# RESPONSE ACTION DOCUMENT

Wastebed B/Harbor Brook Site
Subsite of the Onondaga Lake Site
East Barrier Wall Interim Remedial Measure
Onondaga County, New York


New York State Department of Environmental Conservation
and United States Environmental Protection Agency,
Region II

May 2011

## I. PURPOSE

The purpose of this document is to authorize a response action[1] to minimize the release of contaminants into Lower Harbor Brook and/or Onondaga Lake under an Interim Remedial Measure (IRM)[2] for the Wastebed B/Harbor Brook Site (Subsite), located in the Town of Geddes and the City of Syracuse, Onondaga County, New York (see Figure 1 for a Site map)[3]. In April 2010, an Engineering Evaluation/Cost Analysis (EE/CA)[4] was prepared by O'Brien & Gere on behalf of Honeywell in support of the IRM for the Site *(O'Brien & Gere, 2010)*. The EE/CA and a Proposed Response Action Document (PRAD) were made available for public comment from December 27, 2010 through February 10, 2011. The New York State Department of Environmental Conservation (NYSDEC) conducted a public meeting on January 13, 2011 in the Town of Geddes to discuss the proposed response action and to receive public comments on the EE/CA and the PRAD (as part of the citizen participation program for this IRM).

The Wastebed B/Harbor Brook IRM objectives are to:

- Eliminate, to the extent practicable and within the scope of this IRM, the discharge of contaminated groundwater and non-aqueous phase liquids (NAPL), into Harbor Brook and Onondaga Lake (and collect NAPLs, as feasible).
- Eliminate, to the extent practicable and within the scope of this IRM, the potential human health and ecological impacts associated with Site constituents of concern.
- Eliminate, to the extent practicable and within the scope of this IRM, potential impacts to fish and wildlife resources associated with on-going discharges of Contaminants of Concern from the Site.

Conditions at the Site meet the criteria for a removal action under CERCLA, as documented in Section 300.415(b)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR Part 300 (NCP).

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1 This response action is a non-time-critical removal action under the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601-9675 (CERCLA).

2 An IRM is an activity that is necessary to address either emergency or non-emergency site conditions, which in the short-term, need to be undertaken to prevent, mitigate or remedy environmental damage or the consequences of environmental damage attributable to a site. An IRM is equivalent to a non-time critical removal under the CERCLA removal program pursuant to 40 C.F.R § 300. 415(b)(2).

3 Figures referenced in this document can be found in Appendix A, attached hereto.

4 An EE/CA is a study conducted as part of the removal process to collect necessary data to determine the type and extent of contamination at a site and evaluate response actions to address this contamination.

The Site is a subsite of the Onondaga Lake site, which is on the National Priorities List (NPL) [5]. There are no nationally significant or precedent-setting issues associated with this action.

The index in Appendix C, attached hereto, identifies the items that comprise the Administrative Record upon which the selection of the response action is based.

The New York State Department of Health was consulted on the planned response action and it concurs with the selected response action (see Appendix D, attached hereto).

## II. SITE CONDITIONS AND BACKGROUND

This Response Action Document (RAD) identifies the selected response action for the Site.[6]

### A. Site Description

#### 1. Background

The Wastebed B/Harbor Brook Site is located to the north and south of Interstate Route I-690 in the City of Syracuse and Town of Geddes, Onondaga County. It consists of Harbor Brook, the Lakeshore Area (including Wastebed B and the East Flume), the Penn-Can Property, the Railroad Area, and two areas of study (AOS #1 and AOS #2) east of Harbor Brook (see Figure 1). Wetland SYW-12, located north of Onondaga Creek, is being investigated under the Wastebed B/Harbor Brook Remedial Investigation/Feasibility Study (RI/FS).

Wastebed B is a former Solvay wastebed which received Solvay waste (generated by Allied Chemical Corporation operations) from approximately 1898 to 1926. Wastebed B covers approximately 28 acres and was engineered to receive waste by construction of a bulkhead into Onondaga Lake. The Penn-Can Property has historically been used for the production and storage of asphalt products. The Barrett Division of the Semet Solvay Company of Allied Chemical Corporation (the predecessor to Honeywell International, Inc.[“Honeywell”]) operated at the property from 1919 until approximately 1978. Barrett produced various asphalt

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5 On December 16, 1994, Onondaga Lake and its tributaries and the upland hazardous waste sites which have contributed or are contributing contamination to the lake (sub-sites) were added to EPA’s NPL. NYSDEC and EPA have, to date, organized the work for the Onondaga Lake site into 11 subsites (see Figure 1). The Wastebed B/Harbor Brook Site is one of the subsites at the Onondaga Lake NPL site.

