be protective of the environment by removing impacted sediment from the canal bottom and prevent sediment migration to other environmental receptors.

Alternative 1 was not selected. The 'no action' alternative does not include institutional controls or active corrective measures to remove or treat the areas of impact or to reduce the concentrations of COCs in sediment. The lack of an active remedy could impact canal users and benthic wildlife that may be exposed to the COCs. No action results in unfavorable conditions.

Alternative 3 was not selected. Both Alternatives 2 and 3 include a phased approach with some landside or waterside sediment removal to be completed in the North Shore Deposit allowing for visual verification of removal in this area with the canal water level lowered approximately 5 feet during the non-navigation season. Given this phased approach for removing sediment, both alternatives have many similarities and offer similar success and benefits. Site conditions for both are nearly equal and include:

- Dredging from the water to be completed in the navigation season with landside or waterside removals completed in the non-navigation season
- Full watered conditions with approximately 15 feet water depth in the center of the canal with water elevations lowered by up to 5 feet during the non-navigation season. Sediment removal is not dependent on water levels or water flow rates in the canal. Water fluctuations can be accommodated, generally not causing disruption to the work.
- Significant debris removal is necessary before beginning sediment removal. Timber, large rocks, boulders, and debris can result in delayed dredging. Debris removal methods will be determined as part of the design and based upon data collected during a bathymetric survey.
- Schedule to execute the work in 4 to 8 months. Sediment removal can be performed during both the navigation and non-navigation seasons of the canal, allowing for a phased approach and more flexibility in executing the work.
- Permitting is required to execute the work.

The five selection criteria used to compare the positive and negative aspects of the Alternative #2 and Alternative #3 includes:

- Effectiveness is high for both alternatives because impacted sediment from the RTAs will be removed.
- Neither alternative will reduce the toxicity or volume of the contaminants, but will decrease mobility by being placed in a controlled landfill.
- Both alternatives provide short-term effectiveness by removing impacted sediment and not having rebound potential.
- Both alternatives have high implementability, however Alternative #2 requires lesser land area for processing; water generated from processing can be disposed off-site without treatment; and in general, removal process will be slightly more effective in getting out sediment with the bottom conditions. Alternative #3 requires larger land area/footprint to accommodate dewatering tubes and water treatment system.
- Costs for Alternative #2 = $5,808,000. Costs for Alternative #3 = $6,189,000.

The primary advantage to Alternative 2 when compared to Alternative 3 is less overall water generated during construction resulting in lower water management challenges. Additionally, the required land area for staging, storage, and sediment processing is generally compact and can be less than 3 acres.

Alternative 3 generates significantly more water than Alternative 2 because of the slurry vacuuming at water rates of 1,000 to 1,500 gallons per minute. This necessitates the need for a temporary water treatment facility. Additionally, the required land area for staging, dewatering, storage and sediment processing is reactively large and would be greater than 3 acres. This would require additional land access near the site, including road crossing for water pumping. Alternative 3 was not selected because it requires more land area, increased water treatment volumes, and is not as cost-effective as Alternative 2.

An experienced Department employee and/or inspector will be on-site to monitor the sediment removal work being performed.

STATEMENT OF BASIS

Figures representing the site location, deposit locations, and sediment remedial target areas

