SUPPLEMENTAL INVESTIGATION WORK PLAN IN SUPPORT OF REMEDIAL ACTION WORK PLAN FORMER CHARLTON CLEANERS SITE FOREST AVENUE SHOPPERS TOWN STATEN ISLAND, NEW YORK

Prepared For:

KIOP Forest Avenue, LP

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SUPPLEMENTAL INVESTIGATION WORK PLAN IN SUPPORT OF REMEDIAL ACTION WORK PLAN FORMER CHARLTON CLEANERS SITE FOREST AVENUE SHOPPERS TOWN STATEN ISLAND, NEW YORK

1.0 INTRODUCTION

Leggette, Brashears & Graham, Inc. (LBG), on behalf of Kimco Income Operating Properties Forest Avenue, L.P. (KIOP), has developed this Supplemental Investigation Work Plan in support of a Remedial Action Work Plan (RAWP) at the Former Charlton Cleaners Site (VCP # W3-0891-01-06) located in Staten Island, New York (figure 1, site). The purpose of the work plan is to summarize the findings of recent site investigations and to describe the additional tasks necessary in order to determine the most feasible remedial alternative. Data gathered from this investigation will aid in the development of a feasibility study which will be incorporated into the RAWP. This work plan has been prepared in accordance with New York State Department of Environmental Conservation (NYSDEC) Program Policy Document DER-10 Technical Guidance for Site Investigation and Remediation.

2.0 BACKGROUND

The investigated area is located on the eastern portion of the Forest Avenue Shoppers Town (FAST) in Staten Island, New York (figure 2). Onsite chlorinated solvents emanating from the Former Charlton Cleaners dry cleaners operation that was located in the Rock-Landau building that is current Michaels Store have been fully investigated. The NYSDEC has not determined the offsite investigation to be complete and is pursuing an investigation. The investigation findings are documented in the February 2011 Remedial Investigation Report (RIR) prepared by LBG. The RIR was determined to be acceptable to the NYSDEC and the New York State Department of Health (NYSDOH) as communicated in a letter dated April 15, 2011. The investigations revealed that as a result of historic operations at the site, halogenated volatile organic compounds (VOCs) were released to soils and groundwater on the northeastern portion of the FAST.

The 2011 RIR documents significant contribution to the VOCs at the site due to releases of halogenated VOCs from the former Paul Miller Cleaners located contiguous with the southeastern portion of the FAST. Regional groundwater generally flows to the northeast,

following the overall direction of a historic streambed. The historic Paul Miller Cleaners is hydraulically-upgradient from the site, and VOCs emanating from the Paul Miller Cleaners are believed to have migrated beneath the site. The NYSDEC is currently completing field investigations to evaluate regional groundwater flow and to further delineate impacts from the former Paul Miller Cleaners. Figures 3 and 4 depict isoconcentration for total halogenated VOCs for shallow (less than 30 feet of grade) and deeper aquifer (greater than 30 feet of grade(groundwater beneath the area comprising both the FAST and former Paul Miller Cleaners sites. The figures illustrate that the magnitude and extent of the VOC plume extending from former Paul Miller to the north under the FAST.

Halogenated VOCs have been detected at the site up to 90 ft bg (feet below grade). The VOCs are in a partially degraded state as evidenced by the presence of dichloroethylene and vinyl chloride in the shallow low permeable materials which extend to 30 ft bg. Degradation of halogenated VOCs in low permeable media is common; however, the rate at which this process occurs depends on several factors (such as competing nutrients). Dispersion and diffusion are the likely dominant chemical transport mechanism in this shallow zone (i.e., slow moving and radially spreading).

The upper strata of low permeable materials are underlain by higher permeable fine to coarse grain sands, which extends approximately 70 to 90 ft bg. Halogenated VOCs present in these high permeable materials are less degraded, and have been detected at much higher concentrations than in the shallow low permeable materials. Advective flow appears to be the dominant chemical transport mechanism in this media. Chemical fingerprints and gradients in advective flow environments commonly contain few degradation constituents (reflective of aerobic conditions) with narrow and elongated high concentration plumes. Halogenated VOCs from the upgradient Paul Miller Cleaners release appear to have substantially contributed to the impacts in these high permeable materials; this is evident by the high concentration of halogenated VOCs detected in the hydraulically upgradient monitoring wells (MW-16 cluster, figure 2). These upgradient detections are only modestly lower than the concentrations typically seen in the “hot spot” at the site (MW-6B, figure 2).

Groundwater and soil data indicate the halogenated VOC source area at the site is located beneath the basement of the former Charlton Cleaners and extends immediately north of the basement. The data suggest the source is contained in the upper low permeability zone. This

assessment is based on soil-quality data which showed concentrations of tetrachloroethylene (PCE) detected beneath the basement at concentrations up to 5 milligrams per kilogram (mg/kg) and detected to the north of the former cleaners at concentrations up to 200 mg/kg. In addition, PCE was detected in the groundwater beneath the basement at a concentration of approximately 15 percent the solubility of PCE.

The halogenated VOC source area associated with the site is contained in the upper low permeability zone located beneath the basement of the former Charlton Cleaners and extends immediately north of the basement. Impacts to the upper low permeability zone are partially attributed to the historic release from the former Charlton Cleaners. Groundwater within the deeper coarse aquifer contains relatively high concentrations of halogenated VOCs; however, these impacts are likely associated both with the release at the former Charlton Cleaners and releases at the hydraulically upgradient former Paul Miller Cleaners. If the source area beneath the former Charlton Cleaners is removed from the shallow tighter materials, the impacts associated with this source area in the deeper coarse aquifer will naturally attenuate through advection and dispersion. While the impacts in the coarser materials associated with the former Charlton Cleaners release would naturally attenuate, groundwater quality in this deeper coarse aquifer would likely not substantially improve until remediation of the former Paul Miller Cleaners is complete.

3.0 PRELIMINARY FIELD WORK

In the course of the process of evaluating remedial alternatives for the RAWP, it was determined that certain geochemical data were needed in order to evaluate the potential effectiveness of various chemical and biological in-situ remedial technologies. Field work was completed in August 2011 in order to obtain these data. The following section describes the field work and resultant findings.

On August 24 and 25, 2011, LBG collected groundwater samples from monitoring well clusters located within, and in close proximity to the source area (MW-6 and MW-5 cluster, respectively), hydraulically-downgradient of the source area (MW-11 cluster) and an area that would be considered background (MW-13 cluster) (figure 2). Samples were collected following EPA low flow procedures and analyzed for ethane, ethene, methane, sulfate, sulfide, nitrate, and chloride. All samples were analyzed by York Analytical Laboratories of Stratford, Connecticut.

Field parameters (oxygen reduction potential [ORP], dissolved oxygen, pH, conductivity, and temperature) were measured from these wells and various other wells (MW-7 and MW-8 clusters) and at two points located in the basement of the former cleaners. Laboratory reports and chain-of-custody forms are provided in Appendix I.

3.1 Summary of Results

Table 1 provides a summary of the results. In general, results of the investigation indicate that the shallow and deep aquifers are not conducive to biodegradation and scavengers may be present that would inhibit chemical oxidation. The data suggests that reductive dechlorination through monitored natural attenuation or bio-augmentation would not be effective remedies. The following provides a summary of select parameters collected and analyzed.

3.1.1 Dissolved Oxygen

Concentrations measured of dissolved oxygen (DO) ranged from 2.82 to 7.89 milligrams per liter (mg/l). This enriched oxygen environment was measured in the shallow tight and deep coarse aquifers. Anaerobic bacteria generally cannot function at DO concentrations greater than 0.5 mg/l; therefore, reductive dechlorination will not occur. Under aerobic conditions, TCE, cis-DCE, and vinyl chloride may be partially or totally dechlorinated by methanotrophic bacteria. However, the more chlorinated the compound is, the greater its resistance to dechlorination under aerobic conditions. Therefore, dechlorination of PCE, and a significant percentage of any TCE, does not occur under aerobic conditions.

While DO was measured well above 0.5 mg/l in all wells, DO is likely much lower in localized areas such as the former streambed channel and lenses of silt and/or clay present in the shallow unconsolidated materials (less than 30 feet of grade). This is supported by the presence of degraded chlorinated hydrocarbons detected in shallow Wells MW-5A, 6A, 7A and 8A.

3.1.2 Ethanes and Ethenes

Ethane and ethene were not detected in any of the samples. The absence of ethane and ethene indicate that vinyl chloride is not being reduced, and reductive dechlorination is not a dominant degradation pathway for the halogenated VOCs. However, it is possible that vinyl

chloride is being degraded through oxidation. This type of degradation occurs in high DO environments and results in methane and carbon dioxide as the final breakdown constituents.

3.1.3 Methane

Methane was detected in 4 of 12 wells (MW-6A, MW-11D, MW-13A and MW-13B) at concentrations ranging from 10 to 110 micrograms per liter (ug/l). Methane may be present as the result of the oxidation of vinyl chloride. However, methane was detected at the highest concentration in the background wells, and therefore the presence of methane is more likely associated with other processes or very limited oxidation of vinyl chloride has occurred.

3.1.4 Chlorides

Background concentrations of chloride were detected at 37.7 mg/l and 14.5 mg/l in monitoring wells MW-13A and MW-13B, respectively. Chlorides were detected between 4 and 10 times background in the shallow aquifer. In the deep coarse aquifer, chloride was detected at up to 5 times background. The presence of the elevated chlorides is likely the byproduct of the dechlorination of the higher level halogenated VOCs (PCE, TCE, and DCE). Higher level degradation is occurring at the Site as evidenced by the VOC fingerprint; however, the degradation likely occurs on a limited basis in isolated areas containing low DOs.

3.1.5 ORP

ORP of groundwater is a measure of electron activity and is an indicator of the relative tendency of a solution to accept or transfer electrons. A negative ORP indicates reducing conditions may be present, whereas a positive ORP indicates oxidizing conditions may be present. ORP was detected in the site groundwater to range from -138 millivolts (mv) to +120 mv. ORP less than -100 mv suggest that reductive pathway is likely. ORP less than -100 mv was measured beneath the basement floor (MW-3S) in the shallow aquifer to the north of the former Charlton Cleaners (MW-6A and 7A) and in one well (MW-11D) screened in the deep aquifer north of the former cleaners.

3.1.6 Nitrate

Nitrate was detected at relatively high concentrations, ranging from 0.15 mg/l to 5.5 mg/l, in wells that also contained halogenated VOC impacts. Nitrate was detected below 1 mg/l in three wells, all of which were screened in areas with little or no halogenated VOC impacts. Nitrate present above 1 mg/l may compete with reductive dechlorination.

3.1.7 Sulfate

Sulfate was detected at relatively high concentrations, ranging from 5.8 mg/l to 55.2 mg/l. All but one sample was detected above 20 mg/l. Sulfate present above 20 mg/l may compete with reductive dechlorination.

