

**COMMITMENT & INTEGRITY
DRIVE RESULTS**

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March 6, 2013

Victor Carosi, PE
Commissioner of Public Works
Town of Greenburgh
177 Hillside Ave
Greenburgh, NY 10607

Re: Site Investigation Report
Former Frank's Nursery Site
715 Dobbs Ferry Road
Greenburgh, New York

Dear Mr. Carosi:

Woodard & Curran Engineering P.A. P.C. is providing the following Site Investigation Report (SIR) summarizing the findings from the Site investigation (SI) conducted at the property located at 715 Dobbs Ferry Road, Greenburgh, New York (the "Site"). Our recent Site Investigation (SI) activities were focused on the New York State Department of Environmental Conservation (NYSDEC) Spill Number 0100881, issued to the former owner of the Site, and the presence of historic fill material identified during our previous investigation. Our project understanding, methodology, results, and conclusions are provided below.

BACKGROUND

As documented in the the Phase I Environmental Site Assessment (ESA) Report dated October 4, 2011, the 6.89 acre Site is located in a primarily commercial and residential neighborhood on Dobbs Ferry Road (Figure 1) and is referred to by tax map identification as: Section 008, SBS 050, Block 0028, Lot 009. The Site is developed with one building, former nursery grounds, and two paved parking lots. It has been vacant since 2004 following a bankruptcy filing by Frank's Nursery. The Site was undeveloped until 1967, when a portion of the property was filled-in and a store and barn were built. The Site was further filled in and developed during the 1970s to accommodate an approximately 50,000 square foot commercial building and parking lot. In 1994, the Site was reduced in size from 7.13 acres to 6.89 acres.

The Phase 1 ESA identified a fuel oil spill that occurred on April 23, 2001 (AOC-2) related to an on-site #2 fuel tank and associated piping. NYSDEC records indicate that the Spill Number is still open. Woodard & Curran was retained by the Town of Greenburgh to investigate the status of the spill and the current environmental conditions of soil and ground water specifically related to the spill. An Above Ground Storage Tank (AST) used for storing emergency heating oil (AOC-4) is located in the immediate vicinity of the spill area and was also investigated as part of the spill investigation conducted in September 2012.

The results of Woodard & Curran's spill investigation are included in the October 26, 2012 Spill Investigation Report. Based on the findings of the Spill Investigation Report, Woodard & Curran recommended additional delineation of potential impacts to soil and ground water in the vicinity of the spill area. In addition, Woodard & Curran recommended conducting an investigation to confirm the presence and extent of historic fill material at the Site.



SITE INVESTIGATION

Scope of Work

Woodard & Curran conducted the following scope of work to investigate the presence of fill material underlying the Site and to further delineate the potential impacts to soil and ground water from AOC-2 /AOC-4:

- The advancement of twelve soil borings;
- The collection of six soil samples;
- The installation and development of two ground water monitoring wells;
- The sampling of two new and five existing ground water monitoring wells;
- Implementation of passive product recovery measures for the oil observed in monitoring well MW-6.

Methodology

The methodology for the SI is as follows:

Utility Clearance

Prior to any invasive work a subsurface utility clearance survey was conducted throughout the entire work area and at specific proposed drilling locations. The utility survey was conducted to confirm the proposed drilling locations and identify any subsurface utilities. This utility survey was conducted on January 3, 2013 by Naeva Geophysics Inc. (Naeva) of Congers, New York and overseen by Woodard & Curran personnel. Naeva used geophysical methods including ground penetrating radar, metal detectors, and piping tracing to determine the presence of subsurface obstructions and infrastructure at the proposed boring locations.

Monitoring Well Installation

Based on the ground water flow direction determined by depth to water measurements and the elevation survey conducted during the September 2012 Spill Investigation, Woodard & Curran oversaw the installation of two permanent ground water monitoring wells at the Site. Monitoring wells were installed by Eastern Environmental Solutions, Inc. of Manorville, NY (Eastern Environmental). The purpose of the additional monitoring wells was to delineate the existing ground water impacts up-gradient and cross-gradient of the fuel oil release area. Prior to monitoring well installation, soil borings were installed in the proposed locations to determine the ground water elevation and final well construction details. The soil borings were extended to a depth of up to ten feet and field-screened with a photoionization detector (PID) and visual and olfactory signs of impacts. Existing and new monitoring well locations are indicated on Figure 2.

Monitoring well MW-B was installed on January 7, 2013 using hollow stem augers advanced with the GeoProbe 6610DT drill rig. The monitoring well was constructed with a three-foot length of 2-inch ID, Schedule 40 PVC riser pipe with a fifteen-foot Schedule 40 PVC, 10-slot well screen and #1 sand filter pack, with a total depth of 18 feet below ground surface (bgs). The well was screened to intersect the



apparent saturated zone at the time of installation, generally at approximately eight feet bgs. The sand filter pack extended to one foot above the top of the screen, overlain with a one-foot bentonite seal. The well was surface completed with a flush-mounted road box.

Monitoring well MW-A was installed on January 8, 2013 using hollow stem augers advanced with the GeoProbe 6610DT drill rig. The monitoring well was constructed with a two and a half-foot length of 2-inch ID, Schedule 40 PVC riser pipe with a fifteen-foot Schedule 40 PVC, 10-slot well screen and #1 sand filter pack, with a total depth of 17.5 feet below ground surface (bgs). The well was screened to intersect the apparent saturated zone at the time of installation, generally at approximately seven and one-half feet bgs. The sand filter pack extended to one foot above the top of the screen, overlain with a one-foot bentonite seal. The well was surface completed with a flush-mounted road box. Well construction diagrams are included with the boring logs found in Appendix A.

Well Development

Well development was performed shortly after installation of the new monitoring well and prior to ground water sampling to establish communication with the surrounding aquifer. The wells were developed using a submersible pump with disposable polyethylene tubing to remove fine grained materials from the filter pack and the adjacent formation, as well as to remove sediments from within the well casing. Well development was performed by the removal of several well volumes of water (up to 20 gallons) until the extracted ground water was visually clear of sediment. Development water was transferred to a 55-gallon drum and staged onsite pending characterization and offsite disposal.

Elevation Survey

Following installation of MW-A and MW-B, an elevation survey was conducted by Paul J. Petretti (PJP) of Mamaroneck, NY on January 10, 2013. The survey focused on locating the newly installed and existing monitoring wells and determining the monitoring well casing elevations. This elevation data, in conjunction with the water level measurements collected prior to ground water sampling, was used to estimate ground water flow direction as depicted on a ground water contour map of the water table surface (Figure 3). Monitoring well casing elevation and water level data is included in Table 2.

Soil Investigation

Woodard & Curran advanced twelve soil borings to investigate the presence of fill material documented at the Site and to further delineate the AOC-2/AOC-4 area, which has a documented release of fuel oil and was partially delineated by the previous Site owner and Woodard & Curran.

Soil borings were advanced on January 17 and 18, 2013 by Eastern Environmental and overseen by Woodard & Curran personnel. The borings were completed using a GeoProbe 6610DT track-mounted drill rig utilizing the direct-push methodology. Continuous soil samples were collected at each boring location to beyond the water-table, refusal, or a maximum depth of 14-feet below existing grade. The soil samples were screened with a photoionization detector (PID) for the presence of volatile organic compounds (VOCs). A total of six samples were collected based on field screening and/or visual and olfactory observation for laboratory analysis for the following parameters:

- New York Target Compound List (TCL) VOCs
- New York TCL Semi-Volatile Organic Compounds (SVOCs).
- NYSDEC Part 375 Metals
- NYSDEC Part 375 Pesticides



- NYSDEC Part 375 Herbicides
- Polychlorinated Biphenyls (PCBs)
- Hexavalent Chromium

The soil samples were transferred under chain-of-custody protocol and analyzed by Alpha Analytical Inc. (Alpha) of Westborough MA, a New York State certified laboratory. All field observations were recorded on boring logs and are included in Appendix A.

Ground Water Sampling

After well installation and development, Woodard & Curran remobilized to the Site to sample the existing monitoring wells (WCMW-1, MW-3, MW-4, MW-7, and MW-18) and two newly installed monitoring wells (MW-A, MW-B) to evaluate ground water quality at the Site. MW-6 and MW-2 were not sampled because of the presence of measurable Light Non-Aqueous Phase Liquid (LNAPL) in the form of petroleum product on the surface of the water table.

Ground water sampling was conducted utilizing the low-flow sampling method. Water quality parameters including temperature, conductivity, dissolved oxygen, pH, oxidation-reduction potential and turbidity were recorded at a rate of every three to five minutes until stabilization was achieved. Once the water quality parameters stabilized, a sample was collected from dedicated polyethylene tubing affixed to a submersible bladder pump. All purge water was transferred to a 55-gallon drum to await characterization and disposal. Following the purging of each well, ground water samples were collected using a dedicated bailer for each well and transferred to laboratory-supplied glassware. The ground water samples were transported under chain-of-custody protocol and analyzed for the following parameters:

- New York Target Compound List (TCL) VOCs
- New York TCL Semi-Volatile Organic Compounds (SVOCs).
- NYSDE Part 375 Metals
- NYSDE Part 375 Pesticides
- NYSDE Part 375 Herbicides
- Polychlorinated Biphenyls (PCBs)
- Hexavalent Chromium

Following receipt of the analytical results, samples from WCMW-1 and MW-4 were analyzed for a modified list of dissolved metals including barium, lead, and manganese because elevated concentrations were detected in the unfiltered sample. A more detailed discussion of the results is provided below.

Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) samples were collected throughout the duration of the Site Investigation to ensure the integrity of the data collected. This included the collection and analysis of trip blanks, equipment blanks (field blanks), and standard laboratory QA/QC, as appropriate. The laboratory provided a description of compliance with ASP Level A QA/QC standards.

All samples were analyzed and reported in accordance with the ASP Level A QA/QC standards. Any laboratory QA/QC results which deviated from the performance criteria of the RCPs are explained in the case narratives of the laboratory data reports (Appendix B).



RESULTS

Soil

Subsurface Conditions

The soil observed during boring advancement and soil sample collection confirm the observations of the Spill Investigation Report, which suggested that the Site previously contained a forested wetland area that was cleared and then covered with approximately 5 feet of debris-laden fill. The soil borings contained assorted fill materials including sand, concrete, asphalt, brick, gravel, and other materials in the top several feet, followed by a layer of woody debris in the 5 feet bgs to 7 feet bgs range. This woody layer was especially apparent during the installation of monitoring wells MW-A and MW-B and was previously encountered during the September 2012 Spill Investigation. In addition, the drill cuttings from both monitoring well locations contained a significant quantity of wood shavings and mulch-like material.

Soil Analytical Results

Analytical results were compared to NYSDEC Soil Cleanup Guidance Table 3 Soil Cleanup Levels for Fuel Contaminated Soil ("CP-51"), NYSDEC Part 375 Soil Cleanup Objectives (SCO) for Commercial Use ("Commercial"), and NYSDEC Part 375 Soil Cleanup Objectives for Unrestricted Use ("Residential"). The laboratory report is included in Appendix B and summarized in Table 3 and analytical data is presented on Figures 3A and 3B.

Based on the analytical results, the data indicates the following:

- Herbicides were not detected above the method detection limit (MDL) in any soil samples collected during the SI.
- Pesticides were detected in all six soil samples at concentrations exceeding the NYSDEC Part 375 Unrestricted SCO, but below the Residential and Commercial SCO.
- PCBs were detected at concentrations exceeding the Part 375 Unrestricted SCO, but below the Residential and Commercial SCO in soil borings SB-6 and SB-10.
- SVOCs were detected at concentrations exceeding the Part 375 Unrestricted/CP-51, Residential, and Commercial SCO in SB-6.
- SVOCs were detected at concentrations exceeding the Part 375 Unrestricted/CP-51, and Residential SCO in SB-10 and SB-11.
- Metals were detected at concentrations exceeding the Part 375 Unrestricted SCO in all soil samples.
- Metals were detected above the Part 375 Residential SCO in SB-3, SB-10, and SB-11. In addition, soil borings SB-10 and SB-11 had detected metals concentrations exceeding the Part 375 Commercial SCO.
- VOCs were detected at concentrations exceeding the Part 375 Unrestricted SCO in SB-8 and SB-9.



Ground Water

Ground Water Conditions

Ground water was observed at depths ranging from approximately 5.61 feet bgs to 7.83 feet bgs across the Site. Ground water flow direction was observed to be towards the south/southeast as indicated in Figure 4. Light Non-Aqueous Phase Liquid (LNAPL) was observed in MW-2 and MW-6 at a thickness of 0.01 feet and 0.06 feet respectively. Due to the presence of LNAPL, MW-2 and MW-6 were not sampled. Ground water elevations are summarized in Table 2.

Ground Water Analytical Results

Analytical results were compared to the NYSDEC Technical Guidance Series – Ambient Water Quality Standards for Class GA Ground Water (AWQS). Laboratory results are included in Appendix B and summarized in Table 4 and analytical data is presented on Figure 5.