6 The Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) ID number for the Onondaga Lake site is NYD986913580. The Wastebed B/Harbor Brook Site is being tracked in EPA’s CERCLIS data base as Operable Unit #18 of the Onondaga Lake NPL Site.

emulsions and some coal tar-based products used in road construction. The Railroad Area is situated to the south of the Penn-Can Property and is bounded to the north, south and east by railroad tracks.

In 2003, Honeywell and NYSDEC entered into an Order on Consent (Index #D7-0008-01-09) to conduct an IRM for Wastebed B/Harbor Brook. The IRM scope includes a vertical barrier to be installed along the Onondaga Lake shoreline perimeter of Wastebed B and upstream along the west bank of Harbor Brook with a groundwater collection system installed along the vertical barrier. The location of the barrier wall was to be determined as part of the IRM design. The location of the barrier wall to the west of Harbor Brook ("West Wall") is identified in the final design for the West Wall approved by NYSDEC on December 3, 2009. The remainder of the barrier wall, which is to extend from the eastern terminus of the West Wall, is referred to as the "East Wall." The East Wall area is the focus of this RAD.

## 2. Release or Threatened Release into the Environment of a Hazardous Substance or Pollutant or Contaminant

Based on investigations conducted at the Site, contaminants of concern identified for the Site include metals (antimony, arsenic, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, and zinc) benzene, toluene, ethylbenzene, and xylene (BTEX), chlorinated benzenes, naphthalene and other polycyclic aromatic hydrocarbons (PAHs), chlordane isomers, DDT and metabolites, dieldrin, and heptachlor/heptachlor epoxide phenolic compounds, polychlorinated biphenyls (PCBs), and polychlorinated dibenzo-dioxins/polychlorinated dibenzo-furans (PCDD/PCDFs).

An apparent source of coal tar residues, including NAPL, was identified in the eastern central portion of the Penn-Can Property. The coal tar residues are associated with the historic operations of the former paving facilities that were located on the central and eastern portions of the Penn-Can Property. These residues are likely present because of releases from the former Barrett Paving facility previously located on the property. Residues from this source area migrated into the subsurface and then migrated through coarse lenses of marl and along the top of low-permeability (confining) geologic units (*i.e.*, silt/clay and till) to depths of at least 20 feet (ft) below ground surface (bgs) in the area of lower Harbor Brook. As shown on Figure 2, these residues, including NAPL, appear to have migrated to the vicinity of Wastebed B and Harbor Brook. Groundwater has also been impacted in areas associated with the NAPL. Soils, sediments and surface water have been impacted in areas where shallow and intermediate groundwater discharge to surface water bodies (Harbor Brook, I-690 drainage ditch, and other Site-related ditches). The primary constituents associated with the NAPL include BTEX, and naphthalene and other PAHs.

The RI sampling results for the media that are the subject of this IRM are further discussed in Section 1.3 of the EE/CA[7]. This document can be found in the document repositories maintained in the NYSDEC Region 7 Syracuse, New York office, Onondaga County Public Library Syracuse Branch at the Galleries, Solvay Public Library, Atlantic States Legal Foundation, and the NYSDEC Albany, New York Central Office.

### 3. National Priorities List Status

This Site is part of the Onondaga Lake NPL site.

### 4. Maps, Pictures, and Other Graphic Representation

Figure 3 shows the area of the Wastebed B/Harbor Brook Site that is subject to the East Barrier Wall IRM.

## B. Other Actions to Date

### 1. Previous actions

Previous actions include sampling as part of the Wastebed B/Harbor Brook Preliminary Site Assessment, RI and IRM Pre-Design.

### 2. Current actions

The RI is ongoing. It is anticipated that a Feasibility Study (FS) and Proposed Plan for the Site will be released to the public in 2013.

# III. THREATS TO PUBLIC HEALTH, OR WELFARE, OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

A Streamlined Risk Evaluation (SRE) was prepared for the East Barrier Wall portion of the Wastebed B/Harbor Brook Site. The objective of the SRE was to provide a concise evaluation of potential risks to human and ecological receptors, assuming no removal or clean-up actions would be taken at the Site. The SRE relates to exposure to the contaminated Site media being addressed by this IRM and the contribution that these media may have made to unacceptable risks at the Site. A summary of the human health and ecological evaluations are provided below.