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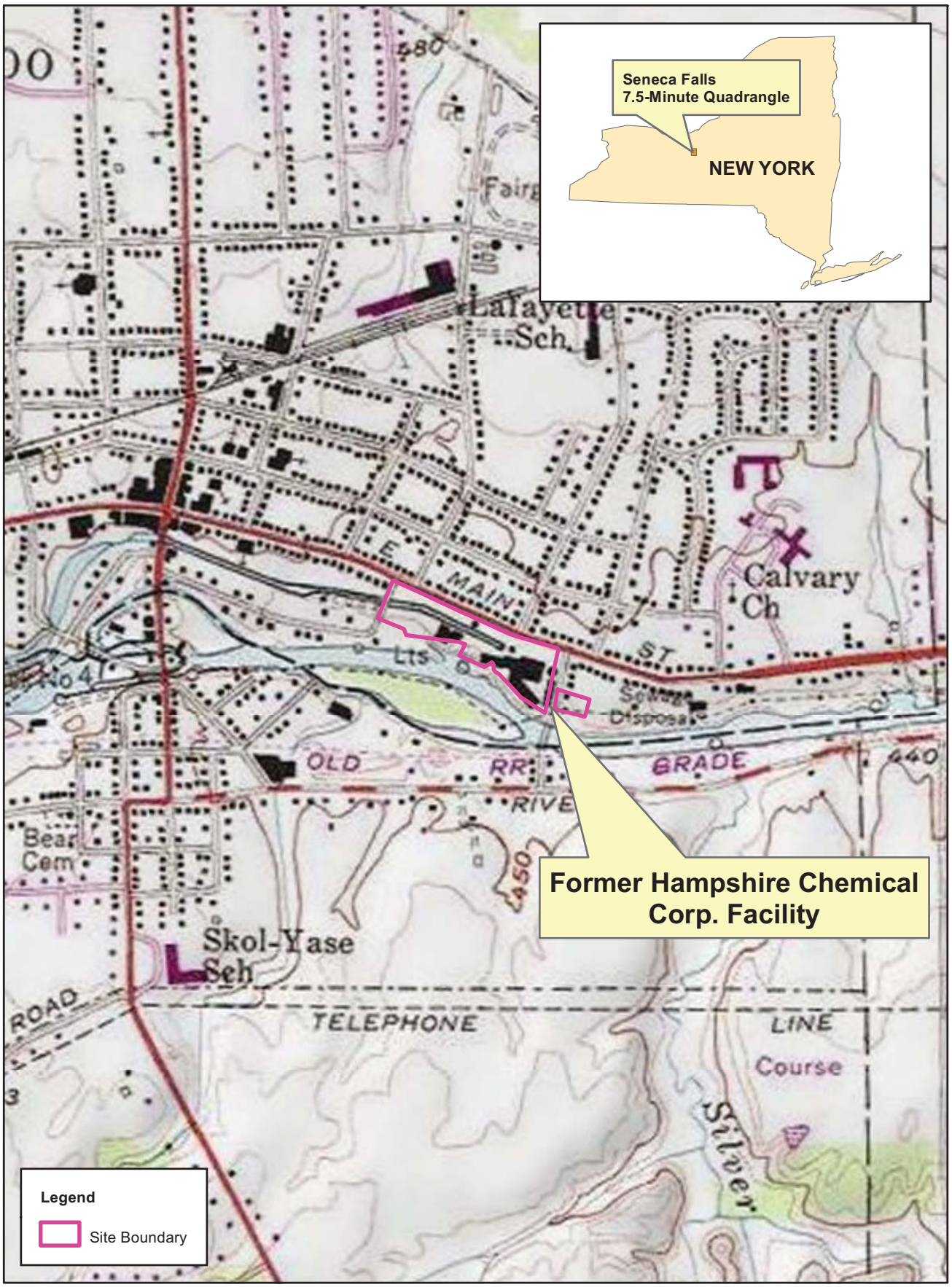
Former Hampshire Chemical Corp. Facility
Waterloo, Seneca County
EPA No. NYD002234763 / Site No. 850001A
Operable Unit 02 – Cayuga-Seneca Canal Sediment Removal-AOC A

March 2014



Seneca Falls, NY 1953 Photo Revised 1978

Figure 1
Facility Location Map
Corrective Measures Study for AOC A - Cayuga-Seneca Canal
Former Hampshire Chemical Corp. Facility
Waterloo, New York

