Division of Environmental Remediation

Record of Decision

Newland Island/Lock 4
Dredge Spoil Disposal Area

Town of Schaghticoke - Rensselaer County
New York

Site Number 442033

January 2010

New York State Department of Environmental Conservation
DAVID A. PATERSON, *Governor* PETE GRANNIS, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

Newland Island/Lock 4 Dredge Spoil Disposal Area
Town of Schaghticoke - Washington County - New York
Site No. 442033

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the Newland Island/ Lock 4 Dredge Spoil Disposal Area (Newland Island), a Class 2 inactive hazardous waste disposal site. The selected remedial program was chosen in accordance with the New York State Environmental Conservation Law 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 Newland Island inactive hazardous waste disposal site, and the public's input to the Proposed Remedial Action Plan (PRAP) 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.

Assessment of the Site

Actual or threatened releases of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD, presents a current or potential significant threat to public health and/or the environment.

Description of Selected Remedy

Based on the results of the Remedial Investigation and Feasibility Study (RI/FS) for Newland Island and the criteria identified for evaluation of alternatives, the Department has selected a remedy that will cover the contaminated dredge spoil areas, divert/enhance drainage in one area of the site, monitor groundwater conditions, and apply an environmental easement with periodic certification. The components of the remedy are as follows:

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program.

2. A soil excavation and consolidation program will be implemented to reduce the potential for exposure to contaminated soils in specific active areas of the site. Excavated soils will be consolidated and isolated beneath an appropriate soil cover. Excavated areas will be backfilled with clean soil approved for use by the Department and that meets the Division of Environmental Remediation's criteria for backfill.

3. An appropriate soil cover will be constructed over the central and northern dredge spoil disposal basins after their consolidation to prevent exposure to contaminated soils. The cover will consist of clean soil placed and compacted to a minimum thickness of twelve inches over an isolation/demarcation indicator (with contrasting color) placed over the consolidated materials to serve as a warning and to delineate between the clean cover and the potentially contaminated materials at depth. The top six inches of soil will be sufficient to support grass. Clean soil will constitute soil approved for use by the Department and that meets the Division of Environmental Remediation's criteria for backfill.

4. An appropriate soil cover will be constructed over the eastern part of the southern basin used by the Canal Corporation for sediment de-watering operations, to reduce the potential for exposure to contaminated soils at depth. The cover will consist of clean soil placed and compacted to a minimum thickness of twelve inches over the existing isolation/demarcation indicator on the basin floor and upon the face of the containment berm of this sub-basin. Clean soil will constitute soil approved for use by the Department and that meets the Division of Environmental Remediation's criteria for backfill.

5. An appropriate soil cover will be maintained over the western part of the southern basin used by the Canal Corporation for sediment de-watering operations, to reduce the potential for exposure to contaminated soils at depth. An effective, twelve to eighteen inch thick, clean soil cover is already in place and an existing geo-textile fabric marker serves to delineate between clean cover and potentially contaminated materials at depth. The cover will be maintained at a minimum thickness of twelve inches over the existing isolation/demarcation indicator on the basin floor and upon the face of the containment berm for this sub-basin.

6. A drainage diversion trench will be constructed along the northwestern margin of the cover area over the northern basin to minimize the potential for migration of contaminants in the local groundwater. The drainage diversion trench will intercept and redirect any intermittent overland water flow in this area and adequately impede/eliminate the migration of this surface water into and through the known, underlying dredge spoil materials. The diversion trench will be constructed in accordance with the Department's New York Standards and Specifications for Erosion and Sediment Control (August, 2005).

7. Imposition of an institutional control in the form of an environmental easement that will require: (a) limiting the use and development of the property to commercial use, which will also permit industrial use; (b) compliance with the approved site management plan; (c) restricting the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined appropriate by NYSDOH; and (d) the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

8. Development of a site management plan which will include the following institutional and engineering controls: (a) management of the final cover systems to restrict excavation below the soil cover's demarcation layer. Any soil excavated from below the established demarcation layer will be tested, properly handled to protect the health and safety of workers and the nearby community, and will be properly managed in a manner acceptable to the

Department; (b) monitoring of the groundwater around the site; (c) identification of any use and development restrictions on the site; and (d) provisions for the continued proper operation and maintenance of the components of the remedy.

9. The property owner will provide a periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal will: (a) contain certification that the institutional controls and engineering controls put in place are still in place and are either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing has occurred that will impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy selected 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.

1/19/10

Date

Dale A. Desnoyers, Director
Division of Environmental Remediation

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RECORD OF DECISION

Newland Island/Lock 4
Dredge Spoil Disposal Area

Town of Schaghticoke - Rensselaer County - New York

Site No. 442033

January 2010

SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected this remedy for the Newland Island/Lock 4 Dredge Spoil Disposal Area (Newland Island). The presence of hazardous waste has created significant threats to human health and/or the environment that are addressed by this proposed remedy. As more fully described in Sections 3 and 5 of this document, the placement and stockpiling of pre-2002 dredge spoil material associated with routine maintenance dredging operations of the New York State Champlain Canal/Hudson River navigation channel between Canal Lock 4 (near Stillwater, NY) and Canal Lock 3 (near Mechanicville, NY), have resulted in the disposal of hazardous wastes, including polychlorinated biphenyls (PCBs) and metals. These wastes, sporadically entrained within the sediment of the Hudson River and subsequently removed with some of the sediment from the Champlain Canal/Hudson River navigation channel as dredge spoil material in the past, have contaminated the surface soil, subsurface soil, and groundwater at the site, and have resulted in:

- a significant threat to human health associated with the potential for exposure to PCBs through direct contact with PCB-contaminated dredge spoil material/soil present at the surface or that may be encountered in the subsurface during any excavation activities.

- a significant environmental threat associated with the potential for contaminants to impact terrestrial plants, invertebrates in soil, and wildlife, such as the American robin and short-tailed shrew. Metals (cobalt, copper, lead, mercury, and zinc) in soil are the risk drivers (chemicals or substances of concern that present the greatest potential risk) for plants and invertebrates, while PCBs in soil are the risk drivers for other wildlife.

To eliminate or mitigate these threats, the Department has selected a remedy that will cover the contaminated dredge spoil areas, divert/enhance drainage in one area of the site, monitor groundwater conditions, and apply an environmental easement with periodic certification.

The proposed remedy, discussed in detail in Section 8, is intended to attain the remediation goals identified for this site in Section 6. The remedy must conform with officially 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. Hereafter, these Standards, Criteria and Guidance are represented by the acronym SCG.

SECTION 2: SITE LOCATION AND DESCRIPTION

The Newland Island/Lock 4 Dredge Spoil Disposal Area site is located along the southern and eastern margins of Newland Island in the Town of Schaghticoke (Rensselaer County), just south of Champlain Canal Lock 4 and near the confluence of the Hoosic River with the Hudson River and the navigation channel of the Champlain Canal (Figure 1). The site consists of a series of large basins and earthen containment berms built by the Waterways Maintenance Division of the New York State Department of Transportation (NYSDOT) to hold sediment removed from the Champlain Canal/Hudson River navigation channel between Canal Lock 4 and Canal Lock 3 - with emphasis on the navigation channel in the Hudson River near Canal Lock 4 and the mouth of the Hoosic River - in conjunction with routine maintenance dredging operations of the Canal System. The unlined settling basins at this site were excavated down to shale bedrock during initial construction and the displaced soils and shale debris were graded 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 a basin and accommodate the disposal of additional dredge spoil materials. The basin and berm system at this site is between 100 and 500 feet wide and extends about 1,800 feet along the southeastern side of the island with a foot-print covering nearly 12.1 acres on the 28.6 acre parcel owned by New York State (Figure 2). The remainder of the State-owned parcel is undeveloped and unoccupied. The adjoining property on the lower island is privately owned and is occupied by two dwellings, equine stables, equine riding facilities, and several small service structures. There are a pair of private wells on this part of the island that draw water from the bedrock aquifer. The wells are approximately 875 feet away from the northern portion of the site and approximately 1,680 feet away from the southern portion of the site.

The Hudson River and the Champlain Canal surrounding Newland Island are part of the United States Environmental Protection Agency's (EPA's) Hudson River PCBs Superfund Site as listed on the National Priority List (NPL) and listed in the Department's "Registry of Inactive Hazardous Waste Disposal Sites in New York State" under site number 546031 with a Class 2 designation (a site where hazardous waste disposal has been confirmed and presents a significant threat to public health and/or the environment - action is required). PCBs, from two upstream General Electric plant site sources, are the main contaminants of concern for this NPL site. These wastes, sporadically entrained within the sediment of the Hudson River and subsequently removed with some of the sediment from the Champlain Canal/Hudson River navigation channel as dredge spoil material in the past, have contaminated the surface soil, subsurface soil, and groundwater at the Newland Island site.

The geologic setting for the Newland Island site has a varied mixture of shale fragments, sands, and clays that were placed over bedrock by natural processes and a varied mixture of cobbles, pebbles, shale fragments, brick fragments, coal fragments, fused slag, glass shards, sands, silts, and clays that were placed over bedrock 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

Figure 1 - Location Map

Newland Island / Lock 4 Dredge Spoil Disposal Area
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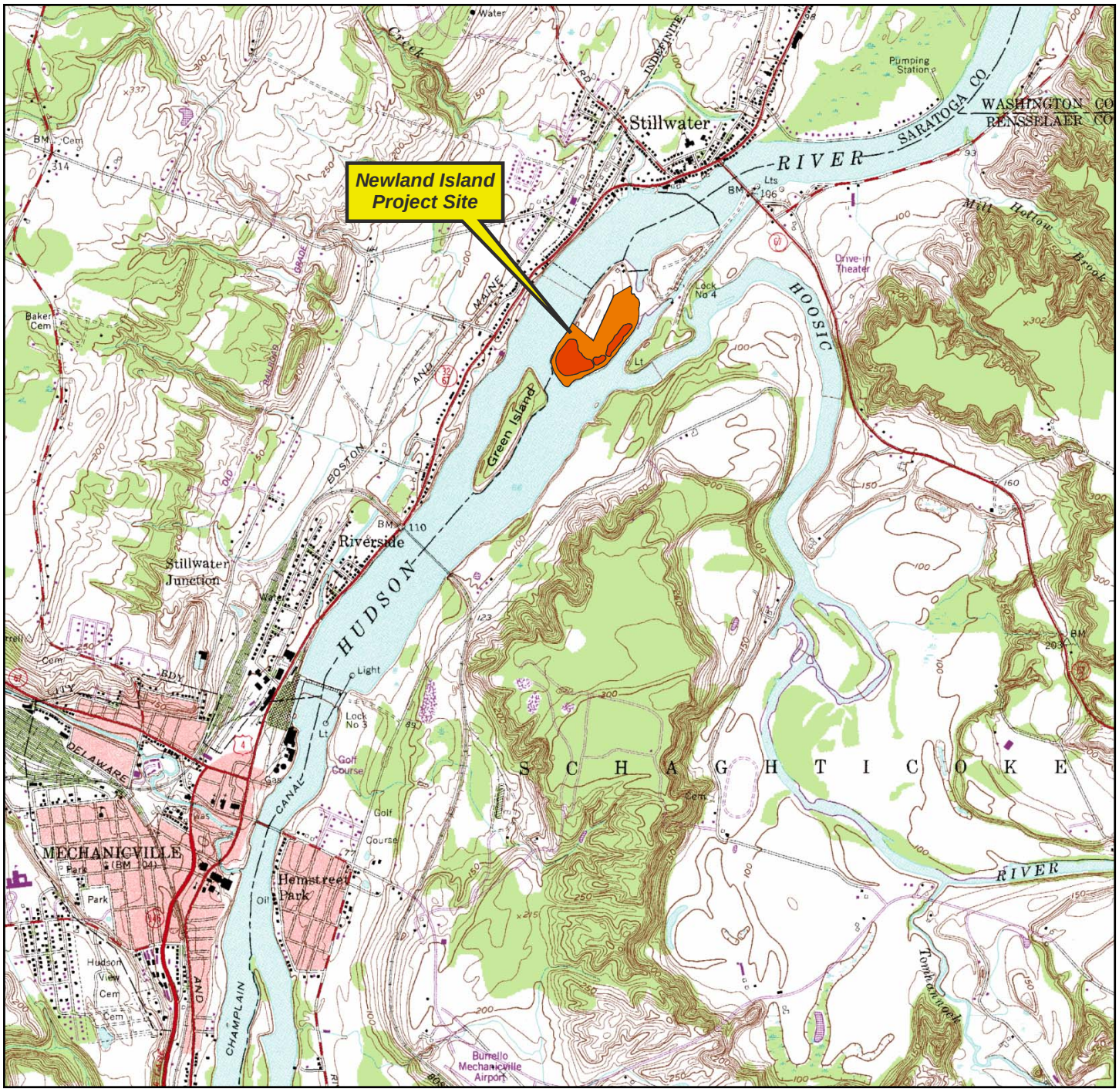

1 0.5 0 1

Scale in Miles

Excerpt from the Mechanicville Quadrangle
7.5 Minute Topographic Series Map
published by the U.S. Geological Survey
in 1954 and photo-revised in 1980.

Figure 2 - Site Details

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berm system at the site. In a few locations, these native soils were found buried under dredge spoil materials in the basin and berm complex. The overall thickness of these native soils on Newland Island is not known, but where encountered in undisturbed locations around the site, the thicknesses varied from a few inches to about five feet. The thickness of these native soils where observed in the basins, varied up to two feet.

The overburden materials in the unnatural setting are best described as mechanically reworked native soil and bedrock mixed with dredge spoil materials in the basin and berm complex. The older, pre-2002 dredge spoils are typically dark gray to black, fine to medium sands with varying amounts of silt and black shale fragments. The more recent dredge spoil materials are characterized as light gray to medium brownish-gray, coarse to fine sand with varying amounts of gravel. Based on observations made during borehole drilling and sampling, materials that could be characterized as pre-2002 dredge spoils varied in thickness from a few inches to nearly 10 feet within the southern basin and were up 27 feet thick in parts of the surrounding berm; varied in thickness from a few inches to nearly four feet within the central basin and were up to 14 feet thick in part of that berm; and varied in thickness from a few inches to nearly eight and one-half feet within the northern basin and were up to seven feet thick in part of that berm structure.

Bedrock at this site is a dark gray to grayish-black, variably calcareous shale that is sometimes finely laminated with very fine sand. This shale is rather friable and weathers to slightly lighter colors.

Groundwater flow throughout the year mimics the topography of the site and moves radially away from the topographic ridge in the central part of the island. This results in groundwater flowing southeast, southwest, and northwest, depending on the point of reference on the island. Overall groundwater flow is either toward the Hudson River or the Champlain Canal. Based on groundwater elevation measurements and other observations made during the RI, groundwater appears to flow either within the weathered shale bedrock below the overburden and older dredge spoil materials at the site, or along the bedrock surface in the overburden.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

As described in Section 2, three unlined settling basins were constructed at this site by the Waterways Maintenance Division of the NYSDOT and were used to hold dredge spoil material removed from the Champlain Canal/Hudson River navigation channel between Canal Lock 4 and Canal Lock 3 in conjunction with routine maintenance dredging operations of the Canal System. Available NYSDOT records report that the Newland Island dredge spoil disposal area, known in the past as the Lock 4 site, was used between 1952 and 1984. The records covering the 1970s and forward also report the disposal of dredge spoil material at this site totaling 135,450 cubic yards, 23,960 cubic yards, 21,470 cubic yards, and 44,509 cubic yards for the years 1971, 1977, 1981, and 1984 respectively. At the time of these disposals, the Newland Island site was controlled and operated by the NYSDOT. PCBs were found in shallow surface soil samples collected within the basin complex in 1989 by the NYSDOT while they prepared the site for the disposal of additional dredge spoil material that year. As a result, NYSDOT abandoned plans to use the site in 1989. As described earlier, PCB contamination at the Newland Island site is attributable to the presence of

PCB wastes (from activities at two upstream General Electric plant site sources) in some Hudson River sediments that were removed from the Champlain Canal/Hudson River navigation channel as dredge spoil material.

State legislation enacted in 1992 transferred the responsibility for all Canal System operations and properties from the Department of Transportation to the New York State Canal Corporation, a subsidiary of the New York State Thruway Authority. A subsequent navigational dredging operation completed by the Canal Corporation in 1996, resulted in the disposal of another 35,974 cubic yards of dredge spoil material at this site in the southern basin. These 1996 dredge spoil materials were mingled with the earlier spoils. In 2002, the Canal Corporation modified and improved the southern basin to stage approximately 25,000 cubic yards of dredge spoil material (characterized as sand and gravel) that was removed from the navigation channel near the mouth of the Hoosic River. Prior to removal, environmental sampling verified that the sediments targeted for removal in 2002 did not contain any PCBs. As a result, the 2002 dredge spoil materials were segregated from the previous dredge spoil materials by a layer of geo-textile fabric as a marker making it possible to remove the later materials for reuse under an established beneficial use determination (BUD) from the Department. In 2006-2007, the Canal Corporation removed nearly 115,000 cubic yards of additional sand and gravel sediment during more navigational dredging near the mouth of the Hoosic and mingled them with the 2002 dredge materials (Figure 3). Again, environmental sampling done prior to removal verified that the targeted sediments did not contain any PCBs. Regardless of this, the mixing of the 2006-2007 and 2002 dredge spoil materials nullified the earlier BUD. Use of Newland Island to stage additional sediment removed from the navigation channel near the mouth of the Hoosic River is expected to continue into the future as sediments from the Hoosic River continue to impact the canal system. Based on recent conditions, the need for channel maintenance dredging operations near the mouth of the Hoosic River occurs every four to six years.

3.2: Remedial History

During an assessment of areas with possible PCB contamination in the Upper Hudson River Valley completed by Weston Environmental for the Department in 1978, it was found that the dredge spoil materials disposed of at this site were contaminated with PCBs at levels up to 4,190 ppm. A follow-up assessment completed by Malcolm Pirnie in 1992 for the Department confirmed the presence of PCB contamination at the Newland Island site at levels greater than 50 ppm, the definition of hazardous waste, in 3 of the 26 samples that had reportable PCB detections. PCB concentrations for all samples ranged between non-detect (< 2 ppm) and 290 ppm while the overall average PCB concentration was calculated to be 21 ppm. Based on the results of the Malcolm Pirnie study, it was estimated that the Newland Island site contained 79,700 cubic yards of contaminated soil with a PCB concentration greater than 2 ppm. The mass of PCBs at this site was also estimated to be 4,100 pounds in the Malcolm Pirnie report.

A series of eleven surface soil samples were collected from the basin and berm system and from the adjoining residential property in August of 1998 by the Department. PCBs were detected at a concentration of 1 ppm in one of the eleven surface soil samples - this single sample was on the residential property. Three sediment samples were also collected by the Department - one sample from a swim area possibly used by the residents - two samples from a wetland area between

Figure 3
Dewatering Activities – Southern Basin – 2006 to 2007
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Images Captured from Microsoft Virtual Earth (2008-12-29)
Photographs from the Spring of 2007

Newland Island and the island peninsula to the north. PCBs were only detected in the two wetland samples with concentrations reported at less than 1 ppm. These findings were included in the Department's "July 2001 Dredge Spoils Investigation Report".

In November of 1998, the Department listed the site as a Class 2 site in the "Registry of Inactive Hazardous Waste Disposal Sites in New York State". A Class 2 site is a site where hazardous waste presents a significant threat to the public health or the environment and action is required.

Additional surface soil samples were collected at the residential property on Newland Island following the release of the "July 2001 Dredge Spoils Investigation Report". Three of the samples were collected to verify the results obtained earlier using field screening test methods. Twenty-three other samples were collected from areas of the property that were of concern to the resident family. All samples were analyzed for PCBs using a certified laboratory test method and all results were reported as non-detect.

