NEW YORK
state department of
HEALTH

Nirav R. Shah, M.D., M.P.H.
Commissioner

Sue Kelly
Executive Deputy Commissioner

May 23, 2014

Mr. Nick Acampora
Division of Environmental Remediation
NYS Department of Environmental Conservation
50 Circle Road
Stony Brook, NY 11970

Re: **Remedial Action Work Plan**
Former Cibro Petroleum Terminal Site
Site# C130153
Island Park, Nassau County

Dear Mr. Acampora:

At your Department's request, staff reviewed the Remedial Action Work Plan for the referenced site. Specifically, we have reviewed the document to determine whether the proposed remedial action is protective of public health. I understand human exposures to site contamination would be addressed by the remedial action as follows:

- Soil: Soils that exceed the site-specific Track 4 soil cleanup objectives or exhibit gross contamination will be remediated via a combination of excavation, off-site disposal and on-site soil washing, to the maximum depth at which shoring, dewatering or disruption of the peat layer are not required. The excavated areas will be backfilled with soils meeting the soil cleanup objectives. A cover system will be installed that consists of structures such as buildings, pavement and sidewalks or two feet of clean soil over a demarcation layer.

- Soil Vapor: All routinely occupied buildings will be constructed with sub-slab vapor barriers and sub-slab depressurization systems that will be activated if soil vapor presents a concern as per the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York.

- Groundwater: Groundwater monitoring will be conducted to assess performance of the remedy and determine when groundwater standards and remedial action objectives are met.

A community air monitoring plan (CAMP) will be in place during remedial activities. Also, a Site Management Plan will be prepared that will describe institutional and engineering controls and site monitoring and management requirements. It will contain a soil vapor intrusion evaluation plan and a plan for sub-slab depressurization system activation, if warranted, restrict the use of groundwater and restrict use of the property to restricted-residential, commercial or industrial use as local zoning allows. Based on

this information, I believe the proposal is protective of public health and approve of the Remedial Action Work Plan. If you have any questions, please contact me at 518-402-7860.

Sincerely,

Wendy S. Kuehner, P.E.
Public Health Engineer 2
Bureau of Environmental Exposure Investigation

ec: C. Bethoney / e-File
B. Devine – NYSDOH MARO
J. DeFranco – NCDOH
J. Harrington – NYSDEC Central Office
W. Parish – NYSDEC Region 1

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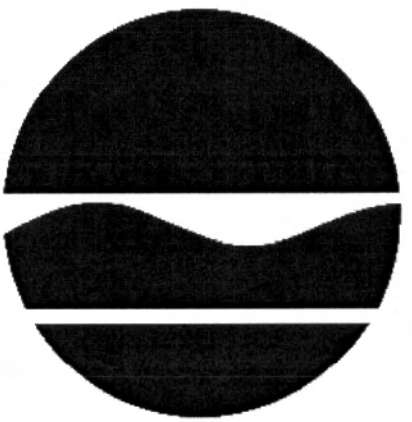
DECISION DOCUMENT

Former Cibro Petroleum Terminal Site
Brownfield Cleanup Program
Island Park, Nassau County
Site No. C130153
May 2014



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

DECLARATION STATEMENT - DECISION DOCUMENT

Former Cibro Petroleum Terminal Site
Brownfield Cleanup Program
Island Park, Nassau County
Site No. C130153
May 2014

Statement of Purpose and Basis

This document presents the remedy for the Former Cibro Petroleum Terminal Site site, a brownfield cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Former Cibro Petroleum Terminal Site site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the selected remedy are as follows:

The alternatives developed for the site and evaluation of the remedial criteria are presented in the alternative analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation and 6 NYCRR Part 375. The remedy proposed is a Track 4: Restricted use with site-specific soil cleanup objectives remedy and is referred to as the Ex-Situ Soil Washing & Treatment and/or Excavation/Off-Site Disposal remedy.

The elements of the proposed remedy including the removal of impacted soil based on visual, olfactory and/or field instrumentation will be completed in two phases as depicted in Figure 2. The first phase will be to remove the impacted soil within the "Soil Wash Plant Excavation Area" (depicted in blue) with the soil properly staged on a liner on site Upon completion of the Soil Wash Plant, the previously stockpiled soil and soil from "Bulkhead Excavation Area" (depicted in red) will then undergo treatment. Once complete, the second phase will be the removal and treatment of impacted soil from the remainder of the site (depicted in yellow). All excavated soils will be processed/treated through the Soil Wash Plant.