3.1.8 Sulfide

Sulfide was also detected at high concentrations within groundwater; all but two samples were detected above 2 mg/l. The presence of the high sulfide concentration suggests that sulfate is being reduced to sulfide, and that reductive dechlorination is possible. However, the high concentrations of the reduced mineral (sulfide) may act as a scavenger to a chemical oxidant, thus requiring a larger dose to oxidize the halogenated VOCs.

3.1.9 Temperature and pH

Temperature was measured between 18.3 and 28.1 °C. Temperature measurements were unusually high in the MW-8 well cluster. If these measurements are accurate, the temperatures measured in this cluster are indicative of an abnormal condition, and may be the result of an exothermic reaction or discharge to the aquifer.

pH was measured between 5.7 and 7.4 units. In general, the shallow aquifer was slightly acidic, and the deeper aquifer was neutral. These conditions are normal, and would not inhibit reductive dechlorination or chemical oxidation. In fact, the slightly acidic condition would be favorable to most chemical oxidants.

4.0 SUPPLEMENTAL WORK PLAN

4.1 Injection Tracer Testing

In order to determine the effective radius of injection of a potential in-situ remedial material, a drilling contractor will be utilized to conduct an injection tracer test. Approximately five temporary monitoring wells will be installed at various distances (spacing 1 to 5 feet) from an injection point. The borings will be drilled using direct push drilling technique and the temporary monitoring wells will consist of 1-inch PVC and be screened from a depth of 20 to 25 ft bg. One soil boring will be drilled and water mixed with a tracer (likely sodium bromide) will be injected through a vertical profile from a depth of approximately 20 to 25 ft bg. The water and trace mixture will be injected through a zone isolation injection screen using a high-pressure pump. Prior to and after the injection, groundwater samples will be collected from the temporary monitoring wells and analyzed for sodium and bromide. During injection, several variables including maximum and sustained injection pressure, injection rate and total fluid volume will be recorded. These data will help determine whether in-situ application of remedial materials is feasible given the hydrogeologic setting, and if feasible, the appropriate injection spacing. At the completion of the tracer test, the temporary monitoring wells will be removed and the void space will be backfilled with the soil cuttings (clean sand if additional materials are needed), while the top foot of each borehole will be sealed with bentonite.

It is anticipated that the test will be located on the eastern portion of the FAST between the Michaels building and the T-Mobile building (figure 2). However the precise location will not be determined until after a review of underground utilities. In accordance with Federal requirements, the United States Environmental Protection Agency (USEPA) will receive written notice of the planned subsurface injection prior to implementing the injection tracer testing.

4.2 Natural Oxidant Demand/Treatability Testing

Natural oxidant demand (NOD) refers to the loss of oxidant due to subsurface reactions unrelated to contamination oxidation. NOD is a significant consideration in determining the economic viability of chemical oxidation and in engineering the appropriate oxidation application dose and approach. This parameter is critical in evaluating the potential effectiveness of an in-situ chemical oxidation approach as well as appropriate chemical dose. During the injection tracer test, soil will be collected from the borings and retained. Some of this soil will be

submitted for laboratory analysis of NOD to determine the effectiveness of both permanganate and sodium pursulfate. Additional soil samples will be collected to be potentially used for a bench-scale treatability testing using nano-scale zero valent iron (ZVI). LBG will determine if this testing will be completed after review of injection tracer testing, collection of additional groundwater parameters, and review of the NOD analyses. Procedures discussed in Section 4.2.1 will be followed in general accordance for any bench scale testing of ZVI.

4.2.1 Generic ZVI Bench Scale Treatability Protocols

Soils will be thoroughly mixed and homogenized prior to delivering to the laboratory. The soil samples will be analyzed for baseline VOC concentrations. Depending on the results of the analysis, the soil may be spiked to increase the concentration of PCE to better match concentrations detected in the site soils (i.e., 200 mg/kg). Spiked soils will then be transferred to five separate 4-ounce amber glass containers, each containing 120 cc of soil. All soil aliquots will be weighed prior to adding to the glass containers. If the soils are spiked, they will be stored in a firmly capped container, stored out of direct sunlight in a cool dry location (not in a refrigerator) for 14 days to allow the VOCs to adsorb to the soils.

Prior to commencing the study, all soil samples will be analyzed for halogenated VOCs to document the baseline concentrations. Once the baseline concentrations have been determined, the batch experiment will commence by adding the amended groundwater to each container based on the following ratios.

Experiment	Soil Ratio/Oxidant Ratio: 4:1 At 20 0C	ZVI/Groundwater, g/l
1	120 c.c. : 30 c.c.	Just groundwater
2	120 c.c. : 30 c.c.	20
3	120 c.c. : 30 c.c.	50
4	120 c.c. : 30 c.c.	100
5	120 c.c. : 30 c.c.	200

Note: ZVI ratios may change based on review of field parameters or laboratory analyses.

Each reaction container will be weighed, before and after adding the ZVI mixture to the soils. All weights will be noted to two significant decimals. After the liquid mixture has been added, each sample will be gently stirred using a wooden tongue depressor (or equivalent). After the initial blending, no additional stirring or mixing will be performed. Based upon visual inspection of the samples over the 21 day incubation period, should one or more of the samples appear to be going dry at any time during the experiment, add an additional 30 cc of clean tap water to all samples. This water will contain no additional iron. After 7, 14 and 21 days, all of the soil samples will be analyzed for halogenated VOCs.

4.3 Additional Hydrogeologic Parameters

Groundwater will be withdrawn from select monitoring wells using the low-stress purging and sampling technique. The methodology for this technique is outlined in the July 30, 1996 USEPA Region I, "Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells." Geochemical field parameters including pH, oxygen reduction potential, dissolved oxygen, conductivity and temperature will be recorded and compared to those collected in August.

Hydrogeologic testing consisting of falling and rising-head permeability tests (slug tests) will be conducted in select shallow monitoring wells. A recording pressure transducer will be inserted in each well to a level below the static water table. An inert slug will be inserted quickly to a depth below the static water level and the equilibration of the water level will be recorded (falling-head test). This will be repeated upon withdrawal of the slug (rising-head test). Permeability will be determined from these data using one of several available software applications.

4.4 Health and Safety Plan

Appendix II is a site specific health and safety plan (HASP) which will be followed during all field activities. Due to the nature of the direct-push drilling technique, a Community Air Monitoring Plan (CAMP) is not considered necessary. No particulates or dust will be generated and no VOCs were detected during CAMP monitoring performed during prior drilling activities in the same area of the Site.

5.0 REPORTING

The results of this supplemental investigation will be communicated to the Department in a data package and will include a summary of field activities, tabulated data and reference figures. The results will be incorporated into the Feasibility Study portion of the RAWP.

6.0 PROJECT SCHEDULE

The field work in support of the supplemental investigation (injection pilot test, collection of hydrogeologic parameters) will be initiated within 4 weeks following Department approval of this Work Plan in Support of Alternatives Analyses. Results of NOD testing should be available approximately 4 weeks following submittal of soil samples (collected during injection pilot test). If a treatability study is completed for ZVI, the results of the treatability study should be available 6 weeks after commencement of the test specified in Section 4.2.1 above. A concise letter report will be submitted to the Department within 3 weeks following the receipt of all testing results. The first draft of the RAWP will be submitted 12 weeks subsequent to the receipt by LBG of the complete data package. A Gantt chart summarizing the proposed project schedule is provided as Appendix III.

LEGGETTE, BRASHEARS & GRAHAM, INC.

Paul Woodell
Associate

Michael Manolakas, CPG, LEP
Vice President

cmm
February 1, 2012
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TABLE

TABLE 1
FORMER CHARLTON CLEANERS
FOREST AVENUE SHOPPERS TOWN
24 BARRETT AVENUE, STATEN ISLAND, NEW YORK

Summary of Groundwater Quality Results Collected August 24 and 25, 2011

	Top of Casing	Bottom of Casing	Chloride mg/L	Ethane ug/l	Ethene ug/l	Methane ug/l	Nitrate mg/L	Sulfate mg/L	Sufide mg/L	Conductivity mS/cm	DO mg/l	ORP mV	pH unitless	Temperature °C
basement sump	1	5	--	--	--	--	--	--	--	1.26	7.89	51	7.01	21.50
MSS-3	1	5	--	--	--	--	--	--	--	1.09	5.00	-122	7.16	23.92
GES MW-4	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	5	20	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	5	20	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	5	20	--	--	--	--	--	--	--	--	--	--	--	--
MW-2A	5	20	--	--	--	--	--	--	--	--	--	--	--	--
MW-5A	5	20	159	ND<10	ND<10	ND<10	2.39	53.8	2.56	1.08	2.82	120	5.72	20.23
MW-6A	5	20	401	ND<10	ND<10	64	ND<0.05	26.2	2.56	3.48	3.09	-107	6.19	24.27
MW-7A	5	20	--	--	--	--	--	--	--	0.316	3.37	-138	6.27	23.75
MW-8A	5	20	--	--	--	--	--	--	--	1.71	4.08	40	6.13	26.08
MW-9A	5	20	--	--	--	--	--	--	--	--	--	--	--	--
MW-10A	5	20	--	--	--	--	--	--	--	--	--	--	--	--
MW-13A	5	20	37.7	ND<10	ND<10	110	0.166	20.2	2.56	0.516	4.16	21	5.75	21.64
MW-2B	40	50	--	--	--	--	--	--	--	--	--	--	--	--
MW-5B	40	50	55.8	ND<10	ND<10	ND<10	4.7	44.7	ND<2	0.478	3.85	72	6.84	18.69
MW-6B	40	50	75.2	ND<10	ND<10	ND<10	5.48	53.2	2.56	0.9	3.93	56	6.59	20.91
MW-7B	40	50	--	--	--	--	--	--	--	0.9	6.35	-4	6.93	22.30
MW-8B	40	50	--	--	--	--	--	--	--	0.9	5.12	33	6.76	25.30
MW-9B	40	50	--	--	--	--	--	--	--	--	--	--	--	--
MW-13B	40	50	14.5	ND<10	ND<10	99	0.169	5.77	5.71	1.91	4.51	54	6.17	19.24
MW-5C	60	70	78	ND<10	ND<10	ND<10	2.23	52	4.14	0.37	3.61	-4	6.70	18.50
MW-6C	60	70	86	ND<10	ND<10	ND<10	4.48	52.5	ND<2	1	4.19	8	7.40	20.04
MW-7C	60	70	--	--	--	--	--	--	--	--	--	--	--	--
MW-8C	60	70	--	--	--	--	--	--	--	--	--	--	--	--
MW-9C	60	70	--	--	--	--	--	--	--	--	--	--	--	--
MW-11C	60	70	41.2	ND<10	ND<10	ND<10	1.83	55.2	7.29	0.9	2.65	30	7.10	21.28
MW-12C	60	70	--	--	--	--	--	--	--	--	--	--	--	--
MW-5D	80	90	88.8	ND<10	ND<10	ND<10	0.147	53.3	2.56	0.9	3.79	11	6.48	18.34
MW-6D	80	90	91.4	ND<10	ND<10	ND<10	3.74	54.8	4.14	1.05	3.92	-65	7.02	19.58
MW-7C	60	70	--	--	--	--	--	--	--	0.893	6.37	-62	6.75	23.02
MW-8C	60	70	--	--	--	--	--	--	--	0.33	5.60	32	7.01	28.14
MW-9D	80	90	--	--	--	--	--	--	--	--	--	--	--	--
MW-11D	80	90	74.9	ND<10	ND<10	10	3.17	53.2	2.56	0.9	3.43	-138	6.91	20.81
MW-12D	80	90	--	--	--	--	--	--	--	--	--	--	--	--

FIGURES

SOURCE: USGS TOPOGRAPHIC QUADRANGLES ELIZABETH AND ARTHUR KILL, NEW YORK–NEW JERSEY (PHOTOREVISED 1981).

