135-35 NORTHERN BOULEVARD

QUEENS, NEW YORK

Remedial Investigation Report

NYC VCP Site Number: -

OER Site Number: 11RHAZ214Q

E-Designation Number: R-67

Prepared for:

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LIST OF ACRONYMS

Acronym	Definition
AOC	Area of Concern
CAMP	Community Air Monitoring Plan
COC	Contaminant of Concern
CPP	Citizen Participation Plan
CSM	Conceptual Site Model
DER-10	New York State Department of Environmental Conservation Technical Guide 10
FID	Flame Ionization Detector
GPS	Global Positioning System
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
IRM	Interim Remedial Measure
NAPL	Non-aqueous Phase Liquid
NYC VCP	New York City Voluntary Cleanup Program
NYC DOHMH	New York City Department of Health and Mental Hygiene
NYC OER	New York City Office of Environmental Remediation
NYS DOH ELAP	New York State Department of Health Environmental Laboratory Accreditation Program
OSHA	Occupational Safety and Health Administration
PID	Photoionization Detector
QEP	Qualified Environmental Professional
RI	Remedial Investigation
RIR	Remedial Investigation Report
SCO	Soil Cleanup Objective
SPEED	Searchable Property Environmental Electronic Database

CERTIFICATION

I, Mark E. Robbins, am a Qualified Environmental Professional, as defined in RCNY § 43-1402(ar). I have primary direct responsibility for implementation of the Remedial Investigation for the 135-35 Northern Boulevard Queens Site, (NYC VCP Site No. site number). I am responsible for the content of this Remedial Investigation Report (RIR), have reviewed its contents and certify that this RIR is accurate to the best of my knowledge and contains all available environmental information and data regarding the property.

Mark E. Robbins

Qualified Environmental Professional Date Signature

EXECUTIVE SUMMARY

The Remedial Investigation Report (RIR) provides sufficient information for establishment of remedial action objectives, evaluation of remedial action alternatives, and selection of a remedy pursuant to RCNY§ 43-1407(f). The remedial investigation (RI) described in this document is consistent with applicable guidance.

Site Location and Current Usage

The Site is located at 135-35 Northern Boulevard in the Flushing section in Queens, New York and is identified as Block 4958and Lots 38 and 48 on the New York City Tax Map. Figure 1 shows the Site location. The Site is 41,833-square feet in area and is bounded by 35th Avenue to the north, Northern Boulevard to the south, Farrington Street to the east and Prince Street to the west. A map of the site boundary is shown in Figure 2. Currently, Lot 48 is a vacant, abandoned movie theater with seven small storefronts contained within the building and Lot 38 is an unoccupied office building.

Summary of Proposed Redevelopment Plan

The proposed future use of the Site will consist of a 16-story residential, commercial and community use building with a multi-level underground basement parking garage for 300 vehicles. Portions of the first and second floor will be retail/commercial and a portion of the third floor will be a community facility. Excavation is anticipated to be 4 to 5 feet below the lowest area of the current structure. Cellar parking will be 14 feet below the main entry lobby, which is 21.0' NAVD; therefore, parking will be at 7.0' NAVD. Approximately 11,500 tons of soil will be excavated and transported offsite. Excavation is planned below the water table. Demolition is expected to begin within four to six months of this report. Layout of the proposed site development is presented in Figure 3. The current zoning designation is C2-2/R6 for mixed use commercial and residential. The proposed use is consistent with existing zoning for the property.

Summary of Past Uses of Site and Areas of Concern

Based upon the review of the Phase I Environmental Site Assessment (ESA) Report prepared by Ellis Koch C.P.G. Inc. in December 2010 and amended June 2011, a Site history was established. According to the Sanborn Maps, the Site was occupied by the Flushing Hotel and a livery in 1897 until the Subject Property was redeveloped into the current structure in 1927. The

current structure housed the Flushing Hotel until its conversion to the Flushing RKO Theatre prior to 1941. The current structure housed seven small shops consisting of professional services companies located on both sides of the entrance to the theater and were only located on the first floor. The current structure has been vacant for approximately twenty-seven years.

