



OFFICE OF ENVIRONMENTAL REMEDIATION

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Tin See Fung (Jack Fung)
East Star Realty LLC
1740 East 27th Street
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Stephen Morse
GRANT Engineering
139 Fulton Street, Suite 907
New York, NY 10038

Re: **NYC VCP Remedial Action Work Plan Approval**
498 Leonard Street
Block 2698, Lot 11
VCP Project # 13CVCP144K/ OER Project # 13EHAZ197K

Dear Mr. Fung:

The New York City Office of Environmental Remediation (OER), in consultation with the New York City Department of Health and Mental Hygiene (DOHMH), has completed its review of the Remedial Action Work Plan (RAWP) and Stipulation List for the 498 Leonard Street Site, VCP Project # 13CVCP144K, dated August 6, 2013 and October 21, 2013. The Plan was submitted to OER under the NYC Voluntary Cleanup Program (VCP). The RAWP was released for public comment for 30 days as required by program rule. That comment period ended on September 6, 2013.

The following remedial action elements will be implemented at the project site:

Statement of Purpose and Basis

This document presents the remedy for a Voluntary Cleanup site known as “498 Leonard Street” site. This document is a summary of the information that can be found in the site-related reports and documents in the document repository at OER’s website: <http://www.nyc.gov/oer>

The New York City Office of Environmental Remediation (the Office or OER) has established a remedy for the above referenced site. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous substances.

The decision is based on the Administrative Record of the New York City Office of Environmental Remediation (the Office or OER) for the 498 Leonard Street Site and the public's input to the proposed remedy presented by the Office.

Description of Selected Remedy

The remedy selected for this 498 Leonard Street Site is Track 4 remedy and includes soil excavation, cover system, active sub-slab depressurization system, vapor barrier and groundwater remediation (by NYSDEC).

The elements of the selected remedy are as follows:

1. Preparation of a Community Protection Statement and performance of all required NYC VCP citizen participation activities according to an approved Citizen Participation Plan (CPP);
2. Performance of a Community Air Monitoring Plan (CAMP) for particulates and VOCs.
3. Establishment of Track 4 Soil Cleanup Objectives (SCOs). Excavation and removal of soil/fill exceeding SCOs. Removal of arsenic and mercury hotspots;
4. Collection and analysis of 22 end-point samples from the bottom of the excavation will be collected to evaluate the performance of the remedy with respect to attainment of Track 4 SCOs;
5. Removal of the 5,000 gallon on site underground storage tank (UST) containing No. 2 fuel oil and any other unknown sub-grade storage tanks that may be present and closure of the associated open petroleum spills (NYSDEC Spill Case numbers 1206982 and 0212132) under the authority of NYSDEC and in compliance with applicable local, State and Federal laws and regulations.
6. Sampling of groundwater monitoring wells and treatment of groundwater under the authority of NYS DEC to address petroleum contamination;
7. Capping with concrete building slab in all developed areas and with two feet of certified clean fill in landscaped areas to prevent human exposure to residual soil/fill remaining under the Site;
8. Installation of a vapor barrier system beneath the proposed cellar floor and walls of the Site building and an active sub-slab depressurization system to address migration of off-site soil vapors. Submittal of a Design Report for the vapor barrier system and sub slab depressurization system for OER approval prior to the start of development;
9. Demarcation of residual soil/fill;
10. Import of materials to be used for backfill and cover, as needed, in compliance with OER approved plan and in accordance with applicable Federal, State and City laws and regulations;
11. Transportation and off-Site disposal of all soil/fill material at permitted facilities in accordance with all applicable laws and regulations for handling, transport, and disposal, and this plan. Sampling and analysis of excavated media as required by disposal facilities. Appropriate segregation of excavated media onsite;
12. Screening of excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID;
13. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas;
14. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations;
15. Performance of all activities required for the remedial action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations;
16. Dewatering will be performed in full compliance with applicable laws, rules and regulations.
17. Groundwater treatment to address the petroleum spill under NYS DEC authority;
18. Performance of groundwater sampling from all remaining monitoring wells after remediation is completed consistent with NYS DEC requirements for spill closure. If needed, additional means of groundwater remediation for may be required as determined by NYS DEC;
19. Submission of a Remedial Action Report (RAR) that describes the remedial activities certifies including any changes from this RAWP, certifies that the remedial requirements have been achieved, defines the Site boundaries, and describes all engineering and institutional controls to be implemented at the Site, and lists any changes from this RAWP;

20. Submission of an approved Site Management Plan (SMP) in the RAR for long-term management of residual contamination, including plans for operation, maintenance, monitoring, inspection and certification of engineering and institutional controls and reporting at a specified frequency; and
21. Continued registration with an E-Designation at the NYC Buildings Department. Establishment of Engineering Controls and Institutional Controls and management of these controls in compliance with an approved SMP. Institutional controls will include prohibition of the following: (1) vegetable gardening and farming; (2) use of groundwater without treatment rendering it safe for the intended use; (3) disturbance of residual contaminated material unless it is conducted in accordance with the SMP; and (4) higher level of land usage without OER-approval.