QUADRANGLE LOCATION

SCALE IN FEET

FORMER CHARLTON CLEANERS FACILITY
VCP # W3-0891-01-06
FOREST AVENUE SHOPPERS TOWN
24 BARRETT AVENUE
STATEN ISLAND NEW YORK

SITE LOCATION MAP

DATE	REVISED

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DRAWN:	RAC	CHECKED:	PW	DATE:	09/14/10	FIGURE:	1

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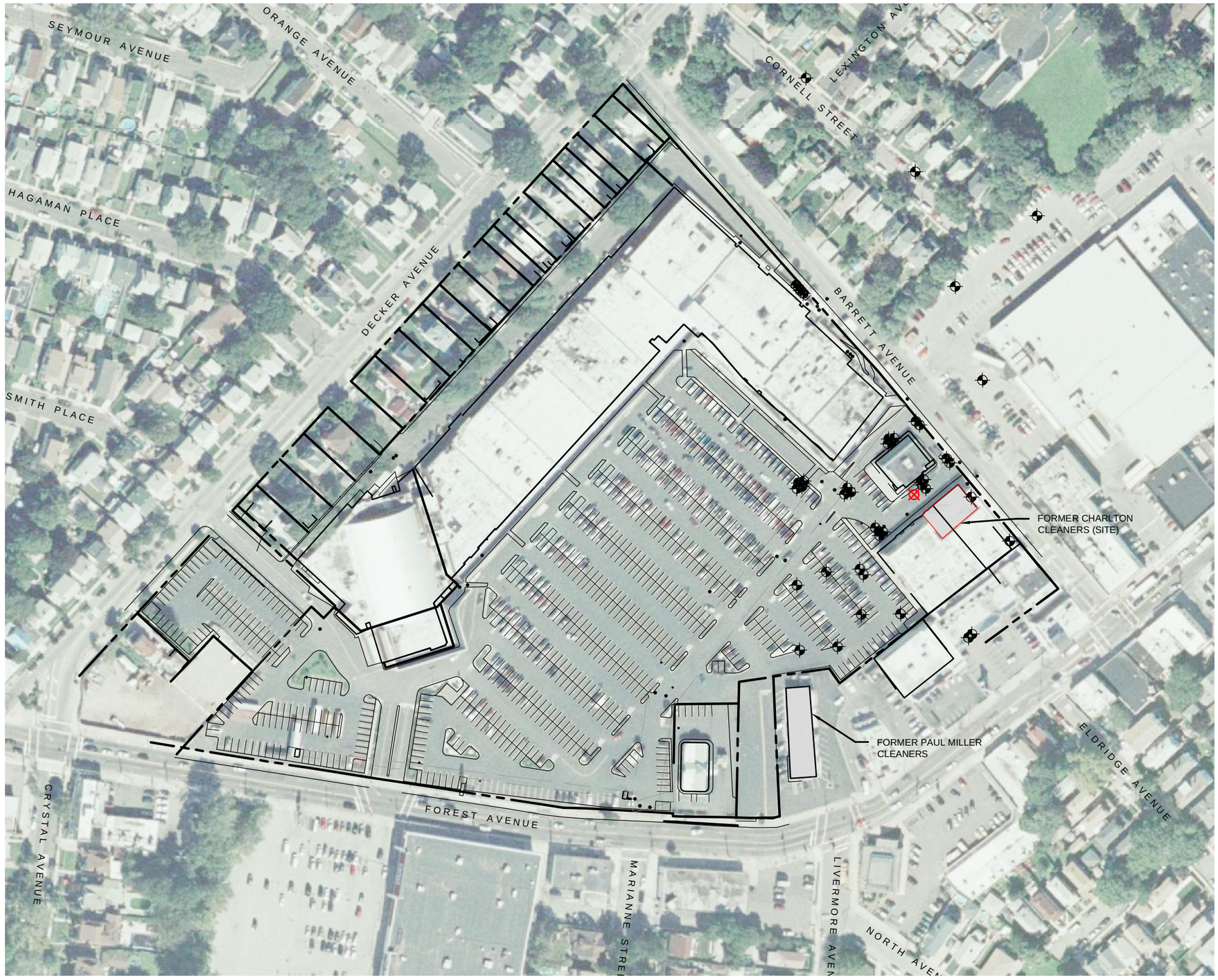

LEGEND

- PROPERTY BOUNDARY
- MONITOR WELL LOCATION
- PROPOSED INJECTION POINT TEST BORING

0 150

APPROXIMATE SCALE IN FEET

FORMER CHARLTON CLEANERS FACILITY
VCP # W3-0891-01-06
FOREST AVENUE SHOPPERS TOWN
24 BARRETT AVENUE
STATEN ISLAND NEW YORK

SITE MAP

DATE	REVISED

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DRAWN:	RAC	CHECKED:	MM	DATE:	02/01/12	FIGURE:	2

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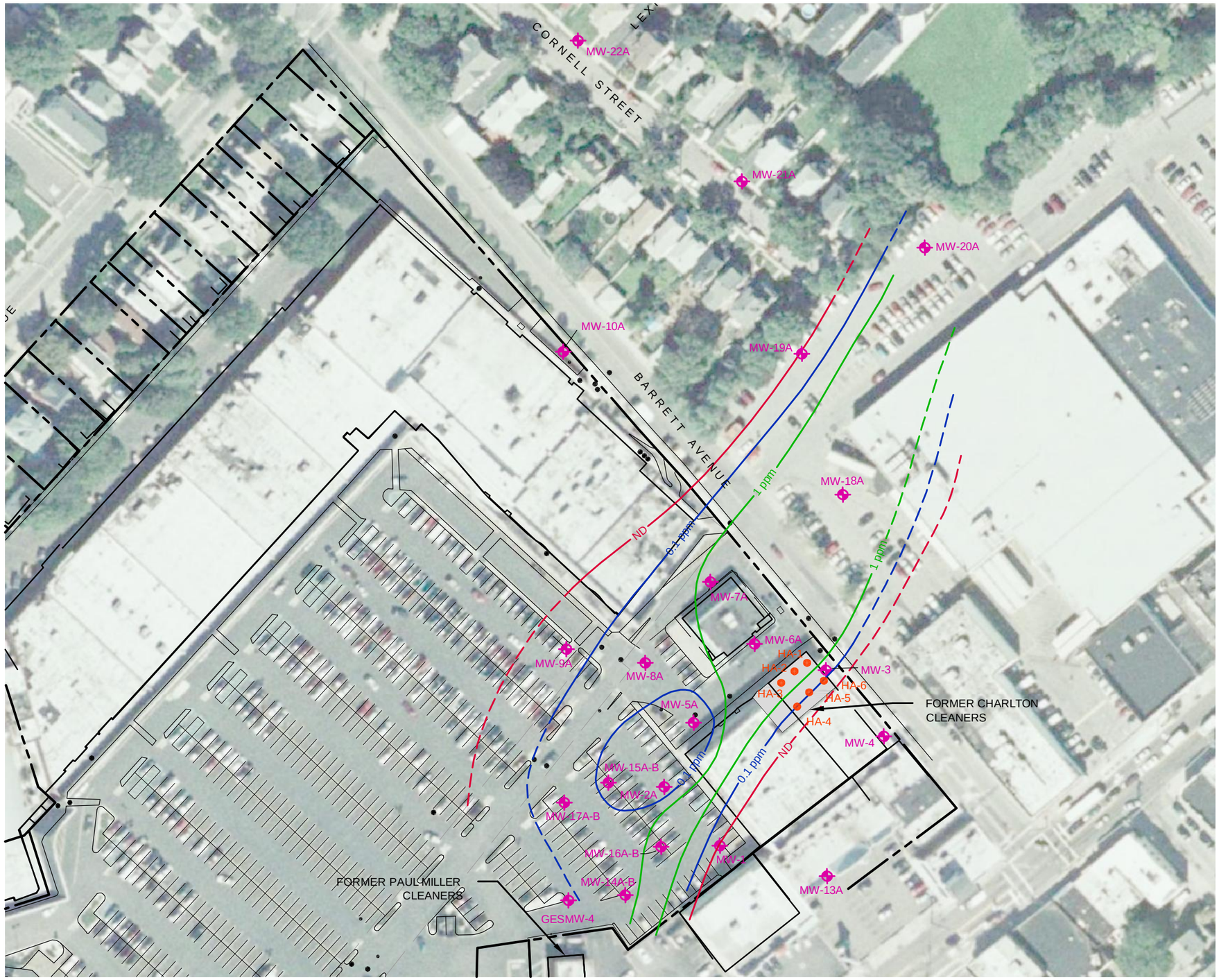

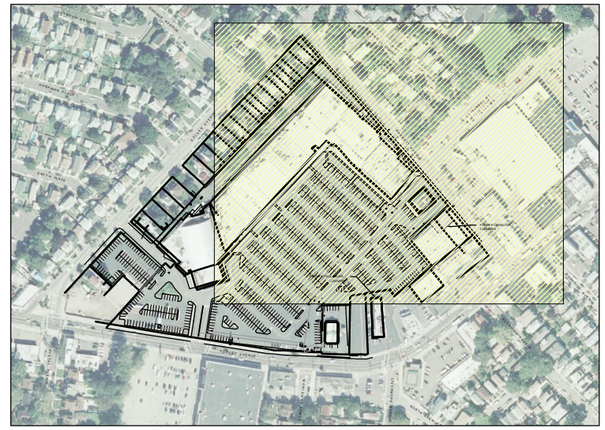

KEY MAP
SCALE: 1" = 500'

LEGEND

- PROPERTY BOUNDARY
- MW-1 — SHALLOW MONITOR WELL LOCATION
- HA-6 — SAMPLING POINT
- ND, 0.1 ppm, 1 ppm — CONCENTRATION OF HALOGENATED VOCs (DASHED WHERE INFERRED)

NOTES:

1. PEAK HALOGENATED VOCs INCLUDE COMBINATION OF TETRACHLOROETHYLENE, TRICHLOROETHENE, (CIS) 1, 2-DICHLOROETHENE AND VINYL CHLORIDE.
2. LBG WAS NOT PROVIDED WITH SURVEY DATA FROM STATE CONTRACTOR BEFORE COMPLETION OF THIS FIGURE.
3. ISOCONCENTRATION DELINEATED USING MOST RECENT GROUNDWATER QUALITY DATA FROM SAMPLING POINTS SHOWN. PEAK CONCENTRATON FROM WELL CLUSTERS USED IN CONSTRUCTION OF THE FIGURE.

