August 2019
(Revised March 2020)

NYS Brownfield Cleanup Program

Remedial Work Plan

Cottage Place Gardens
Phase 5 Parcel Site
8 Cottage Place and
178 Warburton Avenue
City of Yonkers
Westchester County, New York
BCP Site No. C360161

Prepared for:

178 WARBURTON LIMITED PARTNERSHIP
90 State Street, Suite 602
Albany, New York 12207

Prepared by:

C.T. MALE ASSOCIATES
ENGINEERING, SURVEYING, ARCHITECTURE,
LANDSCAPE ARCHITECTURE & GEOLOGY, D.P.C.
50 Century Hill Drive
Latham, New York 12110
(518) 786-7400
FAX (518) 786-7299

C.T. Male Associates Project No: 16.6669

CERTIFICATIONS
Cottage Place Gardens
Phase 5 Parcel Site (BCP Site No. C360161)
8 Cottage Place and 178 Warburton Avenue
City of Yonkers, Westchester County

I, Rosaura Andújar-McNeil, P.E., certify that I am a NYS registered professional engineer and that this Remedial Work Plan was prepared in accordance with applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) dated May 3, 2010.

097844	04/08/2020	
NYS Professional Engineer #	Date	Signature

REMEDIAL WORK PLAN
COTTAGE PLACE GARDENS PHASE 5 PARCEL SITE
CITY OF YONKERS, WESTCHESTER COUNTY

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1.0 INTRODUCTION & PURPOSE

1.1 Introduction

On behalf of 178 Warburton Limited Partnership, C.T. Male Associates Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C. (C.T. Male) has prepared this Remedial Work Plan (RWP) pursuant to the New York State Department of Environmental Conservation (DEC) Brownfield Cleanup Program (BCP). This RWP pertains to the property known as the Cottage Place Gardens Phase 5 Parcel Site (Site No. C360161) located at 8 Cottage Place and 178 Warburton Avenue in the City of Yonkers, Westchester County, New York (herein the "Site"). A Site Location Map is presented as Figure 1.

178 Warburton Limited Partnership entered into a Brownfield Cleanup Agreement (BCA) with the DEC in December 2017 (BCA Index No.: C360161-09-17), to remediate an approximate 1.47[1] acre property to Unrestricted Use as defined in 6 NYCRR Part 375. 178 Warburton Limited Partnership is a Volunteer in the BCP. When redevelopment is completed, the Site will contain multi-family residential housing with associated parking and green spaces.

1.2 Purpose and Goal

The purpose of the RWP is to provide a conceptual plan for the selected remedy for the Site. With concurrence from DEC, the preparation of a formal remedial design work plan is not planned considering that the remedial action (generally excavate and properly dispose) is a presumptive remedy, as defined at DER-10-1.3(b)46 and 6 NYCRR Part 375-1.2(ai).

The goal of this RWP is to provide guidance to 178 Warburton Limited Partnership's design and construction team to supplement the project's technical specifications, and

[1] The area of the Site is depicted as 1.54 acres in the BCA. To accommodate the proposed redevelopment goals for the Site and its north adjoining Cottage Place Gardens Phase 3 BCP Site, the boundaries of the 8 Cottage Place portion of the Site were reconfigured; reducing the size of the Site from 1.54 to 1.47 acres. The Site's reconfiguration is memorialized in the BCP Application to Amend Brownfield Cleanup Agreement and Amendment, which was executed by NYSDEC on June 15, 2018.

bidding and construction documents. The remedial action requirements will be incorporated into the overall Site redevelopment project, as necessary, to comply with the BCP. It is the responsibility of the Volunteer to provide this RWP to the general contractor in order to coordinate and integrate remedial and Site redevelopment activities and ensure adherence by the contractor to this RWP. Prior to the start of Site redevelopment activities, the Contractor shall indicate in writing their receipt and review of the RWP.

1.3 Nature and Extent of Contamination

The nature and extent of Site contaminants was characterized through the completion of a DEC-approved Remedial Investigation (RI) of the Site in April 2018. The RI analytical data is supplemented with analytical data of fill/soil and groundwater sampled in 2014, 2016 and 2017 as part of Phase II Environmental Site Assessment (ESA) investigations of the Site completed by C.T. Male, and analytical data of fill/soil samples from confirmatory post-excavation sidewall samples collected as part of the remedial action of the Site's north adjoining Cottage Place Gardens Phase 3A BCP Parcel (C360150). The aforementioned sidewall samples are representative of fill material along the Site's northern boundary.

The following sections summarizes the contaminants of concern (COCs) encountered in the Site's media and potential source areas for the contaminants.

1.3.1 Contaminants of Concern in Fill Material Mantling the Site

Analytical results of fill/soil samples collected during previous Phase II ESA investigations and the Remedial Action at the CPG Phase 3A BCP site identified six (6) VOCs, 10 SVOCs, three (3) pesticides and seven (7) metals at concentrations exceeding Soil Cleanup Objectives (SCOs) for Unrestricted Use Sites promulgated at 6 NYCRR Part 375.

The highest frequency of detections were for the SVOCs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene and indeno(1,2,3-cd)pyrene which were detected in eastern and western portions of the Site; and the metals lead, mercury and zinc which were detected across the Site. The VOCs, with the exception of acetone, were petroleum related and were confined to the western portion of the Site addressed

as 178 Warburton Avenue that was formerly developed with a gasoline station and vehicle repair facility. The sampling locations and concentration ranges for the COCs in fill material are depicted on Figure 3: Analytes in Fill/Soil Exceeding SCGs.

The Site was assigned NYSDEC Spill No. 1610948 on March 7, 2017 pursuant to subjective impacts in the Site's fill/soil, which included elevated photoionization detector (PID) readings and petroleum-type odors. The impacts were confined to the western portion of the Site (178 Warburton Avenue). The spill was administratively closed by NYSDEC on April 9, 2018. The impacts to fill/soil within the western portion of the Site will be addressed as part of the Site remedy, which will include the excavation and off-site disposal of these impacted fill/soil and the capture and treatment and/or off-Site disposal of groundwater present during the removal of impacted soils/fill.

1.3.2 Contaminants of Concern in Native Soil Underlying the Fill Material

There were no COCs in native soil underlying the fill material based on analytical results for native soil samples collected during the RI.

1.3.3 Contaminants of Concern in Groundwater

Groundwater is impacted above regulatory criteria by eight (8) VOCs, eight (8) SVOCs and nine (9) metals. The majority of the contaminants (7 VOCs, 6 SVOCs and 8 metals) were encountered in groundwater samples collected from four (4) monitoring wells within the western portion of the Site at 178 Warburton Avenue. The VOC contaminants within this portion of the Site are petroleum related. The contaminants of concern in groundwater within the western portion of the Site include the VOCs benzene, ethylbenzene, isopropylbenzene, methyl tert butyl ether (MtBE), toluene, o-xylene and p/m-xylene; the SVOCs benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene, and naphthalene; and the metals barium, chromium, copper, iron, lead, manganese, nickel and sodium.

Contaminants in groundwater samples collected from two (2) monitoring wells on southern portions of the Site, up-gradient and to the east of the 178 Warburton Avenue portion of the Site included the VOC acetone, the SVOC phenol and the metals chromium, iron, lead, manganese, mercury and sodium. The sampling locations and

concentration ranges for the COCs in groundwater are depicted on Figure 4: Analytes in Groundwater Exceeding SCGs.

1.3.4 Interim Remedial Measures

A non-emergency interim remedial measure (IRM) was conducted on the western portion of the Site addressed as 178 Warburton Avenue that was formerly used as a gasoline station and vehicle repair facility. An IRM Work Plan (dated June 7, 2018) detailing the activities to be conducted during the IRM was prepared by C.T. Male and approved by NYSDEC on July 2, 2018. The IRMs included profiling and disposal of the contents of an aboveground tank, drums and containers located in and around the building (completed on July 11, 2018); asbestos abatement (completed May 2018) and demolition (completed March 2019) of the building; and paving the Site with an asphalt binder (completed on July 10, 2019). A report detailing the IRM will be submitted to NYSDEC under separate cover.

1.3.5 Potential Sources for Contaminants of Concern

The primary source of Site contaminants is the uncontrolled fill material that mantles the Site. VOCs, SVOCs, pesticides and metals are present in fill material at concentrations exceeding Unrestricted Use SCOs.

A secondary source of Site contaminants is the former usage of the western portion of the Site addressed as 178 Warburton Avenue as a gasoline station and vehicle repair facility. Petroleum-type contaminants in fill/soil and groundwater within this portion of the Site may be attributed to former floor drains and hydraulic lifts within the former building and/or residual impacts from the removal of 11 petroleum underground storage tanks (USTs) and subsequent removal of 850 tons of petroleum impacted soils from 2006 to 2008.

Petroleum-type impacts were not encountered in media samples collected in the vicinity of the two (2) existing out of service heating oil USTs located to the east of Building 12.

1.3.6 Remedial Action Objectives

Based on the findings and results of the RI, remedial action objectives (RAOs) have been identified for the Site as presented in the following table.

Affected Media	Remedial Action Objectives
Fill/Soil	RAOs for Public Health Protection • Prevent ingestion and direct contact with contaminated fill/soil. • Prevent inhalation of, or exposure to, contaminants volatilizing from contaminated fill/soil. RAOs for Environmental Protection • Prevent migration of contaminants that would result in groundwater contamination
Groundwater	RAOs for Public Health Protection • Prevent ingestion of groundwater containing contaminant levels exceeding drinking water standards. • Prevent contact with, or inhalation of, volatiles emanating from contaminated groundwater. RAOs for Environmental Protection • Restore groundwater, to the extent practicable, to pre-disposal/pre-release conditions. • Remove the sources of groundwater contamination.
Soil Vapor	RAOs for Public Health • Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at the Site.
Surface Water	Not Applicable
Sediment	Not Applicable

1.4 Remedial Action Approach

The remedial action for the Site is generalized as decommissioning of monitoring wells; closure by removal of bulk petroleum USTs; closure by removal of underground hydraulic lifts and drainage structures (if present); fill/soil excavation and off-site

disposal; and groundwater evacuation/dewatering and treatment/disposal as necessary to facilitate the removal of impacted soil/fill below the water table.

A soil vapor intrusion (SVI) evaluation will be completed prior to the submission of the Final Engineering Report. The SVI evaluation will include an assessment of pre- and post-remediation soil and groundwater data, evaluation of the effectiveness of the remedial action relative to SVI, and evaluation of the on-site buildings relative to SVI. The need for sub-slab soil vapor and indoor/outdoor air quality samples will be evaluated during completion of the SVI evaluation. No active vapor intrusion mitigation measures are anticipated at the Site pending on the remedial action achieving the RAOs for soil vapor.

The depth to groundwater beneath the Site is estimated at 11 feet beneath the ground surface (bgs) in the eastern portion of the Site addressed as 8 Cottage Place, nine (9) feet to 12.5 feet bgs in the central portion of the Site addressed as 8 Cottage Place and two (2) feet bgs in the western portion of the Site addressed as 178 Warburton Avenue. Sheeting/shoring at the property boundaries of the 178 Warburton Avenue parcel will likely be required to effectively remove the impacted fill/soil below the depth groundwater has been historically encountered.

1.4.1 Decommissioning of Monitoring Wells

Existing monitoring wells within the Site will be decommissioned in accordance with DEC Policy CP-43: Groundwater Monitoring Well Decommissioning Policy, dated November 3, 2009. The monitoring wells that will be decommissioned are depicted on Figure 2 as 178MW01, 178MW02, 178MW03, 178MW04, MW-B, MW-E, MW-K, MW-P and MW-Q. Monitoring wells to be decommissioned will be tremi-grouted from the bottom of the monitoring well to the anticipated bottom of the remedial excavation. The monitoring well construction logs are presented in Appendix C.

1.4.2 Closure of Bulk Storage Tanks

Two (2) known USTs are located beneath asphalt pavement adjacent east of Building 12 (see Figure 2). The tanks reportedly contained fuel oil for boilers in the basement of Building 12. The tanks were reportedly rendered out of service approximately five (5) to 10 years ago when the Site converted to natural gas.

The following general procedures will be followed for closure by removal of the known bulk storage tanks and any other tanks that may be encountered during the remedial action.

-Notify NYSDEC of closure activities through the use of a "Pre-Work Notification for Bulk Storage (PBS or CBS) Tank Installation or Closure" form.

-Notify the Westchester County Department of Health of the tank closures.

-The tank closure contractor will need to obtain a Minor Alteration permit from the City of Yonkers Department of Housing and Buildings prior to the tank closures.

-Closure of the tanks and associated appurtenances (product, fill and vent piping, underground electric, concrete pump island, etc.) will conform to applicable sections of DER-10, NYSDEC Petroleum Bulk Storage regulations 6 NYCRR Part 613-2.6, Out-of-service UST Systems and Closure, and the City of Yonkers Department of Housing and Buildings.

-Any soil, fill, concrete and/or asphalt overlying and/or surrounding the tanks will be removed to allow access to the tanks. The contents of the tanks will be removed and transported to a disposal facility permitted to accept this waste. If in small quantities, the liquids and tank bottoms may be temporarily stored in labeled DOT approved 55-gallon drums for disposal at a permitted and approved treatment, storage and disposal facility (TSDF). Oil soaked rags, clothing and polyethylene (i.e., PPE) will also be placed in a labeled DOT approved 55-gallon drum for off-site disposal.

-The tanks will be accessed either through tank man-ways (if present) or a hole will be cut in the tank to allow access for removal of the tank contents and cleaning while the tanks remains in-place. Polyethylene will be placed on the ground adjacent to the tank openings to mitigate contamination of the ground surface when cleaning the tank interiors. Prior to opening, cutting or entering the tanks for cleaning, the Contractor will assess and document the atmospheric conditions within the tanks. The Contractor will follow confined space entry procedures in accordance with 29 CFR Part 1910.146 for tank cleaning by appropriately trained personnel.

-The tanks will be cleaned and purged of any vapors in accordance with all applicable regulations in addition to 29 CFR Part 1910.146. The tanks will be rendered unusable

on-site by cutting a hole in the end of the tank after removal from the ground and/or vault, if not already done so for access. The tank, distribution and vent piping, and associated equipment will be properly disposed of off-site at a steel recycling facility. Records of metal disposal/recycling will be provided to the Remediation Engineer.

-Fill/soil samples will be collected for laboratory analyses after removal of the tanks, as described in Section 5.1 of this document.

-The waste contents of the tanks and associated piping and equipment, and cleaning wastes will be properly managed and disposed of off-site at an approved and permitted TSDF. The wastes will be transported by a 6 NYCRR Part 364 transporter permitted to transport these wastes, and disposed of at a facility permitted to accept the waste being disposed of. Should out-of-state facilities be identified as proposed disposal facilities, permits for the facilities by the corresponding regulatory agency must be provided to the Remediation Engineer and NYSDEC for review and approval prior to material exportation. The disposal facility and general type of waste will be specifically listed on the transporter's permit.

-Registration of the tanks as "closed-removed" in accordance with NYSDEC Petroleum Bulk Storage regulations, the City of Yonkers Department of Housing and Buildings and the Westchester County Department of Health.

1.4.3 Closure By Removal Of Underground Hydraulic Lifts And Drainage Structures

Evidence of up to four (4) former hydraulic lifts and square-type floor drains were identified within the concrete slab of the former building addressed as 178 Warburton Avenue (see Figure 2). The lifts and floor drains appear to have been filled at least in part with concrete.

One (1) floor drain and a concrete floor slab cut-out believed to have been used for drainage were identified within the northeastern and eastern portions of the concrete slab of the former building at 178 Warburton Avenue.

The following general procedures will be followed for closure by removal of the underground hydraulic lifts and drainage structures during the remedial action.

-The concrete slab will be removed in a controlled manner so as not to damage the hydraulic lifts and drainage structures.

-The hydraulic lifts and all appurtenances (piping, electrical, hydraulic oil reservoirs, etc.) will be removed and staged on poly and covered. The Remediation Engineer's field representative will assess the hydraulic lifts for remaining fluids. If the hydraulic lifts and appurtenances do not contain residual fluids, they will be disposed of off-site at a metal recycling facility. If the hydraulic lifts and appurtenances contain fluids, the fluids will be drained/emptied into 55-gallon drums and remain on-Site pending profiling and off-site disposal at an approved and permitted TSDF. Once emptied, the cylinders/ apparatus will be disposed of off-site at a metal recycling facility. Approval will be obtained from the Remediation Engineer and the DEC Project Manager prior to disposal off-site.

-The drainage structures will be assessed by exposing and tracing any connecting piping or other conveyance attached to the drainage structures to their terminus. The entirety of the drainage structure systems (drain receptacles and conveyances) will be removed and staged atop poly and covered. The Remediation Engineer's field representative will assess the drainage structure systems for environmental impacts by scanning the systems for organic vapors with a photoionization detector (PID) and via visual observation. If the drainage systems do not appear impacted, they will be disposed of off-site at a recycling facility. If the drainage systems appear impacted and cannot be field cleaned/decontaminated, they will be profiled and disposed of off-site at an approved and permitted TSDF. Approval will be obtained from the Remediation Engineer and the DEC Project Manager prior to disposal off-site.

-Fill/soil surrounding the hydraulic lifts and drainage structure systems will be subjectively assessed by the Remediation Engineer's field representative for organic vapors employing a PID and via organoleptic (sight and smell) perception. Impacted fill/soil will either be disposed of with the remaining fill/soil as part of the Site's overall remedial action or the impacted fill/soil will be staged atop poly and covered pending profiling and off-site disposal at an approved and permitted TSDF. Approval will be obtained from the Remediation Engineer and the DEC Project Manager prior to disposal off-site.

1.4.4 Remediation of Impacted Fill/Soil

The following general procedures will be followed for the remediation of impacted fill/soil mantling the Site.

-Fill/soil mixtures underlying the 178 Warburton portion of the Site are impacted by petroleum and may need to be remediated separately from non-petroleum impacted soil/fill mixtures mantling remaining portions of the Site.

-Excavation and off-site disposal of fill/soil mixtures mantling the Site from the ground surface to depths ranging from approximately two (2) to 12 feet bgs. The remedial excavation may also include the additional excavation of native soils that do not meet SCOs for Unrestricted Use Sites based on analytical results of confirmatory post-excavation sampling and analysis. The generalized excavation depths across the Site are depicted on Figure 2. As depicted on the figure, impacted fill/soil within the western portion of the Site at 178 Warburton Avenue will be excavated to an approximate depth of 12 feet bgs (deeper excavation might be warranted in certain areas) and impacted fill/soil within remaining portions of the Site will be excavated to depths ranging from approximately four (4) to eight (8) feet bgs.

-The remedial excavation will extend horizontally to the Site boundaries or to the extent feasible without compromising the integrity of roadways and/or structures on adjacent properties and/or as limited by access restrictions from adjacent property owners. In the event of not being able to extend excavations to the property boundaries, the limits of the BCA will be adjusted accordingly via a BCA amendment.

-The vertical depths that fill and/or contaminants were encountered at each of the boring locations completed during the RI and previous investigations of the Site are depicted on Figure 2: Remedial Action Implementation.

It should be noted that the COCs identified as part of the RI are intended to provide a general description of the contamination at the Site. The concentration ranges of COCs identified at the sampling locations may be representative of COCs throughout the Site's media. Furthermore, both different types and different concentration ranges of COCs may be encountered during characterization of the Site's media for disposal facility purposes.

-Any concrete from building remains in contact with fill/soil requiring remediation will either be broken up and disposed of with the impacted fill/soil and/or the impacted

fill/soil will be removed from the concrete and disposed of as a separate C&D waste stream. The disposal locations for both waste streams is required to the submitted to the certifying Remediation Engineer and DEC Project Manager for approval prior to removal from the Site.

-Other appurtenances that may be in contact with contaminated Site fill/soil include, but are not limited to, asphalt access-ways and parking lots; concrete walkways, stairways, retaining walls, bollards and curbing; subsurface portions of handrails, light posts and signage, and underground utilities. These appurtenances, and any other appurtenances encountered within the remedial excavation, may be disposed of as a separate C&D waste stream provided that any fill/soil adhering to the appurtenances are removed prior to the appurtenances leaving the Site for off-site disposal. The disposal location will be required to the submitted to the certifying Remediation Engineer and DEC Project Manager for approval prior to removal from the Site.

-Grossly impacted fill/soil, if any, (as defined at DER-10, Section 1.3, Item 23) encountered in the excavation floor at the depth limits of the excavations will be further excavated and staged on-site pending waste characterization and subsequent off-site disposal. The extent of the grossly impacted fill/soil will be subjectively assessed by the Remediation Engineer's field representative using PID headspace analysis and organoleptic (sight and smell) perception. Confirmatory post-excavation end-point samples will be collected for laboratory analysis to confirm removal of the material to the prescribed cleanup levels.

-The possibility exists for the addition of chemical and/or biological amendments to open excavation areas to aid in the degradation of petroleum-type contaminants in soil and groundwater. The need for the application of amendments will be determined during the implementation of the remedial action and in consultation with NYSDEC. NYSDEC will be provided with a scope of work for the application of the amendments prior to its implementation for review and approval.

1.4.5 Groundwater Evacuation and Treatment

The COCs in groundwater beneath the portion of the Site addressed as 8 Cottage Place include acetone, phenol, and the metals chromium, iron, lead, manganese, mercury and sodium. Iron and manganese are viewed as naturally occurring in the environment. Sodium is attributed to the application of snow/ice salt at the ground surface and is not

viewed as a COC. Groundwater was measured from approximately nine (9) to 12.5 feet bgs within this portion of the Site.

The COCs in groundwater beneath the portion of the Site addressed as 178 Warburton Avenue include petroleum related VOCs, SVOCs and metals. Groundwater was measured at approximately two (2) feet bgs within this portion of the Site.

Groundwater will likely be encountered during excavation of impacted fill/soil in the western portion of the Site addressed as 178 Warburton Avenue and may be encountered during excavation of impacted fill/soil in remaining eastern portions of the Site. The following general procedures will be followed for groundwater evacuation and treatment during the remedial action.

-Groundwater entering the excavations during fill/soil remediation within portions of the Site east of the 178 Warburton Avenue parcel will be evacuated and transferred into a temporary holding tank to the extent necessary to remove impacted soils. If limited in volume, the groundwater may be evacuated from the excavations as necessary via a vacuum (Vac) truck and transported for off-site disposal at an approved and permitted TSDF. The disposal location will be required to the submitted to the certifying Remediation Engineer and DEC Project Manager for approval prior to removal from the Site.

-On-site groundwater treatment will be implemented when one or a combination of the following conditions are observed: laboratory testing has identified the presence of petroleum chemical constituents in the groundwater above applicable discharge limits (below); a petroleum film/sheen is observed on the groundwater surface; petroleum odors are noted in the groundwater; groundwater comes into contact with petroleum contaminated soil; and/or testing for approval to discharge groundwater to the municipal storm/sewer system shows contaminants above applicable discharge limits (below).

-Treated groundwater will be discharged to the closest connection to the municipality's sanitary collection system (i.e. sanitary lines along Warburton Avenue, Irving Place and/or Wood Place). Prior to discharge, the remediation contractor will be responsible for obtaining a wastewater discharge permit from the Westchester County Department of Environmental Facilities (DEF). Pre- and post-treatment sampling will be performed of the water treatment system prior to discharging to the sewer to confirm that the discharge meets the limits established by the Westchester County DEF. Subsequent

sampling and analysis of the treatment system will be performed at sampling frequencies required by the Westchester County DEF. DEC will be provided with the dewatering and treatment system design and plan prior to its implementation.

-Groundwater that may be encountered in the eastern portions of the Site (other than the 178 Warburton Avenue parcel) that does not appear impacted and constituents are below the above applicable discharge limits will be managed on-site. Approval will be obtained from the Remediation Engineer and NYSDEC prior to managing groundwater on-site (as determined by laboratory testing and absence of sheen and odors).

1.4.6 Post-Remedial Action Groundwater Monitoring and/or Treatment

Site investigations have shown that groundwater has been impacted by petroleum-related VOCs, SVOCs and metals. These impacts are predominantly confined in groundwater beneath the 178 Warburton Avenue portion of the Site. The proposed remedy that will be implemented to address impacted groundwater within this portion of the Site will include the following.

-Four (4) monitoring wells are anticipated to be installed at hydraulically down-gradient locations prior to the commencement of the remedial action. Two (2) monitoring wells are anticipated to be installed along the western boundary within the 178 Warburton Avenue portion of the Site (to be installed only if the existing monitoring wells at the 178 Warburton Avenue parcel are not suitable for groundwater sampling). Two (2) monitoring wells will be installed off-site to the west of the western property boundary of the 178 Warburton Avenue portion of the Site. The approximate monitoring well locations are depicted on Figure 2.

-The soil borings for installation of the monitoring wells will be completed utilizing direct-push methods. The monitoring wells will be constructed of one (1) to 1.25-inch diameter PVC riser and screen. The screened portions of the wells will straddle the water table five (5) feet above and five (5) feet below the water table. The monitoring wells will be protected at the surface with flush-mounted enclosures set in concrete.

-Groundwater samples will be collected from the monitoring wells to gage groundwater quality prior to initiation of the remedial action within the 178 Warburton Avenue portion of the Site. The monitoring wells will be developed, purged and sampled in accordance with the Field Sampling Plan (FSP) presented in Appendix A of

the June 30, 2017 (Revised January 2018) Remedial Investigation Work Plan (RIWP). The groundwater samples will be analyzed for the Target Compound List (TCL) for VOCs and SVOCs, and the Target Analyte List (TAL) for metals.

-The remedial action will be implemented, which will include excavation and off-site disposal of impacted fill/soil; excavation dewatering, treatment and off-site disposal; the closure by removal of remaining hydraulic lifts and drainage structures (if encountered); and the backfilling of the excavations with clean, imported fill meeting soil cleanup objectives (SCOs) for Unrestricted Use Sites promulgated at 6 NYCRR Part 375.

-The possibility exists for the addition of chemical and/or biological amendments to open excavation areas to aid in the degradation of petroleum-type contaminants in soil and groundwater. The need for the application of amendments will be determined in consultation with NYSDEC. NYSDEC will be provided with a scope of work for the application of the amendments prior to its implementation for review and approval.

-Collection of groundwater samples post-remedial action. Groundwater samples will be collected after completion of the remedial action to gage the effectiveness of the remedial action on groundwater quality. A subset of the monitoring wells that were destroyed/decommissioned during the remedial action will be replaced in-kind (unless permission is granted by NYSDEC to waive the replacement of wells). Monitoring wells to be replaced will be determined following remedial activities with approval of NYSDEC. The monitoring wells will be developed, purged and sampled in accordance with the FSP in the RIWP. The groundwater samples will be analyzed for the TCL for VOCs and SVOCs, and the TAL for metals.

-The pre- and post-remedial action groundwater sampling results will be reviewed by the Remediation Engineer and the Department to gauge the effectiveness of the remedial action on groundwater quality. As a "Volunteer" in the BCP, 178 Warburton Limited Partnership will only be responsible for remedial activities related to on-site groundwater quality.