Remedial activities will be performed at the Site in accordance with this OER-approved RAWP. All deviations from the RAWP will be promptly reported to OER. Changes will be documented in the RAR.

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

January 30, 2014



Date

Shaminder Chawla
Deputy Director

SITE BACKGROUND

Location:

The Site is located at 498 Leonard Street in the Greenpoint section of Brooklyn, New York and is identified as Block 2698 and Lot 11 on the New York City Tax Map. Figure 1 shows the Site location.

Site Features:

The Site is 7,400-square feet and is bounded by a 1-story structure commercial property to the north, Leonard Street to the west, a 2-story commercial property to the south, and a 2-story commercial property to the east. Currently, the Site contains one (1), 2-story commercial building and a paved lot with an underground storage tank (UST) present in the southwest portion of the property. It is understood that the Site's current use is for factory and industrial purposes and that the current owner is Mr. John Huey.

Current Zoning/uses:

The Site is located in a mixed-use district, containing both manufacturing and residential lots, designated as M1-2/R61 by zoning map 13a. There is a mixture of manufacturing and residential buildings in the immediate vicinity of the Site. Therefore, the proposed use is consistent with the new zoning for the property.

Historical Use:

Historically, the site was fully developed prior to year 1887 and has been used historically for manufacturing purposes. The lot measures approximately 7400 sq. ft. (74' x 100') and contains a two-story structure built in approximately 1929.

Summary of Environmental Findings:

1. Depth to groundwater was present at approximately ten (10) feet below grade at the Site during the RIR. HTE installed 13 monitoring wells on the Site and adjacent sidewalk in October 2012. The monitoring wells were surveyed and groundwater table elevations were measured between 14.77 and 15.71.
2. Groundwater flow direction is generally from the south towards the north.
3. Bedrock was not encountered during the RI.
4. The stratigraphy of the site from the surface down consists of a layer of historic fill material from approximately 0 to 12 feet below grade (ft bg), sand, gravel and silt with heavy petroleum impacts from 12-16 ft bg, visible petroleum staining from 16-30 ft bg in the area of the UST and an impacted layer of highly compressible organic peat, clay and silt from 16-28 ft bg throughout the remainder of the Site and a highly compressible layer of clay/silt that appears to function as an hydraulic barrier at approximately 28-34 ft bg.

A site location map is attached as Figure 1.

PROPOSED DEVELOPMENT PLAN

The Site will be developed with a multi-story residential building. The proposed plan is to demolish the existing structure and construct a multi-story residential building. Development plans are being finalized.

The remedial action contemplated under this RAWP may be implemented independently of the proposed redevelopment plan.

SUMMARY OF REMEDIAL INVESTIGATION

The Remedial Investigation was conducted on between October 2012 and April 2013. A full Remedial Investigation Report is available online in the document repository and the results are summarized below.

Nature and Extent of Contamination:

Soil:

Soils during Phase 2: Five SVOC (all PAH) exceeded both Track 1 Unrestricted Use SCOs and Track 2 Restricted Residential SCOs in two of 13 shallow soil samples. The maximum concentration of these exceedances was 1.440 ppm. Seven SVOCs, all PAH, exceeded Track 2 Restricted Residential Use SCOs in up to eight of 15 deep soil samples. A variety of petroleum derived VOCs were detected but were below Track 1 SCOs in shallow soil samples. Four VOC, all petroleum derived compounds, exceeded Track 1 Unrestricted Use SCOs in deep soil samples but did not exceed Track 2 Restricted Residential Use SCOs. Maximum concentration of these exceedances was 57.1 ppm. One pesticide (dieldrin; maximum concentration 255 ppb) was detected above Track 2 Restricted Residential SCOs and three pesticides were also detected only above Track 1 Unrestricted SCOs in 2 to 4 shallow soil samples. Two pesticides were detected above Track 1 SCOs in deep samples but did not exceed Track 2 Restricted Residential Use SCOs. The following metals were detected above Track 2 Restricted Residential SCOs: arsenic (2 shallow samples, maximum 59 ppm; 5 deep samples, maximum 41.5 ppm), barium (1 shallow sample, maximum 777 ppm; 3 deep samples, maximum 879 ppm), cadmium (9 shall samples, maximum 6.85 ppm; 6 deep samples, maximum 3.75 ppm), lead (9 shall samples, maximum 2020 ppm; 6 deep samples, maximum 5730 ppm), mercury (3 shallow samples, maximum 25.3 ppm; 4 deep samples, maximum 5.12 ppm). Chromium, copper and zinc also exceeded Track 1 Unrestricted Use SCOs but not Track 2 Restricted Residential SCOs in both shallow and deep soil samples.