***Human Health Evaluation***

The intended future use of the portion of the Site affected by the IRM is for habitat enhancements, including wetland improvements. In addition, the area will also likely be used for

7 The draft RI Report is currently being revised.

recreational activities (*e.g*., biking along a bike trail). Current and future exposure scenarios in the area which were considered in the SRE include trespassers, construction workers, surveillance workers, and recreational visitors. Although unlikely, potential future industrial/commercial workers and residents were also considered in the SRE.

A conservative screening process was applied to identify constituents of potential concern (COPCs) in the surface soil, subsurface soil, sediment, groundwater, and surface water of the Site which may pose potential risk to current and future receptors. Some of these COPCs were also previously identified as risk drivers in the Lake based on consumption of fish. Specifically, the SRE identified arsenic, dioxins/furans (2,3,7,8-TCDD equivalents), mercury, and PCBs as COPCs for surface soils and sediments. Arsenic and mercury were also identified as COPCs for subsurface soil, groundwater and surface water. PCBs were also identified as COPCs for subsurface soil. In the baseline Human Health Risk Assessment (HHRA) for the Lake Bottom subsite, it was determined that arsenic, dioxins, mercury, and PCBs were the primary risk drivers associated with the consumption of fish from the Lake (TAMS, 2002a). EPA's acceptable risk thresholds were exceeded for both potential cancer and noncancer risks (*i.e*. potential cancer risks exceed the $10^{-4}$ to $10^{-6}$ risk range and potential noncancer risks exceeded a hazard index [HI] of 1).

***Ecological Evaluation***

Constituents of potential ecological concern (COPECs) for surface soil, sediment, surface water, and groundwater were identified by screening the maximum detected concentrations in Site media against recommended conservative ecologically-based screening criteria and/or guidance values.

Arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and zinc were among the surface soil COPECs. These COPECs were also identified in the Onondaga Lake Baseline Ecological Risk Assessment (BERA) as contaminants of concern (COCs) which were risk drivers associated with the potential for phytotoxic effects in soil.

Sediment COPECs included metals (antimony, arsenic, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, and zinc), benzene, ethylbenzene, toluene, xylenes, chlorobenzenes, PAHs, chlordane isomers, DDT and metabolites, dieldrin, and heptachlor/heptachlor epoxide. These COPECs were also identified as sediment COCs in the Onondaga Lake BERA. In addition, PCBs and dioxins/furans (2,3,7,8-TCDD equivalents) were detected in Site sediment and have been identified as sediment COCs in the Onondaga Lake BERA (TAMS, 2002b).

Surface water COPECs included metals (barium, copper, lead, manganese, mercury, zinc, and cyanide), chlorobenzenes, and bis(2-ethylhexyl)phthalate. These compounds also were identified as exceeding surface water criteria in the Onondaga Lake BERA. In addition, metals (antimony, arsenic, chromium, mercury, selenium, vanadium, and zinc), DDT and metabolites, endrin, PCBs, and dioxin/furans were identified in the Onondaga Lake BERA as surface water COCs impacting fish.

Groundwater COPECs including metals (barium, copper, lead, manganese, mercury, zinc, and cyanide), chlorobenzenes, and bis(2-ethylhexyl)phthalate were identified as surface water COCs in the Onondaga Lake BERA.

Key results of the Onondaga Lake BERA indicate that comparisons of measured tissue concentrations and modeled doses of chemicals to toxicity reference values show exceedances of hazard quotients for site-related chemicals throughout the range of the point estimates of risk. Site-specific sediment toxicity data indicate that sediments are toxic to benthic macroinvertebrates on both an acute (short-term) and chronic (long-term) basis. Many of the contaminants in the Lake are persistent and, therefore, the risks associated with these contaminants are unlikely to decrease significantly in the absence of remediation. On the basis of these comparisons, it has been determined through the Onondaga Lake BERA that all receptors of concern are at risk. Contaminants and stressors in the Lake have either impacted or potentially impacted every trophic level examined in the Onondaga Lake BERA (NYSDEC and EPA, 2005).

***Conclusions***

The identification of COPCs and COPECs indicate that there is a potential threat to human health and the environment. Many of these COPCs and COPECs are also identified as COCs and risk drivers in the Onondaga Lake HHRA and BERA. Contaminated sediment and surface water from the Site have the potential to directly impact sediment and surface water in the Lake. Surface soils in the proposed remediation area have the potential to enter the Lake and remain at the bottom as sediment. Contaminated subsurface soil and groundwater from the Site have the potential to impact Harbor Brook and the Lake via groundwater migration. Therefore, response actions at the portion of the Site being evaluated in the EE/CA are warranted based on the following factors acknowledged in 40 CFR Section 300.415 (b)(2):

- Potential threat of exposure to nearby human populations, animals, and the food chain from site-related contaminants,
- Unacceptable potential risks as a result of elevated levels of Site-related contaminants in soils, sediment, surface water, and groundwater, and
- Actual or potential contamination of sensitive ecosystems.

## IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this RAD, may present an imminent and substantial endangerment to public health, welfare, or the environment.

## V. SELECTED ACTIONS AND ESTIMATED COSTS

### A. Selected Actions

#### 1. Selected Action Description

The Selected Action includes installing a vertical barrier wall to the east of Lower Harbor Brook and the relocation and restoration of Lower Harbor Brook, and the construction of an upgradient groundwater collection system to the east of the existing Lower Harbor Brook Channel (west of the new channel). The vertical barrier will consist of a sealed-joint sheet pile wall that will be keyed into the silt and clay layer at approximate depths of between 25 ft and 40 ft bgs. The wall will be installed downgradient of the NAPL-impacted soils that have been identified in this area.

The existing culvert in the vicinity of the proposed barrier wall will be decommissioned and replaced by a new culvert, as shown on Figure 4. The groundwater collection system will include a shallow groundwater collection trench, passive wells (*e.g.*, wick drains) to collect groundwater from the intermediate unit, collection sumps and conveyance piping, and a monitoring system. Collected groundwater will be treated at the Willis Avenue groundwater treatment plant and discharged to the Onondaga County Metropolitan Wastewater Treatment Plant. The areas affected by the implementation of the Selected Action, including the new Harbor Brook channel and the adjacent wetlands, will be restored and/or mitigated, as appropriate, consistent with the Lake-wide habitat restoration plan. The permanent relocation and restoration of Lower Harbor Brook will be coordinated with remedial activities in the Outboard Area.

The final disposition of NAPL-impacted soils upgradient of the wall will be evaluated during the FS/Record of Decision for the Wastebed B/Harbor Brook Site.

The environmental benefits of the Selected Action may be enhanced by consideration, during the design, of technologies and practices that are sustainable in accordance with EPA Region 2's Clean and Green policy[8] and NYSDEC's Division of Environmental Remediation Program Policy *Green Remediation* (DER-31)[9]. This will include consideration of green remediation technologies and practices.

#### 2. Contribution to Remedial Performance

The IRM will be performed at the Wastebed B/Harbor Brook Site, which is part

8 See http://epa.gov/region2/superfund/green_remediation
9 See http://www.dec.ny.gov/docs/remediation_hudson_pdf/der31.pdf

of the Onondaga Lake NPL site. Installing a subsurface barrier wall and groundwater collection system to the east of Lower Harbor Brook and rerouting the Lower Harbor Brook channel as part of the IRM will facilitate the cleanup of Onondaga Lake and Harbor Brook via elimination or control of Wastebed B/Harbor Brook contaminant sources. It is anticipated that the Selected Action, along with the other Site IRMs (West Barrier Wall, Upper Harbor Brook, and the Outboard Area), will be incorporated into a final remedy for the Site.

## 3. Description of Alternative Technologies

Not applicable.

## 4. Engineering Evaluation/Cost Analysis

The EE/CA was prepared to analyze different removal actions, Harbor Brook channel locations, and barrier wall locations. The EE/CA was prepared in conformance with the guidelines in Guidance on Conducting Non-Time-Critical Removal Actions under CERCLA (EPA/450-R-93-057, August 1993).

A PRAD (NYSDEC and EPA, 2010), which identified EPA and NYSDEC's preferred response action and the basis for that preference, and the EE/CA were made available to the public in both the Administrative Record and information repositories maintained in the NYSDEC Syracuse and Albany, New York offices, the Onondaga County Public Library, 447 South Salina Street, Syracuse, New York, the Solvay Public Library, 615 Woods Road, Solvay, New York, and at the Atlantic States Legal Foundation, 658 West Onondaga Street, Syracuse, New York. The documents were also made available on NYSDEC's website at www.dec.ny.gov/chemical/37558.html. On December 27, 2010, a notice of availability for these documents was published in the Syracuse *Post Standard* and e-mailed to interested community members via NYSDEC's Onondaga Lake News Listserv. A public comment period was held from December 27, 2010 to February 10, 2011. On January 13, 2011, NYSDEC and EPA conducted a public meeting at the Martha Eddy Room in the Art and Home Center at the New York State Fairgrounds, to present the findings of the EE/CA and answer questions from the public about the Site and the response actions under consideration. Approximately forty people, consisting of residents, representatives of the media, representatives of Honeywell, and local government officials attended the public meeting. Public comments have been addressed in the Responsiveness Summary (see Appendix E, attached hereto).