-Per 6 NYCRR Part 375-3.8(e)(1)(iii)(b), the Volunteer will make a good faith effort to "demonstrate to the Department's satisfaction that there has been a bulk reduction in groundwater contamination to asymptotic levels". Good faith efforts include closure by removal of hydraulic lifts and drainage structures, closure by removal of known and

unexpected underground storage tanks, excavation and off-site disposal of impacted HFM, evacuation and off-site disposal of groundwater entering the remedial excavations, and the possible addition of chemical and/or biological amendments to open excavation areas to aid in the degradation of petroleum-type contaminants in soil and groundwater.

For informational purposes, the following paragraphs provide information regarding groundwater use restrictions within the City of Yonkers and the City of Yonkers potable water source.

The Site and surrounding community are provided with public water that is furnished by the City of Yonkers. Per Section 57-26 A: Water for Drinking or Domestic Purposes of Part VI: Fire and Buildings of Article VII: Water Supply of the Code of the City of Yonkers, "All water supply used for drinking purposes or domestic purposes, except bottled water, shall be provided by the public water supply of the City of Yonkers, New York."

Private potable and/or domestic water wells are not permitted within the City of Yonkers. Per Section 57-26 C: Water for Drinking or Domestic Purposes of Part VI: Fire and Buildings of Article VII: Water Supply of the Code of the City of Yonkers, "Wells are not permitted for drinking or domestic use and may not be physically connected in any way to the public water supply system of the City of Yonkers."

The City of Yonkers obtains its drinking water from the New York City Water Supply System. Most of this water originates from two (2) protected watershed areas, the Catskill and Delaware, located west of the Hudson River in upstate New York.

1.4.7 Remedial Investigation Derived Wastes

Investigation Derived Wastes (IDW) generated as a function of the RI includes 19, 55-gallon drums containing drill cuttings from the soil borings, monitoring well development and purge water, and decontamination water used for the decontamination pad. The IDW will be characterized and disposed of off-site at an approved and permitted TSDF in the event the IDW cannot be disposed with the impacted fill/soil mixture at the approved off-site disposal facilities. The wastes will be transported by a 6 NYCRR Part 364 transporter permitted to transport these wastes. The drums are currently staged along the eastern exterior of Building 12.

1.5 Remedial Treatment Units

The entire Site, the limits of which are shown on Figure 2, is to be considered as one (1) remedial treatment unit or area of concern.

The approximate vertical depths of fill material mantling the Site at each of the sampling locations completed during the RI and previous investigations are summarized on Figure 2.

The sampling locations, sampling depths and concentrations of contaminants in fill/soil exceeding SCOs for Unrestricted Use Sites are summarized in Figure 3 in Appendix A.

1.6 Applicable NYS Standards, Criteria and Guidance (SCGs)

The applicable SCGs for each media type to be remediated during the remedial action are summarized as follows:

Media	Regulation	SCGs
Fill/Soil and Native Soil	6 NYCRR Part 375 (December 14, 2007)	Table 375-6.8(a) Unrestricted Use Soil Cleanup Objectives
Groundwater	NYSDEC Division of Water TOGS 1.1.1	Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1998)
Treated Groundwater Discharge to the Public Works	WCDEF Wastewater Discharge Permit	Per Permit Requirements

A copy of the December 14, 2007 6 NYCRR Part 375 Table 375-6.8(a) is included in Appendix B for reference. The NYSDEC Division of Water TOGS 1.1.1 document is not included, but the standards or guidance values for the remedial action are the ambient groundwater (GA class) values. Treated groundwater analytical results will be

compared to the Local Sewer Limitations per the WCDEF Wastewater Discharge Permit.

1.7 Remedial Action Schedule

It is expected that the remedial action will be completed in two (2) phases as follows:

Phase I: Asbestos Abatement and Building Demolition

Phase I is anticipated to begin in late 2020 and should be completed in Spring/Summer 2021. Phase I will include the following tasks.

-Asbestos abatement and demolition of Buildings 4, 8 and 12 within the portion of the Site addressed as 8 Cottage Place. Abatement of asbestos containing materials (ACM) will be in accordance with the New York State Department of Labor (NYSDOL) Industrial Code Rule (ICR) 56. The ACM abatement work activities will be managed under the requirements of the NYSDOL rather than the DEC Division of Environmental Remediation. As a note, asbestos abatement and demolition of the aboveground portion of the building addressed as 178 Warburton Avenue within the western portion of the Site was completed in March 2019 as part of a non-emergency interim remedial measure (IRM). The former building's concrete slab remains.

-Building foundation concrete (footers, walls and slabs) in contact with Site fill/soil will either be addressed as part of the building demolition or will be left in place and addressed as part of the remedial excavation. If removed as part of the building demolition, methods will be employed to remove any soils adhering to the concrete prior to the concrete leaving the Site for off-site disposal.

Phase II: Remedial Action

Phase II is anticipated to begin immediately following the asbestos abatement and demolition phase, in Spring/Summer 2021 and should be completed during the Winter of 2022. Phase II will include the following tasks.

-As a note, due to the Site's redevelopment sequencing utilizing different contractors for construction of the proposed building and a public park, different areas of the Site may

be remediated at different times. The goal will be to first begin remediation in the western portion of the Site addressed as 178 Warburton Avenue.

-Decommissioning of monitoring wells within the Site boundaries that were installed during previous investigations of the Site. These monitoring wells are identified as 178MW01, 178MW02, 178MW03, 178MW04, MW-B, MW-E, MW-K, MW-P and MW-Q on Figure 2.

-Closure by removal of bulk USTs, hydraulic lifts and drainage structure systems.

-Excavation and off-site disposal of all fill/soil mixtures mantling the Site, and the possible additional excavation of native soils that do not meet SCGs based on analytical results of confirmatory post-excavation sampling. The remedial excavation will extend to the boundaries of the Site. Fill/soil mixtures mantling the 178 Warburton Avenue portion of the Site are impacted by petroleum. This phase of the remedial action is anticipated to be completed in Summer/Fall 2021.

-Groundwater evacuation, characterization, treatment and/or off-site disposal as necessary during the remedial excavation. Sheeting/shoring at the property boundaries of the 178 Warburton Avenue parcel will likely be required to effectively remove the impacted fill/soil below the depth groundwater has been historically encountered.

-Possible addition of chemical and/or biological amendments to open excavation areas within the 178 Warburton Avenue parcel to aid in the degradation of petroleum-type contaminants in soil and groundwater.

-Backfilling of the Site with imported fill meeting SCOs for Unrestricted Use Sites. This phase of the remedial action is anticipated to be completed in Winter 2022.

-Characterization (if needed) and off-site disposal of drummed investigation derived wastes generated during the previous investigations and RI of the Site. The drummed wastes are located along the eastern exterior of Building 12.

-Preparation and submission of the Final Engineering Report (FER), which is anticipated to be completed during the Winter/Spring of 2022. The time lapse for submission of the FER takes into account the time required for receipt of analytical

results of remedial excavation end-point sampling, data validation of the analytical results, and review by the Volunteer. A more detailed remedial action schedule will be provided to the DEC Project Manager after completion of field work associated with the remedial activities.

-A SVI evaluation will be completed prior to the submission of the Final Engineering Report. The SVI evaluation will include an assessment of pre- and post-remediation soil and groundwater data, evaluation of the effectiveness of the remedial action relative to SVI, and evaluation of the on-site buildings relative to SVI. The need for sub-slab soil vapor and indoor/outdoor air quality samples will be evaluated during completion of the SVI evaluation. No active vapor intrusion mitigation measures are anticipated at the Site pending on the remedial action achieving the RAOs for soil vapor.

1.8 Miscellaneous General Requirements

Prior to beginning construction of the remedial action (excluding the asbestos abatement and building demolition phase), a pre-construction meeting will be held with the DEC Project Manager, the Volunteer, the Remediation Engineer (C.T. Male), the construction manager and the contractor/subcontractors designated to complete the remedial action related work.

The hours of operation of the remedial construction work will conform to the City of Yonkers construction codes. The DEC Project Manager will be notified of any variances issued by the City of Yonkers.

1.9 Citizen Participation

Citizen participation will continue on this project as follows:

- Once the RWP has been finalized, a public notice fact sheet will be released by the DEC before the start of the remedial construction work. The Decision Document will be issued after the RWP is finalized.

2.0 TEMPORARY CONSTRUCTION FACILITIES

2.1 Site Security

The Site is an approximate 1.47 acre single lot that occupies the central portion of the Cottage Place Gardens public housing complex addressed as 8 Cottage Place and 178 Warburton Avenue. The Site consists of three (3) multi-story residential apartment buildings and the concrete slab remains of the former building addressed as 178 Warburton Avenue. The residential apartment building identified as Building 12 on Figure 2 contains a boiler in its basement that is used to heat the apartment buildings within the Site. These structures are surrounded with asphalt paved access-ways and parking areas, concrete sidewalks, and landscaped areas. Currently, the Site is easily accessible to residents of surrounding apartment buildings within the Cottage Place Gardens complex and to the public from Warburton Avenue, Irving Place and Wood Place; which are public streets.

As the Site is easily accessible to the public, construction fencing with lockable gate(s) will be installed and maintained around the entire perimeter of the Site prior to the start of the building asbestos abatement and demolition activities, and remain in-place throughout the remedial action.

2.2 Trailers/Office Space

A construction office trailer(s) or nearby office space will be provided by the contractor for use by the Remediation Engineer's field representative and DEC personnel. The space shall include a desk or table to work on and power to charge field monitoring equipment daily. A minimum area, generally six (6) feet by six (6) feet, should be sufficient.

2.3 Equipment Decontamination

Construction equipment that comes into contact with the Site's contaminated fill and soil, and potentially impacted groundwater, will be considered contaminated. Prior to the equipment being demobilized from the Site or prior to entering an area deemed clean by meeting applicable SCGs, the equipment will be decontaminated in a manner

that removes adhered soils and residues. Soils/residues generated from the decontamination procedures will be disposed of with the impacted fill/soil mixtures at the approved off-site disposal facilities. If water is generated during the decontamination effort, it will either be transferred into 55 gallon drums or directly to the on-site groundwater treatment system (if used), and/or if in small volume, be incorporated into the impacted fill/soil mixtures for disposal at the approved off-site disposal facilities. Any wastes (soils or water) created at the Site will either be sampled first, or assumed to be impacted, and then disposed of accordingly.

Trucks entering and exiting the Site will be subject to the requirements of the Site specific erosion and sediment control measures outlined in this RWP and site specific Stormwater Pollution Prevention Plan (SWPPP), which shall include the requirements of a stabilized construction entrance to mitigate fill/soil from being tracked off-site and onto roadways (see Section 2.7). The public roadway(s) where trucks exit the Site will be monitored by the Remediation Engineer's field representative. If fill/soil tracking is apparent, improvements to the erosion and sediment controls and fill/soil loading procedures will be required and implemented. Trucks entering and exiting the Site will also conform to the Site's State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity.

2.4 Groundwater Dewatering System During Construction

The remedial action and subsequent redevelopment construction activity may require groundwater dewatering and treatment. DEC will be provided with the dewatering and treatment system design prior to its implementation. Design of the treatment system will be the responsibility of the remediation contractor or the vendor (subcontractor) that specializes in this type of treatment.

It is the Volunteer's intention to treat groundwater and discharge it to the closest connection to the municipality's sanitary collection system (i.e. sanitary lines along Warburton Avenue, Irving Place and/or Wood Place) with approval from the municipal authority. If this is implemented, pre- and post-treatment sampling will be performed of the water treatment system to confirm that the discharge meets the limits established by the Westchester County DEF. The sampling will be conducted prior to system startup and during on-going system discharges at sampling frequencies required by the Westchester County DEF.

For the purpose of tracking the volume of treated groundwater that is discharged to the sanitary collection system, a water meter with a totalizer will be installed in line with the groundwater treatment system. The groundwater treatment system will be equipped with equipment to reduce suspended sediment, pre-and post-treatment sampling ports, and treatment media such as granular activated carbon. It is estimated that approximately 210,000 gallons of groundwater (predominantly from the 178 Warburton Avenue parcel) will be treated and discharged to the sanitary collection system.

In lieu of on-site groundwater treatment, the groundwater may be transferred from the temporary holding tanks and later transported off-site for disposal at an approved and permitted TSDF facility.

The NYSDEC and the New York State Department of Health (NYSDOH) will be notified of how the groundwater will be handled and disposed of prior to the remedial actions occurring on Site.

2.5 Impacted Soil Handling

Fill/soil within the Site boundaries commencing at the ground surface and extending vertically downwards to approximately two (2) to 12 feet bgs will be considered as contaminated and will require special handling. The approximate vertical depths of fill material mantling the Site at each of the sampling locations completed during the RI and previous investigations are summarized on Figure 2.

The vertical depth of petroleum impacted soils beneath the 178 Warburton Avenue portion of the Site is estimated from the ground surface to 12 feet bgs (deeper excavation might be warranted in certain areas). The vertical depth of soil/fill mixtures mantling remaining portions of the Site is estimated to range from the ground surface to four (4) to eight (8) feet bgs. Based on these assumptions, it is estimated that approximately 5,000 cubic yards (9,400 tons) of petroleum impacted soils and 16,500 cubic yards (27,800 tons) of soil/fill mixtures will require remediation. The total tonnage may vary depending on the material density and changes in excavation depths.

The overall excavation depths may be adjusted based on organic vapor screening with a PID and visual observations by the Remediation Engineer's field representative.

Confirmatory end-point soil samples will be collected by the Remediation Engineer's field representative and analyzed in the laboratory to confirm that the soil that remains in-place meets applicable SCGs.

Should boulders be encountered during excavation activities, they will be segregated and stockpiled on-site and assessed by the Remediation Engineer's field representative to determine whether the boulders exhibit field evidence of contamination (odors, sheen, and/or discoloration). Boulders exhibiting field evidence of contamination (FEC) will not be reused on-site. Boulders with no FEC could be reused on-site, following a determination by the project's design engineers that the reuse of this material is acceptable. Boulders to be reused as backfill will need to be free from excessive soil/fill prior to processing in order to prevent cross contamination.

Upon completion of the remedial action, excavation of additional native soil may be necessary to facilitate construction of deeper building foundations. If the confirmatory endpoint floor samples from the remedial excavation indicate that the native soils are not impacted above SCGs, these soils will be considered as clean soil and the reuse and/or disposition of these soils will no longer be regulated per the BCP. Approval to remove these soils from the Site will require approval from NYSDEC.

The handling of the contaminated fill/soil will involve direct loading into dump trucks or trailers, and if not directly loaded, temporarily stockpiled on-Site. For soil stockpiling, the fill/soil will be staged on a minimum of 12-mil plastic and covered with the same to mitigate washout by rainwater. For directly loaded fill/soil, the truck/tractor trailers will be covered during transport with solid covers (not mesh), and if high in moisture content where free-standing water will be released, the truck gates will be sealed and/or lined with plastic. Mesh tarps or covers will not be allowed for trucks hauling impacted fill/soil from the Site.

In order to dispose of the contaminated fill/soil at an off-site disposal facility (and to be able to directly load the material into dump trucks and/or trailers), waste characterization samples will be collected before the remedial action begins. This will be accomplished by advancing exploratory test pits and/or soil borings for collection of representative fill/soil samples for laboratory analysis. The number of samples and analytical requirements will be in accordance with the target disposal facility(ies) permit requirements, and if unspecified, shall be at a minimum for the full Toxicity

Characteristic Leaching Procedure (TCLP) parameters and RCRA characteristics. Multiple disposal facilities are anticipated to be use by the Contractor.

It should be noted that the COCs identified as part of the RI are intended to provide a general description of the contamination at the Site. The concentration ranges of COCs identified at the sampling locations may be representative of COCs throughout the Site's media. Furthermore, both different types and different concentration ranges of COCs may be encountered during characterization of the Site's media for disposal facility purposes.

Disposal facility approval letters and other related documentation will be submitted to the Remediation Engineer and the DEC Project Manager for review and approval prior to the exportation of contaminated fill/soil.

All IDW from the RI will be characterized and disposed of off-site.

2.6 Utility Disconnects

The Site is serviced with electricity and natural gas from Con Edison. Potable water is provided by the City of Yonkers Water Bureau. The Westchester County DEF is responsible for sanitary sewer service to the Site. Additionally, several private utilities installed as part of the construction of the Cottage Place Gardens complex are present beneath the Site. These include steam lines, drainage and storm water piping, and fiber optic and cable lines. If not already addressed prior to the demolition of the Site buildings, the Contractor is responsible to locate all utilities and disconnect/terminate them per State, City, County, Cottage Place Gardens and Municipal Housing Authority for the City of Yonkers (MHACY) requirements, or properly reroute or protect them during excavation in cooperation with applicable utility providers.

2.7 Construction Entrance

A stabilized construction entrance(s) will be installed in accordance with a Site-specific SWPPP to mitigate the tracking of potentially contaminated fill/soil onto public rights-of-way from vehicle traffic exiting the Site.

2.8 Excavation Shoring/Sheeting

The anticipated horizontal and vertical remedial excavation depths may require sheeting/shoring to effectuate stable and safe excavation conditions. The need for and design of the sheeting/shoring systems will be the responsibility of the Contractor, and shall be designed by a NYS licensed professional engineer. Prior to commencement of the remedial action, excavation sheeting/shoring plans will be submitted to DEC for their information. Excavation sheeting/shoring plans for non-remedial needs are not required to be submitted to DEC.

3.0 SITE CONTROLS DURING REMEDIAL ACTION

3.1 Stormwater Management

The cumulative area of fill/soil disturbance for this project is greater than one (1) acre requiring 178 Warburton Limited Partnership to obtain coverage under the State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity before commencing construction activity.

In accordance with the New York Guidelines for Urban Erosion and Sediment Control and the New York State Stormwater Management Design Manual, erosion and sediment control measures, pollution prevention measures, and if applicable, post-construction water quality treatment, shall be designed by 178 Warburton Limited Partnership and presented in the form of a Stormwater Pollution Prevention Plan (SWPPP).

The following forms are needed to be completed and submitted to comply with the requirements of the General Permit for Stormwater Discharges from Construction Activity - GP-0-15-002:

- Notice of Intent (NOI) to DEC, which is a request for coverage under the General Construction Stormwater Permit;
- SWPPP Acceptance Form, which is required along with the NOI because the Site is located within the boundaries of an MS4. The SWPPP must be reviewed and accepted by the MS4 prior to submitting the NOI to the DEC; and
- Notice of Termination (NOT) to DEC, which is a notification that the construction project is complete and has met the requirements of the construction permit.

A copy of the blank Notice of Intent, Notice of Termination and SWPPP Acceptance forms are available through DEC's website. The SWPPP, NOI and SWPPP Acceptance forms will be provided to DEC under separate cover after approval from the City of Yonkers Engineering Department, but prior to the start of construction. The NOT will be provided to DEC upon completion of the Site disturbance portion of the project. Periodic SWPPP inspection reports will be provided to C.T. Male for review and inclusion in the FER.

3.2 Air Monitoring

A Community Air Monitoring Plan (CAMP) will be followed during ground intrusive remedial activities (i.e., excavation, disturbance and handling of site fill/soil). The intent of the CAMP is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of remedial work activities. The CAMP is not intended for use in establishing action levels for worker respiratory protection. The CAMP will monitor the air for dust (particulate air monitoring, see Section 3.2.1) and volatile organic compound vapors (VOC air monitoring, see Section 3.2.2) at the downwind perimeter of the work area and/or at occupied buildings within 20 feet of the work area. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown.

Remedial actions will not take place within occupied Site buildings. In areas where remedial actions will take place within 20 feet of occupied buildings, VOC and particulate monitoring will be conducted in accordance with the Special Requirements CAMP. The CAMP and Special Requirements CAMP are included in Appendix D.

3.2.1 Particulate Air Monitoring

Three (3) real-time particulate monitors capable of continuously measuring concentrations of particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) will be utilized. The instruments will be placed inside environmental enclosures at temporary monitoring stations based on the prevailing wind direction each work day, one (1) upwind and two (2) downwind of the designated work areas. If the remedial action is taking place within 20 feet of occupied structures, monitoring will be conducted opposite the walls of the occupied structures or next to the structures' air intake vents.

Each particulate monitor will be equipped with a telemetry unit capable of transmitting real-time particulate data to the Remediation Engineer and/or the Remediation Engineer's field representative. The particulate monitoring instruments will be capable of displaying and transmitting the short term exposure limit (STEL) or 15 minute averaging period, which will be compared to the NYSDOH Generic and Special

Requirements Community Air Monitoring Plan action levels for particulates, as listed below. Instrument alarms will be transmitted in real time to the Remediation Engineer and/or the Remediation Engineer's field representative via email and/or text message. The dust monitoring data for the remedial action will be stored in the Environet database and will be periodically downloaded and stored in C.T. Male's electronic project directory.

- If the downwind and/or occupied structures PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that the downwind and/or occupied structures PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, the downwind and/or occupied structures PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind and/or occupied structures PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

In the event of poor weather such as heavy rain, particulate monitoring will not be performed for protection of instrumentation. These weather conditions would limit the effectiveness of the sensitive monitoring equipment and likely suppress particulate generation. Work activities will be halted if fugitive dust migration is visually observed for a sustained period of time during poor weather conditions.

3.2.2 Volatile Organic Compound Air Monitoring

C.T. Male will continuously monitor for VOCs at the downwind perimeter of the immediate work areas and/or occupied structures with a MiniRAE 3000 VOC monitor or equal. The VOC monitors will be placed in the downwind and occupied structures environmental enclosures containing a particulate monitor. The downwind VOC monitors will be equipped with telemetry units capable of transmitting real-time VOC

data to the Remediation Engineer and/or the Remediation Engineer's field representative. The VOC monitoring instruments will be capable of displaying and transmitting the short term exposure limit (STEL) or 15 minute averaging period, which will be compared to the NYSDOH Generic and Special Requirements Community Air Monitoring Plan action levels for VOCs, as listed below. Instrument alarms will be transmitted in real time to the Remediation Engineer and/or the Remediation Engineer's field representative via email and/or text message. The VOC monitoring data for the remedial action will be stored in the Environet database and will be periodically downloaded and stored in C.T. Male's electronic project directory.

Upwind VOC STEL concentrations will be measured at the start of the work day and periodically thereafter employing a handheld MiniRae 3000 VOC monitor to evaluate the Site's background conditions. The upwind VOC STEL readings will be manually recorded for future reference and reporting.

- If the ambient air concentration of total organic vapors opposite the walls of occupied structures exceeds 1 ppm above background for the 15-minute average, work activities will be temporarily halted and monitoring will be conducted within the occupied structure.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone (not including the occupied structures) exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.
- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone (not including the occupied structures) persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure,

whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shutdown. Work activities will then be evaluated to determine the source of the organic vapors and the engineering controls required to reduce/eliminate the organic vapors.

3.3 Noise and Vibration

There is potential for noise and vibration to be an issue depending on the means and methods selected by the construction contractor to excavate and load the Site fill/soil during the remedial action. If sheet piling is used to facilitate the excavation of Site fill/soil during the remedial excavation, the project plans and specifications will require the contractor to plan for and provide as necessary, controls to monitor and mitigate noise and vibration from adversely affecting nearby buildings, structures, improvements and the community.

3.4 Dust Control

Dust suppression techniques will be required, as necessary, to control fugitive dust to the extent practical during the remedial action. Such techniques must be employed, at a minimum, if the community air monitoring results indicate that particulate levels are above action levels. All reasonable attempts will be made to inhibit visible and/or fugitive dusts. Techniques to be utilized by the contractor may include one or more of the following:

- Applying water to haul roads.
- Wetting equipment and excavation faces.
- Spraying water on buckets during excavation and dumping.
- Hauling materials in containers or vehicles with solid tarp covers.
- Restricting vehicle speeds on-site.
- Covering excavated areas and materials after excavation immediately after activity ceases.

The contractor will be required to perform dust control measure in a manner consistent with the applicable portions of the "New York Guidelines for Urban Erosion and Sediment Control" and the "New York State Stormwater Management Design Manual".

3.5 Construction Observation and Certification

Phase I (preparation for the remedial action) work includes asbestos abatement followed by demolition of the Site buildings. A licensed asbestos project monitor will be retained during the ACM abatement work, as required by ICR-56. The asbestos project monitor will be responsible for collecting daily air samples in accordance with ICR-56. As air monitoring will be conducted per DOL requirements during the ACM abatement work, CAMP related air monitoring will not be performed during this portion of the work. Once the ACM has been abated, C.T. Male will provide a full-time construction observer to monitor the building demolition aspect of the project and conduct CAMP monitoring.

Phase II (remedial action) work includes closure by removal of USTs, hydraulic lifts and drainage systems; excavation (disturbance) of existing fill/soil; possible groundwater evacuation, characterization, treatment and disposal; abandonment of monitoring wells; and possible installation of sheeting and shoring within the remedial excavation. C.T. Male will provide full-time observation during the remedial action. At the point in construction when the environmental related issues have been fully addressed (i.e., USTs, hydraulic lifts and drainage systems closed; impacted fill/soil removed and off-site; groundwater treatment is stabilized or completed; and CAMP monitoring is no longer required, etc.), construction observation by C.T. Male will cease, unless some other unforeseen condition is identified necessitating further observation..

Periodic observation during the remedial action will be conducted by a C.T. Male Remediation Engineer in order to provide the required certification of the FER. The Remediation Engineer will supervise the construction observer (field representative) during the remedial action to document that the project is implemented in accordance with the DEC approved RWP. The Remediation Engineer will provide engineering review of remedial related contractor submittals and field changes for the remedial related work.

3.6 Odor Control

If nuisance odors are identified to extend beyond the perimeter of the work area during remedial action ground intrusive activities, measures that may be implemented to abate the nuisance odors include limiting the area of open excavations, limiting the size of soil stockpiles, shrouding open excavations with tarps and other covers, direct load-out of soils to trucks for off-site disposal, use of chemical odorants via spray or misting systems, and use of staff to monitor odors in surrounding neighborhoods.

4.0 HEALTH AND SAFETY PLAN (HASP)

Health and safety procedures to be followed by C.T. Male will be conducted in accordance with a site-specific Health and Safety Plan (HASP), which is included in Appendix E. The HASP will be available at the Site during the remedial action.

The contractor completing the remedial work will be required to provide a site specific HASP that is certified by a Certified Industrial Hygienist, Certified Safety Professional or Remediation Engineer determined equivalent safety professional. The contractor's employees will be required to have read and understood their company's site specific HASP prior to completing the work.

5.0 CONFIRMATION AND DOCUMENTATION SAMPLING

5.1 Tank Closure Sampling

There are currently two (2) known USTs located to the east of Building 12 (see Figure 2) and the potential for additional tanks in and around the 178 Warburton Avenue portion of the Site. Upon removal of the tanks (following emptying and cleaning procedures), C.T. Male's field representative will assess the soils surrounding the tanks for organic vapors employing PID headspace analyses and organoleptic perception.

If the soils do not appear impacted and the bottoms of the tanks are in native soil, post-remediation confirmation samples will be collected per Section 5.3. If the soils do not appear impacted and the bottoms of the tanks are in fill material, the fill material will be excavated to native soils and post-remediation confirmation samples will be collected per Section 5.3. The samples will be analyzed for the Target Compound List (TCL) of VOCs, SVOCs, pesticides and polychlorinated biphenyls (PCB), the Target Analyte List (TAL) of metals (including mercury), hexavalent chromium and cyanide (TCL/TAL Parameters).