- Herbicides were not detected above the reporting limit (RL) in any ground water sample.
- Pesticides were not detected above the RL in any ground water sample.
- SVOCs were detected at a concentration exceeding the AWQS in WCMW-1, MW-18, MW-B, MW-7, and MW-A.
- PCBs were not detected above the RL in any ground water sample.
- Barium (total) was detected at a concentration exceeding the AWQS in an unfiltered sample collected from WCMW-1. However, barium (dissolved) was detected at a concentration below the AWQS in a laboratory filtered sample collected from WCMW-1.
- Lead was detected at concentrations exceeding the AWQS in MW-A, MW-B, and MW-4. However, lead (dissolved) was detected at a concentration below the AWQS in a laboratory filtered sample collected from MW-4.
- Manganese (total) was detected at concentrations exceeding the AWQS in all seven monitoring wells. In addition, Manganese was detected at a concentration exceeding the AWQS in the laboratory filtered sample collected from WCMW-1. Manganese was not detected at a concentration exceeding the AWQS in the laboratory filtered samples collected from MW-4.

CONCLUSIONS

Based on the results of the SI, soil and ground water impacts were observed onsite, specifically the concentrations of several SVOCs and metals in soil and SVOCs in ground water exceeding NYSDEC standards outside the MW-6/MW-2 area. These impacts are believed to be likely attributable to the historic fill observed in borings throughout the southern portion of the Site. SVOCs exceeding NYSDEC soil standards were distributed sporadically in the horizontal plane and the sample locations exhibiting elevated SVOCs and metals in soil appear to be correlated.

Soil contamination related to the open NYSDEC Spill has been delineated outbound of the initial spill area. VOC and/or SVOC contamination in exceedance of NYSDEC SCOs observed in soil samples



WC-3, WC-4, WC-14, SB-8, SB-6, SB-9, SB-10, and SB-11 is likely attributed to the presence of fill underlying the Site.

However, impacted soils and ground water from NYSDEC Spill Number 0100881 are still present at the Site. The observed subsurface conditions, including petroleum product in MW-6 and MW-2, indicate the impacted soils and ground water are limited to the immediate area of the historic fuel oil spill as shown on Figures 3A, 3B, and 5.

SVOCs consistent with fuel oil contamination were detected in several down-gradient and cross-gradient monitoring wells at concentrations exceeding the NYSDEC AWQS, however, due to the presence of historic fill encountered in both the September 2012 Spill Investigation and this SI, SVOC contamination may be related to the fill layer underlying the Site.

In addition, metals including barium, manganese, and/or lead were detected in unfiltered ground water samples collected from all monitoring wells at the Site at concentrations exceeding the AWQS, suggesting that ground water contamination outside of the immediate historic fuel oil spill area is related to the presence of historic fill.

Qualitative Receptor Evaluation

Woodard & Curran conducted a limited qualitative receptor evaluation of the contaminated soil and ground water observed at the Site to determine if they may represent a potential risk to public health and/or ecological receptors. Potential exposure pathways evaluated included direct contact with impacted soil or ground water and ground water discharge to surface water, as summarized below:

- Potential for direct contact with soil and ground water in the area of investigation is limited as contaminated soils were identified under the building slab, asphalt parking lot, and areas of heavy vegetation. In addition, soil contamination found in samples collected in vegetative areas (SB-10, SB-12) is at a depth of 8.5-9.5 feet below ground surface and may not be representative of shallow soil conditions.
- The ground water is not a source of drinking water in the area and the area is supplied by municipal water. Consequently, ingestion of ground water is this not considered a potential exposure pathway.
- An adjacent low lying area southeast of the Site appears to be a wetland area. As such, there is potential for exposure to ecological receptors through ground water discharge to surface water at that location. However, given the distance to the potential wetland area from the fuel oil release area and the relatively low concentrations of the constituents detected in the ground water it is not likely that there would be a significant impact to ecological receptors, if any.

Soil and surface water samples in the assumed wetland area were not collected as part of the spill investigation or this Site investigation.

REDEVELOPMENT STRATEGY RECOMMENDATIONS

Spill Remediation and Closeout

Woodard & Curran recommends continued remedial actions to address the presence of LNAPL found in MW-6 and MW-2. Remedial actions for petroleum product may include:



- Passive removal of the observed fuel oil through the use of absorbent socks combined with ongoing ground water quality monitoring;
- Active product removal using vacuum extraction methods and/or excavation of the impacted soils.

Final determination of a Spill Remediation approach should be made in consultation with the NYSDEC Case Manager and should ideally include integration of remedial activities with site redevelopment. Factors that should be evaluated include the observed limited impacts of the spill (fuel oil only observed in two monitoring wells) since 2003, the potential project schedule, the proposed future use/redevelopment of the Site, and the nature and extent of excavation activities that would be required as part of redevelopment.

UST Closeout

Because the identified UST will not resume active use, the tank and all associated fill and supply lines should be properly removed and disposed of in accordance with state and local regulations.

Additional Historic Fill Characterization

Woodard & Curran understands the proposed current redevelopment plans for the Site involves the construction of an indoor athletic complex. Based on the intended Site redevelopment plans and the goal of minimizing risk of exposure to any subsurface contaminants, Woodard & Curran recommends a cap-by-function approach to address the historic fill underlying the Site.

Generally, a cap-by-function approach would involve the use of the following caps to minimize risk of exposure to any subsurface contaminants. There are two types of caps that could be relied upon as part of the final redevelopment. These include:

- Type I Cap – Asphalt Areas
- Type II Cap – Building Footprint

Each of these cap types is discussed below:

Type I Cap – Asphalt Areas

In the event the historic fill material is located in an area that would be covered with asphalt in the final end use, the cap would include the use of an impervious asphalt surface to minimize risk of exposure to subsurface contaminants and prevent stormwater infiltration.

Type II Cap – Building Footprints

In the event that historic fill material is located in an area beneath a proposed building footprint, the building would function as a cap and would minimize risk of exposure to subsurface contaminants and prevent stormwater infiltration.

In addition, the NYSDEC may require the excavation and disposal of any historic fill material not addressed in the cap-by-function approach based on the final Site redevelopment plans. This may include proposed areas of vegetation or any areas not included under the proposed building footprint or asphalt parking areas.



At a minimum, based on our experience, a Soil Management Plan (SMP) may be required as a part of any Site redevelopment activities. A SMP would typically include:

- Additional characterization of the fill material, as required for offsite disposal of any excess fill generated from redevelopment activity and/or re-use of excavated fill material onsite. Additional characterization can be completed in-situ prior to redevelopment to better quantify impacts to the project and to help develop a strategy that integrates the potential redevelopment with the remediation of the historic fill materials;
- Waste characterization sampling procedures and protocols, as appropriate;
- Approved Standard Operating Procedures for air monitoring during excavation activities, the handling/stockpiling of excavated materials, and the documentation and reporting for any materials re-used onsite and/or transported for offsite disposal;
- Proper response protocols in the event that impacted soil and ground water are encountered during Site redevelopment activities including an outline of procedures to notify the appropriate regulatory agencies of potential environmental impacts of soil and ground water encountered, as appropriate.

Based on the observed historic fill material and the concentrations of SVOCs and metals in the investigation area we believe that it would be prudent to meet with the NYSDEC to review the investigation results and discuss our approach for addressing the buried historic fill and associated contamination. Ultimately, the final remedial strategy will be based on an agreed upon approach with the NYSDEC.

We appreciate the opportunity to provide you with this Site Investigation Report. If you have any questions regarding this report, please give me a call at 914.448.2266.

Sincerely,

WOODARD & CURRAN ENGINEERING, PA PC

A handwritten signature in black ink, appearing to read 'AC Catalano'.

Anthony C. Catalano, P.E., BCEE
Principal

213948.01
Enclosure(s)
Tables
Figures
Appendix A – Boring Logs
Appendix B – Laboratory Reports

Cc: Michael van der Heijden – W&C
Hugh Greechan, PE – W&C

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TABLES

Table 1
Summary of Soil and Ground Water Sampling Program
Site Investigation Report
715 Dobbs Ferry Road, Greenburgh NY

SAMPLES			ANALYTICAL PROGRAM ⁽¹⁾						
Location	Date	Sample Matrix	TCL VOCs	TCL SVOCs	Part 375 Metals	Part 375 Pesticides	Part 375 Herbicides	Hexavalent Chromium	PCBs
SB-3	1/17/2013	Soil	X	X	X	X	X	X	X
SB-6	1/17/2013	Soil	X	X	X	X	X	X	X
SB-8	1/17/2013	Soil	X	X	X	X	X	X	X
SB-9	1/18/2013	Soil	X	X	X	X	X	X	X
SB-10	1/18/2013	Soil	X	X	X	X	X	X	X
SB-11	1/18/2013	Soil	X	X	X	X	X	X	X
FB	1/18/2013	Water	X	X	X	X	X	X	X
TB	1/18/2013	Water	X						
WCMW-1	1/29/2013	Ground Water	X	X	X	X	X	X	X
MW-3	1/30/2013	Ground Water	X	X	X	X	X	X	X
MW-4	1/30/2013	Ground Water	X	X	X	X	X	X	X
MW-7	1/30/2013	Ground Water	X	X	X	X	X		X
MW-18	1/29/2013	Ground Water	X	X	X	X	X	X	X
MW-A	1/30/2013	Ground Water	X	X	X	X	X	X	X
MW-B	1/29/2013	Ground Water	X	X	X	X	X	X	X
Field Blank	1/30/2013	Water	X	X	X	X	X	X	X
Trip Blank	1/29/2013	Water	X						
Trip Blank	1/30/2013	Water	X						

(1) Analytical program
TCL VOC - Target Compound List Volatile Organic Compounds
TCL SVOCs - TCL Semivolatile Organic Compounds
Hex Cr - Hexavalent Chromium
Part 375 - New York State Department of Environmental Conservation
375 Soil Cleanup Objectives List
PCBs - Polychlorinated Biphenyls

Table 2
Ground Water Elevation Data
715 Dobbs Ferry Road
Greenburgh, NY

Date		1/15/2013		1/29/2013*	
Well	Casing Elevation (ftamsl)	DTW (ft)	GWE (ftamsl)	DTW (ft)	GWE (ftamsl)
MW-A	322.17	6.05	316.12	6.13	316.04
MW-B	321.67	5.56	316.11	5.61	316.06
MW-2	323.76	7.65	316.11	7.73	316.03
MW-3	323.86	9.22	314.64	7.76	316.1
MW-4	323.8	8.25	315.55	7.83	315.97
MW-6	322.93	6.91	316.02	6.96	315.97
MW-7	322.54	6.4	316.14	6.5	316.04
WCMW-1	321.81	6.49	315.32	6.5	315.31
MW-18	322.63	6.67	315.96	6.98	315.65

Notes:

ftamsl - feet above mean sea level

ft - feet

DTW - Depth to water, measured from top of PVC well casing

GWE - Ground water elevation

* Oil Absorbent pads were removed on 1/23/2013

Table 3
 Summary of Soil Analytical Data
 715 Dobbs Ferry Road
 Greenburgh, NY

LOCATION					SB-8	SB-6	SB-3	SB-9	SB-10	SB-11
SAMPLING DATE					1/17/2013	1/17/2013	1/17/2013	1/18/2013	1/18/2013	1/18/2013
LAB SAMPLE ID					L1301211-01	L1301211-02	L1301211-04	L1301211-05	L1301211-06	L1301211-07
SAMPLE DEPTH (ft.)					7-8	7-8	8.5-9.5	7.5-8.5	8.5-9.5	8.5-9.5
	COMM	RES	UNRES/CP-51	Units		Q	Q	Q	Q	Q
Herbicides					ND	ND	ND	ND	ND	ND
General Chemistry										
Solids, Total	---	---	---	%	91	86	89	28	74	84
Cyanide, Total	27	27	27	mg/kg	0.24	U 0.26	U 0.25	U 0.81	U 0.31	U 0.27
Pesticides										
4,4'-DDE	62	1.8	0.0033	mg/kg	0.0123	0.00973	0.000397	U 0.00125	U 0.00972	U 0.0086
4,4'-DDD	92	2.6	0.0033	mg/kg	0.0163	0.0169	P 0.0041	U 0.00193	U 0.0952	0.0346
4,4'-DDT	47	1.7	0.0033	mg/kg	0.00312	J 0.00145	U 0.00214	J 0.00513	J 0.0338	U 0.0299
cis-Chlordane	24	0.91	0.094	mg/kg	0.000608	U 0.000628	U 0.000598	U 0.00189	U 0.0415	J 0.115
trans-Chlordane	---	0.54	---	mg/kg	0.000576	U 0.000594	U 0.000567	U 0.00179	U 0.062	P 0.0975
Chlordane	---	---	---	mg/kg	0.00578	U 0.00597	U 0.00569	U 0.018	U 0.453	P 0.826
PCBs										
Aroclor 1254	1	1	0.1	mg/kg	0.0056	U 0.173	U 0.00575	U 0.0177	U 0.478	U 0.00597
Aroclor 1260	1	1	0.1	mg/kg	0.0122	J 0.00633	U 0.00633	U 0.0194	U 0.0749	U 0.0283
Semivolatile Organic Compounds										
Acenaphthene	500	100	20	mg/kg	0.078	U 2.2	0.052	J 0.25	U 0.96	U 0.84
Fluoranthene	500	100	100	mg/kg	0.66	20	0.53	0.15	U 0.58	U 4.6
Naphthalene	500	100	12	mg/kg	0.12	U 0.73	J 0.058	U 0.37	U 1.4	U 1.2
Bis(2-Ethylhexyl)phthalate	---	50	---	mg/kg	0.075	U 0.81	J 0.038	U 0.24	U 2	J 0.8
Benzo(a)anthracene	5.6	1	1	mg/kg	0.32	8.3	0.28	0.23	U 1.3	2.4
Benzo(a)pyrene	1	1	1	mg/kg	0.33	5.3	0.24	0.28	U 1.3	2.5
Benzo(b)fluoranthene	5.6	1	1	mg/kg	0.47	6.7	0.31	0.21	U 1.9	3.3
Benzo(k)fluoranthene	56	1	0.8	mg/kg	0.19	J 2.9	0.15	0.18	U 0.79	1.3
Chrysene	56	1	1	mg/kg	0.38	7.2	0.27	0.18	U 1.5	2.6
Acenaphthylene	500	100	100	mg/kg	0.094	U 0.3	J 0.048	U 0.3	U 1.2	U 1
Anthracene	500	100	100	mg/kg	0.089	J 6.5	0.12	0.16	U 0.61	J 0.76
Benzo(ghi)perylene	500	100	100	mg/kg	0.23	J 2.1	0.12	J 0.3	U 1.1	U 1.4
Fluorene	500	100	30	mg/kg	0.067	U 5.6	0.063	J 0.22	U 0.82	U 0.71
Phenanthrene	500	100	100	mg/kg	0.31	24	0.42	0.2	U 1.6	J 2.2
Dibenzo(a,h)anthracene	0.56	0.33	0.33	mg/kg	0.067	U 0.63	0.034	J 0.22	U 0.82	U 0.72
Indeno(1,2,3-cd)Pyrene	5.6	0.5	0.5	mg/kg	0.2	J 2.1	0.11	J 0.28	U 1.1	U 1.4
Pyrene	500	100	100	mg/kg	0.58	15	0.44	0.19	U 2.2	J 4.2
Dibenzofuran	350	14	7	mg/kg	0.074	U 2.7	0.038	U 0.24	U 0.91	U 0.8
2-Methylnaphthalene	---	0.41	---	mg/kg	0.14	U 0.65	J 0.072	U 0.46	U 1.7	U 1.5
Carbazole	---	---	---	mg/kg	0.058	U 2.8	0.066	J 0.19	U 0.71	U 0.62
Metals										
Arsenic, Total	16	16	13	mg/kg	2	3.2	1.6	2J	J 4.8	6.4
Barium, Total	400	350	350	mg/kg	160	120	170	220	570	470
Beryllium, Total	590	14	7.2	mg/kg	0.4	J 0.47	0.43	J 0.25	J 0.32	J 0.11
Cadmium, Total	9.3	2.5	2.5	mg/kg	0.05	U 0.05	U 0.05	U 1J	0.75	J 0.45
Chromium, Hexavalent	400	22	1	mg/kg	0.2	U 0.21	U 0.2	U 0.64	U 0.24	U 0.21
Chromium, Trivalent	1500	36	30	mg/kg	30	32	37	14	53	17
Copper, Total	270	270	50	mg/kg	42	23	32	58	56	31
Lead, Total	1000	400	63	mg/kg	60	180	20	39	730	1300
Manganese, Total	10000	2000	1600	mg/kg	230	480	310	180	300	330
Mercury, Total	2.8	0.81	0.18	mg/kg	0.09	0.1	0.06	J 0.29	0.35	1.1
Nickel, Total	310	140	30	mg/kg	21	16	26	17	70	12
Selenium, Total	1500	36	3.9	mg/kg	0.96	J 0.67	J 0.8	J 5.2	J 1.4	J 0.59
Silver, Total	1500	36	2	mg/kg	0.17	U 0.61	J 0.18	U 0.56	U 0.2	U 0.18
Zinc, Total	10000	2200	109	mg/kg	110	110	100	48	460	370

Table 3
 Summary of Soil Analytical Data
 715 Dobbs Ferry Road
 Greenburgh, NY

LOCATION					SB-8	SB-6	SB-3	SB-9	SB-10	SB-11						
SAMPLING DATE					1/17/2013	1/17/2013	1/17/2013	1/18/2013	1/18/2013	1/18/2013						
LAB SAMPLE ID					L1301211-01	L1301211-02	L1301211-04	L1301211-05	L1301211-06	L1301211-07						
SAMPLE DEPTH (ft.)					7-8	7-8	8.5-9.5	7.5-8.5	8.5-9.5	8.5-9.5						
	COMM	RES	UNRES/CP-51	Units		Q	Q	Q	Q	Q	Q					
Volatile Organic Compounds																
Acetone	500	100	0.05	mg/kg	0.057	0.02	0.017	0.53	0.0036	U	0.039					
2-Butanone	500	100	0.12	mg/kg	0.0045	U	0.0042	0.0036	U	0.13	0.0043	U	0.0045	U		
Naphthalene	500	100	12	mg/kg	0.001	J	0.002	J	0.00071	U	0.0051	U	0.00085	U	0.0009	U
1,4-Diethylbenzene	---	---	---	mg/kg	0.00048	J	0.00022	U	0.00018	U	0.0013	U	0.00022	U	0.00023	U
1,2,4,5-Tetramethylbenzene	---	---	---	mg/kg	0.0011	J	0.00019	U	0.00017	U	0.0012	U	0.0002	U	0.00021	U

Notes:

Bold - Indicates compound detected

mg/kg - milligrams per kilogram

Q - Qualifier

U - Compound not detected above the method detection limit (MDL) shown

J - Estimated value (compound detected above the MDL, but below the reporting limit (RL))

P - The relative percent difference (RPD) between the results for the two columns exceeds the method-specified criteria.

NYSDEC - New York State Department of Environmental Conservation

CP-51 - Soil Cleanup Levels for Fuel Oil Contaminated Sites

SCO - Soil Cleanup Objective

Compound Exceeds NYSDEC Part 375 Unrestricted SCO/CP-51

Compound Exceeds NYSDEC Part 375 Residential & Unrestricted SCO

Compound Exceeds NYSDEC Part 375 Commercial, Residential & Unrestricted SCO

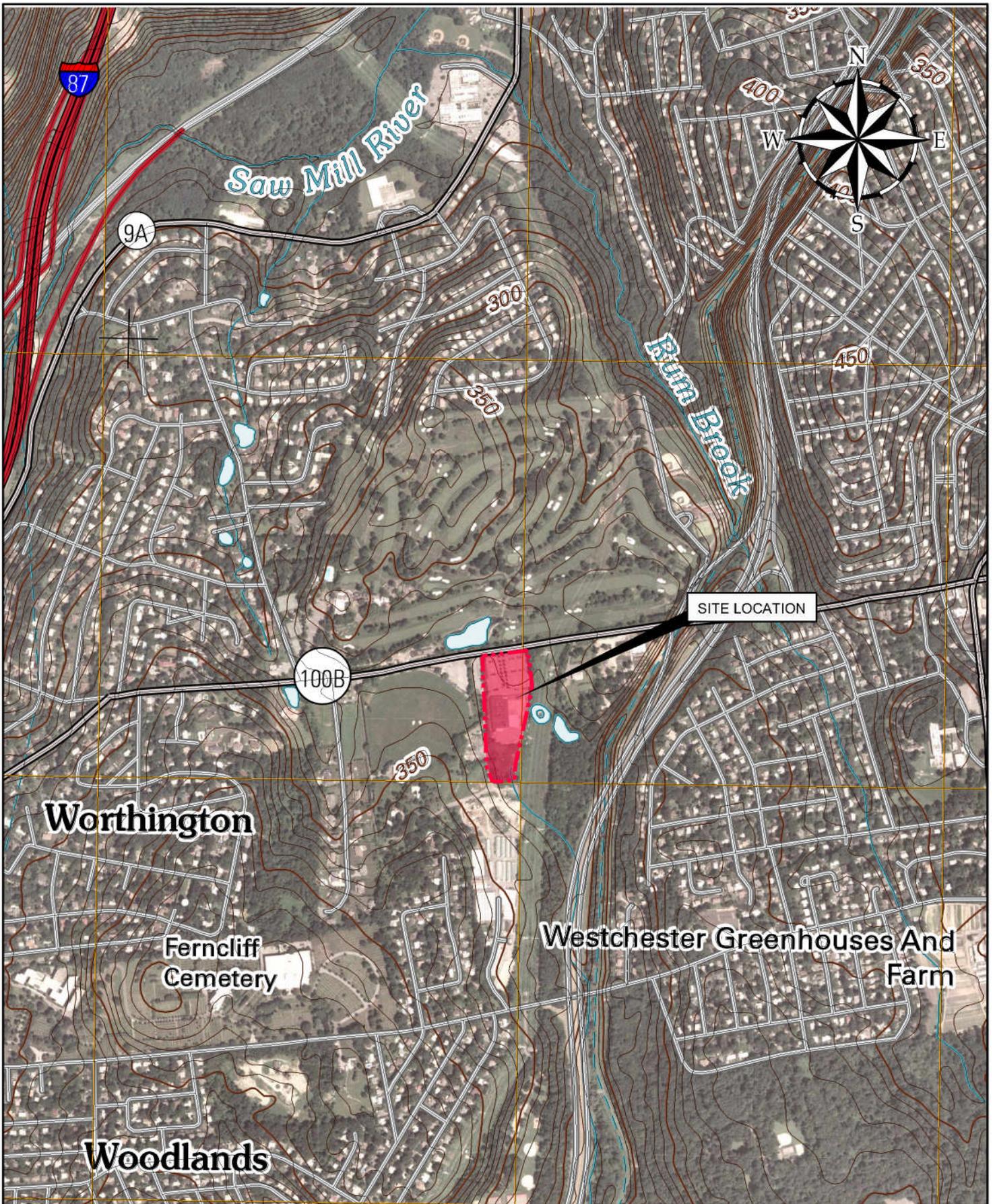
Table 4
 Summary of Ground Water Analytical Data
 715 Dobbs Ferry Road
 Greenburgh, NY