## 5. Applicable or Relevant and Appropriate Requirements and Other Environmental Criteria

Applicable or Relevant and Appropriate Requirements (ARARs) and To-Be-Considered criteria (TBCs) related to this Selected Action will be complied with

during implementation of the Wastebed B/Harbor Brook East Barrier Wall IRM. The ARARs/TBCs include, but are not limited to:

- 6 NYCRR 701 - Classifications - Surface Waters and Ground Waters
- 6 NYCRR Part 703 - Class GA Groundwater Quality Standards
- NYS TOGS 1.1.1 – Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations
- 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives
- NYSDEC Technical Guidance for Screening Contaminated Sediment (1999)
- 6 NYCRR 663 - Freshwater Wetland Permit Requirements
- Clean Water Act Section 404, 33 CFR Parts 320 - 330
- Clean Water Act Section 404, 40 CFR Parts 230 – 231
- Executive Order 11990 - Protection of Wetlands
- Executive Order 11988 – Floodplain Management
- Policy on Flood Plains and Wetland Assessments for CERCLA Actions (OSWER Directive 9280.0-02)
- National Historic Preservation Act, 36 CFR 800- Preservation of Historic Properties Owned by a Federal Agency
- National Historic Preservation Act, 36 CFR Part 65 - National Historic Landmarks Program
- New York State Historic Preservation Act of 1980, 9 NYCRR Parts 426 – 428
- 33 U.S.C. 1341 - Clean Water Act Section 401, State Water Quality Certification Program
- 6 NYCRR 608 - Use and Protection Of Waters
- 16 USC 661 - Fish and Wildlife Coordination Act
- 33 CFR Parts 330 - Nationwide Permit Program
- 40 CFR Part 257 - Criteria for Classification of Solid Waste Disposal Facilities and Practices
- 6 NYCRR 360 - Solid Waste Management Facilities
- 29 CFR Part 1910.120 - Occupational Safety and Health Standards - Hazardous Waste Operations and Emergency Response
- 29 CFR Part 1926 - Safety and Health Regulations for Construction

### 6. Project Schedule

The remedial design is ongoing. It is expected that construction of the East Barrier Wall will commence in the Summer of 2011 and be completed in 2012.

## B. Estimated Costs

The estimated capital cost, annual O&M Site control costs, and present-worth cost for the Wastebed B/Harbor Brook East Barrier Wall IRM are presented below. The estimated present-worth cost is $7,154,000.

| Capital Cost | Annual O&M Cost | Present-Worth O&M Cost | Total Present-Worth Cost |
|---|---|---|---|
| $6,360,000 | $64,000 | $794,000 | $7,154,000 |

## VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

If the IRM were to be delayed or not taken, the Site will continue to pose a potential health risk to human health or the environment.

## VII. OUTSTANDING POLICY ISSUES

None.

## VIII. ENFORCEMENT

Pursuant to CERCLA, the current owner and operator of a facility from which there is a release of hazardous substances which causes the incurrence of response costs shall be liable for the costs incurred by the United States. CERCLA also provides that persons who previously owned or operated a facility at the time of disposal of hazardous substances are similarly liable. NYSDEC anticipates that the response action will be implemented and funded by Honeywell, a party which has been identified as potentially liable regarding the Site.

## IX. AUTHORIZATION

Conditions at the Site meet the NCP Section 300.415(b)(2) criteria for a removal action.

This decision document, which selects a response action for the Wastebed B/Harbor Brook East

Barrier Wall IRM, located in the City of Syracuse, Onondaga County, New York, was developed in accordance with CERCLA and is not inconsistent with the NCP. The decision documented in this RAD is based on the Administrative Record for the IRM.

NYSDEC and EPA's selected response action includes installing a subsurface barrier wall and groundwater collection system to the east of Lower Harbor Brook and rerouting the Lower Harbor Brook channel. This response action will be protective of human health and the environment, both in the short and long-term, and will meet federal and state ARARs/TBCs. The volume of contaminants will be reduced through collection and treatment of the groundwater and is readily implementable. The response action includes a barrier wall and groundwater collection system that will be both a physical and hydraulic containment system for the NAPL, contaminated groundwater, and contaminated soil upgradient of the barrier wall. The barrier wall will contain the entire NAPL-impacted area.

As discussed in the Proposed Response Action Document (see Appendix E-1), NYSDEC and EPA have determined that the Selected Action provides the best balance of tradeoffs among the response actions with respect to the three evaluation criteria (effectiveness, implementability, and cost). NYSDEC and EPA also believe that the selected response action will be protective of human health and the environment, will comply with ARARs/TBCs to the extent practicable, will be cost-effective, and will utilize permanent solutions and response action treatment technologies or resource recovery technologies to the maximum extent practicable.