If the soils appear impacted, additional excavation will be conducted until the soils no longer appear impacted employing the above field screening methods. Floor and sidewall samples will be collected from the tank excavation for analyses for the TCL/TAL Parameters to document that the impacted soils have been sufficiently remediated. The impacted soils will be staged atop poly and covered pending waste characterization and off-site disposal.

5.2 Hydraulic Lifts and Drainage Systems Closure Sampling

Hydraulic lifts and drainage systems are located in and around the concrete slab of the former building within the 178 Warburton Avenue portion of the Site (see Figure 2). Upon removal of the hydraulic lifts and drainage systems, the Remediation Engineer's field representative will assess the soils surrounding the hydraulic lifts and drainage systems for organic vapors employing PID headspace analyses and organoleptic perception.

If the soils do not appear impacted and the bottoms of the hydraulic lifts/drainage structures are in native soil, post-remediation confirmation samples will be collected per Section 5.3. If the soils do not appear impacted and the bottoms of the hydraulic lifts/drainage structures are in fill material, the fill material will be excavated to native soils and post-remediation confirmation samples will be collected per Section 5.3. The samples will be analyzed for the TCL/TAL Parameters.

If the soils surrounding any of the hydraulic lifts and/or drainage systems appear impacted, additional excavation will be conducted until the soils no longer appear impacted employing the above field screening methods. Floor and sidewall samples will be collected from the excavation(s) for analyses for the TCL/TAL Parameters to document that the impacted soils have been sufficiently remediated. The impacted soils will be staged atop poly and covered pending waste characterization and off-site disposal.

5.3 Post-Excavation Confirmation Sampling

Post-excavation confirmation soil samples will be collected for laboratory analysis after removal of impacted fill/soil to document that SCGs have been met. The samples will be analyzed for the TCL/TAL Parameters (including emerging contaminant [EC] 1,4-dioxane). A subset of the samples will be analyzed for the NYSDEC list of 21 per- and polyfluorinated alkyl substances (PFAS) as per the NYSDEC-approved Sampling Plan for ECs (dated February 7, 2020). The Sampling Plan for ECs is presented in Appendix F. If a certain parameter does not meet the project SCGs, that area will be further excavated and resampled. These samples will be analyzed for only those parameters that had exceedances in the initial samples.

Post-excavation verification soil samples will be collected at a frequency of one (1) grab sample per each 900 square feet of excavation floor and one (1) sample from the bottom of the eastern and western sidewalls for every 30 linear feet of sidewall, pursuant to DEC DER-10. Sidewall samples will not be collected from the northern and southern sidewalls as these sidewalls extend into the CPG Phase 3A and Phase 4 BCP Sites (BCP Site No.'s C360150 and C360160, respectively). Impacted soil/fill mixtures have been effectively remediated at the CPG Phase 3A and Phase 4 BCP Sites and the Sites have been backfilled with imported fill meeting SCOs for Unrestricted Use Sites. In the event that the excavations do not extend to the sidewalls of the CPG Phase 3A and Phase 4

BCP sites, confirmatory sidewall samples will be required. Any proposed modifications to sampling type and frequency will be submitted to the DEC Project Manager for review and approval.

5.4 Quality Assurance/Quality Control and Deliverables

Quality Assurance/Quality Control (QA/QC) samples at a ratio of (one) 1 set of QA/QC samples per 20 media samples will be collected and analyzed. The QA/QC samples for soils will include a blind field duplicate (FD) and matrix spike (MS)/matrix spike duplicate (MSD).

The laboratory will provide the analytical results in DEC ASP Category B Data Deliverable format for subsequent third party data validation. Data validation will be performed in accordance with the USEPA National and Regional Validation Guidelines/Procedures to determine the applicable qualifications of the data. The validator will then prepare a Data Usability Summary Report (DUSR) for all post-excavation confirmatory samples in accordance with DEC guidance. All of the laboratory data will also be submitted electronically to NYSDEC in Version 4 EQuIS database format.

5.5 Groundwater Treatment Documentation Sampling

Groundwater treatment may be necessary during the remedial action and subsequent new sub-grade construction. Groundwater treatment shall be implemented when there is a petroleum sheen on the water surface, the groundwater comes into contact with petroleum contaminated soil, and/or testing for approval to discharge groundwater to the municipal storm/sewer system shows contaminants above applicable acceptance parameters. Groundwater that does not appear impacted will be managed on-Site. Approval will be obtained from the Remediation Engineer and the DEC Project Manager prior to managing groundwater on-Site.

The documentation and sampling necessary for the groundwater treatment system will be dependent on the requirement of the applicable Westchester County DEF permit for such treatment system. Documentation will likely include influent (prior to treatment) and effluent (post treatment) sampling which will be used to gauge groundwater contaminant levels, document conformance to applicable permit discharge limits, and

set forth the frequency of change-out of groundwater treatment media. The proposed sampling frequency and analysis will be presented to DEC for concurrence prior to its implementation. If it is determined that groundwater is to be discharged to the municipal system under a permit, the sample results will be provided to the DEC Project Manager prior to discharge.

In lieu of a groundwater treatment system, groundwater staged in temporary holding tanks may be removed and transported for off-site disposal at a permitted TSDF facility.

5.6 Imported Fill Testing

The source of the fill and the analytical data will be provided to the DEC Project Manager for review and approval prior to importing the fill to the Site. The sampling and analysis requirements for fill imported to the Site are set forth in 5.4(e)10 of DEC DER-10. The following requirements must also be met:

- All materials proposed for import onto the Site will be approved by the certifying Remediation Engineer and the DEC Project Manager, and will be in compliance with provisions in 6 NYCRR Part 375 and DER-10 prior to delivery to the Site.

- Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the Site.

- All imported soils will meet the backfill quality standards established in 6 NYCRR 375-6.7(d). Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards are listed in Table 375-6.8(a) in Appendix B.

  DEC may require that select samples of imported fill be analyzed for the emerging contaminants (ECs) 1,4-dioxane and the DEC list of 21 per- and polyfluoroalkyl substances (PFAS). The EC analytical results will be reviewed by the DEC Project Manager to determine if the fill material is suitable for import onto the Site.

Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill objectives for this Site, will not be imported onto the Site without prior approval by DEC. Solid waste will not be imported onto the Site.

- Trucks entering the Site with imported soils will be securely covered with tight fitting solid covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

6.0 APPLICABLE PERMITS AND RELATED

6.1 ACM Abatement/Building Demolition Work

Prior to starting asbestos abatement, there are two (2) required notifications, one (1) on the State level and one (1) on the Federal level (USEPA). There is a minimum 10 calendar day pre-notification of the ACM abatement activity from the NYSDOL (State), which will be sought by the asbestos abatement contractor. There is a 19 working day pre-notification of demolition and renovation from USEPA, which will be solicited by the asbestos abatement contractor. Each building shall be considered a separate project for the NYSDOL pre-notification requirements.

A Building Permit will be sought from the City of Yonkers by the Owner (or the contractor, as applicable) prior to the initiation of the demolition activities and construction activities.

A City of Yonkers Demolition Permit shall be prepared by and secured by the General Contractor. As part of the application, the applicant is required to engage a licensed firm to inspect the structure for the presence of asbestos, which will be performed by C.T. Male. A copy of C.T. Male's Asbestos Survey will be made available to the General Contractor. The applicant shall file a certificate of finding with the City of Yonkers Department of Housing and Buildings (DHB) prior to the issuance of a Demolition permit. The asbestos removal project cannot be started unless and until satisfactory proof of compliance with Article 30 of Labor Law of the State of New York is filed with the City of Yonkers DHB and a permit has been obtained from the City of Yonkers DHB for any asbestos removal.

Copies of, or evidence of the DOL notification, the approved building permit, and the approved demolition permit will be made part of the Final Engineering Report.

6.2 Soil Remediation and UST Closures

The remediation contractor will be responsible for obtaining applicable permits from the City of Yonkers DHB prior to the commencement of soil remediation and/or tank closures.

6.3 Groundwater Discharge

A dewatering system may be necessary during the remedial action and subsequent new subgrade construction to mitigate groundwater infiltration. Groundwater extracted from the subsurface may require treatment (see Section 5.5) prior to discharge to the closest MS4 combined sewer manhole, which will require a sewer discharge permit. The requirements of a sewer discharge permit will be sought from the Westchester County DEF; the entity that operates the local sewage treatment plant. DEC will be provided a copy of the approval to discharge to the sewer, when applied for and received from DEF. It will be the remediation contractor's responsibility to obtain the necessary permit(s).

If the volume of groundwater requiring treatment is anticipated to be low, the impacted groundwater may be pumped to temporary tank(s) and periodically removed from the Site in tanker trucks. The tank liquids will be properly managed and disposed of off-site at an approved and permitted TSDF. The wastes will be transported by a 6 NYCRR Part 364 transporter permitted to transport these types of wastes, and disposed of at a facility permitted to accept the waste being disposed of.

7.0 SITE RESTORATION

7.1 General

The Site will be restored upon completion of work in accordance with the plans and specifications for new construction. Imported backfill will be tested in accordance with Section 5.6. Once the Site is backfilled to final grade or at some point prior to when existing Site soils have been fully remediated, CAMP monitoring will be discontinued with pre-approval from DEC and the NYSDOH.

8.0 REPORTING AND CERTIFICATE OF COMPLETION

8.1 Weekly Progress Updates

Progress meeting minutes will be submitted to the DEC Project Manager via email during the remedial action (Phase II only). The progress report will briefly summarize the remedial activities completed at the Site for the previous week. The progress report will be submitted at the beginning of the following week. The format will be in a bulleted style generally highlighting the major items accomplished during the previous week. Results of the CAMP will also be included in the weekly progress reports. Additionally, if there are any exceedances during the CAMP monitoring, NYSDEC and NYSDOH will be notified immediately (including the reason for the exceedance, corrective actions taken, and whether these were effective) via email and not solely in the weekly report.

8.2 Monthly Progress Reports

Monthly progress reports will report on the progress of the remedial actions accomplished during the reporting period. The reports will be submitted to DEC, with a copy to the NYS Department of Health project manager and pertinent personnel representing the Volunteer. The progress reports will be submitted on or about the 10th day of each month. The progress reports will generally include the following information, where applicable

- Any request for modifications to the approved RWP, and the status of previously requested modifications.
- A discussion of project progress and significant activities during the reporting period, including the status of any requisite permits.
- A discussion of pending/planned significant project activities during the next two months, unless another time frame is authorized by the Department.
- The approved remedial action schedule and proposed modifications to the remedial action schedule, resulting from new information and/or unforeseen conditions.

- A discussion of any problems or delays in the implementation of the remedial action relative to the work and/or remedial action schedule.
- Proposed actions to correct any identified problems, including how to mitigate any adverse schedule impacts.
- Any additional, pertinent documentation that is available (e.g., photographs) that helps communicate progress/issues facing the project.
- A tabulation of sample results received during the reporting period and submission of a report summarizing the data and presenting conclusions.
- A tabulation of waste classification and/or characterization samples collected including the physical state of the material (solid, liquid, sludge), the volume of material, number of samples collected, analyses performed and results.
- A listing of the types and quantities of contamination generated by the remedial action during the reporting period and to date, as well as the name of the disposal facilities, transporters' dates of disposal and, if appropriate, the manifest numbers of each waste load.

8.3 Final Engineering Report (FER)

Upon completion of the remedial action, a FER will be prepared that summarizes the work completed and results of the confirmation and documentation sampling. Any deviations from the RWP will also be discussed in the FER. The FER will be prepared in general accordance with the FER requirements promulgated in Section 5.8 of DER-10, as summarized below.

- The final FER submitted to DEC for approval will be prepared, stamped, certified and signed by an individual licensed or otherwise authorized in accordance with article 145 of the Education Law to practice the profession of engineering using the appropriate certification provided in Table 1.5 of DER-10.
- A description of the remedy, as constructed, pursuant to the DEC-approved RWP.

- A summary of the remedial actions completed, including description of problems encountered and resolved, summary of changes to the RWP, listing of the waste streams, the quantity of each waste stream, and the disposal location(s) for each waste stream.
- A list of the remedial action objectives applied to the remedial action.
- Tables and figures containing pre- and post-remedial data keyed appropriately so that completion of the remedial action is documented.
- A description of the applicable areas of remedial action compliance.
- Drawings showing the excavation limits and the excavation end-point soil sampling locations.
- Executed manifests documenting off-site transport of the waste materials.
- Analytical results of the excavation end-point soil samples, including laboratory data sheets and the required laboratory data deliverables.

8.4 Certificate of Completion

The Volunteer will be seeking a Certificate of Completion (COC) from DEC upon completion of the remedial action and DEC approval of the FER. It is anticipated that completion of the remedial action and the Volunteer's receipt of the COC will likely occur prior to completion of the entire construction project at the Site.

APPENDIX A

FIGURES

Image Provided By ESRI Street Map

N

Not to Scale

Figure 1

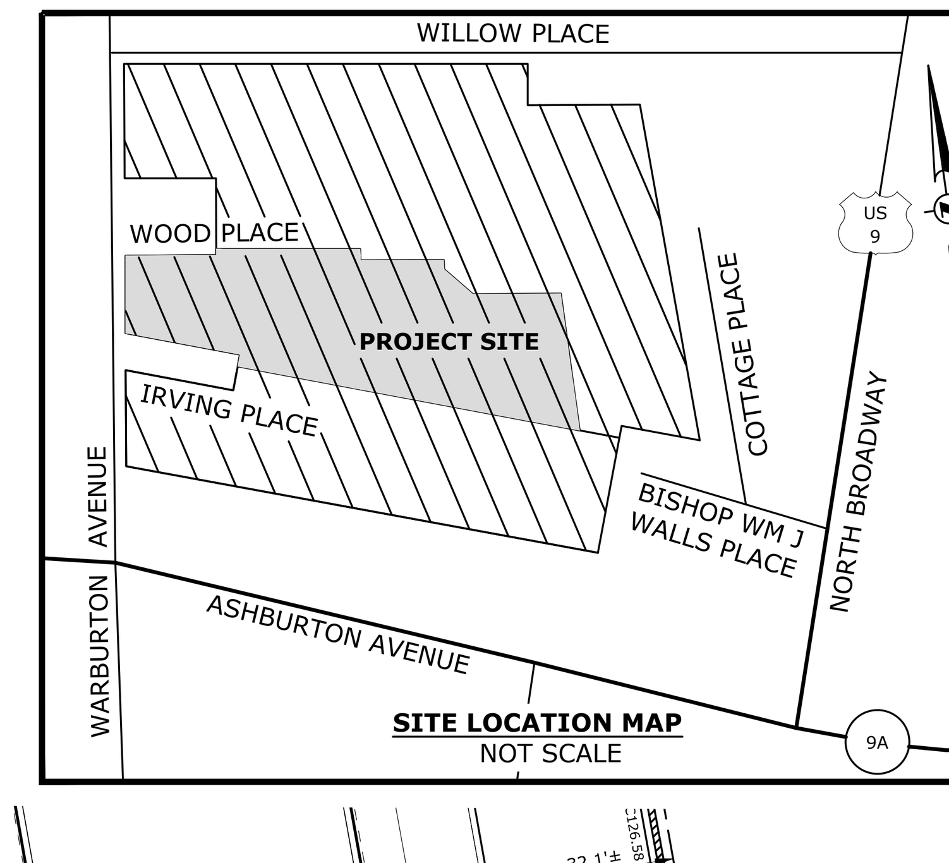
SITE LOCATION MAP
COTTAGE PLACE GARDENS
PHASE 5 PARCEL
WESTCHESTER COUNTY, NEW YORK

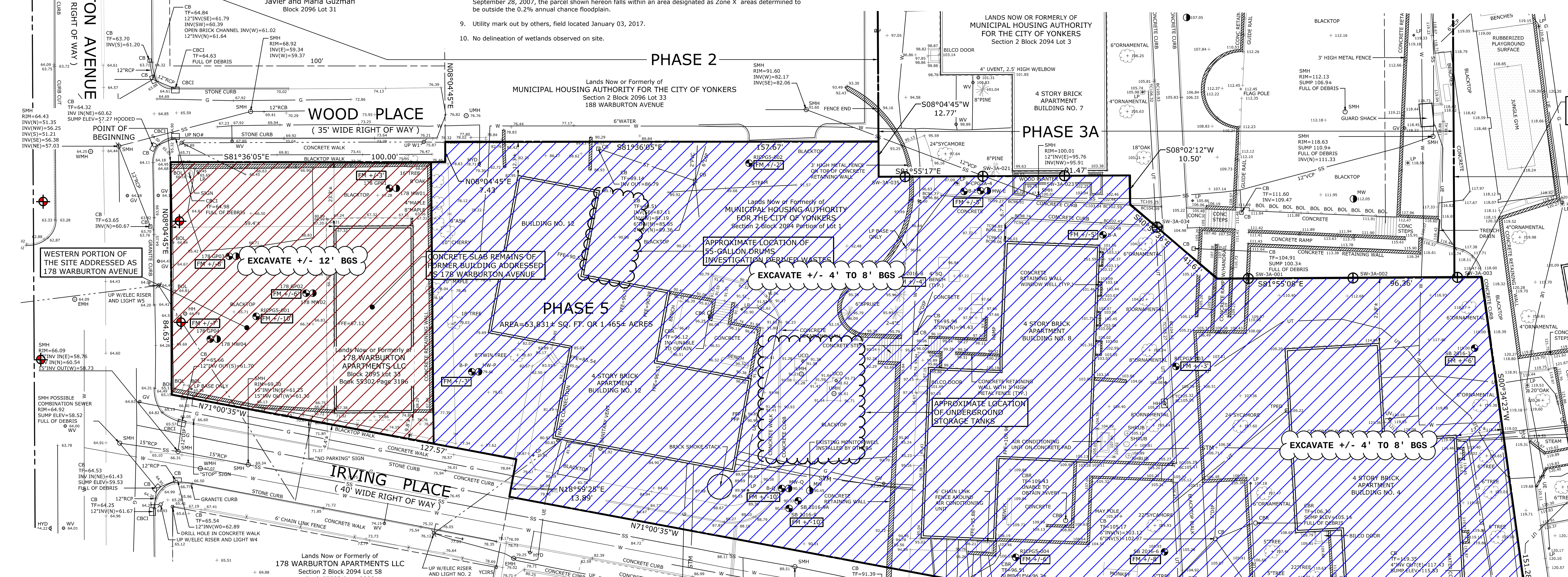
MAP NOTES:

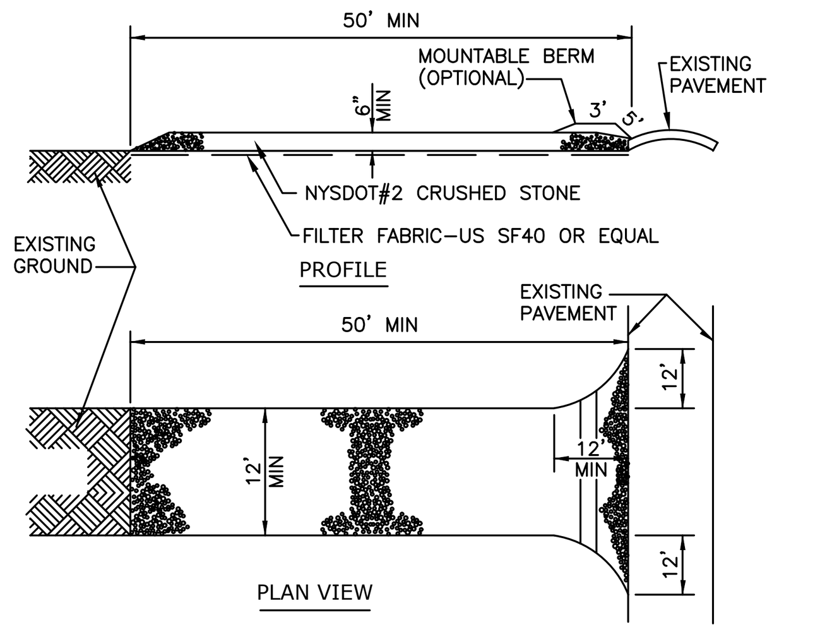
1. Boundary and topographic information shown hereon was compiled from an actual field survey conducted during the month of May 2015 and Septmeber 2015.
2. North orientation and bearings are referenced to Grid North and are based on the New York State Plane Coordinate System, East Zone, NAD 83/2011 epoch 2010.00 as obtained from GPS observations
3. Objects shown on this drawing with a distance indicating how far that object is from a particular line, lie on the same side of the line that the offset distance is written.
4. Vertical datum shown hereon is NAVD 88 and was obtained from GPS observations which were post processed holding Queens and Lamont Earth CORS.
5. Underground facilities, structures, and utilities have been plotted from data obtained from previous maps and record drawings. Surface features such as catch basin rims, manhole covers, water valves, gas valves, etc. are the result of field survey unless noted otherwise. There may be other underground utilities, the existence of which is not known to the undersigned. Size and location of all underground utilities and structures must be verified by the appropriate authorities. Dig Safely New York must be notified prior to conducting test borings, excavation and construction.
6. This survey was prepared without the benefit of an up to date abstract of title or title report and is therefore subject to any easements, covenants, restrictions or any statement of fact that such documents may disclose.
7. Test pit locations shown hereon were field located.
8. Per map entitled National Flood Insurance Program, FIRM Flood Insurance Rate Map, City of Yonkers, New York, Westchester County, Panel 309 of 426, Community Panel Number 36119C0309F, effective date September 28, 2007, the parcel shown hereon falls within an area designated as Zone X areas determined to be outside the 0.2% annual chance floodplain.
9. Utility mark out by others, field located January 03, 2017.
10. No delineation of wetlands observed on site.

MAP REFERENCES:

1. "Boundary and Topographic Survey" Cottage Place, City of Yonkers, Westchester County, New York, Dated June 29, 2010. Prepared by Langan Engineers & Environmental Services.
2. "Cottage Gardens Pur, Yonkers, NY, Master Plan", prepared by Magnusson Architects & Planning PC., DWG No. A-04, dated September 30, 2015.







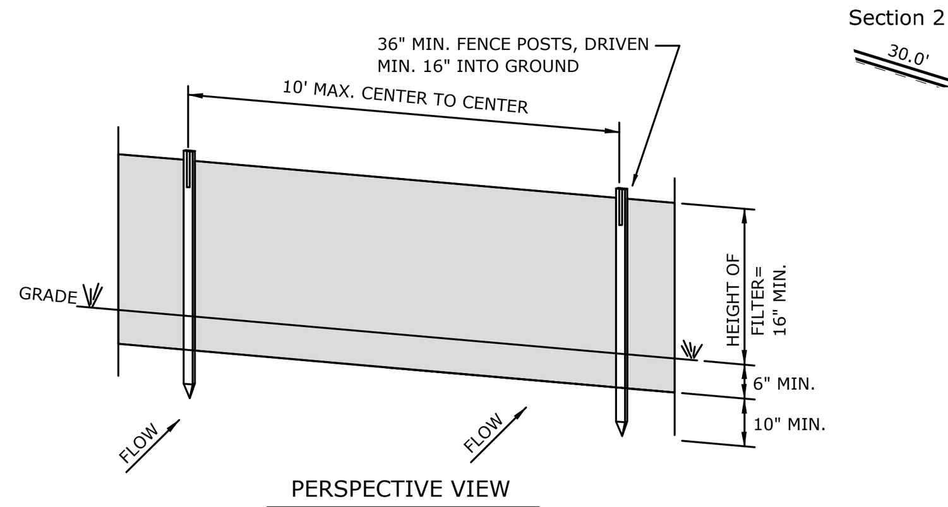
NOTES:

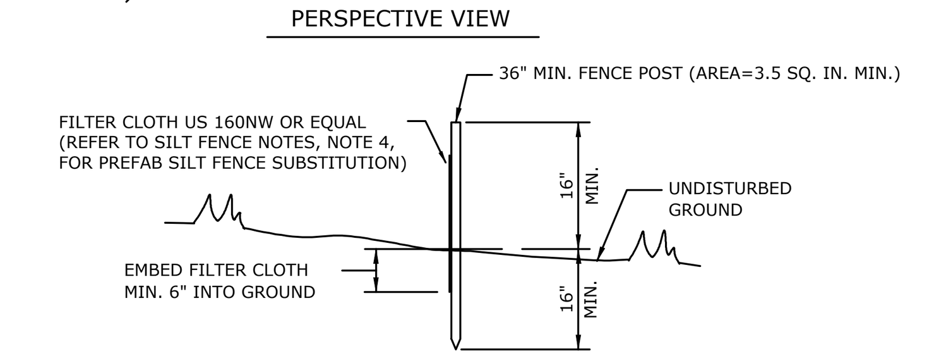
1. USE 1"–4" STONE, OR RECLAIMED OR RECYCLED CONCRETE OR APPROVED EQUAL.
2. THE LENGTH SHALL NOT BE LESS THAN 50 FEET.
3. CRUSHED STONE SHALL BE MAINTAINED AT A MINIMUM OF 6" IN DEPTH.
4. ENTRANCE SHALL HAVE A 12 FOOT MINIMUM WIDTH, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. ENTRANCE SHALL BE AT LEAST 24 FEET WIDE IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO THE PLACING OF STONE.
6. ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS NOT PRACTICAL, A MOUNTABLE BERM WITH 1:5 SLOPES WILL BE PERMITTED.
7. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS– OF–WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY SHALL BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

1 FIG2 **STABILIZED CONSTRUCTION ENTRANCE DETAIL**

SCALE: NONE
CROSS REFERENCE: NONE

"ONLY COPIES OF THIS MAP SIGNED IN RED INK AND EMBOSSED WITH THE SEAL OF AN OFFICER OF C.T. MALE ASSOCIATES OR A DESIGNATED REPRESENTATIVE SHALL BE CONSIDERED TO BE A VALID TRUE COPY".





NOTES:

1. FILTER CLOTH TO BE FASTENED SECURELY TO WOODEN STAKES
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
3. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIALS REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
4. PREFABRICATED SILT FENCE IS ACCEPTABLE AS LONG AS ALL MATERIAL SPECIFICATIONS ARE MET.

2 FIG2 **STANDARD SILT FENCE DETAIL**

SCALE: NONE
CROSS REFERENCE: NONE

LEGEND

Symbol	Description	Symbol	Description
SB	Soil Boring	HH	Hand Hole
MW	Monitor Well	HYD	Hydrant
TP	Test Pit	LP	Light Pole
BOL	Bollard	SMH	Sanitary Manhole
CB	Catch Basin	TPED	Telephone Pedestal
CBCI	Catch Basin Curb Inlet	UMH	Unknown Manhole Type
CBR	Catch Basin Round	UP	Utility Pole
CO	Cleanout	WV	Water Valve
TREE	Coniferous Tree	—T—	Overhead Telephone Wires
TREE	Deciduous Tree	—UE—	Underground Electric Line Markout
EMH	Electric Manhole	—G—	Underground Gas Line Markout
FFE=	Finished Floor Elevation	—STM—	Underground Steam Line
RE=	Roof Elevation	—UT—	Underground Telephone Line Markout
GV	Gas Valve	—W—	Underground Water Line Markout
⊕	Confirmatory Post-Excavation Sidewall Sampling Location from the Remedial Action at the Cottage Place Gardens Phase 3A Parcel Site	—SS—	Underground Sanitary Sewer Line Markout
FM +/-5'	Approximate Depth of Fill Material (FM) Encountered at Soil Borings Completed During the RI and Previous Investigations		
	Proposed Monitoring Well		

BAR SCALE
20 0 10 20 40
1 inch = 20 ft.

