DECISION DOCUMENT

Former Glenwood Power Plant
Brownfield Cleanup Program
Yonkers, Westchester County
Site No. C360100
November 2017

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

DECLARATION STATEMENT - DECISION DOCUMENT

Former Glenwood Power Plant
Brownfield Cleanup Program
Yonkers, Westchester County
Site No. C360100
November 2017

Statement of Purpose and Basis

This document presents the remedy for the Former Glenwood Power Plant 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 Glenwood Power Plant 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:

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

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

2. A site cover will be required to allow for commercial use of the site in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is to be used it will be a minimum of one foot of soil placed over a demarcation

layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

3. The stone revetment along the southern portion of the site shoreline will be stabilized and extended as necessary to protect the integrity of the soil cover along the edge of the river.

4. Institutional Control

Imposition of an institutional control in the form of an environmental easement (EE) for the controlled property which will:

- require 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);
- allow the use and development of the controlled property for commercial use or industrial use as described in Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict 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
- require compliance with the Department approved Site Management Plan.

5. Site Management Plan

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 discussed in paragraph 4 above.

Engineering Controls:

- The soil cover discussed in paragraph 2, and
- The shoreline stabilization discussed in paragraph 3.

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

groundwater use restrictions;

- a provision for evaluation of the potential for soil vapor intrusion for any buildings on site, including provision for implementing actions recommended to address exposures to soil vapor intrusion;
- a provision that, should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 2 above will be placed in any areas where the upper one foot of exposed surface soil exceeds the applicable soil cleanup objectives (SCOs)
- 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 effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of groundwater to assess the effectiveness of the remedy;
- schedule of monitoring and frequency of submittals to the Department; and
- monitoring for vapor intrusion for any buildings 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.

November 28, 2017

Date

George Heitzman, Director
Remedial Bureau C

DECISION DOCUMENT

Former Glenwood Power Plant
Yonkers, Westchester County
Site No. C360100
November 2017

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:

Yonkers Public Library
Attn: John Favreau
One Larkin Center
Yonkers, NY 10701
Phone: (914) 375-7940

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 site is located in the City of Yonkers, Westchester County, on the eastern shore of the Hudson River, west of the Glenwood Metro North Railroad station, south of JFK Marina Park, and north of the BICC Cables Corporation BCP Site (Site #360051). The property consists of approximately 4.3 acres of upland and underwater property, while the BCP site consists of the upland portion, which is approximately 1.94 acres in size.

Site Features: The site contains two three-story brick buildings connected by a second floor metal grate walkway. These buildings consist of an approximately 250 x 165 foot building partially built on piers in the river, where the power generation took place, and an approximately 45 x 255 foot building. A dirt-covered courtyard separates the two buildings. A grass covered area and a small one-story vacant wooden building is located on the southeast portion of the property. Old railroad tracks run north/south along the eastern portion of the property. The southern portion of the site's shoreline contains a stone revetment.

Current Zoning and Land Use: The site is vacant, is located in a commercial and residential area of the City of Yonkers, and is zoned for industrial use. The nearest residential area is about 350 feet east of the site.

Past Use of the Site: The site was a coal-fired power plant that operated between 1917 and 1978.

Site Geology and Hydrogeology: Site soils consist of brown organic rich top soil including black and gray sand and gravel mixture from about 24 inches below grade. The topsoil is underlain by unconsolidated soils, followed by Fordham bedrock. The tidally influenced groundwater under the site is located approximately four to six feet below ground surface and flows west to southwest towards the Hudson River.

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 commercial use (which allows for 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.

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
- soil
- soil vapor

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:

tetrachloroethene (PCE)	chrysene
trichloroethene (TCE)	dibenz[a,h]anthracene
cis-1,2-dichloroethene	indeno(1,2,3-CD)pyrene
naphthalene	PCB aroclor 1254
benzo(a)anthracene	arsenic
benzo(a)pyrene	copper
benzo(b)fluoranthene	lead

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.