CH2MHILL

E:\GIS\DOW\WATERLOO\REPORTS\2012\CORRECTIVEMEASURESSTUDY\MAPFILES\FIGURE01_FACILITY_LOCATION_MAP.MXD JHANSEN1 5/17/2012 8:43:15 AM
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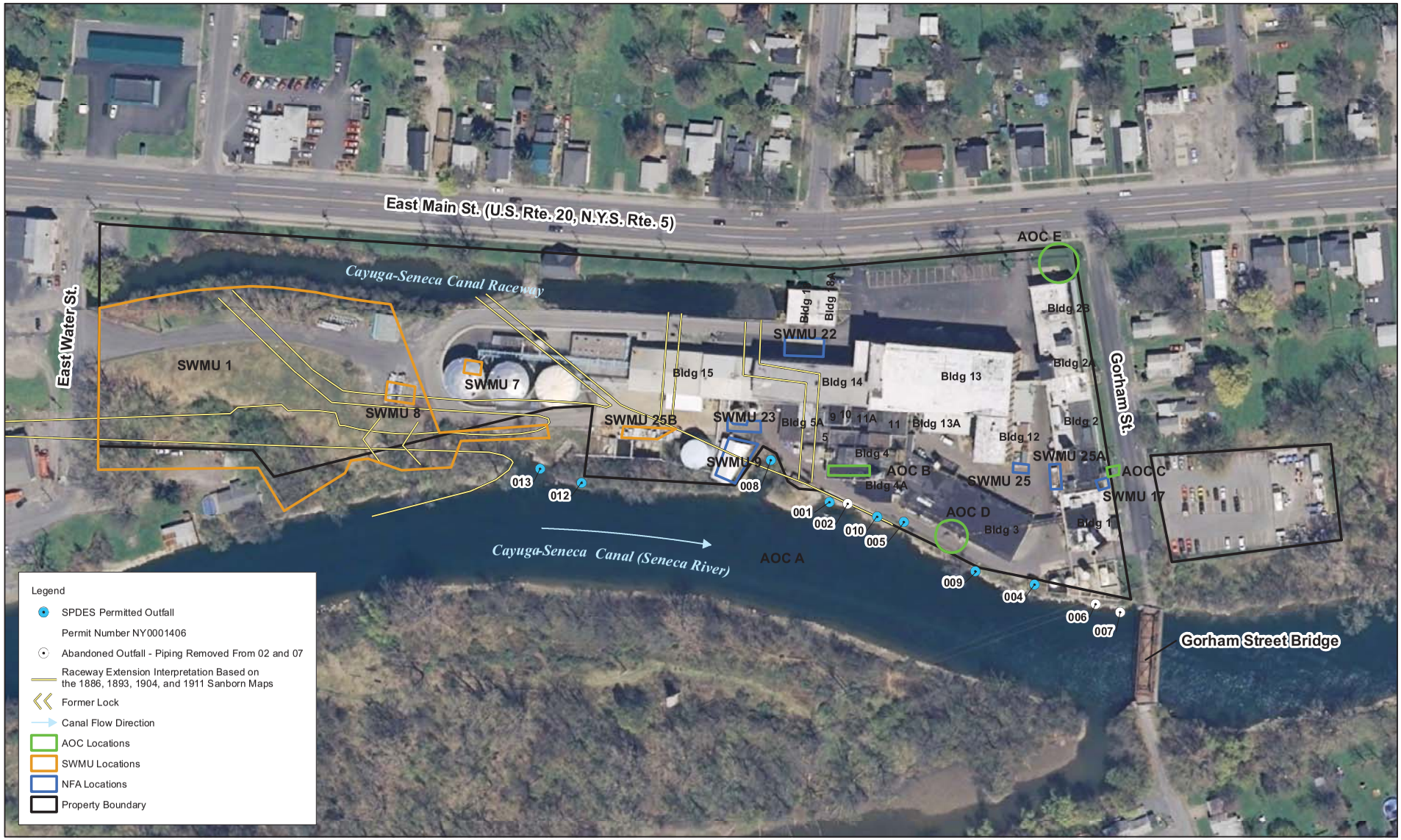

0 120 240
Feet

Notes:
NFA - No further action
NFA issued by NYSDEC on Dec. 2, 2003.
SWMU 28 (NFA) - Wash Water Sewer System (Buildings 2, 3, 4, 9, 13, 14 and 16)
SWMU 29 (NFA) - SPDES Sewer System (Buildings 1, 2, 2A, 2B, 3, 4, 5, 14 and Reactor)

Figure 2
SWMU and AOC Locations
Corrective Measures Study for AOC A - Cayuga-Seneca Canal
Former Hampshire Chemical Corp. Facility
Waterloo, New York