Remedy will consist of several components to allow Track 4 Restricted Residential use including:

1. Remedial Design

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

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and - Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation and Treatment or Off-site Disposal:

The excavation of grossly contaminated soils will continue until obviously contaminated soil based on visual, olfactory and/or field instrumentation (readings at or below 250 PPM) has been removed. Excavated soil will be treated on-site by an Ex-situ Soil Washing System. Soil that does not meet restricted residential Soil Clean-up Objectives (SCOs) will be disposed of off-site. The estimated volume of soil to be excavated is 50,000 cubic yards. The soil washing process consists of mechanical and hydraulic grain size separation, removing the petroleum from the soil granules using surfactants and mechanical abrasion, and hydraulic sorting of the untreatable fraction of soil for subsequent disposal at a licensed facility.

Existing stockpiles of recycled concrete aggregate and soil will be sorted prior to sampling and screening against restricted residential use SCOs. If contaminants in the soil are detected above the SSCOs or if it is found to be grossly contaminated, the soil will be treated as described below. Soil that meets the SCOs and is not grossly contaminated will be reused as backfill during site restoration. Concrete tank contents, foundation slabs and underground storage tank (presumed to be present on the site) would be removed.

3. Bulkhead Replacement. The existing bulkhead will be removed and a new bulkhead will be constructed.

After bulkhead replacement, soil will be excavated and the excavated material will be treated through the on-site soil washing system for placement as reusable backfill if the timeframe to reduce the contamination to the SCOs does not impede the construction schedule. Otherwise the

excavated material will be transported and properly disposed of off-site. Groundwater extracted during excavation (i.e., for dewatering) would be treated prior to discharge in accordance with applicable surface water discharge requirements.

4. Cover System

A site cover will be required to allow for restricted residential use of the site. The cover will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs or exhibits gross contamination). Where the soil cover is required it will be a minimum of two feet of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted residential use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

5. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property that:

- requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allows the use and development of the controlled property for restricted residential (which allows restricted-residential use, commercial use or industrial use) as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH and;
- requires compliance with the Department approved Site Management Plan.

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

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:
Institutional Controls: The Environmental Easement is discussed above.
Engineering Controls: The site cover and bulk head replacement is discussed above.
This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use, and/or groundwater and/or surface water use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any buildings developed or reoccupied on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion

- a provision that requires the installation of sub-slab barriers and subslab depressurization systems on all routinely occupied buildings. If testing identifies that vapor intrusion is a concern, the systems will be activated;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to

- monitoring of groundwater to assess and confirm the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department;
- monitoring for vapor intrusion for any buildings developed or reoccupied on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

Declaration

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration Department guidance, as appropriate. The remedy is protective of public health and the environment.

_____ _____

Date

James B. Harrington, PE
Director, Remedial Bureau A

DECISION DOCUMENT

Former Cibro Petroleum Terminal Site
Island Park, Nassau County
Site No. C130153
May 2014

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, the redevelopment or reuse of which may be complicated by the presence or potential presence of a contaminant.

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

SECTION 2: CITIZEN PARTICIPATION

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

Island Park Public Library
Attn: Island Park Public Library
176 Long Beach Road
Island Park, NY 11558
Phone: 516-432-0122

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen

participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The Former Cibro Petroleum Terminal Site is comprised of approximately 11.6 acres located in an urban portion of Island Park, Nassau County, Long Island.

Site Features: The main site features include foundations of the former above ground tanks and truck racks; one masonry structure at the southeast corner of the parcel previously used as an equipment and boiler room; bulkheads; an asphalt roadway (Washington Avenue extension) and temporary office trailers at the north end of the parcel. It is fenced to prevent unauthorized entry.

Current Zoning and Land Use: The site is essentially vacant land zoned Residential C-A. The site is bounded on three sides by Wreck Lead Channel and a canal identified on some maps as The Basin, and on the north by dense residential development. The surrounding area consists of a combination of residential; light industrial and commercial/retail establishments. Since 2003, the site has been utilized for the storage of clean soil, crushed rock and concrete.

Past Use of the Site: The site was used as a petroleum storage facility from the 1940's thru 1988 when the facility was closed and all related infrastructure was removed (tanks, truck racks etc.) over the subsequent 2 years. Between 1990 and 2003 the site remained vacant. Past use of the site has resulted in petroleum contamination to the soil and groundwater primarily at the eastern and southern portions of the site.