5/12/11

Dale A. Desnoyers, Director
Division of Environmental Remediation
New York State Department of Environmental Conservation

5/12/11

Date

Walter E. Mugdan, Director
Emergency and Remedial Response Division
U.S. Environmental Protection Agency

***References:***

New York State Department of Conservation and United States Environmental Protection Agency. 2005. *Onondaga Lake Bottom Subsite of the Onondaga Lake Superfund Site.* New York State Department of Environmental Conservation, Albany, New York and United States Environmental Protection Agency, New York, New York. July.

New York State Department of Conservation and United States Environmental Protection Agency. 2010. *Wastebed B/Harbor Brook Interim Remedial Measure Proposed Response Action Document*. New York State Department of Environmental Conservation, Albany, New York and United States Environmental Protection Agency, New York, New York. December.

O'Brien & Gere. 2010. *Engineering Evaluation/Cost Analysis (EE/CA), Harbor Brook Interim Remedial Measure.* O'Brien & Gere Engineers, Inc., Syracuse, New York. April.

TAMS. 2002a. *Onondaga Lake Human Health Risk Assessment*. TAMS, New York, New York and YEC, Valley Cottage, New York. December.

TAMS. 2002b. *Onondaga Lake Baseline Ecological Risk Assessment*. TAMS, New York, New York and YEC, Valley Cottage, New York. December.

# APPENDIX A

## Figures

## APPENDIX B

## Tables

**Table 1**
**Wastebed B/Harbor Brook East Barrier Wall IRM**
**Selected Action Cost Summary**

| Install Barrier Wall to East of Lower Harbor Brook and Reroute Lower Harbor Brook Channel | | |
|---|---|---|
| | Capital Cost | $6,360,000 |
| | Annual O&M Costs | $64,000 |
| | Present-Worth O&M Cost | $794,000 |
| | Total Present Worth Cost | $7,154,000 |

Notes: From Wastebed B/Harbor Brook Engineering Evaluation/Cost Analysis (O'Brien& Gere, 2010). Feasibility Study level accuracy (+50% / -30%).

Capital cost included the following markups: 28% indirect construction costs, 35% contingency, and 25% engineering, design, and construction oversight.

## APPENDIX C

## Administrative Record Index

**Administrative Record Index**
**Wastebed B/Harbor Brook East Barrier Wall IRM**

| | |
|---|---|
| Documents Related to IRM Activities | Wastebed B/Harbor Brook IRM Consent Order (December 2003)<br><br>Wastebed B/Harbor Brook IRM Work Plan (July 2004)<br><br>Wastebed B/Harbor Brook IRM Engineering Evaluation/Cost Analysis (April 2010)<br><br>Proposed Response Action Document for the Wastebed B/Harbor Brook Site IRM (December 2010) |
| Documents in Support of Streamlined Risk Evaluation | Onondaga Lake Human Health Risk Assessment. (December 2002)<br><br>Onondaga Lake Baseline Ecological Risk Assessment. (December 2002)<br><br>Onondaga Lake Bottom Subsite/Onondaga Lake Superfuned Site Record of Decision. (July 2005)<br><br>Wastebed B/Harbor Brook Site Human Health Risk Assessment. (October 2009) |

# APPENDIX D

## NYSDOH Letter of Concurrence

# APPENDIX E

## Responsiveness Summary

**RESPONSIVENESS SUMMARY**
Wastebed B/Harbor Brook East Barrier Wall IRM

## INTRODUCTION

This Responsiveness Summary provides a summary of citizens' comments and concerns received during the public comment period related to the Wastebed B/Harbor Brook East Barrier Wall IRM and the responses of the New York State Department of Environmental Conservation (NYSDEC) and U.S. Environmental Protection Agency (EPA). All comments summarized in this document have been considered in NYSDEC and EPA's final decision in the selection of a response action to address the contamination at the Site.