LOCATION			WCMW-1		MW-18		MW-B		MW-7		MW-A		MW-3		MW-4
SAMPLING DATE			1/29/2013		1/29/2013		1/29/2013		1/30/2013		1/30/2013		1/30/2013		1/30/2013
LAB SAMPLE ID			L1301717-01/R1		L1301717-02/R1		L1301717-03/R1		L1301717-05/R1		L1301717-06/R1		L1301717-07		L1301717-08
	AWQS	Units		Q		Q		Q		Q		Q		Q	
Herbicides	---	ug/l	ND		ND		ND								
Pesticides	---	ug/l	ND		ND		ND								
Semivolatile Organics	---														
Dibenzofuran	---	ug/l	2	U	2	U	1.3	J	1.4	J	1.4	J	2	U	2
3-Methylphenol/4-Methylphenol	---	ug/l	5	U	5	U	5	U	5	U	14		5	U	5
Benzoic Acid	--	ug/l	50	U	50	U	17	J	50	U	86		50	U	50
Acenaphthene	20	ug/l	1.6		1.3		3.6		5.2		3.4		0.26		0.81
Fluoranthene	50	ug/l	0.31		0.64		2.5		0.83		0.38		0.2	U	0.14
Naphthalene	10	ug/l	0.3		0.2	U	1.6		0.2	U	0.95		0.2	U	0.2
Benzo(a)anthracene	---	ug/l	0.06	J	0.14	J	0.69		0.16	J	0.06	J	0.2	U	0.2
Benzo(a)pyrene	0	ug/l	0.2	U	0.12	J	0.55		0.12	J	0.2	U	0.2	U	0.2
Benzo(b)fluoranthene	0.002	ug/l	0.2	U	0.18	J	0.76		0.15	J	0.2	U	0.2	U	0.2
Benzo(k)fluoranthene	0.002	ug/l	0.2	U	0.08	J	0.31		0.2	U	0.2	U	0.2	U	0.2
Chrysene	0.002	ug/l	0.08	J	0.16	J	0.72		0.15	J	0.06	J	0.2	U	0.2
Acenaphthylene	--	ug/l	0.2	U	0.2	U	0.09	J	0.2	U	1.6		0.2	U	0.2
Anthracene	50	ug/l	0.22		0.35		1.3		0.86		0.41		0.2	U	0.09
Benzo(ghi)perylene	---	ug/l	0.2	U	0.1	J	0.37		0.09	J	0.2	U	0.2	U	0.2
Fluorene	50	ug/l	1.5		1.2		3.6		4.4		2.7		0.26		0.82
Phenanthrene	50	ug/l	0.4		0.74		5.8		1.7		1.9		0.2	U	0.19
Dibenzo(a,h)anthracene	---	ug/l	0.2	U	0.2	U	0.09	J	0.2	U	0.2	U	0.2	U	0.2
Indeno(1,2,3-cd)Pyrene	0.002	ug/l	0.2	U	0.1	J	0.4		0.09	J	0.2	U	0.2	U	0.2
Pyrene	50	ug/l	0.22		0.52		1.8		0.66		0.26		0.2	U	0.12
2-Methylnaphthalene	---	ug/l	0.12	J	0.2	U	0.52		0.09	J	1.5		0.2	U	0.2
Polychlorinated Biphenyls	---	ug/l	ND		ND		ND								
Total Metals - Westborough Lab	---														
Arsenic, Total	25	ug/l	3.3		3.1		2.5		0.8		1.1		0.6		0.9
Barium, Total	1000	ug/l	1110		364		713.7		845.5		745.8		259.1		436.9
Beryllium, Total	3	ug/l	0.5	U	0.5	U	0.5	U	0.3	J	0.5	U	0.5	U	0.5
Cadmium, Total	5	ug/l	0.2	U	0.1	J	0.1	J	0.1	J	0.1	J	0.5	U	0.1
Chromium, Hexavalent	50	ug/l	50	U	50	U	50	U	10	U	10	U	1	J	2
Chromium, Total	50	ug/l	1.4		2.8		1.3		2		1.4		0.8	J	1.2
Copper, Total	200	ug/l	2.6		9.5		2.8		2.3		2.5		3.2		3.1
Lead, Total	25	ug/l	20.6		24.9		28.8		24.7		27.5		3.7		40.3
Manganese, Total	300	ug/l	1267		692.5		1163		1171		1053		490.4		320.2
Mercury, Total	0.7	ug/l	0.1	J	0.1	J	0.1								
Nickel, Total	100	ug/l	1		4.9		1.2		0.9	J	0.97	J	0.9	J	1.9
Zinc, Total	2000	ug/l	44.2		43.3		48.8		51.5		48.6		59.4		47.6
Dissolved Metals															
Barium, Dissolved	1000	ug/l	884.5		NA		NA		NA		NA		NA		367.5
Lead, Dissolved	25	ug/l	1	U	NA		NA		NA		NA		NA		0.3
Manganese, Dissolved	300	ug/l	1106		NA		NA		NA		NA		NA		286.9
Volatile Organics															
Toluene	5	ug/l	2.5	U	2.5	U	2.5	U	2.5	U	1.4	J	2.5	U	2.5
Acetone	50	ug/l	5	U	2.3	J	1.7	J	6.4		4.6	J	3	J	2.7
n-Butylbenzene	5	ug/l	2.5	U	2.5	U	2.5	U	2.5	U	1.6	J	2.5	U	2.5
sec-Butylbenzene	5	ug/l	2.5	U	2.5	U	2.5	U	0.77	J	2.6		2.5	U	2.5
Isopropylbenzene	5	ug/l	2.5	U	2.5	U	2.5	U	2.5	U	3.3		2.5	U	2.5
p-Isopropyltoluene	5	ug/l	2.5	U	2.5	U	2.5	U	2.5	U	2.1	J	2.5	U	2.5
Naphthalene	10	ug/l	2.5	U	2.5	U	2	J	2.5	U	1	J	2.5	U	2.5
n-Propylbenzene	5	ug/l	2.5	U	2.5	U	2.5	U	2.5	U	2.8		2.5	U	2.5
1,4-Diethylbenzene	--	ug/l	2	U	2	U	2	U	0.74	J	1.8	J	2	U	2
1,2,4,5-Tetramethylbenzene	--	ug/l	2	U	0.8	J	2	U	4		8.9		2	U	0.69

Notes:
 Bold - Indicates compound detected
 NA - Not Analyzed
 ND - Not Detected
 ug/l - micrograms per liter
 Q - Qualifier
 U - Compound not detected at reporting limit (RL) shown
 J - Estimated Value; compound detected above method detection limit (MDL) but below RL
 NYSDEC - New York State Department of Environmental Conservation
 AWQS - Ambient Water Quality Standards - NYSDEC Technical Operational Guidance Series (TOGS)
 Exceeds AWQS

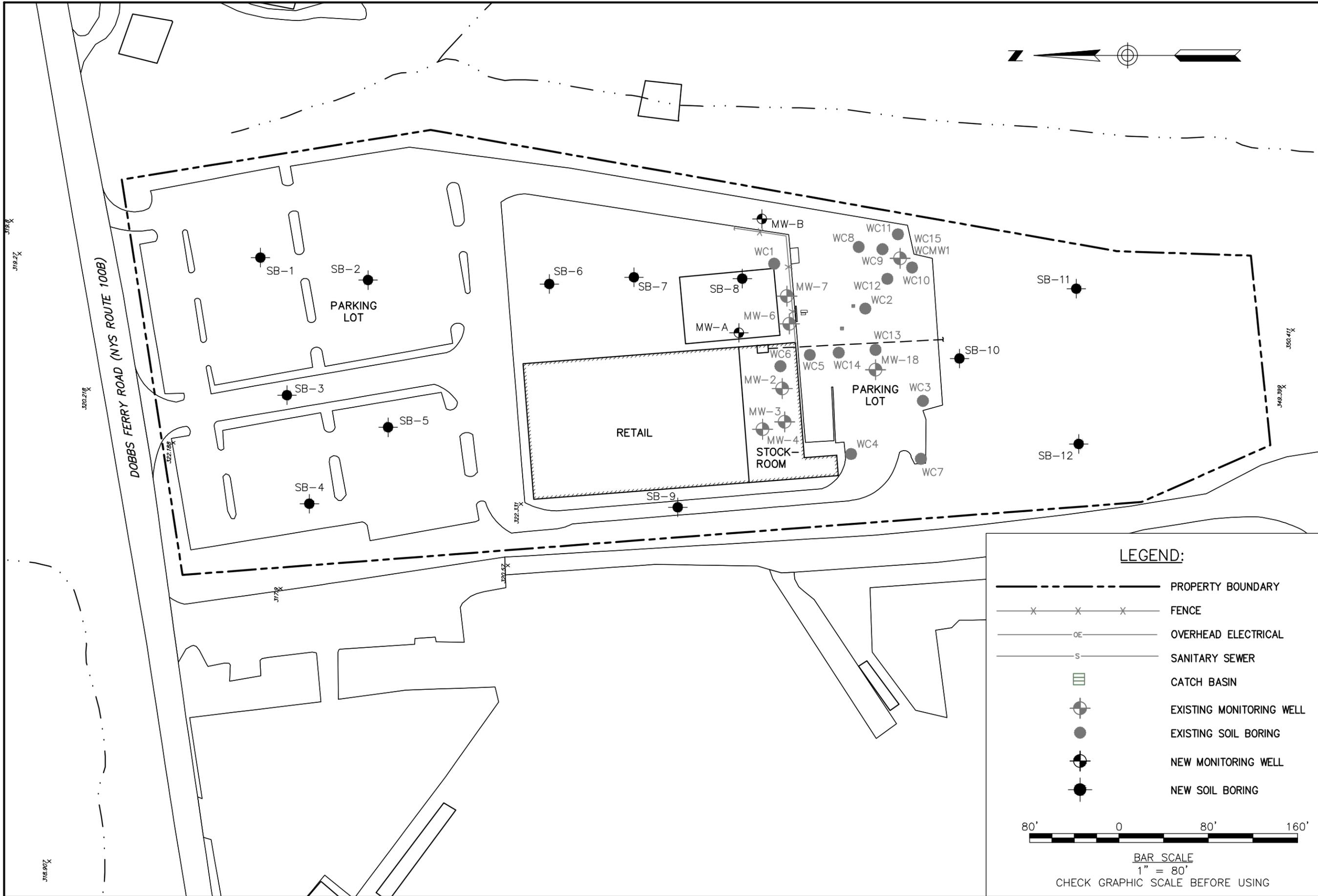


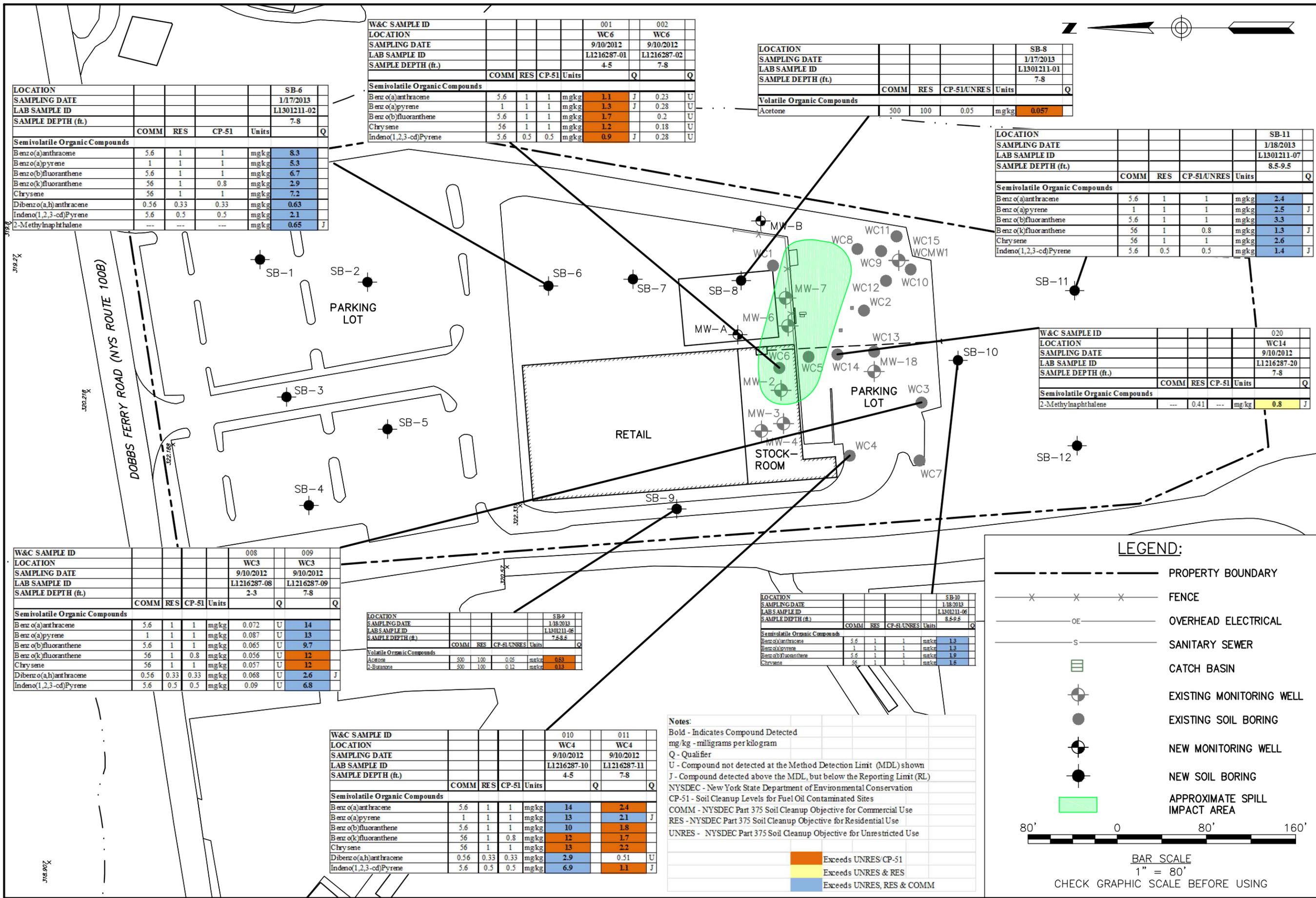
FIGURES



SOURCE: ©2010 United States Geological Survey

 <p>WOODARD & CURRAN ENGINEERING P.A.C. 709 Westchester Avenue Suite L2 White Plains, New York 10604 914.448.2266 www.woodardcurran.com</p> <p>COMMITMENT & INTEGRITY DRIVE RESULTS</p>	<p>SITE LOCATION MAP</p>		<p>TOWN OF GREENBURGH 715 DOBBS FERRY ROAD GREENBURGH, NEW YORK 10607</p>	<p>JOB NO: 213948.00 DATE: February 2013 SCALE: 1"=1500'</p>
	<p>DESIGNED BY: LH DRAWN BY: DCC</p>	<p>CHECKED BY: LH 21394800_Figure 1.dwg</p>	<p>SITE INVESTIGATION REPORT</p>	<p>FIGURE 1</p>