Site Geology and Hydrology: Site-specific hydrogeologic conditions consist of a tidally-influenced, unconfined aquifer within the shallow fill and glacial fluvial deposits underlying the property. Prior investigations encountered a peat layer approximately nine feet below grade. Depth to the water table varies as a result of tidal effects, but is approximately four to six feet below grade. Groundwater flows from the northwest comer of the property towards the east-southeast, and diffuses into the adjacent saltwater bodies.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

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

A comparison of the results of the Remedial Investigation (RI) to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the RI Report.

SECTION 5: ENFORCEMENT STATUS

The Applicant(s) under the Brownfield Cleanup Agreement is a/are Volunteer(s). The Applicant(s) does/do not have an obligation to address off-site contamination. However, the Department has determined that this site does not pose a significant threat to public health or the environment; accordingly, no enforcement actions are necessary.

The Applicant under the Brownfield Cleanup Agreement is a Volunteer. While the BCA requires the Volunteer to investigate the extent of off-site impacts, if remedial actions are warranted, they would be completed by the Department. As a result, the Remedial Action Work Plan includes the collection of sediment samples from the sea floor of the surface water body known as The Basin; where leaching of petroleum was previously identified. The Department will then determine if further investigatory and/or remedial actions will be necessary.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and
- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site, or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- groundwater
- surface water
- soil

6.1.1: Standards, Criteria, and Guidance (SCGs)

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

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

6.1.2: RI Results

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

Petroleum Products

The contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil

6.2: Interim Remedial Measures

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

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

6.3: Summary of Environmental Assessment

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

The primary contaminants of concern at the site known at this time include constituents normally associated with petroleum and a small area of low level PCB contamination.

Previous investigations indicate that petroleum hydrocarbons have impacted the soil throughout the site. However, the majority of the soil contamination is located on the eastern half of the parcel from the northern property line extending to the southern boundary where the Washington Avenue extension bisects the property. Although Constituents of Concern (COCs) generally meet the Soil Clean-up Objectives (SCOs), significant concentrations of Tentatively Identified Compounds (TICs)for both Volatile Organic Compounds (VOCs) and Semi-Volatile Organic Compounds (SVOCs) are present. Both visual(staining)and olfactory evidence of petroleum contamination is present at the site, particularly in the eastern half.

The low level PCB contamination (generally less than 1 ppm)is located at the south western section of the property within the tidal wetland boundary. Marine Habitat Protection staff has indicated that any disturbance in this area would not be beneficial to the environment and have recommended that the area remain undisturbed.

Previous groundwater sampling indicated the presence of COCs consistent with petroleum contamination throughout the site. However, recent groundwater sampling (August 2011) indicated a decrease in these constituents to levels slightly above groundwater standards, possibly due to natural attenuation and/or degradation. Again, the most significant amount of ground water contamination was located at the eastern half of the site.

The surface water of Wreck Lead Channel and The Basin had been previously impacted by petroleum leaching thru the bulkhead, although recent inspections have not indicated any significant leaching at this time.

As indicated earlier, while there may not be any current exceedances of SCOs at this time, high concentrations of VOC and SVOC TICs and physical evidence (visual and olfactory) of petroleum contamination exists throughout the site, but primarily along the eastern half of the site.

The site historically presented an environmental threat due to the ongoing releases from the source area soils to ground and surface waters. However, recent site inspections conducted by this office and monthly inspections by the Volunteer have not shown any ongoing leaching based on visual observations. Although soil data does indicate the presence of heavy petroleum contamination including TICs, groundwater data only indicates the presence of COCs (VOCs and SVOCs) either slightly above, at or below their respective groundwater standards.

6.4: Summary of Human Exposure Pathways

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

People are not drinking the contaminated groundwater because the area is served by a public water supply that obtains its water from a different source. The site is fenced and people are not expected to come into contact with contaminated groundwater or subsurface soils unless they dig below the ground surface. Volatile organic compounds in the groundwater may move into the

soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Because there is no occupied building on-site, inhalation of site contaminants in indoor air due to soil vapor intrusion does not represent a concern for the site in its current condition. However, the potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site development. In addition, sampling indicates soil vapor intrusion is not a concern for off-site buildings.