## SUMMARY OF COMMUNITY RELATIONS ACTIVITIES

The December 2010 Proposed Response Action Document (PRAD), which identified the response action preferred by NYSDEC and EPA, and the basis for that preference, and the Engineering Evaluation/Cost Analysis (EE/CA) were made available to the public in both the Administrative Record and information repositories maintained in the NYSDEC's Albany, New York and Region 7 Syracuse, New York offices and at local information repositories at the Onondaga County Public Library, 447 South Salina Street, Syracuse, New York, the Solvay Public Library, 615 Woods Road, Solvay, New York, and at the Atlantic States Legal Foundation, 658 West Onondaga Street, Syracuse, New York. The documents were also made available on NYSDEC's website at www.dec.ny.gov/chemical/37558.html. On December 27, 2010, a notice of availability for these documents was published in the *Post Standard* and e-mailed to interested community members via NYSDEC's Onondaga Lake News Listserv. A public comment period was held from December 27, 2010 to February 10, 2011. On January 13, 2011, NYSDEC conducted a public meeting at the Martha Eddy Room in the Art and Home Center at the New York State Fairgrounds, to present the findings of the EE/CA and answer questions from the public about the site and the response actions under consideration. Approximately forty people, consisting of residents, representatives of the media, representatives of Honeywell, and local government officials, attended the public meeting.

## OVERVIEW

The public supports NYSDEC and EPA's selected IRM, which includes installing a subsurface barrier wall and groundwater collection system to the east of Lower Harbor Brook and rerouting the Lower Harbor Brook channel. Responses to the comments received at the public meeting and in writing during the public comment period are summarized below. Attached to this Responsiveness Summary are the following Appendices:

Appendix E-1 - Proposed Response Action Document (December 2010)
Appendix E-2 - Public Notice published in the *Post Standard* on December 27, 2010

## SUMMARY OF COMMENTS AND RESPONSES

A summary of the comments received at the January 13, 2011 public meeting, as well as the EPA, NYSDEC, and New York State Department of Health's responses to them, are provided below:

*Comment #1:* A commenter asked if there is contamination in Harbor Brook upstream of the area that will be addressed by the IRM.

*Response #1:* Within the Wastebed B/Harbor Brook Site boundary but upstream of the area that will be addressed by the East Barrier Wall IRM, there is site-related contamination present. Specifically, non-aqueous phase liquids (NAPL) are present at the Site and have impacted site groundwater and soils. NAPL and contaminated groundwater have also impacted sediments in portions of Harbor Brook and its tributaries (upstream of the East Wall area). As part of the IRM, these contaminated sediments will be remediated prior to or concurrent with implementation of the response action in Lower Harbor Brook. Upstream of the site boundary contaminant levels are similar to background levels and are not considered a concern for the Site.

*Comment #2:* A commenter asked if the NAPL that is present on the Site could be treated.

*Response #2:* A Feasibility Study, which evaluates options to address remaining contamination at the Wastebed B/Harbor Brook site, is underway. The study will include an evaluation of potential remedial process options and technologies to address NAPL impacted media upgradient of the barrier wall.

*Comment #3:* A commenter requested that the alternatives that were considered in the EE/CA be identified during the public meeting.

*Response #3:* There were three alternatives considered: a no-action alternative (Response Action 1); installing the barrier wall and groundwater collection system west of Lower Harbor Brook (Response Action 2); and installing the barrier wall and groundwater collection system east of Lower Harbor Brook and rerouting the Lower Harbor Brook Channel (Response Action 3). Response Action 3 was selected following an analysis of the alternatives that determined that the selected action not only costs less than Response Action 2, but it would be the most effective action in meeting the objectives of the IRM, since it would contain the entire NAPL-impacted area.

*Comment #4:* A commenter asked that the contaminants of concern (COCs) in the outboard area be identified. The commenter also asked about the schedule for the Outboard Area IRM.

*Response #4:* Although not part of the East Barrier Wall IRM, the COCs for the outboard area are the same for the other areas of the Site: benzene, toluene, ethylbenzene, and xylene (BTEX), chlorinated benzenes, naphthalene and other polycyclic aromatic hydrocarbons (PAHs), phenolic

compounds, PCBs, mercury, and polychlorinated dibenzo-dioxins/polychlorinated dibenzo-furans (PCDD/PCDFs).