FORMER CHARLTON CLEANERS FACILITY
VCP # W3-0891-01-06
FOREST AVENUE SHOPPERS TOWN
24 BARRETT AVENUE
STATEN ISLAND NEW YORK

ISOCONCENTRATION OF PEAK TOTAL HALOGENATED VOLATILE ORGANIC COMPOUNDS IN SHALLOW AQUIFER (LESS THAN 30 FEET BELOW GRADE)

DATE	REVISED

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DRAWN:	RAC	CHECKED:	MM	DATE:	02/01/12	FIGURE:	3

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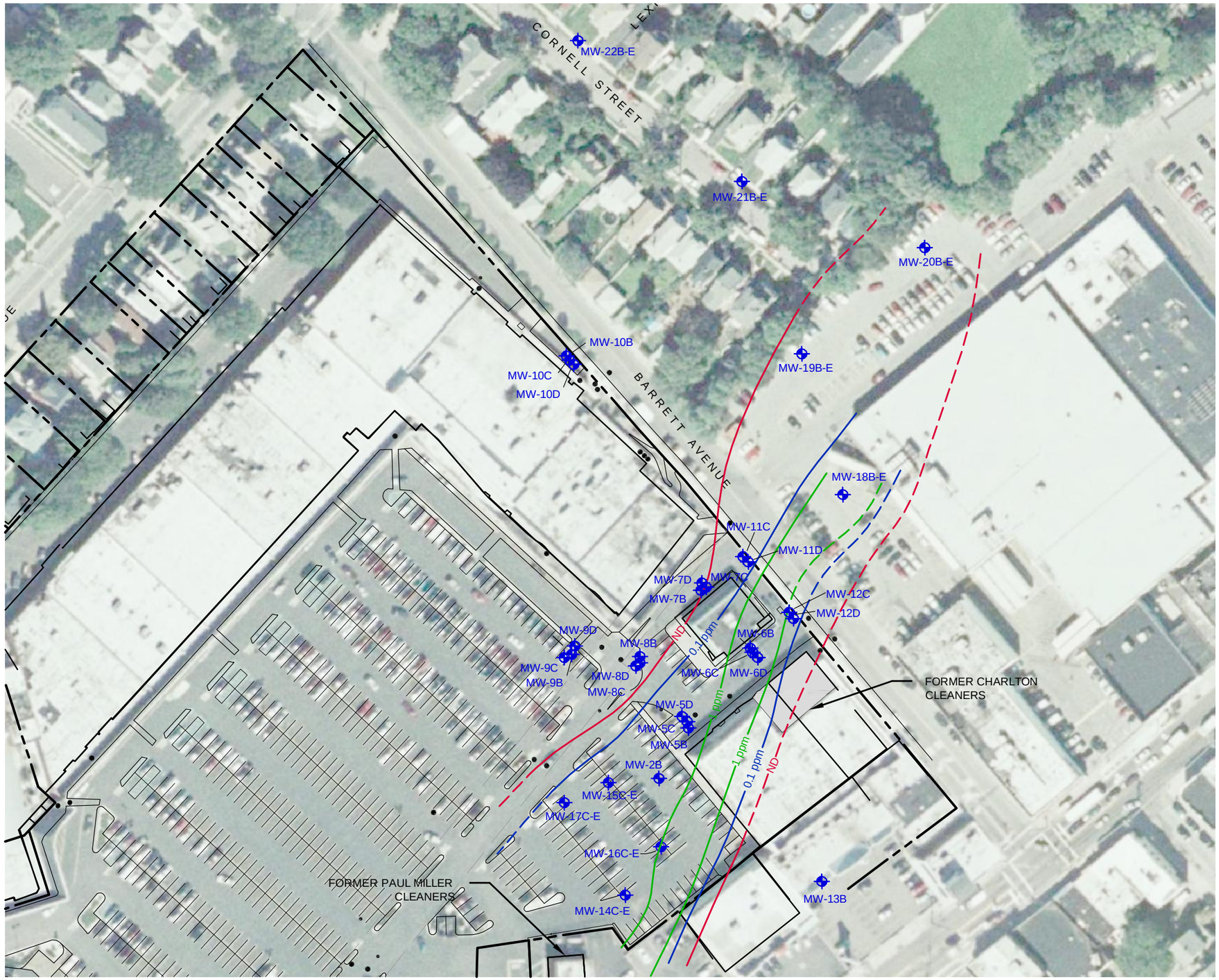

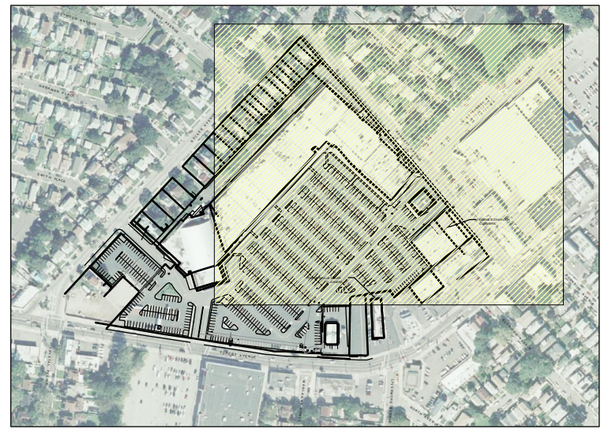

KEY MAP
SCALE: 1" = 500'

LEGEND

- PROPERTY BOUNDARY
- MW-1 — DEEP MONITOR WELL LOCATION
- ND / 0.1 ppm / 1 ppm — CONCENTRATION OF HALOGENATED VOCs (DASHED WHERE INFERRED)

NOTES:

1. PEAK HALOGENATED VOCs INCLUDE COMBINATION OF TETRACHLOROETHYLENE, TRICHLOROETHENE, (CIS) 1, 2-DICHLOROETHENE AND VINYL CHLORIDE.
2. LBG WAS NOT PROVIDED WITH SURVEY DATA FROM STATE CONTRACTOR BEFORE COMPLETION OF THIS FIGURE.
3. ISOCONCENTRATION DELINEATED USING MOST RECENT GROUNDWATER QUALITY DATA FROM SAMPLING POINTS SHOWN. PEAK CONCENTRATON FROM WELL CLUSTERS USED IN CONSTRUCTION OF THE FIGURE.

FORMER CHARLTON CLEANERS FACILITY
VCP # W3-0891-01-06
FOREST AVENUE SHOPPERS TOWN
24 BARRETT AVENUE
STATEN ISLAND NEW YORK

ISOCONCENTRATION OF PEAK TOTAL HALOGENATED VOLATILE ORGANIC COMPOUNDS IN DEEPER AQUIFER (GREATER THAN 30 FEET BELOW GRADE)

DATE	REVISED

PREPARED BY:
LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Groundwater and Environmental Engineering Services
110 Corporate Park Drive
Suite 112
White Plains, NY 10604
(914) 694-5711

DRAWN:	RAC	CHECKED:	MM	DATE:	02/01/12	FIGURE:	4

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ATTACHMENT I

Laboratory Reports

YORK
ANALYTICAL LABORATORIES, INC.

Technical Report

prepared for:

Leggette Brashears & Graham White Plains Office
110 Corporate Park Drive, Suite 112
White Plains NY, 10604
Attention: Paul Woodell

Report Date: 08/31/2011
Client Project ID: Charlton Cleaners
York Project (SDG) No.: 11H0850

Report Date: 08/31/2011
Client Project ID: Charlton Cleaners
York Project (SDG) No.: 11H0850

Leggette Brashears & Graham White Plains Office
110 Corporate Park Drive, Suite 112
White Plains NY, 10604
Attention: Paul Woodell

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on August 24, 2011 and listed below. The project was identified as your project: **Charlton Cleaners**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Notes section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the attachment to this report, and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
11H0850-01	MW-5A (5-20)	Water	08/23/2011	08/24/2011
11H0850-02	MW-5B (40-50)	Water	08/23/2011	08/24/2011
11H0850-03	MW-5C (60-70)	Water	08/23/2011	08/24/2011
11H0850-04	MW-5D (80-90)	Water	08/23/2011	08/24/2011
11H0850-05	MW-6A (5-20)	Water	08/23/2011	08/24/2011
11H0850-06	MW-6B (40-50)	Water	08/23/2011	08/24/2011
11H0850-07	MW-6C (60-70)	Water	08/23/2011	08/24/2011
11H0850-08	MW-6D (80-90)	Water	08/23/2011	08/24/2011

General Notes for York Project (SDG) No.: 11H0850

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All samples were received in proper condition for analysis with proper documentation, unless otherwise noted.
6. All analyses conducted met method or Laboratory SOP requirements. See the Qualifiers and/or Narrative sections for further information.
7. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
8. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.