LOCATION	SB-6
SAMPLING DATE	1/17/2013
LAB SAMPLE ID	L1301211-02
SAMPLE DEPTH (ft.)	7-8
	COMM RES CP-51 Units Q
Semivolatile Organic Compounds	
Benz o(a)anthracene	5.6 1 1 mg/kg 8.3
Benz o(a)pyrene	1 1 1 mg/kg 5.3
Benz o(b)fluoranthene	5.6 1 1 mg/kg 6.7
Benz o(k)fluoranthene	5.6 1 0.8 mg/kg 2.9
Chrysene	5.6 1 1 mg/kg 7.2
Dibenzo(a,h)anthracene	0.56 0.33 0.33 mg/kg 0.63
Indeno(1,2,3-cd)Pyrene	5.6 0.5 0.5 mg/kg 2.1
2-Methylnaphthalene	--- --- --- mg/kg 0.65 J

W&C SAMPLE ID	001	002
LOCATION	WC6	WC6
SAMPLING DATE	9/10/2012	9/10/2012
LAB SAMPLE ID	L1216287-01	L1216287-02
SAMPLE DEPTH (ft.)	4-5	7-8
	COMM RES CP-51 UNRES Units Q	Q
Semivolatile Organic Compounds		
Benz o(a)anthracene	5.6 1 1 mg/kg 1.1	0.23 U
Benz o(a)pyrene	1 1 1 mg/kg 1.3	0.28 U
Benz o(b)fluoranthene	5.6 1 1 mg/kg 1.7	0.2 U
Chrysene	5.6 1 1 mg/kg 1.2	0.18 U
Indeno(1,2,3-cd)Pyrene	5.6 0.5 0.5 mg/kg 0.9	0.28 U

LOCATION	SB-8
SAMPLING DATE	1/17/2013
LAB SAMPLE ID	L1301211-01
SAMPLE DEPTH (ft.)	7-8
	COMM RES CP-51/UNRES Units Q
Volatile Organic Compounds	
Acetone	500 100 0.05 mg/kg 0.057

LOCATION	SB-11
SAMPLING DATE	1/18/2013
LAB SAMPLE ID	L1301211-07
SAMPLE DEPTH (ft.)	8.5-9.5
	COMM RES CP-51/UNRES Units Q
Semivolatile Organic Compounds	
Benz o(a)anthracene	5.6 1 1 mg/kg 2.4
Benz o(a)pyrene	1 1 1 mg/kg 2.5 J
Benz o(b)fluoranthene	5.6 1 1 mg/kg 3.3
Benz o(k)fluoranthene	5.6 1 0.8 mg/kg 1.3 J
Chrysene	5.6 1 1 mg/kg 2.6
Indeno(1,2,3-cd)Pyrene	5.6 0.5 0.5 mg/kg 1.4 J

W&C SAMPLE ID	020
LOCATION	WC14
SAMPLING DATE	9/10/2012
LAB SAMPLE ID	L1216287-20
SAMPLE DEPTH (ft.)	7-8
	COMM RES CP-51 Units Q
Semivolatile Organic Compounds	
2-Methylnaphthalene	--- 0.41 --- mg/kg 0.8 J

W&C SAMPLE ID	008	009
LOCATION	WC3	WC3
SAMPLING DATE	9/10/2012	9/10/2012
LAB SAMPLE ID	L1216287-08	L1216287-09
SAMPLE DEPTH (ft.)	2-3	7-8
	COMM RES CP-51 Units Q	Q
Semivolatile Organic Compounds		
Benz o(a)anthracene	5.6 1 1 mg/kg 0.072	14 U
Benz o(a)pyrene	1 1 1 mg/kg 0.087	13 U
Benz o(b)fluoranthene	5.6 1 1 mg/kg 0.065	9.7 U
Benz o(k)fluoranthene	5.6 1 0.8 mg/kg 0.056	12 U
Chrysene	5.6 1 1 mg/kg 0.057	12 U
Dibenzo(a,h)anthracene	0.56 0.33 0.33 mg/kg 0.068	2.6 U
Indeno(1,2,3-cd)Pyrene	5.6 0.5 0.5 mg/kg 0.09	6.8 J

LOCATION	SB-9
SAMPLING DATE	1/18/2013
LAB SAMPLE ID	L1301211-06
SAMPLE DEPTH (ft.)	7-8-9.5
	COMM RES CP-51 UNRES Units Q
Volatile Organic Compounds	
Acetone	500 100 0.05 mg/kg 0.53
2-Butanone	500 100 0.12 mg/kg 0.13

LOCATION	SB-10
SAMPLING DATE	1/18/2013
LAB SAMPLE ID	L1301211-06
SAMPLE DEPTH (ft.)	8.5-9.5
	COMM RES CP-51 UNRES Units Q
Semivolatile Organic Compounds	
Benz o(a)anthracene	5.6 1 1 mg/kg 1.3
Benz o(a)pyrene	1 1 1 mg/kg 1.3
Benz o(b)fluoranthene	5.6 1 1 mg/kg 1.9
Chrysene	5.6 1 1 mg/kg 1.8

W&C SAMPLE ID	010	011
LOCATION	WC4	WC4
SAMPLING DATE	9/10/2012	9/10/2012
LAB SAMPLE ID	L1216287-10	L1216287-11
SAMPLE DEPTH (ft.)	4-5	7-8
	COMM RES CP-51 Units Q	Q
Semivolatile Organic Compounds		
Benz o(a)anthracene	5.6 1 1 mg/kg 14	2.4
Benz o(a)pyrene	1 1 1 mg/kg 13	2.1 J
Benz o(b)fluoranthene	5.6 1 1 mg/kg 10	1.8
Benz o(k)fluoranthene	5.6 1 0.8 mg/kg 12	1.7
Chrysene	5.6 1 1 mg/kg 13	2.2
Dibenzo(a,h)anthracene	0.56 0.33 0.33 mg/kg 2.9	0.51 U
Indeno(1,2,3-cd)Pyrene	5.6 0.5 0.5 mg/kg 6.9	1.1 J

Notes:
 Bold - Indicates Compound Detected
 mg/kg - milligrams per kilogram
 Q - Qualifier
 U - Compound not detected at the Method Detection Limit (MDL) shown
 J - Compound detected above the MDL, but below the Reporting Limit (RL)
 NYSDEC - New York State Department of Environmental Conservation
 CP-51 - Soil Cleanup Levels for Fuel Oil Contaminated Sites
 COMM - NYSDEC Part 375 Soil Cleanup Objective for Commercial Use
 RES - NYSDEC Part 375 Soil Cleanup Objective for Residential Use
 UNRES - NYSDEC Part 375 Soil Cleanup Objective for Unrestricted Use

LEGEND:

- PROPERTY BOUNDARY
- X X X FENCE
- OE — OVERHEAD ELECTRICAL
- S — SANITARY SEWER
- [] CATCH BASIN
- EXISTING MONITORING WELL
- EXISTING SOIL BORING
- NEW MONITORING WELL
- NEW SOIL BORING
- [] APPROXIMATE SPILL IMPACT AREA

80' 0 80' 160'

BAR SCALE
 1" = 80'
 CHECK GRAPHIC SCALE BEFORE USING

W&C SAMPLE ID	001	002	LOCATION			
LOCATION	WC6	WC6	SB-6			
SAMPLING DATE	9/10/2012	9/10/2012	1/17/2013			
LAB SAMPLE ID	L1217993-01	L1217993-02	L1301211-02			
SAMPLE DEPTH (ft.)	4-5	7-8	7-8			
	COMM	RES	UNRES	Units	Q	Q
Pesticides						
4,4'-DDE	62	1.8	0.0033	mg/kg	0.00973	
4,4'-DDD	92	1.7	0.0033	mg/kg	0.0169	P
PCBs						
Aroclor 1254	1	1	0.1	mg/kg	0.173	
Metals						
Chromium, Trivalent	1500	36	30	mg/kg	32	
Lead, Total	1000	400	63	mg/kg	180	
Mercury, Total	2.8	0.81	0.18	mg/kg	0.52	
Zinc, Total	10000	2200	109	mg/kg	110	

W&C SAMPLE ID	003	004	LOCATION			
LOCATION	WC1	WC1	SB-6			
SAMPLING DATE	9/10/2012	9/10/2012	1/17/2013			
LAB SAMPLE ID	L1217993-03	L1217993-04	L1301211-01			
SAMPLE DEPTH (ft.)	4-5	8-9	7-8			
	COMM	RES	UNRES	Units	Q	Q
Total Metals						
Iron, Total	---	2000	---	mg/kg	16000	13000
Pesticides						
4,4'-DDE	62	1.8	0.0033	mg/kg	0.0123	
4,4'-DDD	92	1.7	0.0033	mg/kg	0.0163	
Metals						
Chromium, Trivalent	1500	36	30	mg/kg	30	
Zinc, Total	10000	2200	109	mg/kg	110	

W&C SAMPLE ID	020	LOCATION				
LOCATION	WC14	SB-11				
SAMPLING DATE	9/10/2012	1/18/2013				
LAB SAMPLE ID	L1217993-13	L1301211-07				
SAMPLE DEPTH (ft.)	7-8	8.5-9.5				
	COMM	RES	UNRES	Units	Q	
Total Metals						
Arsenic, Total	16	16	13	mg/kg	15	
Copper, Total	270	270	50	mg/kg	160	
Chromium, Trivalent	1500	36	30	mg/kg	42	
Iron, Total	---	2000	---	mg/kg	43000	
Lead, Total	1000	400	63	mg/kg	170	
Mercury, Total	2.8	0.81	0.18	mg/kg	0.22	
Nickel, Total	310	140	30	mg/kg	36	
Zinc, Total	10000	2200	109	mg/kg	190	

W&C SAMPLE ID	006	007	LOCATION			
LOCATION	WC2	WC2	SB-11			
SAMPLING DATE	9/10/2012	9/10/2012	1/18/2013			
LAB SAMPLE ID	L1217993-06	L1217993-07	L1301211-04			
SAMPLE DEPTH (ft.)	4-5	8-9	8.5-9.5			
	COMM	RES	UNRES	Units	Q	Q
Total Metals						
Copper, Total	270	270	50	mg/kg	96	29
Iron, Total	---	2000	---	mg/kg	29000	23000
Lead, Total	1000	400	63	mg/kg	280	56
Mercury, Total	2.8	0.81	0.18	mg/kg	0.29	0.02
Zinc, Total	10000	2200	109	mg/kg	280	91

W&C SAMPLE ID	015	LOCATION				
LOCATION	WC7	SB-9				
SAMPLING DATE	9/10/2012	1/18/2013				
LAB SAMPLE ID	L1217993-12	L1301211-05				
SAMPLE DEPTH (ft.)	7-8	7.5-8.5				
	COMM	RES	UNRES	Units	Q	
Total Metals						
Copper, Total	270	270	50	mg/kg	57	
Chromium, Trivalent	1500	36	30	mg/kg	31	
Iron, Total	---	2000	---	mg/kg	26000	
Lead, Total	1000	400	63	mg/kg	94	
Nickel, Total	310	140	30	mg/kg	49	
Zinc, Total	10000	2200	109	mg/kg	110	

W&C SAMPLE ID	008	009	LOCATION			
LOCATION	WC3	WC3	SB-3			
SAMPLING DATE	9/10/2012	9/10/2012	1/17/2013			
LAB SAMPLE ID	L1217993-08	L1217993-09	L1301211-04			
SAMPLE DEPTH (ft.)	2-3	7-8	8.5-9.5			
	COMM	RES	UNRES	Units	Q	Q
Total Metals						
Arsenic, Total	16	16	13	mg/kg	2	23
Barium, Total	400	350	350	mg/kg	28	510
Cadmium, Total	9.3	2.5	2.5	mg/kg	0.86	3.7
Chromium, Trivalent	1500	36	30	mg/kg	2.7	56
Copper, Total	270	270	50	mg/kg	250	300
Iron, Total	---	2000	---	mg/kg	35000	110000
Lead, Total	1000	400	63	mg/kg	38	1600
Mercury, Total	2.8	0.81	0.18	mg/kg	0.09	0.69
Nickel, Total	310	140	30	mg/kg	6.9	75
Zinc, Total	10000	2200	109	mg/kg	64	1700

W&C SAMPLE ID	010	011	LOCATION			
LOCATION	WC4	WC4	SB-9			
SAMPLING DATE	9/10/2012	9/10/2012	1/18/2013			
LAB SAMPLE ID	L1217993-10	L1217993-11	L1301211-06			
SAMPLE DEPTH (ft.)	4-5	7-8	8.5-9.5			
	COMM	RES	UNRES	Units	Q	Q
Total Metals						
Barium, Total	400	350	350	mg/kg	1500	140
Copper, Total	270	270	50	mg/kg	580	35
Iron, Total	---	2000	---	mg/kg	14000	48000
Lead, Total	1000	400	63	mg/kg	1600	300
Mercury, Total	2.8	0.81	0.18	mg/kg	0.32	0.19
Zinc, Total	10000	2200	109	mg/kg	860	240

W&C SAMPLE ID	009	LOCATION			
LOCATION	WC3	SB-10			
SAMPLING DATE	9/10/2012	1/18/2013			
LAB SAMPLE ID	L1217993-09	L1301211-06			
SAMPLE DEPTH (ft.)	7-8	8.5-9.5			
	COMM	RES	UNRES	Units	Q
Pesticides					
4,4'-DDD	92	1.7	0.0033	mg/kg	0.0041
Metals					
Chromium, Trivalent	1500	36	30	mg/kg	37