Soils and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides/herbicides/PCBs (P/H/PCBs), metals (inorganic compounds), and total cyanide. Soil vapor was only analyzed for VOCs.

In surface soil, nine contaminants exceeded the commercial use soil cleanup objectives (SCOs): six SVOCs including benzo(a)anthracene (maximum 25 parts per million [ppm], SCO 5.6 ppm),

benzo(a)pyrene (21 ppm, SCO 1ppm), benzo(b)flouranthene (26 ppm, SCO 5.6 ppm), dibenzo(a,h)anthracene (3 ppm, SCO 0.56 ppm), and indeno(1,2,3-cd)pyrene (13 ppm, SCO 5.6 ppm); and three inorganic compounds, including arsenic (270 ppm, SCO 16 ppm), copper (1,400 ppm, SCO 270 ppm), and lead (2,100 ppm, SCO 1,000 ppm).

In sub-surface soil, eleven contaminants exceeded the commercial use SCOs: one VOC, naphthalene (maximum 1,200 ppm, SCO 500 ppm), six SVOCs including benzo(a)anthracene (120 ppm, SCO 5.6 ppm), benzo(a)pyrene (97 ppm, SCO 1ppm), benzo(b)flouranthene (120 ppm, SCO 5.6 ppm), chrysene (110 ppm, SCO 56 ppm) dibenzo(a,h)anthracene (19 ppm, 0. SCO 56 ppm), and indeno(1,2,3-cd)pyrene (60 ppm, SCO 5.6 ppm); one detection of PCBs (5.49 ppm, SCO 1 ppm); and three inorganic compounds, including arsenic (69 ppm, SCO 16 ppm), copper (560 ppm, SCO 270 ppm), and lead (13,000 ppm, SCO 1,000 ppm).

In groundwater, seven contaminants exceeded NYSDEC Part 703.5 ambient groundwater quality standards (GWQS). They include three VOCs: tetrachloroethene (maximum 360 parts per billion [ppb], GWQS 5 ppb), trichloroethene (15 ppb, GWQS 5ppb), and cis-1,2-dichloroethene (33 ppb, GWQS 5ppb); and four SVOCs: benzo(a)anthracene (0.07 ppb, GWQS 0.002 ppb), benzo(a)pyrene (0.1 ppb, GWQS 0.00 ppb), benzo(b)fluoranthene (0.09, GWQS 0.002 ppb), and chrysene (0.06 ppb, GWQS 0.002 ppb). No pesticides, herbicides, PCBs or site-related metals were found in groundwater. Because the wells with the highest chlorinated VOC concentrations are along the upgradient boundary of the site, and because no chlorinated VOCs were detected in the site soils, the source of the chlorinated VOC groundwater contamination at this site is most likely from an area upgradient and off the site.

Soil Vapor: Two soil vapor samples were taken. Tetrachloroethene was detected at 854 and 345 micrograms per cubic meter (ug/m3). Also detected were trichloroethene (14.1 and 7.26 ug/m3), benzene (18.2 and 2.55 ug/m3), toluene (36.3 and 12.2 ug/m3), p/m-xylene (20.9 and 16.6 ug/m3), o-xylene (10.8 and 9.08 ug/m3), 1,2,4-trimethylbenzene (8.5 and 7.82 ug/m3), cis-1,2-dichloroethene (12.9 and 4.2 ug/m3), and isopropanol (130 and 109 ug/m3). Other compounds were detected at low concentrations.

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.*

Access to the site is unrestricted. Persons who enter the site could contact contaminants by walking on the soil, digging or otherwise disturbing the soil. Contact with contaminated groundwater is unlikely unless they dig below the ground surface. Contaminated groundwater at the site is not used for drinking or other purposes and the site is served by a public water supply that obtains water from a different source not affected by this contamination. Volatile organic compounds in soil vapor (air spaces within the soil) 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 the site is vacant, the inhalation of contaminants due to soil vapor intrusion does not represent a current concern. The

potential for soil vapor intrusion on-site should be evaluated if on-site buildings are reoccupied or if any new buildings are constructed onsite. Sampling indicates that soil vapor intrusion is not a concern off-site.

