RECORD OF DECISION

Special Area 13 Dredge Spoil Disposal Area
State Superfund Project
Moreau, Saratoga County
Site No. 546041
December 2012

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

DECLARATION STATEMENT - RECORD OF DECISION

Special Area 13 Dredge Spoil Disposal Area
State Superfund Project
Moreau, Saratoga County
Site No. 546041
December 2012

Statement of Purpose and Basis

This document presents the remedy for the Special Area 13 Dredge Spoil Disposal Area site, a Class 2 inactive hazardous waste disposal site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375, and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Special Area 13 Dredge Spoil Disposal Area site and the public's input to the proposed remedy presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Remedial Design

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

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gas and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which 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. Maintain the existing isolation cap/cover, which has been constructed, over the main dredge spoil disposal area at the Special Area 13 site to satisfy Toxic Substances Control Act requirements imposed by the United States Environmental Protection Agency.

3. Maintain the isolation soil covers that have been established beyond the margins of the main dredge spoil disposal area that are part of the TSCA-approved dredge spoil containment structure. These areas include those portions of the first fill area (NYSDEC Boat Launch in Moreau) that were subject to the installation of a soil cover and those areas within the second fill area at the northern extent of the site that are adequately covered by materials placed in association with the construction of General Electric's Work Support Marina Facility for the Hudson River PCBs Site remedial dredging project.

4. Installation of a cover system where current surficial PCB concentrations exceed 1 part per million for the commercial portions of the site (the main dredge spoil disposal area, fill area 1, and fill area 2). These areas include all portions of the Special Area 13 site where PCB-contaminated dredge spoils are exposed at the surface - and - that are not covered by an adequate cover at the present time - but excludes all of the residential use portion of the site. This currently includes two small areas adjacent to the river-side of the main dredge spoil disposal area, a small flood plain soil area south and east of the southeastern margin of the main dredge spoil disposal area, and those areas within the second fill area at the northern extent of the site that are outside of the adequate cover materials placed in association with the construction of General Electric's Work Support Marina Facility for the Hudson River PCBs Site remedial dredging project.

5. For the commercial portions of the site that are not covered by an adequate cover at the present time - a cover will be required to allow for commercial use of these areas of the site. Applicable cover will consist either of the structures such as buildings, pavement, sidewalks comprising any site development or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for commercial use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

6. For the residential use portion of the site and those areas immediately adjacent to it, removal and off-site disposal of contaminated soils to meet the residential use SCO of 1 ppm total PCBs in Part 375. This area adjoins the capped landfill cell to the west at the southern end and consists of shallow depression fill area which is oblate in shape with a maximum width of about 220 feet and a long axis length of around 500 feet that covers nearly 2.0 acres.

Approximately 17,500 cubic yards of soil will be removed. Clean fill meeting the requirements of 6 NYCRR Part 375-6.8 will be brought in to replace the excavated soil and establish the

designed grades at the site.

7. Imposition of an institutional control in the form of an environmental easement or an environmental notice for the controlled property that:

(a) requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8(h)(3);
(b) allows the use and development of the controlled property for residential (parcels zoned residential) or commercial (parcels not zoned residential) use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
(c) restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH;
(d) prohibits agriculture or vegetable gardens on the portions of the controlled property which were subject to remediation; and
(e) requires compliance with the Department approved Site Management Plan.

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

(a) an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

    Institutional Controls: The Environmental Easements and Environmental Notices discussed in Paragraph 7 above.

    Engineering Controls: The existing isolation cap/cover discussed in Paragraph 2 above, the existing isolation covers discussed in Paragraph 3 above, and the soil covers discussed in Paragraph 4 and 5 above.

    This plan includes, but may not be limited to: (i) Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination; (ii) descriptions of the provisions of the environmental easement including any land use and/or groundwater use restrictions; (iii) provisions for the management and inspection of the identified engineering controls; (iv) maintaining site access controls and Department notification; and (v) the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls; and

(b) a Monitoring Plan to include, but not be limited to: (i) monitoring of groundwater to assess the performance and effectiveness of the remedy; and (ii) a schedule of monitoring and frequency of submittals to the Department.

New York State Department of Health Acceptance

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

Declaration

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

December 18,2012

Date

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

RECORD OF DECISION

Special Area 13 Dredge Spoil Disposal Area
Moreau, Saratoga County
Site No. 546041
December 2012

SECTION 1: SUMMARY AND PURPOSE

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

The New York State Inactive Hazardous Waste Disposal Site Remedial Program (also known as the State Superfund Program) is an enforcement program, the mission of which is to identify and characterize suspected inactive hazardous waste disposal sites and to investigate and remediate those sites found to pose a significant threat to public health and environment.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

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

New York State Department of Environmental Conservation
Attn: William Shaw
625 Broadway
Albany, NY 12233
Phone: (518) 402-9676

USEPA - Hudson River PCB Project Field Office
421 Lower Main Street
Hudson Falls, NY 12839
Phone: (518) 747-4389

Town of Moreau Office Building
61 Hudson Street
South Glens Falls, NY 12803
Phone: (518) 792-1030

A public meeting was also conducted. At the meeting, the findings of the Remedial Investigation (RI) and the Feasibility Study (FS) were presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period was held, during which verbal or written comments were accepted on the proposed remedy.

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

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Location:

The Special Area 13 (Dredge Spoil Disposal Area) site is located along the western shore of the Hudson River in the Town of Moreau (Saratoga County), about 1,200 feet down-river (south) of Champlain Canal Lock 7 and near Buoy 219 that marks the western margin of the navigation channel of the Champlain Canal within the Hudson River.

Site Features:

The 25.3 acre site consists of four distinct areas. The main dredge spoil disposal area consists of a closed and covered basin and earthen containment berm complex built by the New York State Department of Transportation (NYSDOT) to dewater and hold sediment removed from the Champlain Canal/Hudson River navigation channel south of Canal Lock 7 and from around Rogers Island. In its present closed and covered state, this dredge spoil disposal structure ranges between 175 and 300 feet wide and extends about 1,750 feet along the shore of the Hudson River

with a foot-print covering nearly 14 acres. PCB-contaminated dredge spoils from the main dredge spoil disposal area were graded out onto three adjoining areas prior to its closure. The first fill area adjoins the main dredge spoil disposal area to the north and consists of a closed and covered shallow depression fill area which ranges between 200 and 250 feet wide and extends about 550 feet along former County Route 29 with a foot-print covering nearly 3 acres. This area was covered with a soil cover (consisting of filter fabric, a marker layer, one foot of clean soil, and a vegetated surface) to limit the potential for human exposure to the dredge spoil found here. A second fill area is located in a shallow depression further north beyond the first fill area and is about 550 feet wide and about 500 feet long with a foot-print covering around 6.3 acres. A large portion of the second fill area is covered with clean fill and pavement placed during the construction of a Work Support Marina Facility for the Hudson River PCBs Site remedial dredging project, however the remaining portions of this area are not covered at present. The third fill area adjoins the main dredge spoil disposal area to the west at the southern end and consists of another shallow depression fill area which is oblate in shape with a maximum width of about 220 feet and a long axis length of around 500 feet that covers nearly 2.0 acres on a parcel classified for residential use. This residential use property is occupied by a single dwelling and a few out-buildings. There is a private well on the property that draws water from the shallow overburden aquifer.

Current Zoning/Use:

The main dredge spoil disposal area at the site is the location of a Toxic Substances Control Act approved dredge spoil containment structure and is currently zoned for manufacturing. The first fill area is zoned as a marina and is being used as a State-owned recreational boat launch site. The second fill area is zoned Hudson River Regulatory and is now the location of an active Work Support Marina Facility for the Hudson River PCBs Site remedial dredging project. The third fill area is zoned for general manufacturing and industrial distribution, but retains a property use classification as a single family residence - property used for human habitation, in the Tax Records for the Town of Moreau in Saratoga County. This residential use property appears to be unoccupied.

Historic Use:

A series of unlined, transient settling basin and baffle systems were constructed at the main part of this site by the NYSDOT and were used to dewater and hold dredge spoil material removed from the Champlain Canal/Hudson River navigation channel south of Champlain Canal Lock 7 in conjunction with routine and emergency maintenance dredging operations of the Canal System. These settling basin systems were initially constructed by excavating the soils across this area slightly and grading the displaced materials outward and upward to form the various containment berms. During subsequent maintenance operations, it is likely that some of the older dredge spoil materials were re-graded in order to deepen or modify the established settling basin to accommodate the disposal of additional dredge spoil materials. During one or more of these re-grading activities in the 1970s, it is believed that spoils from the basin and containment berm complex were pushed outward and into the three identified shallow depression areas adjacent to the main disposal area as fill material.

Available NYSDOT records report that the Special Area 13 dredge spoil disposal area was used between 1952 and 1979 for the disposal of up to 802,000 cubic yards of dredge spoil material during canal maintenance operations. In 1979, it was covered with between six and 24-inches of sand and seeded. Monitoring wells were also installed and a monitoring program was established. These actions were taken to comply with Toxic Substances Control Act (TSCA) requirements imposed by the USEPA when they issued an approval for the interim storage/disposal of PCB laden material at this site in September of 1979. In 1991, a TSCA-approved clay cover/cap was added over the existing 'standard turf' cover. The new cover was constructed by the NYSDOT and the earlier monitoring wells were replaced. The new cover added a six-inch to five-foot thick layer of clay over the entire closed main structure. The combination of the two cover layers put the top surface of the potentially contaminated dredge spoil materials at depths ranging between about one-foot and nearly five-feet below the ground surface. Following the installation of the TSCA-approved cap, subsequent monitoring demonstrated that PCB levels in the local groundwater diminished such that PCBs were no longer detected in the groundwater. Personnel from the NYSDOT inspect and sample the groundwater monitoring wells and maintain the site under the TSCA program. The latest TSCA program inspection occurred on May 20, 2010.

The first fill area adjoining the main disposal area to the north has been closed and covered and now serves as part of a State-owned public recreational boat launch site. As mentioned previously, a large portion of the second fill area is covered with clean fill and pavement placed during the construction of a Work Support Marina Facility for the Hudson River PCBs Site remedial dredging project, however the remaining portions of this area are not covered at present.. The third fill area on the residential use property that adjoins the main disposal site to the west along the southern margin has not been covered.

Site Geology and Hydrogeology:

The geologic setting for the Special Area 13 site has a varied mixture of silts, sands, gravel, and clay and that were placed over bedrock by natural processes and a varied mixture of sand, silt, shale fragments, and debris that were placed over the earlier lacustrine and alluvial deposits by unnatural processes a relatively short time ago.

The overburden materials in the natural setting are located in most areas outside of the basin and berm system at the site. The overall thickness of these native soils at Special Area 13 is not known, but earlier work by others report similar undisturbed silts, sands, gravel, and clay to a depth about 30 feet lower than the bottom of the Special Area 13 dredge spoil disposal structure.