ZONING

District M Apartment Houses, Medium Density

DATE	REVISIONS RECORD/DESCRIPTION	DRAFTER	CHECK	APPR.
	1			
	2			
	3			
	4			
	5			
	6			
	7			
	8			
	9			

APPROVED: BIEBER
DRAFTED : GLB
CHECKED : BIEBER
PROJ. NO : 16.6669
SCALE : 1" = 20'
DATE : JUNE 3, 2019

FIGURE 2: REMEDIAL IMPLEMENTATION PLAN & DETAILS

COTTAGE PLACE GARDENS PHASE 5 PARCEL SITE

CITY OF YONKERS WESTCHESTER COUNTY, NEW YORK

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C.
50 CENTURY HILL DRIVE, LATHAM, NY 518.786.7400
COBLESKILL, NY · GLENS FALLS, NY · POUGHKEEPSIE, NY · JOHNSTOWN, NY
LITTLE FALLS, NY · RED HOOK, NY · SYRACUSE, NY
www.ctmale.com

SHEET 1 OF 1
DWG. NO: 19-360

CAD DWG. FILE NAME: Figure 2 RIP.dwg

CAD DWG. FILE NAME: K:\Projects\166669\Env\Drawings-Maps\Figure 2 RIP.dwg

XREFS: NONE

PROJECT NUMBER: 16.6669

CAD DWG. FILE NAME: K:\Projects\15512\Survey\Drawings-Maps\ALTA PHASE 5.dwg

MAP REFERENCES:

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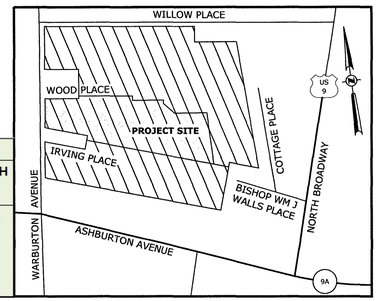
9. Utility mark out by others, field located January 03, 2017.
10. No delineation of wetlands observed on site.

DESCRIPTION
PHASE 5
COTTAGE PLACE GARDENS
CITY OF YONKERS, COUNTY OF WESTCHESTER, STATE OF NEW YORK
AREA = 1.465 ACRES OF LAND

All that certain tract, piece or parcel of land situate in the City of Yonkers, County of Westchester, State of New York, lying Easterly of Warburton Avenue, and being more particularly bounded and described as follows:

BEGINNING at the point of intersection of the Easterly street boundary of Warburton Avenue (50-foot-wide right-of-way) with the Southerly street boundary of Wood Place (35-foot-wide right-of-way) and runs thence from said point of beginning along said Southerly street boundary of Wood Place South 81 deg. 36 min. 05 sec. East 100.00 feet to a point, said point being the Easterly terminus of Wood Place; thence along said Easterly terminus of Wood Place North 08 deg. 04 min. 45 sec. East 7.43 feet to its point of intersection with the division line between Phase 5 Cottage Place Gardens lands now or formerly of the Municipal Housing Authority for the City of Yonkers Section 2 Block 2094 Lot 1 on the South and Phase 2 Cottage Place Gardens lands now or formerly of the Municipal Housing Authority for the City of Yonkers Section 2 Block 2096 Lot 33 on the North; thence South 81 deg. 36 min. 05 sec. East along the last mentioned division line 157.67 feet to its point of intersection with the division line between said Phase 5 Cottage Place Gardens on the West and Phase 3A Cottage Place Gardens lands now or formerly of the Municipal Housing Authority for the City of Yonkers Section 2 Block 2094 Lot 3 on the East; thence South 08 deg. 04 min. 45 sec. West along the last mentioned division line 12.77 feet to its point of intersection with the division between said Phase 5 Cottage Place Gardens on the South and said Phase 3A Cottage Place Gardens on the North; thence South 81 deg. 55 min. 17 sec. East along the last mentioned division line 91.47 feet to its point of intersection with the division line between said Phase 5 Cottage Place Gardens on the West and said Phase 3A Cottage Place Gardens on the East; thence South 08 deg. 02 min. 12 sec. West along the last mentioned division line 10.50 feet to its point of intersection with the division line between said Phase 5 Cottage Place Gardens on the Southwest and said Phase 3A Cottage Place Gardens on the Northeast; thence South 49 deg. 59 min. 36 sec. East along the last mentioned division line 41.61 feet to its point of intersection with the common division line between said Phase 5 Cottage Place Gardens on the South and said Phase 3A Cottage Place Gardens and Phase 6 Cottage Place Gardens lands now or formerly of the Municipal Housing Authority for the City of Yonkers Section 2 Block 2094 Lot 1 on the North; thence South 81 deg. 55 min. 08 sec. East along the last mentioned common division line 96.36 feet to its point of intersection with the division line between said Phase 5 Cottage Place Gardens on the West and said Phase 6 Cottage Place Gardens on the East; thence South 00 deg. 34 min. 23 sec. West along the last mentioned division line 151.28 feet to its point of intersection with the division line between said Phase 5 Cottage Place Gardens on the North and Phase 4 Cottage Place Gardens lands now or formerly of the Municipal Housing Authority for the City of Yonkers Section 2 Block 2094 Lot 1 on the South; thence North 71 deg. 00 min. 35 sec. West along the last mentioned division line 380.96 to its point of intersection with the Easterly terminus of Irving Place (40-foot-wide right-of-way); thence North 18 deg. 59 min. 25 sec. East along said Easterly terminus of Irving Place 13.89 feet to its point of intersection with the Northerly street boundary of Irving Place; thence along said Northerly street boundary of Irving Place North 71 deg. 00 min. 35 sec. West 127.57 feet to its point of intersection with the above mentioned Easterly street boundary of Warburton Avenue; thence North 08 deg. 04 min. 45 sec. East 84.63 feet to the point or place of beginning and containing 63,831 ± Square feet or 1.465 acres of land, more or less.



SITE LOCATION MAP
NOT SCALE

B-A			
Analyte	UNRESTRICTED USE SCO (mg/kg)	CONC (mg/kg)	DEPTH (ft)
Copper	50	**52.9**	2.5-5
Lead	63	**1410**	
Mercury	0.18	**0.501**	
Zinc	109	**521**	

178GP03				
ANALYTE	UNRESTRICTED USE SCO (mg/kg)	CONC (mg/kg)		DEPTH (ft)
Benzene	0.06	**0.48**		2.5-5
Ethylbenzene	1	**9.6**		
Toluene	0.7	**2.8**		
o-Xylene	0.26	**4.7**		
p/m-Xylene	0.26	**19**		
4,4'-DDD	0.0033	**0.00351**	PI	
4,4'-DDE	0.0033	**0.0108**	P	

178GP02				
ANALYTE	UNRESTRICTED USE SCO (mg/kg)	CONC (mg/kg)		DEPTH (ft)
p/m-Xylene	0.26	**0.44**		2.5-5
Benzo(a)anthracene	1	**1.4**		
Benzo(a)pyrene	1	**1.3**	J	
Benzo(b)fluoranthene	1	**1.5**		
Chrysene	1	**1.5**		
Indeno(1,2,3-cd)pyrene	0.5	**0.72**	J	
4,4'-DDT	0.0033	**0.00331**	P	

SB2016-8			
Analyte	UNRESTRICTED USE SCO (mg/kg)	CONC (mg/kg)	DEPTH (ft)
Cadmium, Total	2.5	**4.2**	2-6
Lead, Total	63	**340**	
Zinc, Total	109	**1800**	

SW-3A-021(3.5')			
ANALYTE	UNRESTRICTED USE SCO (mg/kg)	CONC. (mg/kg)	DEPTH (ft)
Lead, Total	63	**78.2**	3.5

SW-3A-035			
Analyte	UNRESTRICTED USE SCO (mg/kg)	CONC (mg/kg)	DEPTH (ft)
Acetone	0.05	**0.092**	2.5

SW-3A-001			
ANALYTE	UNRESTRICTED USE SCO (mg/kg)	CONC. (mg/kg)	DEPTH (ft)
Lead, Total	63	**138**	2.5
Mercury, Total	0.18	**0.41**	

SW-3A-002			
ANALYTE	UNRESTRICTED USE SCO (mg/kg)	CONC. (mg/kg)	DEPTH (ft)
Benzo(b)fluoranthene	1	**1.1**	2.5
Indeno(1,2,3-cd)pyrene	0.5	**0.56**	
Lead, Total	63	**113**	
Mercury, Total	0.18	**0.39**	

SW-3A-003			
ANALYTE	UNRESTRICTED USE SCO (mg/kg)	CONC. (mg/kg)	DEPTH (ft)
Acetone	0.05	**0.12**	2.5
Barium, Total	350	**1150**	
Mercury, Total	0.18	**0.24**	

SB2016-3			
Analyte	UNRESTRICTED USE SCO (mg/kg)	CONC (mg/kg)	DEPTH (ft)
3-Methylphenol/4-Methyl	0.33	**0.58**	2-4
Benzo(a)anthracene	1	**54**	
Benzo(a)pyrene	1	**46**	
Benzo(b)fluoranthene	1	**56**	
Benzo(k)fluoranthene	0.8	**14**	
Chrysene	1	**44**	
Dibenzo(a,h)anthracene	0.33	**5.3**	
Fluoranthene	100	**110**	
Indeno(1,2,3-cd)pyrene	0.5	**28**	
Phenol	0.33	**0.57**	
Lead, Total	63	**960**	
Mercury, Total	0.18	**0.69**	
Zinc, Total	109	**360**	

SB2016-1			
Analyte	UNRESTRICTED USE SCO (mg/kg)	CONC (mg/kg)	DEPTH (ft)
Acetone	0.05	**0.052**	2-4
Mercury, Total	0.18	**0.49**	

178GP04			
ANALYTE	UNRESTRICTED USE SCO (mg/kg)	CONC (mg/kg)	DEPTH (ft)
4,4'-DDE	0.0033	**0.00537**	0-5

B-P			
Analyte	UNRESTRICTED USE SCO (mg/kg)	CONC (mg/kg)	DEPTH (ft)
Chromium	30	**30.2**	7.5-9.2

B-Q			
Analyte	UNRESTRICTED USE SCO (mg/kg)	CONC (mg/kg)	DEPTH (ft)
Lead	63	**143**	0.5-2.5
Zinc	109	**318**	

B-B			
Analyte	UNRESTRICTED USE SCO (mg/kg)	CONC (mg/kg)	DEPTH (ft)
Lead	63	**211**	2.5-5
Mercury	0.18	**0.318**	
Zinc	109	**136**	

SB2016-6			
Analyte	UNRESTRICTED USE SCO (mg/kg)	CONC (mg/kg)	DEPTH (ft)
Lead, Total	63	**160**	2-4
Mercury, Total	0.18	**0.23**	
Zinc, Total	109	**110**	

B-K			
Analyte	UNRESTRICTED USE SCO (mg/kg)	CONC (mg/kg)	DEPTH (ft)
Benzo(a)anthracene	1	**7.20D**	2.5-5
Benzo(a)pyrene	1	**5.50D**	
Benzo(b)fluoranthene	1	**6.20D**	
Benzo(k)fluoranthene	0.8	**1.8**	
Chrysene	1	**5.80D**	
Dibenzo(a,h)anthracene	0.33	**0.62**	
Indeno(1,2,3-cd)pyrene	0.5	**2.3**	
Copper	50	**71.2**	
Lead	63	**232**	
Mercury	0.18	**0.242**	
Zinc	109	**148**	

LEGEND

SB	Soil Boring	HH	Hand Hole
MW	Monitor Well	HYD	Hydrant
SB/MW	Where applicable, soil borings and monitoring wells are identified on the Figure as being co-located for visual purposes. In actuality, the soil borings were converted into monitoring wells.	LP	Light Pole
		SMH	Sanitary Manhole
		TPED	Telephone Pedestal
CB	Catch Basin	UMH	Unknown Manhole Type
CBCI	Catch Basin Curb Inlet	UP	Utility Pole
CBR	Catch Basin Round	WV	Water Valve
CO	Cleanout	T	Overhead Telephone Wires
TREE	Coniferous Tree	UE	Underground Electric Line Markout
TREE	Deciduous Tree	G	Underground Gas Line Markout
EMH	Electric Manhole	STM	Underground Steam Line
FFE=	Finished Floor Elevation	UT	Underground Telephone Line Markout
RE=	Roof Elevation	W	Underground Water Line Markout
GV	Gas Valve	SS	Underground Sanitary Sewer Line Markout
	Confirmatory Post-Excavation Sidewall Sampling Location from the Remedial Action at the Cottage Place Gardens Phase 3A Parcel Site		

To: 178 Warburton Limited Partnership

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2016 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS ,and includes Items 2, 3, 4, 5, 6, 7(a)(b)(c), 8, 9, 10(a)(b), 11, 13, 14, 16, 17, 18, 19, 20 and 21 of Table A thereof. The Fieldwork Was Completed on January 4, 2017.

ZONING

District M Apartment Houses, Medium Density

BAR SCALE
20 0 10 20 40
1 inch = 20 ft.

ONLY COPIES OF THIS MAP SIGNED IN RED INK AND EMBOSSED WITH THE SEAL OF AN OFFICER OF C.T. MALE ASSOCIATES OR A DESIGNATED REPRESENTATIVE SHALL BE CONSIDERED TO BE A VALID TRUE COPY.

DATE		REVISIONS RECORD/DESCRIPTION	DRAFTER	CHECK	APPR.
01/29/18	1	REVISED PHASE 5 PARCEL BOUNDARY	GLB	MG	WJN
02/15/18	2	REVISED PHASE 5 PARCEL BOUNDARY	GLB	MG	WJN
03/21/18	3	REVISED PHASE 5 PARCEL BOUNDARY	GLB	MG	WJN
07/12/18	4	ADDED TEST BORING LOCATIONS	SB	SB	SB
	5				
	6				
	7				
	8				
	9				

APPROVED: WJN
DRAFTED : GLB/TCB
CHECKED : MG
PROJ. NO : 16.6669
SCALE : 1"=20'
DATE : JUNE 23, 2017

FIGURE 3
ANALYTES IN FILL/SOIL EXCEEDING SCGs
COTTAGE PLACE GARDENS PHASE 5 PARCEL SITE

CITY OF YONKERS — WESTCHESTER COUNTY, NEW YORK

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture & Landscape Architecture, D.P.C.
50 CENTURY HILL DRIVE, LATHAM, NY 12110
518.786.7400 * FAX 518.786.7299

SHEET 1 OF 1
DWG. NO: 17-363

XREFS: NONE

PROJECT NUMBER: 16.6669

MAP REFERENCES:

1. "Boundary and Topographic Survey" Cottage Place, City of Yonkers, Westchester County, New York, Dated June 29, 2010. Prepared by Langan Engineers & Environmental Services.
2. "Cottage Gardens Pur, Yonkers, NY, Master Plan", prepared by Magnusson Architects & Planning PC., DWG No. A-04, dated September 30, 2015.

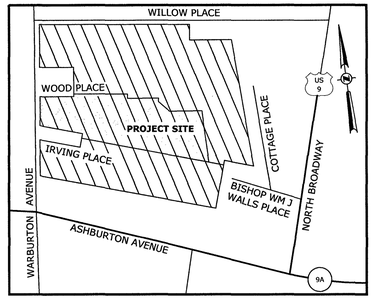
MAP NOTES:

1. Boundary and topographic information shown hereon was compiled from an actual field survey conducted during the month of May 2015 and Septmeber 2015.
2. North orientation and bearings are referenced to Grid North and are based on the New York State Plane Coordinate System, East Zone, NAD 83/2011 epoch 2010.00 as obtained from GPS observations
3. Objects shown on this drawing with a distance indicating how far that object is from a particular line, lie on the same side of the line that the offset distance is written.
4. Vertical datum shown hereon is NAVD 88 and was obtained from GPS observations which were post processed holding Queens and Lamont Earth CORS.
5. Underground facilities, structures, and utilities have been plotted from data obtained from previous maps and record drawings. Surface features such as catch basin rims, manhole covers, water valves, gas valves, etc. are the result of field survey unless noted otherwise. There may be other underground utilities, the existence of which is not known to the undersigned. Size and location of all underground utilities and structures must be verified by the appropriate authorities. Dig Safely New York must be notified prior to conducting test borings, excavation and construction.
6. This survey was prepared without the benefit of an up to date abstract of title or title report and is therefore subject to any easements, covenants, restrictions or any statement of fact that such documents may disclose.
7. Test pit locations shown hereon were field located.
8. Per map entitled National Flood Insurance Program, FIRM Flood Insurance Rate Map, City of Yonkers, New York, Westchester County, Panel 309 of 426, Community Panel Number 36119C0309F, effective date September 28, 2007, the parcel shown hereon falls within an area designated as Zone X areas determined to be outside the 0.2% annual chance floodplain.
9. Utility mark out by others, field located January 03, 2017.
10. No delineation of wetlands observed on site.

DESCRIPTION
PHASE 5
COTTAGE PLACE GARDENS
CITY OF YONKERS, COUNTY OF WESTCHESTER, STATE OF NEW YORK
AREA = 1.465 ACRES OF LAND

All that certain tract, piece or parcel of land situate in the City of Yonkers, County of Westchester, State of New York, lying Easterly of Warburton Avenue, and being more particularly bounded and described as follows:

BEGINNING at the point of intersection of the Easterly street boundary of Warburton Avenue (50-foot-wide right-of-way) with the Southerly street boundary of Wood Place (35-foot-wide right-of-way) and runs thence from said point of beginning along said Southerly street boundary of Wood Place South 81 deg. 36 min. 05 sec. East 100.00 feet to a point, said point being the Easterly terminus of Wood Place; thence along said Easterly terminus of Wood Place North 08 deg. 04 min. 45 sec. East 7.43 feet to its point of intersection with the division line between Phase 5 Cottage Place Gardens lands now or formerly of the Municipal Housing Authority for the City of Yonkers Section 2 Block 2094 Lot 1 on the South and Phase 2 Cottage Place Gardens lands now or formerly of the Municipal Housing Authority for the City of Yonkers Section 2 Block 2096 Lot 33 on the North; thence South 81 deg. 36 min. 05 sec. East along the last mentioned division line 157.67 feet to its point of intersection with the division line between said Phase 5 Cottage Place Gardens on the West and Phase 3A Cottage Place Gardens lands now or formerly of the Municipal Housing Authority for the City of Yonkers Section 2 Block 2094 Lot 3 on the East; thence South 08 deg. 04 min. 45 sec. West along the last mentioned division line 12.77 feet to its point of intersection with the division between said Phase 5 Cottage Place Gardens on the South and said Phase 3A Cottage Place Gardens on the North; thence South 81 deg. 55 min. 17 sec. East along the last mentioned division line 91.47 feet to its point of intersection with the division line between said Phase 5 Cottage Place Gardens on the West and said Phase 3A Cottage Place Gardens on the East; thence South 08 deg. 02 min. 12 sec. West along the last mentioned division line 10.50 feet to its point of intersection with the division line between said Phase 5 Cottage Place Gardens on the Southwest and said Phase 3A Cottage Place Gardens on the Northeast; thence South 49 deg. 59 min. 36 sec. East along the last mentioned division line 41.61 feet to its point of intersection with the common division line between said Phase 5 Cottage Place Gardens on the South and said Phase 3A Cottage Place Gardens and Phase 6 Cottage Place Gardens lands now or formerly of the Municipal Housing Authority for the City of Yonkers Section 2 Block 2094 Lot 1 on the North; thence South 81 deg. 55 min. 08 sec. East along the last mentioned common division line 96.36 feet to its point of intersection with the division line between said Phase 5 Cottage Place Gardens on the West and said Phase 6 Cottage Place Gardens on the East; thence South 00 deg. 34 min. 23 sec. West along the last mentioned division line 151.28 feet to its point of intersection with the division line between said Phase 5 Cottage Place Gardens on the North and Phase 4 Cottage Place Gardens lands now or formerly of the Municipal Housing Authority for the City of Yonkers Section 2 Block 2094 Lot 1 on the South; thence North 71 deg. 00 min. 35 sec. West along the last mentioned division line 380.96 to its point of intersection with the Easterly terminus of Irving Place (40-foot-wide right-of-way); thence North 18 deg. 59 min. 25 sec. East along said Easterly terminus of Irving Place 13.89 feet to its point of intersection with the Northerly street boundary of Irving Place; thence along said Northerly street boundary of Irving Place North 71 deg. 00 min. 35 sec. West 127.57 feet to its point of intersection with the above mentioned Easterly street boundary of Warburton Avenue; thence North 08 deg. 04 min. 45 sec. East 84.63 feet to the point or place of beginning and containing 63,831 ± Square feet or 1.465 acres of land, more or less.



SITE LOCATION MAP
NOT SCALE

	178 MW02		3/8/2017
ANALYTE	Conc	Q	SCG
Benzene	4.7		1
Ethylbenzene	10		5
Toluene	6.9		5
o-Xylene	12		5
p/m-Xylene	25		5
Benzo(a)anthracene	0.19		0.002 (GV)
Benzo(b)fluoranthene	0.24		0.002 (GV)
Benzo(k)fluoranthene	0.08	J	0.002 (GV)
Chrysene	0.2		0.002 (GV)
Indeno(1,2,3-cd)pyrene	0.09	J	0.002 (GV)
Chromium, Total	90		50
Iron, Total	48,000		300
Lead, Total	382		25
Manganese, Total	1900		300
Sodium, Total	240,000		20,000

	178 MW01		3/8/2017
ANALYTE	Conc	Q	SCG
Benzo(a)anthracene	0.1	J	0.002 (GV)
Benzo(b)fluoranthene	0.05	J	0.002 (GV)
Chrysene	0.1	J	0.002 (GV)
Barium, Total	1220		1000
Chromium, Total	290		50
Copper, Total	499		200
Iron, Total	96,000		300
Lead, Total	599		25
Manganese, Total	7820		300
Nickel, Total	212		100

	178 MW04		3/8/2017
ANALYTE	Conc	Q	SCG
Benzene	22		1
Benzo(a)anthracene	0.42		0.002 (GV)
Benzo(b)fluoranthene	0.62		0.002 (GV)
Benzo(k)fluoranthene	0.24		0.002 (GV)
Chrysene	0.46		0.002 (GV)
Indeno(1,2,3-cd)pyrene	0.29		0.002 (GV)
Iron, Total	15,000		300
Manganese, Total	1780		300
Sodium, Total	260,000		20,000

	178 MW03		178 MW03
ANALYTE	Conc	Q	SCG
Benzene	58		1
Ethylbenzene	440		5
Isopropylbenzene	60		5
Methyl tert butyl ether	20	J	10 (GV)
Toluene	300		5
o-Xylene	260		5
p/m-Xylene	940		5
Benzo(a)anthracene	0.15	J	0.002 (GV)
Benzo(b)fluoranthene	0.14	J	0.002 (GV)
Benzo(k)fluoranthene	0.05	J	0.002 (GV)
Chrysene	0.14	J	0.002 (GV)
Indeno(1,2,3-cd)pyrene	0.04	J	0.002 (GV)
Naphthalene	68		10 (GV)
Chromium, Total	90		50
Iron, Total	36,000		300
Lead, Total	186		25
Manganese, Total	1360		300
Sodium, Total	220,000		20,000

	MW-P		1/13/2015
ANALYTE	Conc	Q	SCG
Acetone	100		50
Phenol	2	J	1
Iron	2,210		300
Manganese	7,370		300
Sodium	362,200		20,000

	MW-B		1/13/2015
ANALYTE	Conc	Q	SCG
Chromium	110		50
Iron	48,100		300
Lead	459		25
Manganese	1,080		300
Mercury	4.76		0.7
Sodium	32,000		20,000

LEGEND

SB	Soil Boring	HH	Hand Hole
MW	Monitor Well Where applicable, soil borings and monitoring wells are identified on the Figure as being co-located for visual purposes. In actuality, the soil borings were converted into monitoring wells.	HYD	Hydrant
		LP	Light Pole
		SMH	Sanitary Manhole
CB	Catch Basin	TPED	Telephone Pedestal
CBCI	Catch Basin Curb Inlet	UMH	Unknown Manhole Type
CBR	Catch Basin Round	UP	Utility Pole
CO	Cleanout	WV	Water Valve
TREE	Coniferous Tree	T	Overhead Telephone Wires
TREE	Deciduous Tree	UE	Underground Electric Line Markout
EMH	Electric Manhole	G	Underground Gas Line Markout
FFE=	Finished Floor Elevation	STM	Underground Steam Line
RE=	Roof Elevation	UT	Underground Telephone Line Markout
GV	Gas Valve	W	Underground Water Line Markout
		SS	Underground Sanitary Sewer Line Markout

Analytical Boxes Showing Analytes at Concentrations Exceeding SCGs. Concnetraions and SCGs are in ug/l or ppb.

To: 178 Warburton Limited Partnership

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2016 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS ,and includes Items 2, 3, 4, 5, 6, 7(a)(b)(c), 8, 9, 10(a)(b), 11, 13, 14, 16, 17, 18, 19, 20 and 21 of Table A thereof. The Fieldwork Was Completed on January 4, 2017.

BAR SCALE
20 0 10 20 40
1 inch = 20 ft.

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DATE		REVISIONS RECORD/DESCRIPTION	DRAFTER	CHECK	APPR.
01/29/18	1	REVISED PHASE 5 PARCEL BOUNDARY	GLB	MG	WJN
02/15/18	2	REVISED PHASE 5 PARCEL BOUNDARY	GLB	MIG	WJN
03/21/18	3	REVISED PHASE 5 PARCEL BOUNDARY	GLB	MIG	WJN
07/12/18	4	ADDED TEST BORING LOCATIONS	SB	SB	SB
	5				
	6				
	7				
	8				
	9				

APPROVED: SB
DRAFTED : SB
CHECKED : SB
PROJ. NO : 16.6669
SCALE : 1"=20'
DATE : JULY 17, 2018

FIGURE 4
ANALYTES IN GROUNDWATER EXCEEDING SCGs
COTTAGE PLACE GARDENS PHASE 5 PARCEL SITE

CITY OF YONKERS — WESTCHESTER COUNTY, NEW YORK

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture & Landscape Architecture, D.P.C.
50 CENTURY HILL DRIVE, LATHAM, NY 12110
518.786.7400 * FAX 518.786.7299

SHEET 3 OF 3
DWG. NO: 17-363

CAD DWG. FILE NAME: K:\Projects\15512\Survey\Drawings-Maps\ALTA PHASE 5.dwg

CAD DWG. FILE NAME: ALTA PHASE 5.dwg

APPENDIX B

TABLES

375-6.8 Soil cleanup objective tables.

(a) Unrestricted use soil cleanup objectives.

