DECISION DOCUMENT

Former Sterling Transformer Corp. Brownfield Cleanup Program Brooklyn, Kings County Site No. C224203 November 2016



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

DECLARATION STATEMENT - DECISION DOCUMENT

Former Sterling Transformer Corp. Brownfield Cleanup Program Brooklyn, Kings County Site No. C224203 November 2016

Statement of Purpose and Basis

This document presents the remedy for the Former Sterling Transformer Corp. 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 Sterling Transformer Corp. 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. 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. 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

The existing asphalt cover, on-site soil and historic fill exceeding unrestricted use soil cleanup objectives (SCOs), as defined by 6 NYCRR Part 375-6.8, will be excavated to depths as great as 15 feet below ground surface (bgs) site-wide, and to 25 feet or greater within petroleum and chlorinated volatile organic compounds (CVOC) impacted areas to achieve unrestricted use SCOs. The removal of soil exceeding unrestricted use SCOs will address the source area of CVOCs and petroleum-related compounds impacting groundwater.

All on-site soils which exceed unrestricted SCOs, as defined by 6 NYCRR Part 375-6.8 will be excavated and transported off-site for disposal. About 12,000 cubic yards of contaminated soil will be removed from the site. On-site soil which does not exceed the unrestricted use SCOs for any constituent may be used anywhere beneath the future building, including below the water table, to backfill the excavation. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfilling of the excavation and establish the designed grades at the site.

3. Groundwater Extraction and Treatment

Due to the planned excavation depth and the typical groundwater elevations at the site, dewatering will be required to facilitate the remedial excavation and development-related foundation work. Contaminated groundwater from dewatering operations will be treated as necessary prior to discharge to the municipal sewer system. It is expected that the dewatering will improve groundwater quality beneath the site.

4. Vapor Intrusion Evaluation

As part of the Track 1 remedy, a soil vapor intrusion evaluation will be completed. The evaluation will include a provision for implementing actions recommended to address exposures related to soil vapor intrusion.

5. Local Institutional Controls

If no EE or SMP is needed to achieve soil, groundwater, or soil vapor remedial action objectives, then the following local use restriction will be relied upon to prevent ingestion of groundwater: Article 141 of the NYCDOH code, which prohibits potable use of groundwater without prior approval.

Contingent Track 1 Elements

The intent of the remedy is to achieve Track 1 unrestricted use; therefore no environmental easement or site management plan is anticipated.

In the event that Track 1 unrestricted use is not achieved, the following contingent remedial elements will be required and the remedy will achieve a Track 2 residential cleanup.

6. Institutional Control

Imposition of an institutional control in the form of an environmental easement 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 controls in accordance with Part 375-1.8 (h)(3);
- allow the use and development of the controlled property for restricted residential use as defined by 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 NYCDOH; and
- require compliance with the Department approved Site Management Plan.

7. Site Management Plan

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

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

Institutional Controls: The Environmental Easement discussed in Paragraph 6 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 groundwater use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion into future buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional 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 soil, groundwater or soil vapor to assess the performance and effectiveness of the remedy;
- Schedule of monitoring and frequency of submittals to the Department;
- Monitoring for vapor intrusion for any occupied existing or future buildings developed 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.

Jab H.T)

November 9, 2016

Date

James Harrington, Director Remedial Bureau A

DECISION DOCUMENT

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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: <u>CITIZEN PARTICIPATION</u>

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

Brooklyn Public Library - Leonard Branch 81 Devoe Street Brooklyn, NY 11211 Phone: 718-486-3365

Brooklyn Community Board 1 Attn: Dealice Fuller 435 Graham Avenue Brooklyn, NY 11211 Phone: 718-389-0009

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 Williamsburg section of the borough of Brooklyn, NY. The site has approximately 175 feet of frontage along Driggs Avenue and 100 feet of frontage along North 8th Street.

Site Features: The property is currently developed with an asphalt-paved parking lot, with a small unoccupied attendant's booth.

Current Zoning and Land Use: The property is currently a vacant parking lot. The site is zoned commercial/industrial/high density residential (M1-2/R6A and R6B). Allowable uses include light manufacturing, warehouses, wholesalers, and multi-story residential buildings.

Past use of the Site: Based on a map dated 1855, the property is believed to have been occupied by a manufactured gas plant (MGP). The MGP was demolished by 1887. By 1942, southern portions of the site were developed with a garage. Between 1942 and 1951, the garage was converted to an industrial building and occupied by a chair manufacturer. The chair manufacturer was replaced by a transformer manufacturer circa 1965 and later by a food warehouse circa 1991. Both buildings were demolished in 2006 and replaced with the existing parking lot.

Geology and Hydrogeology: Soil at the site is described as historic fill materials to a depth of approximately 15 feet below the surface followed by native brown fine sand with silt and some clay. Groundwater is present at approximately 12 feet below ground surface, and flows to the northeast.

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, an alternative which allows for unrestricted use of the site was evaluated.

A comparison of the results of the Remedial Investigation (RI) against unrestricted use standards,

criteria and guidance values (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 Volunteer(s) does/do not have an obligation to address off-site contamination. The Department has determined that this site poses a significant threat to human health and the environment and there are off-site impacts that require remedial activities; accordingly, enforcement actions are necessary.

The Department will seek to identify any parties (other than the Volunteer(s)) known or suspected to be responsible for contamination at or emanating from the site, referred to as Potentially Responsible Parties (PRPs). The Department will bring an enforcement action against the PRPs. If an enforcement action cannot be brought, or does not result in the initiation of a remedial program by any PRPs, the Department will evaluate the off-site contamination for action under the State Superfund. The PRPs are subject to legal actions by the State for recovery of all response costs the State incurs or has incurred.