Approved By:  **Date:** 08/31/2011

Robert Q. Bradley
Executive Vice President / Laboratory Director

YORK

Sample Information

Client Sample ID: MW-5A (5-20) **York Sample ID:** 11H0850-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
11H0850	Charlton Cleaners	Water	August 23, 2011 11:30 am	08/24/2011

Methane, Ethane & Ethylene

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Preparation for GC Analysis

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
74-84-0	Ethane	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW
74-85-1	Ethylene (Ethene)	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW
74-82-8	Methane	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW

Chloride

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	**Chloride**	**159**		mg/L	0.0690	0.500	1	EPA Method 300.0	08/24/2011 08:07	08/25/2011 10:02	AD

Nitrate (as N)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14797-53-8	**Nitrate as N**	**2.39**		mg/L	0.0120	0.0500	1	EPA Method 300.0	08/24/2011 08:07	08/25/2011 10:02	AD

Sulfate as SO4

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14808-79-8	**Sulfate**	**53.8**		mg/L	0.860	10.0	10	EPA Method 300.0	08/30/2011 03:33	08/30/2011 03:33	AMC

Sulfide

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
18496-25-8	**Sulfide**	**2.56**		mg/L	2.00	2.00	1	EPA 376.1	08/29/2011 15:04	08/29/2011 15:04	SC

Sample Information

Client Sample ID: MW-5B (40-50) **York Sample ID:** 11H0850-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
11H0850	Charlton Cleaners	Water	August 23, 2011 10:52 am	08/24/2011

Methane, Ethane & Ethylene

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Preparation for GC Analysis

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
74-84-0	Ethane	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW
74-85-1	Ethylene (Ethene)	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW
74-82-8	Methane	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW

Chloride

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: MW-5B (40-50) **York Sample ID:** 11H0850-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
11H0850	Charlton Cleaners	Water	August 23, 2011 10:52 am	08/24/2011

Chloride

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	**Chloride**	**55.8**		mg/L	0.0690	0.500	1	EPA Method 300.0	08/24/2011 08:07	08/25/2011 10:22	AD

Nitrate (as N)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14797-53-8	**Nitrate as N**	**4.70**		mg/L	0.0120	0.0500	1	EPA Method 300.0	08/24/2011 08:07	08/25/2011 10:22	AD

Sulfate as SO4

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14808-79-8	**Sulfate**	**44.7**		mg/L	0.0860	1.00	1	EPA Method 300.0	08/24/2011 08:07	08/25/2011 10:22	AD

Sulfide

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
18496-25-8	Sulfide	ND		mg/L	2.00	2.00	1	EPA 376.1	08/29/2011 15:04	08/29/2011 15:04	SC

Sample Information

Client Sample ID: MW-5C (60-70) **York Sample ID:** 11H0850-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
11H0850	Charlton Cleaners	Water	August 23, 2011 10:10 am	08/24/2011

Methane, Ethane & Ethylene

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Preparation for GC Analysis

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
74-84-0	Ethane	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW
74-85-1	Ethylene (Ethene)	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW
74-82-8	Methane	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW

Chloride

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	**Chloride**	**78.0**		mg/L	0.0690	0.500	1	EPA Method 300.0	08/24/2011 08:07	08/25/2011 10:42	AD

Nitrate (as N)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14797-53-8	**Nitrate as N**	**2.23**		mg/L	0.0120	0.0500	1	EPA Method 300.0	08/24/2011 08:07	08/25/2011 10:42	AD

Sample Information

Client Sample ID: MW-5C (60-70) **York Sample ID:** 11H0850-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
11H0850	Charlton Cleaners	Water	August 23, 2011 10:10 am	08/24/2011

Sulfate as SO4

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14808-79-8	**Sulfate**	**52.0**		mg/L	0.860	10.0	10	EPA Method 300.0	08/30/2011 03:52	08/30/2011 03:52	AMC

Sulfide

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
18496-25-8	**Sulfide**	**4.14**		mg/L	2.00	2.00	1	EPA 376.1	08/29/2011 15:04	08/29/2011 15:04	SC

Sample Information

Client Sample ID: MW-5D (80-90) **York Sample ID:** 11H0850-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
11H0850	Charlton Cleaners	Water	August 23, 2011 9:30 am	08/24/2011

Methane, Ethane & Ethylene

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Preparation for GC Analysis

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
74-84-0	Ethane	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW
74-85-1	Ethylene (Ethene)	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW
74-82-8	Methane	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW

Chloride

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	**Chloride**	**88.8**		mg/L	0.0690	0.500	1	EPA Method 300.0	08/24/2011 08:07	08/25/2011 11:01	AD

Nitrate (as N)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14797-53-8	**Nitrate as N**	**0.147**		mg/L	0.0120	0.0500	1	EPA Method 300.0	08/24/2011 08:07	08/25/2011 11:01	AD

Sulfate as SO4

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14808-79-8	**Sulfate**	**53.3**		mg/L	0.860	10.0	10	EPA Method 300.0	08/30/2011 04:12	08/30/2011 04:12	AMC

Sulfide

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
18496-25-8	**Sulfide**	**2.56**		mg/L	2.00	2.00	1	EPA 376.1	08/29/2011 15:04	08/29/2011 15:04	SC

Sample Information

Client Sample ID: MW-6A (5-20) **York Sample ID:** 11H0850-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
11H0850	Charlton Cleaners	Water	August 23, 2011 2:58 pm	08/24/2011

Methane, Ethane & Ethylene

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Preparation for GC Analysis

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
74-84-0	Ethane	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW
74-85-1	Ethylene (Ethene)	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW
74-82-8	**Methane**	**64**		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW

Chloride

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	**Chloride**	**401**		mg/L	0.0690	0.500	1	EPA Method 300.0	08/24/2011 17:30	08/25/2011 17:36	AD

Nitrate (as N)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14797-53-8	Nitrate as N	ND		mg/L	0.0120	0.0500	1	EPA Method 300.0	08/24/2011 17:30	08/25/2011 17:36	AD

Sulfate as SO4

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14808-79-8	**Sulfate**	**26.2**		mg/L	0.860	10.0	10	EPA Method 300.0	08/30/2011 04:32	08/30/2011 04:32	AMC

Sulfide

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
18496-25-8	**Sulfide**	**2.56**		mg/L	2.00	2.00	1	EPA 376.1	08/29/2011 15:04	08/29/2011 15:04	SC

Sample Information

Client Sample ID: MW-6B (40-50) **York Sample ID:** 11H0850-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
11H0850	Charlton Cleaners	Water	August 23, 2011 2:20 pm	08/24/2011

Methane, Ethane & Ethylene

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Preparation for GC Analysis

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
74-84-0	Ethane	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW
74-85-1	Ethylene (Ethene)	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW
74-82-8	Methane	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW

Chloride

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: MW-6B (40-50) **York Sample ID:** 11H0850-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
11H0850	Charlton Cleaners	Water	August 23, 2011 2:20 pm	08/24/2011

Chloride

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	**Chloride**	**75.2**		mg/L	0.0690	0.500	1	EPA Method 300.0	08/24/2011 17:30	08/25/2011 17:56	AD

Nitrate (as N)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14797-53-8	**Nitrate as N**	**5.48**		mg/L	0.0120	0.0500	1	EPA Method 300.0	08/24/2011 17:30	08/25/2011 17:56	AD

Sulfate as SO4

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14808-79-8	**Sulfate**	**53.2**		mg/L	0.0860	1.00	1	EPA Method 300.0	08/24/2011 17:30	08/25/2011 17:56	AD

Sulfide

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
18496-25-8	**Sulfide**	**2.56**		mg/L	2.00	2.00	1	EPA 376.1	08/29/2011 15:04	08/29/2011 15:04	SC

Sample Information

Client Sample ID: MW-6C (60-70) **York Sample ID:** 11H0850-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
11H0850	Charlton Cleaners	Water	August 23, 2011 1:40 pm	08/24/2011

Methane, Ethane & Ethylene

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Preparation for GC Analysis

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
74-84-0	Ethane	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW
74-85-1	Ethylene (Ethene)	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW
74-82-8	Methane	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW

Chloride

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	**Chloride**	**86.0**		mg/L	0.0690	0.500	1	EPA Method 300.0	08/24/2011 17:30	08/25/2011 18:16	AD

Nitrate (as N)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14797-53-8	**Nitrate as N**	**4.48**		mg/L	0.0120	0.0500	1	EPA Method 300.0	08/24/2011 17:30	08/25/2011 18:16	AD

Sample Information

Client Sample ID: MW-6C (60-70) **York Sample ID:** 11H0850-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
11H0850	Charlton Cleaners	Water	August 23, 2011 1:40 pm	08/24/2011

Sulfate as SO4

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14808-79-8	**Sulfate**	**52.5**		mg/L	0.860	10.0	10	EPA Method 300.0	08/30/2011 04:52	08/30/2011 04:52	AMC

Sulfide

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
18496-25-8	Sulfide	ND		mg/L	2.00	2.00	1	EPA 376.1	08/29/2011 15:04	08/29/2011 15:04	SC

Sample Information

Client Sample ID: MW-6D (80-90) **York Sample ID:** 11H0850-08

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
11H0850	Charlton Cleaners	Water	August 23, 2011 1:08 pm	08/24/2011

Methane, Ethane & Ethylene

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Preparation for GC Analysis

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
74-84-0	Ethane	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW
74-85-1	Ethylene (Ethene)	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW
74-82-8	Methane	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:11	08/25/2011 17:11	JW

Chloride

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	**Chloride**	**91.4**		mg/L	0.0690	0.500	1	EPA Method 300.0	08/24/2011 17:30	08/25/2011 18:36	AD

Nitrate (as N)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14797-53-8	**Nitrate as N**	**3.74**		mg/L	0.0120	0.0500	1	EPA Method 300.0	08/24/2011 17:30	08/25/2011 18:36	AD

Sulfate as SO4

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14808-79-8	**Sulfate**	**54.8**		mg/L	0.860	10.0	10	EPA Method 300.0	08/30/2011 05:11	08/30/2011 05:11	AMC

Sulfide

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
18496-25-8	**Sulfide**	**4.14**		mg/L	2.00	2.00	1	EPA 376.1	08/29/2011 15:04	08/29/2011 15:04	SC

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ANALYTICAL LABORATORIES, INC.

Notes and Definitions

ND	Analyte NOT DETECTED at the stated Reporting Limit (RL) or above.
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
MDL	METHOD DETECTION LIMIT - the minimum concentration that can be measured and reported with a 99% confidence that the concentration is greater than zero. If requested or required, a value reported below the RL and above the MDL is considered estimated and is noted with a "J" flag.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

Corrective Action:

YORK
ANALYTICAL LABORATORIES, INC.
120 RESEARCH DR. STRATFORD, CT 06615
(203) 325-1371 FAX (203) 357-0166

Field Chain-of-Custody Record

NOTE: York's Std. Terms & Conditions are listed on the back side of this document.
This document serves as your written authorization to York to proceed with the analyses requested and your signature binds you to York's Std. Terms & Conditions unless superseded by written contract.

York Project No. 11H0850

YOUR Information	**Report To:**	**Invoice To:**	**YOUR Project ID**	**Turn-Around Time**	**Report Type/Deliverbles**
Company: LBG	Company: SAME	Company: SAME	CHARLTON CLEANERS	RUSH - Same Day ☐	Summary Report ✓
Address: White Plains NY	Address:	Address:	**Purchase Order No.**	RUSH - Next Day ☐	Summary w/ QA Summary
Phone No: 914-694-5711	Phone No:	Phone No:		RUSH - Two Day ☐	CT RCP Package
Contact Person: Paul Woodell	Attention:	Attention:		RUSH - Three Day ☐	NY ASP A Package
E-Mail Address:	E-Mail Address:	E-Mail Address:	Samples from: CT NY NJ	RUSH - Four Day ☐	NY ASP B Package
				Standard(5-7 Days) ☒	Electronic Deliverables: see comments
					EDD (Specify Type)
					Excel

Print Clearly and Legibly. All Information must be complete. Samples will NOT be logged in and the turn-around time clock will not begin until any questions by York are resolved.