The AOCs identified for this site include:

1. The historic presence of fuel oil tanks
2. The historic presence of fuel oil releases.

Summary of the Work Performed under the Remedial Investigation

The scope of work implemented by Hydro Tech included:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);
2. Performed a Ground Penetrating Radar (GPR) survey throughout the entire Site;
3. Installed twelve (12) soil borings across the entire project Site, and collected thirty-four (34) soil samples for chemical analysis (three samples from ten soil borings and two samples from two borings) from the soil borings to evaluate soil quality;
4. Installed six (6) groundwater monitoring wells throughout the Site to establish groundwater flow and collected six (6)groundwater samples for chemical analysis to evaluate groundwater quality;
5. Installed five (5) sub slab soil vapor probes throughout the Site and collected five (5) samples for chemical analysis.
6. One (1) outdoor and one (1) indoor air samples were collected for chemical analysis.

Summary of Environmental Findings

1. Elevation of the property is 30 feet.
2. Depth to groundwater ranges from 1.00 to 2.89 feet at the Site.
3. Groundwater flow is generally westerly beneath the Site.
4. Bedrock was not encountered at the Site.

5. The stratigraphy of the site, from the surface down to about 12 feet bgs, is classified as fill consisting of a mixture of gravel, sand, silt, bricks and concrete.

6. Soil/fill samples results were compared to NYSDEC Unrestricted Use Soil Cleanup Objectives and Restricted Residential Soil Cleanup Objectives as presented in 6NYCRR Part 375-6.8 and CP51. Soil/fill samples results show no VOCs exceeding Track 1 Unrestricted Use Soil Cleanup Objectives (SCOs). Several VOCs including 2-Butanone, methylene chloride, o-xylene and p- & m-xylenes were detected at concentrations below Unrestricted Use SCOs. Several SVOCs (PAH compounds) were detected at concentrations less than Track 1 SCOs and included 2,6-Dinitrotoluene, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, di-n-butyl phthalate and fluoranthene. Three pesticides including 4, 4'-DDD (max. 0.0043 mg/kg), 4'4-DDE (max. 0.0054 mg/kg) and 4'4-DDT (max. 0.0424 mg/kg) were detected in two shallow soil samples at concentrations exceeding Unrestricted Use SCOs. PCBs were not detected above detection limits. Metals including barium (max. 1,110 mg/kg), chromium-trivalent (max. 88 mg/kg), copper (max. 229 mg/kg), lead (max. 203 mg/kg), nickel (max. 30.30 mg/kg), selenium (max. 5.05 mg/kg), and zinc (max. 753 mg/kg) exceeded Unrestricted Use SCOs. And of these, barium and chromium also exceeded Restricted Residential Use SCOs. Overall, the soil chemistry is unremarkable and does not indicate any disposal.

7. Groundwater samples results were compared to New York State 6NYCRR Part 703.5 Class GA groundwater quality standards (GQS). Groundwater samples identified two VOCs (acetone and tetrachloroethylene) detected at concentrations less than their respective GQS. Only one SVOC, bis(2-ethylhexyl)phthalate was detected at concentrations less than GQS. No pesticides or PCBs were detected at concentrations exceeding GQS. Several metals were identified, but only manganese (max. 4,270 µg/L) and sodium (max. 220,000 µg/L) exceeded GQS.

8. Soil vapor results collected during the RI were compared to the compounds listed in Table 3.1 Air Guideline Values located in the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion dated October 2006. Soil vapor results show petroleum related VOCs and associated derivatives in each air sample

and each sub slab soil vapor sample at concentrations exceeding NYSDOH standards. The petroleum related compounds (BTEX) ranged from 0.6 µg/m^3 to 211.4 µg/m^3. Acetone was the highest detected petroleum related compound with a concentration of 211.4 µg/m^3. Chlorinated hydrocarbon, including tetrachloroethylene (PCE) was detected at a maximum concentration of 74.6 µg/m^3. Trichloroethylene (TCE) was detected at 8.6 µg/m^3.