The overburden materials in the unnatural setting are best described as mechanically reworked native soil mixed with dredge spoil materials in the closed and covered dredge spoil disposal structure. The dredge spoils are typically dark gray to black, fine to medium sands with varying amounts of silt, black shale fragments, pebble gravel, brick fragments, coal fragments, fused slag, glass shards, and wood debris. Dredge spoils vary in thickness from a few inches to nearly 13.5 feet within the closed and covered main disposal area, from a few inches to 6.7 feet within the closed and covered first fill area, from a few inches to 6.5 feet within the second fill area, and from a few inches to about 7 feet within the third fill area.

Groundwater flow in this area typically moves away from the slight topographic rise on the west and toward the Hudson River in a general east-southeast direction.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

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

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

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The PRPs for the site, documented to date, include:

NYS Department of Transportation

General Electric Company

The PRPs for the site declined to implement a remedial program when requested by the Department. Now that the remedy has been selected, the PRPs will again be contacted to assume responsibility for the remedial program. If an agreement cannot be reached with the PRPs, the Department will evaluate the site for further action. The PRPs are subject to legal actions by the state for recovery of all response costs NYSDEC has incurred. NYSDOT is required to continue all operation, maintenance and monitoring activities at those portions of this site that are governed under the TSCA authorization for the Special Area 13 Dredge Spoil Disposal Area.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

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

The following general activities are conducted during an RI:

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

The analytical data collected on this site includes data for:

- groundwater
- surface water
- drinking water
- soil

6.1.1: Standards, Criteria, and Guidance (SCGs)

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

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

6.1.2: RI Results

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

Polychlorinated Biphenyls (PCBs)

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

- soil

6.2: Interim Remedial Measures

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

There were no IRMs performed at this site during the RI.

6.3: Summary of Environmental Assessment

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

The Fish and Wildlife Resources Impact Analysis (FWRIA) for OU 01, which is included in the RI Report, presents a detailed discussion of the existing and potential impacts from the site to fish and wildlife receptors.

Based upon investigations conducted to date, the primary contaminants of concern for the proposed Special Area 13 site are PCBs in soils. Groundwater monitoring data demonstrates that groundwater is not being impacted by this site.

Main Dredge Spoil Disposal Area (Closed and Covered)

PCBs were found in many of the subsurface soil samples collected below the established cover at concentrations up to 49 ppm which exceeds the soil cleanup objectives (SCOs) for unrestricted use (0.1 ppm), residential use (1 ppm), commercial use (1 ppm), and industrial use (25 ppm).

First Fill Area - State-owned Recreational Boat Launch (Closed and Covered)

PCBs were found at concentrations up to 12 ppm in soil samples collected at locations that are now beneath the established cover. These PCB concentrations exceed the SCOs for unrestricted use (0.1 ppm), residential use (1 ppm), and commercial use (1 ppm).

Second Fill Area - Land East of the Moreau Dredge Spoil Disposal Area (Partially Covered)

PCBs were found in many of the soil samples collected at locations below the established cover at concentrations up to 25 ppm which exceeds the SCOs for unrestricted use (0.1 ppm), residential use (1 ppm), and commercial use (1 ppm).

Third Fill Area - Residential Use Property

PCBs were found in many of the soil samples collected from all parts of the third fill area at concentrations up to 30 ppm which exceeds the SCOs for unrestricted use (0.1 ppm), residential use (1 ppm), commercial use (1 ppm), and restricted industrial use (25 ppm).

Special Resources Impacted/Threatened:

A Fish and Wildlife Impact Analysis was conducted which concluded that environmental contamination attributable to the dredge spoil materials at the site poses little or no risk to communities of terrestrial plants, invertebrates in soil, or carnivorous birds and mammals.

6.4: Summary of Human Exposure Pathways

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

People will not come in contact with contamination unless they dig below the cover layer. In areas where dredge spoils are present at the surface beyond the fenced enclosure, people could come in contact with contamination by digging or otherwise disturbing the soil below the vegetated layer.

6.5: Summary of the Remediation Objectives

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

The remedial action objectives for this site are:

Groundwater

RAOs for Environmental Protection

- Prevent the discharge of contaminants to surface water.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

RAOs for Environmental Protection

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

SECTION 7: SUMMARY OF THE SELECTED REMEDY

To be selected the remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. The remedy

must also attain the remedial action objectives identified for the site, which are presented in Section 6.5. Potential remedial alternatives for the Site were identified, screened and evaluated in the FS Report.

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

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

The selected remedy is referred to as the No Further Action - Soil Cover - Soil Removal - Site Management remedy.

The estimated present worth cost to implement the remedy is $5,391,000. The cost to construct the remedy is estimated to be $4,866,000 and the estimated average annual cost is $36,000.

The elements of the selected remedy are as follows:

1. Remedial Design

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

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gas and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which 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. Maintain the existing isolation cap/cover, which has been constructed, over the main dredge spoil disposal area at the Special Area 13 site to satisfy Toxic Substances Control Act requirements imposed by the United States Environmental Protection Agency.

3. Maintain the isolation soil covers that have been established beyond the margins of the main dredge spoil disposal area that are part of the TSCA-approved dredge spoil containment structure. These areas include those portions of the first fill area (NYSDEC Boat Launch in Moreau) that were subject to the installation of a soil cover and those areas within the second fill area at the northern extent of the site that are adequately covered by materials placed in association with the construction of General Electric's Work Support Marina Facility for the Hudson River PCBs Site remedial dredging project.

4. Installation of a cover system where current surficial PCB concentrations exceed 1 part per million for the commercial portions of the site (the main dredge spoil disposal area, fill area 1, and fill area 2). These areas include all portions of the Special Area 13 site where PCB-contaminated dredge spoils are exposed at the surface - and - that are not covered by an adequate cover at the present time - but excludes all of the residential use portion of the site. This currently includes two small areas adjacent to the river-side of the main dredge spoil disposal area, a small flood plain soil area south and east of the southeastern margin of the main dredge spoil disposal area, and those areas within the second fill area at the northern extent of the site that are outside of the adequate cover materials placed in association with the construction of General Electric's Work Support Marina Facility for the Hudson River PCBs Site remedial dredging project.

5. For the commercial portions of the site that are not covered by an adequate cover at the present time - a cover will be required to allow for commercial use of these areas of the site. Applicable cover will consist either of the structures such as buildings, pavement, sidewalks comprising any site development or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for commercial use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

6. For the residential use portion of the site and those areas immediately adjacent to it, removal and off-site disposal of contaminated soils to meet the residential use SCO of 1 ppm total PCBs in Part 375. This area adjoins the capped landfill cell to the west at the southern end and consists of shallow depression fill area which is oblate in shape with a maximum width of about 220 feet and a long axis length of around 500 feet that covers nearly 2.0 acres.

Approximately 17,500 cubic yards of soil will be removed. Clean fill meeting the requirements of 6 NYCRR Part 375-6.8 will be brought in to replace the excavated soil and establish the designed grades at the site.

7. Imposition of an institutional control in the form of an environmental easement or an environmental notice for the controlled property that:

(a) requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8(h)(3);

(b) allows the use and development of the controlled property for residential (parcels zoned residential) or commercial (parcels not zoned residential) use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
(c) restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH;
(d) prohibits agriculture or vegetable gardens on the portions of the controlled property which were subject to remediation; and
(e) requires compliance with the Department approved Site Management Plan.

8. A Site Management Plan is required, which includes the following:
(a) an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easements and Environmental Notices discussed in Paragraph 7 above.

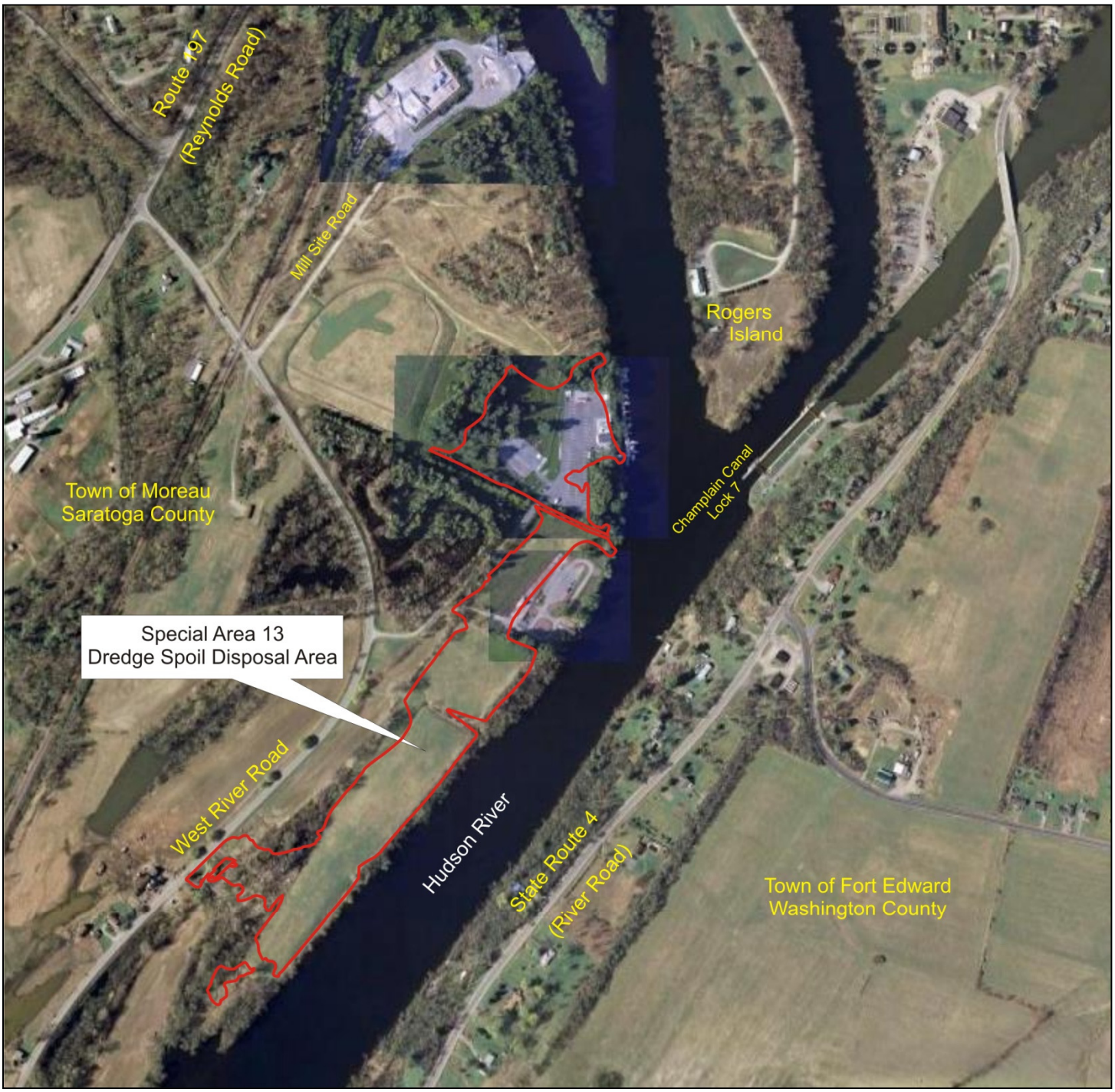
Engineering Controls: The existing isolation cap/cover discussed in Paragraph 2 above, the existing isolation covers discussed in Paragraph 3 above, and the soil covers discussed in Paragraph 4 and 5 above.

