Chapter 7: Hazardous Materials

A. INTRODUCTION

This chapter presents the findings of the hazardous materials assessment and considers the potential for significant adverse impacts to occur as a result of the proposed actions.

Conditions at the Brooklyn Bay Center site ("project site") resulting from previous and existing uses of the site and the surrounding areas were determined from a review of previous reports including *Phase I Environmental Site Assessment (August 2007),* and two *Remedial Investigation Reports* (for the eastern portion dated November 2007 and for the western portion dated January 2008), and a *Supplemental Remedial Investigation Report* for the eastern portion (October 2008), all prepared by Langan Engineering and Environmental Services, P.C. of New York, New York. The Phase I study included: a visual inspection; a review of the existing data on geology and hydrology of the area; an examination of historical maps and aerial photographs, and federal and state databases to determine past and current uses on the project site and adjacent areas; and a review of previous site studies and regulatory agency correspondence. The Remedial Investigation for the western portion primarily involved characterization of historic fill material including the collection and analysis of soil and groundwater samples; the studies on the eastern portion included geophysical investigations to locate abandoned and active underground storage tanks (USTs), and collection and analysis of soil and groundwater samples.

PRINCIPAL CONCLUSIONS

There is a potential for adverse impacts associated with excavation for new construction resulting from the known and potential presence of subsurface contamination, and with demolition/renovation, related to materials within the structure. Although these activities could increase pathways for human exposure, significant adverse impacts would be avoided by performing construction activities in accordance with the measures identified below in the "Probable Impacts from the Proposed Project" section.

The project sponsor has obtained approval from New York State Department of Environmental Conservation (NYSDEC) of a Solid Waste Mitigation and Soil Management Plan (SWMSMP) and a Beneficial Use Determination (BUD) to reuse certain materials excavated from the western portion of the project site to raise the grade on the eastern portion of the site in connection with the site redevelopment. NYSDEC's approval of the Plan and BUD binds the project sponsor to ensure that certain measures are conducted to avoid significant adverse impacts associated with hazardous materials. These measures include the preparation of a Site Management Plan and associated Restrictive Declaration (a legally enforceable recorded document) with NYSDEC. In addition, the New York City Department of Environmental Protection (NYCDEP) has required the applicant to enter into a NYCDEP restrictive declaration that is consistent with the NYSDEC measures. The restrictive declaration would serve as an additional mechanism to ensure the above measures would be implemented and would be subject to NYCDEP review and approval.

B. EXISTING CONDITIONS

SITE AND AREA HISTORY

Historic uses of the project site included solid waste disposal, coal storage, an asphalt plant, auto dealership/rentals, and, on the eastern portion of the property, numerous USTs and aboveground storage tanks (ASTs). The site is currently used by a school-bus company that includes fueling and repair facilities. An "open status" petroleum spill (No. 0510989) is listed in the NYSDEC database and is in the process of being resolved with NYSDEC.

Permits were issued in the 1970s to fill what is now the western portion of the project site with clean, inorganic sand, gravel, rock, concrete, demolition debris, or dirt, and to extend the property into Gravesend Bay. However, other solid waste was placed on the western portion of the site, resulting ultimately in a May 1985 Modified Order on Consent entered into by the previous owners of the site requiring the sorting of solid waste from the fill material and the disposal of the solid waste at an approved off-site landfill. The previous owners failed to complete this work.

Adjacent and nearby properties include a machine shop and two fuel oil companies, including Bayside Fuel Oil Depot, which is located immediately to the south and has documented petroleum releases.

TOPOGRAPHY AND SUBSURFACE CONDITIONS

The topography of the project site has a general slope toward Gravesend Bay, and includes mounded areas in the western portion, up to approximately 30 feet above sea level. Soil borings in the eastern portion of the project site and test pits in the western portion encountered historic fill material consisting primarily of fine sand and silt mixed with gravel, concrete and brick fragments, along with traces of coal and ash. Most test pit locations in the western plateau had 25 percent to 30 percent solid waste consisting primarily of demolition debris, but no domestic garbage or putrescible waste. The groundwater table was found at approximately 1 to 4 feet above mean high water (+1 foot to +4 feet). Flow would be expected to be toward the Bay, but is likely tidally influenced. Groundwater is likely brackish or saline and is not used for potable supply in Brooklyn.

PREVIOUS INVESTIGATIONS

In 2005, a Preliminary Environmental Site Assessment and subsequent Phase II Environmental Site Assessment were conducted by ConTech Services, Inc. (ConTech). This identified petroleum-related impacts in soil and groundwater. ConTech reported these findings to NYSDEC, and NYSDEC assigned Spill Case Number 0510989 to the project site. Langan conducted additional Remedial Investigations to evaluate the extent and magnitude of petroleum impacts from the documented releases, and other potential releases from undocumented or documented USTs.

An August 2007 Phase I Environmental Site Assessment performed by Langan identified Recognized Environmental Conditions associated with the project site's former uses and the uses of adjacent properties. In addition, the site inspection noted several unlabeled drums and metal waste containers in the vegetation located on the site's northern perimeter as well as containers and drums with various maintenance and repair chemicals, cleaners, oils, and fluids throughout the maintenance garage.