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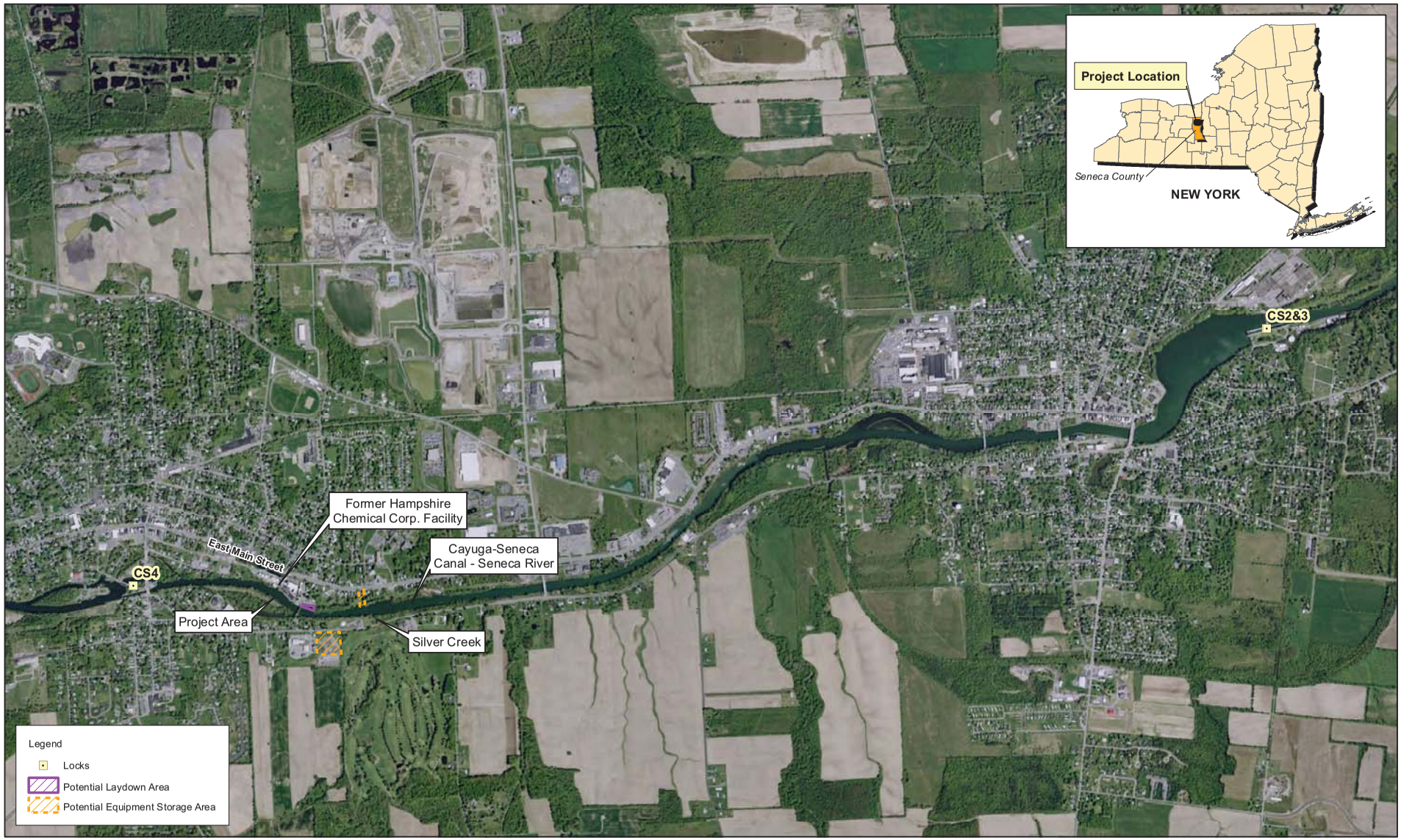

0 0.25 0.5
Miles

Figure 3
Cayuga-Seneca Canal Locks
Corrective Measures Study for AOC A - Cayuga-Seneca Canal
Former Hampshire Chemical Corp. Facility
Waterloo, New York

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E:\GIS\DOW\WATERLOO\REPORTS\2012\CORRECTIVEMEASURESSTUDY\MAPFILES\FIGURE03_SENECA_CAYUGA_CANAL_LOCKS.MXD JHANSEN1 5/17/2012 8:47:31 AM
Originator: C. Ngoma Checked By: L. La Fortune Approved by SM: D. Brodmerkel

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0 125 250

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Figure 4

North Shore, South Shore, Gorham Street, and Downstream Deposits

Corrective Measures Study for AOC A - Cayuga-Seneca Canal

Former Hampshire Chemical Corp. Facility

Waterloo, New York

CH2MHILL

E:\GIS\DOW\WATERLOO\REPORTS\2012\CORRECTIVEMEASURESSTUDY\MAPFILES\FIGURE04_NORTHAREA_GORHAMSTREET_SOUTHAREA_DOWNSTREAM.MXD JHANSEN1 5/17/2012 8:35:35 AM