In 2005, the Department contracted Ecology & Environment Engineering, P.C. to perform the Newland Island RI/FS to characterize the nature and extent of contamination at the site and to develop remedial alternatives to address that contamination.

SECTION 4: 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: the New York State Department of Transportation and the General Electric Company. After remedy selection, the Department will evaluate the site history for the consideration of further action against responsible parties regarding compliance with the law and cost recovery as required.

SECTION 5: SITE CONTAMINATION

A remedial investigation/feasibility study (RI/FS) has been conducted to evaluate the alternatives for addressing the significant threats to human health and/or the environment.

5.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The RI was conducted between April 2005 and May 2008. The field activities and findings of the investigation are described in the RI report.

The tasks associated with the Newland Island RI included site reconnaissance and a records search; a surface soil sampling program; exploration borehole and well drilling programs with concurrent subsurface soil sampling elements; groundwater monitoring well installation and groundwater sampling programs; surveying and mapping programs; completion of a human health risk evaluation and a screening-level ecological risk assessment; and report preparation.

5.1.1: Standards, Criteria, and Guidance (SCG)

To determine whether the surface soil, subsurface soil, groundwater, and ponded surface water/seeps contain contamination at levels of concern, data from the investigation were compared to the following SCGs:

- Groundwater, drinking water, and surface water SCGs are based on the Department's "Ambient Water Quality Standards and Guidance Values" and Part 5 of the New York State Sanitary Code.

- Soil SCGs are based on the Department's Cleanup Objectives provided in 6 NYCRR Part 375 - "Environmental Remediation Programs" - December 14, 2006.

Based on the RI results, in comparison to the SCGs and potential public health and environmental exposure routes, certain media and areas of the site require remediation. These are summarized in Section 5.1.2. More complete information can be found in the RI report.

5.1.2: Nature and Extent of Contamination

This section describes the findings of the investigation for all environmental media that were investigated. As described in the RI report, many surface soil, subsurface soil, groundwater, and ponded surface water/seep samples were collected to characterize the nature and extent of contamination. As summarized in Table 1, the main categories of contaminants that exceed their SCGs are polychlorinated biphenyls (PCBs) and inorganics (metals). For comparison purposes, where applicable, SCGs are provided for each medium. In the tables, figures and narrative, the chemical concentrations are reported in parts per billion (ppb) for water and parts per million (ppm) for soil.

Figure 4 depicts the locations where environmental samples were collected at this site and Table 1 summarizes the degree of contamination for the contaminants of concern in surface soil, subsurface soil, groundwater, and ponded surface water/seeps, and compares the data with the SCGs for the site. The following are the media which were investigated and a summary of the findings of the investigation.

Waste Materials

Dredge spoil materials are the waste materials at the Newland Island site, especially those spoils derived from sediment sporadically tainted with PCBs and metals (cobalt, copper, lead, mercury, and zinc) in the Hudson River and subsequently removed from the Champlain Canal/Hudson River navigation channel in the past. This designation as waste includes only those dredge spoils older than those placed in 2002. Environmental sampling verified that the sediments targeted for removal in 2002 and later did not contain any PCBs. These later dredge spoil materials were also segregated from the earlier, variably contaminated dredge spoil materials to avoid mixing.

Figure 4
Environmental Sampling Point Locations

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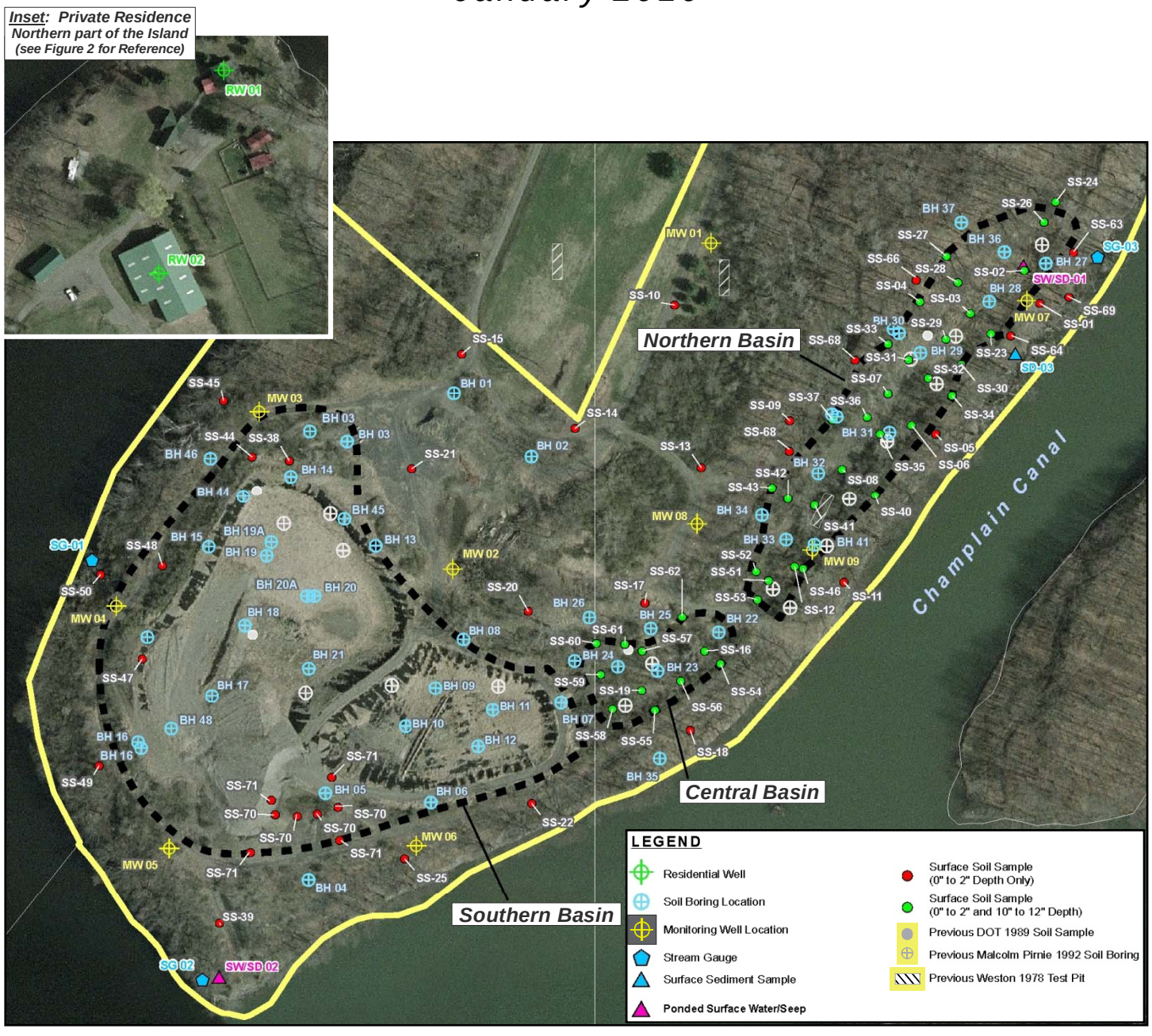

Environmental Sampling Point Locations

Excerpt from the August 2009
"Remedial Investigation Report for the Newland Island Dredge Spoil Disposal Area"

The dredge spoil - waste materials (characterized as silt, sand, and gravel) at Newland Island were described and sampled as soil during the course of the RI/FS. Figure 5 depicts the extent of contaminated soil (dredge spoil - waste materials) at this site.

Contaminated dredge spoil material/soil identified during the RI/FS will be addressed in the remedy selection process.

Surface Soil

Surface soil samples (covering the 0 to 2-inch soil depth interval) were collected from 131 locations at this site, including points distributed within each dredge spoil disposal basin, upon each containment berm, and around each basin perimeter. Samples from the surface at each exploration borehole, monitoring well borehole, and ponded surface water/seep sampling point contributed to the overall surface soil assessment. (Note that the surface soil sampling points in the active southern basin reflect conditions and relative elevations prior to the addition and reworking of nearly 115,000 cubic yards of additional sand and gravel sediments in 2006-2007.) All 131 samples were analyzed for PCBs. Results confirm PCBs at 89 surface soil sampling points with 76 samples reporting concentrations above 0.1 ppm (the unrestricted use Soil Cleanup Objective (SCO)) and 41 samples reporting concentrations above 1.0 ppm (the restricted use - commercial - SCO applicable to this site). The highest PCB concentration in surface soil was 12 ppm. PCBs in soil are the risk drivers for human health and for wildlife.

For the 26 surface soil samples analyzed for cadmium, chromium, lead, and mercury, the respective SCG value for each metal was exceeded 35 to 54 percent of the time. Lead and mercury in soil are two of the risk drivers for plants and invertebrates. Lead exceeded its SCG at 9 locations and mercury exceeded its SCG at 10. For the 8 surface soil samples analyzed for the other 19 metals listed in Table 1, the respective SCG values were exceeded 50 percent of the time or more in only two instances - once for zinc and once for manganese. Zinc in soil is a risk driver for plants and invertebrates and exceeded its SCG at 5 locations.

In summary for surface soil: PCBs exceeded the unrestricted use SCO of 0.1 ppm in 76 of 131 samples; lead exceeded the unrestricted use SCO of 63 ppm in 9 of 26 samples; mercury exceeded the unrestricted use SCO of 0.18 ppm in 10 of 26 samples; and zinc exceeded the unrestricted use SCO of 109 ppm in 5 of 8 samples.

Surface soil contamination identified during the RI/FS will be addressed in the remedy selection process.

Subsurface Soil

One hundred and ninety subsurface soil samples (deeper than the 0 to 2-inch soil depth interval) were collected from 99 locations at this site. Sampling locations were distributed within the dredge spoil disposal basins, upon the containment berms, and around the perimeter of the disposal areas at the site. Samples from below grade at each exploration borehole, monitoring well borehole, and hand-advanced sampling point contributed to the overall subsurface soil assessment. (Note that the subsurface soil sampling points in the active southern basin reflect conditions and relative elevations

Figure 5
Map Extent of PCB-Contaminated Soil

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Map Extent of PCB-Contaminated Soil (Dredge Spoil – Waste Materials)

Excerpt from the August 2009
"Remedial Investigation Report for the Newland Island Dredge Spoil Disposal Area"

prior to the addition and reworking of nearly 115,000 cubic yards of additional sand and gravel sediments in 2006-2007.) All 190 samples were analyzed for PCBs. Results confirm PCBs in 110 subsurface soil samples with 82 samples reporting concentrations above 0.1 ppm and 46 samples reporting concentrations above 1.0 ppm. The highest PCB concentration in the subsurface soil was 43 ppm. The distribution of subsurface soil samples containing PCBs at various depths is illustrated in Figures 6, 7, and 8. PCBs in soil are the risk drivers for human health and for wildlife.

For the 43 subsurface soil samples analyzed for cadmium, chromium, lead, and mercury, the respective SCG value for each metal was exceeded 16 to 35 percent of the time. Lead and mercury in soil are two of the risk drivers for plants and invertebrates. Lead exceeded its SCG in 9 samples and mercury exceeded its SCG in 7. Chromium and cadmium exceeded their respective SCG values in 11 and 15 samples. For the 17 subsurface soil samples analyzed for the other 19 metals listed in Table 1, the respective SCG value for each metal was exceeded 50 percent of the time or more in only one instance - manganese. The other risk drivers for plants and invertebrates in soil - cobalt, copper, and zinc, exceeded their respective SCG values in 5, 2, and 3 of the samples collected.

In summary for subsurface soil: PCBs exceeded the unrestricted use SCO of 0.1 ppm in 82 of 190 samples; cadmium exceeded the unrestricted use SCO of 2.5 ppm in 11 of 43 samples; chromium exceeded the unrestricted use SCO of 30 ppm in 15 of 43 samples; lead exceeded the unrestricted use SCO of 63 ppm in 9 of 43 samples; and mercury exceeded the unrestricted use SCO of 0.18 ppm in 7 of 43 samples.

Subsurface soil contamination identified during the RI/FS will be addressed in the remedy selection process.

Groundwater

A total of thirty-three groundwater samples were collected from nine shallow groundwater monitoring wells around the site in April, June, September, and December of 2006 (Figure 9). Three monitoring wells (MW-03, MW-07, and MW-09) were dry in September and did not yield a sample. All thirty-three samples were analyzed for PCBs and metals. Results confirm PCBs above the applicable water quality standard of 0.09 ppb in the April and June samples collected from MW-07 at concentrations of 1.45 ppb and 0.31 J ppb (an estimated result) respectively. These findings may reflect sample turbidity and not represent PCBs dissolved in water. The screen of this well is set in dredge spoil material. For metals that may be attributable to contaminated dredge spoil materials, chromium and lead exceeded their respective SCG values in the June sample from MW-06, barium exceeded its SCG value in the April sample from MW-01, and copper exceeded its SCG value in the June sample from MW-03. These findings may also reflect sample turbidity and not represent occurrences where these metals are dissolved in water. Other metals (iron, magnesium, and manganese) that exceeded their respective SCG values in the shallow groundwater monitoring wells around the site appear to represent natural conditions.

A total of six groundwater samples were collected from the two residential wells near the site in April, September, and December of 2006 on dates coincident with the sampling dates for the shallow groundwater monitoring wells around the site. These wells draw water from the bedrock aquifer and do not show any impact attributable to the site. All samples were analyzed for PCBs and metals.

Figure 6
Maximum Total PCB Concentrations in the Soil
Depth: Surface to 6-inches below the Surface

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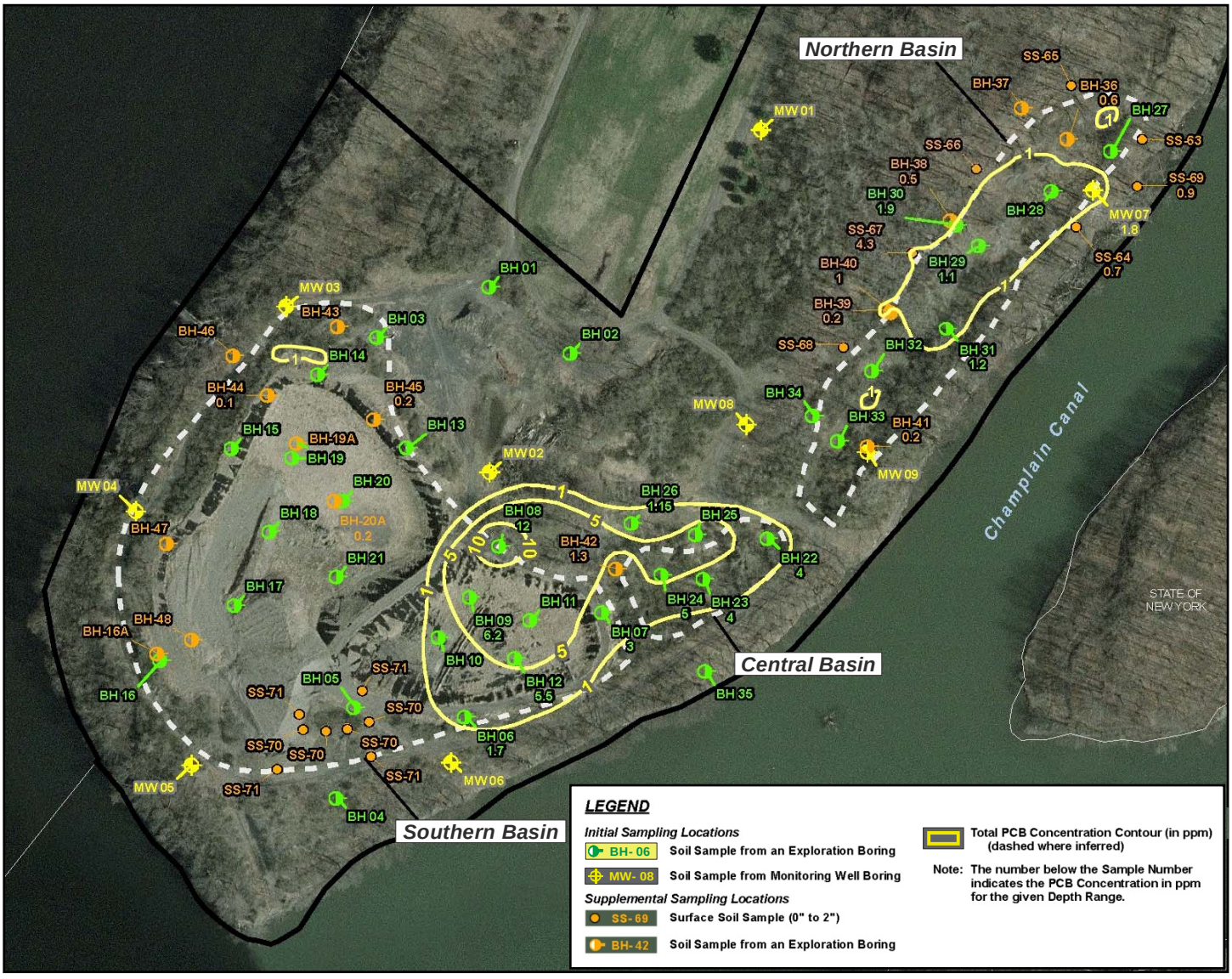

Maximum Total PCB Concentrations in the Soil
Depth: Surface to 6-inches below the Surface

(Note that the given soil sampling points in the active southern basin reflect conditions and relative elevations prior to the addition and reworking of nearly 115,000 cubic yards of additional sand and gravel sediments in 2006-2007.)

Excerpt from the August 2009
"Remedial Investigation Report for the Newland Island Dredge Spoil Disposal Area"

Figure 7
Maximum Total PCB Concentrations in the Soil
Depth: 6-inches to 8-feet below the Surface

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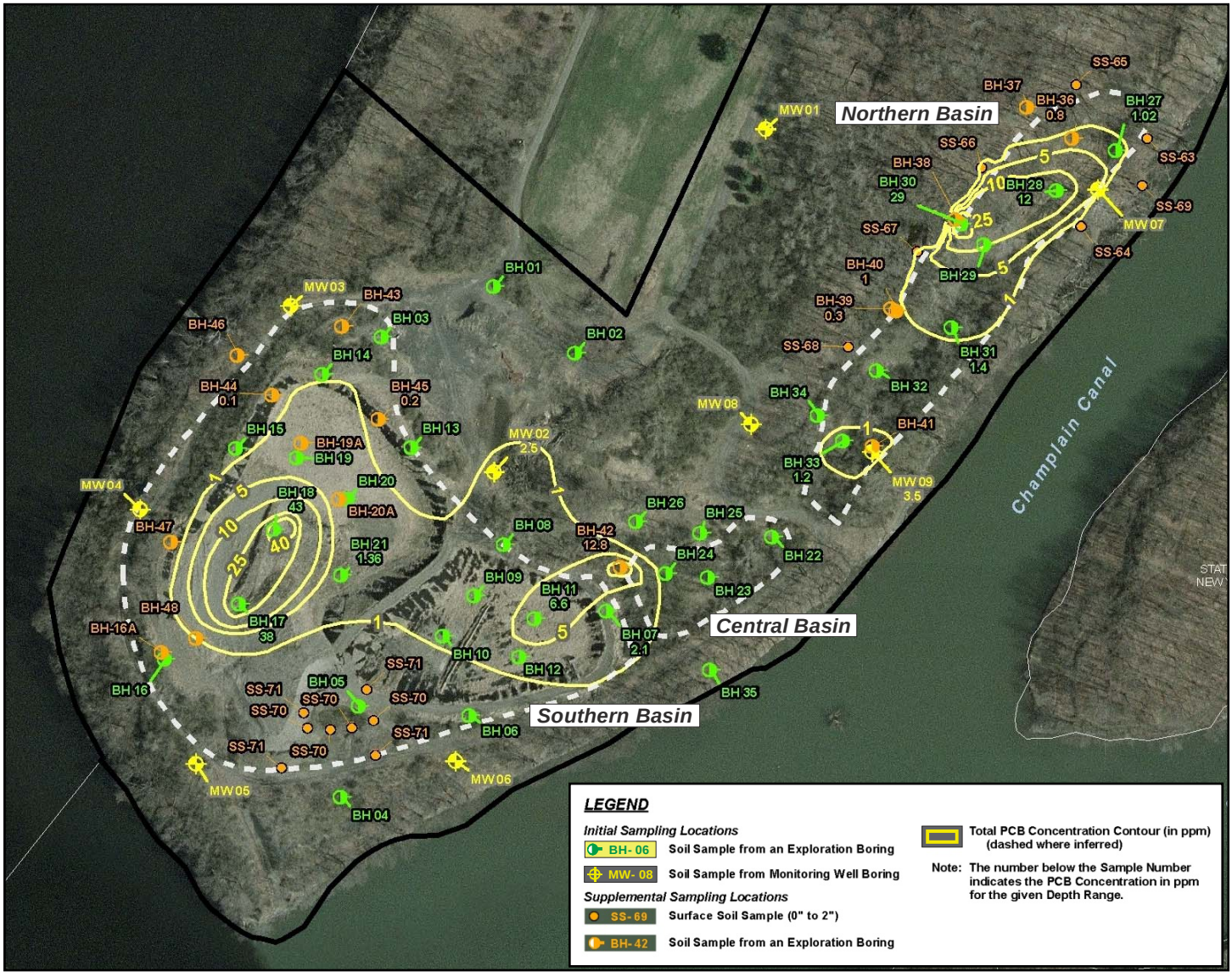

Maximum Total PCB Concentrations in the Soil
Depth: 6-inches to 8-feet below the Surface

(Note that the given soil sampling points in the active southern basin reflect conditions and relative elevations prior to the addition and reworking of nearly 115,000 cubic yards of additional sand and gravel sediments in 2006-2007.)