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 ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

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.

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 Cover System remedy.

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

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the

design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
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2. A site cover will be required to allow for commercial use of the site in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is to be used it will be a minimum of one foot of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

3. The stone revetment along the southern portion of the site shoreline will be stabilized and extended as necessary to protect the integrity of the soil cover along the edge of the river.

4. Institutional Control

Imposition of an institutional control in the form of an environmental easement (EE) for the controlled property which will:

- require 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);
- allow the use and development of the controlled property for commercial use or industrial use as described in Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict 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
- require compliance with the Department approved Site Management Plan.

5. Site Management Plan

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 discussed in paragraph 4 above.

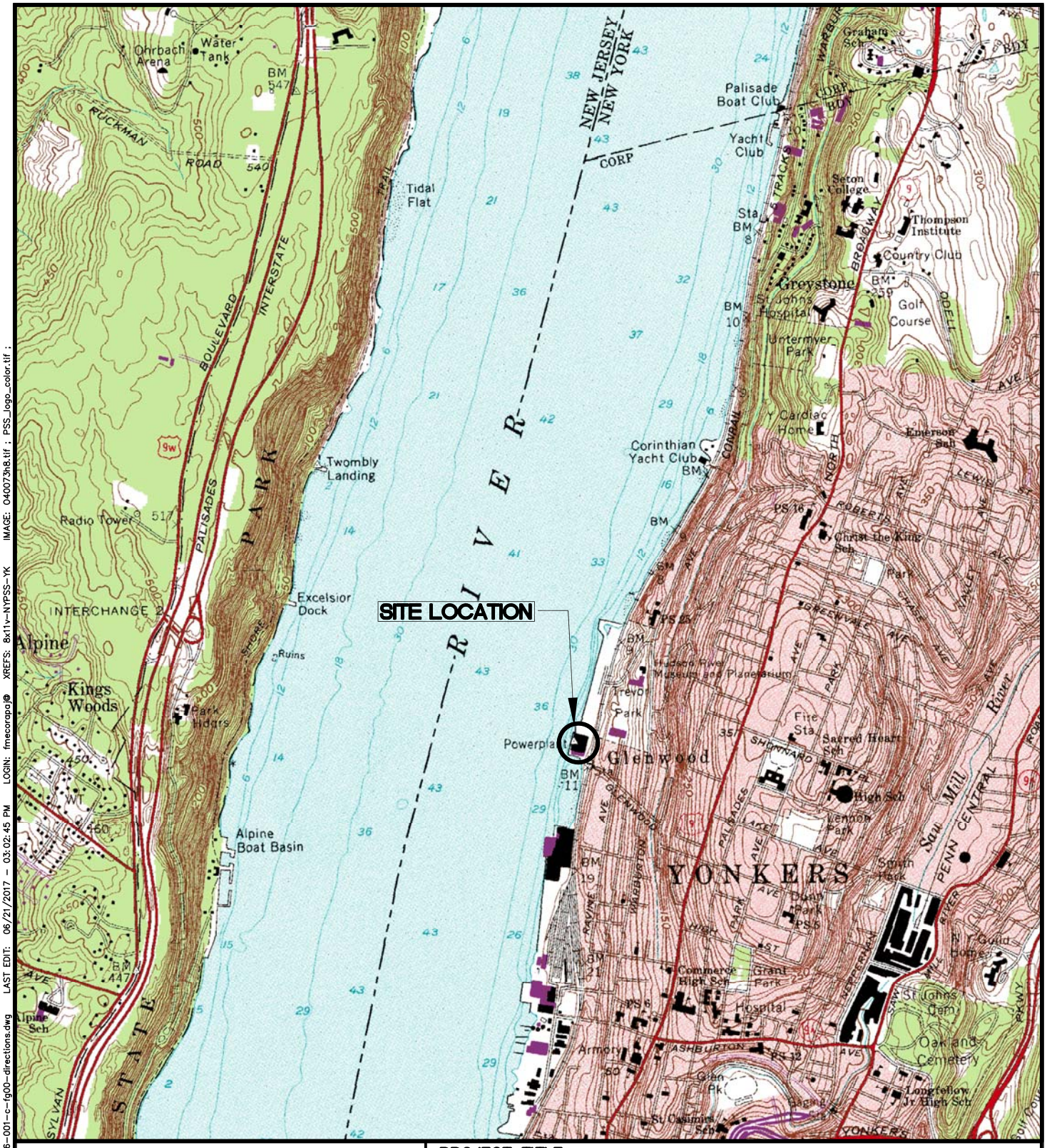
Engineering Controls:

- The soil cover discussed in paragraph 2, and
- The shoreline stabilization discussed in paragraph 3.

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 groundwater use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any buildings on site, including provision for implementing actions recommended to address exposures to soil vapor intrusion;
- a provision that, should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 2 above will be placed in any areas where the upper one foot of exposed surface soil exceeds the applicable soil cleanup objectives (SCOs)
- 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 effectiveness of the remedy. The plan includes, but may not be limited to:
- monitoring of groundwater to assess the effectiveness of the remedy;
- schedule of monitoring and frequency of submittals to the Department; and
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.



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PS&S

ONE LARKIN PLAZA
2ND FLOOR
YONKERS, NEW YORK 10701

PROJECT TITLE

GLENWOOD POWER PLANT
45 WATER GRANT WAY
YONKERS, WESTCHESTER COUNTY, NEW YORK

SHEET TITLE

FIGURE 1
SITE LOCATION MAP
(USGS TOPOGRAPHIC MAP, 7.5 MINUTE SERIES)

DATE:	06/21/2017	**DRN. BY:**	FM	**PROJ. NO.:**	K48260001
SCALE:	NTS	**CK'D BY:**	PM	**SHT. NO.:**	1

NORTH

HUDSON RIVER

NOTES:
1. SURVEY INFORMATION IS REFERENCED FROM SURVEY OF PROPERTY PREPARED FOR GLENWOOD POH, LLC, BY WARD CARPENTER ENGINEERS, INC., DATED 03/30/2012.
2. REVETMENT STONE HORIZONTAL EXTENTS TO BE DETERMINED IN THE FIELD.

LEGEND
- EXTENT OF CAP
- POWER PLANT BUILDING INTERIOR
- SITE BOUNDARY
- PROPOSED RIP-RAP

PUMP HOUSE BUILDING

SMOKE STACK BUILDING

EXISTING BULKHEAD DEMOLITION TO BE CUT AS DETERMINED IN THE FIELD

REVETMENT STONE SHORELINE WITH VEGETATION

FORMER GLENWOOD POWER PLANT

COURTYARD

SWITCH HOUSE BUILDING

CITY OF YONKERS
JFK PARK

COMMUTER PLATFORM

METRO-NORTH RAILROAD

GRAPHIC SCALE
60 0 30 60 120
(IN FEET)
1 inch = 60 ft.

SITE LOCATION

PS&S
ONE LARKIN PLAZA
2ND FLOOR
YONKERS, NEW YORK 10701
PHONE: (914) 509-8600

PROJECT TITLE

GLENWOOD POWER PLANT
BCP SITE

45 WATER GRANT WAY
CITY OF YONKERS, WESTCHESTER COUNTY, NY

SHEET TITLE

SELECTED REMEDY
COVER SYSTEM
PLAN

DATE:	6/22/17
SCALE:	1" = 60'
DRN. BY:	FM
CK'D BY:	PM
PROJ. NO.:	048260005
SHT. NO.:	FIGURE 2