This plan includes, but may not be limited to: (i) Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination; (ii) descriptions of the provisions of the environmental easement including any land use and/or groundwater use restrictions; (iii) provisions for the management and inspection of the identified engineering controls; (iv) maintaining site access controls and Department notification; and (v) the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls; and

(b) a Monitoring Plan to include, but not be limited to: (i) monitoring of groundwater to assess the performance and effectiveness of the remedy; and (ii) a schedule of monitoring and frequency of submittals to the Department.

Figure 1 - Location Map

Special Area 13 Dredge Spoil Disposal Area
Record of Decision
December 2012



0 100 200 300 400 500 1000 1500 2000

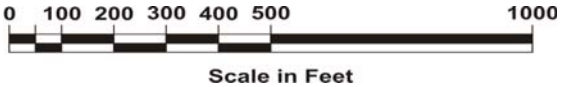
Scale in Feet

N
W E
S

Aerial Imagery extracted from Google Earth and Microsoft's Bing Maps.

Figure 2
Remedial Findings and Selected Remedy

Special Area 13 Dredge Spoil Disposal Area
Record of Decision
December 2012



Excerpt from the February 2012
"Remedial Investigation Report for the Special Area 13 Dredge Spoil Disposal Area"

RECORD OF DECISION

Exhibits A through D

Special Area 13 Dredge Spoil Disposal Area
State Superfund Project
Town of Moreau, Saratoga County
Site No. 546041
December 2012

Exhibit A

Nature and Extent of Contamination

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

For each medium, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. The contaminants are arranged into one category; polychlorinated biphenyls (PCBs. For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 6.1.1 are also presented.

Waste/Source Areas

As described in the RI report, waste/source materials were identified at the site which were the original source of PCB at the site.

Wastes are defined in 6 NYCRR Part 375-1.2 (aw) and include solid, industrial and/or hazardous wastes. Source Areas are defined in 6 NYCRR Part 375 (au). Source areas are areas of concern at a site were substantial quantities of contaminants are found which can migrate and release significant levels of contaminants to another environmental medium. Wastes and Source areas that were identified at the site include all areas used by the NYSDOT to dispose of nearly 802,000 cubic yards of dewatered dredge spoil materials that were removed from the Champlain Canal/Hudson River navigation channel during routine and emergency maintenance dredging operations between 1952 and 1979. These areas include the unlined settling basins of the main dredge spoil disposal area (now part of the TSCA-approved dredge spoil containment structure at the site) and three nearby shallow depression areas that received dredge spoil materials from the main disposal area as fill during re-grading operations in the 1970s. The first of these fill areas is adjacent to the main dredge spoil disposal area to the north, the second fill area is at the northern extent of the site beyond the first fill area, and the third fill area is located on the residential use property that adjoins the main dredge spoil disposal site to the west along the southern margin of the site. Sampling has confirmed that the dredge spoil materials placed in the main disposal area and the identified fill areas of site are contaminated with PCBs.

The waste/source areas identified will be addressed in the remedy selection process.

Groundwater

Four rounds of groundwater samples were collected from six new monitoring wells installed at the site and from five existing monitoring wells located around the cell. PCBs were not detected in groundwater collected from the 11 on-site monitoring wells during the four sampling rounds.

Table 1 - Groundwater

Detected Constituents	Concentration Range (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
Pesticides/PCBs			
Total PCB	ND	0.09	(No exceedances)

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

No site-related groundwater contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for groundwater.

Soil

Surface Soil. During all related project investigations, surface soil samples (less than 2 inches below grade) were collected from 140 locations, including 36 locations upon the main dredge spoil disposal area (disposal cell), 18 locations along the margins of the disposal cell, 15 locations within Fill Area 1 to the north of the disposal cell, 22 locations within Fill Area 2 at the northern part of the Special Area 13 site beyond Fill Area 1, and 41 locations within Fill Area 3 (the residential use property) near the southwest corner of the disposal cell. PCBs were found in this series of surface soil samples at concentrations up to 0.083 parts per million (ppm) over the footprint of the closed and covered disposal cell, up to 8.4 ppm along the margins of the disposal cell, up to 12 ppm within Fill Area 1, up to 3.2 ppm within Fill 2 , and up to 15 ppm within Fill Area 3.

In addition, seven soil samples were collected from shallow depressions and ditches along the western and southern borders of the disposal cell along with one soil sample that was collected at the mouth of a drainage swale that traverses the disposal cell and leads to the Hudson River. Five of the eight samples contained PCBs at concentrations ranging from 0.05 to 2 ppm. The samples with the highest concentrations were located along the southern border of the disposal cell. As these samples were taken from areas where there is only occasional water associated with runoff events, these areas will be managed as soils in the remedy for the site.

Subsurface Soil. During all related project investigations, 255 subsurface soil samples were collected from 121 locations, including 43 samples from 10 locations within the footprint of the disposal cell, 57 samples from 24 locations along the margins of the disposal cell, 32 samples from 15 locations within Fill Area 1, 81 samples from 31 locations within Fill Area 2, and 42 samples from 41 locations within Fill Area 3. PCBs were found in this series of subsurface soil samples at concentrations up to 49 ppm within the footprint of the closed and covered disposal cell, up to 15 ppm along the margins of the disposal cell, up to 12 ppm within Fill Area 1, up to 23 ppm within Fill 2 , and up to 30 ppm within Fill Area 3.

SCOs were exceeded in all areas where dredge spoil materials were placed.

The results for the soil samples that were collected form Fill Area 3 (the residential use property) were appropriately compared to the residential use (1 ppm) SCO for PCBs, as the parcel retains a property use classification as a single family residence - property used for human habitation in the Tax Records for the Town of Moreau in Saratoga County. The other areas where dredge spoil materials were placed or where PCBs were found in soils related to dredge spoil deposition at the Special Area 13 site are not classified as residential, but rather represent a commercial exposure and were compared to the commercial/recreational SCO.

Table 2 - Soil

Detected Constituents	Concentration Range (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG[c] (ppm)	Frequency Exceeding Restricted SCG
Pesticides/PCBs					
Total PCBs - Disposal Cell	ND to 49	0.1 ppm	30/85	1 ppm	27/85
Total PCBs - Outside Cell	ND to 15	0.1 ppm	24/77	1 ppm	16/77
Total PCBs - Fill Area 1	ND to 12	0.1 ppm	34/47	1 ppm	26/47
Total PCBs - Fill Area 2	ND to 23	0.1 ppm	55/103	1 ppm	43/103
Total PCBs - Fill Area 3	ND to 30	0.1 ppm	45/83	1 ppm	33/83
Total PCBs - Whole Site	**ND to 49**	**0.1 ppm**	**188/395**	**1 ppm**	**145/395**

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.
c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Residential or Commercial Use, unless otherwise noted.

PCBs are the primary contaminants of concern found in the surface and subsurface soil at the Special Area 13 site. PCBs were found within the closed and covered disposal cell, along the margins of the disposal cell, within Fill Area 1 (the NYSDEC Boat Launch) to the north of the disposal cell, within Fill Area 2 (property currently being used as the support marina for the ongoing EPA Hudson River dredging project) at the northern part of the Special Area 13 site beyond Fill Area 1, and within Fill Area 3 (the residential use property) near the southwest corner of the disposal cell. No other significant contaminants requiring remediation were identified in the soil at this site.

Based on the findings of the Remedial Investigation, the presence of PCBs from the placement of dredge spoil materials has resulted in the contamination of soil. The site contaminants identified in soil which are considered to be the primary contaminants of concern, to be addressed by the remedy selection process are PCBs.

Surface Water

No surface water contamination was measured in samples collected during the site Remedial Investigation. Samples were collected in drainage areas leading away from the dredge disposal site and in the vicinity of other areas were dredge spoil was placed. No site-related surface water contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for surface water.

Exhibit B

Description of Remedial Alternatives

The following alternatives were considered based on the remedial action objectives (see Section 6.5) to address the contaminated media identified at the site as described in Exhibit A. Three sets of alternatives were developed to address three substantially different portions of the site: (1) the closed and clay capped portion of the Special Area 13 site (disposal cell); (2) the portions of the site outside of the closed and clay capped disposal cell that have already had a soil cover placed over dredge spoils; and (3) those areas outside of the closed and clay capped disposal cell where dredge spoils have been placed, or where soils have been impacted by dredge spoil placement, that have not been covered.

Alternatives to address the Disposal Cell (Closed and Clay Capped)

Disposal Cell Alternative 1: No Further Action

The No Further Action Alternative recognizes the remediation of the site completed by the capping work described in the site history. This alternative leaves the site in its present condition and does not provide any additional protection of the environment.

Disposal Cell Alternative 2: No Further Action with Site Management

The No Further Action with Site Management Alternative recognizes the remediation of the site completed by the installation of the clay cap described in the site history. Site Management and Institutional Controls and Engineering Controls are necessary to confirm the effectiveness of this action. This alternative maintains engineering controls which were part of this action, and includes institutional controls (in the form of an environmental easement or environmental notice in the deed for State owned land) and site management plan, necessary to protect public health and the environment from contamination remaining at the site after the cap was placed.

Present Worth: *$302,000*
Capital Cost: *$8,000*
Annual/Periodic Costs: *$20,000*

Disposal Cell Alternative 3: Restoration to Pre-Disposal or Unrestricted Conditions by Excavation and On-Site Treatment by High Temperature Thermal Desorption

This alternative achieves all of the SCGs discussed in Section 6.1.1 and Exhibit A and soil meets the unrestricted soil clean objectives listed in Part 375-6.8 (a). This alternative would include the excavation and on site treatment of all soils exceeding SCGs within the already closed and clay capped disposal cell. This treatment would be accomplished by the use of high temperature thermal desorption. Under this alternative, the use of the treatment technology requires construction and operation of a treatment system at the site, or mobilization of a transportable treatment unit. The substantive requirements of all applicable regulations are met through the proper implementation of the treatment technology. The remedy will not rely on institutional

or engineering controls to prevent future exposure. There is no Site Management, no restrictions, and no periodic review. This remedy will have no annual cost, only the capital cost.

Capital Cost:..... $32,821,000

Disposal Cell Alternative 4: Restoration to Pre-Disposal or Unrestricted Conditions by Excavation and Off-Site Disposal of the Dredge Spoils and Impacted Soils

This alternative achieves all of the SCGs discussed in Section 6.1.1 and Exhibit A and soil meets the unrestricted soil clean objectives listed in Part 375-6.8 (a). This alternative would include the excavation and proper off site disposal of all dredge spoils and soils exceeding the SCOs within the already closed and clay capped disposal cell. The excavated soils and dredge spoils under this alternative are disposed in properly permitted off site disposal facilities. The remedy will not rely on institutional or engineering controls to prevent future exposure. There is no Site Management, no restrictions, and no periodic review. This remedy will have no annual cost, only the capital cost.