Excerpt from the August 2009
"Remedial Investigation Report for the Newland Island Dredge Spoil Disposal Area"

Figure 8
Maximum Total PCB Concentrations in the Soil
Depth: Greater than 8-feet below the Surface

Newland Island / Lock 4 Dredge Spoil Disposal Area
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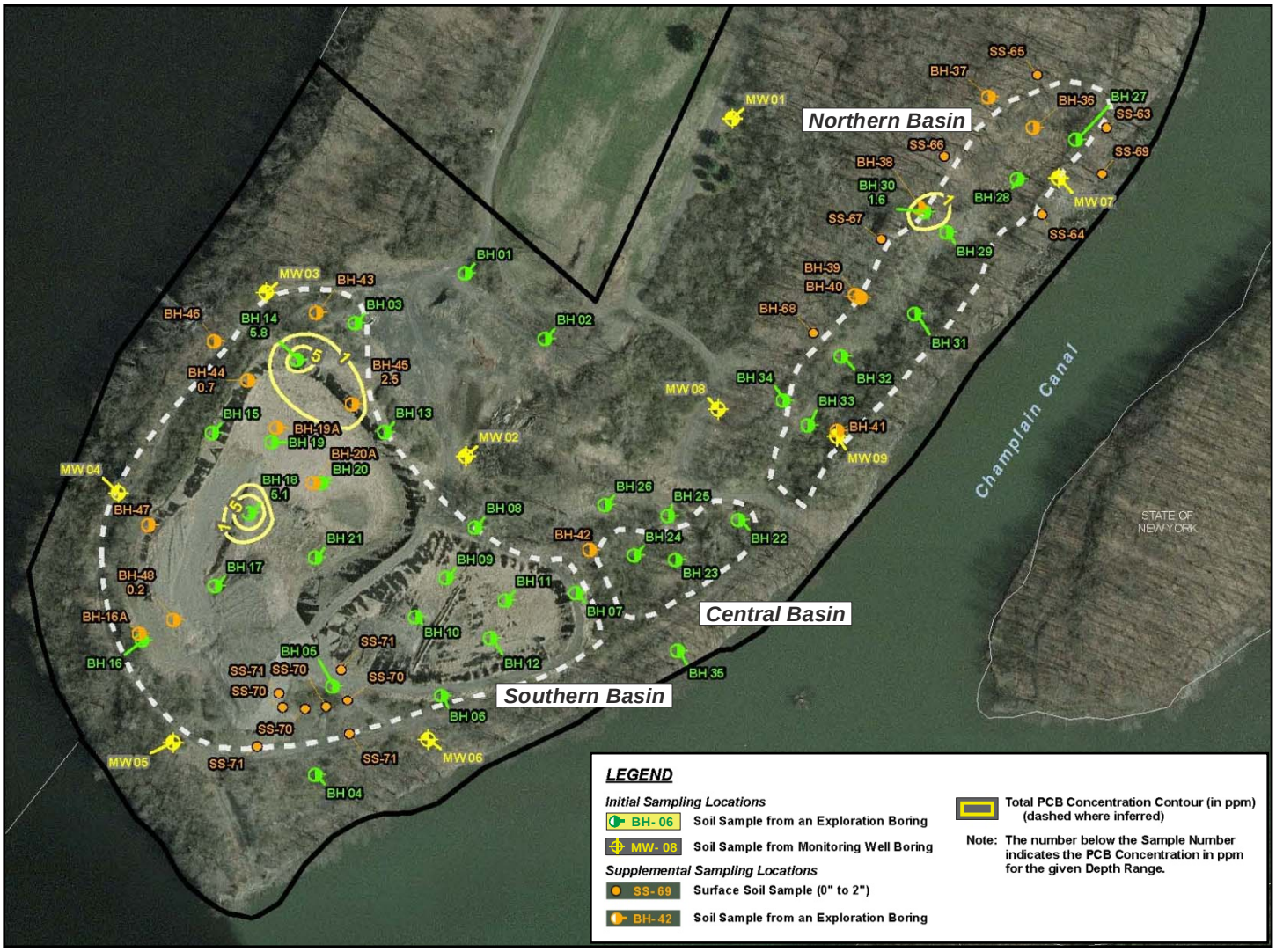

Maximum Total PCB Concentrations in the Soil
Depth: Greater than 8- feet below the Surface

(Note that the given soil sampling points in the active southern basin reflect conditions and relative elevations prior to the addition and reworking of nearly 115,000 cubic yards of additional sand and gravel sediments in 2006-2007.)

Excerpt from the August 2009
"Remedial Investigation Report for the Newland Island Dredge Spoil Disposal Area"

Figure 9
Groundwater Monitoring Results for PCBs
April, June, September, and December of 2006

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Groundwater Monitoring Results for PCBs – Samples collected in April, June, September, and December of 2006

Excerpt from the August 2009
"Remedial Investigation Report for the Newland Island Dredge Spoil Disposal Area"

PCBs were not detected in any residential well sample. Sodium was the only metal to exceed its SCG value at any time, and all three samples that did, were collected from the same well. Sodium is not attributable to the site.

Groundwater contamination identified during the RI/FS will be addressed in the remedy selection process.

Surface Water

There are no sustained surface water bodies on this site. When the dredging operations are occurring and sediments are being de-watered in the southern basin, water ponds on the site temporarily, but is not sustained. One area where precipitation collects intermittently was identified in the northern basin and sampled once. One intermittent groundwater seep expression was identified in an area south and outside of the southern basin and sampled once. The location of these sampling points is shown on Figure 4 and the results are provided in Table 1. PCBs were not detected in either sample and the few metals found above the applicable SCG values were inconsequential.

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

Sediments

Considering there are no sustained surface water bodies on this site, there are no aquatic sediments present on this site. No site-related sediment contamination of concern was identified during the RI/FS. Therefore, no remedial alternatives need to be evaluated for sediment.

Soil Vapor/Air

Taking into account that volatile organic compounds were not associated with the known activities at this site and that previous environmental sampling did not indicate any soil contamination by volatile organic compounds, an evaluation of the soil vapor and indoor air conditions at the site during the RI/FS were not warranted. No site-related soil vapor or indoor air contamination of concern was identified during the RI/FS. Therefore, no remedial alternatives were evaluated for this medium.

5.2: 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 completion of the RI/FS. There were no IRMs performed at this site during the RI/FS.

5.3: Summary of Human Exposure Pathways

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the human exposure pathways can be found in Section 7 of the RI report. An exposure pathway describes the means by which an individual may

be exposed to contaminants originating from a site. An exposure pathway has five key elements: [1] a contaminant source, [2] contaminant release and transport mechanisms, [3] a point of exposure, [4] a route of exposure, and [5] a receptor population.

The source of contamination is the location where contaminants were released to the environment (any waste disposal area or point of discharge). Contaminant release and transport mechanisms carry contaminants from the source to a point where people may be exposed. The exposure point is a location where actual or potential human contact with a contaminated medium may occur. The route of exposure is the manner in which a contaminant actually enters or contacts the body (e.g., ingestion, inhalation, or direct contact). The receptor population is the people who are, or may be, exposed to contaminants at a point of exposure.

An exposure pathway is complete when all five elements of an exposure pathway exist. An exposure pathway is considered a potential pathway when one or more of the elements currently does not exist, but could in the future.

Workers may come in contact with contaminated dredge spoil materials at the site that contain PCBs and metals. Exposure to these contaminants in the impacted dredge spoil material/soil can occur through prolonged direct contact, incidental ingestion, and the inhalation of airborne dust. Surface soils collected from the private residential property on the Island did not reveal any impacts or the presence of any contaminated dredge spoil materials on that property.

Shallow groundwater in one monitoring well at the site was found to contain PCBs. The screen of this well is set in dredge spoil material. Two shallow groundwater monitoring wells at the perimeter of the southern basin contain metals that may be attributable to dredge spoil contamination. Other metals, such as iron and manganese, were found in several shallow groundwater monitoring wells around the site and appear to represent natural conditions. Groundwater is not used at the site; therefore, there are no current exposures to the contaminants identified in the shallow groundwater. Two private residential wells near the site that draw water from the bedrock aquifer have been sampled and do not show any impact attributable to the site.

5.4: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts include existing and potential future exposure pathways to fish and wildlife receptors, as well as damage to natural resources such as aquifers and wetlands.

The Screening Level Ecological Risk Assessment, 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. This assessment is limited to terrestrial habitats that are on the Newland Island and does not include the nearby Hudson River, Hoosic River, or Champlain Canal. The Hudson River and the portions of the Champlain Canal that are within it, are being addressed by the EPA Hudson River PCBs Superfund Site remedial program.

The following environmental exposure pathways and ecological risks have been identified:

- The results of phytotoxicity screening for metals in soil at this site confirm that cobalt exceeded the 13 ppm benchmark in 6 of 16 samples up to 17.5 ppm, copper exceeded the benchmark of 60 ppm in 5 of 16 samples up to 85.1 ppm, lead exceeded the benchmark of 120 ppm in 14 of 43 samples up to 332 ppm, mercury exceeded the benchmark of 0.3 ppm in 16 of 43 samples up to 2 ppm, and zinc exceeded the benchmark of 50 ppm in 15 of 16 samples up to 621 ppm. Considering this distribution, these metals in soil may pose a risk to terrestrial plant communities at the site.

- The results of fauna screening for metals in soil at this site confirm that copper exceeded the 50 ppm benchmark in 7 of 16 samples up to 85.1 ppm, mercury exceeded the benchmark of 0.1 ppm in 28 of 43 samples up to 2 ppm, and zinc exceeded the benchmark of 200 ppm in 8 of 16 samples up to 621 ppm. Considering this distribution, these metals in soil may pose a risk to invertebrates at the site.

- Based on food-chain modeling results, total PCBs in soil are likely to pose a risk to song birds, such as the American robin, and small mammals, such as the short-tailed shrew, that feed extensively on invertebrates in soil. Risks to carnivorous birds and mammals are minimal.

Although current levels of PCBs and metals (cobalt, copper, lead, mercury, and zinc) in soil may pose a risk to some groups of ecological receptors, the primary stressor to ecological receptors at the site is most likely the physical disturbance caused by placement, de-watering, and mechanical redistribution of spoil materials.

Environmental contamination at this site may pose a risk to some communities of terrestrial plants, some invertebrates in soil, and some wildlife species that use the site. Site contamination has impacted the groundwater resource in the shallow overburden aquifer at four locations, though the findings may reflect sample turbidity and not be representative of contamination dissolved in water. Residential wells near the site that draw water from the bedrock aquifer have been sampled and do not show any impact attributable to the site.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The remediation goals for this site are to eliminate or reduce to the extent practicable:

- exposures of persons at or around the site to PCB-contaminated dredge spoil material/soil present at the surface or that may be disturbed in the subsurface during any excavation activities - through the potential exposure pathway of direct contact;

- environmental exposures of flora or fauna to PCBs and metals (cobalt, copper, lead, mercury, and zinc) in dredge spoil material/soil - through the potential exposure pathways of direct contact and/or ingestion; and

- the release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards.

Further, the remediation goals for the site include attaining to the extent practicable:

- ambient groundwater quality standards and

- Soil Cleanup Objectives for PCBs, cobalt, copper, lead, mercury, and zinc.

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected 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. Potential remedial alternatives for the Newland Island/Lock 4 Dredge Spoil Disposal Area were identified, screened and evaluated in the FS report which is available at the document repositories established for this site.

A summary of the remedial alternatives that were considered for this site is discussed below. The present worth 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.

7.1: Description of Remedial Alternatives

The following potential remedies were considered to address the contaminated dredge spoil material, surface soil, subsurface soil, and groundwater at the site.

Alternative 1: No Action

The No Action Alternative is evaluated as a basis for comparison. It provides for the site to remain in an unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

The alternative would be acceptable only if it is demonstrated that the contamination at the site is below the applicable remedial action objectives, or that natural processes will reduce the contamination to acceptable levels. This alternative does not include remedial action, institutional or engineering controls, or long-term monitoring.

Alternative 2: Institutional Controls and Monitoring

Present Worth: *$260,000*
Capital Cost: *$170,000*
Annual Costs:
(Years 1-5): *$3,200*
(Years 5-30): *$3,200*

This alternative would implement an environmental easement on the property to limit the potential for human exposure to contaminated dredge spoil material/soil. This institutional control would specify limits relative to the use and development of the property, and require a site management plan to control activities at the site to minimize the potential for creating additional exposure pathways to site contamination. These institutional controls would take less than one year to implement.

Another element of this alternative involves a program to monitor the existing groundwater wells located along the Hudson River and Champlain Canal to verify that PCBs are not moving into these waters from the site. The existing series of nine groundwater monitoring wells would be sampled once, five years following the implementation of the remedy, and the results would be evaluated to determine if any modifications to the remedy or monitoring program are warranted.

Alternative 3: Excavation and Off-Site Treatment by High Temperature Thermal Desorption

Present Worth: *$42,500,000*
Capital Cost: *$42,500,000*
Annual Costs:
(Years 1-5): *$0*
(Years 5-30): *$0*

This alternative would address the PCB-contaminated dredge spoil material/soil at the site by excavation and treatment and remove the potential for human and ecological receptor exposures and impacts. In this alternative, excavated dredge spoil material/soil would be transported to an off-site High Temperature Thermal Desorption (HTTD) facility for treatment, and the remediated soils would not be returned to the site. The extent of the proposed excavation for this alternative would involve the handling of approximately 128,000 cubic yards of contaminated material.

PCB-contaminated dredge spoil materials/soils are nearly 27 feet thick in places and excavation would readily be accomplished using conventional construction equipment. PCB field screening tests would be used to establish final excavation limits out to 1 ppm. De-watering of excavated dredge spoil material/soil may be necessary in the northwest portion of the northern disposal basin if groundwater levels are higher than 90 feet above mean sea level in this area at the time of excavation. If needed, de-watering activities would be limited in duration and scope, and the water would be treated before being released to the environment under appropriate discharge limits.

Newland Island can be accessed either by land or water. The single access road is unimproved and involves crossing a narrow earthen causeway leading onto the island. The integrity of the access

road and its ability to handle heavy construction and transport equipment on a routine basis is unknown. Further study would be required to determine the extent of improvements necessary for the road to handle the type and volume of truck traffic associated with this alternative. Access by water would only require the construction of a temporary loading dock and possibly some mooring structures along the margin of the Canal navigation channel next to the island. Based on access requirements and the ease of implementation, site access by water would provide the greatest benefit and was assumed in the development of this alternative.

Excavated material would be loaded into lined and covered roll-off type containers, that subsequently would be loaded onto barges using a crane located on a temporary crane platform/loading dock installed along the east side of the island. The barges would then be transported to the Port of Albany. Once at the port, the roll-off containers would be loaded onto roll-off trucks (provided by a transportation company), and transported to the nearest HTTD treatment facility that can accept contaminated dredge spoil materials/soils from this site.

Considering that up to 5 feet of backfill would be needed to restore grade in some portions of the site following removal excavations, it was assumed for this alternative that clean materials would be imported to the site by 1,000 ton capacity hopper barges from the Port of Albany, and that the laden hopper barges would be unloaded at the site using the crane system established at the site already.

Since all of the contaminated dredge spoil materials/soils would be removed from this site under this alternative, no institutional controls, monitoring program, or maintenance activities are necessary.

Alternative 4: Excavation and Off-Site Disposal

Present Worth: *$46,100,000*
Capital Cost: *$46,100,000*
Annual Costs:
(Years 1-5): *$0*
(Years 5-30): *$0*

This alternative would address the PCB-contaminated dredge spoil material/soil at the site by excavation and off-site disposal and remove the potential for human and ecological receptor exposures and impacts. In this alternative, excavated dredge spoil material/soil would be stockpiled, characterized, and transported to an appropriate disposal facility. Based on recent sampling, contaminated soils proposed for excavation and removal using this alternative do not contain PCBs greater than 50 ppm and, under NYS regulations, would be considered a non-hazardous waste and qualify for disposal in a permitted Department-approved, non-hazardous/solid waste landfill. The extent of the proposed excavation for this alternative would involve the handling of approximately 128,000 cubic yards of contaminated material.

Excavation, confirmation sampling, de-watering, and transportation of the contaminated dredge spoil materials/soils would be accomplished as described in Alternative 3. Excavated soils would be stockpiled in plastic-lined areas at the site for characterization as required by the disposal facility. Once approved for disposal, the contaminated material would be loaded for transport to the Port of Albany. This alternative assumes that the contaminated material would be transported in lined and

covered roll-off type containers from the port to the disposal facility by truck. The requirements for backfill/site restoration and the methods to fulfill them would be the same as those described for Alternative 3.

Since all of the contaminated dredge spoil materials/soils would be removed from this site under this alternative, no institutional controls, monitoring program, or maintenance activities are necessary.

Alternative 5: Excavation and On-Site Disposal

Present Worth: *$18,900,000*
Capital Cost: *$15,900,000*
Annual Costs:
(Years 1-5): *$18,000*
(Years 5-30): *$18,000*

This alternative would address the PCB-contaminated dredge spoil material/soil at the site by excavation and disposal at a newly constructed, Department-approved and permitted, non-hazardous/solid waste landfill at the Newland Island site. The new lined landfill would be constructed, operated, and maintained in accordance with 6 NYCRR Part 360 requirements. Based on recent sampling, contaminated soils proposed for excavation and disposal using this alternative do not contain PCBs greater than 50 ppm and, under NYS regulations, would be considered a non-hazardous waste and qualify for disposal in the new non-hazardous/solid waste landfill. Institutional controls would also be established using this alternative to protect and monitor the integrity of the landfill.