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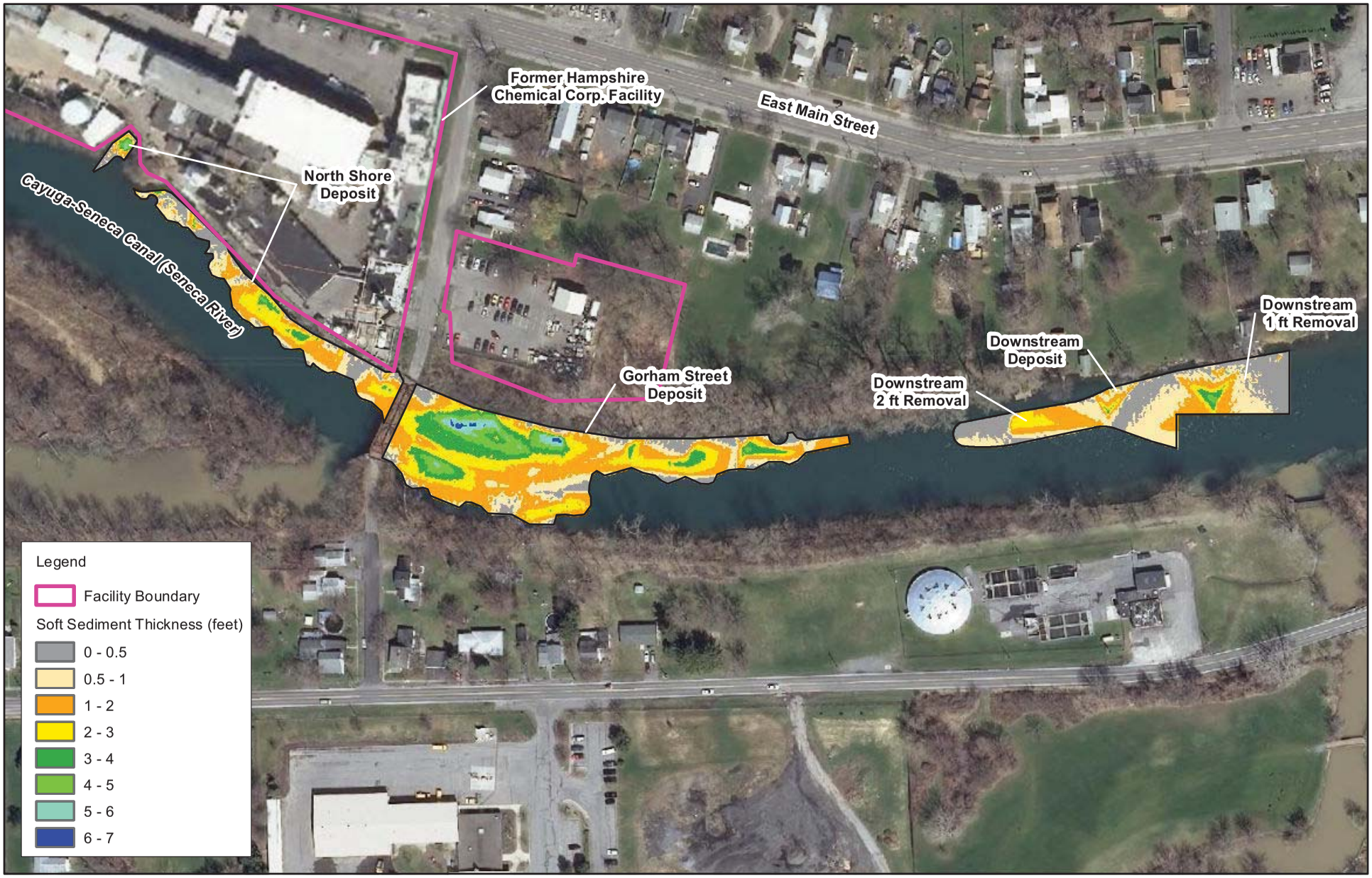

N

0 100 200
Feet

Figure 5
Soft Sediment Thickness Map
AOC-A Sediment Removal Final Design Report
Former Hampshire Chemical Corp. Facility
Waterloo, New York

CH2MHILL

E:\GIS\DOW\WATERLOO\REPORTS\2013\AOC_A_SEDIMENTUPDATE\MAPFILES\FINALDESIGN\FIGURE 04 - SOFT SEDIMENT THICKNESS MAP.MXD JHANSEN1 10/15/2013 4:43:38 PM

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Former Hampshire Chemical Corp. Facility
Operable Unit 02 – Cayuga-Seneca Canal Sediment Removal-AOC A
Waterloo, Seneca County
NYSDEC Site Number 850001A-OU2
EPA ID#NYD 002234763

The draft Statement of Basis (SB) for the referenced 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 for public comment on December 3, 2013. The draft SB outlined the remedial measures proposed for the referenced operable unit.