Capital Cost:..... $28,344,000

Alternatives to address the Covered Spoils within Fill Area 1 and Fill Area 2

Covered Spoils Alternative 1 - No Further Action

The No Further Action Alternative recognizes the remediation of the site completed by the previous soil cover work described above. This alternative leaves the site in its present condition and does not provide any additional protection of the environment.

Covered Spoils Alternative 2 – No Further Action with Site Management

The No Further Action with Site Management Alternative recognizes the remediation of the site completed by the installation of the soil covers described in the site history. Site Management and Institutional Controls and Engineering Controls are necessary to confirm *the effectiveness of this action. This alternative maintains engineering controls which were part of this action, and includes institutional controls (in the form of an environmental easement or notice in deed) and site management plan, necessary to protect public health and the environment from contamination remaining at the site after the cap was placed.*

Present Worth:..... $238,000
Capital Cost:..... $78,000
Annual/Periodic Costs:..... $11,000

Covered Spoils Alternative 3 - Excavation and Off-Site Disposal of all Covered Spoils

This alternative achieves all of the SCGs discussed in Section 6.1.1 and Exhibit A and soil meets the unrestricted soil clean objectives listed in Part 375-6.8 (a). This alternative includes the excavation and proper

off-site disposal of all dredge spoils and soils exceeding the SCOs within the areas containing dredge spoils or impacted soils (outside of the closed and clay capped disposal cell) which had been previously covered. The excavated soils and dredge spoils under this alternative are disposed in properly permitted off-site disposal facilities. The remedy will not rely on institutional or engineering controls to prevent future exposure. There is no Site Management, no restrictions, and no periodic review. This remedy will have no annual cost, only the capital cost.

Capital Cost: *$9,476,000*

Alternatives to address the site areas containing exposed dredge spoils or impacted soils upon and near the Disposal Cell and within Fill Areas 2 and 3

Uncovered Spoils Alternative 1 - No Action

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. This alternative leaves the site in its present condition and does not provide any additional protection to public health and the environment.

Uncovered Spoils Alternative 2 - Cover all Uncovered Spoils in Place

Under this alternative, soil covers to prevent direct contact and erosion would be placed over all currently uncovered areas where dredge spoils or impacted soils exceed SCOs. Site Management and Institutional Controls and Engineering Controls are necessary to confirm the effectiveness of this action. This alternative includes engineering controls and institutional controls (in the form of an environmental easement or notice in deed) and site management plan, as necessary to protect public health and the environment from contamination remaining at the site after the soil cover is placed.

Present Worth: *$589,000*
Capital Cost: *$506,000*
Annual/Periodic Costs: *$5,400*

Uncovered Spoils Alternative 3
Excavation and Off-Site Disposal to meet Residential SCOs
in Fill Area 3 (Residential Use Property),
Soil Cover with Site Management for Uncovered Impacted Areas
upon and near the Disposal Cell and within Fill Area 2

This alternative includes meeting the residential SCO of 1 ppm total PCBs in the residential use property by excavation and off-site disposal, along with the placement of soil covers on the other uncovered areas containing dredge spoils or impacted soils above applicable SCOs. For the residential use property, no further site management or monitoring is required after the action. Site Management and Institutional Controls and Engineering Controls are necessary to confirm the effectiveness of this action where the soil covers are placed. This alternative includes engineering controls and institutional controls (in the form of an environmental easement or notice in deed) and site management plan, as necessary to protect public health and the

environment from contamination remaining at the site after the soil cover is placed.

Present Worth: *$4,851,000*
Capital Cost: *$4,780,000*
Annual/Periodic Costs: *$5,000*

Uncovered Spoils Alternative 4
Excavation and On-Site Treatment to meet Residential SCOs
in Fill Area 3 (Residential Use Property),
Soil Cover with Site Management for Uncovered Impacted Areas
upon and near the Disposal Cell and within Fill Area 2

This alternative is the same as Alternative 4, except that the soils excavated from the residential use property are treated on-site. This treatment would be accomplished by the use of high temperature thermal desorption. Under this alternative, the use of the treatment technology requires construction and operation of a treatment system at the site, or mobilization of a transportable treatment unit. The substantive requirements of all applicable regulations are met through the proper implementation of the treatment technology.

Present Worth: *$6,751,000*
Capital Cost: *$6,687,000*
Annual Periodic Costs: *$4,200*

Uncovered Spoils Alternative 5 - Excavation and Off-Site Disposal of all Uncovered Spoils

This alternative achieves all of the SCGs discussed in Section 6.1.1 and Exhibit A and soil meets the unrestricted SCOs listed in Part 375-6.8 (a). This alternative would include the excavation and proper off-site disposal of all dredge spoils and soils exceeding the SCOs within the currently uncovered soils. The excavated soils and dredge spoils under this alternative are disposed in properly permitted off-site disposal facilities. The remedy will not rely on institutional or engineering controls to prevent future exposure. There is no Site Management, no restrictions, and no periodic review. This remedy will have no annual cost, only the capital cost.

Capital Cost: *$9,479,000*

Exhibit C

Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual/Periodic Costs ($)	Total Present Worth ($)
Disposal Cell Alternative 1 No Action	$0	$0	$0
Disposal Cell Alternative 2 Site Management	$8,000	$20,000	$302,000
Disposal Cell Alternative 3 Excavation and On-Site Treatment	$32,821,000	$0	$32,821,000
Disposal Cell Alternative 4 Excavation and Off-Site Disposal	$28,344,000	$0	$28,344,000
Uncovered Spoils Alternative 1 No Action	$0	$0	$0
Uncovered Spoils Alternative 2 Cover Uncovered Spoils In Place with Site Management	$506,000	$5,400	$589,000
Uncovered Spoils Alternative 3 Excavation and Off-Site Disposal in Fill Area 3 (Residential Use Property), Cover Uncovered Spoils in Place, with Site Management	$4,780,000	$5,000	$4,851,000
Uncovered Spoils Alternative 4 Excavation and On-Site Treatment in Fill Area 3 (Residential Use Property), Cover Uncovered Spoils in Place, with Site Management	$6,687,000	$4,200	$6,751,000
Uncovered Spoils Alternative 5 Excavation and Off-Site Disposal	$9,479,000	$0	$9,479,000
Covered Spoils Alternative 1 No Further Action	$0	$0	$0
Covered Spoils Alternative 2 Site Management	$78,000	$11,000	$238,000
Covered Spoils Alternative 3 Excavation and Off-Site Disposal	$9,476,000	$0	$9,476,000

Exhibit D

SUMMARY OF THE PROPOSED REMEDY

The Department has selected Disposal Cell Alternative 2 (*No Further Action with Site Management*), Covered Spoils Alternative 2 (*No Further Action with Site Management*), and Uncovered Spoils Alternative 3 (*Excavation and Off-Site Disposal to meet Residential SCOs in Fill Area 3 (Residential Use Property), Soil Cover with Site Management for Uncovered Impacted Areas upon and near the Disposal Cell and within Fill Area 2*), as the remedy for this site. This set of alternatives would achieve the remediation goals for the site by preventing any further direct contact exposures or potential for erosion and transport of the dredge spoils or impacted soils. The elements of this remedy are described in Section 7. The selected remedy is depicted in Figure 2.

Basis for Selection

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

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

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

All remedial alternatives, other than the No Action alternatives, would be protective of human health and the environment. Therefore, the No Action alternatives will not be considered further in this evaluation.

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

All Disposal Cell and Covered Spoils Alternatives currently comply with SCGs; for the Uncovered Spoils the retained alternatives all comply.

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

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

For the Disposal Cell Alternatives, all alternatives have good long term effectiveness and permanence. The alternatives which involve excavation and treatment, or excavation and off-site disposal, rank higher than allowing the already clay capped dredge spoils to remain in place per Disposal Cell Alternative 2. However, Alternative 2 still ranks well as the remaining risks are small, the cap system is a proven and reliable technology to contain these dredge spoils, and the existing system has shown for several years to be effective in containing the spoils.

For the Covered Spoils Alternatives, the rationale is the same as for the Disposal Cell Alternatives. Allowing the existing soil covers to address exposures to the surficial contaminants within the spoils or impacted soils has been shown to be effective at this site. The alternatives involving removal of the covered spoils with either treatment or off-site disposal would result in only modest improvements in long term effectiveness.

For the Uncovered Spoil Alternatives, installation of the soil covers in the non-residential areas results in the same level of long term effectiveness as with the areas with existing soil covers. Removal of the uncovered spoils with either, treatment or off-site disposal results in only modest improvements in long term effectiveness over installation of a soil cover. For the residential use property, alternatives which would not meet the residential SCOs have low long term effectiveness, as future controls would not prevent residential exposures to soils exceeding the residential SCOs. Alternatives which result in meeting the Unrestricted SCOs provide the greatest long term effectiveness and permanence.

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

For the Disposal Cell Alternatives, the highest ranking alternative is excavation and treatment (Disposal Cell Alternative 3), followed by excavation and off-site disposal (Disposal Cell Alternative 4) and allowing the area to remain capped (Disposal Cell Alternative 2). The reductions in mobility associated with Disposal Cell Alternatives 2 and 4 are comparable. For the Covered Spoils Alternatives and the Uncovered Spoils Alternatives, each alternative except No Action for the uncovered spoils results in the same reduction in mobility, as the soil covers would prevent erosion and migration via surface water, the only significant migration pathway for these areas.

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

Among the Disposal Cell Alternatives, the best short term effectiveness and permanence is with Alternative 2, as there are little or no negative short term impacts and these can be implemented immediately. Alternatives 3 and 4 require design elements to control releases during excavation and, for Disposal Cell Alternative 4 (utilizing on-site treatment) requires specialized monitoring to ensure control of potential releases from the treatment process. Disposal Cell Alternatives 3 and 4 reflect a lesser degree of green remediation as they include significant expenditure of energy and resources.

For the Covered Spoils Alternatives, the analysis is the same as for the Disposal Cell Alternatives. The alternatives involving excavation and off-site disposal require design elements to control releases during excavation.

For the Uncovered Spoils Alternatives, the analysis is also similar. Alternatives which involve excavation and removal or treatment require design elements to control releases during construction, resulting in lower short term effectiveness. Alternative 2 has the highest short term effectiveness, as no intrusive work would be done to cause potential releases to be controlled.

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

For the Disposal Cell Alternatives, Alternative 2 has the highest implementability, as no approvals or access agreements are required. Excavation and treatment requires the highest level of controls and approvals, which result in lower implementability. Excavation and off-site disposal requires lesser but still significant controls. For all alternatives, the personnel and engineering expertise is available.

For the Covered Spoils Alternatives, a similar evaluation results, where the alternative utilizing the existing soil covers have the best implementability, while excavation and off-site disposal requires access, personnel, and monitoring resulting in somewhat lower implementability.