Table 375-6.8(a):Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
Metals		
Arsenic	7440-38-2	13 [c]
Barium	7440-39-3	350 [c]
Beryllium	7440-41-7	7.2
Cadmium	7440-43-9	2.5 [c]
Chromium, hexavalent [e]	18540-29-9	1[b]
Chromium, trivalent [e]	16065-83-1	30 [c]
Copper	7440-50-8	50
Total Cyanide [e, f]		27
Lead	7439-92-1	63 [c]
Manganese	7439-96-5	1600 [c]
Total Mercury		0.18 [c]
Nickel	7440-02-0	30
Selenium	7782-49-2	3.9[c]
Silver	7440-22-4	2
Zinc	7440-66-6	109 [c]
PCBs/Pesticides		
2,4,5-TP Acid (Silvex) [f]	93-72-1	3.8
4,4'-DDE	72-55-9	0.0033 [b]
4,4'-DDT	50-29-3	0.0033 [b]
4,4'-DDD	72-54-8	0.0033 [b]
Aldrin	309-00-2	0.005 [c]
alpha-BHC	319-84-6	0.02
beta-BHC	319-85-7	0.036
Chlordane (alpha)	5103-71-9	0.094

Table 375-6.8(a):Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
delta-BHC [g]	319-86-8	0.04
Dibenzofuran [f]	132-64-9	7
Dieldrin	60-57-1	0.005 [c]
Endosulfan I [d, f]	959-98-8	2.4
Endosulfan II [d, f]	33213-65-9	2.4
Endosulfan sulfate [d, f]	1031-07-8	2.4
Endrin	72-20-8	0.014
Heptachlor	76-44-8	0.042
Lindane	58-89-9	0.1
Polychlorinated biphenyls	1336-36-3	0.1
Semivolatile organic compounds		
Acenaphthene	83-32-9	20
Acenapthylene [f]	208-96-8	100 [a]
Anthracene [f]	120-12-7	100 [a]
Benz(a)anthracene [f]	56-55-3	1 [c]
Benzo(a)pyrene	50-32-8	1 [c]
Benzo(b)fluoranthene [f]	205-99-2	1 [c]
Benzo(g,h,i)perylene [f]	191-24-2	100
Benzo(k)fluoranthene [f]	207-08-9	0.8 [c]
Chrysene [f]	218-01-9	1 [c]
Dibenz(a,h)anthracene [f]	53-70-3	0.33 [b]
Fluoranthene [f]	206-44-0	100 [a]
Fluorene	86-73-7	30
Indeno(1,2,3-cd)pyrene [f]	193-39-5	0.5 [c]
m-Cresol [f]	108-39-4	0.33 [b]
Naphthalene [f]	91-20-3	12
o-Cresol [f]	95-48-7	0.33 [b]

Table 375-6.8(a):Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
p-Cresol [f]	106-44-5	0.33 [b]
Pentachlorophenol	87-86-5	0.8 [b]
Phenanthrene [f]	85-01-8	100
Phenol	108-95-2	0.33 [b]
Pyrene [f]	129-00-0	100
Volatile organic compounds		
1,1,1-Trichloroethane [f]	71-55-6	0.68
1,1-Dichloroethane [f]	75-34-3	0.27
1,1-Dichloroethene [f]	75-35-4	0.33
1,2-Dichlorobenzene [f]	95-50-1	1.1
1,2-Dichloroethane	107-06-2	0.02 [c]
cis -1,2-Dichloroethene [f]	156-59-2	0.25
trans-1,2-Dichloroethene [f]	156-60-5	0.19
1,3-Dichlorobenzene [f]	541-73-1	2.4
1,4-Dichlorobenzene	106-46-7	1.8
1,4-Dioxane	123-91-1	0.1 [b]
Acetone	67-64-1	0.05
Benzene	71-43-2	0.06
n-Butylbenzene [f]	104-51-8	12
Carbon tetrachloride [f]	56-23-5	0.76
Chlorobenzene	108-90-7	1.1
Chloroform	67-66-3	0.37
Ethylbenzene [f]	100-41-4	1
Hexachlorobenzene [f]	118-74-1	0.33[b]
Methyl ethyl ketone	78-93-3	0.12
Methyl tert-butyl ether [f]	1634-04-4	0.93
Methylene chloride	75-09-2	0.05

Table 375-6.8(a):Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
n - Propylbenzene [f]	103-65-1	3.9
sec-Butylbenzene [f]	135-98-8	11
tert-Butylbenzene [f]	98-06-6	5.9
Tetrachloroethene	127-18-4	1.3
Toluene	108-88-3	0.7
Trichloroethene	79-01-6	0.47
1,2,4-Trimethylbenzene [f]	95-63-6	3.6
1,3,5-Trimethylbenzene[f]	108-67-8	8.4
Vinyl chloride[f]	75-01-4	0.02
Xylene (mixed)	1330-20-7	0.26

All soil cleanup objectives (SCOs) are in parts per million (ppm).

Footnotes

[a] The SCOs for unrestricted use were capped at a maximum value of 100 ppm. See Technical Support Document (TSD), section 9.3.

[b] For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the Track 1 SCO value.

[c] For constituents where the calculated SCO was lower than the rural soil background concentration, as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 1 SCO value for this use of the site.

[d] SCO is the sum of endosulfan I, endosulfan II and endosulfan sulfate.

[e] The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.

[f] Protection of ecological resources SCOs were not developed for contaminants identified in Table 375-6.8(b) with “NS”. Where such contaminants appear in Table 375-6.8(a), the applicant may be required by the Department to calculate a protection of ecological resources SCO according to the TSD.

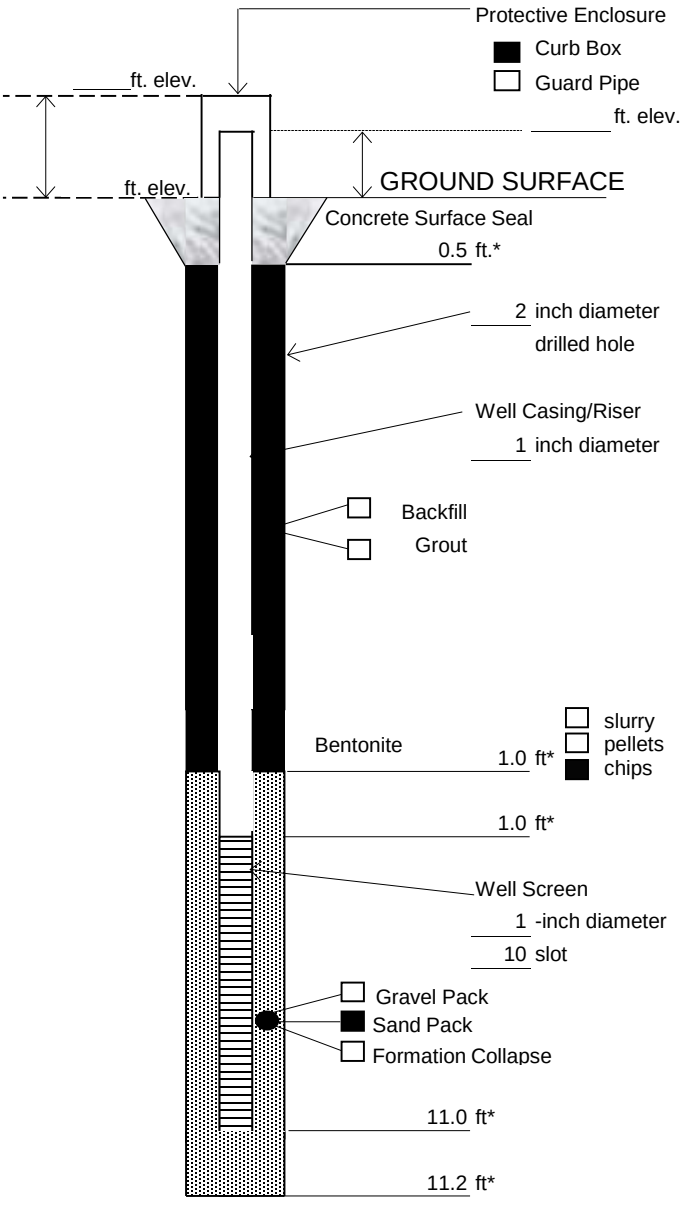
APPENDIX C

MONITORING WELL CONSTRUCTION LOGS

Well No. 178MW01

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES



* Depth below ground surface.

Project Name: Cottage Place Gardens
Phase 5 Parcel

Project Number: 16.6669

Well No.: 178MW01 Boring No.: 178GP01

Town/City: Yonkers

County: Westchester State: NY

Installation Date(s): 3/7/2017

Drilling Contractor: Aquifer Drilling & Testing, Inc.

Drilling Method: Geoprobe

Water Depth From Top of Riser: 0.3 ft 3/8/17 (Date)

C.T. Male Observer: Dan Achtyl

Materials Used:

1/2	Bags of Sand	(50	lb. bags)
	Sand Size: #0	Brand:	Filpro
1/10	Bags of Bentonite	(50	lb. bags)
	Brand:	Cetco Granular	
10	ft. of	PVC	well screen
1	ft. of	PVC	well riser
1/8	Bags of Cement/Concrete	(55	lb. bags)
	Brand:	Rapid Set	

Grout Mixture:

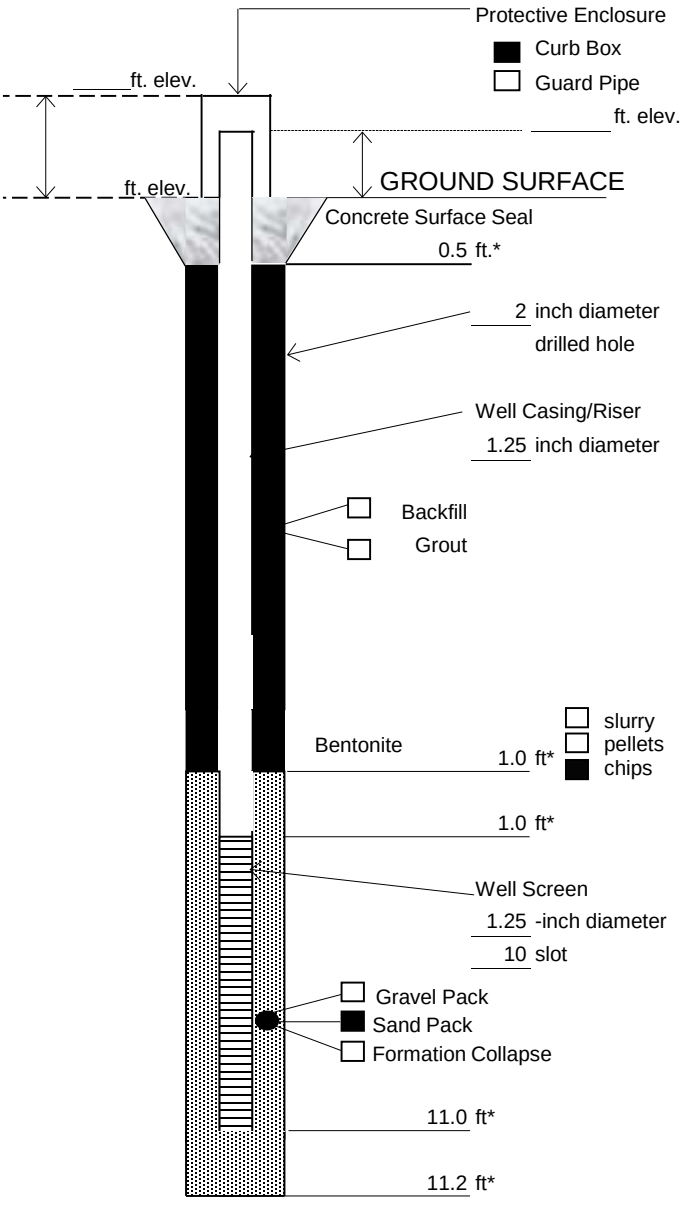
	Bags of Cement	(	lb. bags)
	Lbs. of Bentonite		
	Gallons of Water		
	Grout Batches		

Notes:

Well No. **178MW02**

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES



* Depth below ground surface.

Project Name: Cottage Place Gardens
Phase 5 Parcel

Project Number: 16.6669

Well No.: 178MW02 Boring No.: 178GP02

Town/City: Yonkers

County: Westchester State: NY

Installation Date(s): 3/7/2017

Drilling Contractor: Aquifer Drilling & Testing, Inc.

Drilling Method: Geoprobe

Water Depth From Top of Riser: 1.92 ft 3/8/17 (Date)

C.T. Male Observer: Dan Achtyl

Materials Used:

- 1/2 Bags of Sand (50 lb. bags)
  Sand Size: #0 Brand: Filpro
- 1/10 Bags of Bentonite (50 lb. bags)
  Brand: Cetco Granular
- 10 ft. of PVC well screen
- 1 ft. of PVC well riser
- 1/8 Bags of Cement/Concrete (55 lb. bags)
  Brand: Rapid Set

Grout Mixture:

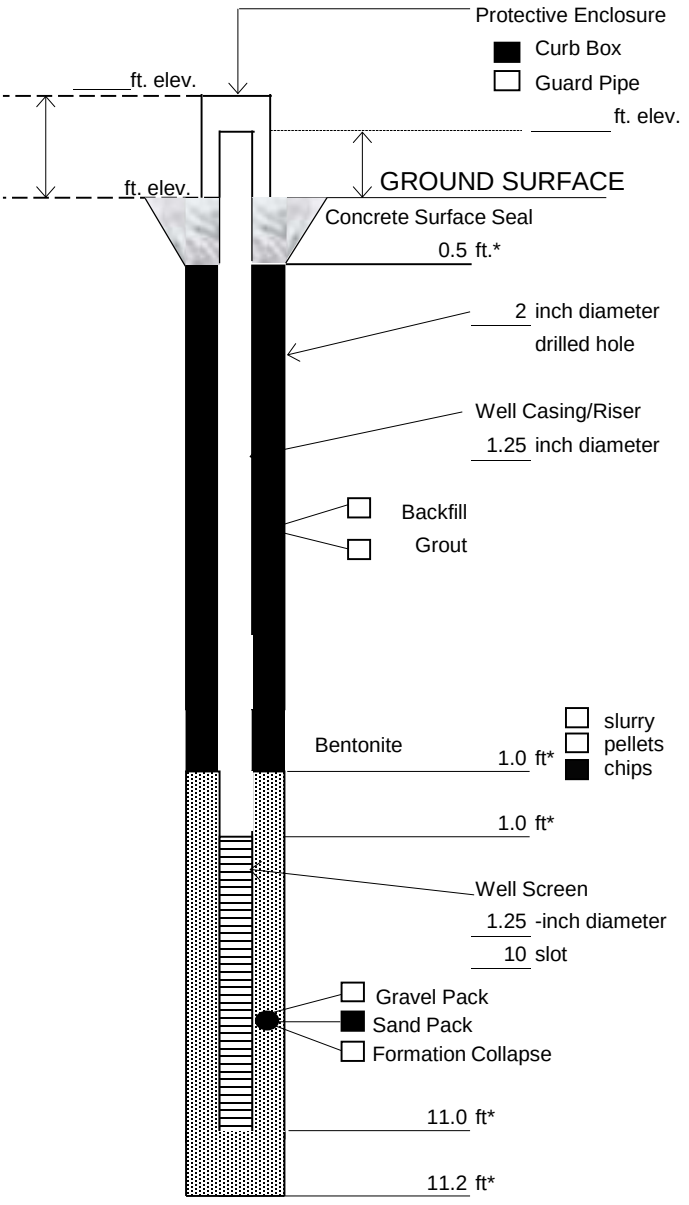
- _____ Bags of Cement (_____ lb. bags)
- _____ Lbs. of Bentonite
- _____ Gallons of Water
- _____ Grout Batches

Notes:

Well No. 178MW03

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES



* Depth below ground surface.

Project Name: Cottage Place Gardens
Phase 5 Parcel

Project Number: 16.6669

Well No.: 178MW03 Boring No.: 178GP03

Town/City: Yonkers

County: Westchester State: NY

Installation Date(s): 3/7/2017

Drilling Contractor: Aquifer Drilling & Testing, Inc.

Drilling Method: Geoprobe

Water Depth From Top of Riser: 3.37 ft 3/8/17 (Date)

C.T. Male Observer: Dan Achtyl

Materials Used:

1/2	Bags of Sand	(50	lb. bags)
	Sand Size: #0	Brand:	Filpro
1/10	Bags of Bentonite	(50	lb. bags)
	Brand:	Cetco Granular	
10	ft. of	PVC	well screen
1	ft. of	PVC	well riser
1/8	Bags of Cement/Concrete	(55	lb. bags)
	Brand:	Rapid Set	

Grout Mixture:

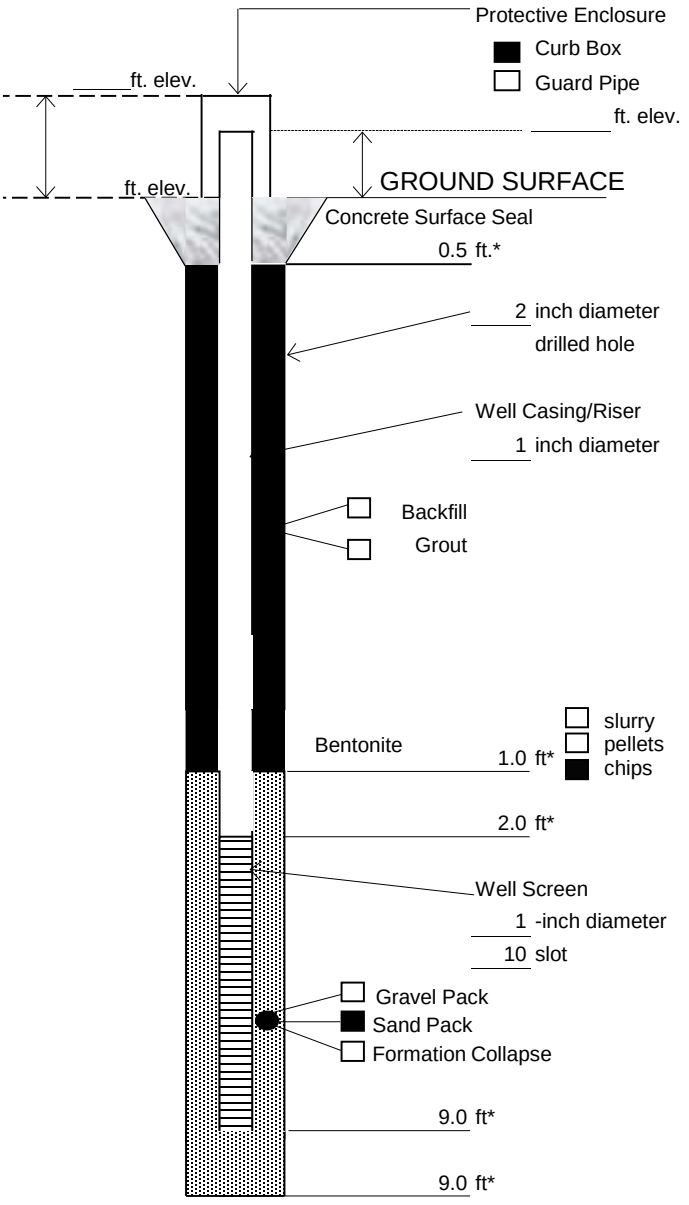
	Bags of Cement	(	lb. bags)
	Lbs. of Bentonite		
	Gallons of Water		
	Grout Batches		

Notes:

Well No. 178MW04

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES



* Depth below ground surface.

Project Name: Cottage Place Gardens
Phase 5 Parcel

Project Number: 16.6669

Well No.: 178MW04 Boring No.: 178GP04

Town/City: Yonkers

County: Westchester State: NY

Installation Date(s): 3/7/2017

Drilling Contractor: Aquifer Drilling & Testing, Inc.

Drilling Method: Geoprobe

Water Depth From Top of Riser: 1.22 ft 3/8/17 (Date)

C.T. Male Observer: Dan Achtyl

Materials Used:

1/2	Bags of Sand	(50	lb. bags)
	Sand Size: #0	Brand:	Filpro
1/10	Bags of Bentonite	(50	lb. bags)
	Brand:	Cetco Granular	
7	ft. of	PVC	well screen
2	ft. of	PVC	well riser
1/8	Bags of Cement/Concrete	(55	lb. bags)
	Brand:	Rapid Set	

Grout Mixture:

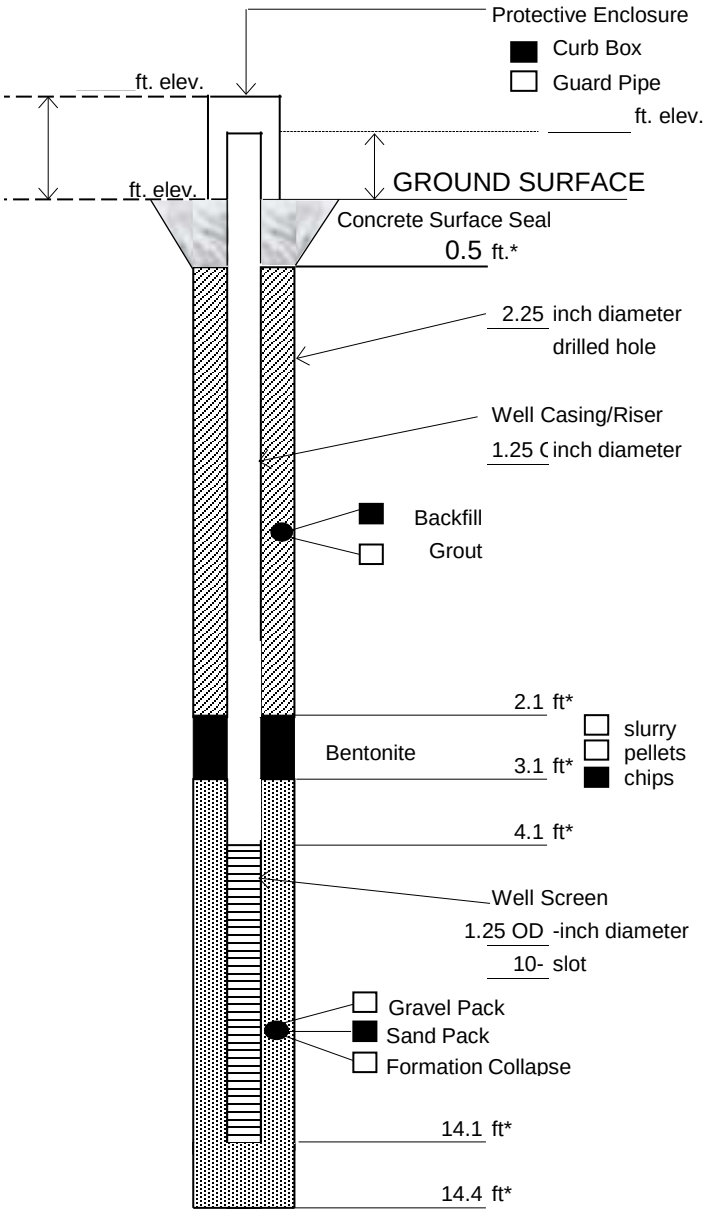
	Bags of Cement	(	lb. bags)
	Lbs. of Bentonite		
	Gallons of Water		
	Grout Batches		

Notes:

Well No. MW-B

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES



* Depth below ground surface.

Project Name: Cottage Place Gardens

Project Number: 14.4452

Well No.: MW-B Boring No.: B-B

Town/City: Yonkers

County: Westchester State: NY

Installation Date(s): 12/3/2014

Drilling Contractor: ADT, Inc.

Drilling Method: Direct Push with Track Mtd Geoprobe

Water Depth From Top of Riser: ____ ft ____ Date

C.T. Male Observer: S. Bieber

Materials Used:

1/3 Bags of Sand (50 lb. bags)
Sand Size: #1 Brand: FilPro
1/16 Bags of Bentonite (50 lb. bags)
Brand: HolePlug
10 ft. of 0.010 slot well screen
4.1 ft. of solid PVC well riser
NA Bags of Cement/Concrete (____ lb. bags)
Brand: ____

Grout Mixture:

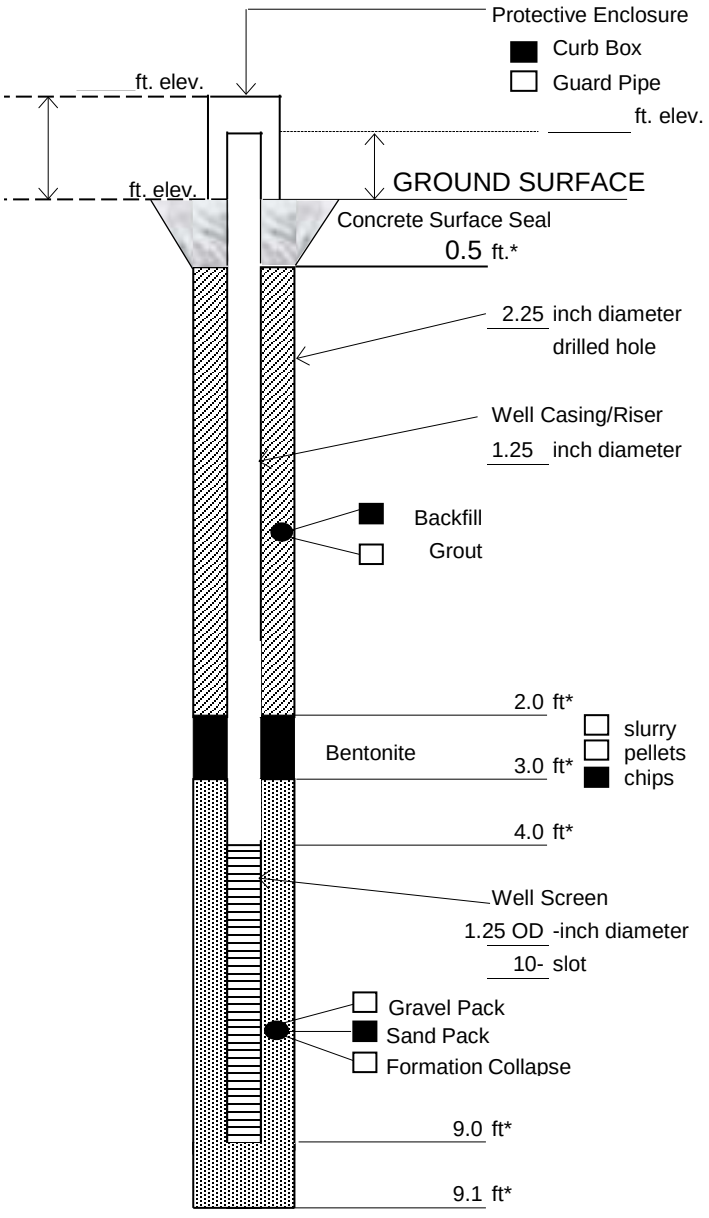
____ Bags of Cement (____ lb. bags)
____ Lbs. of Bentonite
____ Gallons of Water
____ Grout Batches

Notes:

Well No. MW-E

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES



* Depth below ground surface.

Project Name: Cottage Place Gardens

Project Number: 14.4452

Well No.: MW-E Boring No.: B-E

Town/City: Yonkers

County: Westchester State: NY

Installation Date(s): 12/3/2014

Drilling Contractor: ADT, Inc.