REMEDIAL INVESTIGATION REPORT

1.0 SITE BACKGROUND

Flushing Square, LLC has enrolled in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate a 0.96-acre site located at 135-35 Northern Boulevard in the Flushing section of Queens, New York. Mixed commercial, residential and community use is proposed for the property. The RI work was performed between July 9, 2014 and August 1, 2014. This RIR summarizes the nature and extent of contamination and provides sufficient information for establishment of remedial action objectives, evaluation of remedial action alternatives, and selection of a remedy that is protective of human health and the environment consistent with the use of the property pursuant to RCNY§ 43-1407(f).

1.1 Site Location and Current Usage

The Site is located at 135-35 Northern Boulevard in the Flushing section in Queens, New York and is identified as Block 4958 and Lots 38 and 48 on the New York City Tax Map. Figure 1 shows the Site location. The Site is 41,833-square feet and is bounded by 35th Avenue to the north, Northern Boulevard to the south, Farrington Street to the east and Prince Street to the west. A map of the site boundary is shown in Figure 2. Currently, Lot 48 is a vacant abandoned movie theater with seven small storefronts contained within the building and Lot 38 is an unoccupied office building.

1.2 Proposed Redevelopment Plan

The proposed future use of the Site will consist of a 16-story residential, commercial and community use building with a multi-level underground basement parking garage for 300 vehicles. Portions of the first and second floor will be retail/commercial and a portion of the third floor will be a community facility. Excavation is anticipated to be 4 to 5 feet below the lowest area of the current structure. Cellar parking will be 14 feet below the main entry lobby, which is 21.0’ NAVD; therefore, parking will be at 7.0’ NAVD. Approximately 11,500 tons of soil will be excavated and transported offsite. Excavation is planned below the water table. Demolition is expected to begin within four to six months of this report. Layout of the proposed site development is presented in Figure 3. The current zoning designation is C2-2/R6 for mixed use commercial and residential. The proposed use is consistent with existing zoning for the property.

1.3 Description of Surrounding Property

The Subject Property is located on the northern side of Northern Boulevard, between Farrington Street to the east and Prince Street to the west. The vicinity of the Subject Property consists of commercial and residential properties. The ground surfaces in the vicinity of the Site consist of asphalt, concrete and bare soil. The results of the Site inspection and an evaluation of the United States Geological Survey (USGS) 7 ½-Minute Topographic Map containing the properties indicate there is one sensitive receptor located within a 500-foot radius of the Subject Property. The receptor is identified as Martin L. King, Jr. Memorial Day Care Center. The Subject Property should not impact upon the sensitive receptor.

Figure 4 shows the surrounding land usage.

2.0 SITE HISTORY

2.1 Past Uses and Ownership

Based upon the review of the Phase I Environmental Site Assessment (ESA) Report prepared by Ellis Koch C.P.G. Inc. in December 2010 and amended June 2011, a Site history was established. According to the Sanborn Maps, the Site was occupied by the Flushing Hotel and a livery in 1897 until the Subject Property was redeveloped into the current structure in 1927. The current structure housed the Flushing Hotel until its conversion to the Flushing RKO Theatre prior to 1941. The current structure housed seven small shops consisting of professional services companies located on both sides of the entrance to the theater and were only located on the first floor. The current structure has been vacant for approximately twenty-seven years.

2.2 Previous Investigations

Previous investigations performed at the Site include the following:

- Phase I Environmental Site Assessment, December 23, 2010 and amended July 2011, Ellis Koch C.P.G. Inc.
- Environmental Assessment Report, 2004, environmental consulting firm unknown
- Phase I Environmental Site Assessment, 2002, environmental consulting firm unknown

2.3 Site Inspection

Ms. Rachel Ataman of Hydro Tech performed the site inspection on June 13, 2014. The reconnaissance included a visual inspection of the Site. At the time of the inspection, the Site was an unoccupied theater. No evidence of former or present underground or aboveground storage tanks was observed.

2.4 Areas of Concern

The AOCs identified for this site include:

1. The historic presence of fuel oil tanks
2. The historic presence of fuel oil releases.

Phase 1 Report is presented in Appendix A. A map showing areas of concern is presented in Figure 5.