For the Uncovered Spoils Alternatives, again a similar evaluation results under which the alternatives involving greater amounts of excavation and either treatment or off-site disposal having somewhat lower implementability. The excavation and treatment alternative would require greater difficulties in achieving the applicable controls on releases during treatment, and in finding available treatment vendors.

7. 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.

For the Disposal Cell Alternatives, the costs vary significantly between the alternatives which involve excavation and either treatment or off-site disposal, and Alternative 2 under which the Disposal Cell would remain in place under the existing clay cap. The significant difference in cost, however, does not appear to be proportional to any increase in protectiveness, implementability, or effectiveness.

For the Covered Spoils Alternatives, there is again a significant difference in costs between the alternatives which involve excavation and either treatment or off-site disposal, and Alternative 2 under which the Disposal Cell would remain in place under the existing soil covers. The significant difference in cost, however, also does not appear to be proportional to any increase in protectiveness, implementability, or effectiveness.

For the Uncovered Spoils Alternatives, there is a wide range in costs between the alternatives under which some, versus all of the uncovered dredge spoils and impacted soils are excavated and either disposed off-site or treated on site. The increase in cost between Alternatives 2 and 3 appears proportional to the increased protectiveness, as Alternative 3 would achieve the SCOs in the residential use property when Alternative 2 would not. The significant increases in cost between Alternative 3 and the alternatives under which all of the uncovered spoils would be excavated and either treated on-site or disposed off-site do not appear to be proportional to any increase in protectiveness, implementability, or effectiveness.

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

For the Disposal Cell Alternatives, the current land use is not anticipated to change. The surrounding land use will be governed by the site management plans associated with the areas which will receive soil covers, which could be recreational or commercial. The presence of the Disposal Cell will not impair commercial or recreational use of the adjacent areas.

The Covered Spoils alternatives, and the portions of the Uncovered Spoils alternatives, the current and anticipated land use (except for the residential use property) is commercial or recreational.

The current land use of the residential parcel is expected to remain residential.

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

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

Disposal Cell Alternative 2 (*No Further Action with Site Management*), Covered Spoils Alternative 2 (*No Further Action with Site Management*), and Uncovered Spoils Alternative 3 (*Excavation and Off-Site Disposal to meet Residential SCOs in Fill Area 3 (Residential Use Property), Soil Cover with Site Management for Uncovered Impacted Areas upon and near the Disposal Cell and within Fill Area 2*) has been selected as the remedy because, as described above, it satisfies the threshold criteria and provides the best balance of the balancing criterion.

APPENDIX A

RESPONSIVENESS SUMMARY

RESPONSIVENESS SUMMARY

Special Area 13 Dredge Spoil Disposal Area

State Superfund Project

Town of Moreau – Saratoga County - New York

Site No. 546041

December 2012

The Proposed Remedial Action Plan (PRAP) for the Special Area 13 Dredge Spoil Disposal Area (Special Area 13) was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on February 24, 2012. The PRAP outlined the remedial measures proposed for contaminated soil at the Special Area 13 site.

The release of the PRAP was announced by sending a notice to the public contact list and served to invite the public to comment on the proposed remedy.

A public meeting was held on March 6, 2012, which provided information about the Remedial Investigation (RI) and the Feasibility Study (FS) for the Special Area 13 site and discussed elements of the proposed remedy. The meeting also provided citizens with an opportunity to discuss concerns, ask questions, and comment on the proposed remedy. All questions and comments received during the public comment period have become part of the Administrative Record for this site. The public comment period for the Special Area 13 PRAP ended on May 10, 2012 instead of March 26, 2012, as provided in the PRAP in response to General Electric's March 6, 2012 request for an extension to the public comment period.

This responsiveness summary responds to all questions and comments raised during the public comment period. The following passages provide the narrative of each question/comment received and the Department's response.

The following questions and comments were made and answered during the public meeting held on March 6, 2012:

COMMENT 1: Are the plants on the site removing contamination from the soil and if so, could pollen present exposure concerns?

RESPONSE 1: Generally, the uptake of PCBs in plants is low and is not expected to contribute substantially to a reduction of PCBs in soil. Any PCBs that may transfer from site soils into site plants are expected to mostly persist in roots, leaves and/or shoots, and are expected to return to

nearby soil after the plants shed leaves or die. New York State does not believe that pollen is a PCB exposure concern for people using the site.

COMMENT 2: If the State was to dig up the entire site and remove all of the PCB contamination, would the PCBs have to be destroyed or could they be placed in a landfill?

RESPONSE 2: PCB-contaminated soil from this site could be disposed of in an appropriately permitted landfill.

COMMENT 3: What technology would be used to treat the soil at the site?

RESPONSE 3: PCB-contaminated soil from this site could be treated by thermal and/or chemical means. One of the alternatives considered involved treatment by turning the soil material into glass also known as vitrification. However, the high costs associated with the vitrification process and extraordinarily high energy demands made that alternative infeasible.

COMMENT 4: Who is responsible for the cost?

RESPONSE 4: After the remedy is selected, all potential responsible parties (PRPs) will be approached about assuming responsibility for the remedial program. If an agreement cannot be reached with the PRPs, the Department will evaluate funding alternatives.

COMMENT 5: Has traffic from the Hudson River PCBs Site remedial dredging project potentially impacted any of these sites and have those potential impacts been considered?

RESPONSE 5: While some PCB contamination may be present under the roadways leading to the Work Support Marina and the Backfill Storage and Offloading Area associated with the Hudson River PCBs Site remedial dredging project, the roadways are covered with clean material including an adequate thickness of either pavement or crushed stone. These materials provide an adequate barrier and it is unlikely that any travel use of these roadways would result in the migration of the PCB contaminated soils underneath. In addition, these cover materials will be maintained over the roadways after the dredging project is completed.

COMMENT 6: Could the remedy be implemented while the dredging project is underway or would the roadways need to stay clear for Hudson River dredging-related traffic?

RESPONSE 6: The remedy could be implemented while the dredging project is underway. For example, the application of the soil cover over the adjacent Old Moreau Dredge Spoil Disposal Area would be timed so that it would not interfere with access to the Backfill Storage and Offloading Area associated with the dredging project.

COMMENT 7: When do you anticipate issuing the Record of Decision (ROD) documents for the three Dredge Spoil Sites in Moreau?

RESPONSE 7: At the public meeting, the public was told that the Department expected to have all three RODs out by May 2012. The Moreau and Old Moreau RODs were issued in March 2012.

John G. Haggard, Executive Director of the Remediation and Hudson Programs for General Electric, submitted a comment letter on May 8, 2012, which is included in the Administrative Record (Appendix B).

COMMENT 8: The administrative record for the key Special Area 13 site documents is incomplete and, as a result, NYSDEC has compromised the public participation process that is required as part of remedy selection. Even though the public comment period was extended an additional 45 days and certain key documents were provided directly to GE upon request, the administrative record provided for public review at two of the three public repositories is still incomplete. Key documents regarding sampling conducted at the Morrison Property were not placed in the public repositories and made available to the public for review. In addition, information contained in the FS regarding costing conflicts with information contained in the Proposed Remedial Action Plan (PRAP), which remains unexplained. The unavailability of key administrative documents for review during the public comment period compromises the process.

RESPONSE 8: It is accurate that the formal report for the results of the soil sampling program conducted at the Morrison Property were made available to the public for review as a stand alone document, after the start of the comment period, however these results were also included in the Special Area 13 Remedial Investigation Study Report which was available to the public at the start of the comment period. These results are depicted on several of the figures and discussed in the narratives of the RI and were also incorporated into the discussion in the Exhibits and figures in the PRAP provided to the public repositories as part of the public participation process. While the data for the sampling conducted at the Morrison Property has always been reflected in the RI, the formal report for the results of the soil sampling program has since been incorporated into the Appendix of the Special Area 13 Remedial Investigation Study Report as a supplement and provided to the public repositories. The minor editorial error in the PRAP showing the estimated alternative costs does not change the overall evaluation of alternatives and has been corrected in this ROD.

COMMENT 9: The Fact Sheet for the proposed remedial action at the Special Area 13 Disposal Site incorrectly states that the remedial investigation and feasibility study for the site were submitted to the NYSDEC by New York State Department of Transportation (NYSDOT) and General Electric (GE).

RESPONSE 9: Comment noted.

COMMENT 10: The PRAP presented a proposed remedy cost that is 1.2 times lower than the costs provided in the FS Report, and NYSDEC's failure to explain this significant cost difference further compromises any meaningful review during the public comment period.

The estimated present value (PV) cost to implement the proposed remedy set forth in the PRAP is $4,599,000. The PV cost of the remedial alternative in the FS that represents the proposed remedy is $5,391,000. This cost difference is unexplained by NYSDEC and complicates the review process during the public comment period.

RESPONSE 10: The costs in the Special Area 13 Feasibility Study Report are correct and the appropriate corrections have been made in the ROD narrative. (See Response 8.)

COMMENT 11: The Special Area 13 Dredge Spoil Disposal Area is not an "Inactive Hazardous Waste Disposal Site" as defined by the Environmental Conservation Law (ECL), and therefore the NYSDEC has no authority to issue a ROD or to take any other action under the State Superfund Program regarding the Special Area 13 disposal area.

The Special Area 13 disposal area site does not meet the definition of an "inactive hazardous waste disposal site" that is found in ECL Section 27-1301(2) and in 6 NYCRR Section 375-1.2(y) in that it is not "an area or structure [as to which] no permit or authorization issued by the department or a federal agency for the disposal of hazardous waste was in effect after the effective date of this title." As a result, NYSDEC is not authorized to expend hazardous waste remedial program funds to implement the proposed remedy under the ECL and 6 NYCRR Part 375, nor does it have the authority to order the implementation of the selected remedy.

The purpose of the above-quoted language is to avoid the imposition of multiple sets of regulatory requirements governing response actions at inactive hazardous waste disposal sites. As the Division of the Budget made clear at the time the legislation establishing the inactive hazardous waste disposal site program was enacted, permits covering sites would effectively address the disposal and containment of released materials, but a new statute would be needed to address otherwise unregulated "inactive sites." Thus, creating an exception to the definition of "inactive hazardous waste disposal site" for a site at which a "permit or authorization issued by the department or a federal agency" has been issued fulfills the goal of ensuring that environmental protection will be achieved at an inactive hazardous waste site while at the same time also ensuring that duplicative or contradictory remedial measures will not be required at such site.

The Special Area 13 disposal area site was authorized by the U.S. Environmental Protection Agency (USEPA) for the disposal of dredge spoils under the Toxic Substance Control Act (TSCA) in the letter dated September 6, 1979 from the USEPA Region 2 Administrator to the Commissioner of the NYSDOT. This letter, and the subsequent, ongoing maintenance of the Special Area 13 disposal area site under TSCA, constitute a "permit or authorization" issued by a Federal agency, and therefore remove the Special Area 13 disposal area site from the definition of "inactive hazardous waste disposal site." As a result of the fact that the Special Area 13 disposal area site is not an "inactive hazardous waste disposal site," as the term is defined in the ECL and in 6 NYCRR Part 375, NYSDEC is precluded from seeking any form of relief under the statutory and regulatory program established to address such sites.