Paul Woodell
Samples Collected/Authorized By (Signature)

PAUL WOODELL
Name (printed)

Matrix Codes
S - soil
Other - specify(oil, etc.)
WW - wastewater
GW - groundwater
DW - drinking water
Air-A - ambient air
Air-SV - soil vapor

Volatiles		Semi-Vols.	Pest/PCB/Herb	Metals	Misc. Org.	Full Lists	Common Miscellaneous Parameters		
8260 full	TICs	8270 or 625	8082PCB	RCRA8	TPH GRO	Pri Poll	Corrosivity	Nitrate	Color
624	Site Spec	STARS list	8081Pest	PP13 list	TPH DRO	TCL Organics	Reactivity	Nitrite	Phenols
STARS list	Nassau Co	BN Only	8151Herb	TAL	CT ETPH	TAL Met/CN	Ignitability	TKN	Cyanide-T
BTEX	Suffolk Co	Acids Only	CT RCP	CT15 list	NY 310-13	Full TCLP	Flash Point	Tot Nitrogen	Cyanide-A
MTBE	Ketones	PAH list	App IX	TAGM list	TPH 1664	Full App IX	Sieve Anal	Ammonia-N	BOD5
TCL list	Oxygenates	TAGM list	Site Spec	NJDEP list	Air TO14A	Part 360-Routine	Heterotrophs	Chloride	CBOD5
TAGM list	TCLP list	CT RCP list	SPLP or TCLP	Total	Air TO15	Part 360-Baseline	TOX	Phosphate	BOD28
CT RCP list	524.2	TCL list	TCLP Pest	Dissolved	Air STARS	Part 360+	BTU/lb	Tot Phos.	COD
Aromatics only	502.2	NJDEP list	TCLP Herb	SPLP or TCLP	Air VPH	Part 360	Aquatic Tox	Oil&Grease	TSS
Halogs only	NJDEP list	App IX	Chlordane	Index Metals	Air TICs	NYCDEP Sewer	TOC	FOG	Total Solids
App IX list	SPLP or TCLP	TCLP BNA	608 Pest	LIST Below	Methane	NYSDEC Sewer	Asbestos	pH	TDS
8021B list		SPLP or TCLP	608 PCB		Helium	TAGM	Silica	MBAS	TPH-1664

Special Instructions
Field Filtered ☐
Lab to Filter ☐

Sample Identification	Date Sampled	Sample Matrix	Choose Analyses Needed from the Menu Above and Enter Below	Container Description(s)
MW-5A (5-20)	08/23/11 1130	GW	ethane, ethene, methane, chloride, nitrate, sulfate, sulfide	various
5B (40-50)	1052			
5C (60-70)	1010			
5D (80-90)	0930			
MW-6A (5-20)	1458			
6B (40-50)	1420			
6C (60-70)	1340			
6D (80-90)	1308			

Comments
please provide EDD typically required by Mike Manolakas in LBG Shelton office.

Preservation Check those Applicable
°C ___ Frozen ___ HCl ___ MeOH ___ HNO₃ ___ H₂SO₄ ___ NaOH ___
ZnAc ___ Ascorbic Acid ___ Other ___

Paul Woodell 8/24/11 0800
Samples Relinquished By Date/Time

Samples Relinquished By Date/Time

Samples Received By 8/24/11 8:00 Date/Time

Samples Received in LAB by 8/24/11 1700 Date/Time

Temperature on Receipt 4.7 °C

YORK
ANALYTICAL LABORATORIES, INC.

Technical Report

prepared for:

Leggette Brashears & Graham White Plains Office
110 Corporate Park Drive, Suite 112
White Plains NY, 10604
Attention: Paul Woodell

Report Date: 08/31/2011
Client Project ID: Charlton Cleaners
York Project (SDG) No.: 11H0880

Report Date: 08/31/2011
Client Project ID: Charlton Cleaners
York Project (SDG) No.: 11H0880

Leggette Brashears & Graham White Plains Office
110 Corporate Park Drive, Suite 112
White Plains NY, 10604
Attention: Paul Woodell

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on August 25, 2011 and listed below. The project was identified as your project: **Charlton Cleaners**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Notes section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the attachment to this report, and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
11H0880-01	MW-11C	Water	08/24/2011	08/25/2011
11H0880-02	MW-11D	Water	08/24/2011	08/25/2011
11H0880-03	MW-13A	Water	08/24/2011	08/25/2011
11H0880-04	MW-13B	Water	08/24/2011	08/25/2011

General Notes for York Project (SDG) No.: 11H0880

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All samples were received in proper condition for analysis with proper documentation, unless otherwise noted.
6. All analyses conducted met method or Laboratory SOP requirements. See the Qualifiers and/or Narrative sections for further information.
7. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
8. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.

Approved By: 

Date: 08/31/2011

Robert Q. Bradley
Executive Vice President / Laboratory Director

YORK

Sample Information

Client Sample ID: MW-11C **York Sample ID:** 11H0880-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
11H0880	Charlton Cleaners	Water	August 24, 2011 12:00 pm	08/25/2011

Methane, Ethane & Ethylene

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Preparation for GC Analysis

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
74-84-0	Ethane	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:12	08/25/2011 17:30	JW
74-85-1	Ethylene (Ethene)	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:12	08/25/2011 17:30	JW
74-82-8	Methane	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:12	08/25/2011 17:30	JW

Chloride

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	**Chloride**	**41.2**		mg/L	0.0690	0.500	1	EPA Method 300.0	08/26/2011 08:00	08/26/2011 13:13	AD

Nitrate (as N)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14797-53-8	**Nitrate as N**	**1.83**		mg/L	0.0120	0.0500	1	EPA Method 300.0	08/26/2011 08:00	08/26/2011 13:13	AD

Sulfate as SO4

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14808-79-8	**Sulfate**	**55.2**		mg/L	0.860	10.0	10	EPA Method 300.0	08/30/2011 05:31	08/30/2011 05:31	AMC

Sulfide

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
18496-25-8	**Sulfide**	**7.29**		mg/L	2.00	2.00	1	EPA 376.1	08/29/2011 15:04	08/29/2011 15:04	SC

Sample Information

Client Sample ID: MW-11D **York Sample ID:** 11H0880-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
11H0880	Charlton Cleaners	Water	August 24, 2011 12:34 pm	08/25/2011

Methane, Ethane & Ethylene

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Preparation for GC Analysis

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
74-84-0	Ethane	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:12	08/25/2011 17:30	JW
74-85-1	Ethylene (Ethene)	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:12	08/25/2011 17:30	JW
74-82-8	**Methane**	**10**		ug/L	10	10	1	GC/Headspace	08/25/2011 17:12	08/25/2011 17:30	JW

Chloride

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: MW-11D **York Sample ID:** 11H0880-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
11H0880	Charlton Cleaners	Water	August 24, 2011 12:34 pm	08/25/2011

Chloride

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	**Chloride**	**74.9**		mg/L	0.0690	0.500	1	EPA Method 300.0	08/26/2011 08:00	08/26/2011 13:32	AD

Nitrate (as N)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14797-53-8	**Nitrate as N**	**3.17**		mg/L	0.0120	0.0500	1	EPA Method 300.0	08/26/2011 08:00	08/26/2011 13:32	AD

Sulfate as SO4

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14808-79-8	**Sulfate**	**53.2**		mg/L	0.860	10.0	10	EPA Method 300.0	08/30/2011 06:31	08/30/2011 06:31	AMC

Sulfide

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
18496-25-8	**Sulfide**	**2.56**		mg/L	2.00	2.00	1	EPA 376.1	08/29/2011 15:04	08/29/2011 15:04	SC

Sample Information

Client Sample ID: MW-13A **York Sample ID:** 11H0880-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
11H0880	Charlton Cleaners	Water	August 24, 2011 3:50 pm	08/25/2011

Methane, Ethane & Ethylene

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Preparation for GC Analysis

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
74-84-0	Ethane	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:12	08/25/2011 17:30	JW
74-85-1	Ethylene (Ethene)	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:12	08/25/2011 17:30	JW
74-82-8	**Methane**	**110**		ug/L	10	10	1	GC/Headspace	08/25/2011 17:12	08/25/2011 17:30	JW

Chloride

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	**Chloride**	**37.7**		mg/L	0.0690	0.500	1	EPA Method 300.0	08/26/2011 08:00	08/26/2011 13:52	AD

Nitrate (as N)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14797-53-8	**Nitrate as N**	**0.166**		mg/L	0.0120	0.0500	1	EPA Method 300.0	08/26/2011 08:00	08/26/2011 13:52	AD

Sample Information

Client Sample ID: MW-13A **York Sample ID:** 11H0880-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
11H0880	Charlton Cleaners	Water	August 24, 2011 3:50 pm	08/25/2011

Sulfate as SO4 **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14808-79-8	**Sulfate**	**20.2**		mg/L	0.0860	1.00	1	EPA Method 300.0	08/26/2011 08:00	08/26/2011 13:52	AD

Sulfide **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
18496-25-8	**Sulfide**	**2.56**		mg/L	2.00	2.00	1	EPA 376.1	08/29/2011 15:04	08/29/2011 15:04	SC

Sample Information

Client Sample ID: MW-13B **York Sample ID:** 11H0880-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
11H0880	Charlton Cleaners	Water	August 24, 2011 4:25 pm	08/25/2011

Methane, Ethane & Ethylene **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: Preparation for GC Analysis

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
74-84-0	Ethane	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:12	08/25/2011 17:30	JW
74-85-1	Ethylene (Ethene)	ND		ug/L	10	10	1	GC/Headspace	08/25/2011 17:12	08/25/2011 17:30	JW
74-82-8	**Methane**	**99**		ug/L	10	10	1	GC/Headspace	08/25/2011 17:12	08/25/2011 17:30	JW

Chloride **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	**Chloride**	**14.5**		mg/L	0.0690	0.500	1	EPA Method 300.0	08/26/2011 08:00	08/26/2011 14:12	AD

Nitrate (as N) **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14797-53-8	**Nitrate as N**	**0.169**		mg/L	0.0120	0.0500	1	EPA Method 300.0	08/26/2011 08:00	08/26/2011 14:12	AD

Sulfate as SO4 **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14808-79-8	**Sulfate**	**5.77**		mg/L	0.0860	1.00	1	EPA Method 300.0	08/26/2011 08:00	08/26/2011 14:12	AD

Sulfide **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
18496-25-8	**Sulfide**	**5.71**		mg/L	2.00	2.00	1	EPA 376.1	08/29/2011 15:04	08/29/2011 15:04	SC

YORK
ANALYTICAL LABORATORIES, INC.