The release of the draft SB was announced by sending a fact sheet to the Seneca County public contact list via Department Listserv, informing the public of the opportunity to comment on the proposed remedy. A fact sheet regarding the proposed action was also mailed to adjacent property owners. The draft SB was issued to the document repository at the Waterloo Public Library to facilitate public availability and review of documents related to the proposed action.

An availability session and public meeting were held on December 17, 2013, which included a presentation of the site investigation as well as a discussion of the proposed remedy for AOC A - Cayuga-Seneca Canal. 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 draft SB ended on January 16, 2014.

This responsiveness summary responds to questions and comments raised during the public comment period. This includes comments received at the public meeting. No written comments were received. The following are the comments received, with the Department's responses:

Public Meeting Comments:

COMMENT 1: What are the chemicals of concern? What about other chemicals like MIBK?

RESPONSE 1: The contaminants of concern identified as being in AOC A – Cayuga-Seneca Canal are – total polychlorinated biphenyls (PCBs), total polycyclic aromatic hydrocarbons (PAHs), and metals – arsenic, cadmium, copper, lead, mercury, and zinc. No volatile organic compounds (VOCs) detected in the canal, including methyl isobutyl ketone (MIBK), exceeded their respective screening values.

COMMENT 2: Was there a particular PCB found? Was it Aroclor 1254?

RESPONSE 2: Aroclor 1254 was the predominant Arcolor detected. Aroclor 1260 was also reported as part of the total PCB concentration.

COMMENT 3: Where did the chemical originate from?

RESPONSE 3: Information suggests liquid waste was discharged to the canal prior to 1975 via historical pipes. Many of the compounds of interest in the canal are believed to be related to the woolen mill operational time.

COMMENT 4: Should they be stirring up these chemicals in the canal?

RESPONSE 4: Removal of the impacted sediment will protect the environment – particularly the benthic community – and prevent downstream migration to environmental receptors. The water will be monitored for Total Suspended Solids (TSS) during the removal process. Silt/Turbidity curtains will enclose the work area to prevent the transport of re-suspended sediment to the canal.

COMMENT 5: How was it determined that Hampshire Chemical pays the bills? Is there a financial assurance in the consent order?

RESPONSE 5: Hampshire Chemical Corporation agreed to conduct Resource Conservation and Recovery Act (RCRA) facility investigations (RFIs) and appropriate corrective measures at the site under a consent order with the DEC. The order provides assurance of financial responsibility for completing corrective action. Hampshire Chemical Corp. has retained the environmental liability for the facility in accordance with the terms described in the purchase agreement between Hampshire Chemical Corp. and Bruno Bock, the current property owner.

COMMENT 6: How will the dredging work? Will there be dredging again? Is hydraulic the vacuum thing? Will it be a mess? Will you go beyond west of the factory? Will you be cutting the banks back?

RESPONSE 6: Hydraulic dredging is not contemplated; soft sediment will be removed by mechanical dredging methods using a conventional excavator mounted on a barge with a bucket equipped with cover mechanism, smooth cut surface and no teeth. The dredged material will be placed in a scow and offloaded for processing. The offloaded sediment will be dewatered with Portland cement or an equivalent material. Debris in sediment removal areas will be removed as necessary prior to the mechanical dredging. A temporary on-site water treatment system may be used for treatment of the water derived from the sediment dewatering and decontamination activities to allow discharge back into the canal. The dewatered sediment will be directly loaded into trucks and covered. The exterior of trucks will be washed to remove visible sediment and soil. Trucks will depart the site and transport sediment to a Department approved permitted off-site landfill.

The objective of this sediment removal is to remove the contaminated sediment. Based on the success of the removal, to be determined by the post-removal verification plan, no further dredging by Hampshire Chemical Corp. is anticipated.

Up to 7,200 cubic yards of soft sediment is expected to be removed from the work area which extends from the western end of the Evans facility boundary down to Silver Creek – a distance of approximately 2,600 feet.