3.0 PROJECT MANAGEMENT

3.1 Project Organization

The Qualified Environmental Profession (QEP) responsible for preparation of this RIR is Mark E. Robbins.

3.2 Health and Safety

All work described in this RIR was performed in full compliance with applicable laws and regulations, including Site and OSHA worker safety requirements and HAZWOPER requirements.

3.3 Materials Management

All material encountered during the RI was managed in accordance with applicable laws and regulations.

4.0 REMEDIAL INVESTIGATION ACTIVITIES

The scope of work implemented by Hydro Tech included:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);
2. Performed a Ground Penetrating Radar (GPR) survey throughout the entire Site;
3. Installed twelve (12) soil borings across the entire project Site, and collected thirty-four (34) soil samples for chemical analysis (three samples from ten soil borings and two samples from two borings) from the soil borings to evaluate soil quality;
4. Installed six (6) groundwater monitoring wells throughout the Site to establish groundwater flow and collected six (6) groundwater samples for chemical analysis to evaluate groundwater quality;
5. Installed five (5) sub slab soil vapor probes throughout the Site and collected five (5) samples for chemical analysis.
6. One (1) outdoor and one (1) indoor air samples were collected for chemical analysis.

Photographs were taken during RI activities and are provided in Appendix B.

4.1 Geophysical Investigation

The survey was performed over a grid pattern that was determined immediately prior to the survey. The GPR operator wheeled the antenna over the predetermined grid. The GPR takes one "scan" per set unit. The number of scans per unit is based upon the estimated size of targets. As each scan is performed, the antenna emits specific radar amplitude into the subsurface. The amplitude of the radar reflected back to the antenna is based upon the differences in the dielectric constants of the subsurface materials. The differences in amplitude obtained during each scan are graphically displayed on the Control Unit, which are then interpreted by the GPR operator. Additional interpretations are then conducted in the office using computer software.

The GPR survey was performed successfully over the entire Site. No anomalies indicative of suspect USTs were identified during the GPR survey. Appendix C includes the GPR summary report.

4.2 Borings and Monitoring Wells

Drilling and Soil Logging

A total of twelve (12) soil probes were installed and sampled at the Site and designate SP-1 through SP-12. Three (3) soil probes designated SP-1, SP-7 and SP-12 were installed to a depth of 12 feet bgs. Seven (7) soil probes designated SP-3, SP-4, SP-5, SP-6, SP-8 SP-10 and SP-11 were installed to a depth of 8 feet bgs and were terminated due to saturation from the shallow water table. One (1) soil probe designated SP-2 was installed to a depth of 10 feet bgs and was terminated due to saturation from the shallow water table.

All soil probes were installed utilizing Hydro Tech's fleet of Geoprobe® fitted with Geoprobe® tooling and sampling equipment. Soil samples were collected utilizing a 4-foot long Macro Core sampler fitted with dedicated acetate liners. The soil was screened and characterized at two-foot intervals. Continuous samples were collected during soil probe installation. Each Macro Core was cut open and immediately screened with a Photo Ionization Detector (PID) for VOCs, prior to collecting the required samples for laboratory analysis. No PID readings were detected.

Boring logs were prepared by a geologist and are attached in Appendix D. A map showing the location of soil borings and monitoring wells is shown in Figure 6.

Groundwater Monitoring Well Construction

Six (6) monitoring wells designated MW-1 to MW-6 were installed at the Site. MW-1, MW-4 and MW-6 were installed to 15 feet bgs; MW-2 was installed to 10 feet bgs and MW-3 and MW-5 were installed to 12 feet bgs. All wells were constructed of 1-inch diameter PVC. The well screens consist of 0.010-inch slots and extend up 10 feet from the bottom of each well. The well screen of MW-2 extends up 9 feet from the bottom of the well. The remaining portions of each of the wells consist of riser.

Monitoring well construction logs are attached in Appendix E. Groundwater sampling log with information on purging and sampling of groundwater monitoring wells is included in Appendix F. A map showing the location of monitoring wells is shown in Figure 6.

Survey

A land survey was used to identify the locations of all soil borings and monitoring wells.