The proposed landfill would be roughly in the central part of the island between the private parcel and the northern disposal basin. This location was selected because it is large enough to contain the contaminated dredge spoils/soils and because the current elevation of the ground surface is sufficient to keep the landfill materials above the local groundwater table. The proposed landfill dimensions would be calculated to hold approximately 128,000 cubic yards of contaminated material and approximately 20 % more to allow for the use of clean soil as daily cover during construction, a requirement in 6 NYCRR Part 360. Daily cover materials would come from the stockpile of clean soil excavated from the landfill footprint. The approximate dimensions of the proposed landfill at the ground surface (including cutback) would be 730 feet in length by 330 feet in width by 31 feet in height, of which 5 feet would be below ground level.

Excavation, confirmation sampling, and any necessary de-watering of the contaminated dredge spoil materials/soils would be accomplished as described in Alternative 3. The requirements for backfill/site restoration and the methods to fulfill these requirements, would be the same as those described for Alternative 3. Remedial excavation activities and landfill construction would likely be concurrent considering open space limitations on the island.

To construct the landfill as described, approximately 83,000 cubic yards of soil and gravel material would need to be transported to Newland Island. Considering the site access issues discussed in Alternative 3, it is assumed that the required clean materials for landfill construction would be transported to the site by 1,000 ton capacity hopper barges from the Port of Albany, and that the

laden hopper barges would be unloaded at the site using the crane system detailed in Alternative 3.

Leachate and storm water captured by the drainage layers in the landfill would be directed into perforated piping located around the landfill border where the water will either be pumped out for disposal off of the site, or cycled through an on-site treatment system and into either the Hudson River or the Champlain Canal under appropriate discharge limits.

Other controls proposed in this alternative once the landfill has been constructed and closed include the installation of a perimeter fence around the landfill, and the construction of a berm structure around the landfill to minimize the transfer the landfill material in the event of runoff and erosion. In addition, specific management and monitoring plans would be required under Part 360 regulations.

This alternative would also implement an environmental easement on the property to limit the potential for human exposure to contaminated dredge spoil material/soil. This institutional control would specify limits relative to the use and development of the property, and require a site management plan to control activities at the site to minimize the potential for creating exposure pathways to site contamination.

Alternative 6: Soil Cover and Diversion Trench with Institutional Controls and Monitoring

Present Worth: *$1,500,000*
Capital Cost: *$1,200,000*
Annual Costs:
(Years 1-5): *$5,000*
(Years 5-30): *$5,000*

This alternative would address the PCB-contaminated dredge spoil material/soil at the site by selective excavation and consolidation, construction of appropriate soil covers, construction of a drainage diversion trench, and the implementation of institutional controls and a monitoring program (Figures 10 and 11). This alternative would serve to reduce the potential for human and ecological receptor exposures at the ground surface through direct contact and would minimize the potential for migration of contaminants in the groundwater aquifer.

The construction elements proposed in this alternative would be readily accomplished using conventional construction methods and equipment. To reduce costs and make room for future navigational dredging operations, all backfill and cover material required for this project would come from the Canal Corporation's stockpile of nearly 130,000 cubic yards of clean dredge spoil material at the southern portion of the site, once the Department approves the material for beneficial use and if the material meets the Division of Environmental Remediation's criteria for backfill. Based on volume estimates for the backfill and cover material needed, the available volume would be sufficient for the proposed construction and no additional backfill or cover materials would need to be imported to the site. The assessment of access options are the same as presented in Alternative 3, however, based on project requirements and the ease of implementation, site access by land would provide the greatest benefit and was assumed in the development of this alternative.

Figure 10
Selective Excavation and Consolidation
Remedial Alternative 6

Newland Island / Lock 4 Dredge Spoil Disposal Area
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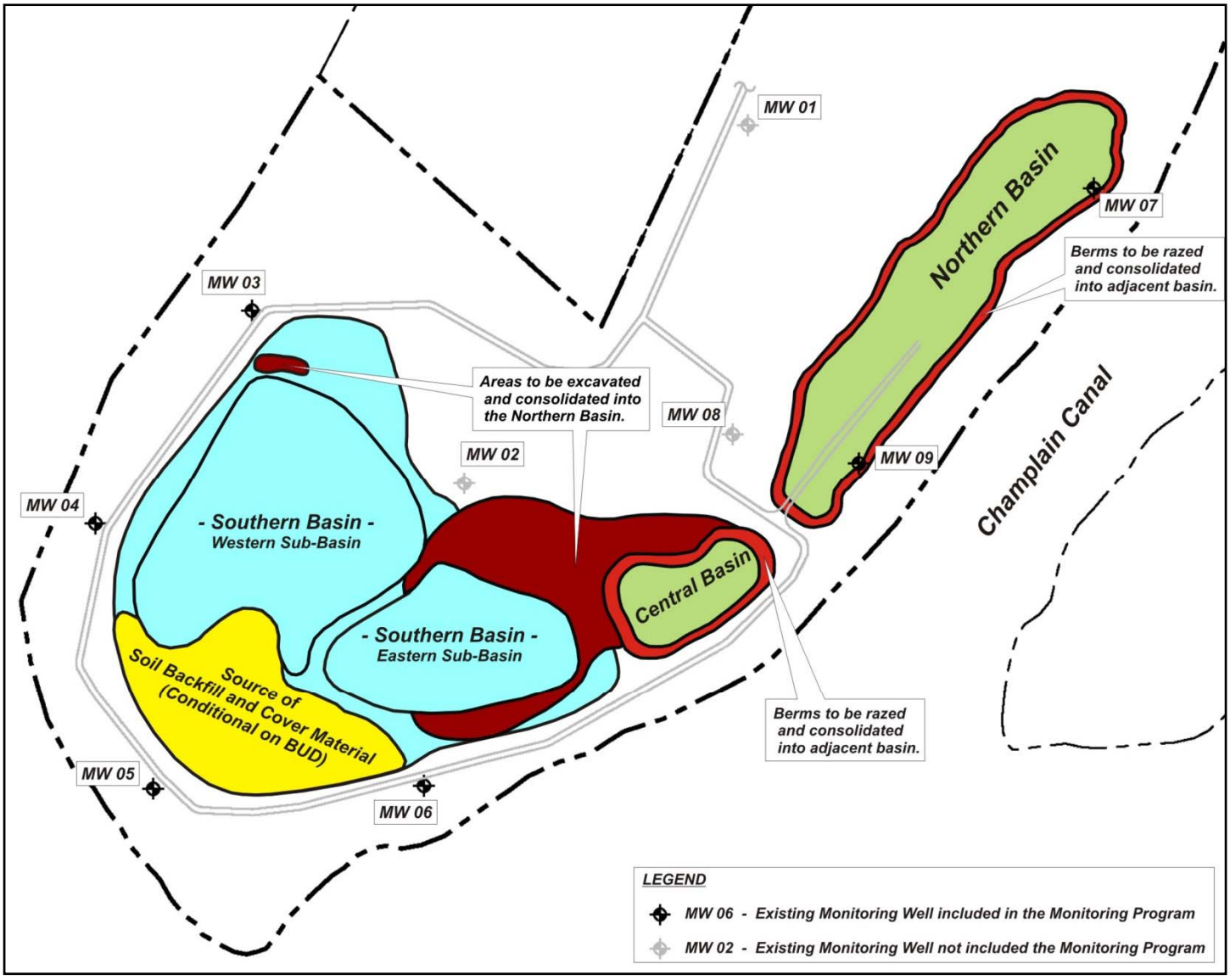
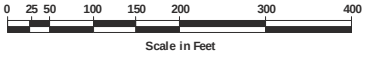
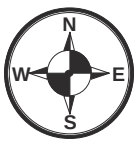


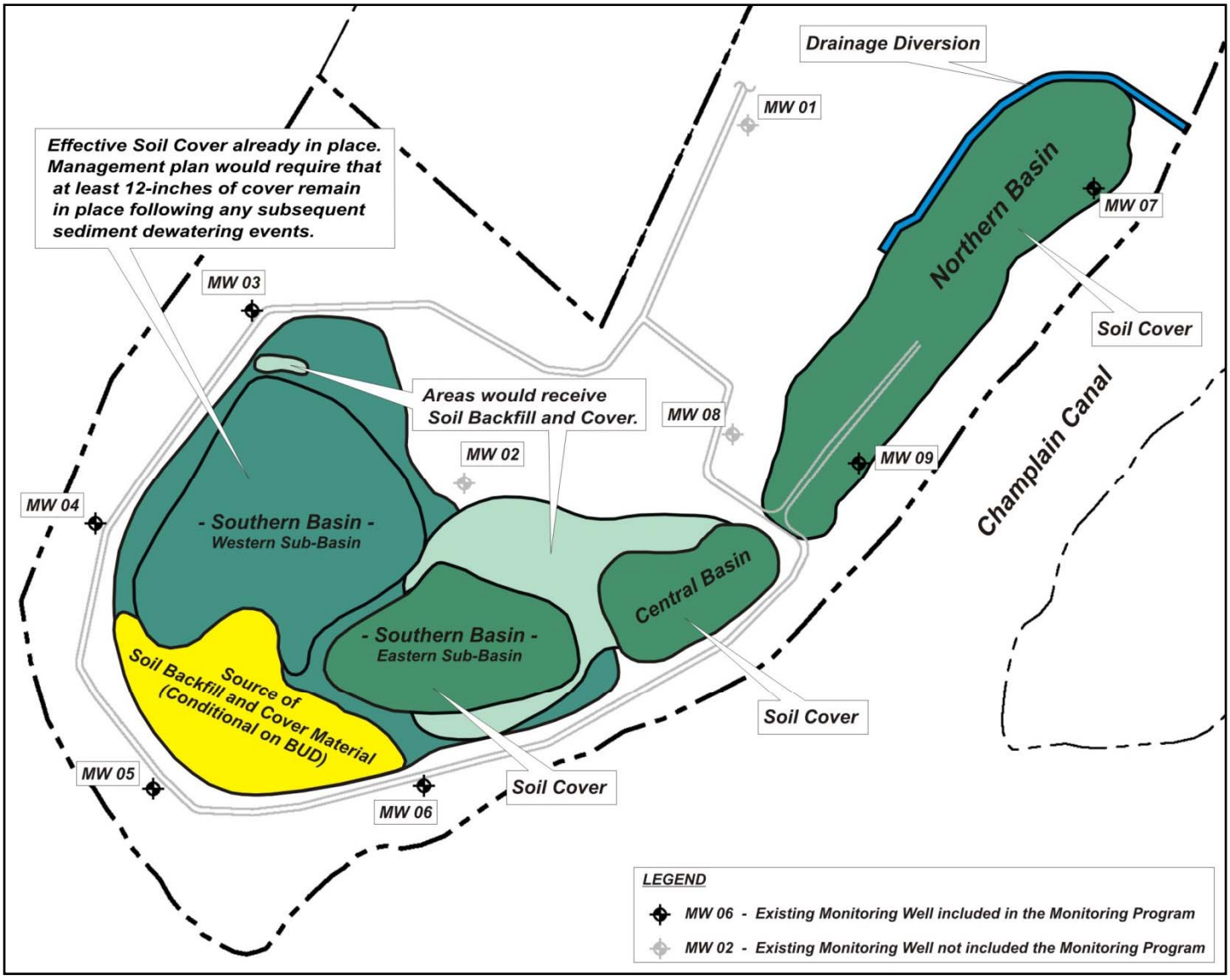


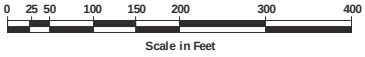


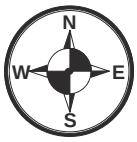
Selective Excavation and Consolidation – Remedial Alternative 6
"Remedial Investigation Report for the Newland Island Dredge Spoil Disposal Area"

Figure 11
Soil Cover and Drainage Diversion
Remedial Alternative 6

Newland Island / Lock 4 Dredge Spoil Disposal Area
Record of Decision
January 2010







PCB-contaminated dredge spoil materials/soils that were identified at or near the surface in some parts of the containment berm for the southern basin and around the central basin would be excavated and placed in the northern basin prior to proceeding with cover construction. It is estimated that approximately 20,000 cubic yards of contaminated material would be excavated to a depth of three feet and moved to the northern basin by truck. Confirmation samples would be used to establish the final lateral excavation limits. Backfill would be required to restore the grade and slope of the berm structure following removal excavation and is readily available at the site. Prior to the placement of backfill, an isolation/demarcation indicator (with contrasting color) would be placed at the base of the excavation to serve as a warning and to delineate between clean cover and potentially contaminated materials at depth.

In preparation for the construction of the soil cover over the central and northern dredge spoil disposal basins, the containment berm around each basin would be razed, consolidated into the respective basin, and graded to match the adjacent ground surface elevations to the extent practical and with no appreciable increase in footprint area. In the northern basin, materials from the razed berm would be graded along with the contaminated materials placed there during the selective excavation program. Upon completion of grading, and prior to the construction of the soil cover for the central and northern basins, an isolation/demarcation indicator (with contrasting color) would be placed over the consolidated materials to serve as a warning and to delineate between clean cover and potentially contaminated materials at depth. Once the isolation/demarcation indicator is installed, cover construction would begin. This element involves the placement, compaction, and grading of clean fill over both basins to a minimum thickness of twelve inches above the isolation/demarcation indicator. Attempts would be made to match adjacent grades to the extent practical. A slight pitch would also be incorporated into the cover grade to promote surface drainage toward the proposed drainage diversion trench along the northwestern margin of the northern basin. It is estimated that approximately 7,400 cubic yards of clean material would be required for the construction of this cover and that it would be approximately 4.6 acres in size when complete.

The southern basin is actively used by the Canal Corporation to process sediments on a four to six year cycle and was divided into two sub-basins during modification in 2002 into its current configuration to accomplish this. Both sub-basins were covered with a geo-textile fabric to segregate 2002 and later dredge spoil materials from earlier, potentially contaminated dredge spoil materials. The western sub-basin contains up to sixteen feet of clean sand and gravel placed during and after 2002 over the demarcation fabric and older dredge spoil materials, while the eastern sub-basin contains a very thin veneer of clean silt and fine sand placed during and after 2002 over the demarcation fabric and older dredge spoil materials. In some places in the eastern sub-basin, the demarcation fabric covering the basin floor and containment berm does not have any soil cover and is exposed at the surface. The soil thickness variations found in these two sub-basins is the result of the de-watering process. The western sub-basin receives all of the water and sediments discharged directly from the hydraulic dredge, while the eastern sub-basin only receives the silt and fine sands that settle out of the water that passes through spill box in the western sub-basin after a period of retention. Considering these different settings, two different approaches for cover construction would be used in this alternative.

For the western sub-basin, an effective, twelve to eighteen inch thick, clean soil cover is already in place over the potentially contaminated dredge spoil materials in this area. In addition, the existing

geo-textile fabric would readily serve as a warning and marker to delineate between the clean cover and the potentially contaminated materials at depth. Recognizing the need to excavate/recover some of the sand and gravel in the basin to make room for future navigational dredging operations, the management plan for activities at this site would require that at least twelve inches of clean cover remain in place over the existing isolation/demarcation indicator on the basin floor and upon the face of the containment berm for this sub-basin.

In the eastern sub-basin, prior to the construction of the soil cover, the existing geo-textile fabric marker would be supplemented with another isolation/demarcation indicator (with contrasting color). Once the new isolation/demarcation indicator is installed, cover construction would begin. This element involves the placement, compaction, and grading of clean fill upon the basin floor to a minimum thickness of twelve inches over the isolation/demarcation indicator, and the placement of at least twelve inches of clean cover over the isolation/demarcation indicator upon the face of the containment berm of this sub-basin. It is estimated that approximately 2,000 cubic yards of clean material would be required for the construction of this cover and that it would be approximately 1.2 acres in size when complete.

The top six inches of the soil cover over the central and northern basin would be sufficient to support grass and would be hydro-seeded to stabilize the cover and reduce the potential for erosion. Suitable top soil would be introduced prior to hydro-seeding as needed to facilitate the growth of the seeded vegetation. The soil cover in the southern, intermittently active basin that is used by the Canal Corporation to de-water sediment, would not be seeded. The soil cover in all areas and any exposed isolation/demarcation indicator on the face of the containment berm structures in the southern basin, would be inspected as required in the site management plan and repaired as needed.

This alternative also includes the construction of a drainage diversion trench along the northwestern margin of the northern basin to intercept and redirect any intermittent overland water flow in this area and adequately impede/eliminate the migration of this surface water into and through the known dredge spoil materials. As a permanent storm water management measure, the diversion trench would be constructed in accordance with the Department's New York Standards and Specifications for Erosion and Sediment Control (August, 2005). A grassed trapezoidal design is proposed to fit anticipated drainage calculations.

This alternative would implement an environmental easement on the property to limit the potential for human exposure to contaminated dredge spoil material/soil. This institutional control would specify limits relative to the use and development of the property, and require a site management plan to control activities at the site to minimize the potential for creating additional exposure pathways to site contamination. These institutional controls would take less than one year to implement.

Another element of this alternative involves a program to monitor the existing groundwater wells located along the Hudson River and Champlain Canal to verify that PCBs are not moving into these waters from the site. The existing series of nine groundwater monitoring wells would be sampled once, five years following the implementation of the remedy, and the results would be evaluated to determine if any modifications to the remedy or monitoring program are warranted.

7.2 Evaluation of Remedial Alternatives

The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375, which governs the remediation of inactive hazardous waste disposal sites in New York State. 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.

2. Compliance with New York State Standards, Criteria, and Guidance (SCG). 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.

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

3. Short-term 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.

4. 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.

5. 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.

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.

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. The costs for each alternative are presented in Table 2.

This final criterion 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.

8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the PRAP are evaluated. The responsiveness summary (Appendix A) presents the public comments received and the manner in which the Department addressed the concerns raised.

   No comments were received that resulted in a significant change to the remedy.

SECTION 8: SUMMARY OF THE SELECTED REMEDY

Based on the Administrative Record (Appendix B) and the discussion presented below, the Department has selected Alternative 6, Soil Cover and Diversion Trench with Institutional Controls and Monitoring as the remedy for this site. The elements of this remedy are described at the end of this section.

The selected remedy is based on the results of the RI and the evaluation of alternatives presented in the FS.

Alternative 6 (soil cover and diversion trench) is being selected because, as described below, it satisfies the threshold criteria and provides the best balance of the primary balancing criteria described in Section 7.2. It would achieve the remediation goals for the site by using selective consolidation and soil cover applications to reduce the potential for human and ecological receptor exposures to contaminated soils at the surface through direct contact, and by using intercept and diversion drainage control in part of the site to minimize the potential for migration of contaminants in the groundwater aquifer.

Alternatives 3 (excavation and off-site treatment), 4 (excavation and off-site disposal), and 5 (excavation and on-site disposal) would also comply with the threshold selection criteria. Considering that Alternatives 3, 4, 5, and 6 all satisfy the threshold criteria, the five balancing criteria are particularly important in selecting a final remedy for the site.

Alternative 1 (no action) would provide no protection for potential exposure to contaminated soils. Alternative 2 (institutional controls and monitoring) would provide limited protection for potential human exposure to contaminated soils through institutional controls, but would not be adequate for the protection of ecological receptors. Soils containing PCBs would also remain at the surface. Alternative 3 would provide a greater level of protection than Alternatives 4, 5, and 6 considering the contamination is both removed from the site and subsequently destroyed. Alternatives 4 and 5 would be more protective of human health and the environment than Alternative 6 because site-wide contaminated soils would be excavated and properly disposed of even though the soils containing PCBs are not destroyed. Alternative 6 would be protective of human health and the environment because contaminated soils are covered to reduce the potential for exposures and measures would be taken to minimize migration of contaminants in groundwater, even though contaminated soils would remain on-site.