Notes and Definitions

ND	Analyte NOT DETECTED at the stated Reporting Limit (RL) or above.
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
MDL	METHOD DETECTION LIMIT - the minimum concentration that can be measured and reported with a 99% confidence that the concentration is greater than zero. If requested or required, a value reported below the RL and above the MDL is considered estimated and is noted with a "J" flag.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

Corrective Action:

YORK
ANALYTICAL LABORATORIES, INC.
120 RESEARCH DR. STRATFORD, CT 06615
(203) 325-1371 FAX (203) 357-0166

Field Chain-of-Custody Record

NOTE: York's Std. Terms & Conditions are listed on the back side of this document. This document serves as your written authorization to York to proceed with the analyses requested and your signature binds you to York's Std. Terms & Conditions unless superseded by written contract.

York Project No. 11H0880

YOUR Information
Company: LBG
Address: White Plains NY
Phone No. 914-694-5711
Contact Person: Paul Woodell
E-Mail Address:

Report To:
Company: SAME
Address:
Phone No.
Attention:
E-Mail Address:

Invoice To:
Company: SAME
Address:
Phone No.
Attention:
E-Mail Address:

YOUR Project ID
CHARLTON CLEANERS

Purchase Order No.

Samples from: CT ___ NY X NJ ___

Turn-Around Time
- RUSH - Same Day ☐
- RUSH - Next Day ☐
- RUSH - Two Day ☐
- RUSH - Three Day ☐
- RUSH - Four Day ☐
- Standard(5-7 Days) ☒

Report Type/Deliverbles
- Summary Report ✓
- Summary w/ QA Summary ___
- CT RCP Package ___
- NY ASP A Package ___
- NY ASP B Package ___
- *Electronic Deliverables*: EDD (Specify Type) see Comments
- Excel ___

Print Clearly and Legibly. All Information must be complete. Samples will NOT be logged in and the turn-around time clock will not begin until any questions by York are resolved.

Paul Woodell
Samples Collected/Authorized By (Signature)

PAUL WOODELL
Name (printed)

Matrix Codes
S - soil
Other - specify(oil, etc.)
WW - wastewater
GW - groundwater
DW - drinking water
Air-A - ambient air
Air-SV - soil vapor

Volatiles		Semi-Vols.	Pest/PCB/Herb	Metals	Misc. Org.	Full Lists	Common Miscellaneous Parameters		
8260 full	TICs	8270 or 625	8082PCB	RCRA8	TPH GRO	Pri.Poll.	Corrosivity	Nitrate	Color
624	Site Spec.	STARS list	8081Pest	PP13 list	TPH DRO	TCL Organics	Reactivity	Nitrite	Phenols
STARS list	Nassau Co.	BN Only	8151Herb	TAL	CT ETPH	TAL Met/CN	Ignitability	TKN	Cyanide-T
BTEX	Suffolk Co	Acids Only	CT RCP	CT15 list	NY 310-13	Full TCLP	Flash Point	Tot Nitrogen	Cyanide-A
MTBE	Ketones	PAH list	App. IX	TAGM list	TPH 1664	Full App. IX	Sieve Anal.	Ammonia-N	BOD5
TCL list	Oxygenates	TAGM list	Site Spec.	NJDEP list	Air TO14A	Part360-Routine	Heterotrophs	Chloride	CBOD5
TAGM list	TCLP list	CT RCP list	SPLP or TCLP	Total	Air TO15	Part360-Baseline	TOX	Phosphate	BOD28
CT RCP list	524.2	TCL list	TCLP Pest	Dissolved	Air STARS	Part 360-Expanded No Duplicate Forms	BTU/lb.	Tot. Phos.	COD
Arom. only	502.2	NJDEP list	TCLP Herb	SPLP or TCLP	Air VPH	Part 360-Expanded Full List	Aquatic Tox.	Otl&Grease	TSS
Halog.only	NJDEP list	App. IX	Chlordane	Indiv. Metals	Air TICs	NYCDEP Sewer	TOC	F.O.G.	Total Solids
App IX list	SPLP or TCLP	TCLP BNA	608 Pest	LIST Below	Methane	NYSDEC Sewer	Asbestos	pH	TDS
8021B list		SPLP or TCLP	608 PCB		Helium	TAGM	Silica	MBAS	TPH-1664

Special Instructions
Field Filtered ☐
Lab to Filter ☐

Sample Identification	Date Sampled	Sample Matrix	Choose Analyses Needed from the Menu Above and Enter Below	Container Description(s)
MW-11C	8/24/11 1200	GW	ethane, ethene, methane, chloride, nitrate, sulfate, sulfide	various
MW-11D	1234			
MW-13A	1550			
MW-13B	1625			

Preservation Check those Applicable: 4°C ___ Frozen ___ HCl ___ MeOH ___ HNO_3 ___ H_2SO_4 ___ NaOH ___ ZnAc ___ Ascorbic Acid ___ Other ___

Comments
please provide EDD typically required by Mike Manolakas in LBG Shelton office.

Paul Woodell — 08/25/11 — Samples Relinquished By — Date/Time
___ — ___ — Samples Relinquished By — Date/Time

Chris 8-25-11 14:25 — Samples Received By — Date/Time
Phan 8/25/11 1520 — Samples Received in LAB by — Date/Time

Temperature on Receipt: 4-5 °C

ATTACHMENT II

Site Specific Health and Safety Plan

SITE SPECIFIC HEALTH AND SAFETY PLAN FOR ENVIRONMENTAL WORK RELATED TO VOLATILE ORGANIC COMPOUNDS FORMER CHARLTON CLEANERS FACILITY FOREST AVENUE SHOPPERS TOWN STATEN ISLAND, NEW YORK VCP SITE ID NO. W3-0891-01-06

Prepared For

KIOP Forest Avenue, LP

March 2008
Revised: July 2008
Revised: December 2011

LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground-Water and Environmental Engineering Services
110 Corporate Park Drive, Suite 112
White Plains, NY 10604
(914) 694-5711

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TO VOLATILE ORGANIC COMPOUNDS
FORMER CHARLTON CLEANERS FACILITY
FOREST AVENUE SHOPPERS TOWN
STATEN ISLAND, NEW YORK
VCP SITE ID NO. W3-0891-01-06

This Health and Safety Plan (HASP) is intended to provide a basic framework for the safe conduct of field investigations related to the Charlton Cleaners site. The procedures provided herein are intended as a guide for all Leggette, Brashears & Graham, Inc. (LBG) and subcontractor employees who will be involved in the performance of the project.

The primary objective of the HASP is to establish work-safety guidelines, requirements and procedures before field activities begin and during the field activities. The following information was prepared specifically for field operations by personnel to enforce and adhere to the established rules as specified in the HASP. The HASP will be provided to all personnel to aid in accomplishing the following objectives:

- monitoring the effectiveness of the HASP as it is conducted in the field by performing field operation audits;
- following up on any necessary corrective actions;
- interacting with regulatory agencies and/or client representatives regarding modifications of health and safety actions; and
- stopping work should work-site conditions warrant such action.

All personnel will have had health and safety training in accordance with OSHA Interim Final Standard 29 CFR 1910 or as may be amended. A copy of LBG's Corporate Safety Policy and Drug and Alcohol Policy is attached in Appendix A.

1.0 ORGANIZATION AND RESPONSIBILITIES

The organization and responsibilities for implementing safe site-investigation procedures, and specifically for the requirements contained in this manual, are described in this section.

1.1 Project Manager

The LBG Project Manager will be responsible for the overall implementation and monitoring of the health and safety program by:

- ensuring appropriate protective equipment is available and properly used by all personnel, in accordance with the HASP;
- ensuring personnel health and safety awareness by providing them with proper training and familiarity with procedures and contingency plans;
- ensuring all personnel are apprised of potential hazards associated with the site conditions and operations;
- supervising and monitoring the safety performance of all personnel to ensure their work practices are conducted in accordance with the HASP;
- correcting any work practices or conditions that would expose personnel to possible injury or hazardous condition;
- communications with the onsite Health and Safety Officer (HSO);
- ensuring sufficient protective equipment is provided and used;
- promptly initiating emergency alerts; and,
- communicating with the client and/or regulatory agency representatives.

1.2 Onsite Health and Safety Officer

The LBG HSO will be onsite during all field activities. The HSO will be accountable for the direct supervision of personnel from the subcontractors and other LBG personnel with regard to:

- health and safety program compliance;
- maintaining a high level of health and safety consciousness among employees at the work site; and,
- reporting accidents within LBG jurisdiction and undertaking corrective action.

1.3 Field Personnel

All field personnel will report directly to the onsite HSO, and will be required to:

- be familiar with, and conform to, provisions of the HASP;
- report any accidents or hazardous conditions to the onsite HSO; and,

- have complete familiarity with their job requirements and the health and safety procedures involved.

1.4 Reporting of Accidents and Unsafe Conditions

If an accident occurs, the HSO and the injured person(s) are to complete an Accident Report for submittal to the project manager, who will forward a copy to the principal-in-charge who should ensure that follow-up action is taken to correct the situation that caused the accident.

1.4.1 Safety Inspections

Safety inspections will be conducted periodically by the Project Manager. The Project Manager will be familiar with the Health and Safety Plan before performing an onsite visit. While onsite, the Project Manager will evaluate the effectiveness of the plan and offer any suggestion for improvement. Although the Project Manager is responsible for periodic safety inspections and evaluation of the Health and Safety Plan, the onsite HSO is responsible for daily observation and evaluation of Health and Safety Plan effectiveness.

1.4.2 Safety Meetings

Prior to the start of field activities, a meeting will be held to discuss the potential hazards at the site, with a review of the required protective clothing and procedures observed at this site. As needed, daily meetings will be held to discuss any changes in the hazards. A site safety briefing form will be filled out each day the HSO holds a meeting and signed by all of the attendees of the briefing.

2.0 HAZARD EVALUATION

The exposure limits of chemical constituents which may be encountered are listed in Table 1. These constituents would possibly be encountered in ground water and/or soil and comprise the major concerns for personal health. The protection of personnel and the public from exposure to these substances by inhalation, oral ingestion, dermal absorption or eye contact is included as a primary purpose of this plan.

The onsite HSO is responsible for determining the level of personal protection equipment required. The HSO will perform a preliminary evaluation to confirm personal protective equipment requirements once the site has been entered. When work-site conditions warrant, the onsite HSO will modify the level of protection to be utilized. The existence of a situation more hazardous than anticipated will result in the suspension of work until the Project Manager and volunteer have been notified and appropriate instructions have been provided to the field team.

3.0 MONITORING REQUIREMENTS

A photoionization detector (PID) will be used to monitor ambient air quality at the drilling or excavation sites. Records of these data will be maintained by the onsite HSO. During drilling operations or excavation activities, air quality will be monitored, especially near the top of the boreholes as samples are taken and at the perimeters of any excavations. Instrument calibration information is included in Appendix B.

For the compounds previously identified to be most prevalent, the lowest 8-hour exposure limit is listed on Table 1.