Canal banks affected at the North Shore deposit (along the Evans facility boundary) and at the Gorham Street deposit will be restored as needed based on the disturbance. No bank disturbance is anticipated along the Downstream deposit.

COMMENT 7: Why not drain the canal and scoop it out without the water problem? Wouldn't it be faster if it was drained out? Are you draining it to a certain level? Where is the culvert located?

RESPONSE 7: The Bayard Street culvert is approximately three miles downstream of the Evans facility, in Seneca Falls. The culvert serves to discharge water from Benton Creek to the Cayuga-Seneca Canal. Benton Creek is a collection point for stormwater runoff from the surrounding residential area. The NYS Canal Corporation (NYSCC) reported having historic issues with the Bayard Street culvert when the canal level was previously drawn down for maintenance, including concerns that the culvert might fail. The wet removal approach will allow the culvert to remain submerged; similar to existing conditions. The NYSCC will be responsible for regulating the canal water level in a manner that maintains and protects its infrastructure.

There is also a need to maintain minimum water flow for the hydroelectric power plants at Waterloo and Seneca Falls, which are owned and operated by the Seneca Falls Power Company.

COMMENT 8: Explain sediment processing and dewatering pad. Is it normal and effective to de-water in a couple of days? What do they mix it with [dredged material]? What about smell? How many tractor trailers will there be? I don't want the staging area to be a parking lot.

RESPONSE 8: Hampshire Chemical Corp. owned property, located at 60 East Water Street, will be used as the staging and dewatering area where the dredged sediment will be processed. The staging area will accommodate the temporary on-site water treatment plant, dewatering and sediment drying area, decontamination of trucks hauling dewatered sediment off-site, and dredging debris storage.

Mechanically dredged sediment will be loaded into watertight scow barges and transported to a temporary barge docking platform at the shoreline. Free water on top of the dredged sediment in the scow will be pumped out to the water treatment system located in the staging pad area. The remaining sediment in the scow will be transferred by excavator to the sediment processing area/drying area. The sediment will be mixed with a drying reagent – most likely Portland cement – on an as-needed basis. The drying agent will be mixed and the sediment allowed to cure until the sediment meets the off-site disposal facility's requirements. The dewatered sediment will be loaded into trucks that will be staged on the truck loadout area. Once a truck is loaded, the bed will be covered with a retractable tarp, and the exterior of the truck will be inspected and cleaned of visible sediment and soil.

Odor mitigation will be implemented if necessary by adding an odor neutralizing agent to the sediment and/or pulling a cover over the de-watering sediment. Work practices will be revised and/or halted should persistent nuisance odors attributable to the sediment removal activities migrate off-site and affect off-site receptors.

It is estimated that 12 tandem-axle dump truck (12 yard soil capacity) will be hauling two loads per day.

COMMENT 9: What type of monitoring will take place? How real time will the monitoring be? What about noise mitigation?

RESPONSE 9: Upstream and downstream monitoring locations will be used to assess potential canal water quality impacts attributable to the dredging operations. Turbidity sensors will be deployed at each monitoring location at mid-depth of the canal with readings recorded once every 15 minutes.

Collected water will be pumped to a temporary on-site water treatment system for treatment of suspended solids. The treated water will be sampled before discharging to the canal. Discharge water quality will meet the requirements that will not cause deposition or impair the waters for their best usages (SPDES equivalency requirements).

Real-time air monitoring for volatile organic compounds (VOCs) and particulates will occur during the dredging activities. Air monitoring for particulates less than 10 micrometers in size will be performed during all intrusive activities including the handling and mixing of amendments with sediment. The particulate concentrations will be monitored at upwind and downwind perimeters of the immediate work area on a continuous basis during the work hours. VOCs will be monitored at the downwind perimeter on a continuous basis. Upwind concentrations will be measured at the start of each workday and periodically thereafter. Monitoring results will be reviewed regularly and modifications to both work practices and monitoring protocols will be made as necessary.

Noise monitoring will be conducted periodically during mobilization and execution of the sediment removal. Background noise levels will be established before work begins. Periodic noise monitoring will be conducted during daytime hours at locations where there is the potential for levels to exceed 85 decibels (dredging operations, downstream mixing and offloading area).

Odors will be subjectively monitored and mitigation steps will be implemented if necessary.