Alternatives 1 and 2 would not comply with SCGs because contaminated surface soils that exceed the 1 ppm SCO for PCBs would continue to be a potential route of exposure to humans and wildlife. Alternatives 3, 4, and 5 would comply with SCGs since contaminated soils would either be treated or isolated in a landfill. Alternative 6 would also comply with SCGs since contaminated soils would be isolated beneath a twelve-inch to eighteen-inch thick soil cover.

Short-term impacts would not be anticipated for Alternatives 1 and 2, since no remediation activities would take place. Alternatives 3, 4, 5, and 6 would all have potential, adverse, short-term impacts related to construction, earth-moving, and material transport activities. These activities may cause dust and noise. Appropriate dust and noise monitoring and suppression programs would be followed during these activities to minimize impacts. With the transport of contaminated material off-site for Alternatives 3 and 4, there would be a risk for spills. The spill risks associated with the on-site transport of contaminated material in Alternative 5 would be less based on logistical considerations. Alternative 6 would have fewer short-term impacts than Alternatives 3, 4, and 5 since most contaminated material at the site would not be disturbed.

Alternative 1 would not be effective in providing protection against potential future exposures. Alternative 2 would be effective for human exposure but not for ecological exposures in the long-term, provided that the institutional controls and monitoring programs are enforced. Alternatives 3, 4, and 5 would have a higher level of long-term effectiveness and permanence when compared to Alternatives 1 and 2 considering all site-wide contaminated soils would be excavated and either treated or isolated in a landfill. Alternatives 5 and 6 would also be more effective than Alternatives 1 and 2 in the long term relative to both human and ecological receptors, provided that proper inspection, maintenance, and monitoring programs are performed.

A reduction in the toxicity, mobility, or volume of contaminants would not be achieved with Alternatives 1 or 2. Alternative 3 would reduce the toxicity, mobility, and volume of contaminants by treatment of the contaminated materials. Alternatives 4 and 5 would reduce the mobility of site contaminants by isolating contaminated materials in an appropriate disposal facility. Similarly, Alternative 6 would reduce the mobility of contaminants by covering the contaminated materials in place and by diverting storm water drainage away from these covered materials.

There would be no actions to implement for Alternative 1. Alternatives 2 through 6 would be readily implemented using standard construction means and methods. Implementation issues associated with Alternatives 3 and 4 would be more complex in comparison to the other alternatives considering contaminated materials would be removed from the site by barge and then transported to a separate location for treatment or disposal. Alternative 5 would also have some implementation issues, but related to the barging of materials to the site and the availability of open space during periods when remedial excavation and landfill construction activities are concurrent. Implementation issues would be minimal for Alternative 6 since no contaminated material would be transported off of the island and clean soils from areas on-site would be used for backfill and construction of the soil cover.

Alternative 1 would not incur any costs. Alternative 2 would cost less than Alternatives 3 through 6, but would not be as protective. Alternative 5 would cost less than Alternatives 3 and 4 considering there would be no component for off-site transport of contaminated materials. Alternatives 3 and 4

are relatively comparable in terms of cost, with Alternative 4 being the most expensive due to the differences between landfill and treatment costs. Alternative 6 would cost significantly less than Alternatives 3, 4, and 5 because most contaminated soils would not be disturbed and clean soils on-site would be used for backfill and construction of the soil cover, resulting in reduced material costs.

The estimated present worth cost to implement the remedy is $1,500,000. The cost to construct the remedy is estimated to be $1,200,000 and the estimated average annual costs for 30 years is $5,000.

The elements of the proposed remedy are as follows:

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program.

2. A soil excavation and consolidation program will be implemented to reduce the potential for exposure to contaminated soils in specific active areas of the site. Excavated soils will be consolidated and isolated beneath an appropriate soil cover. Excavated areas will be backfilled with clean soil approved for use by the Department and that meets the Division of Environmental Remediation's criteria for backfill.

3. An appropriate soil cover will be constructed over the central and northern dredge spoil disposal basins after their consolidation to prevent exposure to contaminated soils. The cover will consist of clean soil placed and compacted to a minimum thickness of twelve inches over an isolation/demarcation indicator (with contrasting color) placed over the consolidated materials to serve as a warning and to delineate between the clean cover and the potentially contaminated materials at depth. The top six inches of soil will be sufficient to support grass. Clean soil will constitute soil approved for use by the Department and that meets the Division of Environmental Remediation's criteria for backfill.

4. An appropriate soil cover will be constructed over the eastern part of the southern basin used by the Canal Corporation for sediment de-watering operations, to reduce the potential for exposure to contaminated soils at depth. The cover will consist of clean soil placed and compacted to a minimum thickness of twelve inches over the existing isolation/demarcation indicator on the basin floor and upon the face of the containment berm of this sub-basin. Clean soil will constitute soil approved for use by the Department and that meets the Division of Environmental Remediation's criteria for backfill.

5. An appropriate soil cover will be maintained over the western part of the southern basin used by the Canal Corporation for sediment de-watering operations, to reduce the potential for exposure to contaminated soils at depth. An effective, twelve to eighteen inch thick, clean soil cover is already in place and an existing geo-textile fabric marker serves to delineate between clean cover and potentially contaminated materials at depth. The cover will be maintained at a minimum thickness of twelve inches over the existing isolation/demarcation indicator on the basin floor and upon the face of the containment berm for this sub-basin.

6. A drainage diversion trench will be constructed along the northwestern margin of the cover area over the northern basin to minimize the potential for migration of contaminants in the

local groundwater. The drainage diversion trench will intercept and redirect any intermittent overland water flow in this area and adequately impede/eliminate the migration of this surface water into and through the known, underlying dredge spoil materials. The diversion trench will be constructed in accordance with the Department's New York Standards and Specifications for Erosion and Sediment Control (August, 2005).

7. Imposition of an institutional control in the form of an environmental easement that will require: (a) limiting the use and development of the property to commercial use, which will also permit industrial use; (b) compliance with the approved site management plan; (c) restricting the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined appropriate by NYSDOH; and (d) the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

8. Development of a site management plan which will include the following institutional and engineering controls: (a) management of the final cover systems to restrict excavation below the soil cover's demarcation layer. Any soil excavated from below the established demarcation layer will be tested, properly handled to protect the health and safety of workers and the nearby community, and will be properly managed in a manner acceptable to the Department; (b) monitoring of the groundwater around the site; (c) identification of any use and development restrictions on the site; and (d) provisions for the continued proper operation and maintenance of the components of the remedy.

9. The property owner will provide a periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal will: (a) contain certification that the institutional controls and engineering controls put in place are still in place and are either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing has occurred that will impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

SECTION 9: SUMMARY OF CITIZEN PARTICIPATION ACTIVITIES

As part of the remedial process, a number of Citizen Participation activities were undertaken to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the Newland Island site:

- Document repositories were established to facilitate public access to site-related documents.

- A contact/distribution list of nearby property owners, elected officials, local media and other interested parties was established.

- A fact sheet describing the PRAP and announcing the public comment period, public availability session and public meeting was prepared and distributed.

- A public availability session and public meeting were held on September 1, 2009 to describe the sampling results of the RI, explain the proposed remedy, answer questions about the proposed remedy, and receive verbal and written comments about the proposal.

- A responsiveness summary (Appendix A) was prepared to address the comments about the PRAP that were received during the public comment period for the Newland Island site.

TABLE 1
Nature and Extent of Contamination

Sampling Period: December 2005 to May 2008

SURFACE SOIL	Contaminants of Concern	Concentration Range in parts per million (ppm) [a]	SCG [b] (ppm)	Frequency of Exceeding SCG
PCBs	Total PCBs	ND (0.017 U) to 12	0.1	76 of 131
Inorganic Compounds	Cadmium	ND (0.19 U) to 15.2	2.5	11 of 26
	Chromium	13.1 to 335 J	30	14 of 26
	Lead	10.9 to 332 J	63	9 of 26
	Mercury	ND (0.019 UJ) to 2.0 J	0.18	10 of 26
	Aluminum	4210 J to 18000	15800 †	2 of 8
	Antimony	ND (16.7 UJ)	2.17 ‡	0 of 8
	Arsenic	2.2 to 7.7	13	0 of 8
	Barium	22.2 to 158 J	350	0 of 8
	Beryllium	ND (0.25 U) to 0.16	7.2	0 of 8
	Calcium	950 J to 13700 J	9190 †	1 of 8
	Cobalt	3.2 to 17.5	13.3 †	2 of 8
	Copper	6.2 to 73.7 J	50	3 of 8
	Iron	9450 to 33500	25600 †	3 of 8
	Magnesium	2160 to 7130 J	5130 †	4 of 8
	Manganese	237 to 5290 J	1600	3 of 8
	Nickel	7.4 to 34.6 J	30	2 of 8
	Potassium	531 to 2010 J	1890 †	1 of 8
	Selenium	ND (4.2 U)	3.9	0 of 8
	Silver	ND (0.52 U) to 1.9	2	0 of 8
	Sodium	ND (146 U)	211 †	0 of 8
	Thallium	ND (6.3 U)	16.3 ‡	0 of 8
	Vanadium	6.8 to 33.3 J	31 †	1 of 8
	Zinc	42.0 to 415	109	5 of 8

TABLE 1
Nature and Extent of Contamination

Sampling Period: December 2005 to May 2008

SUBSURFACE SOIL	Contaminants of Concern	Concentration Range in parts per million (ppm) [a]	SCG [b] (ppm)	Frequency of Exceeding SCG
PCBs	Total PCBs	ND (0.017 U) to 43	0.1	82 of 190
Inorganic Compounds	Cadmium	ND (0.19 U) to 34.7	2.5	11 of 43
	Chromium	6.5 to 580	30	15 of 43
	Lead	3.2 to 595	63	9 of 43
	Mercury	ND (0.018 U) to 2.9	0.18	7 of 43
	Aluminum	6010 J to 21000	15800 †	3 of 17
	Antimony	ND (0.53 U)	2.17 ‡	0 of 17
	Arsenic	ND (2.4 U) to 8.6	13	0 of 17
	Barium	30.1 to 154	350	0 of 17
	Beryllium	ND (0.31 U) to 0.73	7.2	0 of 17
	Calcium	1010 to 55100	9190 †	2 of 17
	Cobalt	4.1 to 18.6	13.3 †	5 of 17
	Copper	6.0 to 85.1	50	2 of 17
	Iron	13100 to 43200 J	25600 †	7 of 17
	Magnesium	2280 to 11600 J	5130 †	9 of 17
	Manganese	89.3 J to 953	1600	0 of 17
	Nickel	10.8 to 50.1 J	30	7 of 17
	Potassium	453 to 2490	1890 †	3 of 17
	Selenium	ND (0.57 U)	3.9	0 of 17
	Silver	ND (0.07 U)	2	0 of 17
	Sodium	ND (135 U) to 68.1	211 †	0 of 17
	Thallium	ND (0.30U) to 0.75	16.3 ‡	0 of 17
	Vanadium	9.7 to 38.5	31 †	2 of 17
	Zinc	30 to 621	109	3 of 17

TABLE 1
Nature and Extent of Contamination

Sampling Period: April 2006 to December 2006

GROUNDWATER - Monitoring Wells -	Contaminants of Concern	Concentration Range in parts per billion (ppb) [a]	SCG [b] (ppb)	Frequency of Exceeding SCG
PCBs	Aroclor 1016	ND (0.47 U)	0.09	0 of 33
	Aroclor 1221	ND (0.47 U)	0.09	0 of 32
	Aroclor 1232	ND (0.47 U)	0.09	0 of 33
	Aroclor 1242	ND (0.47 U)	0.09	0 of 33
	Aroclor 1248	ND (0.47 U) to 0.72	0.09	2 of 33
	Aroclor 1254	ND (0.47 U) to 0.73	0.09	1 of 33
	Aroclor 1260	ND (0.47 U)	0.09	0 of 33
Inorganic Compounds	Cadmium	ND (1.0 U)	5	0 of 33
	Chromium	ND (4.0 U) to 61.2	50	1 of 33
	Lead	ND (5.0 U) to 45.2	25	1 of 33
	Mercury	ND (0.2 U)	0.7	0 of 33
	Aluminum	ND (200 U) to 46900 J	NA	- - -
	Antimony	ND (20.0 U)	3	0 of 33
	Arsenic	ND (10.0 U) to 17.1	25	0 of 33
	Barium	7.1 to 1040	1000	1 of 33
	Beryllium	ND (0.10 U)	3	0 of 33
	Calcium	23100 to 324000 J	NA	- - -
	Cobalt	ND (4.0 U) to 37.5	NA	- - -
	Copper	ND (10.0 U) to 307	200	1 of 33
	Iron	ND (50.0 U) to 62900 J	300	26 of 33
	Magnesium	7570 to 163000 J	35000	14 of 33
	Manganese	ND (3.0 U) to 2810	300	14 of 33
	Nickel	ND (10.0 U) to 71.5	100	0 of 33
	Potassium	730 to 18100	NA	- - -
	Selenium	ND (15.0 U)	10	0 of 33
	Silver	ND (3.0 U)	50	0 of 33
	Sodium	ND (1000 U) to 16600	20000	0 of 33
	Thallium	ND (20.0 U)	0.5	0 of 33
	Vanadium	ND (5.0 U) to 81.7	NA	- - -
	Zinc	ND (10.0 U) to 282	2000	0 of 33

TABLE 1
Nature and Extent of Contamination

Sampling Period: April 2006 to December 2006

GROUNDWATER - Private Wells -	Contaminants of Concern	Concentration Range in parts per billion (ppb) [a]	SCG [b] (ppb)	Frequency of Exceeding SCG
PCBs	Aroclor 1016	ND (0.047 U)	0.09	0 of 6
	Aroclor 1221	ND (0.047 U)	0.09	0 of 6
	Aroclor 1232	ND (0.047 U)	0.09	0 of 6
	Aroclor 1242	ND (0.047 U)	0.09	0 of 6
	Aroclor 1248	ND (0.047 U)	0.09	0 of 6
	Aroclor 1254	ND (0.047 U)	0.09	0 of 6
	Aroclor 1260	ND (0.047 U)	0.09	0 of 6
Inorganic Compounds	Cadmium	ND (1.0 U)	5	0 of 6
	Chromium	ND (4.0 U)	50	0 of 6
	Lead	ND (1.0 U) to 3.84	25	0 of 6
	Mercury	ND (0.2 U)	0.7	0 of 6
	Aluminum	ND (200 U)	NA	- - -
	Antimony	ND (1.0 U)	3	0 of 6
	Arsenic	ND (1.0 U)	25	0 of 6
	Barium	36.2 to 111	1000	0 of 6
	Beryllium	ND (0.19 U)	3	0 of 6
	Calcium	29500 to 65800	NA	- - -
	Cobalt	ND (4.0 U)	NA	- - -
	Copper	ND (10.0 U) to 93.9	200	0 of 6
	Iron	ND (50.0 U)	300	0 of 6
	Magnesium	7470 to 16100	35000	0 of 6
	Manganese	ND (3.0 U) to 209	300	0 of 6
	Nickel	ND (10.0 U)	100	0 of 6
	Potassium	2710 to 4120	NA	- - -
	Selenium	ND (1.0 U)	10	0 of 6
	Silver	ND (3.0 U)	50	0 of 6
	Sodium	7360 to 65200	20000	3 of 6
	Thallium	ND (0.20 U)	0.5	0 of 6
	Vanadium	ND (5.0 U)	NA	- - -
	Zinc	ND (10.0 U) to 59.3	2000	0 of 6

TABLE 1
Nature and Extent of Contamination

Sampling Period: December 2005

SURFACE WATER (Ponded and Seeps)	Contaminants of Concern	Concentration Range in parts per billion (ppb) [a]	SCG [b] (ppb)	Frequency of Exceeding SCG
PCBs	Total PCBs	ND (0.47 U)	0.00012	0 of 2
Inorganic Compounds	Cadmium	ND (1.0 U) to 4.7	12 (1,5)	0 of 2
	Chromium	ND (4.0 U) to 31.4	1334 (1, 5)	0 of 2
	Lead	ND (5.0 U) to 25.4	360 (1)	0 of 2
	Mercury	ND (0.200 UJ)	1.4 (1)	0 of 2
	Aluminum	ND (200 U) to 1050	100 (2)	1 of 2
	Antimony	ND (20.0 U)	3 (3)	0 of 2
	Arsenic	ND (10.0 U)	340 (1)	0 of 2
	Barium	38.1 to 77.2	1000 (3)	0 of 2
	Beryllium	ND (0.04 U)	1100 (2)	0 of 2
	Calcium	17100 to 169000	NA	- - -
	Cobalt	ND (4.0 U)	100 (1)	0 of 2
	Copper	ND (10.0 U) to 19.6	36 (1, 5)	0 of 2
	Iron	131 to 1220	300 (1)	1 of 2
	Magnesium	6110 to 71600	35000 (3)	1 of 2
	Manganese	5.4 to 76.0	300 (4)	0 of 2
	Nickel	ND (10.0 U)	1128 (1, 5)	0 of 2
	Potassium	3140 to 5590	NA	- - -
	Selenium	ND (15.0 U)	4.6 (2)	0 of 2
	Silver	ND (3.0 U)	24 (1, 5)	0 of 2
	Sodium	1240 to 3580	NA	- - -
	Thallium	ND (20.0 U)	20 (1)	0 of 2
	Vanadium	ND (5.0 U)	190 (1)	0 of 2
	Zinc	ND (20.0 U) to 88.4	283 (1, 5)	0 of 2

TABLE 1
Nature and Extent of Contamination

Key to Notes

Note [a] ppb = parts per billion, which is equivalent to micrograms per liter or ug/L in water;
ppm = parts per million, which is equivalent to milligrams per kilogram or mg/kg in soil;
ug/m^3 = micrograms per cubic meter in air

Note [b] SCG = Standards, Criteria, and Guidance;

Surface Soil and Subsurface Soil

Criteria are from 6 NYCRR Part 375 - Environmental Remediation Programs - December 14, 2006 - Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives, except as noted below.

Note † - Criteria are from NYS background (95th percentile), Source-Distant Data Set from NYS Brownfield Cleanup Program, Technical Support Document, Appendix D, September 2006.
Note ‡ - Criteria are from Eastern United States background (95th percentile) from Shacklette and Boerngen 1984.

Groundwater

Criteria are from NYSDEC Technical and Operational Guidance #1.1.1: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, 1998.

Surface Water

Criteria are from NYSDEC Technical and Operational Guidance #1.1.1: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, 1998, Table 1, Class A - D, Type W (fresh water).
Note (1) - Class D, Type A(A).
Note (2) - Class C, Type A(C).
Note (3) - Class A, Type H(WS).
Note (4) - Class A, Type (E).
Note (5) - An average hardness value of 183 milligrams per liter, calculated from the measured calcium and magnesium concentrations, was used to derive this screening value.

Data Qualifiers
J - data qualifier that indicates an estimated value.
U - data qualifier that indicates not detected at the reporting limit shown.
UJ - data qualifier that indicates not detected at the estimated reporting limit shown.
NA - indicates that there is no applicable standard or guidance value.
ND - indicates not detected at the reporting limit shown in parentheses.

Table 2
Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
1. No Action	$0	$0	$0
2. Institutional Controls and Monitoring	$170,00	$3,200	$260,000
3. Excavation and Off-Site Treatment by High Temperature Thermal Desorption	$42,500,000	$0	$42,500,000
4. Excavation and Off-Site Disposal	$46,100,000	$0	$46,100,000
5. Excavation and On-Site Disposal	$15,900,000	18,000	$18,900,000
6. Soil Cover and Diversion Trench with Institutional Controls and Monitoring	$1,200,000	$5,000	$1,500,000

APPENDIX A

RESPONSIVENESS SUMMARY

RESPONSIVENESS SUMMARY

Newland Island/Lock 4
Dredge Spoil Disposal Area

Town of Schaghticoke – Rensselaer County - New York

Site No. 442033

January 2010

The Proposed Remedial Action Plan (PRAP) for the Newland Island/Lock 4 Dredge Spoil Disposal Area (Newland Island), 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 August 26, 2009. The PRAP outlined the remedial measure proposed for the contaminated surface soil, subsurface soil and groundwater at the Newland Island site.