Thus, pursuant to the provisions of Subparagraph 3(a) of Section 97-b of the State Finance Law, establishing the State's hazardous waste remedial fund, NYSDEC may not spend moneys from such fund for the inactive hazardous waste disposal site remedial program. Consequently, the provision in State Finance Law Section 97-b - Subdivision 6 - requiring NYSDEC to "make all reasonable efforts to recover the full amount of any funds expended from the fund pursuant to [the above-cited subparagraph] through litigation or cooperative agreements with responsible persons" is

inapplicable. Without the legal authority to expend any such moneys, a recovery obligation is irrelevant.

Relief under the so-called enforcement language of ECL Section 27-1313, found in Subparagraph 3(a) thereof, is similarly unavailable to NYSDEC. That provision states:

Whenever the commissioner finds that hazardous wastes at an inactive hazardous waste disposal site constitute a significant threat to the environment, he may order the owner of such site and/or any person responsible for the disposal of hazardous wastes at such site (i) to develop an inactive hazardous waste disposal site remedial program, subject to the approval of the department, at such site, and (ii) to implement such program within reasonable time limits specified in the order.

That provision too hinges on the definition of "inactive hazardous waste disposal site." Because the Special Area 13 disposal area site is outside that category, NYSDEC lacks the authority to seek enforcement relief under Section 27-1313(3) (a) of the ECL.

In a June 2001 report titled "Dredge Spoils Investigation in the Upper Hudson River Valley," NYSDEC stated that Special Area 13 is not an Inactive Hazardous Waste Disposal Site and should not be placed on the Registry. "[Special Area 13] was previously a Class 2 Inactive Hazardous Waste Disposal Site, but has been delisted by NYSDEC because TSCA facilities do not meet the definition of 'inactive' sites." Nonetheless, on December 8, 2011, NYSDEC re-listed Special Area 13 on the Registry of Inactive Hazardous Waste Disposal Sites (the "Registry"). By virtue of the analysis provided above, as well as NYSDEC's own legal conclusion as set forth in its June 2001 report, NYSDEC was without legal justification to re-list Special Area 13. Therefore, Special Area 13's listing on the Registry is a legal nullity without effect.

RESPONSE 11: The site is a Class 2 site and as such in accordance with 6NYCRR375-2.8(e) the Department has documented the process of selecting a remedy in a Record of Decision.

COMMENT 12: A total of 368 soil samples were collected during the RI activities from the Special Area 13 boundaries as defined in the FS report. None of the RI samples contained PCB concentrations greater than 50 ppm; hence, the presence of hazardous waste has not been confirmed at the Site. Therefore, following the RI, the Department should have removed the Site from the Inactive Hazardous Waste Disposal Site Registry or at a minimum, reclassified it as a Class 3 site.

With a few exceptions that do not apply to this Site, hazardous waste in New York State (NYS) is defined as a waste that appears on the list or satisfies the characteristics promulgated by the commissioner. Current regulation identifies 50 ppm as the concentration which defines PCBs as a hazardous waste. All RI soil sample results exhibited PCB concentrations less than 50 ppm. As such, the RI sampling has not confirmed the presence of hazardous waste at the Site. As a result, even assuming that NYSDEC had any authority to list the Special Area 13 site in the first instance, the Department should have removed the Site from the Registry or at a minimum, reclassified it as a Class 3 site.

RESPONSE 12: The Department disagrees. Regulations provided in 6 NYCRR Part 375-1.2(w) define *"hazardous waste"* as *"a waste which appears on the list or satisfies the characteristics promulgated by the Commissioner pursuant to Environmental Conservation Law (ECL) 27-0903 and any substance which appears on the list promulgated pursuant to ECL 37-0103."* PCBs are on the list promulgated pursuant to ECL 37-0103. The definition does not include any applicable, minimum concentration value. The 50 ppm level is relevant to the classification of PCB waste as a B waste pursuant to 6NYCRR Part 371 and thus subject to regulation as a hazardous waste pursuant to 6 NYCRR Part 375.

COMMENT 13: NYSDEC failed to define the inputs used to calculate key statistical values that were relied upon for making risk management decisions. Furthermore, the key statistical values appear to have excluded site sample results as some were grouped with data from the adjacent New Moreau site.

There are three contiguous dredge spoil material disposal sites. The Special Area 13 site shares common boundaries with the New Moreau site. The clearest site boundaries for the Special Area 13 were provided in the FS report. Based on these boundaries, data clearly within the Special Area 13 site was not included in its RI Report. Consequently, the data evaluation conducted for the Special Area 13 RI likely did not include all site data and it appears the information relied upon by NYSDEC in selecting a proposed remedy was therefore flawed and biased.

RESPONSE 13: As the comment points out, there are three contiguous dredge spoil disposal sites in this area and the Special Area 13 Dredge Spoil Disposal Area shares common boundaries with the Moreau Dredge Spoil Disposal Site and the Old Moreau Dredge Spoil Disposal Area. These common boundaries may or may not be coincident with the established tax map property boundaries for any one of the given sites. The selected remedy for the Special Area 13 Dredge Spoil Disposal Area is based on an interpretation of those data point results deemed to be associated with and pertinent to the Special Area 13 Dredge Spoil Disposal Area regardless of location with respect to established tax map property boundaries. (This approach is echoed in the selection of the remedy provided in the ROD documents for the Old Moreau Dredge Spoil Disposal Area and the Moreau Dredge Spoil Disposal Site.) This issue was also discussed during the public meeting.

COMMENT 14: Data used to assess the remedial approach for the Morrison Property, which represents over 87% of the total remedial action costs, were not included in the RI report. Furthermore, these data, which were only provided to GE upon request after the comment period had commenced, were in a form that was inconsistent with the requirements of DER-10 and 40 CFR § 300.810, Contents of the Administrative Record File**.**

The RI report for Special Area 13 does not contain results for the sampling conducted on the Morrison Property; however, this information was used to develop an excavation and off-site disposal remedial component for this portion of the Special Area 13 site. The sampling results for the Morrison Property were provided to GE in two documents. One is a set of standalone data tables and the other a draft letter to NYSDEC from Ecology & Environment Engineering, PC (EEE), dated 27 February 2004. The documentation related to the Morrison Property sampling does not specify the analytical methodology or the data quality objectives (DQOs) for the effort. In addition,

insufficient documentation is available regarding the laboratory reports, data validation reports, description of qualifiers and interpretation of results. The presentation of this information is inconsistent with the requirements of DER-10 and 40 CFR § 300.810, Contents of the Administrative Record File. 40 CFR § 300.810 provides for the administrative record to include documents that form the basis for the selected response action, including but not limited to, verified sampling data, quality control and quality assurance documentation and chain of custody forms. Without this information, it is not possible to assure the quality or validity of these data. Furthermore, as this data is neither included in the RI report nor the administrative record, there is no basis in the administrative record upon which to base a remedial action at the Morrison Property portion of the site.

RESPONSE 14: See Response 8.

COMMENT 15: There is no basis to support a conclusion that attainment of a 0.1 ppm cleanup goal for PCBs could be achieved with a modest volume increase when the remedial alternatives in the FS were based on a PCB cleanup goal of 1 ppm. The estimated 20% volume increase that was assumed to occur from a more stringent cleanup goal of 0.1 ppm PCB is arbitrary given the detection limits of the existing data exceeds 0.1 ppm.

RESPONSE 15: The Record of Decision clarifies that the PCB cleanup level to be applied will be 1 ppm total PCB, the residential SCO without restrictions.

COMMENT 16: The absence of any Data Quality Objectives (DQOs) to inform the Department's decision to rely on PCB screening results impedes the ability of the Feasibility Study to develop and evaluate remedial alternatives in accordance with DER-10 (§2.1(c)(1)) and the NCP (40 CFR § 300.430(e)) and justify the proposed remedy.

Approximately 80% of the RI sample results were derived from a PCB screening approach. The other 20% of the results were derived from conventional laboratory analysis. Although screening approaches can be common components of an RI, especially when combined with more conventional laboratory analysis, both DER-10 (§3.5.1 (d)) and the NCP (40 CFR § 300.430(e)) contemplate that DQOs are established to ensure the data collected are of known quality and suitable for their intended purpose. Moreover, DER-10 (§2.1 (c) (1) contemplates that data obtained using field-screening methods, even when supported by ELAP approved methods, should "…not be used to make final determinations relative to impacts from contamination on the public health". The administrative record for the Site fails to establish that proper DQOs were established and adhered to in the RI/FS process for all areas of the site including the Morrison Property. Hence, there is no basis to objectively evaluate the uncertainty around the PCB remedial goal adopted by the Department which significantly influences the scope of the proposed remedy.

RESPONSE 16: The Department utilized both screening results and more rigorously developed analytical protocols, in developing its understanding of conditions at the site. As noted the use of screening approaches is detailed in DER 10 at subdivision 1.2(c), and the required analytical sample analysis for field screening is 10% so the 20% analytical identified in the comment is well within the acceptable range.

The commenter also notes that these methods should "…not be used to make final determinations relative to impacts from contamination on the public health". Appendix 2A of DER-10 defines final determinations as those made at the end of the remedial action to confirm compliance with cleanup target concentrations; this clearly is not the point in the process, in remedy selection, where this comment would apply.

The RI/FS work plan included conventional laboratory analytical results, developed with DQOs, which primarily informed the Department on the extent of contamination at the site. Given the clarification of the remedial goal for the site (see response to Comment 15, above), the portion of the comment pertaining to uncertainty about the remedial goal no longer applies.

COMMENT 17: If residential occupation of the Morrison Property resumes, a risk-based cleanup level for PCBs would be more appropriate to evaluate potential remedial actions for the Morrison Property portion of Special Area 13. The use of the SCO for ecological receptors is not appropriate as the SLERA did not conclusively demonstrate ecological risks (see comment below).
Currently, there is an unoccupied home in a state of disrepair located on the Morrison Property. The house does not appear to have been occupied for some time. Should residential use of the property resume, a risk-based cleanup level would be appropriate for this portion of the site. As discussed in Comment 16, Subpart 375 for the use of risk-based cleanup levels in lieu of SCOs. Should NYSDEC choose to rely solely on the existing SCOs, the residential SCO of 1 ppm would be more appropriate if the residential use resumes at the property. It should however be noted that this portion of the site, in fact, is zoned M-1 Industrial and therefore the industrial SCO would be more consistent with that use. Furthermore, the use of the SCO for ecological receptors (as discussed in Comment 19) is not appropriate for this site because the SLERA did not conclusively demonstrate that there are actual risks to ecological receptors at the site.

RESPONSE 17: Neither this Record of Decision, nor did the proposed plan, apply an SCO for ecological receptors as the cleanup level for this site. See Response 15 for a clarification of the cleanup targets for the site.