Soils during RI: PCBs were not detected in soil samples collected during the Remedial Investigation. One VOC, acetone was detected in two (2) samples (at 160 µg/kg and 404 µg/kg), above the Unrestricted Use SCO but well below Restricted Residential Use SCO. SVOCs were detected in one sample (12-16 feet) above the Restricted Residential Use SCOs. They include benzo(a)anthracene (11,600 µg/kg), benzo(a)pyrene (11,700 µg/kg), benzo(b)fluoranthene (9,840 µg/kg), chrysene (9,670 µg/kg), dibenzo(a,h)anthracene (1,900 µg/kg) and indeno(1,2,3-cd)pyrene (5,910 µg/kg). Elevated levels of metals including arsenic, copper, lead, mercury, vanadium, and zinc were detected above the Unrestricted Use Soil Cleanup Objectives (SCOs), and of these, arsenic (74 mg/kg), lead (1,440 mg/kg) and mercury (31 mg/kg) also detected above Restricted Residential Use SCOs. One pesticide 4,4-DDD was detected (11-13 feet) at 54.9 µg/kg, above the Unrestricted Use SCO but below the Restricted Residential Use SCO. The Gas Chromatograph (GC) fingerprint analysis conducted on seven borings did not identify the presence of any compounds with the exception of mineral spirits.

Groundwater:

GW during Phase 2: Thirteen groundwater samples collected during the Phase II showed 13 VOC's, all petroleum derivatives, above groundwater quality standards (GQS). All were below 50 ppb except benzene derivatives, which had a maximum concentration of 544 ppb. Seven SVOC, all PAH compounds, were observed above GQS. The maximum concentration was for Phenanthrene at 503 ppb. Five groundwater samples showed arsenic (3 samples, maximum 193 ppb), barium (3 samples, maximum 1900 ppb) and lead (4 samples, maximum 84 ppb), and iron, manganese, magnesium and sodium above GWS. One pesticide, dieldrin, exceeded GQS (1 sample, 50 ppb).

Groundwater samples collected during the RI showed that SVOCs, pesticides and PCBs were not detected in the groundwater samples. Eight VOCs including 1,2,4-trimethylbenzene (7.7 ug/l), 1,2,4,5-trimethylbenzene (135 ug/l), tert-butylbenzene (43 ug/l), isopropylbenzene (70 ug/l), n-propylbenzene (121 ug/l), n-butylbenzene (63 ug/l), and sec-butylbenzene (160 ug/l) were detected above GQS of 5 ppb. Three metals including arsenic (25 ppb), lead (36 ppb), and mercury (1.6 ppb) were detected above GQS.

Soil vapor:

Soil Vapor during Phase 2: One chlorinated VOC was detected in one of four soil vapor samples (PCE, 30 ug/m³). TCE, 111-TCA and carbon tetrachloride were not detected. These findings were below State DOH monitor levels. Five petroleum derivatives were also detected with maximum concentrations of up to 61 ug/m³.

Soil vapor samples collected during the RI showed a variety of VOCs, including petroleum hydrocarbons and chlorinated VOCs. Petroleum hydrocarbons including 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, acetone, cyclohexane, ethyl benzene, methylene chloride, n-hexane, o-xylene, m&p-xylene, and toluene were detected. Chlorinated VOCs including 1,1,1-trichloroethane (40 ug/m³), carbon tetrachloride (23 ug/m³), tetrachloroethylene (50 ug/m³), and trichloroethylene (20 ug/m³) were at concentrations that are below the monitoring level ranges established within the State DOH soil vapor guidance matrix. Soil vapor results are provided in Table 3.

Figure 1: Site Location Map