Drilling Method: Direct Push with Track Mtd Geoprobe

Water Depth From Top of Riser: ____ ft ____ Date

C.T. Male Observer: S. Bieber

Materials Used:

1/4 Bags of Sand (50 lb. bags)
Sand Size: #1 Brand: FilPro
1/16 Bags of Bentonite (50 lb. bags)
Brand: HolePlug
5 ft. of 0.010 slot well screen
4 ft. of PVC riser well riser
NA Bags of Cement/Concrete (____ lb. bags)
Brand: ____

Grout Mixture:

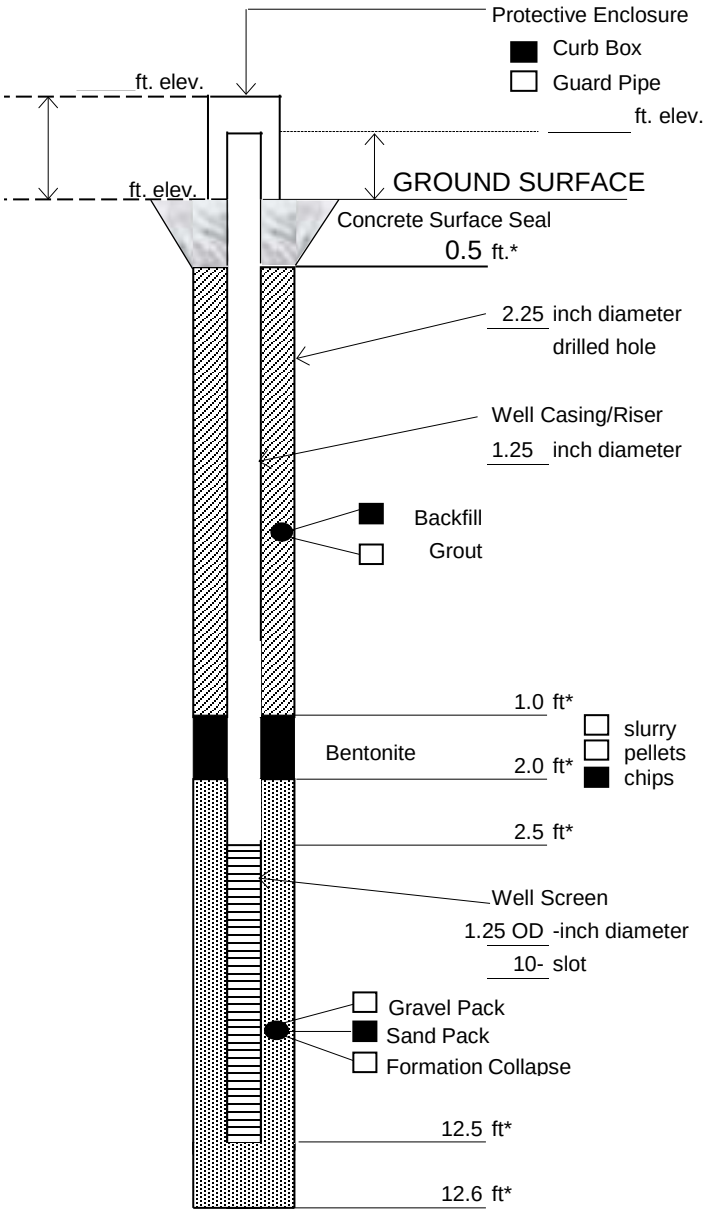
____ Bags of Cement (____ lb. bags)
____ Lbs. of Bentonite
____ Gallons of Water
____ Grout Batches

Notes:

Well No. MW-K

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES



* Depth below ground surface.

Project Name: Cottage Place Gardens

Project Number: 14.4452

Well No.: MW-K Boring No.: B-K

Town/City: Yonkers

County: Westchester State: NY

Installation Date(s): 12/4/2014

Drilling Contractor: ADT, Inc.

Drilling Method: Direct Push with Track Mtd Geoprobe

Water Depth From Top of Riser: ____ ft ____ Date

C.T. Male Observer: S. Bieber

Materials Used:

1/3	Bags of Sand	(50	lb. bags)
	Sand Size: #1	Brand:	FilPro
1/16	Bags of Bentonite	(50	lb. bags)
	Brand:	HolePlug	
10	ft. of	0.010 slot	well screen
2.5	ft. of	PVC riser	well riser
NA	Bags of Cement/Concrete	(____	lb. bags)
	Brand:		

Grout Mixture:

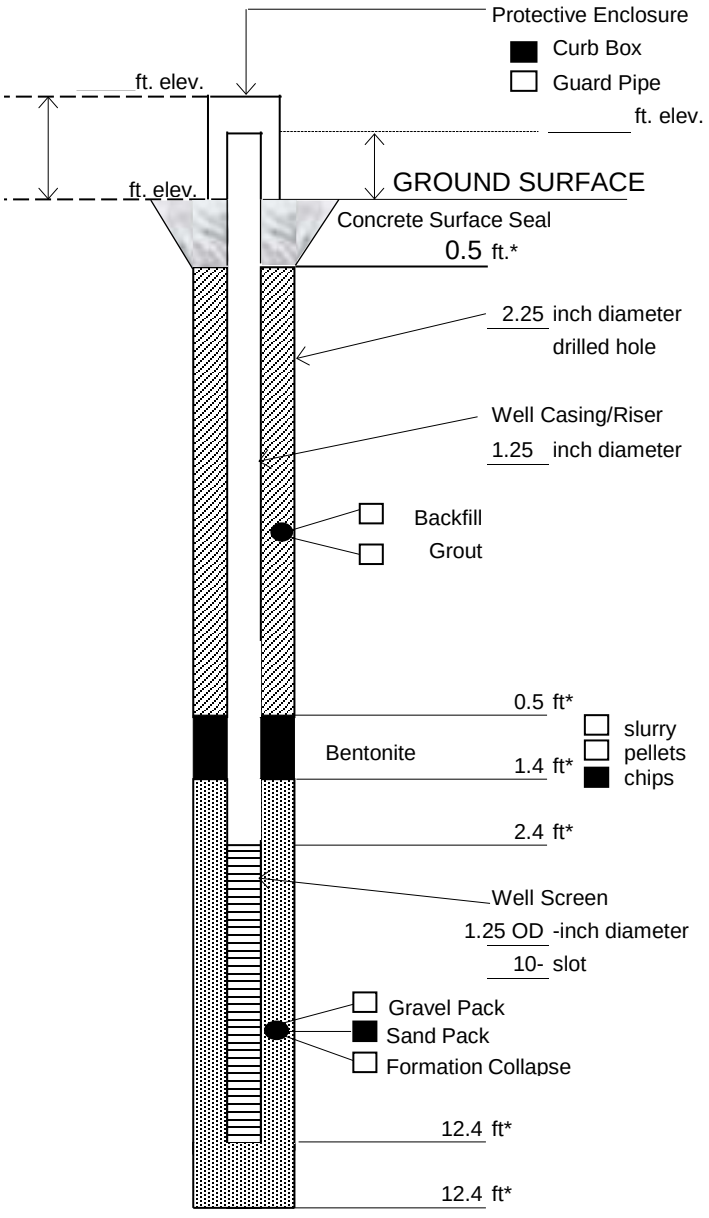
____	Bags of Cement	(____ lb. bags)
____	Lbs. of Bentonite	
____	Gallons of Water	
____	Grout Batches	

Notes:

Well No. MW-P

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES



* Depth below ground surface.

Project Name: Cottage Place Gardens

Project Number: 14.4452

Well No.: MW-P Boring No.: B-P

Town/City: Yonkers

County: Westchester State: NY

Installation Date(s): 12/5/2014

Drilling Contractor: ADT, Inc.

Drilling Method: Direct Push with Track Mtd Geoprobe

Water Depth From Top of Riser: ____ ft ____ Date

C.T. Male Observer: S. Bieber

Materials Used:

1/3 Bags of Sand (50 lb. bags)
Sand Size: #1 Brand: FilPro
1/16 Bags of Bentonite (50 lb. bags)
Brand: HolePlug
10 ft. of 0.010 slot well screen
2.4 ft. of PVC riser well riser
NA Bags of Cement/Concrete (____ lb. bags)
Brand: ____

Grout Mixture:

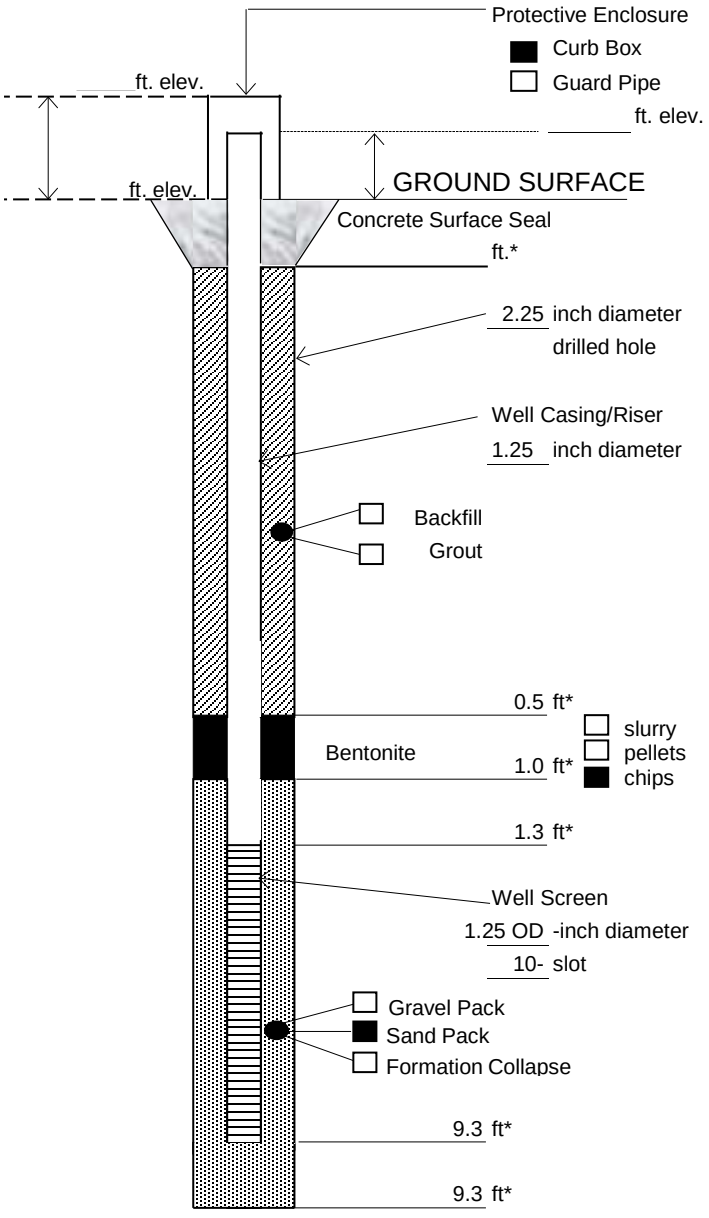
____ Bags of Cement (____ lb. bags)
____ Lbs. of Bentonite
____ Gallons of Water
____ Grout Batches

Notes:

Well No. MW-Q

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES



* Depth below ground surface.

Project Name: Cottage Place Gardens

Project Number: 14.4452

Well No.: MW-Q Boring No.: B-Q

Town/City: Yonkers

County: Westchester State: NY

Installation Date(s): 12/5/2014

Drilling Contractor: ADT, Inc.

Drilling Method: Direct Push with Track Mtd Geoprobe

Water Depth From Top of Riser: ____ ft ____ Date

C.T. Male Observer: S. Bieber

Materials Used:

1/4	Bags of Sand	(50	lb. bags)
	Sand Size: #1	Brand:	FilPro
1/16	Bags of Bentonite	(50	lb. bags)
	Brand:	HolePlug	
8	ft. of	0.010 slot	well screen
1.3	ft. of	solid PVC	well riser
NA	Bags of Cement/Concrete	(	lb. bags)
	Brand:		

Grout Mixture:

	Bags of Cement	(	lb. bags)
	Lbs. of Bentonite		
	Gallons of Water		
	Grout Batches		

Notes:

APPENDIX D

GENERIC AND SPECIAL REQUIREMENTS CAMP

Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. APeriodic@ monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

SPECIAL REQUIREMENTS COMMUNITY AIR MONITORING PROGRAM

Special Requirements for Work within 20 feet of Potentially Exposed Individuals or Structures

When work areas are within 20 feet of potentially exposed populations or occupied structures, the continuous monitoring locations for VOCs and particulates must reflect the nearest potentially exposed individuals and the location of ventilation system intakes for nearby structures. The use of engineering controls such as vapor/dust barriers, temporary negative-pressure enclosures, or special ventilation devices should be considered to prevent exposures related to the work activities and to control dust and odors. Consideration should be given to implementing the planned activities when potentially exposed populations are likely to be lower, such as during weekends or evening hours in non-residential settings.

- If total VOC concentrations opposite the walls of occupied structures or next to intake vents exceed 1 ppm, monitoring should occur within the occupied structure(s). Background readings in the occupied spaces must be taken prior to commencement of the planned work. Any unusual background readings should be discussed with NYSDOH prior to commencement of the work.

- If total particulate concentrations opposite the walls of occupied structures or next to intake vents exceed 150 mcg/m3, work activities should be suspended until controls are implemented and are successful in reducing the total particulate concentration to 150 mcg/m3 or less at the monitoring point.

- Depending upon the nature of contamination and remedial activities, other parameters (e.g., explosivity, oxygen, hydrogen sulfide, carbon monoxide) may also need to be monitored. Response levels and actions should be pre-determined, as necessary for each site.

Special Requirements for Indoor Work with Co-Located Residences or Facilities

Unless a self-contained, negative-pressure enclosure with proper emission controls will encompass the work area, all individuals not directly involved with the planned work must be absent from the room in which the work will occur. Monitoring requirements shall be as stated above under "Special Requirements for Work within 20 Feet of Potentially Exposed Individuals or Structures" except that in this instance "nearby/occupied structures" would be adjacent occupied rooms. Additionally, the location of all exhaust vents in the room and their discharge points, as well as potential

vapor pathways (openings, conduits, etc.) relative to adjoining rooms, should be understood and the monitoring locations established accordingly. In these situations, it is strongly recommended that exhaust fans or other engineering controls be used to create negative air pressure within the work area during remedial activities. Additionally, it is strongly recommended that the planned work be implemented during hours (e.g. weekends or evening) when building occupancy is at a minimum.

APPENDIX E

HEALTH AND SAFETY PLAN

March 2020

NYS Brownfield Cleanup Program

Health & Safety Plan
Pre-Design Investigation &
Remedial Action

Cottage Place Gardens Phase 5 Site
8 Cottage Place &
178 Warburton Avenue
City of Yonkers
Westchester County, New York
BCP Site No. C360161

Prepared by:

C.T. MALE ASSOCIATES
ENGINEERING, SURVEYING, ARCHITECTURE.
LANDSCAPE ARCHITECTURE & GEOLOGY, D.P.C.
50 Century Hill Drive
Latham, New York 12110
(518) 786-7400
FAX (518) 786-7299

C.T. Male Associates Project No: 16.6669

HEALTH AND SAFETY PLAN
COTTAGE PLACE GARDENS PHASE 5 SITE
8 COTTAGE PLACE & 178 WARBURTON AVENUE
CITY OF YONKERS, WESTCHESTER COUNTY

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COTTAGE PLACE GARDENS PHASE 5 SITE
8 COTTAGE PLACE & 178 WARBURTON AVENUE
CITY OF YONKERS, WESTCHESTER COUNTY

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1.0 GENERAL

1.1 Overview

This Health and Safety Plan (HASP) has been prepared for use by employees of C.T. Male Associates Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C. (C.T. Male) during implementation of the Pre-Design Investigation and the Remedial Action at the Cottage Place Gardens Phase 5 Site ("the Site") located at 8 Cottage Place and 178 Warburton Avenue in the City of Yonkers, Westchester County, New York. The project is being performed as part of the NYS Department of Environmental Conservation (DEC) Brownfield Cleanup Program (BCP Site No. C360161).

A designated Health and Safety Officer (HSO) will be responsible for implementing this HASP during the completion of the field work. All C.T. Male employees who enter the work area (support, decontamination, exclusion zone) must review, sign and comply with this HASP. A list of individuals authorized to enter the Site is presented in Section 13.0 of this HASP. Subcontractors retained by either C.T. Male or 178 Warburton Limited Partnership (Volunteer in the BCP) will be required to prepare their own HASP for implementation by their employees, personnel and subcontractors. A copy of this HASP will be maintained at the work area throughout the duration of the project.

A brief description of the proposed scope of work is outlined below.

<u>Pre-Design Investigation Sampling:</u>

- Advancement of test pits and/or test borings within the confines of the Site to aid in the collection of fill/soil samples for laboratory analysis for waste characterization purposes.

<u>Remedial Action</u>

- Decommissioning of monitoring wells.
- Closure by removal of bulk storage tanks.
- Closure by removal of underground hydraulic lifts and drainage structures.
- Excavation of fill/soil for transport to a permitted disposal facility.
- Excavation groundwater dewatering, treatment and off-Site disposal.

- Collection of confirmatory post-excavation soil samples for laboratory analysis.
- Importation of fill material onto the Site to backfill excavations and for Site grading.
- Characterization and off-site disposal of investigation, waste characterization and remedial action derived wastes.

1.2 Contact Names & Numbers

For this project, the following regulatory agencies, Site owner and Site owner consultant names, addresses and telephone numbers are presented below as Site contacts.

DEC CONTACT:

PROJECT MANAGER: Scott Deyette (Project Manager)
NYSDEC Central Office
Remedial Bureau C
Division of Environmental Remediation
625 Broadway, 11th Floor
Albany, NY 12233-0714
Tel: 518.402.9794
Email: scott.deyette@dec.ny.gov

SITE OWNER CONTACT:

AUTHORIZED REPRESENTATIVE: Lauren Hauck
178 Warburton Limited Partnership
8 W 38th Street, Suite 1102
New York, NY 10018
Tel: 646.374.4755
Email: lauren.hauck@tcbinc.org

PROJECT CONSULTANT CONTACTS:

CONSULTING ENGINEER: C.T. Male Associates
50 Century Hill Drive
Latham, NY 12110
Tel: 518.786.7400

Kirk Moline, Project Manager
Office Phone: 518.786.7502
Cell Phone: 518.265.1708
Email: k.moline@ctmale.com

Rosaura Andújar-McNeil, P.E.
Project Engineer and Health & Safety Officer
Office Phone: 845.691.7234
Cell Phone: 347.232.1919
Email: r.andujar-mcneil@ctmale.com

Stephen Bieber, CHMM
Project Scientist
Cell Phone: 518-860-9737
Email: s.bieber@ctmale.com

EMERGENCY PHONE NUMBERS:

PERSONAL INJURY OR EMERGENCY:	Saint Joseph's Medical Center 127 S Broadway Yonkers, NY 10701	(914) 378-7000
FIRE DEPARTMENT:	Emergency City of Yonkers Fire Department 5-7 New School Street Yonkers, NY 10701	911 (914) 377-7500
CITY POLICE:	Emergency City of Yonkers Police 104 South Broadway Yonkers, NY 10701	911 (914) 377-7900
STATE POLICE:	Emergency NYS Troop K Headquarters 2541 Route 44 Salt Point, NY 12578	911 (845) 677-7300
NEW YORK CITY REGIONAL POISON CONTROL CENTER:	New York City Department of Health & Mental Hygiene 455 First Street, Room 123 New York, NY 10016	(800) 222-1222

NATIONAL RESPONSE CENTER:	c/o United States Coast Guard (G-OPF) 2100 2nd Street, Southwest - Room 2611 Washington, DC 20593-0001	(800) 424-8802
NYSDEC SPILL HOTLINE:		(800) 457-7362
UTILITY LOCATOR	Dig Safely New York	811

2.0 HEATLH AND SAFETY PERSONNEL

The Health and Safety Officer (HSO) will be responsible for implementation of the HASP and the delegation of health and safety duties. The HSO will coordinate the resolution of safety issues that arise during Site work. When field operations require Level D protection, it will not be necessary for the HSO to be present on-Site at all times. When the HSO is not present on-Site, a designee will be authorized to perform the duties of the HSO. The designee will be responsible for implementation of the HASP in the absence of the HSO.

The HSO or designee has stop work authorization which the HSO or designee will execute upon the HSO or designee's determination of an eminent safety hazard, emergency situation or other potentially dangerous situations (e.g. weather conditions), when this action is deemed appropriate. Authorization to resume work will be issued by the HSO.

3.0 SITE LOCATION AND DESCRIPTION

The Site is approximately 1.47 acres in size and is comprised of the west-central portion of the overall Cottage Place Gardens (CPG) complex (Tax Map #2.-2094-1) addressed as 8 Cottage Place and a contiguous parcel along the eastern side of Warburton Avenue identified as 178 Warburton Avenue (Tax Map #2.-2095-33).

The site is currently improved with three (3) multi-story brick apartment buildings within the CPG complex. The one (1) single-story concrete block structure located at 178 Warburton Avenue has been demolished; all that remains of this building is its concrete pad. The three (3) brick apartment buildings are identified as Buildings 4, 8 and 12 within the CPG complex and were constructed in the 1940's during development of the CPG complex. The former structure at 178 Warburton Avenue has historically been utilized as a gasoline station and vehicle repair facility. The remainder of the Site consists of landscaped areas, and concrete and asphalt walkways and access-ways.

Two (2) underground tanks are currently located beneath the Site. The tanks are no longer in use, but historically contained fuel oil for boilers located in Building 12. The tanks are located beneath asphalt pavement to the east of Building 12. Former hydraulic lifts and drainage structures are believed to be affiliated with past automotive repair operations within the western portion of the Site at 178 Warburton Avenue.

There is no water body located on the Site or on immediately adjacent properties. Land usage surrounding the Site consists of residential and multi-family dwellings, and mixed commercial development.

The Site is serviced with electricity and natural gas from Con Edison. Public water and sewer are provided by the City of Yonkers and Westchester County, respectively.

4.0 POTENTIAL SITE CONTAMINANTS

Based on analytical results from previous Phase II Environmental Site Assessments (ESAs) and the BCP Remedial Investigation, known and suspected contaminants in the Site's media are identified below. Contaminants of concern (COCs) in fill/soil have exceeded Soil Cleanup Objectives (SCOs) for Unrestricted Use Sites promulgated at 6 NYCRR Part 375. COCs in groundwater have exceeded NYS regulatory groundwater standards and guidance values.

The specific COC analytes in fill material mantling the Site include the VOCs benzene, ethylbenzene, toluene and xylenes; the SVOCs 3-methylphenol/4-methylphenol, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene and indeno(1,2,3-cd)pyrene, phenol; the pesticides 4,4-DDD, 4,4-DDE and 4,4-DDT; and the metals cadmium, chromium, copper, lead, mercury and zinc.

The specific COC analytes in groundwater include the VOCs acetone, benzene, ethylbenzene, isopropylbenzene, MtBE, toluene and xylenes; the SVOCs benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene, naphthalene and phenol; and the metals barium, chromium, copper, iron, lead, manganese, mercury, nickel and sodium.

5.0 HAZARD ASSESSMENT

5.1 General

The hazard assessment, use of specific protective equipment, and monitoring associated with each field work task of the Pre-Design Investigation and Remedial Action to be conducted at the Site are presented in following subsections.

For this project, C.T. Male and 178 Warburton Limited Partnership will be contracting/subcontracting portions of the Pre-Design Investigation and Remedial Action activities. Each contractor/subcontractor will be responsible for developing and implementing a health and safety plan for their activities, for protection of their employees and subcontractors and use of personal protective equipment. The contractor/subcontractor will also be responsible for developing and following their own Respiratory Protection Program, as applicable.

5.2 Subsurface Work

Subsurface work will include the advancement of test pits and/or test borings to aid in the collection of fill/soil samples for disposal facility waste characterization; the decommissioning of monitoring wells; the excavation and temporary staging and/or direct load-out of fill/soil for off-site disposal; the closure by removal of underground tanks, hydraulic lifts and drainage structures; and excavation groundwater dewatering, treatment and disposal.

The potential hazards to personnel during this work are dermal contact and a low potential for vapor and dust inhalation of potential Site contaminants. Level D protection should be sufficient to protect against dermal contact during advancement of test pits and test borings; decommissioning of monitoring wells; soil excavation and/or handling of the subsurface fill/soils, and excavation dewatering. If organic vapors are present at the action levels described in Section 5.3, on the basis of organic vapor monitoring of the area during the work, it may be necessary to upgrade to Level C respiratory protection.

5.3 Air Monitoring

During the completion of the Pre-Design Investigation and Remedial Action, the ambient air in the work area will be monitored for organic vapors employing a photoionization detection (PID) meter (MiniRAE 3000) prior to the start of work and periodically as conditions warrant. If a concentration of 10 parts per million (ppm, sustained for 5 minutes) of total volatile compounds is detected within the work area on the instrument, relative to an isobutylene standard (used to calibrate the instrument), work will cease immediately and the workers shall leave the work area immediately. The level of personal protective equipment (PPE) protection will be evaluated prior to continuing work. If a PPE upgrade to Level C is required, it will include: a half face air purifying respirator equipped with combination organic vapor and particulate cartridges for 10-15 ppm exposure levels; and a full-face air purifying respirator for greater than 15 ppm to less than 50 ppm exposure levels, prior to continuing work. If a concentration greater than 50 ppm is encountered, work will cease immediately and the situation will be evaluated prior to continuation of work. Table 1 summarizes the action levels relative to the required respiratory protection.

Table 1
C.T. Male Action Levels & Required Respiratory Protection

Action Level	Level of PPE	Type of Respiratory Protection
0-10 parts per million	Level D	No respiratory protection
10-15 parts per million	Level C	Half-face air purifying respirator
15-50 parts per million	Level C	Full-face air purifying respirator
Greater than 50	Cease Work	Evaluate work procedures

-Facial hair is not permitted while wearing most respirators.

-Workers required to wear a respirator must have a minimum of OSHA 40 Hour training with current medical monitoring and fit test documentation.

5.4 Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) will be followed if ground intrusive activities having the ability to disturb the Site's fill/soil are conducted during the Pre-Design Investigation and Remedial Action. These include the advancement of test pits and test borings and impacted fill/soil excavation/handling.

The intent of the CAMP is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of remedial work activities. The CAMP is not intended for use in establishing action levels for worker respiratory protection. The CAMP will monitor the air for dust (particulate air monitoring, see Section 5.4.1) and volatile organic compound vapors (VOC air monitoring, see Section 5.4.2) at the downwind perimeter of the work area and/or at occupied buildings within 20 feet of the work area. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown.

Remedial actions will not take place within occupied Site buildings. In areas where remedial actions will take place within 20 feet of occupied buildings, VOC and particulate monitoring will be conducted in accordance with the Special Requirements CAMP. The CAMP and Special Requirements CAMP are included in Appendix B.