COMMENT 18: The Human Health Risk Evaluation concluded that there is no unacceptable human health risk. Therefore, there is no basis for NYSDEC to conclude the site poses a significant threat to human health and hence, no basis to support the Class 2 designation or propose a remedy based on protectiveness of human health.

While the human health risk assessment conducted as part of the RI is presented as a *"qualitative"* risk analysis, it is, in fact, a quantitative risk assessment. NYSDEC evaluated five potential exposure scenarios, calculated upper bound exposure point concentrations as either the 95th UCL or the maximum concentration (whichever was lower, as appropriate) for each scenario, conservative exposure parameters and upper-bound toxicity values, and calculated quantitative estimates of risk and hazard. The scenarios evaluated included: 1) Current Adult Maintenance Workers exposed to surface soils throughout the site, 2) Current and Future Adult and Child Recreational Users exposed to surface sediments outside of the fence, 3) Current Adult and Child Residents exposed to surface soil and sediment located outside of the fence, 4) Future Adult Commercial/Industrial Exposure to

soil (0-10 feet) and sediment across the entire site, and 5) Future Construction Workers exposed to soil (0-10 feet) and sediment across the entire site.

The results of that quantitative risk assessment indicated that all cancer risks and all but one of the non-cancer hazard indices were below benchmarks of concern. While the hazard index for a child resident, assumed to be exposed to media in all areas of the site outside of the fenced area, exceeded that benchmark by a factor of 3, EEE stated that "by definition a reference dose has uncertainty that spans an order of magnitude (or one log cycle); thus, hazard indices between 3 and 0.3 cannot be distinguished from 1 indicating that the child resident's hypothetical exposure is not likely to be of concern." Consequently, it was concluded that the site posed no current or future risk to public health.

In addition, while the EEE risk assessment discussed "current" residential exposure, there is no residential exposure currently occurring at the site. There is a residence located on the Morrison property but that home appears to have been abandoned and is in significant disrepair. In addition, the property on which it is located is zoned for industrial use, rather than residential use. Consequently, the residential scenario is a hypothetical scenario and remedial decisions should not be based on that potential use.

Subpart 375 provides target risk and hazard benchmarks that can be used in determining the need for remediation but also provide flexibility in that process. It permits the Department to depart from using SCOs as remedial goals if it can be demonstrated that alternative levels would be protective of public health. Subpart 375(3) (ii) states that a cleanup level that exceeds a one in one million lifetime cancer risk or hazard index of one may be approved by the Department "without requiring the use of institutional or engineering controls to eliminate exposure only upon a site-specific finding by the Commissioner, in consultation with the State commissioner of health, that such level shall be protective of public health and the environment." Because the EEE risk assessment, which was conducted at NYSDEC's request, has demonstrated that there is no unacceptable risk associated with current media concentrations at the site, the proposed remedies are not necessary to protect public health.

RESPONSE 18: The Department disagrees that there is no basis to conclude that the site poses a significant threat to human health. As the commenter has noted, the hazard index for a child resident exceeds the level of concern; this is typically one of the reasons for the Department to take action at residential locations. Exceedances of the SCO for PCB in surface soils, combined with the potential for human exposures to these surface soils, provide a basis for the selected remedy. The 1 ppm level has been consistently applied for cleanups by the Department.

COMMENT 19: The RI finding that the site poses little or no risks to communities of terrestrial plants and soil invertebrates but may pose a risk to some wildlife species, amphibians and benthic invertebrates does not meet the standard to justify a determination of significant threat. Hence, there is no basis to support the Class 2 designation and no basis to propose a remedy based on protection of the environment.

A Screening-Level Ecological Risk Assessment (SLERA) is a conservative vetting tool whose purpose is to eliminate contaminants of concern from any further consideration of potential ecological risk. It is not intended to support a conclusion that contaminants, which are not eliminated by the screen, present a significant threat as per 6 NYCRR Part 375-1.2 (1) (a) (i), (ii), (iii), (iv), (v) (i.e. results in significant adverse impacts and/or acute or chronic effects or contributes to significant adverse ecotoxicity from bioaccumulation in flora or fauna or cause human consumption to be limited). While a SLERA to assess potential impacts to ecological receptors may be a useful first step in the assessment of potential ecological risks, the NYSDEC DER-10, Fish and Wildlife Resource Impact Assessment [FWRIA] guidance, and the US EPA ecological risk assessment guidelines offer more thorough methods (qualitative and quantitative) to assess ecological risks that may arise from the presence of contaminants in various settings. According to USEPA (2001) *Eco Update, The Role of Screening-Level Risk Assessments and Refining Contaminants of Concern in Baseline Ecological Risk Assessments*, SLERAs are not intended to provide definitive estimates of actual risk or generate cleanup goals. Furthermore, the screening values in the SLERA are not based upon site-specific assumptions.

Notwithstanding the fact that remedial decisions should not be based on the results of a SLERA, review of the SLERA indicates that the assumptions made for the following parameters were overly conservative for determining remedial needs: ingestion rates, soil exposure point concentrations, bioaccumulation factors and toxicity reference values. Some specific examples include, but are not limited to:

Dietary Composition: The SLERA includes a conservative assumption that the robin consumes 100% earthworms, yet the studies from which the ingestion rate was taken state that worms comprise a much smaller fraction of the actual robin diet, with other invertebrates and vegetation factored in as well. Worms accumulate PCBs to a greater extent than plants and other invertebrates, therefore, including these other components would reduce the estimated risk to the robin.

Exposure Point Concentration: The SLERA conservatively uses a maximum concentration in the upper six feet for the EPC rather than the 95% UCL on the mean in the upper six inches of soil. Furthermore, the 0-6 inch depth interval would be the appropriate soil profile to consider for exposure to the identified receptors and is consistent with DER-10.

Bioaccumulation Factors: BAFs that were not appropriate for PCBs were assumed. As stated in the cited reference for this value, the authors acknowledge that the equation for PCBs in earthworms overestimated uptake 81 percent of the time (Sample et al, 1998a).

Toxicity Reference Values (TRV): More appropriate TRVs can be found in other documents not utilized in the SLERA, including but not limited to Region 9 BTAG and values used and accepted by USEPA on other large PCB sites.

Use of more appropriate values for the above parameters demonstrates that Site soil does not pose risks in excess of a hazard quotient of 1. In summary, it can be concluded that an ERA conducted in

accordance with the NCP would conclude that there is no need to conduct remedial action at this Site to mitigate ecological risks.

Based on the above, the SLERA is an insufficient basis for NYSDEC to determine the site poses a significant threat. As a consequence the NYSDEC has no basis to assign the site a Class 2 designation or propose a remedial action to protect the environment. Furthermore, as this assessment does not conclude a risk to ecological receptors under current conditions, there is no rationale to include the ecological SCO of 1 ppm as a remedial goal.

RESPONSE 19: The Department disagrees and believes that the available site data, including (as noted and described in Comment 19 above) the risks to wildlife species, support the selection of this remedy.

COMMENT 20: The FS report failed to consider more appropriate and cost effective remedial options for the Morrison Property, including: (1) focused hot spot soil removal; (2) surface cover with use restrictions; or (3) demolition of the vacant house and enforcement of the M-1 Industrial zoning. Specifically, the proposed remedy for the Morrison Property portion of Special Area 13, which represents approximately 87% of the $5.4 MM estimate, is not cost-effective as defined in the NCP (40 CFR Part 300.430(f), March 8, 1990, page 8725.

The NCP states that cost effectiveness is determined by comparing the cost and overall effectiveness to determine whether the costs are proportional to the effectiveness achieved. For the purpose of making this determination, the NCP assesses the long-term effectiveness, reduction of toxicity, mobility or volume through treatment, implementability and short-term effects. The proposed remedy for the Morrison Property is excavation for the purpose of achieving a PCB cleanup goal of 0.1 ppm. As noted above in Comment 14, the basis for estimating the volume and cost associated with achieving a 0.1 ppm PCB cleanup level is arbitrary and unsupported by existing data.

According to the Town of Moreau zoning maps, the Morrison Property is located in an M-1 Industrial zone. As discussed above, a house that is in severe disrepair, which appears to be unoccupied, is currently located on this property. Given the zoning and the state of the house situated on this property, there are a number of alternative remedial actions that could have been considered. These include: (1) hot spot removal; (2) installation of a surface cover; or (3) removal of the building and enforcement of the M-1 Industrial zoning.

Surface Soil Hot Support Removal

The HHRA concluded no unacceptable risks were posed to human health by the Morrison Property soil and the SLERA did not conclusively indicate any unacceptable risks to ecological receptors. As discussed in Comment 16, Subpart 375 provides for the use of risk-based cleanup levels in lieu of SCOs. Should the NYSDEC choose to rely solely on the existing SCOs, the residential SCO of 1 ppm would be more appropriate for residential and commercial receptors. As the interval of soil exposure for resident is 6-inches (as stated in the RI), the SCO for residential receptors can be more than adequately addressed through removal of PCB hot spots on the upper two feet of surface soil. Through removal of soil exhibiting PCB concentrations ranging from 4.4 to 15 ppm and replacement with clean soil a 95% UCL on the mean of less than 1 ppm could be achieved in the upper two feet

of soil. The SCO for commercial workers could then be addressed through engineering controls (e.g., a Soil Management Plan).

Surface Cover
The residential SCO could also be achieved through installation of a surface cover. This is quite similar to the hot spot removal option above; however, there would be no excavation. The cover would be installed over the PCB hot spots to achieve an acceptable 95% UCL on the mean PCB concentration.

Reinstatement of Industrial Use
Based on current market conditions, the value of the unoccupied house is approximately two orders of magnitude less than the estimated cost of the selected remedy for this portion of the site ($4.3 MM). Purchase and removal of the unoccupied house would preserve the current M-1 Industrial Zone classification and since the 95% UCL PCB concentration in surface soil is 4.25 mg/kg, it is well below the 25 ppm PCB SCO for this land use and easily managed through institutional controls.

All of the three above alternative remedies would be more implementable and have fewer short term effects than the proposed remedy while matching the long-term effectiveness and reduction of toxicity, mobility or volume through treatment of the proposed remedy. Hence, the cost of the proposed remedy is not proportional to the effectiveness achieved while the above three alternative remedies meet the requirement of cost-effectiveness in the NCP.
RESPONSE 20: The Morrison Property - Tax Parcel 64.-2-55.2 - is zoned for general manufacturing and industrial distribution, but retains a property use classification as a single family residence - property used for human habitation, in the Tax Records for the Town of Moreau in Saratoga County. This residential use property is occupied by a single dwelling and a few out-buildings. The current or most recent use for this parcel is residential. The anticipated future use for this parcel is residential. The application of the residential SCOs in Part 375 to this parcel are appropriate. The SCO for the residential use property at this site is 1 ppm total PCB.

COMMENT 21: The remediation action objectives (RAOs) in the PRAP are already met under existing conditions and/or can be assured through institutional controls.