Water Level Measurement

Prior to groundwater purging and sampling of monitoring wells, the wells were gauged for the presence of Light, Non-Aqueous Phase Liquid (LNAPL) and also monitored to determine the depth to groundwater. The well gauging and monitoring was performed utilizing a Solinst® 122 Oil/Water Interface Probe (Interface Probe). The Interface Probe can measure depths to water to 0.01 inch. Well gauging and monitoring was performed in each well from the northern portion of the casing top. LNAPL was not identified in the monitoring wells during the well gauging exercise. Water level and survey data is included in Table 1

Sub Slab Soil Vapor Boring Construction

Five (5) sub slab soil vapor probes designated SSB-1 through SSB-5 were installed during the remedial investigation. All soil vapor probes were installed directly beneath the concrete slab. The sub slab vapor probes were installed in accordance with the NYSDOH guidance for evaluating soil vapor intrusion dated October 2006. Each sub slab soil vapor sampling point consisted of a stainless steel screen, or implant, fitted with dedicated polyethylene tubing. Each of the implants is of 1 ½-inch diameter. Glass beads were poured into the hold to fully encompass the screen implant and the hole was sealed with bentonite and quick dry-lock non-VOC quick set cement. A map showing the locations of sub slab soil vapor borings is shown in Figure 6.

4.3 Sample Collection and Chemical Analysis

Sampling performed as part of the field investigation was conducted for all Areas of Concern and also considered other means for bias of sampling based on professional judgment, area history, discolored soil, stressed vegetation, drainage patterns, field instrument measurements, odor, or other field indicators. All media including soil, groundwater and soil vapor have been sampled and evaluated in the RIR. Discrete (grab) samples have been used for final delineation

of the nature and extent of contamination and to determine the impact of contaminants on public health and the environment. The sampling performed and presented in this RIR provides sufficient basis for evaluation of remedial action alternatives, establishment of a qualitative human health exposure assessment, and selection of a final remedy.

Soil Sampling

Thirty-four (34) soil samples were collected for chemical analysis during this RI; these included twelve (12) shallow soil samples from zero to 2 feet bgs, six (6) intermediate soil samples from 4 to 6 feet bgs, eleven (11) deep soil samples from 6 to 8 feet bgs, one (1) deep soil sample from 8 to 10 feet bgs and four (4) deep soil samples from 10 to 12 feet bgs. Samples were collected utilizing a 4-foot long Macro Core sampler fitted with dedicated acetate liners.

All samples were properly handled and placed into the appropriately labeled containers. One field blank sample was collected and submitted to the laboratory as specified in the work plan. The samples were placed in a cooler filled with ice and maintained at a maximum 4 degrees Celsius. All samples were transmitted under proper chain of custody procedures to a State-certified (ELAP) laboratory for confirmatory laboratory analysis. All holding times were met. The laboratory did not report any irregularities with respect to their internal Quality Assurance/Quality Control.

Data on soil sample collection for chemical analyses, including dates of collection and sample depths, is reported in Tables 2 through 5.. Figure 6 shows the location of samples collected in this investigation. Laboratories and analytical methods are shown below.

Groundwater Sampling

Six (6) groundwater samples were collected for chemical analysis during this RI. Groundwater samples from the monitoring wells were collected using the low stress (low flow) purging and sampling procedures. Low flow sampling was accomplished with a Solinst® Model 410 Peristaltic Pump and the continuous flow was monitored with a Horiba U-52 water quality meter until the readings had stabilized.

All groundwater samples were collected in laboratory-supplied jars, properly labeled with the sample numbers, the date and time of sampling, the analytical requirements and then placed on ice for the duration of the sampling and transport to the laboratory. One field blank and one trip

blank were collected and submitted to the laboratory as specified in the work plan. A chain of custody form was completed at the time of sampling and maintained until disposition of the samples at the laboratory.

Groundwater sample collection data is reported in Tables 6 through 9. Sampling logs with information on purging and sampling of groundwater monitoring wells is included in Appendix F. Figure 6 shows the location of groundwater sampling. Laboratories and analytical methods are shown below.