5.4.1 Particulate Air Monitoring

Three (3) real-time particulate monitors capable of continuously measuring concentrations of particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) will be utilized. The instruments will be placed inside environmental enclosures at temporary monitoring stations based on the prevailing wind direction each work day, one (1) upwind and two (2) downwind of the designated work areas. If the remedial action is taking place within 20 feet of occupied structures, monitoring will be conducted opposite the walls of the occupied structures or next to the structures' air intake vents.

Each particulate monitor will be equipped with a telemetry unit capable of transmitting real-time particulate data to the Remediation Engineer and/or the Remediation Engineer's field representative. The particulate monitoring instruments will be capable of displaying and transmitting the short term exposure limit (STEL) or 15 minute averaging period, which will be compared to the NYSDOH Generic and Special Requirements Community Air Monitoring Plan action levels for particulates, as listed below. Instrument alarms will be transmitted

in real time to the Remediation Engineer and/or the Remediation Engineer's field representative via email and/or text message. The dust monitoring data for the remedial action will be stored in the Environet database and will be periodically downloaded and stored in C.T. Male's electronic project directory.

- If the downwind and/or occupied structures PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that the downwind and/or occupied structures PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, the downwind and/or occupied structures PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped, and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind and/or occupied structures PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

In the event of poor weather such as heavy rain, particulate monitoring will not be performed for protection of instrumentation. These weather conditions would limit the effectiveness of the sensitive monitoring equipment and likely suppress particulate generation. Work activities will be halted if fugitive dust migration is visually observed for a sustained period of time during poor weather conditions.

5.4.2 Volatile Organic Compound Air Monitoring

C.T. Male will continuously monitor for VOCs at the downwind perimeter of the immediate work areas and/or occupied structures with a MiniRAE 3000 VOC monitor or equal. The VOC monitors will be placed in the downwind and occupied structures environmental enclosures containing a particulate monitor. The downwind VOC monitors will be equipped with telemetry units capable of transmitting real-time VOC data to the Remediation Engineer and/or the Remediation Engineer's field representative. The VOC monitoring instruments will

be capable of displaying and transmitting the short term exposure limit (STEL) or 15 minute averaging period, which will be compared to the NYSDOH Generic and Special Requirements Community Air Monitoring Plan action levels for VOCs, as listed below. Instrument alarms will be transmitted in real time to the Remediation Engineer and/or the Remediation Engineer's field representative via email and/or text message. The VOC monitoring data for the remedial action will be stored in the Environet database and will be periodically downloaded and stored in C.T. Male's electronic project directory.

Upwind VOC STEL concentrations will be measured at the start of the work day and periodically thereafter employing a handheld MiniRae 3000 VOC monitor to evaluate the Site's background conditions. The upwind VOC STEL readings will be manually recorded for future reference and reporting.

- If the ambient air concentration of total organic vapors opposite the walls of occupied structures exceeds 1 ppm above background for the 15-minute average, work activities will be temporarily halted, and monitoring will be conducted within the occupied structure.
- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone (not including the occupied structures) exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.
- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone (not including the occupied structures) persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shutdown. Work activities will then be evaluated to determine the source of the organic vapors and the engineering controls required to reduce/eliminate the organic vapors.

5.5 Hazard Identification and Control

The following table presents generalized hazards potentially involved with the tasks to be completed on this project and identifies general procedures to follow to prevent or reduce accident, injury or illness. Any worker on-Site who identifies a potential hazard must report the condition to the HSO or designee, and initiate control of the hazardous condition.

Table 2
Potential Hazards and Control

Potential Hazard	Control
Vehicular Traffic	1. Wear safety vest when vehicular hazards exist. 2. Use cones, flags, barricades, and caution tape to define work area. 3. Use vehicle to block work area. 4. Contact police for high traffic situations, or work in roadway.
Excavations	1. Do not stand near the edge of an excavation, no matter how deep or shallow the excavation. Maintain a distance of at least five (5) feet away from the excavation edge. 2. Do not enter any excavations, no matter how deep or shallow the excavation. 3. Always remain in the view of the excavator operator. Do not stand behind the excavator.
Slip, Trip, and Fall Protection	1. Assess work area to determine if there is a potential for falling, slipping or tripping. 2. Make sure work area is neat and tools are staged in one general area. 3. Review work area for equipment usage and staging. 4. Wear steel-toe boots with adequate tread and always watch where the individual is walking. Carry flashlight when walking in poorly lighted areas. 5. Assess work area for wet conditions due to dewatering or activities related to wet soil and groundwater.

Table 2 Potential Hazards and Control	
Potential Hazard	**Control**
Inclement Weather	1. Stop outdoor work during electrical storms, high winds and other extreme weather conditions such as extreme heat or cold temperatures. 2. Take cover indoors or in vehicle. 3. Listen to local forecasts for warnings about specific weather hazards such as tornadoes, hurricanes, blizzard conditions and flash floods.
Utility Lines Contact	1. Contact Dig Safely New York (DSNY) to have utility lines marked prior to any underground excavation, trenching or drilling. DSNY must be contacted at least 72 hours prior to work. 2. Contract with private utility locating company to clear proposed test pit, test boring and excavation locations. 3. Refer to site drawings for utility locations. 4. Manually dig 3 to 5 feet below grade and 5 feet on each side of utility marked to avoid damaging utility lines. 5. Ensure site workers are aware of what utilities are present and the hazards associated with that utility (e.g. electrical, gas).
Noise	1. Wear hearing protection when equipment such as a drill rig, excavator, jackhammer, or other heavy equipment is operating on-site. 2. Wear hearing protection whenever you need to raise your voice above normal conversational speech due to a loud noise source. This much noise indicates the need for protection. 3. Hearing protection is required when measured sound exceeds 85 decibels (dB) where employees stand or conduct work.
Electrical Shock	1. Maintain appropriate distance between heavy equipment and overhead utilities; 20 foot minimum clearance from power lines; and 10 foot minimum clearance from shielded power lines. 2. Be aware of any transformers, generators or other power sources on site. 3. Contact local underground utility locating service prior to penetrating the ground surface.
Physical Injury	1. Wear hard hats and safety glasses at all times when on-site. 2. Maintain visual contact with equipment operators and wear orange reflective safety vest when heavy equipment is operating on-site.

Table 2 Potential Hazards and Control	
Potential Hazard	**Control**
	3. Avoid loose clothing when working around rotary equipment. 4. Keep hands and feet away from drilling augers and excavation equipment tracks/tires. 5. Test emergency shut-off switches on drill rigs, excavation equipment, and other site equipment before use onsite.
Back Injury	1. Use a mechanical lifting device or a lifting aid where appropriate. 2. Make sure the path of travel is free of obstructions. 3. Bend at the knees and use leg muscles when lifting. 4. Use the buddy system when lifting heavy or awkward objects. 5. Do not twist or jerk your body when lifting.
Heat Stress	1. Increase water intake while working, or if possible, before working if warm conditions are expected. 2. Avoid excessive alcohol intake the night before working in heat stress situations. 3. Increase number of rest breaks as necessary, and rest in a shaded area. 4. Watch for signs and symptoms of fatigue, heat exhaustion and heat stroke. 5. Rest in cool, dry areas. 6. In the event of heat stress or heat stroke, bring the victim to a cool environment and call 911.
Cold Stress	1. Wear cotton, wool or synthetic (polypropylene) undergarments to absorb perspiration from the body. 2. Wear additional layers of light clothing as needed for warmth. The layering effect holds in air, trapping body heat, and some layers could be removed as the temperature rises during the day. 3. Pay close attention to body signals and feelings (hypothermia symptoms), especially to the extremities. Correct any problem indications by breaking from the work activity and moving to a rest area to warm up and add additional clothing. 4. Increase water intake while working.

Table 2 Potential Hazards and Control	
Potential Hazard	**Control**
	5. Avoid excessive alcohol intake the night before working in cold conditions. 6. Increase the number of rest breaks as necessary, and rest in a warm area. 7. In the event of hypothermia and/or frost bite, bring the victim to a warm environment and call 911.
Fire Control	1. Smoke only in designated areas. 2. Keep flammable liquids in closed containers. 3. Isolate flammable and combustible materials from ignition sources. 4. Keep fire extinguisher nearby and use only if deemed safe.
Media Sampling (water, soil, soil vapor, etc.)	1. Wear appropriate PPE to avoid skin, eye contact, inhalation, and ingestion of contaminated media. 2. Stand upwind to minimize possible inhalation exposure, especially when opening monitoring wells or closed containers/vessels, and extracting soil vapor. 3. Conduct air monitoring, whenever necessary to determine level of respiratory protection. 4. If necessary, employ engineering controls (i.e., use of respirator) to assist in controlling chemical vapors. 5. Be aware of site equipment movement and vehicular traffic while conducting sampling activities.
Cleaning Equipment	1. Wear appropriate PPE to avoid skin and eye contact with isopropyl alcohol, alconox, or other cleaning materials. 2. Stand upwind to minimize possible inhalation exposure. 3. Properly dispose of spent chemical cleaning solutions and rinse accordingly.
Poor Structural Building Condition	1. Assess building conditions prior to entering and note where exit points are at all times. 2. Be cautious when walking inside buildings. Always look for holes in the floors, hanging debris, accumulation of materials on floor, holes in roof or ceiling structure which could cause injury. 3. Carry a high power flashlight and use as necessary in low light areas.

Table 2 Potential Hazards and Control	
Potential Hazard	**Control**
	4. If working in buildings, make sure work area is neat and tools are staged in one general area. 5. Wear steel-toe boots with adequate tread. 6. Employ the buddy system so someone knows what part of the building individuals are in. 7. Be aware of Biological hazards such as bird and mice droppings, and animals in the building structure (e.g. bats, rats, mice)
Deer Ticks	1. Wear pants and long sleeve shirts 2. Perform personal body checks for the presence of ticks 3. Notify the Health and Safety Officer immediately if you have been bitten by a tick and contact your physician.
Note: A first aid kit and fire extinguisher will be located in the C.T. Male company vehicle.	

Response actions to personal exposure from on-Site contaminants include skin contact, eye contact, inhalation, ingestion, and puncture or laceration. The recommended response actions are presented in Section 11.2.

6.0 TRAINING

Site specific training of workers and personnel will be conducted and provided by the HSO or designee prior to any on-Site activity. The training will specifically address the activities, procedures, monitoring and equipment for the Site operations. It will include area and facility layout, hazards, emergency services (police, hospital, fire, etc.), and review of this HASP. Questions by workers, field personnel, etc. will be addressed at this time.

Workers and personnel conducting and/or supervising the project must have attended and successfully completed a 40 Hour Health and Safety Training Course for Hazardous Waste Operations, an annual 8 hour Refresher Course, and take part in an employer medical surveillance program in accordance with OSHA 1910.120 requirements, specifically, that the workers have had a medical physical within one (1) year prior to the date the work begins and that they are physically able to wear a respirator, and have been fit tested.

Documentation of training and medical surveillance will be submitted to the HSO or designee prior to the start of any on-site work. Copies of the training certificates are retained in C.T. Male's files and are available upon request.

7.0 SITE ACCESS

The Pre-Design Investigation and Remedial Action Site work (test pits; test borings; decommissioning of monitoring wells; soil excavation and backfill; excavation dewatering; closure of underground tanks, hydraulic lifts and drainage structures; sample collection) will be performed within the Site boundaries. Vehicular traffic will enter and exit the Site along the east side of Warburton Avenue; the north, east and west sides of Cottage Garden Place; and the south side of Wood Place.

Pre-Design Investigation

It is likely that the public or curious bystanders may be present at the time of the work. The work area will be considered within a 20-foot radius of the test pitting or test boring activities. Only OSHA trained employees of C.T. Male that are qualified to do the work and have read and signed this HASP will be allowed within the work area. Pertinent contractors and subcontractors entering into the work area will follow their own HASPs and will have the necessary training for the work that they are performing. During advancement of the test pits or test borings, it will be the Contractor's responsibility to install the necessary caution tape and/or fencing around the test pit or test boring work area or at a minimum, designate personnel to intercept persons from approaching the work area.

Remedial Action

It is likely that the public or curious bystanders may be present at the time of the work. Contractor supplies and equipment will likely be staged on different areas of the Site dependent on which areas of the Site are being remediated at any given time. Therefore, based on vehicular ingress/egress, contractor staging areas and the work area locations, the work area will be considered anywhere within the boundaries of the Site. Only OSHA trained employees of C.T. Male that are qualified to do the work and have read and signed this HASP will be allowed within the Site. Pertinent contractors and subcontractors entering into the work area will follow their own HASPs and will have the necessary training for the work that they are performing. Temporary fencing/hazard tape will be installed around open excavations after hours when C.T. Male or the contractor is not on Site. Security fencing will be installed around the Site perimeter and security personnel may be

engaged by the Contractor to be on-Site during off-hours. The Contractor will be responsible for preventing and/or limiting unauthorized individuals from entering the Site during normal work hours.

7.1 Pre-Design Investigation Exclusion, Contaminant Reduction and Support Zones

During completion of the Pre-Design Investigation, an approximate 20 foot circle around the immediate work area (test pit location and excavator, test boring location and direct-push unit) will be considered the Exclusion Zone (area where the Pre-Design Investigation is to be conducted). The Contamination Reduction Zone (CRZ - decontamination area), and Support Zone (clean area, everywhere else) will be established outside the Exclusion Zone, as necessary. The exclusion, contamination reduction, and support zones during the Pre-Design Investigation have been identified and designated as follows:

Exclusion Zone - The location of the exclusion zone will be determined in the field prior to the start of the Pre-Design Investigation work and will vary depending on the work activities conducted. For the most part, the exclusion zone is anticipated to be an approximate 20 foot radius around the daily work area. The exclusion zone perimeter may be delineated with cones and yellow caution tape or equal method, where applicable. Only authorized persons with proper training and protective gear will be allowed to enter the exclusion zone, after first going through the CRZ. If the exclusion zone, as previously explained, changes orientation during the completion of the work, the HASP will be amended in the field to reflect the change.

Contamination Reduction Zone (CRZ) – The CRZ will be located at the edge of the exclusion zone, once activities involving test pits or test borings have begun. Decontamination of the excavator bucket, tooling to advance the test borings and project personnel will be conducted in this area. Once decontamination of materials and equipment has been completed, it can be moved through the CRZ to the Support Zone. As with the exclusion zone, this area will be marked off with stakes and yellow caution tape or equal method

Support Zone - Area outside of exclusion/contamination reduction zone. Unauthorized or untrained individuals must remain in this zone.

7.2 Remedial Action Exclusion, Contaminant Reduction and Support Zones

During completion of the Remedial Action, an approximate 10 foot perimeter around the work area will be considered the Exclusion Zone. These work areas will include the excavation footprint, soil stockpile areas, truck loading areas, groundwater treatment areas, equipment decontamination areas, staging areas and remediation-derived waste storage areas. The Contamination Reduction Zone and Support Zone will be established outside the Exclusion Zone, as necessary. The exclusion, contamination reduction, and support zone during the remedial action have been identified and designated as follows:

Exclusion Zone - The location of the exclusion zone will be determined in the field prior to the start of the remedial action and will vary depending on the work activities conducted. For the most part, the exclusion zone is anticipated to be an approximate 10 foot perimeter around open excavations, impacted soil stockpiles, truck loading areas, groundwater treatment systems, equipment decontamination areas, staging areas and remediation-derived waste storage areas. The exclusion zone perimeter may be delineated with temporary fencing, hazard tape, cones or equal method, where applicable. Only authorized persons with proper training and protective gear will be allowed to enter the exclusion zone. If the exclusion zone, as previously explained, changes orientation during the completion of the remedial action, the HASP will be amended in the field to reflect the change.

Contamination Reduction Zone (CRZ) – If applicable, the CRZ will generally be a 30'± x 30'± area, marked off with stakes and blue and white colored flagging or equal method, containing the decontamination pad. The location will be determined in the field prior to the start of work and will vary depending on the area(s) the work is being conducted. This zone is where decontamination of personnel and equipment will take place, as necessary, on the basis of the work being performed. It will be located upwind of the Exclusion Zone, if possible.

Support Zone - Area outside of CRZ and not including the exclusion zone. Unauthorized or untrained individuals must remain in this zone.

8.0 PERSONAL PROTECTION

8.1 Level of Protection

Based on evaluation of the potential hazards, the minimum level of protection to be worn by workers during implementation of the Pre-Design Investigation and Remedial Action is defined as Level D protection, and will be controlled by the HSO or designee.

The minimum level D protective equipment will consist of field clothes, rubber or nitrile gloves, hard hats, ear plugs or muffs, safety glasses, and steel toe safety boots. As appropriate, this level of protection may be modified to include polylaminated Tyvek suits, coveralls, leg chaps, or a face shield for additional protection.

Both full-face and half-face air purifying respirators should be readily available. Appropriate combination organic vapor and particulate cartridge filters will be available at the Site, to use, if necessary with the air purifying respirators.

If required, level C protective equipment will consist of the items listed for Level D protection with the added protection of either a negative pressure air purifying half-face or full-face respirator with combination organic vapor and particulate air cartridges, chemical resistant clothing, inner and outer chemically resistant gloves (i.e. solvent resistant nitrile, PVC/nitrile), boot covers, and chemical resistant safety boots/shoes.

Level B is not anticipated, but if required, level B protective equipment will consist of the items listed for Level C protection except a self-contained breathing apparatus (SCBA) will be worn depending on the level of contaminants present in the work zone, and polylaminated Tyvek suits will be required. When Site conditions warrant the need for level B protective equipment, work will cease and the project will be re-evaluated to determine if engineering controls could reduce or eliminate the need for upgrading to Level B protection. Work will not resume under Level B protection until the engineering evaluation is completed and it is determined that engineering controls can mitigate the need for Level B protection.

8.2 Safety Equipment

Clearly marked basic emergency and first aid equipment will be available at an area within the Support Zone or within C.T. Male's company vehicle. This shall include a first aid kit, fire extinguisher, supply of potable water, soap and towels. The HSO or designee shall be equipped with a cellular phone in case of emergencies.

9.0 COMMUNICATIONS

The HSO or designee shall be equipped with a cellular phone in case of emergencies. The HSO or designee shall notify the C.T. Male project manager as soon as safely possible in the event of an accident, injury or emergency action.

Hand signals for certain work tasks will be employed, as necessary, and the buddy system will be employed during advancement of test pits or test borings, excavation, fill/soil load-out, groundwater treatment and sampling activities.

10.0 DECONTAMINATION PROCEDURES

10.1 Personnel Decontamination Procedures

Decontamination procedures will be carried out by all personnel leaving the Exclusion Zone (except under emergency evacuation). The amount of decontamination performed will be dependent on the level of personal protection currently being worn within the exclusion zone. Based on the tasks to be conducted, level D protective equipment is anticipated. The minimum level D protective equipment will consist of field clothes, nitrile or rubber gloves, hard hats, ear plugs or muffs, safety glasses, and steel toe safety boots. The decontamination procedures for level D protection are provided below.

1. Remove any gross soils from boots and clothing prior to exiting the Exclusion Zone. For the pre-design investigation work, return the gross soils to the test pit or test boring from which they originated from. For the remedial action, return the gross soils to portions of the excavation which require further excavation, deposit in the soil/fill stockpile and/or deposit into trucks that will be transporting the impacted fill/soil to the disposal facility.
2. Remove nitrile or rubber gloves, and tyvek suit (if worn) and deposit in designated trash bags.

In the event that higher levels of protection are required, the following general decontamination procedures will be followed.

1. Do not remove respiratory protection until all of the following steps have been completed.
2. Clean outer protective gloves and outer boots, if worn, with water (preferably with a pressurized washer) over designated wash tubs in the exclusion zone to remove the gross amount of contamination.
3. Deposit equipment used (tools, sampling devices, and containers) at designated drop stations - on plastic drop sheets or in plastic lined containers.
4. Rinse outer boots or boot covers, if worn, and gloves with clean water in designated rinse tubs. Remove outer boots if worn and gloves and

deposit in designated area to be determined in the field for use the next day or when necessary. If disposable outer boots are worn, remove and discard in designated container.

5. Remove hard hat & safety glasses, rinse with clean water as necessary and deposit in designated area for use the next day or when necessary.

6. Remove Tyvek suit, if worn, and discard in designated container. Remove respirator at this time, if used; wash and rinse with clean water. Organic vapor and particulate cartridges, when used, will be replaced daily. Used cartridges will be discarded in the designated waste container. Remove inner gloves and discard in designated container.

10.2 Equipment and Sample Containers Decontamination

All decontamination will be completed by personnel in protective gear appropriate for the level of protection determined by the Site HSO or designee. Manual sampling equipment and appurtenances including trowels, hand augers, shovels, macro-core samplers, etc. that come into contact with the Site's fill/soil and/or groundwater will be cleaned with a tap water/detergent wash and a tap water rinse. The sampling equipment will be washed after each sample is collected. The wash and rinse water will be stored in Department of Transportation (DOT) approved containers for characterization and off-site disposal at a permitted disposal facility.

Excavation equipment (i.e., rubber-tire backhoe or track excavator) which comes into contact with the Site's soils or groundwater will be decontaminated with a high pressure/hot water wash. The decontamination procedure will focus on portions of the equipment that has come into contact with the Site's soils or groundwater such as the bucket, tracks and tires. The cleaning will be performed at the completion of excavation activities and the used cleaning liquids will be stored in DOT approved containers for characterization and off-site disposal at a permitted disposal facility.

Groundwater treatment system tubing, piping, gauges, the interiors of the holding tanks/frac tanks and appurtenances that come into contact with impacted groundwater will be decontaminated with a high pressure/hot water wash. The

cleaning will be performed at the completion of groundwater treatment activities and the used cleaning liquids will be stored in DOT approved containers for characterization and off-site disposal at a permitted disposal facility.

Exterior surfaces of sample containers will be wiped clean with disposable wipes in the decontamination/support zone and transferred to a clean cooler for transportation or shipment to the analytical laboratory. Sample identities will be noted and checked off against the chain-of-custody record. The disposable wipes will be placed in the designated disposal container and disposed of as solid waste.

11.0 EMERGENCY RESPONSE PROCEDURES

THE PROJECT EMERGENCY COORDINATOR IS:

Site Health and Safety Officer (HSO) Rosaura Andújar-McNeil

The following standard emergency procedures will be used by on-Site personnel. The Project Manager and HSO shall be notified of any on-Site emergencies and be responsible for assuring that the appropriate procedures are followed.

11.1 Personal Injury

Emergency first aid shall be administered on-Site as deemed necessary and only by a trained individual, if available at the Site. If a trained individual is not available on-Site, decontaminate, if feasible, and transport individual to nearest medical facility (Saint Joseph's Medical Center). The HSO will supply medical data sheets to appropriate medical personnel and be responsible for completing the incident report. If the HSO is injured or controlling the emergency situation, the medical data sheets are available in Appendix A of this HASP.

11.2 Personal Exposure

The recommended response to worker exposure from contaminants on-Site includes the following:

SKIN CONTACT: Use generous amounts of soap and water. Wash/rinse affected area thoroughly, then provide appropriate medical attention, as necessary.

EYE CONTACT: Wash eyes thoroughly with potable water supply provided on Site. Eyes should be rinsed for at least 15 minutes subsequent to chemical contamination. Provide medical attention, as necessary.

INHALATION: Move worker to fresh air and outside of the work zone and/or, if necessary, decontaminate and transport to hospital (Saint Joseph's Medical Center). If respirator use is implemented at

the time of inhalation, the worker must not remove the respirator until completely away from the work zone.

INGESTION: Decontaminate, if feasible, and transport to hospital (Saint Joseph's Medical Center).

PUNCTURE WOUND OR LACERATION: Provide first aid at the Site and if wound needs medical attention, decontaminate, if feasible, and transport to hospital (Saint Joseph's Medical Center).

If the affected worker is exposed to contaminants on-Site and the injury or accident prevents decontamination of the individual, the emergency responders must be notified of this condition and the exposure must be kept to a minimum.

11.3 Potential or Actual Fire or Explosion

Immediately evacuate area in the event of potential or actual fire or explosion. Notify the local fire and police departments, and other appropriate emergency response groups, as listed in Section 1.2. Perform off-site decontamination and contain wastes for proper disposal. If a fire or explosion occurs, all on-Site personnel must meet in the pre-designated rally point of the Site (established by the HSO or designee) for an accurate head count.

11.4 Equipment Failure

Should there be any equipment failure, breakdown, etc. the Project Manager and HSO shall be contacted immediately. The Project Manager or the HSO will make every effort to replace or repair the equipment in a timely manner.

11.5 Spill Response

The Site HSO or designee shall initiate a corrective action program with the subcontractors in the event of an accidental release of a hazardous material, suspected hazardous material and/or petroleum products. The HSO or designee will act as the Emergency Coordinator with the subcontractors for the purposes of: spill prevention; identifying releases; implementing clean up measures; and notification of appropriate personnel.

The corrective action program will be implemented by the HSO and subcontractor to effectively control and minimize any impact accidental releases may have to the environment.

Effective control measures will include:

- Preliminary assessment of the release.
- Control of the release source.
- Containment of the released material.
- Effective clean-up of the released material.

Potential sources of accidental releases include: hydraulic oil spills or petroleum leaks from heavy equipment; cooling oils (potentially PCB containing) from electrical equipment handling and cleaning; and spills from drums, vats, vessels, and tanks. The HSO/Emergency Coordinator in conjunction with the subcontractor shall respond to an accidental release in the following manner:

- Identify the character, source, amount and area affected by the release.
- Have subcontractor take all reasonable steps to control the release.
- Notify the NYSDEC Spill Hotline at 1-800-457-7362.
- Notify NYSDEC Project Manager Scott Deyette and 178 Warburton Limited Partnership.
- Contain the release with sorbent material which should include speedi-dry, spill socks and sorbent pads.
- Prevent the release from entering sensitive receptors (i.e., catch basins and surface water) using the specified sorbent material or sandbags.
- Coordinate cleanup of the released material.
- Oversee proper handling and storage of contaminated material for disposal.

At no time should personal health or safety be compromised or jeopardized in an attempt to control a release. All health and safety measures as outlined in this HASP should be adhered to.

12.0 ADDITIONAL WORK PRACTICES

Workers will be expected to adhere to the established safety practices. Work on the project will be conducted according to established protocol and guidelines for the safety and health of all involved. The following will be adhered to:

- Employ the buddy system when possible, and for those work tasks (i.e., entering abandoned buildings, traversing uneven, vacant land, etc.) which require it. Establish and maintain communications.
- Minimize contact with potentially contaminated soil, soil vapor and groundwater.
- Employ disposable items when possible to minimize risks during decontamination and possible cross-contamination during sample handling.
- Smoking, eating, or drinking in the Exclusion and CRZ will not be allowed (to prevent oral ingestion of potential on-site contaminants).
- Avoid heat and other work stress related to wearing personal protective equipment. Take breaks as necessary and drink plenty of fluids to prevent dehydration.
- Withdrawal from a suspected or actual hazardous situation to reassess procedures is the preferred course of action.
- The removal of facial hair (except mustaches) prior to working on-Site will be required to allow for a proper respiratory face piece fit, if necessary.
- The Project Manager, the HSO, and sampling, pre-design investigation and remedial field personnel shall maintain records recording daily activities, meetings, facts, incidents, data, etc. relating to the project. These records will remain at the project Site during the full duration of the project so that replacement personnel may add information while maintaining continuity. These daily records will become part of the permanent project file.