The risk assessment concluded that there were no unacceptable human health risks, establishing that this goal is already met. To the extent it is prudent to continue to limit future exposure to surface as well as subsurface soil, institutional controls will effectively meet these goals. Further, the potential risks to biota from the identified contaminants were overstated in the SLERA, which is not intended to be a risk-management decision-making document when selecting a remedy. The assessment included inflated exposure factors (e.g., ingestion rates, bioaccumulation factors), toxicity benchmarks and exposure point concentrations (EPCs).

Finally, the RI data did not indicate any groundwater or surface water impacts.

RESPONSE 21: The Department disagrees. As stated above in Responses 18 and 19, the selected remedy is needed to address site conditions and meet the RAOs.

COMMENT 22: Any of the three alternative remedies discussed above in Comment 20 would meet the threshold criteria pursuant to 6 NYCRR Section 375-1.8.

6 NYCRR Section 375-1.8 (f) (Remedy Selection) sets forth nine factors that the Department considers in selecting a remedy. The first two factors, "overall protectiveness of the public heath and the environment" and "standards, criteria and guidance" (SCGs), are similar to the "threshold criteria" set forth in the NCP. (Threshold criteria are ones a remedy must meet to be eligible for selection.)

With respect to "overall protectiveness of the public health and the environment," as discussed earlier, the HHRA indicates there are no unacceptable risks to humans. In the case of potential ecological risk, a SLERA alone is not the basis upon which risk management decisions should be made in proposing a remedial action.

With respect to "standards, criteria and guidance," the residential and commercial SCOs would be met through either hot spot surface soil removal or installation of a surface cover and institutional controls. In addition, under restored industrial use the 95% UCL on the mean PCB concentration in soil located in Special Area 13 is well below 25 ppm and in fact only 2 of the 268 soil samples exceed this value with a maximum concentration of 30 mg/kg. Thus, the SCOs for human health exposure would be met.

In conclusion, any of the three alternative remedies provides adequate protection of human health and the environment and compliance with SCGs. As such, institutional controls would meet the threshold criteria at significantly less cost than the proposed remedy while achieving the same proportional risk reduction.

RESPONSE 22: The alternatives which do not meet the promulgated SCOs do not pass the threshold evaluation for compliance with SCGs. The applicable SCO, as described above (*see Responses 15 and 20, above*), is 1 ppm total PCB. Use of a soil cover for a residential property to achieve this level does not meet the requirements of 6NYCRR375-1.8(g)(2)(i) since the soil cover represents an engineering control which is not allowable for residential use.

COMMENT 23: Any of the three alternate remedies discussed above in Comment 20 would also satisfy the balancing criteria pursuant to 6 NYCRR Section 375-1.8.

6 NYCRR Section 375-1.8 (f) (Remedy Selection) sets forth the nine factors that the Department considers in selecting a remedy; factors three (3) through nine (9) are similar to the "balancing criteria" set forth in the NCP. The balancing criteria in 6 NYCRR Section 375-1.8 (f) include: long-term effectiveness and permanence; short-term impacts and effectiveness; implementability; reduction in toxicity, mobility or volume through treatment; cost-effectiveness; community acceptance; and land use. (Balancing criteria are considered in weighing the advantages and disadvantages of remedial alternatives that meet the threshold criteria in order to select a preferred remedy for a site).

The soil removal and off-site disposal considered for the uncovered spoils portion of the proposed remedy would not reduce the toxicity, mobility or volume of the materials. Hence, the three alternative remedies would meet this criterion to the same degree as the proposed remedy.

In conclusion, any of the three institutional control remedies would also satisfy the balancing criteria at significantly less cost than the proposed remedy while achieving the same proportional risk reduction. The alternative remedies would also be easier to implement and would have fewer short term impacts.

RESPONSE 23: The Department disagrees. Simply because the selected remedy has a similar reduction in toxicity, mobility, and/or volume as other alternatives does not mean that the other alternatives "satisfy the balancing criteria." The land use criteria would not be satisfied by the soil cover since it would not allow residential use. As described in Response 24 below, NYSDEC believes that an evaluation of overall effectiveness favors the selected alternative. Also see Response 22 above.

COMMENT 24: An alternate remedy that relies on institutional controls would be consistent with 6 NYCRR Part 375-1.8 (a) (5) (i) (ii) (iii) as well as the NCP, which is incorporated by reference in 6 NYCRR Part 375-1.1 (g) (2), while providing a greater degree of overall effectiveness.

Threshold criteria are used to determine whether a specific remedial alternative is eligible to be selected. As demonstrated above, the three alternative remedies would result in the same degree of "overall protectiveness of the public heath and the environment" while meeting "standards, criteria and guidance" as set forth in 6 NYCRR Section 375-1.8(f). Hence, the NYSDEC-proposed remedy offers no proportional benefit with respect to risk reduction or compliance with SCGs.

When evaluating the relative benefits of various remedial alternatives that meet the threshold criteria, the balancing criteria are relied upon to make a selection. When balancing the trade-offs among remedial alternatives, the NCP, which is incorporated by reference in 6 NYCRR Part 375-1.1 (g) (2), compares the costs and overall effectiveness. Overall effectiveness includes long-term effectiveness and permanence, reduction in toxicity, mobility or volume through treatment, and short-term effectiveness. The relationship between overall effectiveness and cost is examined across all alternatives to identify those that provide effectiveness that are proportional to their cost.

As previously stated, the three alternative remedies presented in Comment 20 offer similar benefits in long-term effectiveness and permanence, and reduction in toxicity, mobility or volume through treatment as the proposed remedy. Hence, with respect to these criteria, the overall effectiveness of the proposed remedy is not proportional to the effectiveness that can be achieved via one of the three alternative remedies.

And in the case of short-term impacts and effectiveness, any of the three alternative remedies would have lesser short-term impacts and equal effectiveness as the proposed remedial action.

Any of the three alternative remedies represent a remedy whose overall effectiveness is proportional to its cost given the environmental conditions and current and future Site use.

RESPONSE 24: The Department disagrees. Simply because a remedy has a lower cost does not mean that that remedy is cost effective. The long term effectiveness and permanence of an alternative which leaves behind soils exceeding the promulgated SCOs in a residential setting is significantly lower than an alternative which does not. The higher cost of the selected remedy is offset by the increased long term effectiveness and permanence. Also see Response 22.

COMMENT 25: In its May 8, 2012 letter GE asserts that the company should not be identified as a PRP for this site for various reasons listed in the letter.

RESPONSE 25: The Department and the State take no formal position in this document on comments received regarding the legal liability of any particular party or the applicability of any affirmative defenses to such liability and hereby reserves all rights thereto.

APPENDIX B

ADMINISTRATIVE RECORD

Administrative Record
Special Area 13 Dredge Spoil Disposal Area
Town of Moreau – Saratoga County - New York
Site No. 546041

December 2012

Documents

"Final IIWA Letter Report for the Morrison Property (546046) - Town of Moreau in Saratoga County - 2002 Program" dated July 2012, prepared by Ecology and Environment Engineering.

"Proposed Remedial Action Plan for the Special Area 13 Dredge Spoil Disposal Area - Town of Moreau - Saratoga County - New York - Site No. 546041", dated February 24, 2012, prepared by the Department in consultation with the New York State Department of Health.

"Proposed Remedial Action Plan Fact Sheet and Meeting Announcement for the Special Area 13 Dredge Spoil Disposal Area", dated February 2012, prepared by the Department.

"Feasibility Study for the Special Area 13 Dredge Spoil Disposal Area - Site Number 546041 - Moreau, New York", dated February 2012, prepared for the New York State Department of Environmental Conservation by Ecology and Environment Engineering.

"Remedial Investigation Report for the Special Area 13 Dredge Spoil Disposal Area - Site Number 546041 - Moreau, New York", dated February 2012, prepared for the New York State Department of Environmental Conservation by Ecology and Environment Engineering.

"Final -New York State Registry of Inactive Hazardous Waste Disposal Site Classification Report - New Class 2 Site - Special Area 13 Dredge Spoil Disposal Area - Site ID 546041", dated December 2011, prepared by the Department.

"Final Technical Work Plan for the Remedial Investigation and Feasibility Study at the Special Area 13 Dredge Spoil Disposal Area", dated November 2005, prepared by Ecology and Environment Engineering.

"Revised - Technical Scope of Work for the Remedial Investigation and Feasibility Study at the Special Area 13 Dredge Spoil Disposal Area", dated October 2005, prepared by the Department.

"Technical Scope of Work for the Remedial Investigation and Feasibility Study at the Special Area 13 Dredge Spoil Disposal Area", dated June 2005, prepared by the Department.

"Dredge Spoils Investigation in the Upper Hudson River Valley", Dated July 2001, prepared by the Department.

"Report - Hudson River PCB Project - Dredge Spoil Sites Investigation - Special Area 13 - Buoy 212, Old Moreau - Rogers Island - Site 518 - Buoy 204 Annex - Lock 4 - Lock 1", Volume I, dated December 1992, prepared by Malcolm Pirnie, Incorporated.

"Removal and Encapsulation of PCB-Contaminated Hudson River Bed Materials", dated 1977 - 1979, prepared for the New York State Departments of Transportation and Environmental Conservation by Malcolm Pirnie, Incorporated - includes a paper entitled "Removal and Disposal of PCB-Contaminated River Bed Materials", prepared by Richard Thomas (Malcolm Pirnie, Inc.), Russell Mt. Pleasant (NYSDEC) and Steven Maslansky (Malcolm Pirnie, Inc.), and presented at the 1979 National Conference on Hazardous Material Risk Assessment, Disposal and Management - April 25-27, 1979 - Miami Beach, Florida.

"Migration of PCBs from Landfills and Dredge Spoil Sites in the Hudson River Valley, New York - Final Report", dated November 1978, prepared by Weston Environmental.

Letter dated September 6, 1978 from USEPA Regional Administrator Eckardt Beck to NYSDOT Commissioner William Hennessey - Disposal of PCB Dredge Spoils From the Hudson River - (Approval to Use the Buoy 212 Site and Special Area 13 Along the Hudson River to Dispose of Dredge Spoils Containing PCBs) - (Buoy 212 and Special Area 13 TSCA Authorization Letter).

Letter dated November 29, 1976 from NYSDOT Director of Waterways Maintenance Joseph Stellato to NYSDEC Research Unit's Leo Hetling - Tabulation of Maintenance Dredging Records for the Champlain Canal between Waterford and Fort Edward for 1950 to 1969 inclusive.

Letter dated November 3, 1976 from NYSDOT Director of Waterways Maintenance Joseph Stellato to NYSDEC Research Unit's Leo Hetling - Tabulation of Maintenance Dredging Projects in the Champlain Canal for the period 1970 through 10/1976 inclusive.

"Disposal Area Sampling - Hudson River Sediment Study - Investigation of Conditions Associated with the Removal of the Fort Edward Dam - Fort Edward, New York", dated November 4, 1975, prepared for the New York State Department of Environmental Conservation and Malcolm Pirnie, Incorporated by Mueser, Rutledge, Wentworth and Johnston Consulting Engineers.

Comment Letters

Letter dated May 8, 2012 from John G. Haggard, Executive Director of the Remediation and Hudson Programs for General Electric.