Sub Slab Soil Vapor Sampling

Five (5) sub slab soil vapor probes were installed and five (5) sub slab soil vapor samples were collected for chemical analysis during this RI. One (1) outdoor ambient air and one (1) indoor ambient air samples were collected for chemical analysis during this RI. Soil vapor sampling locations are shown in Figure 6. Soil vapor sample collection data is reported in Table 10. Soil vapor sampling logs are included in Appendix G. Methodologies used for soil vapor assessment conform to the *NYS DOH Final Guidance on Soil Vapor Intrusion, October 2006.*

A soil vapor sample was collected from each vapor probe utilizing a 6 liter pre-cleaned, passivated and evacuated whole air Summa® Canister. In order to insure the integrity of the borehole seal and to verify that ambient air is not inadvertently drawn into the sample, a tracer gas, helium, was used to enrich the atmosphere in the immediate vicinity of the sampling location. Plastic sheeting was used to keep the tracer gas in contact with the soil vapor probe during the sampling while continuously monitoring air drawn from the implant with a helium detector (Dielectric Model MGD-2002, Multi-gas Detector). Helium Detector readings did not exceed zero ppm indicating helium was not detected. Following verification that the surface seal was tight and prior to soil vapor sampling, approximately 0.3 ml of air was purged out of all vapor points utilizing a syringe.

The Summa Canisters were calibrated for 8 hours and the soil vapor sampling was run on each canister for the duration of 8 hours. The initial vacuum (inches of mercury) and start time was recorded immediately after opening each Summa Canister. After the sampling was complete, the final vacuum and top time was recorded. After the soil vapor sampling, each Summa was labeled and sent to a laboratory certified to perform air analysis in New York State.

Chemical Analysis

Chemical analytical work presented in this RIR has been performed in the following manner:

Factor	Description
Quality Assurance Officer	The chemical analytical quality assurance is directed by Mark E. Robbins
Chemical Analytical Laboratory	Chemical analytical laboratory(s) used in the RI is NYS ELAP certified and were York Analytical Laboratories, Inc.
Chemical Analytical Methods	Soil analytical methods: • TAL Metals by EPA Method 6010C (rev. 2007); • VOCs by EPA Method 8260C (rev. 2006); • SVOCs by EPA Method 8270D (rev. 2007); • Pesticides by EPA Method 8081B (rev. 2000); • PCBs by EPA Method 8082A (rev. 2000); Groundwater analytical methods: • TAL Metals by EPA Method 6010C (rev. 2007); • VOCs by EPA Method 8260C (rev. 2006); • SVOCs by EPA Method 8270D (rev. 2007); • Pesticides by EPA Method 8081B (rev. 2000); • PCBs by EPA Method 8082A (rev. 2000); Soil vapor analytical methods: • VOCs by TO-15 VOC parameters.

Results of Chemical Analyses

Laboratory data for soil, groundwater and soil vapor are summarized in Tables 2 through 10. Laboratory data deliverables for all samples evaluated in this RIR are provided in digital form in Appendices H, I and J.

5.0 ENVIRONMENTAL EVALUATION

5.1 Geological and Hydrogeological Conditions

The Site is located in the northern portion of Queens County, New York. The elevation of the Subject Property is approximately 30 feet above mean sea level.

Stratigraphy

The stratigraphy of the Site, from the surface down to about 12 feet bgs, is classified as fill consisting of a mixture of gravel, sand, silt, bricks and concrete. Drilling did not occur deeper than 12 feet bgs and bedrock was not encountered.

Hydrogeology

A table of water level data for all monitor wells is included in Table 1. The depth to water ranges from 1.00 feet to 2.89 feet as measured during the well gauging activity. Regional groundwater flow is westerly. A map of groundwater level elevations with groundwater contours and inferred flow lines is shown in Figure 7.