W&C SAMPLE ID	006	007	LOCATION			
LOCATION	WC2	WC2	SB-10			
SAMPLING DATE	9/10/2012	9/10/2012	1/18/2013			
LAB SAMPLE ID	L1217993-06	L1217993-07	L1301211-06			
SAMPLE DEPTH (ft.)	4-5	8-9	8.5-9.5			
	COMM	RES	UNRES	Units	Q	Q
Total Metals						
Copper, Total	270	270	50	mg/kg	96	29
Iron, Total	---	2000	---	mg/kg	29000	23000
Lead, Total	1000	400	63	mg/kg	280	56
Mercury, Total	2.8	0.81	0.18	mg/kg	0.29	0.02
Zinc, Total	10000	2200	109	mg/kg	280	91

W&C SAMPLE ID	015	LOCATION				
LOCATION	WC7	SB-9				
SAMPLING DATE	9/10/2012	1/18/2013				
LAB SAMPLE ID	L1217993-12	L1301211-05				
SAMPLE DEPTH (ft.)	7-8	7.5-8.5				
	COMM	RES	UNRES	Units	Q	
Total Metals						
Copper, Total	270	270	50	mg/kg	57	
Chromium, Trivalent	1500	36	30	mg/kg	31	
Iron, Total	---	2000	---	mg/kg	26000	
Lead, Total	1000	400	63	mg/kg	94	
Nickel, Total	310	140	30	mg/kg	49	
Zinc, Total	10000	2200	109	mg/kg	110	

W&C SAMPLE ID	008	009	LOCATION			
LOCATION	WC3	WC3	SB-10			
SAMPLING DATE	9/10/2012	9/10/2012	1/18/2013			
LAB SAMPLE ID	L1217993-08	L1217993-09	L1301211-06			
SAMPLE DEPTH (ft.)	2-3	7-8	8.5-9.5			
	COMM	RES	UNRES	Units	Q	Q
Total Metals						
Arsenic, Total	16	16	13	mg/kg	2	23
Barium, Total	400	350	350	mg/kg	28	510
Cadmium, Total	9.3	2.5	2.5	mg/kg	0.86	3.7
Chromium, Trivalent	1500	36	30	mg/kg	2.7	56
Copper, Total	270	270	50	mg/kg	250	300
Iron, Total	---	2000	---	mg/kg	35000	110000
Lead, Total	1000	400	63	mg/kg	38	1600
Mercury, Total	2.8	0.81	0.18	mg/kg	0.09	0.69
Nickel, Total	310	140	30	mg/kg	6.9	75
Zinc, Total	10000	2200	109	mg/kg	64	1700

W&C SAMPLE ID	010	011	LOCATION			
LOCATION	WC4	WC4	SB-9			
SAMPLING DATE	9/10/2012	9/10/2012	1/18/2013			
LAB SAMPLE ID	L1217993-10	L1217993-11	L1301211-06			
SAMPLE DEPTH (ft.)	4-5	7-8	8.5-9.5			
	COMM	RES	UNRES	Units	Q	Q
Total Metals						
Barium, Total	400	350	350	mg/kg	1500	140
Copper, Total	270	270	50	mg/kg	580	35
Iron, Total	---	2000	---	mg/kg	14000	48000
Lead, Total	1000	400	63	mg/kg	1600	300
Mercury, Total	2.8	0.81	0.18	mg/kg	0.32	0.19
Zinc, Total	10000	2200	109	mg/kg	860	240

W&C SAMPLE ID	009	LOCATION			
LOCATION	WC3	SB-10			
SAMPLING DATE	9/10/2012	1/18/2013			
LAB SAMPLE ID	L1217993-09	L1301211-06			
SAMPLE DEPTH (ft.)	7-8	8.5-9.5			
	COMM	RES	UNRES	Units	Q
Pesticides					
4,4'-DDD	92	1.7	0.0033	mg/kg	0.0952
PCBs					
Aroclor 1254	1	1	0.1	mg/kg	0.478
Metals					
Barium, Total	400	360	350	mg/kg	570
Chromium, Trivalent	1500	36	30	mg/kg	53
Copper, Total	270	270	50	mg/kg	56
Lead, Total	1000	400	63	mg/kg	730
Mercury, Total	2.8	0.81	0.18	mg/kg	0.35
Nickel, Total	310	140	30	mg/kg	70
Zinc, Total	10000	2200	109	mg/kg	460

W&C SAMPLE ID	006	007	LOCATION			
LOCATION	WC2	WC2	SB-10			
SAMPLING DATE	9/10/2012	9/10/2012	1/18/2013			
LAB SAMPLE ID	L1217993-06	L1217993-07	L1301211-06			
SAMPLE DEPTH (ft.)	4-5	8-9	8.5-9.5			
	COMM	RES	UNRES	Units	Q	Q
Total Metals						
Copper, Total	270	270	50	mg/kg	96	29
Iron, Total	---	2000	---	mg/kg	29000	23000
Lead, Total	1000	400	63	mg/kg	280	56
Mercury, Total	2.8	0.81	0.18	mg/kg	0.29	0.02
Zinc, Total	10000	2200	109	mg/kg	280	91

W&C SAMPLE ID	015	LOCATION				
LOCATION	WC7	SB-9				
SAMPLING DATE	9/10/2012	1/18/2013				
LAB SAMPLE ID	L1217993-12	L1301211-05				
SAMPLE DEPTH (ft.)	7-8	7.5-8.5				
	COMM	RES	UNRES	Units	Q	
Total Metals						
Copper, Total	270	270	50	mg/kg	57	
Chromium, Trivalent	1500	36	30	mg/kg	31	
Iron, Total	---	2000	---	mg/kg	26000	
Lead, Total	1000	400	63	mg/kg	94	
Nickel, Total	310	140	30	mg/kg	49	
Zinc, Total	10000	2200	109	mg/kg	110	

W&C SAMPLE ID	008	009	LOCATION			
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MW-4
GWE=315.97

MW-3
GWE=316.1

MW-2
GWE=316.03

MW-A
GWE=316.04

MW-6
GWE=315.97

MW-7
GWE=316.04

MW-B
GWE=316.06

MW-18
GWE=315.65

WCMW-1
GWE=315.31



Legend

-  Monitoring Well
-  Ground Water Contour

1 inch = 20 feet



Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

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COMMITMENT & INTEGRITY DRIVE RESULTS

Ground Water Contours

Town of Greenburgh
 715 Dobbs Ferry Road
 Greenburgh, NY 10607

Site Investigation Report

JOB NO.: 213948

DRAWN BY: ADF

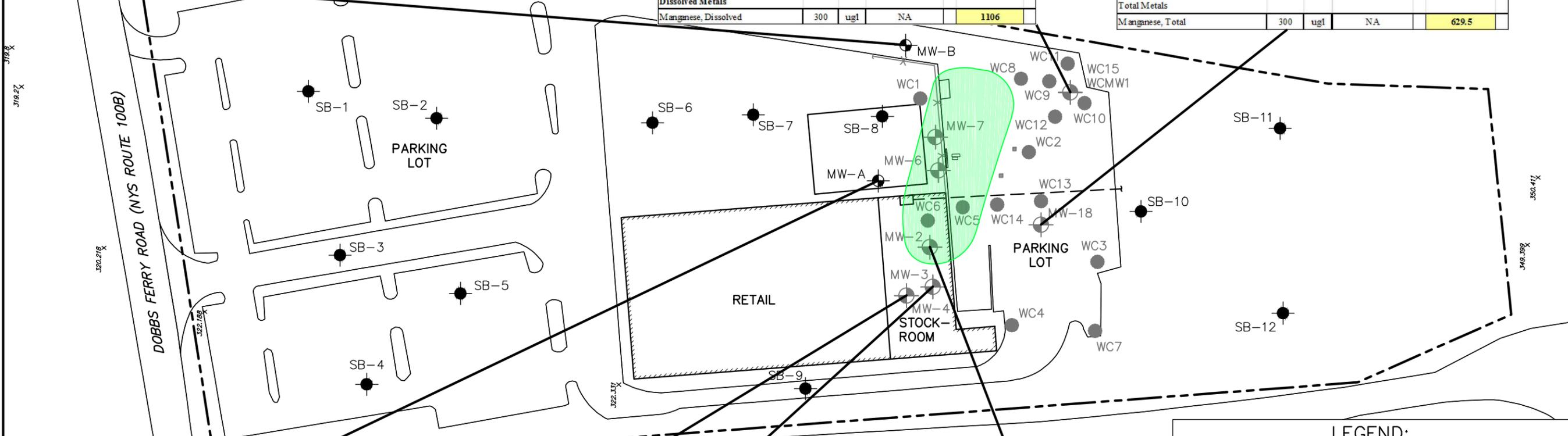
DATE: February 2013

FIGURE 4

LOCATION	MW-B			
SAMPLING DATE	1/29/2013			
LAB SAMPLE ID	L1301717-03/R1			
	AWQS	Units	Q	
Semivolatile Organic Compounds				
Benzo(a)pyrene	0	ug/l	0.55	
Benzo(b)fluoranthene	0.002	ug/l	0.76	
Benzo(k)fluoranthene	0.002	ug/l	0.31	
Chrysene	0.002	ug/l	0.72	
Indeno(1,2,3-cd)Pyrene	0.002	ug/l	0.4	
Total Metals				
Lead, Total	25	ug/l	28.8	
Manganese, Total	300	ug/l	1163	

LOCATION	WCMW-1		WCMW-1	
SAMPLING DATE	9/10/2012		12/29/2013	
LAB SAMPLE ID	L1216287-30		L1301717-01/R1	
	AWQS	Units	Q	
Semivolatile Organic Compounds				
Benzo(a)pyrene	0	ug/l	0.28	U
Benzo(b)fluoranthene	*0.002	ug/l	0.33	U
Benzo(k)fluoranthene	*0.002	ug/l	0.24	U
Chrysene	*0.002	ug/l	0.37	J
Indeno(1,2,3-cd)Pyrene	*0.002	ug/l	0.24	U
Total Metals				
Barium, Total	1000	ug/l	NA	1110
Manganese, Total	300	ug/l	NA	1267
Dissolved Metals				
Manganese, Dissolved	300	ug/l	NA	1106

LOCATION	MW-18-028		MW-18	
SAMPLING DATE	9/10/2012		1/29/2013	
LAB SAMPLE ID	L1216287-28		L1301717-02/R1	
	AWQS	Units	Q	
Semivolatile Organic Compounds				
Benzo(a)pyrene	0	ug/l	0.11	J
Benzo(b)fluoranthene	0.002	ug/l	0.1	J
Benzo(k)fluoranthene	0.002	ug/l	0.07	J
Chrysene	0.002	ug/l	0.11	J
Indeno(1,2,3-cd)Pyrene	0.002	ug/l	0.1	J
Total Metals				
Manganese, Total	300	ug/l	NA	629.5



LOCATION	MW-A			
SAMPLING DATE	1/30/2013			
LAB SAMPLE ID	L1301717-06/R1			
	AWQS	Units	Q	
Semivolatile Organic Compounds				
Chrysene	0.002	ug/l	0.06	J
Total Metals				
Lead, Total	25	ug/l	27.5	
Manganese, Total	300	ug/l	1053	

LOCATION	MW-2			
SAMPLING DATE	9/10/2012			
LAB SAMPLE ID	L1216287-24			
	AWQS	Units	Q	
Semivolatile Organic Compounds				
Acenaphthene	*20	ug/l	99	
Naphthalene	*10	ug/l	550	
Fluorene	*50	ug/l	77	
Phenanthrene	*50	ug/l	81	
Volatile Organic Compounds				
Naphthalene	*10	ug/l	680	
1,2,4-Trime thylbenzene	5	ug/l	14	J

LOCATION	MW-4-026		MW-4	
SAMPLING DATE	9/10/2012		1/30/2013	
LAB SAMPLE ID	L1216287-26		L1301717-08	
	AWQS	Units	Q	
Total Metal				
Lead, Total	25	ug/l	NA	40.3
Manganese, Total	300	ug/l	NA	320.2

LOCATION	MW-3		MW-3	
SAMPLING DATE	9/10/2012		1/30/2013	
LAB SAMPLE ID	L1216287-25		L1301717-07	
	AWQS	Units	Q	
Total Metals				
Manganese, Total	300	ug/l	NA	490.4

Notes:
 Bold - Indicates compound detected
 ug/l - micrograms per liter
 NA - Not analyzed
 Q - Qualifier
 U - Compound not detected at reporting limit (RL) shown
 J - Estimated Value; compound detected above method detection limit (MDL) but below RL
 NYSDEC - New York State Department of Environmental Conservation
 AWQS - Ambient Water Quality Standards - NYSDEC Technical Operational Guidance Series (TOGS)
 * Guidance Value
 Exceeds AWQS

LEGEND:

- PROPERTY BOUNDARY
- x-x-x- FENCE
- oe- OVERHEAD ELECTRICAL
- s- SANITARY SEWER
- [] CATCH BASIN
- [] EXISTING MONITORING WELL
- [] EXISTING SOIL BORING
- [] NEW MONITORING WELL
- [] NEW SOIL BORING
- [] APPROXIMATE SPILL IMPACT AREA

80' 0 80' 160'

BAR SCALE
 1" = 80'
 CHECK GRAPHIC SCALE BEFORE USING

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WOODARD & CURRAN
 COMMITMENT & INTEGRITY DRIVE RESULTS

GROUND WATER ANALYTICAL DATA

DESIGNED BY: 21394800-SI-Figure 2-2013.2.12.dwg
 DRAWN BY:

TOWN OF GREENBURGH
 715 DOBBS FERRY ROAD
 GREENBURGH, NEW YORK 10607

SITE INVESTIGATION REPORT

JOB NO: 213948.00
 DATE: February 2013
 SCALE: 1"=80'

FIGURE 5



APPENDIX A

Boring Logs



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 Fax: 914-448-0147

BORING NUMBER MW-A

ENVIRONMENTAL BH - WC STD_GDT - 2/22/13 07:35 - \\WHITEPLAINS\PROJECTS\213948 TOWN OF GREENBURGH - 715 DOBBS FERRY RD\WIP\PHASE II\SITE INVESTIGATION REPORT\APPENDICES\SOIL BORING LOGS\BORING LOGS.GPJ

CLIENT <u>Town of Greenburgh</u>	PROJECT NAME <u>Frank's Nusery Spill Investigation</u>
PROJECT NUMBER _____	PROJECT LOCATION <u>715 Dobbs Ferry Road, Greenburgh NY</u>
DATE STARTED <u>1/8/13</u> COMPLETED <u>1/7/13</u>	GROUND ELEVATION <u>322.04 ft</u> HOLE SIZE <u>8"</u>
DRILLING CONTRACTOR <u>Eastern Environmental</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>GeoProbe</u>	▽ AT TIME OF DRILLING <u>7.50 ft / Elev 314.54 ft</u>
LOGGED BY <u>Evan Trumpatori</u> CHECKED BY <u>Aaron Townsely</u>	AT END OF DRILLING <u>---</u>
NOTES _____	AFTER DRILLING <u>---</u>

DEPTH (ft)	SAMPLE TYPE	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
0.5	AS 1		PID = 0	[Concrete pattern]	Concrete/Base	
1.5			PID = 0	[Sand pattern]	Black medium grained SAND w/ some fill (wood)	
2.5			PID = 0	[Sand pattern]	Brown/gray medium grained SAND w/ crushed concrete	Sch. 40 PVC Riser Bentonite Seal
2.5			PID = 0		No Recovery	
5.0	AS 2		PID = 0	[Sand pattern]	Black medium grained SAND w/ some fill (wood, brick) Wet, slight sheen/petroleum odor	
7.5			PID = 0		No Recovery	
10.0	AU 3				Black medium grained SAND w/ wood fragments	Sch. 40 PVC 10 Slot Screen Filter Pack
15.0					Black medium grained SAND w/ wood fragments	
18.0	AU 4					

Bottom of borehole at 19.0 feet.



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BORING NUMBER MW-B

ENVIRONMENTAL BH - WC STD.GDT - 2/22/13 07:35 - \\WHITEPLAINS\PROJECTS\213948 TOWN OF GREENBURGH - 715 DOBBS FERRY RD\WIP\PHASE II\SITE INVESTIGATION REPORT\APPENDICES\SOIL BORING LOGS\BORING LOGS.GPJ

CLIENT <u>Town of Greenburgh</u>	PROJECT NAME <u>Frank's Nusery Spill Investigation</u>
PROJECT NUMBER _____	PROJECT LOCATION <u>715 Dobbs Ferry Road, Greenburgh NY</u>
DATE STARTED <u>1/7/13</u> COMPLETED <u>1/8/13</u>	GROUND ELEVATION <u>322.67 ft</u> HOLE SIZE <u>8"</u>
DRILLING CONTRACTOR <u>Eastern Environmental</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>GeoProbe</u>	▽ AT TIME OF DRILLING <u>8.00 ft / Elev 314.67 ft</u>
LOGGED BY <u>Evan Trumpatori</u> CHECKED BY <u>Aaron Townsely</u>	AT END OF DRILLING <u>---</u>
NOTES _____	AFTER DRILLING <u>---</u>

DEPTH (ft)	SAMPLE TYPE	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
0.3			PID = 0		Asphalt/Base	322.4
1.0			PID = 0		Brown medium grained SAND, dry	321.7
	AS 1				No Recovery	Sch. 40 PVC Riser Bentonite Seal
5.0			PID = 0		No Recovery	317.7
	AS 2					
9.0			PID = 0		Brown medium grained SAND, w/ fill (brick, wood) Moist @ 9'	313.7
10.0			PID = 0		Dark Brown FILL w/ some wood fragments, brick, metal Moist	312.7
	AU 3					Sch. 40 PVC 10 Slot Screen Filter Pack
19.0						303.7

Bottom of borehole at 19.0 feet.



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BORING NUMBER SB-1

ENVIRONMENTAL BH - WC STD_GDT - 2/22/13 07:35 - \\WHITEPLAINS\PROJECTS\213948 TOWN OF GREENBURGH - 715 DOBBS FERRY RD\WIP\PHASE II\SITE INVESTIGATION REPORT\APPENDICES\SOIL BORING LOGS\BORING LOGS.GPJ

CLIENT <u>Town of Greenburgh</u>	PROJECT NAME <u>Frank's Nusery Spill Investigation</u>
PROJECT NUMBER _____	PROJECT LOCATION <u>715 Dobbs Ferry Road, Greenburgh NY</u>
DATE STARTED <u>1/17/13</u> COMPLETED <u>1/17/13</u>	GROUND ELEVATION _____ HOLE SIZE <u>2"</u>
DRILLING CONTRACTOR <u>Eastern Environmental</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>GeoProbe</u>	▽ AT TIME OF DRILLING <u>8.50 ft</u>
LOGGED BY <u>Evan Trumpatori</u> CHECKED BY <u>Aaron Townsely</u>	AT END OF DRILLING <u>---</u>
NOTES _____	AFTER DRILLING <u>---</u>

DEPTH (ft)	SAMPLE TYPE	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0.0					Asphalt/base	
0.5						
2.5	AS 1		PID = 0		Brown medium grained SAND w/ little cobble, brick	
			PID = 0			
			PID = 0		Tan medium to fine grained SAND w/ cobble	
			PID = 0			
5.0					No Recovery	
			PID = 0		Brown/tan medium grained SAND w/ brick, rock	
			PID = 0		Brown medium grained SAND w/ brick, rock	
					Wood Fragments	
7.5	AS 2		PID = 0.2		Brown fine grained silty SAND w/ little clay, brick Moist@ 8'	
			PID = 0			
8.5					▽	
10.0						

Bottom of borehole at 10.0 feet.



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BORING NUMBER SB-2

ENVIRONMENTAL BH - WC STD_GDT - 2/22/13 07:35 - \\WHITEPLAINS\PROJECTS\213948 TOWN OF GREENBURGH - 715 DOBBS FERRY RD\WIP\PHASE II\SITE INVESTIGATION REPORT\APPENDICES\SOIL BORING LOGS\BORING LOGS.GPJ

CLIENT <u>Town of Greenburgh</u>	PROJECT NAME <u>Frank's Nusery Spill Investigation</u>
PROJECT NUMBER _____	PROJECT LOCATION <u>715 Dobbs Ferry Road, Greenburgh NY</u>
DATE STARTED <u>1/17/13</u> COMPLETED <u>1/17/13</u>	GROUND ELEVATION _____ HOLE SIZE <u>2"</u>
DRILLING CONTRACTOR <u>Eastern Environmental</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>GeoProbe</u>	▽ AT TIME OF DRILLING <u>10.50 ft</u>
LOGGED BY <u>Evan Trumpatori</u> CHECKED BY <u>Aaron Townsely</u>	AT END OF DRILLING <u>---</u>
NOTES _____	AFTER DRILLING <u>---</u>

DEPTH (ft)	SAMPLE TYPE	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0.0					Asphalt/base	
0.5				0.5	Brown medium grained SAND w/ fill (brick, glass, rock)	
1.0			PID = 0	1.0	Crushed concrete	
1.5				1.5	Brown medium grained SAND w/ fill (wood, brick, concrete)	
2.5	AS 1		PID = 0	2.5		
3.5			PID = 0	3.5	No recovery	
5.0			PID = 0	5.0	Brown medium grained SAND, some silt, w/ fill (brick, wood, cobble)	
7.5	AS 2		PID = 0	7.5		
8.5			PID = 0	8.5	Gray fine grained silty SAND w/ some clay	
9.5			PID = 0	9.5	No recovery	
10.0	AS 3		PID = 0	10.0	Brown/gray fine grained SAND w/ some clay	
11.0			PID = 0	11.0	▽	

PID = 0

Bottom of borehole at 11.0 feet.



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BORING NUMBER SB-3

ENVIRONMENTAL BH - WC STD_GDT - 2/22/13 07:35 - \\WHITEPLAINS\PROJECTS\213948 TOWN OF GREENBURGH - 715 DOBBS FERRY RD\WIP\PHASE I\SITE INVESTIGATION REPORT\APPENDICES\SOIL BORING LOGS\BORING LOGS.GPJ

CLIENT <u>Town of Greenburgh</u>	PROJECT NAME <u>Frank's Nusery Spill Investigation</u>
PROJECT NUMBER _____	PROJECT LOCATION <u>715 Dobbs Ferry Road, Greenburgh NY</u>
DATE STARTED <u>1/17/13</u> COMPLETED <u>1/17/13</u>	GROUND ELEVATION _____ HOLE SIZE <u>2"</u>
DRILLING CONTRACTOR <u>Eastern Environmental</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>GeoProbe</u>	▽ AT TIME OF DRILLING <u>10.00 ft</u>
LOGGED BY <u>Evan Trumpatori</u> CHECKED BY <u>Aaron Townsely</u>	AT END OF DRILLING <u>---</u>
NOTES _____	AFTER DRILLING <u>---</u>

DEPTH (ft)	SAMPLE TYPE	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0.0					Asphalt/base	
0.5						
1.0			PID = 0		Brown medium grained SAND w/cobble	
2.5	AS 1		PID = 0		Brown medium grained SAND w/ fill (brick, crushed rock)	
2.5			PID = 0		Brown/black medium grained SAND w/ fill (brick, wood, rock)	
4.0			PID = 0			
5.0			PID = 0		Brown medium grained SAND w/ brick	
6.0			PID = 0		Brown medium grained SAND w/ little cobble	
7.3	AS 2		PID = 0		Brown/gray fine to medium grained SAND	
8.3			PID = 0		Tan fine grained SAND w/ some silt, little clay	
9.3			PID = 0		No Recovery Sleeve wet @ 10'	
10.0			PID = 0			

Bottom of borehole at 10.0 feet.



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BORING NUMBER SB-4

ENVIRONMENTAL BH - WC STD_GDT - 2/22/13 07:35 - \\WHITEPLAINS\PROJECTS\213948 TOWN OF GREENBURGH - 715 DOBBS FERRY RD\WIPIPHASE I\SITE INVESTIGATION REPORT\APPENDICES\SOIL BORING LOGS\BORING LOGS.GPJ

CLIENT Town of Greenburgh **PROJECT NAME** Frank's Nusery Spill Investigation

PROJECT NUMBER _____ **PROJECT LOCATION** 715 Dobbs Ferry Road, Greenburgh NY

DATE STARTED 1/17/13 **COMPLETED** 1/17/13 **GROUND ELEVATION** _____ **HOLE SIZE** 2"

DRILLING CONTRACTOR Eastern Environmental **GROUND WATER LEVELS:**

DRILLING METHOD GeoProbe **AT TIME OF DRILLING** 7.00 ft

LOGGED BY Evan Trumpatori **CHECKED BY** Aaron Townsely **AT END OF DRILLING** ---

NOTES _____ **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE TYPE	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0.0						
0.5	AS 1		PID = 0		Asphalt/base	
2.0			PID = 0		Brown/black medium grained SAND w/ fill (brick, wood, crushed rock)	
2.3			PID = 0		Crushed rock	
2.5			PID = 0		Brown medium grained SAND w/ brick, cobble	
5.0			PID = 0		No Recovery	
7.5	AS 2		PID = 0		Brown medium grained SAND w/ fill (brick, wood, crushed rock) Saturated @ 7'	
10.0			PID = 0		No Recovery	

Bottom of borehole at 10.0 feet.