Langan's Remedial Investigation Reports for the eastern and western portions of the project site were prepared and submitted to NYSDEC in November 2007 and January 2008, respectively. A Supplemental Remedial Investigation Report for the eastern portion of the site also was prepared and submitted to the NYSDEC on October 2008. Cumulatively, the remedial and supplemental investigations at the site addressed more than 120 soil and groundwater samples, and for the eastern portion of the site, identified petroleum-contaminated soil/groundwater. A NYSDEC spill number had already been issued for the site based on the preliminary investigations conducted by ConTech. The soil testing found some levels of metals and semi-volatile organic compounds (SVOC) above the Recommended Soil Cleanup Objectives (RSCOs) contained in the NYSDEC Technical and Administrative Guidance Memorandum #4046. The findings were generally characteristic of historic fill materials. However, soil (and groundwater) samples from near the active and inactive USTs (several potential abandoned USTs were identified by the geophysical investigation) in the eastern portion of the site showed evidence of petroleum impacts. There were also documented impacts from the southeast-adjacent Bayside Fuel Oil Depot. Selected soil samples were analyzed to determine whether they exceeded hazardous waste thresholds, but none did. No petroleum impacts were identified in the western portion of the site. In July 2009, Langan submitted a Remedial Action Work Plan (RAWP) to the NYSDEC proposing removal of the USTs and petroleum-impacted soil to the extent practicable. In an email correspondence dated October 6, 2009, NYSDEC approved the RAWP in connection with the removal of the USTs and petroleum-impacted soil.

C. THE FUTURE WITHOUT THE PROPOSED PROJECT

This analysis assumes that absent the proposed actions, the existing bus storage facility would remain on the project site. Currently, there are no known significant health risks associated with the site and only relatively minor petroleum-related impacts on the eastern portion of the site. As described above, a RAWP has been submitted and approved by NYSDEC, which will address these impacts through the removal of abandoned USTs and petroleum-impacted soil. Even without the proposed development, completion of the RAWP will result in the closure of the open oil spill number that the NYSDEC assigned to the site. NYSDEC is also requiring the neighboring property owner, Bayside Fuel, to control or eliminate the source of petroleum that has been detected in the wells on the project site along the southeastern boundary.

D. PROBABLE IMPACTS OF THE PROPOSED PROJECT

The proposed development would require extensive regrading to level the project site to an elevation of approximately +13 feet, followed by construction of a two-story retail structure (with an attached three-story parking garage) and a perimeter esplanade (walkway and landscaped areas). Currently, the elevation of the western portion of the site ranges from +12 feet to approximately +30 feet while the elevation of the eastern portion is at approximately +7 feet.

The project sponsor has obtained approval from NYSDEC of a SWMSMP and a BUD to reuse certain materials excavated from the western portion of the project site to raise the grade on the eastern portion of the site in connection with the site redevelopment. NYSDEC's approval of the Plan and BUD binds the project sponsor to ensure that the following measures are conducted:

- Conducting demolition of the existing buildings, building foundations, and other above-grade structures in compliance with applicable requirements, including those relating to asbestos and lead-based paint;

- Installing and maintaining erosion and sedimentation control measures in accordance with a Stormwater Pollution Prevention Plan and an Erosion and Sediment Control Plan;
- Following prescribed procedures for excavation of the western portion to the desired grade, processing the material to remove solid waste, and backfilling the remaining material;
- Following prescribed procedures for registering and removing (or closing-in-place) known and any unexpectedly encountered USTs and ASTs along with any associated contaminated soil;
- Following prescribed procedures for segregating, stockpiling, testing, transporting and disposing of contaminated soil encountered during excavation activities;
- Following prescribed procedures for importing material (soils in areas that will not be capped either by impervious structures such as building, or with concrete/asphalt pavement will be capped with clean fill meeting the 6 NYCRR Part 375 Unrestricted Use Site Cleanup Objectives (SCO); other imported soils will meet the Restricted Commercial Use SCOs);
- Implementing a Health and Safety Plan (HASP) during all earthwork including requirements for worker training, personal protective equipment (PPE), and site and community air monitoring.
- Installing a vapor barrier in the new retail building with interior monitoring system for methane and hydrogen sulfide;
- Illustrating the locations and presenting requirements for groundwater monitoring; and
- Preparing a Site Management Plan and associated Restrictive Declaration (a legally enforceable recorded document) to ensure continued implementation of those engineering and institutional measures described above and also including: providing notice to future property owners of environmental conditions and development restrictions; inspecting and maintaining the site cover and monitoring systems; notifying the NYSDEC before certain types of ground-intrusive work; and reporting to NYSDEC.

Based on their review of the previous investigations, the New York City Department of Environmental Protection (NYCDEP) has required the applicant to enter into a NYCDEP restrictive declaration that is consistent with the NYSDEC measures listed above. The restrictive declaration would serve as an additional mechanism to ensure the above measures would be implemented and would be subject to NYCDEP review and approval. The restrictive declaration would also be binding on the property's successors and assigns. The NYCDEP-approved restrictive declaration will be executed and submitted for recording and DEP will be provided with a proof of recording.

With these measures, no significant adverse impacts related to hazardous materials would be expected to occur either during or following construction at the project site. ✷