5.2 Soil Chemistry

Soil/fill samples collected during the RI show no VOCs exceeding Track 1 Unrestricted Use Soil Cleanup Objectives (SCOs).VOCs detected but not at concentrations exceeding Track 1 SCOs include 2-Butanone, methylene chloride, o-xylene and p- & m-xylenes. SVOCs consisting of PAH compounds were detected at concentrations less than Track 1 SCOs; these SVOCs include 2,6-Dinitrotoluene, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, di-n-butyl phthalate and fluoranthene. Three pesticides (4, 4'-DDD (max. 0.0043 mg/kg), 4'4-DDE (max. 0.0054 mg/kg) and 4'4-DDT (max. 0.0424 mg/kg)) were detected in two shallow soil samples at concentrations greater than Track 1 SCOs. Pesticides chlordane and dieldrin and the PCB Arochlor 1254 were detected in a shallow sample not exceeding Track 1 SCOs. Metals were detected in all samples. Barium (max. 1,110 mg/kg) and chromium, trivalent (max. 88 mg/kg) was detected in two shallow soil samples at concentrations exceeding Track 2 SCOs. Copper (max. 229 mg/kg), lead (max. 203 mg/kg), nickel (max. 30.30 mg/kg), selenium (max. 5.05 mg/kg), and zinc (max. 753 mg/kg) were detected in seven (7) samples exceeding Track 1 SCOs. Aluminum, antimony, arsenic, barium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel,

potassium, selenium, sodium, vanadium, zinc, mercury and chromium, trivalent were detected at concentrations less than Track 1 SCOs.

Data collected during the RI is sufficient to delineate the vertical and horizontal distribution of contaminants in soil/fill at the Site. A summary table of data for chemical analyses performed on soil samples is included in Tables 2 through 5 Figures 8 and 9 show the location and posts the values for soil/fill that exceed the 6NYCRR Part 375-6.8 Track 2 Soil Cleanup Objectives.

5.3 Groundwater Chemistry

Groundwater samples collected during the RI show no VOCs detected above New York State 6NYCRR Part 703.5 Groundwater Quality Standards (GQS). Two VOCs (acetone and tetrachloroethylene) were detected at concentrations less than their respective GQS. No SVOCs were detected at concentrations exceeding their respective GQS. SVOC bis(2-ethylhexyl)phthalate was detected at concentrations less than GQS. No pesticides or PCBs were detected at concentrations exceeding GQS. The pesticide 4,4'-DDT was detected at a concentration less than GQS. Metals manganese (max. 4,270 µg/L) and sodium (max. 220,000 µg/L) were detected at concentrations exceeding GQS. Metals detected but not exceeding GQS include aluminum, barium, calcium, cobalt, iron, magnesium, manganese, nickel, potassium, sodium and zinc.

Data collected during the RI is sufficient to delineate the distribution of contaminants in groundwater at the Site. A summary table of data for chemical analyses performed on groundwater samples is included in Tables 6 through 9. Exceedences of applicable groundwater standards are shown.

Figure 10 shows the location and posts the values for groundwater that exceed the New York State 6NYCRR Part 703.5 Class GA groundwater standards.

5.4 Soil Vapor Chemistry

Soil vapor results collected during the RI were compared to the compounds listed in Table 3.1 Air Guideline Values located in the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion dated October 2006. Soil vapor results show petroleum related VOCs and associated derivatives in each air sample and each sub slab soil vapor sample at concentrations exceeding NYSDOH standards. The petroleum related compounds range from 0.6 µg/m^3 to 211.4 µg/m^3. Acetone was the highest detected petroleum

related compound with a concentration of 211.4 µg/m^3. Chlorinated hydrocarbons were also detected in the sub slab soil vapor samples and range from 0.6 µg/m^3 to 74.6 µg/m^3. Tetrachloroethylene was the highest detected chlorinated hydrocarbon with a concentration of 74.6 µg/m^3. Tetrachloroethylene was detected in all 5 sub slab soil vapor samples and the 2 ambient air samples.

Data collected during the RI is sufficient to delineate the distribution of contaminants in soil vapor at the Site. A summary table of data for chemical analyses performed on soil vapor samples is included in Table 10.

Figure 11 shows the location and posts the values for soil vapor samples with detected concentrations.

5.5 Prior Activity

Based on an evaluation of the data and information from the RIR, disposal of significant amounts of hazardous waste is not suspected at this site.

5.6 Impediments to Remedial Action

There are no known impediments to remedial action at this property.