The release of the PRAP and the start of the public comment period were announced through the distribution of a fact sheet to nearby property owners, elected officials, local media outlets and other interested parties. The fact sheet also served to invite the public to comment on the proposed remedy and notified the public about a scheduled public availability session and public meeting for Newland Island.

The public availability session and public meeting were held on September 1, 2009 and provided information about the Remedial Investigation (RI) and the Feasibility Study (FS) for the Newland Island 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 Newland Island PRAP ended on September 28, 2009.

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 availability session and public meeting held on September 1, 2009:

COMMENT 1: What is the schedule after the proposed remedial action is approved? When will the work begin, how long will it take and when should we expect it to be complete?

RESPONSE 1: After the comment period for the PRAP ends on September 28th and all comments have been considered, the next steps in the remedial process are to issue a Record of Decision for the selected remedy, negotiate with responsible parties, move forward with Remedial Design, and begin construction. The timing is unknown since it is not known if the responsible party/parties will implement the remedy.

COMMENT 2: Will sediment removed from the Champlain Canal during future navigation channel dredging operations near the mouth of the Hoosic River be contaminated as a result of the Hudson River dredging project?

RESPONSE 2: It is unlikely that sediments targeted for removal from the Champlain Canal/Hudson River navigation channel near the mouth of the Hoosic River during future maintenance dredging operations will be contaminated as a result of the larger Hudson River dredging project. The sediments that accumulate in the navigation channel near the mouth of the Hoosic River and result in the need for periodic maintenance dredging in that area are typically derived from the Hoosic River. Hoosic River sediments are readily distinguishable from the typical sediments found in the Hudson River in this vicinity. Even so, sediments targeted for removal from the navigation channel near the mouth of the Hoosic River in any future maintenance dredging operation will be sampled for PCBs before removal as part of the application to modify the existing NYSDEC 401 Water Quality Certification that governs maintenance dredging of the entire Canal System.

COMMENT 3: The private party residing on Newland Island inquired about the status of the two access agreements that they have with the Canal Corporation and expressed an interest in making the existing agreement regarding access from the turn off Route 67 at the Stillwater Bridge and across property controlled by the Canal Corporation, including the existing causeway, and out to their private property on Newland Island, a permanent easement arrangement.

RESPONSE 3: There are currently two standing verbal access agreements between the Canal Corporation and the nearby residents on Newland Island. One agreement concerns access from the turn off Route 67 at the Stillwater Bridge and across property controlled by the Canal Corporation, including the existing causeway, out to the private property on Newland Island. The other agreement concerns granting the Canal Corporation access across a short stretch of private property on the route to the Newland Island Dredge Spoil Disposal Area. The Department does not take any formal position on these issues. The private party may wish to contact the Canal Corporation to discuss these and any future access agreements.

COMMENT 4: What is the purpose of placing a drainage diversion trench along the western side of the northern basin? Does the area west of the northern basin contain contaminated dredge spoil material?

RESPONSE 4: The purpose of the drainage structure is storm water management. The area west of the northern basin does not contain contaminated dredge spoil material. The selected remedy includes the construction of a drainage diversion trench along the northwestern margin of the northern basin to intercept and redirect any intermittent overland storm water flow in this area and adequately impede/eliminate the migration of this water into and through the known dredge spoil

materials within the basin and berm complex. The selected remedy will comply with all State and Federal storm water management requirements.

COMMENT 5: Why were the PCB levels found during the recent remedial investigation lower than the levels found during previous investigation work? Why do the PCB levels appear to be dropping?

RESPONSE 5: There is no certain answer to these observations.

COMMENT 6: Were any of the recent samples collected from the same locations that were sampled during the earlier investigations?

RESPONSE 6: No. Some sampling points in the Remedial Investigation may have been incidentally located near earlier sampling points, but not by intent. No attempts were made to duplicate earlier sampling points during the recent Remedial Investigation.

COMMENT 7: Did the remedial investigation include the collection of samples as deep as those collected in earlier investigations?

RESPONSE 7: Yes. Environmental samples were collected for analysis as part of the Remedial Investigation from sampling intervals as deep as the bedrock surface below the Newland Island site and at various depths between that bedrock surface and the existing ground surface to adequately characterize conditions at the site.

COMMENT 8: Was the sample that contained PCBs at 43 ppm collected from the more recent, post 2002, dredge spoil material removed from the navigation channel near the mouth of the Hoosic River or did it come from the older spoils material?

RESPONSE 8: The sample that contained PCBs at a concentration of 43 ppm was collected from the older, pre-2002, dredge spoil material.

COMMENT 9: The proposed remedy states that the top six inches of the soil cover at some parts of the site are to be able to support grass and that suitable top soil would be introduced prior to seeding. Where will this top soil come from and how will it be brought to the site? What type of grass/vegetation will be planted and why?

RESPONSE 9: Any top soil needed from off site will come from a clean approved source. It is anticipated that this material would be delivered by truck to the site. The potential sources and transportation of any top soil would be determined in the design and bidding phases of the project. The type and mix of seed to be planted will also be determined in design, but would be comparable to native vegetation and suitable to stabilize the cover and control water and wind erosion.

COMMENT 10: Did the proposed remedial action take into account the condition of the earthen causeway that crosses over to the lower part of the island and the unimproved roadway that crosses private property when considering the transport of material and equipment by truck in and out of the site?

RESPONSE 10: The selected remedy was identified with the understanding that access across these areas would be able to be maintained. Any repairs, upgrades or restoration in these areas necessary for implementation of the remedy would be borne by the remedial party as an element of the remedial work.

COMMENT 11: After remediation, will the site be designated as "forever wild"?

RESPONSE 11: The site will not be designated as "forever wild" after remedy implementation. It is not anticipated that the future use of this site will change as a result of the remedial work, other than those changes associated with future site management as described in the ROD.

COMMENT 12: Why will groundwater monitoring only occur once every 5-years?

RESPONSE 12: An element of the selected remedy calls for a program to monitor the existing groundwater wells located along the Hudson River and Champlain Canal to verify that PCBs are not moving into these waters from the site. The existing series of nine groundwater monitoring wells would be sampled once, five years following the implementation of the remedy, and the results would be evaluated to determine if any modifications to the remedy or monitoring program are warranted. This is sufficient given the groundwater data from the Remedial Investigation. Results confirm PCBs above the applicable water quality standard of 0.09 ppb in the April and June 2006 samples collected from MW-07 at concentrations of 1.45 ppb and 0.31 J ppb (an estimated result) respectively. These findings likely reflect sample turbidity and do not represent PCBs dissolved in water. The screen of this well is set in dredge spoil material. Considering these facts and that PCBs are not readily soluble in groundwater, the migration of PCBs from the contaminated dredge spoil material at the Newland Island site to groundwater is not likely.

COMMENT 13: After the proposed remedy is implemented, will the site classification change and what will the new classification be? How will the new classification affect resale of the adjoining property?

RESPONSE 13: It is anticipated that the site would be reclassified to Class 4 once the remedy is implemented. This classification describes a site that has been remediated and/or closed and that requires continued operation, maintenance, and/or monitoring to achieve and/or maintain protectiveness as defined by the Record of Decision. It is unknown how this change in classification will impact the adjacent parcel.

COMMENT 14: Considering the possible need to remove sediment from the navigation channel near the mouth of the Hoosic River and the use of the site every four to six years, will there be any testing of that material prior to its placement at the site? What program at the NYSDEC will oversee this work?

RESPONSE 14: Sediments targeted for removal from the navigation channel near the mouth of the Hoosic River in any future maintenance dredging operation will be sampled for PCBs, at a minimum, before removal and placement at the Newland Island site as part of the application to modify the existing NYSDEC 401 Water Quality Certification that governs maintenance dredging of

the entire Canal System. All aspects of the 401 Water Quality Certification and the associated compliance work are managed by the NYSDEC Division of Water.

COMMENT 15: After the proposed remedy is implemented, will the soil covers placed over the northern and central basins be mounded or graded to match the existing topography?

RESPONSE 15: The final soil cover over the central and northern dredge spoil disposal basins are to be graded to match the adjacent ground surface elevations to the extent practical and with no appreciable increase in footprint area. A slight pitch would also be incorporated into the cover grade to promote surface drainage toward the proposed drainage diversion trench along the northwestern margin of the northern basin.

COMMENT 16: What is the difference between the proposed remedy and the alternative to encapsulate the material in a newly constructed landfill at the site?

RESPONSE 16: The description for Alternative 5 identifies that a landfill approximately 730 feet long by 330 feet wide by 31 feet high would be needed to contain the existing contaminated dredge spoil materials and that the newly constructed landfill would be located in the center of the island between the existing basin and berm complex that contains these dredge spoils and the private residence. Alternative 6, the selected alternative, would result in the contaminated dredge spoil materials being covered, in place for the most part, within the existing foot print of the basin and berm complex.

COMMENT 17: I am in favor of your alternative number six (the proposed remedy), but will the short-term impacts associated with remedy implementation be greater than the potential hazard posed by the PCBs at the site in its current condition?

RESPONSE 17: The Department anticipates that the short-term impacts related to the implementation of the selected alternative can be minimized by proper design and implementation of the remedy, and that the human health and environmental risks posed by the wastes disposed at the site in the current condition are greater than any risks posed by remedy implementation.

COMMENT 18: How did the PCBs get on Newland Island?

RESPONSE 18: PCBs, sporadically entrained within the sediment of the Hudson River and subsequently removed with some of the sediment from the Champlain Canal/Hudson River navigation channel between Canal Lock 4 and Canal Lock 3 as dredge spoil material prior to 1992, were placed within the Newland Island basin and berm complex by the Waterways Maintenance Division of the New York State Department of Transportation in conjunction with routine maintenance dredging operations of the Canal System.

Carmella R. Mantello, Director of the New York State Canal Corporation, submitted a letter on September 28, 2009 which included the following comments:

COMMENT 19: The Canal Corporation intends to continue using Newland Island as an upland dredge spoil disposal site for the foreseeable future. This continued use will eventually require the renewed use of the central and northern dredge spoil disposal basins for the disposal of new dredge spoils. The remedial design of the proposed cover system and the proposed storm water drainage diversion trench must allow for the placement of additional dredge spoils in these areas. To meet these objectives, the Canal Corporation requests the opportunity to review and comment on all phases of the remedial design.

RESPONSE 19: The details of the soil cover system and the storm water drainage diversion trench in the selected remedy for the central and northern dredge spoil disposal basin areas will be determined during the remedial design phase of the project. A design objective will be to allow for continued site use by the Canal Corporation, including the renewed use of the central and northern dredge spoil disposal basin areas for the disposal of new dredge spoils. It is the intention of the Department to coordinate remedial activities with the Canal Corporation.

COMMENT 20: The southern basin is actively used by the Canal Corporation, requiring that any planned changes to the site take into account its use. The eastern subdivision in the southern basin is proposed to have two feet of cover materials placed over the existing bottom. Since this basin is sized to retain water to reduce turbidity during dredging operations, the design will need to take into account how the site is used.

RESPONSE 20: The details of the soil cover system in the selected remedy for the eastern subdivision of the southern basin during remediation will be determined during the remedial design phase of the project. A design objective will be to allow for continued site use by the Canal Corporation. It is also the intention of the Department to coordinate remedial activities with the Canal Corporation.

COMMENT 21: The Canal Corporation is not in a position to make any certifications associated with the proposed remedy, including the future certification of the integrity of the cover system. Additionally, the Canal Corporation will not agree to an environmental easement that obligates it to conduct a periodic certification of institutional and engineering controls. The Plan should identify which entity will be making these certifications.

RESPONSE 21: Provisions relative to institutional control/engineering control certification for remedial program work involving institutional controls, engineering controls and environmental easements are governed by 6 NYCRR Part 375.1.8(h)(3). Under these provisions:

(i) The owner or the remedial party at a site at which institutional or engineering controls are employed as part of a remedy, must annually submit, unless an alternate certification period is provided in writing by the Department, a written certification:

(a) by a professional engineer, or by such other qualified environmental professional as the Department may find acceptable as set forth in ECL 27-1415(b); or

(b) where the only control is an institutional control on the use of the property, the certification may be made by the property owner.

(ii) The certification shall be included in a report summarizing the site management effort for the certification period, in such form and manner as the Department may require, and shall certify that:

(a) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual identified in subparagraph (3)(i) above.

(b) the institutional controls and/or engineering controls employed at such site:

(1) are in-place;

(2) are in the Department-approved format; and

(3) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(c) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(d) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(e) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(f) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(g) the information presented is accurate and complete.

COMMENT 22: The PRAP correctly designates the NYSDOT and GE as the Potentially Responsible Parties. Newland Island jurisdiction was transferred to the Canal Corporation from the State (NYSDOT) as part of the "Thruway 2000" legislation (Chapter 766 of the Laws of 1992) and it is the position of the Canal Corporation that the indemnification as set forth in Canal Law Section 6(6) is applicable to Newland Island.

RESPONSE 22: The Department and the State take no 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. The text in the ROD reflects this position.

COMMENT 23: A Canal Work Permit will be required in order to conduct any work on land under the jurisdiction of the Canal Corporation. Therefore, the Corporation must review and approve the final design.

RESPONSE 23: Provisions relative to obtaining permits and other approvals for remedial work are governed by the Environmental Conservation Law § 27-1313(10). The Department will work with the Canal Corporation on the final design within these bounds.

John G. Haggard, Manager of the Site Evaluation and Remediation Program for General Electric, submitted a letter on September 28, 2009 which included the following comments:

COMMENT 24: The determination that hazardous waste was present at the Newland Island Dredge Spoil Disposal (the "Site") relied on a small number of PCB sample test results (> 50 ppm) whose documentation and analytical methodology was flawed. Hence, the results cannot be used to justify a determination that contaminants constitute a significant threat to the public health or the environment or warrant placement of the Site on the Inactive Hazardous Waste Disposal Site Registry.

RESPONSE 24: As indicated on page 1 of the commenter's letter, data available at the time of listing indicated that there were four locations at the Newland Island site that had concentrations of PCBs in excess of 50 ppm. State 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.

COMMENT 25: The Remedial Investigation (RI) expanded the pre-existing dataset to a total of 400 soil samples. As no RI samples contained PCB concentrations greater than 50 ppm, this further demonstrates hazardous waste is not present at the Site. Therefore, following the RI the Department should have removed Site from the IHWDS Registry or at a minimum, reclassified it to a Class 3.

RESPONSE 25: As indicated on page 1 of the commenter's letter, data available at the time of listing indicated that there were four locations at the Newland Island site that had concentrations of PCBs in excess of 50 ppm. State 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.

COMMENT 26: The Human Health Risk Evaluation concluded that there is no unacceptable human health risk. Therefore, there was no basis following the RI to support the Class 2 designation indicating that the Site posed a significant threat to human health under current use.

RESPONSE 26: 6 NYCRR Part 375 was used to make remedial decisions. Under Part 375, soil within one foot of the ground surface in a commercial setting must not exceed a concentration of 1 ppm for PCBs. To comply with the Part 375 requirements, the selected remedy calls for the addition of an appropriate thickness of clean cover over known areas of PCB contamination so that the top one foot of soil at the site meets the 1 ppm cleanup objective for PCBs.

COMMENT 27: The conclusion that "current levels of environmental contamination at the Site may pose a risk (to) terrestrial plants, soil invertebrates, and invertivorous wildlife such as the American robin and short-tailed shrew" was based solely on a Screening-Level Ecological Risk

Assessment (SLERA). However, since a SLERA is for screening, it is not the appropriate assessment tool to use when making a determination of ecological risk for the purpose of considering remedial action.

RESPONSE 27: The RI report explains that the given ecological risk assessment is a screening-level assessment and that as such, suggests that current levels of environmental contamination at the Newland Island site may pose a risk to terrestrial plants, soil invertebrates, and invertivorous wildlife such as the American robin and short-tailed shrew. The RI report discussed these points:

1) the American robin and the short-tailed shrew have relatively small home ranges and could derive a large portion of their food and habitat requirements from the Newland Island site, and;
2) both the robin and shrew feed extensively on soil invertebrates, such as earthworms, and thus are often highly exposed to contaminants in soil.

The RI report goes on to state that additional ecological evaluation should be considered depending on the future use or uses proposed for the Newland Island site.

COMMENT 28: Notwithstanding the fact that remedial decisions should not be based on the results of a SLERA, review of the SLERA indicates that certain assumptions about ingestion rates, soil exposure point concentrations, bioaccumulation factors and toxicity reference values were inflated, resulting in ecological risks being overstated.

RESPONSE 28: The RI report explains that certain risk assumptions presented in the given screening-level assessment related to the American robin and the short-tailed shrews are not as conservative as they could be, based on some of the applicable literature. However, the RI report does state that:

1) the robin and shrew were conservatively assumed to prey entirely on earthworms, and;
2) earth worms were chosen as a representative prey item for these receptors because earthworms are abundant in eastern New York, are important in the diets of shrews and robins, and have been well studied compared with other groups of soil invertebrates.

COMMENT 29: The SLERA identifies potential risks to terrestrial plants based on a comparison of Site data to inflated benchmarks. However, no additional lines of evidence are provided to support this conclusion.

RESPONSE 29: The RI report details and explains some significant sources of uncertainty in the given screening-level ecological risk assessment relative to terrestrial plants. However, the results of phytotoxicity screening for metals in soil at the Newland Island site confirm that cobalt exceeded the 13 ppm benchmark in 6 of 16 samples up to 17.5 ppm, copper exceeded the benchmark of 60 ppm in 5 of 16 samples up to 85.1 ppm, lead exceeded the benchmark of 120 ppm in 14 of 43 samples up to 332 ppm, mercury exceeded the benchmark of 0.3 ppm in 16 of 43 samples up to 2 ppm, and zinc exceeded the benchmark of 50 ppm in 15 of 16 samples up to 621 ppm. Considering this distribution, these metals in soil may pose a risk to terrestrial plant communities at the site.

COMMENT 30: This Site operates under a NYS Permit issued to the Canal Corporation that authorizes, among other things, maintenance dredging and upland placement of dredged material

further demonstrating that the Site should not be on the Inactive Hazardous Waste Disposal Site Registry.

RESPONSE 30: The Newland Island site falls within the definition of an inactive hazardous waste disposal site as provided in the applicable State law.

COMMENT 31: The remediation goals in the PRAP are already met under existing conditions and further reduction in risk (i.e., covering additional soil) will be accomplished through continued Canal Corporation activities under Alternative 2: Institutional Controls.

RESPONSE 31: The remediation goals in the PRAP are not already met based on the potential exposures to humans and the environment currently posed by conditions at the Newland Island site. Institutional controls will not protect the ecological receptors and the soil cover systems in the selected remedy will provide a more effective protection against potential human exposures than institutional controls alone. Considering that many areas of the site will continue to be used by the Canal Corporation, the soil cover systems in the selected remedy will also significantly reduce the potential for exposures to humans and the environment that could otherwise result based on site uses.

COMMENT 32: The proposed remedy (i.e., construction of a cover over a portion of the dredge material) is not substantially different than what has been part of the routine Canal Corporation operations at the Site that presumably has regulatory approval. Therefore, the FS should have recognized these ongoing operations as common to each remedial alternative, including the No Action alternative. As ongoing Canal Corporation operations will result in the placement of stockpiled dredge materials on the 1.2 acre area proposed for covering in the FS, Alternative 2: Institutional Control, which ensures continued commercial use of the site, is the most appropriate remedial action for the ROD.