COMMENT 10: Why is there nothing in-between (referencing the four sediment deposit areas)? Describe the toxicity delineation process – how was it decided which area needs to be excavated? There is the South Shore and some Downstream areas that don't need to be excavated – how did DEC draw that line? There are no LEL and SEL exhibited in South Shore?

RESPONSE 10: Four sediment characterization studies were completed in the Cayuga-Seneca Canal in the area of the site. These investigations delineated the extent of the depositional sediment in the canal near the facility and then characterized the nature and extent of chemical contamination in that sediment. Data from all phases of the investigation were compared to Department sediment quality values for the low effects level (LEL) and severe effects level (SEL). An ecological impact assessment was also performed in portions of two of the deposit areas – South Shore and Downstream deposits.

From the investigations it was determined that site-related constituents were present above background concentrations and respective LELs within the North Shore deposit, in localized areas within the Gorham

Street deposit, at a limited number of stations within the South Shore deposit, and within portions of the Downstream deposit. The ecological impact assessment investigation focused on areas within the South Shore and Downstream deposits. Collecting sediment samples for chemical analyses and toxicity testing from locations in and around areas in the South Shore and Downstream deposits identified as potential hot spot locations by the Department's LEL approach.

Data from the overall sediment characterization for the North Shore and Gorham Street deposits indicated these areas have increased potential for toxicity and could potentially adversely affect benthic invertebrates. The overall conclusion drawn from the impact assessment for the South Shore deposit was that the site-specific chemical and toxicity data indicated sediment in the deposit does not cause adverse biological effects compared to upstream conditions, and no corrective action is required.

For the Downstream deposit, the Department determined there were clusters in the western portion of the Downstream deposit associated with some form of potential toxicity, and requiring remediation of the western portion of the Downstream deposit. A 2-foot and 1-foot removal area on the western edge of the Downstream deposit to Silver Creek was selected for removal, which focused on the areas where a slightly higher potential for adverse biological effects were observed in the surface or subsurface intervals.

COMMENT 11: What does green remediation mean?

RESPONSE 11: Green remediation is defined as 'the practice of considering all environmental effects of remedy implementation and incorporating options to minimize the environmental footprint of clean-up actions'. It is intended to improve the overall sustainability of the clean-ups by promoting the use of more sustainable practices and technologies. Examples of green remediation concepts are – minimizing energy consumption, reducing greenhouse gas emissions, maximizing the reuse of land and the recycling of materials, and conserving natural resources such as soil, water, and habitat.

COMMENT 12: Is there any way of cleaning out the spill way (Bear Run) on the southside of Watkins Island across the canal from Evans?

RESPONSE 12: Two sampling points near the exit of Bear Run in the South Shore deposit area were analyzed for the contaminants of concern. The results for both locations reported PCBs as non-detects, and both metals and total PAHs below the Department's screening levels. In addition, site-specific chemical and toxicity test data indicate sediments in the South Shore deposit should not cause adverse biological effects compared to upstream reference conditions, and no corrective measures are required. With no conclusive evidence that the contaminants of concern have entered the Bear Run spillway, it has been determined that no remediation dredging needs to occur in the spillway at this time.

APPENDIX B

Administrative Record

Former Hampshire Chemical Corp. Facility
Waterloo, Seneca County
EPA No. NYD002234763 / Site No. 850001A
Operable Unit 02 – Cayuga-Seneca Canal Sediment Removal-AOC

March 2014

CH2M HILL 2004. *RCRA Facility Investigation Report, Evans Chemetics Facility, Waterloo, New York.* **October.**

CH2M HILL 2006. *RCRA Facility Investigation Report, Evans Chemetics Facility, Waterloo, New York..* **May.**

CH2M HILL 2009. *Phase I Sediment Characterization Results/Phase II Work Plan, Waterloo, New York.* **July.**

CH2M HILL 2010. *Phase II Sediment Investigation Data Report, Waterloo, New York.* **July.**

CH2M HILL 2011. *RCRA Facility Investigation Phase III Sediment Investigation Data Report, Waterloo, New York.* **February.**

CH2M HILL 2012. *RCRA Facility Investigation, Ecological Impact Assessment Report, Former Hampshire Chemical Corp. Facility, Waterloo, New York.* **February.**

CH2M HILL 2013. *Revised Corrective Measures Study for AOC A – Seneca-Cayuga Canal, Former Hampshire Chemical Corp. Facility, Waterloo, New York.* **June.**

Second Amended Order on Consent, Index Number CO 8-20000218-3281, August 12, 2011