SECTION 6: SITE CONTAMINATION

6.1: <u>Summary of the Remedial Investigation</u>

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 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: <u>http://www.dec.ny.gov/regulations/61794.html</u>

6.1.2: <u>RI Results</u>

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:

naphthalene	benzo(b)fluoranthene
cis-1,2-dichloroethene	chrysene
vinyl chloride	dibenz[a,h]anthracene
benzo(a)anthracene	indeno(1,2,3-CD)pyrene
benzo(a)pyrene	benzene

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: <u>Summary of Environmental Assessment</u>

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.

Nature and Extent of Contamination

A Remedial Investigation (RI) was conducted at the site in August and September 2015. Soil and groundwater samples were analyzed for Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), Metals, Polychlorinated Biphenyls (PCBs) and Pesticides. Soil vapor samples were analyzed for VOCs.

Soil borings in the southern half of the site encountered refusal between 18 and 21 feet below ground surface (bgs), in the vicinity of the suspected former MGP gas holder foundation. A source area near the location of the former MGP gas holder is suspected due to the presence of non-aqueous phase liquids (NAPL) and elevated levels of petroleum VOCs, chlorinated VOCs (CVOCs), and naphthalene.

The following are the results for each medium sampled:

Soil: Results of the RI show that fill materials are present to a depth of approximately 15 feet bgs. Chlorinated and petroleum-related VOCs were reported above unrestricted use soil cleanup objectives (SCOs) in samples collected in the southern portion of the site from 10 to 21 feet bgs. Compounds included benzene (up to 0.89 parts per million (ppm)), chrysene (up to 38 ppm, naphthalene (up to 620 ppm) and vinyl chloride (up to 2.6 ppm). The unrestricted use SCOs for benzene, chrysene, naphthalene and vinyl chloride are 0.06 ppm, 1 ppm, 12 ppm and 0.02 ppm, respectively. SVOCs were detected above unrestricted use SCOs throughout the site at all sampled depths. Compounds included benz(a)anthracene (150 ppm) benzo(a)pyrene (86 ppm), benzo(b)fluoranthracene (100 ppm), chrysene (120 ppm), dibenz(a,h)anthracene (4.2 ppm), and indeno(1,2,3-cd)pyrene (27 ppm). The unrestricted use SCOs for benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthracene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3cd)pyrene are 1 ppm, 1 ppm, 1 ppm, 0.33 ppm, and 0.5 ppm, respectively. Off-site investigation of soil was not conducted as part of the RI. Metals including chromium, mercury, and lead were detected up to 121 ppm. Pesticides including chlordane, a-chlordane 4,4'-DDT, 4,4'-DDE, and deildrin were detected up to .97 ppm. Detections of metals and pesticides were predominantly at the 0-5 foot sampling depth. PCBs were not detected during environmental sampling.

Groundwater: CVOCs were reported above ambient water quality standards (AWQS) at all of the sample locations, with pure solvent found in the southern portion of the site and elevated concentrations (up to 1,200 parts per billion, or ppb, of cis-1,2-dichloroethene) in the southeast corner of the site. The AWQS for cis-1,2-dichloroethene is 5 ppb. Benzene and SVOCs were also detected above AWQS in several monitoring wells. Benzene was detected up to 4,300 in the central portion of the site. SVOCs including ben(a)anthracene, benzo(a)pyrene, benzo(b)flouranthene, chrysene, and indeno(1,2,3-cd)pyrene, were detected between 0.02 and 0.35 ppb, predominantly in the western portion of the site. Metals including iron, sodium, and manganese were detected above standards at levels commonly observed throughout Brooklyn due to historic over pumping of groundwater in the area. PCBs were not detected during environmental sampling. Data indicates potential off-site impacts in groundwater related to this site. Soil Vapor: Chlorinated solvents were reported in all of the soil vapor samples, with the highest levels (vinyl chloride at 116,000 micrograms (ug)/cubic meter) in the eastern portion of the site. Petroleum-related compounds were detected in soil vapor samples. Benzene was the highest petroleum- related compound at 1,240 ug/cubic meter, detected in the eastern portion of the lot. All other petroleum related compounds were detected between 2.26 ug/cubic meter and 390 ug/cubic meter. Data indicates potential off-site impacts in soil vapor related to this site.

6.4: <u>Summary of Human Exposure Pathways</u>

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*.

Since the site is fenced and covered by asphalt or concrete, people will not come into contact with site-related soil and groundwater contamination 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 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 are no on-site buildings, 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 a concern for off-site buildings.

6.5: <u>Summary of the Remediation Objectives</u>

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.

RAOs for Environmental Protection

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

<u>Soil</u>

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.

<u>Soil Vapor</u>

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 Conditional Track 1 remedy.

The selected remedy is referred to as the Soil Excavation remedy.

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

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. 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;
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4. Vapor Intrusion Evaluation

As part of the Track 1 remedy, a soil vapor intrusion evaluation will be completed. The evaluation will include a provision for implementing actions recommended to address exposures related to soil vapor intrusion.

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Contingent Track 1 Elements

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- require compliance with the Department approved Site Management Plan.

7. Site Management Plan

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

Institutional Controls: The Environmental Easement discussed in Paragraph 6 above.

This plan includes, but may not be limited to:

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- 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 into future buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional 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 soil, groundwater or soil vapor to assess the performance and effectiveness of the remedy;
- Schedule of monitoring and frequency of submittals to the Department;

• Monitoring for vapor intrusion for any occupied existing or future buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above