RESPONSE 32: There is an important distinction between the operation of the site under current conditions and implementation of the selected remedy, Alternative 6. An alternate remedy requiring only institutional controls would not meet the threshold criteria pursuant to 6 NYCRR Section 375-1.8 as described in Response 31 above. Considering that many areas of the site will continue to be used by the Canal Corporation, the soil cover systems in the selected remedy will significantly reduce the potential for exposures that could otherwise result based on site uses.

COMMENT 33: An alternate remedy requiring institutional controls would meet the threshold criteria pursuant to 6 NYCRR Section 375-1.8.

RESPONSE 33: An alternate remedy requiring only institutional controls would not meet the threshold criteria pursuant to 6 NYCRR Section 375-1.8 as described in Response 31 above. Considering that many areas of the site will continue to be used by the Canal Corporation, the soil cover systems in the selected remedy will significantly reduce the potential for exposures that could otherwise result based on site uses by providing an effective barrier to direct contact with contaminated materials at depth.

COMMENT 34: An alternate remedy requiring institutional controls would also satisfy the balancing criteria pursuant to 6 NYCRR Section 375-1.8.

RESPONSE 34: See Response 33 above.

COMMENT 35: The proposed remedy is inconsistent with the NCP because an Institutional Control remedy provides a greater degree of overall effectiveness.

RESPONSE 35: See Response 33 above. Although institutional controls alone would have less short term impacts and are relatively easy to implement, the advantage of exposure abatement afforded by the selected remedy makes it the alternative with the highest overall effectiveness.

COMMENT 36: The "Enforcement Section" of the PRAP is in Error.

RESPONSE 36: The Department and the State take no 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. The text in the ROD reflects this position.

APPENDIX A-1

Comment Letter
from the
New York State Canal Corporation

New York State Canal Corporation
www.nyscanals.gov

John L. Buono
Chairman

Michael R. Fleischer
Executive Director

Carmella R. Mantello
Director

September 28, 2009

Mr. William Shaw
NYSDEC, Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7013

RE: Proposed Remedial Action Plan (PRAP) for the Newland Island/Lock 4 Dredge Spoil Disposal Area, August 2009

Dear Mr. Shaw:

The New York State Canal Corporation ("Canal Corporation") currently maintains the Newland Island/Lock 4 Dredge Spoil Disposal Area ("site"). The Proposed Remedial Action Plan (PRAP) for the site lists the proposed remedy as Alternative #6, Soil Cover and Diversion Trench with Institutional Controls and Monitoring, and the following comments are based on this remedy:

The Canal Corporation intends to continue using Newland Island as an upland dredge spoil disposal site for the foreseeable future. This continued use will eventually require the renewed use of the central and northern dredge spoil disposal basins for the disposal of new dredge spoils. The remedial design of the proposed cover system and the proposed storm water drainage diversion trench must allow for the placement of additional dredge spoils in these areas. To meet these objectives, the Canal Corporation requests the opportunity to review and comment on all phases of the remedial design.

The southern basin is actively used by the Canal Corporation, requiring that any planned changes to the site take into account its use. The eastern subdivision in the southern basin is proposed to have two feet of cover materials placed over the existing bottom. Since this basin is sized to retain water to reduce turbidity during dredging operations, the design will need to take into account how the site is used.

200 Southern Blvd., P.O. Box 189, Albany, NY 12201-0189 518-436-3055/1-800-253-6244 Fax 518-471-5936

The Canal Corporation is not in a position to make any certifications associated with the proposed remedy, including the future certification of the integrity of the cover system. Additionally, the Canal Corporation will not agree to an environmental easement that obligates it to conduct a periodic certification of institutional and engineering controls. The Plan should identify which entity will be making these certifications.

The PRAP correctly designates the NYSDOT and GE as the Potentially Responsible Parties. Newland Island jurisdiction was transferred to the Canal Corporation from the State (NYSDOT) as part of the "Thruway 2000" legislation (Chapter 766 of the Laws of 1992) and it is the position of the Canal Corporation that the indemnification as set forth in Canal Law Section 6(6) is applicable to Newland Island.

A Canal Work Permit will be required in order to conduct any work on land under the jurisdiction of the Canal Corporation. Therefore, the Corporation must review and approve the final design.

Thank you for the opportunity to comment on the Proposed Remedial Action Plan for the Newland Island/Lock 4 Dredge Spoil Disposal Area.

Sincerely,

Carmella R. Mantello
Director

CRM:Jm:lms

APPENDIX A-2

Comment Letter
from the
General Electric Company

John G. Haggard
Manager,
Site Evaluation and Remediation Program

GE
319 Great Oaks Blvd.
Albany, NY 12203

T 518 862 2739
F 518 862 2731
John.Haggard@corporate.ge.com

Via E-Mail, Federal Express, and Hand Delivery

September 28, 2009

William Shaw
Newland Island Project Manager
NYSDEC Central Office
625 Broadway
Albany, NY 12233-7013

Re: Comments on New York State Department Of Environmental Conservation's Proposed Remedial Action Plan: Newland Island/Lock 4 Dredge Spoil Disposal Area Town of Schaghticoke, Rensselaer County, New York Site No. 442033

Dear Mr. Shaw:

Attached find the General Electric Company's (GE) written comments on the Proposed Remedial Action Plan (PRAP) for the above referenced site.

Sincerely,

John G. Haggard
Manager, Site Evaluation and Remediation Program

JGH/dld

Attachment

RECEIVED BY HAND DELIVERY
TO NYSDEC REPRESENTATIVE
SEPTEMBER 28, 2009

Comments on the Proposed Remedial Action Plan
Newland Island Spoil Disposal Area
Site No. 442033
Town of Schaghticoke, Rensselaer County, New York

1. *The determination that hazardous waste was present at the Newland Island Dredge Spoil Disposal (the "Site") relied on a small number of PCB sample test results (> 50 ppm) whose documentation and analytical methodology was flawed. Hence, the results cannot be used to justify a determination that contaminants constitute a significant threat to the public health or the environment or warrant placement of the Site on the Inactive Hazardous Waste Disposal Site Registry.*

   The Site was listed on the Registry of Inactive Hazardous Waste Disposal Sites (IHWDS) in November 1998. 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.[i] Current regulation identifies 50 ppm as the concentration which defines PCBs as a hazardous waste.[ii] As such, the ≥ 50 ppm PCB concentrations identified in the samples discussed below were presumably the determining factor that hazardous waste was present at the Site.

   The support for this determination was a 1992 report prepared by Malcolm Pirnie Inc. (i.e., MPI 1992 report). This report contained results from sampling conducted at the Site in 1990 by MPI, as well as sampling conducted in 1977 and 1989. An additional report was prepared in 2001 documenting sampling conducted in August 1998, prior to placing the Site on the IHWDS registry.

   In total, 59 samples were collected prior to the Site being placed on the IHWDS registry in November 1998. Of these samples, 21 (36%) were non-detect for PCBs, 5 (8%) exhibited concentrations less than 1 mg/kg (parts per million-ppm) and 29 (49%) exhibited concentrations between 1 mg/kg and 49 ppm. Only four (4) samples (7%) exhibited a PCB concentration in excess of 50 ppm. Of the four samples with PCB concentrations in excess of 50 ppm, three were collected in 1990 and one was collected in 1977.

   The 1977 sample (collected at Test Pit 38) exhibited the highest PCB concentration with a total PCB concentration of 4,915 ppm (4,910 ppm of which was identified as Aroclor 1016). As discussed below, the accuracy and precision of the 1977 sample result are highly suspect, thereby calling into question the validity of this sample result:

   - *The analytical procedure cited for the 1977 Weston samples [iii] could not be verified.* The analytical procedure cited in the 1978 Weston report is not a PCB analytical procedure. As such, the means and methods used to obtain the sampling results contained in the 1978 Weston report are not known.
   - *The other PCB aroclors and concentrations are different and considerably lower in concentration.* The 59 samples collected prior to the Site being placed on the IHWDS registry exhibited different PCB aroclors and sample concentrations when compared to this anomalous 1977 sample result.
   - *Aroclor 1016 is not commonly found at the Site.* PCBs at the Site, as demonstrated by the large data set collected during the Remedial Investigation (RI) efforts, are mainly comprised of Aroclor 1248 and 1254. Only one sample of the 341

samples (including duplicates) collected during the RI had a detectable concentration of Aroclor 1016. This concentration was 12 ppm, at BH-28-02 (0.6-0.9 foot interval).

- *This sampling result (i.e., concentration) was not duplicated in more recent, robust sampling.* Subsequent sampling conducted in the area of Test Pit 38 (i.e., RI samples surface soil samples SS-07A/B, SS-35A/B, SS-36A/B, SS-37 A/B, and BH-31 and subsurface soil samples BH-29 and BH-32) exhibited surface soil concentrations ranging from 0.46 ppm to 2.1 ppm and subsurface soil concentrations ranging from non-detect to 1.8 ppm. Aroclor 1016 was not detected in any of these samples.
- *There is insufficient documentation to support the sample result.* Neither results tables nor data packages were available for the 1977 Weston data. Thus, the accuracy of these data cannot be verified and the possibility of a transposition error cannot be discounted.

The remaining 3 samples containing PCBs > 50 PPM that were collected prior to the Site being placed on the IHWDS registry (77 ppm at two surface soil locations and 260 ppm at one subsurface soil location) were collected during the 1990 MPI sampling. For the reasons set forth below, the accuracy and precision of these reported concentrations are also highly suspect, calling into question the validity of the results for making regulatory decisions:

- *There is insufficient documentation to support the sample result.* Neither results tables nor data packages were available. Thus, the accuracy of these data cannot be verified and the possibility of a transposition error cannot be discounted.
- *The locations of these samples are not known.* Figures depicting sample locations were not provided in the information package provided to GE.
- *A biased high analytical method was used.* The available records indicate that USEPA SW-846 Method 8080 was used by the laboratory to analyze PCBs in the soil samples collected in 1990. Method SW-846 Method 8080 is different than the analytical protocol (USEPA SW-846 Method 8082) used during the RI. Method 8080 is a low resolution packed column Gas Chromatography/Electro Capture Detection method (PGC/ECD) that relied on second column confirmation to confirm the presence of PCBs and Pesticides. PCBs were identified in this method by matching the peak pattern from a single Aroclor standard, with a single peak used for quantitation. Later analytical methods (such as Method 8082) relied on up to five peaks for identification and quantitation with further confirmation of the presence of PCBs by mass spectrometry (MS). In PCB analysis, the choice of peaks used for quantitation and recognition may be complicated by alteration (weathering) of Aroclors in the environment and/or coeluting analytes. The older method 8080 makes no provision for accounting for weathering/coelution. In fact, the prescriptive requirements of Method 8080 resulted in "force fitting" by laboratories of PCB patterns into Aroclor identification without sufficient critical evaluation of other possibilities. Catherman[iv] reports that at a site where PCBs in excess of 25 ppm were detected by PGC/ECD analysis (Method 8080), subsequent on-site analysis using gas chromatography/mass spectrometry indicated that on-site PCB concentrations were actually less than 2 ppm. Consequently, it is highly likely that the Method 8080 analysis conducted in 1990 overestimated the actual PCB concentrations in Site soil, particularly in light of subsequent, more accurate data.

- *Sampling conducted immediately prior to listing demonstrated very low PCB levels.* Just prior to the listing additional sampling was conducted in August 1998 and fourteen surface soil samples were collected on the island – all exhibiting PCB results <1 ppm.

During performance of the RI, a total of 324 samples, not including duplicates, was collected across the Site. The samples included 3 upland sediment/drainage locations/intervals, 171 surface soil sample locations/intervals and 150 subsurface sample locations/intervals from soil borings and monitoring well borings.[v] In addition, 9 monitoring wells were installed on the Site and 33 groundwater samples were collected and analyzed from these wells. In addition, six groundwater samples were also collected from the two private wells on the Island.

The 324 soil/sediment samples collected during the RI represents a significantly more intense sample frequency in comparison to the 59 samples collected prior to the placement of the Site on the IHWDS registry. Moreover, the RI sampling program, using a newer analytical method with greater precision and accuracy, confirmed that PCBs in excess of 50 ppm are not present at the Site. Data reproducibility is a reliable confirmation both of the type of constituent that is present as well as its concentration. The large dataset developed during the RI was unable to reproduce any PCB concentration in excess of 50 ppm, indicating that hazardous waste is not present at the Site.

In summary, although some of the original samples suggested the presence of hazardous waste at the Site (i.e., PCBs in excess of 50 ppm), the accuracy and precision of these results are highly suspect. Given the small percentage of samples thought to exceed 50 ppm for PCBs prior to placement of the Site on the IHWDS registry and questions of accuracy and precision of the data, NYSDEC should have sought to further evaluate whether hazardous waste was in fact present at the Site.[1] Furthermore, the presence of hazardous waste (i.e., PCBs in excess of 50 ppm) was not confirmed in subsequent, more extensive investigations conducted by the NYSDEC. A more robust RI sampling program confirmed that PCBs <u>are not</u> present in excess of 50 ppm. If the RI had been the original assessment, it would have been determined that the Site does not contain hazardous waste (i.e., PCBs in excess of 50 ppm) and consequently, did not belong on the Registry of IHWDS. Therefore, at the conclusion of the RI, the NYSDEC knew that the Site did not pose a significant threat and should have removed it from the IHWDS program or reclassified it accordingly.

2. *The Remedial Investigation (RI) expanded the pre-existing dataset to a total of 400 soil samples. As no RI samples contained PCB concentrations greater than 50 ppm, this further demonstrates hazardous waste is not present at the Site. Therefore, following the RI the Department should have removed the Site from the IHWDS Registry or at a minimum, reclassified it to a Class 3.*

Following NYSDEC's decision to place the Site on the IHWDS registry and designate it Class 2, the RI expanded the dataset by collecting another 324 soil samples (excluding

[1] According to the record, the placement of the Site on the IHWDS registry and its designation as a Class 2 site occurred six years after the 1992 MPI report without any further testing.

duplicates) bringing the total soil data set to 383 samples. Hence, the RI constitutes the vast majority (85%) of the soil sample data set being relied upon to characterize soil environmental media at the Site.

The RI soil samples can be segmented into surface (i.e., < 6 inches in depth) and subsurface (i.e., > 6 inches in depth). These depth intervals are important in assessing potential risks to human health and the environment (see Comments 3, 4, 5 & 6 below) as well as to determining whether the soil conditions continue to meet the "significant threat" assumption necessary for a Class 2 designation.

A summary of the PCB results for the surface and subsurface soil samples collected during the RI is provided below. As shown, none of the 324 soil samples (or their duplicates) collected during the RI identified PCBs at concentrations that would indicate hazardous waste (i.e., 50 ppm or greater). Only 3% and 4% of the surface and subsurface soil samples, respectively indicated PCB concentrations > 10 ppm with the highest concentration reported in a single sample to be 43 ppm. Notwithstanding that a duplicate of this sample had a reported PCB concentration of only 18 ppm, the sample was collected from approximately 6 feet below grade, not a depth that poses any potential risk to human health or the environment at this commercial Site.

	Total	ND	0-1 ppm	1-10 ppm	>10 & < 50ppm
Surface Soil (<6 in.)	174	28%	38%	32%	2%
Subsurface Soil (>6 in.)	150	52%	31%	13%	4%
Total	324	39%	35%	23%	3%

Note: For sample locations with duplicates, the higher of the two concentrations was used in this sample count.

The inability of the RI, which relied upon a much more robust dataset to characterize the Site, to confirm the presence of hazardous waste should have led to the Site being removed from the registry. Pursuant to regulation, the classification of any site on the Registry must be reviewed at least annually but not later than March 31 of each year.[vi] If such a review had been conducted following the RI, the vast amount of new information could not continue to support the "significant threat" assumption and NYSDEC should have reclassified the site to a Class 3. As NYSDEC's own regulations state "The mere presence of contaminants at a site or in the environment is not a sufficient basis for finding that contaminants disposed at a site constitute a significant threat to the environment" (i.e., Class 2).[vii]

3. *The Human Health Risk Evaluation concluded that there is no unacceptable human health risk. Therefore, there was no basis following the RI to support the Class 2 designation indicating that the Site posed a significant threat to human health under current use.*

The National Contingency Plan (NCP) provides for the determination of human health and ecological risks based on the calculation of an exposure point concentration that represents the reasonable maximum exposure based on the available dataset.[viii] In accordance with regulatory guidance, the 95% upper confidence limit (UCL) is intended to represent the reasonable maximum exposure scenario (RMES).

During the RI, a total of 324 soil samples were collected and analyzed for PCBs[ix]. These samples were designated as sediment/drainage, surface soil and subsurface samples. In

accordance with NYSDEC guidance, surface soil at a depth of two inches below ground surface (excluding vegetative cover) is relied upon to evaluate public health exposure. Surface soil to a depth of six inches below ground surface is relied upon to assess potential impacts arising from garden soils.[x] A total of 174 soil/sediment samples were collected from the upper 6-inches (i.e., surface soil). Three (3) samples were collected from sediment/drainage and 171 samples from surface (upper 6-inches). Another 150 samples were collected below 6-inches. Of the surface 174 surface samples, 172 samples were collected from the upper 2-inches of soil.

As discussed above, NYSDEC guidance recommends that public health exposure should consider surface soil at a depth of two inches below ground surface. However, the Human Health Risk Evaluation in the RI used a 95% UCL for PCBs for the upper 6-inches of 3.47 ppm for the adult industrial worker and adult and child visitor, and 4.30 ppm (0 – 10 ft) for the future adult construction/excavation and future adult and child resident. Using these conservative values, the Human Health Risk Evaluation still concluded that calculated risks fell within an acceptable risk range for carcinogens and were below a hazard index of 1 for non-cancer risks.[xi] (Note: these 95% UCL values could not be replicated using the dataset provided in the RI; rather lower values were calculated using the dataset). Based on the RI findings that potential risks fell within an acceptable risk range for carcinogens and non-carcinogens, there was no basis for considering any remedial action to address human heath risks.

4. *The conclusion that "current levels of environmental contamination at the Site may pose a risk (to) terrestrial plants, soil invertebrates, and invertivorous wildlife such as the American robin and short-tailed shrew" was based solely on a Screening-Level Ecological Risk Assessment (SLERA). However, since a SLERA is for screening, it is not the appropriate assessment tool to use when making a determination of ecological risk for the purpose of considering remedial action.*

   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 draft DER-10, Fish and Wildlife Resource Impact Assessment [FWRIA] guidance and the US EPA ecological risk assessment guidelines established under the NCP offer more thorough methods (qualitative and quantitative) to access 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, generate cleanup goals and, in general, are not based upon site-specific assumptions. Therefore, the reliance on a SLERA to determine potential ecological risk is inconsistent with the NCP and should not have been used to make remedial decisions.

5. *Notwithstanding the fact that remedial decisions should not be based on the results of a SLERA, review of the SLERA indicates that certain assumptions about ingestion rates, soil exposure point concentrations, bioaccumulation factors and toxicity reference values were inflated, resulting in ecological risks being overstated.*

   The evaluation of potential risks to wildlife included exposure modeling for American robin, short-tailed shrew, red-tailed hawk, and red fox. As described below, the assumptions regarding dietary components, exposure point concentrations (EPCs), bioaccumulation factors (BAFs) and toxicity reference values (TRVs) were inappropriate:

- Dietary Components: The SLERA assumes that robins and shrews consume 100% earthworms; and is unrealistic. For robins, studies from which the ingestion rates were taken state that diets consist of up to 92% fruit (Sample and Suter 1994), and earthworms account for only 8.7 to 20% of the diet (Heppner 1965; cited in Sample and Suter 1994). Similarly, the short-tailed shrew diet includes approximately 13.8% plant and fungi matter, with the remainder of the diet comprised of slugs/snails, earthworms, coleoptera, miscellaneous animals, and soil invertebrates. Only 31.4% of the short-tailed shrew diet consists of earthworms (Whitaker and Ferraro 1963).