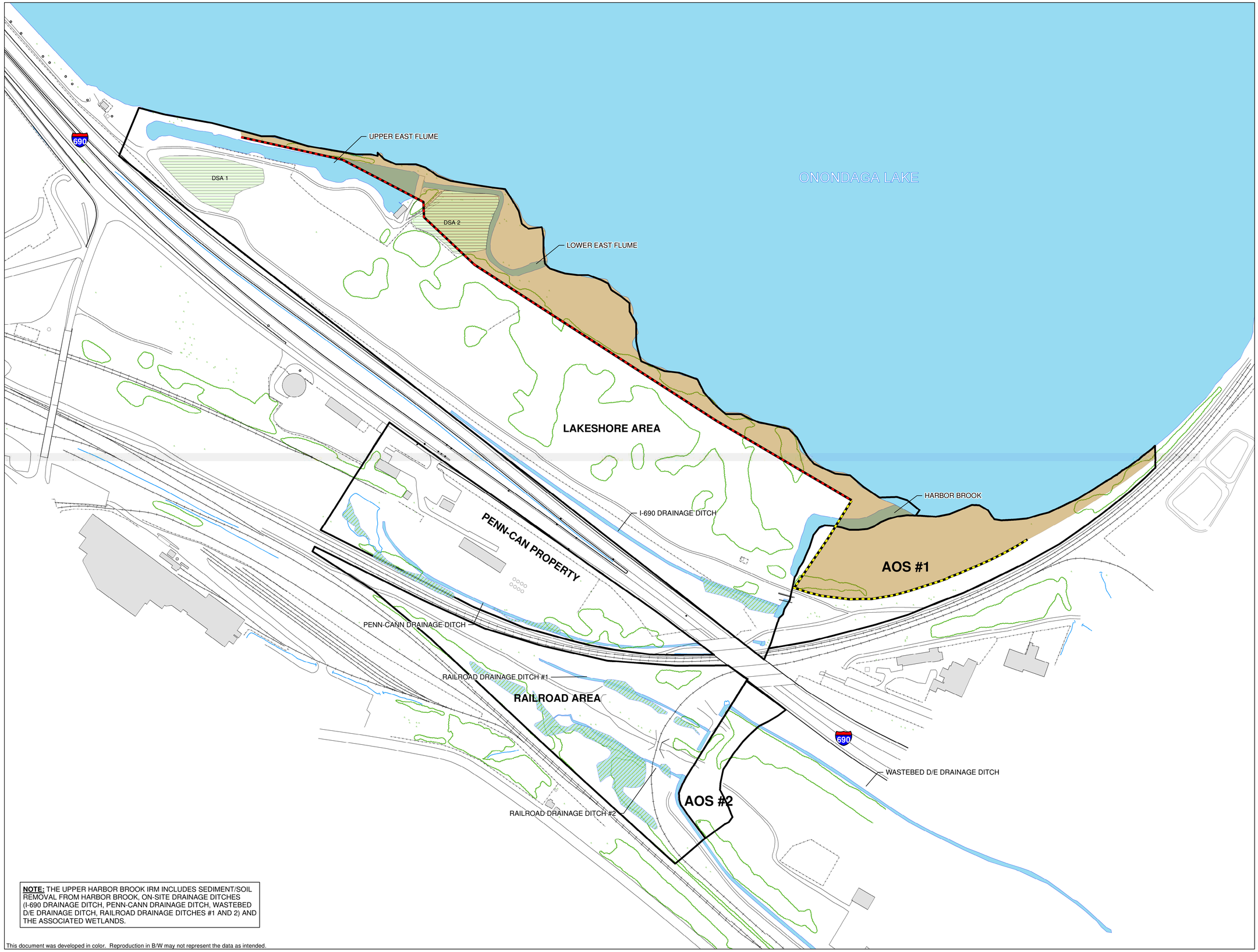
A separate EE/CA and PRAD for the Outboard Area IRM is anticipated to be released in the Summer of 2011.

*Comment #5:* A commenter asked about the schedule for this IRM and how it will be coordinated with the Lake bottom dredging and other upland sites.

*Response #5:* Construction of the East Barrier Wall IRM is anticipated to start in the Summer of 2011 and be completed in 2012. This IRM and other Site IRMs that will address the ongoing significant release of contaminants to Onondaga Lake and Harbor Brook are scheduled to be completed prior to commencing Lake dredging in close proximity of the Site.

**Appendix E-1**
**December 2010 Proposed Response Action Document**

**Appendix E-2**
**December 27, 2010 Public Notice**

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## LEGEND

- DELINEATED WETLAND
- HARBOR BROOK SITE
- DREDGE SPOIL AREA
- OUTBOARD AREA

**BARRIER WALL ALIGNMENT**

- EAST WALL
- WEST WALL

**NOTE:** THE UPPER HARBOR BROOK IRM INCLUDES SEDIMENT/SOIL REMOVAL FROM HARBOR BROOK, ON-SITE DRAINAGE DITCHES (I-690 DRAINAGE DITCH, PENN-CANN DRAINAGE DITCH, WASTEBED D/E DRAINAGE DITCH, RAILROAD DRAINAGE DITCHES #1 AND 2) AND THE ASSOCIATED WETLANDS.

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**FIGURE 1**

WASTEBED B/HARBOR BROOK
GEDDES AND SYRACUSE, NEW YORK

# WASTEBED B / HARBOR BROOK IRMs

0 175 350
Feet