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BORING NUMBER SB-5

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ENVIRONMENTAL BH - WC STD_GDT - 2/22/13 07:35 - \\WHITEPLAINS\PROJECTS\213948 TOWN OF GREENBURGH - 715 DOBBS FERRY RD\WI\PHASE II\SITE INVESTIGATION REPORT\APPENDICES\SOIL BORING LOGS\BORING LOGS.GPJ

CLIENT <u>Town of Greenburgh</u> PROJECT NUMBER _____ DATE STARTED <u>1/17/13</u> COMPLETED <u>1/17/13</u> DRILLING CONTRACTOR <u>Eastern Environmental</u> DRILLING METHOD <u>GeoProbe</u> LOGGED BY <u>Evan Trumpatori</u> CHECKED BY <u>Aaron Townsely</u> NOTES _____	PROJECT NAME <u>Frank's Nusery Spill Investigation</u> PROJECT LOCATION <u>715 Dobbs Ferry Road, Greenburgh NY</u> GROUND ELEVATION _____ HOLE SIZE <u>2"</u> GROUND WATER LEVELS: ▽ AT TIME OF DRILLING <u>8.50 ft</u> AT END OF DRILLING <u>---</u> AFTER DRILLING <u>---</u>
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DEPTH (ft)	SAMPLE TYPE	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0.0						
0.5	AS 1		PID = 0	0.5	Asphalt/base	
2.0			PID = 0	2.0	Brown/gray medium grained SAND w/ crushed rock	
2.5			PID = 0	2.5	Brown medium grained SAND w/ fill (brick, wood, cobble)	
5.0	AS 2		PID = 0		No Recovery	
5.0			PID = 0	5.0	Brown medium grained SAND w/ brick, crushed rock	
7.5			PID = 0	7.5	Brown/tan medium grained SAND	
8.0			PID = 0	8.0	Brown fine grained SAND w/ some silt	
8.2			PID = 0	8.2	Brown fine grained SAND w/ some silt	
8.5				8.5	Crushed Rock	
10.0			PID = 0		No Recovery Sleeve wet @ 8.5'	

Bottom of borehole at 10.0 feet.



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BORING NUMBER SB-6

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CLIENT Town of Greenburgh **PROJECT NAME** Frank's Nusery Spill Investigation

PROJECT NUMBER _____ **PROJECT LOCATION** 715 Dobbs Ferry Road, Greenburgh NY

DATE STARTED 1/17/13 **COMPLETED** 1/17/13 **GROUND ELEVATION** _____ **HOLE SIZE** 2"

DRILLING CONTRACTOR Eastern Environmental **GROUND WATER LEVELS:**

DRILLING METHOD GeoProbe **AT TIME OF DRILLING** 9.50 ft

LOGGED BY Evan Trumpatori **CHECKED BY** Aaron Townsely **AT END OF DRILLING** ---

NOTES _____ **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE TYPE	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0.0					Concrete/base	
0.5	AS 1		PID = 0		Brown medium grained SAND w/ fill (wood, glass, rock)	
2.0		Brown medium grained SAND w/ fill (brick, crushed concrete)				
3.5		No Recovery				
5.0	AS 1		PID = 0		Brown medium grained SAND w/ brick	
6.3		Wood Fragments				
7.0		Brown/tan medium to fine grained SAND w/ wood				
7.3		No Recovery Sleeve wet @ 9.5'				
10.0						

Bottom of borehole at 10.0 feet.



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BORING NUMBER SB-7

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CLIENT <u>Town of Greenburgh</u>	PROJECT NAME <u>Frank's Nusery Spill Investigation</u>
PROJECT NUMBER _____	PROJECT LOCATION <u>715 Dobbs Ferry Road, Greenburgh NY</u>
DATE STARTED <u>1/17/13</u> COMPLETED <u>1/17/13</u>	GROUND ELEVATION _____ HOLE SIZE <u>2"</u>
DRILLING CONTRACTOR <u>Eastern Environmental</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>GeoProbe</u>	▽ AT TIME OF DRILLING <u>10.00 ft</u>
LOGGED BY <u>Evan Trumpatori</u> CHECKED BY <u>Aaron Townsely</u>	AT END OF DRILLING <u>---</u>
NOTES _____	AFTER DRILLING <u>---</u>

DEPTH (ft)	SAMPLE TYPE	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0.0					Concrete/base	
0.5					Gray fine grained SAND moist	
1.0			PID = 0		Crushed wood, brick	
1.5					Brown medium grained SAND w/ wood	
2.5	AS 1		PID = 0		Brown medium grained SAND w/ concrete	
3.0			PID = 0		No Recovery	
5.0			PID = 0		Brown medium grained SAND w/ fill (brick, concrete)	
6.5			PID = 0		Brown medium grained Sand w/ brick	
6.8					Crushed wood	
7.0			PID = 0		Brown medium grained SAND w/ fill (brick, wood)	
7.5	AS 2		PID = 0		Sleeve moist @ 10'	
10.0					Bottom of borehole at 10.0 feet.	



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BORING NUMBER SB-8

ENVIRONMENTAL BH - WC STD_GDT - 2/22/13 07:35 - \\WHITEPLAINS\PROJECTS\213948 TOWN OF GREENBURGH - 715 DOBBS FERRY RD\WIP\PHASE I\SITE INVESTIGATION REPORT\APPENDICES\SOIL BORING LOGS\BORING LOGS.GPJ

CLIENT <u>Town of Greenburgh</u>	PROJECT NAME <u>Frank's Nusery Spill Investigation</u>
PROJECT NUMBER _____	PROJECT LOCATION <u>715 Dobbs Ferry Road, Greenburgh NY</u>
DATE STARTED <u>1/17/13</u> COMPLETED <u>1/17/13</u>	GROUND ELEVATION _____ HOLE SIZE <u>2"</u>
DRILLING CONTRACTOR <u>Eastern Environmental</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>GeoProbe</u>	▽ AT TIME OF DRILLING <u>9.00 ft</u>
LOGGED BY <u>Evan Trumpatori</u> CHECKED BY <u>Aaron Townsely</u>	AT END OF DRILLING <u>---</u>
NOTES _____	AFTER DRILLING <u>---</u>

DEPTH (ft)	SAMPLE TYPE	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0.0					Concrete/Base	
0.3			PID = 0		Brown/gray medium grained SAND w/ fill (brick, rock, wood)	
2.5	AS 1		PID = 0			
3.0			PID = 0		No Recovery	
5.0			PID = 0		Brown/gray medium grained SAND w/ little cobble	
7.0			PID = 5.2		Crushed concrete	
7.5	AS 2		PID = 0		Brown medium grained SAND w/ wood Wet @ bottom of sleeve (8-9')	
8.7			PID = 0			
10.0					▽	

Bottom of borehole at 10.0 feet.



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BORING NUMBER SB-9

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CLIENT Town of Greenburgh **PROJECT NAME** Frank's Nusery Spill Investigation

PROJECT NUMBER _____ **PROJECT LOCATION** 715 Dobbs Ferry Road, Greenburgh NY

DATE STARTED 1/18/13 **COMPLETED** 1/18/13 **GROUND ELEVATION** _____ **HOLE SIZE** 2"

DRILLING CONTRACTOR Eastern Environmental **GROUND WATER LEVELS:**

DRILLING METHOD GeoProbe **AT TIME OF DRILLING** 9.00 ft

LOGGED BY Evan Trumpatori **CHECKED BY** Aaron Townsely **AT END OF DRILLING** ---

NOTES _____ **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE TYPE	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0.0						
0.0 - 2.5	AS 1		PID = 0	0.5	Asphalt/base	
0.5 - 1.5			PID = 0	1.5	Brown medium grained SAND w/ little cobble	
1.5 - 1.8				1.8	Crushed rock	
1.8 - 2.5			PID = 0	2.5	Brown fine to medium grained SAND w/ little cobble, fill (brick, wood)	
2.5 - 5.0			PID = 0		No recovery	
5.0 - 7.5	AS 2		PID = 0	5.0	Brown fine to medium grained SAND w/ some silt, cobble, wood	
5.0 - 7.5			PID = 0			
7.5 - 8.0			PID = 0	8.0	Gray fine grained SAND w/ some silt, cobble, wood	
8.0 - 9.0			PID = 0	9.0	No recovery	
9.0 - 10.0						
10.0				10.0		

Bottom of borehole at 10.0 feet.



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BORING NUMBER SB-10

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CLIENT Town of Greenburgh **PROJECT NAME** Frank's Nusery Spill Investigation

PROJECT NUMBER _____ **PROJECT LOCATION** 715 Dobbs Ferry Road, Greenburgh NY

DATE STARTED 1/18/13 **COMPLETED** 1/18/13 **GROUND ELEVATION** _____ **HOLE SIZE** 2"

DRILLING CONTRACTOR Eastern Environmental **GROUND WATER LEVELS:**

DRILLING METHOD GeoProbe **AT TIME OF DRILLING** 10.00 ft

LOGGED BY Evan Trumpatori **CHECKED BY** Aaron Townsely **AT END OF DRILLING** ---

NOTES _____ **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE TYPE	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0.0						
0.5	AS 1		PID = 0		Topsoil	
1.2			PID = 0		Crushed Rock	
1.8			PID = 0		Gray fine to medium grained SAND w/ some cobble	
2.5			PID = 0		Brown fine to medium grained SAND w/ fill (brick, wood)	
2.5			PID = 0		No Recovery	
5.0	AS 2		PID = 0		Brown fine to medium grained sand w/ fill (brick, wood) Sleeve wet @ 10'	
7.5			PID = 0		No Recovery	
7.5			PID = 0		No Recovery	
10.0	AS 3		PID = 0		Saturated wood	
11.0			PID = 0		No recovery, entire sleeve fill with water	
15.0						

Bottom of borehole at 15.0 feet.



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BORING NUMBER SB-11

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CLIENT <u>Town of Greenburgh</u>	PROJECT NAME <u>Frank's Nusery Spill Investigation</u>
PROJECT NUMBER _____	PROJECT LOCATION <u>715 Dobbs Ferry Road, Greenburgh NY</u>
DATE STARTED <u>1/18/13</u> COMPLETED <u>1/18/13</u>	GROUND ELEVATION _____ HOLE SIZE <u>2"</u>
DRILLING CONTRACTOR <u>Eastern Environmental</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>GeoProbe</u>	▽ AT TIME OF DRILLING <u>11.00 ft</u>
LOGGED BY <u>Evan Trumpatori</u> CHECKED BY <u>Aaron Townsely</u>	AT END OF DRILLING <u>---</u>
NOTES _____	AFTER DRILLING <u>---</u>

DEPTH (ft)	SAMPLE TYPE	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0.0						
0.5	AS 1		PID = 0		Topsoil	
1.0			PID = 0		Brown fine to medium grained SAND w/ little wood	
1.3			PID = 0		Crushed brick	
1.5			PID = 0		Brown/black medium grained SAND	
2.5			PID = 0		Brown medium grained SAND w/ crushed rock	
3.0		PID = 0			Brown medium grained SAND w/ some wood	
5.0					No recovery	
7.5	AS 2		PID = 0		Brown medium grained SAND w/ some wood	
10.0			PID = 19.1			
10.0			PID = 0		Brown medium grained SAND w/ fill (brick, wood) Saturated @ 11'	
12.0			PID = 0		▽	
12.5	AS 3		PID = 0		No recovery	
15.0						

Bottom of borehole at 15.0 feet.



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BORING NUMBER SB-12

ENVIRONMENTAL BH - WC STD_GDT - 2/22/13 07:35 - \\WHITEPLAINS\PROJECTS\213948 TOWN OF GREENBURGH - 715 DOBBS FERRY RD\WIP\PHASE I\SITE INVESTIGATION REPORT\APPENDICES\SOIL BORING LOGS\BORING LOGS.GPJ

CLIENT <u>Town of Greenburgh</u>	PROJECT NAME <u>Frank's Nusery Spill Investigation</u>
PROJECT NUMBER _____	PROJECT LOCATION <u>715 Dobbs Ferry Road, Greenburgh NY</u>
DATE STARTED <u>1/18/13</u> COMPLETED <u>1/18/13</u>	GROUND ELEVATION _____ HOLE SIZE <u>2"</u>
DRILLING CONTRACTOR <u>Eastern Environmental</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>GeoProbe</u>	▽ AT TIME OF DRILLING <u>14.00 ft</u>
LOGGED BY <u>Evan Trumpatori</u> CHECKED BY <u>Aaron Townsely</u>	AT END OF DRILLING <u>---</u>
NOTES _____	AFTER DRILLING <u>---</u>

DEPTH (ft)	SAMPLE TYPE	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM	
0.0							
0.5	AS 1		PID = 0		Topsoil		
1.2			PID = 0		Brown fine to medium grained SAND w/ some silt		
1.8			PID = 0		Crushed Rock		
2.5			PID = 0		Brown fine to medium grained SAND w/ some silt		
2.5			PID = 0		No recovery		
5.0	AS 2		PID = 0		Crushed brick, borck		
5.5			PID = 0		Brown fine to medium grained SAND w/ some silt, fill (wood)		
7.5			PID = 0		No recovery		
10.0	AS 3		PID = 0		Brown medium grained SAND w/ wood		
11.0			PID = 0		No recovery Sleeve wet @ 14'		
15.0							

Bottom of borehole at 15.0 feet.



APPENDIX B

Laboratory Reports (Disk)