- Exposure Point Concentrations (EPCs): The SLERA uses maximum detected concentrations in the upper six feet of soil for the EPCs, greatly over-estimating potential exposure. For example, the EPC for PCBs used in the SLERA is 43 mg/kg. That concentration was detected in subsurface soil (4.9 to 6.0-foot interval), and a duplicate sample collected in the same location yielded a much lower concentration of only 18 mg/kg. A more appropriate soil EPC would be to use the 95% UCL on the mean in the upper six inches of soil, which for PCBs is only 2.34 mg/kg. This over-estimation of EPCs also occurred for the metals. A comparison of the EPC used in the SLERA for metals to the 95% UCL on the mean is provided below. This comparison demonstrates that use of the maximum concentration for metal EPCs was also overly conservative.

Constituent	EPC used in SLERA (max detection)	95% UCL on the mean (mg/kg)
Cobalt	17.5	12.56
Copper	85.1	53.63
Lead	332	168.4
Mercury	2.0	0.743
Zinc	621	284.4

- Bioaccumulation Factors (BAFs): The SLERA uses overly-conservative BAFs. For example, for PCBs the cited reference for BAFs acknowledges that the equation overestimates PCBs in earthworms 81 percent of the time (Sample et al, 1998a).

- Toxicity Reference Values (TRVs): The SLERA frequently relies on the lowest possible TRVs that are not supported by more recent literature. For example, for PCBs more appropriate TRVs can be found in other documents not utilized in the SLERA, including but not limited to Region 9 BTAG[xii] and values used and accepted by USEPA on other large PCB sites[xiii].

Use of more appropriate values for the above parameters demonstrates that Site soil does not pose significant risks to wildlife. A more thorough ERA conducted in accordance with the NCP would conclude that there is no need to conduct remedial actions at this Site to mitigate ecological risks.

The SLERA also used inflated benchmarks for evaluating risks to plants and soil invertebrates based on the fact that rural soil background values[xiv] sometimes exceed these benchmarks. For example, the invertebrate benchmark for mercury (0.1 mg/kg) is less than the background value of 0.18 mg/kg, and the phytotoxicity value for zinc (50 mg/kg) is less than the background value of 109 mg/kg.

Finally, the RI report stated the primary stressor to ecological receptors at the site is most likely the physical disturbance caused by placement, dewatering, and mechanical redistribution of spoil materials. Consequently, from a practical standpoint, any debate over potential ecological risks arising from the presence of contaminants at the Site is far overshadowed by those risks that are expected from normal, commercial operations.

6. *The SLERA identifies potential risks to terrestrial plants based on a comparison of Site data to inflated benchmarks. However, no additional lines of evidence are provided to support this conclusion.*

   The SLERA identifies possible risks to plants based on exceedance of non-site specific screening benchmarks. However, no signs of stressed vegetation were observed at the Site by Ecology and Environment Engineering, PC (EEEPC) personnel (see page 8-5 of the SLERA). If the exceedance of benchmarks was an accurate predictor of risks to plants, then some degree of stressed vegetation would likely be observed. The fact that no stressed vegetation was observed strongly suggests that the SLERA evaluation overstated potential risks to terrestrial plants.

7. *This Site operates under a NYS Permit issued to the Canal Corporation that authorizes, among other things, maintenance dredging and upland placement of dredged material further demonstrating that the Site should not be on the Inactive Hazardous Waste Disposal Site Registry.*

   The NYS Canal Corporation operates under a system wide Water Quality Certification permit issued under Section 401 of the Clean Water Act.[xv] This permit sets forth the regulatory requirements relating to the upland disposal of dredged materials. Moreover, if the Canal Corporation seeks to reuse the dredged materials for another purpose, the permit requires that a beneficial use determination (BUD) be obtained in accordance with 6 NYCRR Section 360-1.15(d).[xvi] In fact, the record indicates that the Canal Corporation had received a BUD in the past, though it was nullified after the material authorized for reuse was mixed with sediments that were subsequently dredged under the permit.

   The PRAP acknowledges that the NYS Canal Corporation will continue to stockpile, dewater and place dredged sediments at the Site in the coming years. The PRAP acknowledges that the placement of dredged sediments in the area defined as the western sub-basin met the objective of the proposed remedy for that area of the Site. Therefore, future placement of dredged sediments under the existing Water Quality Certification permit on the remainder of the Site, particularly the area defined as the eastern sub-basin that is the subject of the proposed remedy, should continue to be managed under the regulatory framework already in place and not as part of the IHWDS program.

8. *The remediation goals in the PRAP are already met under existing conditions and further reduction in risk (i.e., covering additional soil) will be accomplished through continued Canal Corporation activities under Alternative 2: Institutional Controls*

The PRAP defines three goals of the remediation which are intended to eliminate or reduce to the extent practicable:

- exposures of persons at or around the site to PCB-contaminated dredge spoil material/soil present at the surface or that may be disturbed in the subsurface during any excavation activities – through the potential exposure pathway of direct contact;
- environmental exposures of flora or fauna to PCBs and metals (cobalt, copper, lead, mercury, and zinc) in dredge spoil material/soil - through the potential exposure pathways of direct contact and/or ingestion; and
- the release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards.

The risk assessment concluded that potential human health risks were in the acceptable risk range or below a Hazard Index of 1, 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 are capable of meeting these goals. In addition, future placement of dredge spoils as part of on-going site operations will also continue to reduce the residual risk posed to humans from any historic sediments placed on the Site.

As indicated in Comments No. 5 and 6 above, potential risks to flora and fauna from the identified contaminants were overstated in the SLERA. The assessment included inflated exposure factors (e.g., ingestion rates, bioaccumulation factors), toxicity benchmarks and exposure point concentrations (EPCs).

Finally, the groundwater sampling conducted during the RI did not indicate that potential for releases from soil to groundwater exist as dissolved PCBs were not detected in groundwater. Rather the RI stated: "These findings may reflect sample turbidity and not represent PCBs dissolved in water. The screen of this well is set in dredge spoil material. Considering these facts and that PCBs are not readily soluble in groundwater, the migration of PCBs from the contaminated dredge spoil material at the Newland Island site to groundwater is not expected to be significant. Likewise, the potential for the release of PCBs to the Hudson River or the Champlain Canal from the site through groundwater discharge is expected to be minimal." In addition, these reports also stated that "conditions and observations noted at the site indicate that the possible rate of erosion is likely very low and that overland flow is not a significant route of contaminant migration". Thus, the remedial goal to prevent the release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards has been met.

Given the current, and likely future commercial/industrial use of the Site by the NYS Canal Corporation and the on-going placement of dredge spoils at the site, the remediation goals set forth in the PRAP are met under current and continued site operations. The Site is currently used for commercial/industrial use and according to the RI and FS reports is zoned as Marine. Simple institutional control elements (e.g., declaration of environmental restriction, development of a Site Management Plan, etc.) would formalize procedures and practices to ensure these conditions are maintained into the future.

9. *The proposed remedy (i.e., construction of a cover over a portion of the dredge material) is not substantially different than what has been part of the routine Canal Corporation operations at the Site that presumably has regulatory approval. Therefore, the FS should have recognized these on-going operations as common to each remedial alternative, including the No Action alternative. As ongoing Canal Corporation operations will result in the placement of stockpiled dredge materials on the 1.2 acre area proposed for covering in the FS, Alternative 2: Institutional Control, which ensures continued commercial use of the site, is the most appropriate remedial action for the ROD.*

   As noted in the PRAP, the Site has been used since the 1950s and will continue to be used into the future for the staging of dredged river sediments; the RI and FS acknowledge that the Canal Corporation continues to use this Site for placement of dredge spoils and that the recent dredged material has "no PCBs". Thus, placement of dredged materials on an on-going basis would continue to occur at the Site under all of the remedial alternatives contemplated in the FS. Consequently, all remedial alternatives included in the FS, including the No Action alternative, should have acknowledged the on-going placement of dredged sediment at the Site as a common action.

   The FS acknowledges that clean dredge materials constitute a cover for a large portion of the dredge spoils located at the Site (see Figure 11 of the PRAP). Consequently, the on-going placement of dredge spoils is viewed in these documents as an acceptable cover for the historic dredge spoil materials. As noted in the FS report, an approximate 1.2-acre area of the Site would be covered under the proposed remedy – Alternative 6. It appears that the areas proposed for cover exhibit surface soil concentrations in excess of 1 ppm and thus placement of a 12-inch thick soil cover in these areas was proposed.

   Given the fact the recent dredge spoils have exhibited "no PCBs", have been approved as BUD materials and placement of dredge spoils will continue in the future, this area could readily be covered with future dredge spoils as part of future dredge spoil placement at the Site. With the inclusion of this common action (i.e., continued placement of dredge spoils at the site), Alternative 2 (Institutional Controls and Monitoring) would be the more appropriate alternative for the Site.

10. *An alternate remedy requiring institutional controls 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 the HHRA indicated that there were no unacceptable risks to humans. Furthermore, when appropriate assumptions are made for risk parameters, the findings show that existing conditions do not present an ecological risk. Given these conclusions, current conditions augmented by institutional controls in the form of access and use restrictions would be the most appropriate remedial action for the Site. This would include limiting the Site to commercial use (its past, current and likely future use) and implementing a Soil

Management Plan (SMP) for future subsurface work while acknowledging that the ongoing placement of dredged sediment at the Site would suffice as an appropriate cover.

Moreover, the Institutional Controls remedial action alternative included in the 2009 Feasibility Study report (Alternative No. 2 – Institutional Controls and Long Term Monitoring) would not need to include long term ground water monitoring. As stated in the RI, PCB detections in groundwater were attributed to turbidity in the samples and it was concluded that PCBs were not present in groundwater. As groundwater is not of concern at the Site, there is no need for long-term groundwater monitoring for PCBs.

Based on the above information, an Institutional Control remedial action would provide adequate protection of human health and the environment and its selection would meet this threshold requirement of 6 NYCRR Section 375-1.8 (f).

With respect to "standards, criteria and guidance", the Soil Cleanup Objectives (SCOs) pertaining to PCBs in surface soil in the Southern Basin – western sub-basin for commercial exposure and protection of ecological receptors, both 1 ppm, are essentially met in their respective intervals in this area of the Site. The other areas of the Site (Southern Basin-eastern sub-basin) would be covered by dredge materials containing less than 1 ppm PCBs in the future as part of ongoing operations (i.e., common action). As such, a remedy that couples the common action involving continued placement of dredge spoils as cover material by the NYS Canal Corporation along with institutional controls as described above would meet this second threshold criterion in a manner equal to the proposed remedy (i.e., the proposed remedy also manages residual PCB-impacted soil on Site).

In conclusion, an Institutional Control remedial action provides adequate protection of human health and the environmental 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.

11. *An alternate remedy requiring institutional controls 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; the first two were discussed in Comment 10. 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).

A remedy that couples current conditions (e.g., continued placement of dredged materials, commercial use, etc.) with institutional controls as described above would provide long-term effectiveness, have no short term impacts and is readily implementable.

The proposed remedy does not reduce the toxicity, mobility or volume. Hence, current conditions coupled with institutional controls would meet this criterion to the same degree as the proposed remedy.

Coupling existing conditions and on-going dredge spoil placement activities with institutional controls is less costly than the proposed remedy. Also, the Department can be reasonably certain of future commercial/industrial land use at the Site[xvii] in light of continued use of the Site by the NYS Canal Corporation.

In conclusion, an institutional control remedy coupled with the existing conditions would also satisfy the balancing criteria at significantly less cost than the proposed remedy while achieving the same proportional risk reduction.

12. *The proposed remedy is inconsistent with the NCP because an Institutional Control remedy provides 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, coupling existing conditions at the Site with institutional controls 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 compares the costs and overall effectiveness.[xviii] 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.[xix]

As mentioned above, a remedy that couples existing conditions with institutional controls offers 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 given the option of an institutional control remedy.

And in the case of short-term impacts and effectiveness, a remedy based on institutional controls (along with the common action) would have equal short-term impacts and effectiveness as the proposed remedial action.

The alternative that ensures institutional controls remain in place and includes the ongoing placement of fill material by the Canal Corporation as a common action (<$260,000) represents the remedy whose overall effectiveness is proportional to its cost given the environmental conditions and current and future Site use. (Note, this referenced cost omits the annual O&M, which is presumed to relate to ground water monitoring since the ground water findings in the RI do not support a need for continued monitoring).

13. *The "Enforcement Section" of the PRAP is in Error*

Section 4 of the PRAP, entitled "Enforcement Status," contains the following statement:

"The PRPs for the site, documented to date, include: the New York State Department of Transportation and the General Electric Company. After remedy selection, the Department will evaluate the site history for the consideration of further action against responsible parties regarding compliance with the law and cost recovery as required. "

The statement that General Electric is a potentially responsible party is unexplained and otherwise unsupported in the PRAP and is of no legal consequence. Nevertheless, GE wishes to make clear that the assertion that GE bears responsibility for conditions at the Newland Island/Lock 4 site is both factually and legally flawed. GE has no liability for the costs of response or any other costs or for any actions at that site; to the contrary, others bear sole responsibility and liability for site cleanup and other response activities, including but not limited to the New York State Department of Transportation. In any event, any claims that DEC might otherwise have had against GE for conditions at the Newland Island/Lock 4 site were finally and irrevocably released by the Agreement dated September 8, 1976 between GE and DEC concerning GE's discharges of PCBs to the Hudson River.

Based on the foregoing, General Electric requests the Department correct the PRAP accordingly, and ensure that the Record of Decision (ROD) reflects the fact that General Electric is not a potentially responsible party at the Newland Island/Lock 4 site or otherwise subject to legal action relative to compliance with the law or cost recovery.

CONCLUSION

As presented above, GE regards the inclusion of the Newland Island/Lock 4 site on the Registry of Inactive Hazardous Waste Disposal Sites as unfounded since the Site does not contain hazardous waste, and calls upon NYSDEC to remove the Site from the Registry.

Even assuming for the sake of argument that NYSDEC were to continue to list the Site on the Registry, it is clear that the Site does not pose "a significant threat to public health or the environment" and is more appropriately classified as a Class 3, and the ROD should be prepared with that reality in mind. With such a reclassification, the Department does not have the authority to order a PRP to develop and implement a remedial program for the Site pursuant to Section 27-1313 of the Environmental Conservation Law. Similarly, such a reclassification would result in the Department being precluded from accessing the Hazardous Waste Remedial Fund, pursuant to Section 97-b of the State Finance Law, for its own performance of such a remedial program.

It is also clear that even if the Department were to continue to classify the Site as a Class 2, the remedy it has designated as its preferred remedy in the PRAP does not meet the tests of either the NCP or 6 NYCRR Part 375. Under that circumstance, the establishment of institutional controls is the most appropriate remedial option and should be selected by DEC in the ROD.

Finally, GE reiterates its position that it is not a PRP at the Newland Island/Lock 4 site, and is thus not subject to legal action for recovery of any response costs or any other costs or for any actions. The PRAP should be corrected in this regard, and the ROD should clearly reflect this fact as well.

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[i] Environmental Conservation Law §27-1301 (1)

[ii] 6 NYCRR Section 371.4(e)(1), Lists of Hazardous Waste

[iii] Weston report states that the analytic method used was provided in Federal Register Vol 38, No 125. June 29, 1973 Part 11. Sediment Extraction Procedures of the Southeast Water Laboratory, EPA Athens, GA Method No. SP-8/71

[iv] Catherman DR. Proceedings 25th Midatlantic Industrial Waste Conference, 1993, pp. 348-356, CA120(14:172549Y)

[v] These totals exclude duplicates as well as duplicate samples analyzed via method 8082 and method 8082-screen

[vi] 6NYCRR Section 375-2.7 (d) (1)

[vii] 6NYCRR Section 375-2.7(a)(4)

[viii] 40 CFR Section 300.430 (e) (2), Response to Comments, page 8716 (March 8, 1990)

[ix] These totals exclude duplicates as well as duplicate samples analyzed via method 8082 and method 8082-screen

[x] See draft DER-10, Section 1.3 Definitions,"Surface Soil", page 17 (December 2002)

[xi] FINAL Remedial Investigation Report for the Newland Island (Lock 4) Dredge Spoil Disposal Area, Schaghticoke, Rensselaer County, New York, Site Number 442033, page 7-7 (August 2009). A hazardous index of > 1 was indicated for a future child resident. However, the document further states "due to the uncertainly associated with reference doses and the conservative nature of this assessment, resident child exposure to PCB contaminated soil/dredge spoil material is not likely to result in any adverse health effects."

[xii] DON. 1998. Interim Final: Development of Toxicity Reference Values as Part of a Regional Approach for Conducting Risk Assessments at Naval Facilities in California. Prepared by U.S. Department of the Navy, Engineering Field Activity West, Naval Facilities Engineering Command

[xiii] USEPA. 2003. Ecological Risk Assessment for General Electric (GE)/Housatonic River Site, Rest Of River. Prepared by Weston Solutions, Inc. for the U.S. Army Corps of Engineers, New England District, and the U.S. Environmental Protection Agency, New England Region, West Chester, Pennsylvania. July.

[xiv] New York State Brownfield Cleanup Program, Development of Soil Cleanup Objectives, Technical Support Document, Prepared By: New York State Department of Environmental Conservation and New York State Department of Health, September 2006

[xv] Water Quality Certification - Under Section 401 - Clean Water Act Permit ID 0-9999-00031/00001-Renewal Effective Date: 2/1/2007 Expiration Date: 1/31/2012

[xvi] See http://www.dec.ny.gov/chemical/8734.html

[xvii] 6 NYCRR Section 375-1.8 (f) (9)

[xviii] 40 CFR Section 300.430 (f), Response to Comments, page 8725 (March 8, 1990)

[xix] Ibid, page 8728

APPENDIX B

ADMINISTRATIVE RECORD

Administrative Record

Newland Island/Lock 4 Dredge Spoil Disposal Area

Town of Schaghticoke – Rensselaer County - New York

Site No. 442033

December 2009

Documents

1. "Proposed Remedial Action Plan for the Newland Island/Lock 4 Dredge Spoil Disposal Area - Town of Schaghticoke - Rensselaer County - New York - Site No. 442033", dated August 2009, prepared by the Department in consultation with the New York State Department of Health.
2. "Proposed Remedial Action Plan Fact Sheet and Meeting Announcement for the Newland Island/Lock 4 Dredge Spoil Disposal Area", dated August 2009, prepared by the Department.
3. "Feasibility Study for the Newland Island Dredge Spoil Disposal Area - Schaghticoke, New York - Site Number 442033", dated August 2009, prepared by Ecology and Environment Engineering.
4. "Remedial Investigation Report for the Newland Dredge Spoil Disposal Area - Schaghticoke, Rensselaer County, New York - Site Number 442033", dated August 2009, prepared by Ecology and Environment Engineering.
5. "Final Technical Work Plan for the Remedial Investigation and Feasibility Study at the Newland Island/Lock 4 Dredge Spoil Disposal Area", dated January 2006, prepared by Ecology and Environment Engineering.
6. "Technical Scope of Work for the Remedial Investigation and Feasibility Study at the Newland Island/Lock 4 Dredge Spoil Disposal Area", dated June 2005, prepared by the Department.
7. "Dredge Spoils Investigation in the Upper Hudson River Valley", Dated July 2001, prepared by the Department.
8. "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.
9. "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.

Comment Letters

1. Letter dated September 28, 2009 from Carmella R. Mantello, Director of the New York State Canal Corporation.
2. Letter dated September 28, 2009 from John G. Haggard, Manager of the Site Evaluation and Remediation Program for General Electric.