13.0 AUTHORIZATIONS

Personnel authorized to enter the exclusion zone at the Brownfield Cleanup Program being conducted at the Cottage Place Gardens Phase 5 Site in the City of Yonkers, Westchester County, New York while operations are being conducted must be certified by the HSO. Authorization will involve completion of appropriate training courses and review and sign off of this HASP.

Personnel authorized to perform work on-site are as follows:

1. Kirk Moline C.T. Male Associates
2. Stephen Bieber C.T. Male Associates
3. Jeffrey Marx C.T. Male Associates
4. Dan Achtyl C.T. Male Associates
5. Jon Dippert C.T. Male Associates
6. Aimee Smith C.T. Male Associates
7. Rosaura Andújar-McNeil C.T. Male Associates
8. Brittany Winslow C.T. Male Associates
9. Mary Loughlin C.T. Male Associates
10. Chris Ormsby C.T. Male Associates
11. Ryan Hubbard C.T. Male Associates
12. Nancy Garry C.T. Male Associates
13. Cliff Bondi C.T. Male Associates
14. Dan King C.T. Male Associates
15. _____ C.T. Male Associates
16. _____ C.T. Male Associates

14.0 MEDICAL DATA SHEET

This medical data sheet will be completed by all on-Site personnel and will be kept at C.T. Male's human resources office for the duration of the project. In an emergency, the HSO or designee will contact C.T. Male's human resources office to obtain and forward the medical data sheet to emergency personnel.

PROJECT: Brownfield Cleanup Program to be conducted at the Cottage Place Gardens Phase 5 Site located at 8 Cottage Place and 178 Warburton Avenue in the City of Yonkers, Westchester County, New York.

Name _____ Telephone _____

Address _____

Emergency Contact _____

Drug or Other Allergies _____

Particular Sensitivities _____

Do You Wear Contact Lenses _____

Provide a Checklist of Previous Illness or Exposure to Hazardous Chemicals

_____

What Medications Are You Presently Using _____

_____

Do You Have Any Physical or Medical Restrictions _____

_____

Are You Qualified to Wear Respirator (Provide Fit Test Results)_____

Name, Address, and Telephone Number of Personal Physician:

_____

_____

_____

15.0 FIELD TEAM REVIEW

Each field team member shall sign this section after Site specific training is completed and before being permitted to work on-Site.

I have read and understand this Health and Safety Plan, and I will comply with the provisions contained herein.

PROJECT: Brownfield Cleanup Project
Cottage Place Gardens Phase 5 Site
8 Cottage Place and 178 Warburton Avenue
City of Yonkers
Westchester County, New York

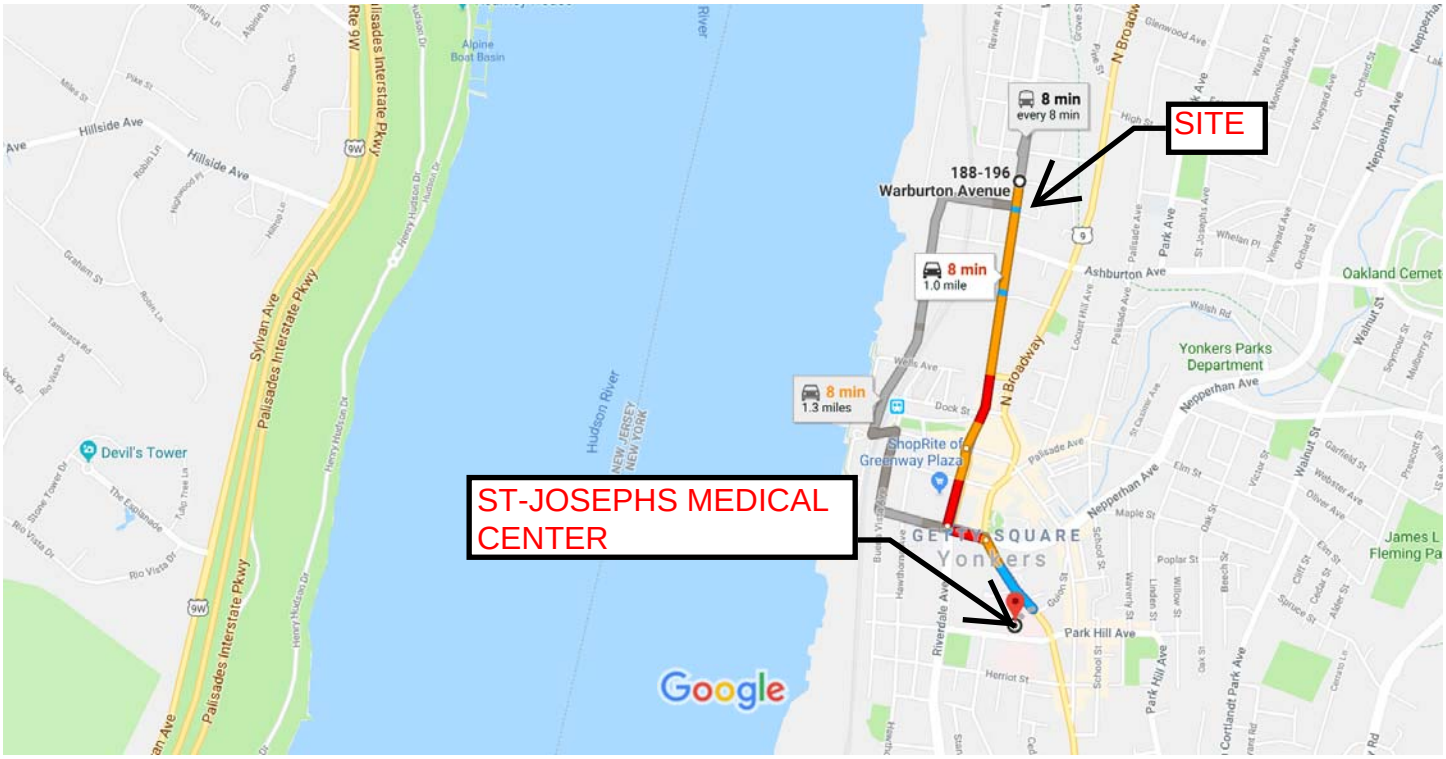
Name: Printed	Signature	Date

FIGURE 1

MAP SHOWING ROUTE TO SAINT JOSEPH'S MEDICAL CENTER

Google Maps

DIRECTIONS FROM COTTAGE PLACE GARDENS PHASE 5 SITE TO ST-JOSEPHS MEDICAL CENTER



Map data ©2017 Google 1000 ft

188-196 Warburton Ave

Yonkers, NY 10701

1. Head south on Warburton Ave toward Wood Pl — 0.5 mi
2. Continue onto New York State Reference Rte 984H/Riverdale Ave — 0.2 mi
3. Turn left onto Prospect St — 463 ft
4. Turn right onto S Broadway — 0.2 mi

Destination will be on the right

127 S Broadway

Yonkers, NY 10701

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

APPENDIX A

COMMUNITY AIR MONITORING PLAN

Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. APeriodic@ monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

SPECIAL REQUIREMENTS COMMUNITY AIR MONITORING PROGRAM

Special Requirements for Work within 20 feet of Potentially Exposed Individuals or Structures

When work areas are within 20 feet of potentially exposed populations or occupied structures, the continuous monitoring locations for VOCs and particulates must reflect the nearest potentially exposed individuals and the location of ventilation system intakes for nearby structures. The use of engineering controls such as vapor/dust barriers, temporary negative-pressure enclosures, or special ventilation devices should be considered to prevent exposures related to the work activities and to control dust and odors. Consideration should be given to implementing the planned activities when potentially exposed populations are likely to be lower, such as during weekends or evening hours in non-residential settings.

- If total VOC concentrations opposite the walls of occupied structures or next to intake vents exceed 1 ppm, monitoring should occur within the occupied structure(s). Background readings in the occupied spaces must be taken prior to commencement of the planned work. Any unusual background readings should be discussed with NYSDOH prior to commencement of the work.

- If total particulate concentrations opposite the walls of occupied structures or next to intake vents exceed 150 mcg/m3, work activities should be suspended until controls are implemented and are successful in reducing the total particulate concentration to 150 mcg/m3 or less at the monitoring point.

- Depending upon the nature of contamination and remedial activities, other parameters (e.g., explosivity, oxygen, hydrogen sulfide, carbon monoxide) may also need to be monitored. Response levels and actions should be pre-determined, as necessary for each site.

Special Requirements for Indoor Work with Co-Located Residences or Facilities

Unless a self-contained, negative-pressure enclosure with proper emission controls will encompass the work area, all individuals not directly involved with the planned work must be absent from the room in which the work will occur. Monitoring requirements shall be as stated above under "Special Requirements for Work within 20 Feet of Potentially Exposed Individuals or Structures" except that in this instance "nearby/occupied structures" would be adjacent occupied rooms. Additionally, the location of all exhaust vents in the room and their discharge points, as well as potential

vapor pathways (openings, conduits, etc.) relative to adjoining rooms, should be understood and the monitoring locations established accordingly. In these situations, it is strongly recommended that exhaust fans or other engineering controls be used to create negative air pressure within the work area during remedial activities. Additionally, it is strongly recommended that the planned work be implemented during hours (e.g. weekends or evening) when building occupancy is at a minimum.

APPENDIX F

SAMPLING PLAN FOR EMERGING CONTAMINANTS

Bieber, Steve

From: Deyette, Scott (DEC) <scott.deyette@dec.ny.gov>
Sent: Tuesday, February 25, 2020 3:00 PM
To: Bieber, Steve
Cc: Hauck, Lauren; Antsis, Alla; Moline, Kirk; Andujar-McNeil, Rosaura
Subject: RE: Cottage Place Gardens Phase 5 Parcel Site - Sampling for Emerging Contaminants
Attachments: pfassamplingguidelines.pdf

Steve-

I have reviewed the proposal for the approach to collect samples for Emerging Contaminants in soil at the CPG Phase 5 site. The samples will be collected in-situ prior to remediation during the waste characterization sampling. I strongly advise that the protocols for sample collection are strictly followed, as "anomalies" in sample results for these contaminants will not be ignored, and the only recourse will be to resample. Once all of the data has been received a summary report should be forwarded to the Department for approval prior to any intrusive (excavation) work beginning on the site. The proposal is approved; please provide notice as to when the sampling will take place. I have also attached our most recent (January 2020) PFAS Sampling Guidelines for your reference. Let me know if you have any questions.

R. Scott Deyette
Chief, Inspection Unit, Remedial Bureau C, Environmental Remediation

New York State Department of Environmental Conservation
625 Broadway, Albany, NY 12233-7014
P: (518) 402-9794 | C: (518) 461-3721 | scott.deyette@dec.ny.gov

www.dec.ny.gov | | | |

From: Bieber, Steve <s.bieber@ctmale.com>
Sent: Friday, February 07, 2020 12:18 PM
To: Deyette, Scott (DEC) <scott.deyette@dec.ny.gov>
Cc: Hauck, Lauren <lauren.hauck@tcbinc.org>; Antsis, Alla <alla.antsis@TCBINC.ORG>; Moline, Kirk <k.moline@ctmale.com>; Andujar-McNeil, Rosaura <r.andujar-mcneil@ctmale.com>
Subject: Cottage Place Gardens Phase 5 Parcel Site - Sampling for Emerging Contaminants

Hi Scott,

In regard to the Department's request that confirmatory post-excavation soil samples from the remedial action at CPG5 also be analyzed for the emerging contaminants (ECs) 1,4-dioxane and the NYSDEC list of 21 PFAS (January 2020) in addition to the analytical parameters specified in the RWP, C.T. Male proposes the following sampling approach to address ECs for your review and consideration.

1,4-dioxane

1,4-dioxane is an analyte that is included in the laboratory's regular analyses of SVOCs in soil by EPA Method 8270 (not SIM). The laboratory has indicated that the reporting limit (RL) and method detection limit (MDL) for 1,4-dioxane in soil by method 8270 is RL= 25.05 ug/kg (0.025 mg/kg) and MDL=7.682 ug/kg (0.0076 mg/kg); which is below the action level of 0.1 mg/kg (ppm) for 1,4-dioxane in soil. As such, 1,4-dioxane will be analyzed for in confirmatory post-excavation samples. Sampling of 1,4-dioxane is anticipated to occur during the collection of confirmatory post-excavation samples during the remedial action.

PFAS

25% of the confirmatory post-excavation floor soil sample locations will be analyzed for PFAS by EPA Method 537.1 Modified using isotopic dilution techniques. Reporting limits for PFOA and PFOS in soil samples are targeted to be less than 0.5 ug/kg. Reporting limits for PFOA and PFOS in aqueous samples are targeted to be less than 2 ng/L.

Per the attached figure, 72 +/- 900 square foot post-excavation sampling cells (highlighted in red) are identified. 18 (25%) of the confirmatory post-excavation cells will be sampled and analyzed for PFAS. The proposed PFAS sampling locations are shown on the attached drawing which provide overall coverage of the Site.

Due to anticipated delayed laboratory turnaround times for PFAS analyses and the historic accelerated construction schedule of remediation quickly followed by redevelopment at the other CPG phases (I – IV), we propose to perform the end point (floor) soil sampling for PFAS during the waste characterization sampling activity (anticipated in February/March 2020), prior to the commencement of soil remediation activities. End-point side wall sampling for PFAS will be conducted during the remedial action from side walls that do not abut areas of prior remediation (i.e. CPG III and IV). The attached drawing also depicts the waste characterization cells (highlighted in green).

The collection of native soils for PFAS analyses will be performed in the following manner.

-Soil samples will be collected via direct-push methods employing a track-mounted Geoprobe unit.
-The samples will be collected with a decontaminated (alconox/laboratory provided PFAS-free water wash and laboratory provided PFAS-free water rinse) macro-core sampler with new, acetate liners.
-Each sample will consist of approximately one (1) vertical foot of native soil immediately beneath the overlying fill/soil material.
-Each recovered soil sample will be homogenized in a decontaminated stainless-steel bowl using a decontaminated stainless steel or HDPE spoon.
-One (1) set of QA/QC samples will be collected per each 20 samples collected. These samples will include a trip blank, duplicate sample, matrix spike, matrix spike duplicate and equipment blank of the stainless steel bowl and Geoprobe sampling barrel.
-The analytical results will be reported as a Category B deliverable for validation by an independent third party data validator.
-The analytical results report and table will be provided to the Department.
-Field sampling will generally conform to the Field Sampling Plan contained in Appendix A of the June 13, 2017 (Revised January 2018) Remedial Investigation Work Plan for the Cottage Place Gardens Phase 5 Parcel, and Guidelines for Sampling and Analysis of PFAS – Under NYSDEC's Part 375 Remedial Programs (January 2020).

Please let us know if this sampling approach and plan is acceptable to the Department.

Thanks.

Stephen Bieber
Environmental Scientist

XREFS: NONE

PROJECT NUMBER: 16.6669

CAD DWG. FILE NAME: ALTA PHASE 5.dwg

MAP REFERENCES:

1. "Boundary and Topographic Survey" Cottage Place, City of Yonkers, Westchester County, New York, Dated June 29, 2010. Prepared by Langan Engineers & Environmental Services.
2. "Cottage Gardens Pur, Yonkers, NY, Master Plan", prepared by Magnusson Architects & Planning PC., DWG No. A-04, dated September 30, 2015.

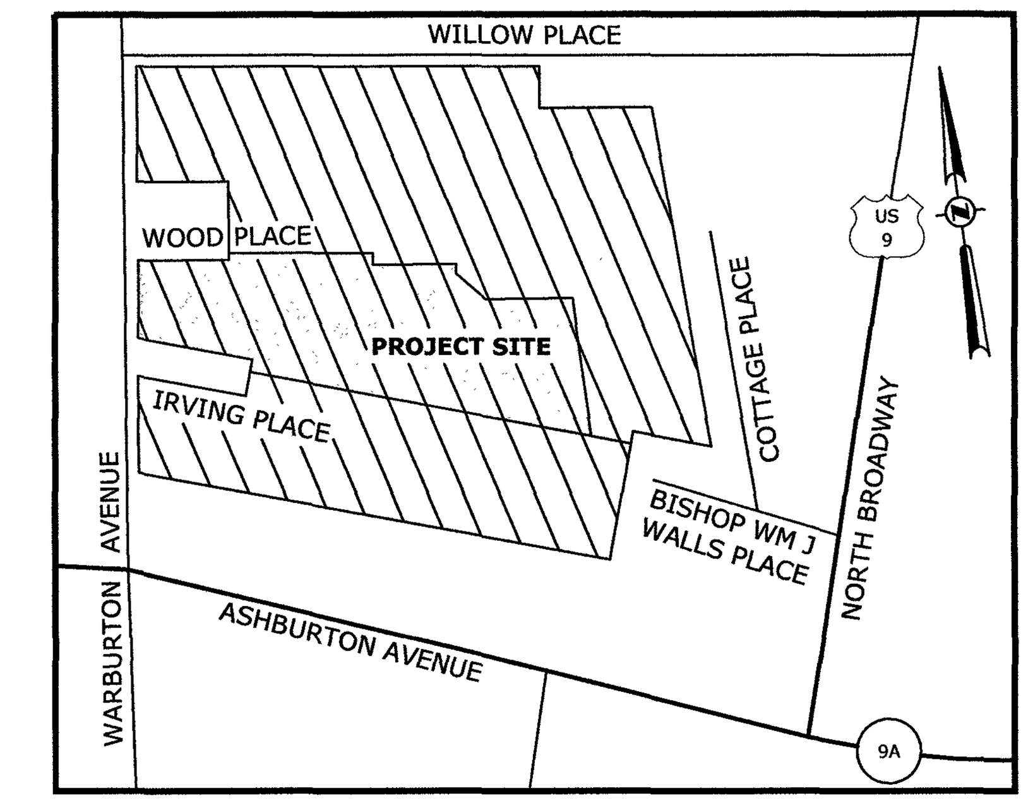
MAP NOTES:

1. Boundary and topographic information shown hereon was compiled from an actual field survey conducted during the month of May 2015 and Septmeber 2015.
2. North orientation and bearings are referenced to Grid North and are based on the New York State Plane Coordinate System, East Zone, NAD 83/2011 epoch 2010.00 as obtained from GPS observations
3. Objects shown on this drawing with a distance indicating how far that object is from a particular line, lie on the same side of the line that the offset distance is written.
4. Vertical datum shown hereon is NAVD 88 and was obtained from GPS observations which were post processed holding Queens and Lamont Earth CORS.
5. Underground facilities, structures, and utilities have been plotted from data obtained from previous maps and record drawings. Surface features such as catch basin rims, manhole covers, water valves, gas valves, etc. are the result of field survey unless noted otherwise. There may be other underground utilities, the existence of which is not known to the undersigned. Size and location of all underground utilities and structures must be verified by the appropriate authorities. Dig Safely New York must be notified prior to conducting test borings, excavation and construction.
6. This survey was prepared without the benefit of an up to date abstract of title or title report and is therefore subject to any easements, covenants, restrictions or any statement of fact that such documents may disclose.
7. Test pit locations shown hereon were field located.
8. Per map entitled National Flood Insurance Program, FIRM Flood Insurance Rate Map, City of Yonkers, New York, Westchester County, Panel 309 of 426, Community Panel Number 36119C0309F, effective date September 28, 2007, the parcel shown hereon falls within an area designated as Zone X areas determined to be outside the 0.2% annual chance floodplain.
9. Utility mark out by others, field located January 03, 2017.
10. No delineation of wetlands observed on site.

DESCRIPTION
PHASE 5
COTTAGE PLACE GARDENS
CITY OF YONKERS, COUNTY OF WESTCHESTER, STATE OF NEW YORK
AREA = 1.465 ACRES OF LAND

All that certain tract, piece or parcel of land situate in the City of Yonkers, County of Westchester, State of New York, lying Easterly of Warburton Avenue, and being more particularly bounded and described as follows:

BEGINNING at the point of intersection of the Easterly street boundary of Warburton Avenue (50-foot-wide right-of-way) with the Southerly street boundary of Wood Place (35-foot-wide right-of-way) and runs thence from said point of beginning along said Southerly street boundary of Wood Place South 81 deg. 36 min. 05 sec. East 100.00 feet to a point, said point being the Easterly terminus of Wood Place; thence along said Easterly terminus of Wood Place North 08 deg. 04 min. 45 sec. East 7.43 feet to its point of intersection with the division line between Phase 5 Cottage Place Gardens lands now or formerly of the Municipal Housing Authority for the City of Yonkers Section 2 Block 2094 Lot 1 on the South and Phase 2 Cottage Place Gardens lands now or formerly of the Municipal Housing Authority for the City of Yonkers Section 2 Block 2096 Lot 33 on the North; thence South 81 deg. 36 min. 05 sec. East along the last mentioned division line 157.67 feet to its point of intersection with the division line between said Phase 5 Cottage Place Gardens on the West and Phase 3A Cottage Place Gardens lands now or formerly of the Municipal Housing Authority for the City of Yonkers Section 2 Block 2094 Lot 3 on the East; thence South 08 deg. 04 min. 45 sec. West along the last mentioned division line 12.77 feet to its point of intersection with the division between said Phase 5 Cottage Place Gardens on the South and said Phase 3A Cottage Place Gardens on the North; thence South 81 deg. 55 min. 17 sec. East along the last mentioned division line 91.47 feet to its point of intersection with the division line between said Phase 5 Cottage Place Gardens on the West and said Phase 3A Cottage Place Gardens on the East; thence South 08 deg. 02 min. 12 sec. West along the last mentioned division line 10.50 feet to its point of intersection with the division line between said Phase 5 Cottage Place Gardens on the Southwest and said Phase 3A Cottage Place Gardens on the Northeast; thence South 49 deg. 59 min. 36 sec. East along the last mentioned division line 41.61 feet to its point of intersection with the common division line between said Phase 5 Cottage Place Gardens on the South and said Phase 3A Cottage Place Gardens and Phase 6 Cottage Place Gardens lands now or formerly of the Municipal Housing Authority for the City of Yonkers Section 2 Block 2094 Lot 1 on the North; thence South 81 deg. 55 min. 08 sec. East along the last mentioned common division line 96.36 feet to its point of intersection with the division line between said Phase 5 Cottage Place Gardens on the West and said Phase 6 Cottage Place Gardens on the East; thence South 00 deg. 34 min. 23 sec. West along the last mentioned division line 151.28 feet to its point of intersection with the division line between said Phase 5 Cottage Place Gardens on the North and Phase 4 Cottage Place Gardens lands now or formerly of the Municipal Housing Authority for the City of Yonkers Section 2 Block 2094 Lot 1 on the South; thence North 71 deg. 00 min. 35 sec. West along the last mentioned division line 380.96 to its point of intersection with the Easterly terminus of Irving Place (40-foot-wide right-of-way); thence North 18 deg. 59 min. 25 sec. East along said Easterly terminus of Irving Place 13.89 feet to its point of intersection with the Northerly street boundary of Irving Place; thence along said Northerly street boundary of Irving Place North 71 deg. 00 min. 35 sec. West 127.57 feet to its point of intersection with the above mentioned Easterly street boundary of Warburton Avenue; thence North 08 deg. 04 min. 45 sec. East 84.63 feet to the point or place of beginning and containing 63,831 ± Square feet or 1.465 acres of land, more or less.



SITE LOCATION MAP
NOT SCALE

LEGEND

Symbol	Description	Symbol	Description
SB	Soil Boring	HH	Hand Hole
MW	Monitor Well	HYD	Hydrant
	Where applicable, soil borings and monitoring wells are identified on the Figure as being co-located for visual purposes. In actuality, the soil borings were converted into monitoring wells.	LP	Light Pole
		SMH	Sanitary Manhole
		TPED	Telephone Pedestal
CB	Catch Basin	UMH	Unknown Manhole Type
CBCI	Catch Basin Curb Inlet	UP	Utility Pole
CBR	Catch Basin Round	WV	Water Valve
CO	Cleanout	—T—	Overhead Telephone Wires
TREE	Coniferous Tree	—UE—	Underground Electric Line Markout
TREE	Deciduous Tree	—G—	Underground Gas Line Markout
EMH	Electric Manhole	—STM—	Underground Steam Line
FFE=	Finished Floor Elevation	—UT—	Underground Telephone Line Markout
RE=	Roof Elevation	—W—	Underground Water Line Markout
GV	Gas Valve	—SS—	Underground Sanitary Sewer Line Markout

ZONING

District M Apartment Houses, Medium Density

P — WASTE CHARACTERIZATION SAMPLING CELL

CONFIRMATORY POST-EXCAVATION SAMPLING CELL

PROPOSED PFAS SAMPLING LOCATION

To: 178 Warburton Limited Partnership

WASTE CHARACTERIZATION SAMPLING

-EACH CELL REPRESENTS APPROXIMATELY 800 CUBIC YARDS OF FILL/SOIL

-THE FOOTPRINTS OF CELLS A TO C (APPROXIMATELY 1,800 SQUARE FEET EACH) ARE BASED ON THE ASSUMPTION THAT FILL/SOIL REQUIRING REMEDIATION EXTENDS TO AVERAGE DEPTHS OF APPROXIMATELY 12 FEET BELOW EXISTING GRADES

-THE FOOTPRINTS OF CELLS D TO Q (APPROXIMATELY 2,700 SQUARE FEET EACH) ARE BASED ON THE ASSUMPTION THAT FILL/SOIL REQUIRING REMEDIATION EXTENDS TO AVERAGE DEPTHS OF APPROXIMATELY 8 FEET BELOW EXISTING GRADES.

BAR SCALE
20 0 10 20 40
1 inch = 20 ft.

"ONLY COPIES OF THIS MAP SIGNED IN RED INK AND EMBOSSED WITH THE SEAL OF AN OFFICER OF C.T. MALE ASSOCIATES OR A DESIGNATED REPRESENTATIVE SHALL BE CONSIDERED TO BE A VALID TRUE COPY".

CAD DWG. FILE NAME: K:\Projects\155128\Survey\Drawings-Maps\ALTA PHASE 5.dwg

DATE		REVISIONS RECORD/DESCRIPTION	DRAFTER	CHECK	APPR.
01/29/18	1	REVISED PHASE 5 PARCEL BOUNDARY	GLB	MG	WJN
02/15/18	2	REVISED PHASE 5 PARCEL BOUNDARY	GLB	MIG	WJN
03/21/18	3	REVISED PHASE 5 PARCEL BOUNDARY	GLB	MIG	WJN
07/12/18	4	ADDED TEST BORING LOCATIONS	SB	SB	SB
	5				
	6				
	7				
	8				
	9				

APPROVED: WJN
DRAFTED : GLB/TCB
CHECKED : MG
PROJ. NO : 16.6669
SCALE : 1"=20'
DATE : JUNE 23, 2017

FIGURE 2: SITE FEATURES MAP

COTTAGE PLACE GARDENS PHASE 5 PARCEL SITE

CITY OF YONKERS — WESTCHESTER COUNTY, NEW YORK

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture & Landscape Architecture, D.P.C.
50 CENTURY HILL DRIVE, LATHAM, NY 12110
518.786.7400 * FAX 518.786.7299

SHEET 1 OF 1
DWG. NO: 17-363