6.5: Summary of the Remediation Objectives

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

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

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

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Prevent the discharge of contaminants to surface water.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

Surface Water

RAOs for Public Health Protection

- Prevent surface water contamination which may result in fish advisories.

RAOs for Environmental Protection

- Prevent impacts to biota from ingestion/direct contact with surface water causing toxicity and impacts from bioaccumulation through the marine or aquatic food chain.

Soil Vapor

RAOs for Public Health Protection

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

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

The alternatives developed for the site and the evaluation of the remedial criteria are presented in the Alternative Analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation and 6 NYCRR Part 375.

The selected remedy is a Track 4: Restricted use with site-specific soil cleanup objectives remedy.

The selected remedy is referred to as the Ex-Situ Soil Washing & Treatment and/or Excavation/Off-Site Disposal remedy.

The elements of the selected remedy, as shown in Figure 2, are as follows:

The alternatives developed for the site and evaluation of the remedial criteria are presented in the alternative analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation and 6 NYCRR Part 375. The remedy proposed is a Track 4: Restricted use with site-specific soil cleanup objectives remedy and is referred to as the Ex-Situ Soil Washing & Treatment and/or Excavation/Off-Site Disposal remedy.

The elements of the proposed remedy including the removal of impacted soil based on visual, olfactory and/or field instrumentation will be completed in two phases as depicted in Figure 2. The first phase will be to remove the impacted soil within the "Soil Wash Plant Excavation Area" (depicted in blue) with the soil properly staged on a liner on site Upon completion of the Soil Wash Plant, the previously stockpiled soil and soil from "Bulkhead Excavation Area" (depicted in red) will then undergo treatment. Once complete, the second phase will be the removal and treatment of impacted soil from the remainder of the site (depicted in yellow). All excavated soils will be processed/treated through the Soil Wash Plant.
Remedy will consist of several components to allow Track 4 Restricted Residential use including:

1. Remedial Design

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

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and - Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation and Treatment or Off-site Disposal:

The excavation of grossly contaminated soils will continue until obviously contaminated soil based on visual, olfactory and/or field instrumentation (readings at or below 250 PPM) has been removed. Excavated soil will be treated on-site by an Ex-situ Soil Washing System. Soil that does not meet restricted residential Soil Clean-up Objectives (SCOs) will be disposed of off-site. The estimated volume of soil to be excavated is 50,000 cubic yards. The soil washing process consists of mechanical and hydraulic grain size separation, removing the petroleum from the soil granules using surfactants and mechanical abrasion, and hydraulic sorting of the untreatable fraction of soil for subsequent disposal at a licensed facility.
Existing stockpiles of recycled concrete aggregate and soil will be sorted prior to sampling and screening against restricted residential use SCOs. If contaminants in the soil are detected above the SSCOs or if it is found to be grossly contaminated, the soil will be treated as described below. Soil that meets the SCOs and is not grossly contaminated will be reused as backfill during site restoration. Concrete tank contents, foundation slabs and underground storage tank (presumed to be present on the site) would be removed.

3. Bulkhead Replacement. The existing bulkhead will be removed and a new bulkhead will be constructed.

After bulkhead replacement, soil will be excavated and the excavated material will be treated through the on-site soil washing system for placement as reusable backfill if the timeframe to reduce the contamination to the SCOs does not impede the construction schedule. Otherwise the excavated material will be transported and properly disposed of off-site. Groundwater extracted during excavation (i.e., for dewatering) would be treated prior to discharge in accordance with applicable surface water discharge requirements.

3. Cover System

A site cover will be required to allow for restricted residential use of the site. The cover will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs or exhibits gross contamination). Where the soil cover is required it will be a minimum of two feet of soil, meeting the SCOs for cover material as

set forth in 6 NYCRR Part 375-6.7(d) for restricted residential use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

4. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property that:

- requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allows the use and development of the controlled property for restricted residential (which allows restricted-residential use, commercial use or industrial use) as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH and;
- requires compliance with the Department approved Site Management Plan.

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

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:
Institutional Controls: The Environmental Easement is discussed above.
Engineering Controls: The site cover and bulk head replacement is discussed above.
This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use, and/or groundwater and/or surface water use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any buildings developed or reoccupied on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to

- monitoring of groundwater to assess and confirm the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department;
- monitoring for vapor intrusion for any buildings developed or reoccupied on the site, as may be required by the Institutional and Engineering Control Plan discussed above.