3.1 Vapor Emission Response Plan

If the ambient air concentration of organic vapors exceeds 5 ppm above background at the perimeter of the work area, activities will be halted and monitoring continued. If the organic vapor level decreases below 5 ppm above background, work activities can resume. If the organic vapor levels are greater than 5 ppm over background but less than 25 ppm over background at the perimeter of the work area, activities can resume provided:

- the organic vapor level 200 feet downwind of the work area or half the distance to the nearest residential or commercial structure, whichever is less, is below 5 ppm over background.

If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shutdown. When work shutdown occurs, downwind air monitoring as directed by the Safety Officer will be implemented to ensure that vapor emission does not impact the nearest residential or commercial structure at levels exceeding those specified in the Major Vapor Emission section.

3.2 Major Vapor Emission

If any organic levels greater than 5 ppm over background are identified 200 feet downwind from the work area or half the distance to the nearest residential or commercial property, whichever is less, all work activities will be halted.

If, following the cessation of the work activities, or as the result of an emergency, organic levels persist above 5 ppm above background 200 feet downwind or half the distance to the nearest residential or commercial property from the work area, then the air quality will be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (20 Foot Zone).

If efforts to abate the emission source are unsuccessful and if the following levels persist for more than 30 minutes in the 20 Foot Zone, then the Major Vapor Emission Response Plan shall automatically be placed into effect. The Major Vapor Emission Response Plan shall be immediately placed into effect if organic vapor levels are greater than 10 ppm above background.

3.3 Major Vapor Emission Response Plan

Upon activation, the following activities will be undertaken:

1. All Emergency Response Contacts as listed in the Health and Safety Plan of the Work Plan will be notified.
2. The local police authorities will immediately be contacted by the Safety Officer and advised of the situation.
3. Frequent air monitoring will be conducted at 30 minute intervals within the 20 Foot Zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the Safety Officer.

4.0 LEVELS OF PROTECTION

The level of protection anticipated to perform work on this investigation is Level D, unless otherwise upgraded. Only protective equipment deemed suitable by the onsite HSO for use at the work site will be worn. Any changes in protection levels shall be documented by the onsite HSO. Field personnel should exercise informed judgment on protective equipment requirements at active work sites or at work sites that have been repeatedly entered or occupied without

apparent harm. In any case where doubt exists, the safest course of action must be taken. The protective equipment to be used by field personnel is listed below.

4.1 Level D

- hard hat;
- safety glasses, shatter-proof prescription glasses or chemical splash goggles;
- boots/shoes, leather or chemical-resistant, steel toe and shank;
- coveralls; and,
- chemical resistant gloves.

At a minimum, protective headgear, including protective hearing devices, eyewear and footwear will be worn at all times by personnel working around the drilling equipment. When work-site conditions dictate, protective gloves and chemical-resistant boots shall be required for those personnel handling contaminated soils or water.

Typically, for VOC-related work, a sustained level of 0 to 5 ppm above background as measured with a PID provides a large safety margin for the 8-hour exposure limit.

4.2 Level C

- hard hat;
- boots, leather, steel toe and shank;
- outer boots, chemical resistant;
- chemical-resistant gloves (solvex);
- Tyvek or Saranex suit; and,
- Air purifying respirator with organic vapor cartridge and dust and mist filter.

Level C protection will be considered for sustained PID readings of 5 to 100 ppm above background in the breathing zone.

Respirators for all personnel will be available with both particulate and organic vapor protection cartridges. The onsite HSO will direct when the protective clothing and respirators will be utilized based on the conditions encountered at the work site.

4.3 Level B

- pressure-demand, self-contained breathing apparatus;
- standby escape pack;
- chemical resistant clothing (Saranex suit);
- outer gloves (Solvex);
- inner gloves (surgical);
- outer boots (chemical resistant);
- inner boots (leather, steel shank and toe); and,
- hard hat.

Level B will be considered for sustained PID readings of 100 ppm above background in the breathing zone. In the event that the work space atmosphere contains in excess of 100 ppm of total ionizable compounds above background, colorimetric tubes or a portable gas chromatograph will be used to determine the levels of individual chemicals. The use of Level B equipment will be based on the specific compounds present and will include discussions with the regulatory authorities and/or the client representative.

Level A conditions will require specialized procedures to be formulated on a case-by-case basis.

5.0 SAFE WORK PRACTICES AND HYGIENE

In addition to the use of protective equipment, other procedures will be followed to minimize risk:

- all consumptive activities including eating, drinking or smoking are prohibited during the drilling, sampling and decontamination activities;
- an adequate source of potable water for emergency use will be available at the drilling sites (two liters per person per day);
- fire extinguishers will be available at the work sites for use on equipment or small fires when appropriate; and,
- an adequately stocked first-aid kit will be maintained at the work site at all times during operational hours.

5.1 Heat Stress

In order to avoid heat stress several preventative measures will be observed:

- Workers will be urged to drink a 16-ounce glass of water prior to work (in the morning and after lunch). Water will be contained in a cooler, maintained at a temperature below 60^{o}F. Workers will be encouraged to drink approximately every 20 minutes during days of extreme heat.
- In extreme hot weather, field activities will be conducted in the early mornings and late afternoons.
- Rest breaks in cool or shaded areas will be enforced as needed.
- Toilet facilities will be made available to site workers, unless transportation is readily available to nearby toilet facilities.
- Good hygiene practices will be encouraged, stressing the importance of allowing the clothing to dry during rest periods. Anyone who notices skin problems should receive medical attention immediately.
- If there are support personnel available outside the work zone, they should observe the workers in the exclusion zone to monitor signs of stress, frequency of breaks, etc.

5.2 Cold Stress and Exposure

In order to avoid cold stress, several preventative measures will be observed;

- work will not take place when the temperature falls below -20^{o}F. (The wind chill factor should be a major consideration);
- clothing should be worn in layers, so that personnel can adapt to changing conditions and various levels of physical stress;
- if possible, breaks should be taken in a heated vehicle or building, but care should be taken to remove outer clothing during the break;
- have on hand extra inner clothing in case perspiration builds up;
- keep insulated containers of warm liquids available for breaks outside of the exclusion zone;
- be aware of the signs of frostbite and take immediate remedial measures; and,
- take extra precautions around areas subject to ice buildup, such as sanding slippery surfaces.

6.0 WORK ZONE

To prevent unauthorized personnel from entering areas where active operations are being performed, the area enclosing the operation will be marked.

Typically, VOC projects such as this one involve installation of wells, monitoring of wells, installation and operation of treatment systems and observation of tank and trench excavation work. Safety issues with respect to this type of work are attached in Appendix C.

7.0 DECONTAMINATION

An area will be set aside within the work zone for decontamination. The type of decontamination procedures used will be based on the level of protection required. Decontamination of Level D protective wear will consist of brushing heavily soiled boots to remove soils, rinsing gloves and safety glasses (and overboots, if worn) with water, and removing and storing coveralls in plastic bags before leaving the work zone, if heavily soiled or suspected of having been in contact with site contaminants. For detailed decontamination, equipment and procedures, refer to Appendix D.

8.0 CONTINGENCY PLAN FOR EMERGENCIES

In the event of a safety or health emergency, appropriate corrective measures must immediately be taken to assist those who have been injured or exposed and to protect others from hazard. The onsite HSO will be notified of the incident immediately. If necessary, first aid will be rendered. A contact sheet showing the closest police, hospital and NYSDEC office will be maintained onsite within this HASP as Appendix E.

dmd
March 26, 2008
Revised: July 9, 2008
Revised: December 13, 2011
f:\reports\charlton cleaners\2011\supplemental work plan\supplement wp appendix ii hasp.docx

TABLE

TABLE 1
Exposure Limits

COMPOUND	EXPOSURE STANDARDS			RECOGNITION QUALITIES		
	TLV/PEL (a) (ppm)	STEL (b) (ppm)	IDLH (c) (ppm)	Odor/Threshold (ppm)	LEL (d) (%)	Ionization Potential (eV)
Tetrachloroethene[1/]	Ca[2/]	Ca[2/]	150	Chloroform	B	9.32
Trichloroethene	Ca[2/]	25	1,000	Chloroform	8.0	9.45
1,2-Dichloroethylene	200	B	1,000	Chloroform	5.6	9.65
Vinyl Chloride	Ca[2/]	Ca[2/]	Not determined	Pleasant	3.6	9.99
1,1-Dichloroethane	100	Ca[2/]	3,000	Chloroform	5.4	11.06
1,1,2-Trichloroethane	Ca[2/]	10	100	Chloroform	6.0	11.00
Chlorobenzene	75[3/]	B	1,000	Almonds	1.3	B
Benzene[1/]	0.1	1	500	12	1.2	9.24
Toluene	100	150	500	Sweet benzene like/2.9	1.1	8.82
Ethylbenzene	100	125	800	Aromatic	0.8	8.76
Xylenes	100	150	900	Aromatic/1.1	0.9	8.56

Notes:

1/ Potential occupational carcinogen
2/ NIOSH recommends occupational exposures to carcinogens to be limited to the lowest feasible concentration
3/ OSHA guideline, NIOSH questions the adequacy of 75 ppm
B = No published value
(a) The more stringent of either: (1) Occupational Safety and Health Administration (OSHA) 1989 Permissible Exposure Limit (PEL), (2) American Conference Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), or (3) National Institute for Occupational Safety and Health (NIOSH) recommended exposure limits (RELs), time-weighted average concentrations for up to a 10-hour work day.
(b) Short Term Exposure Limit - 15 minute exposure.
(c) Immediately dangerous to life and health.
(d) Lower Explosive Limit

FORMS

SITE SAFETY BRIEFING

Job Name: Environmental Investigation Activities Work Plan
Date: Winter 2012
Site Location: Forest Avenue Shoppers Town, Staten Island, NY

SAFETY ISSUES (Circle appropriate information)

Tasks: Soil Boring Drilling, Groundwater Monitoring and Delineation Well Installation, Trench Excavation

Protective Clothing/Equipment: Level D, Level C, Level B, Level A

Chemical Hazards: Benzene, Toluene, Ethylbenzene, Xylene, Tetrachloroethylene (and decay products), Acetone, Chloroform, Fuel Oil, Waste Oil

Physical Hazards: Car Traffic, Construction Equipment, Confined Space, Overhead Wires

Control Methods: Cones, Restricted Access, Traffic Control Personnel

Other: _____

Hospital Name/Address: Staten Island University Hospital
500 Seaview Avenue
Staten Island, New York
(718)979-0831

ATTENDEES

Print Name:	Sign Name:
_____	_____
_____	_____
_____	_____
_____	_____

Meeting conducted by: _____

_____

AIR MONITORING

General Information

Name(s): _____ Background Level: _____

Date: _____ Weather Conditions: _____

Time: _____ _____

Project: Forest Avenue Shoppers Town

Staten Island, New York

Equipment Calibration

PID _____ CGI _____

Wind Direction	Time	Work Location	PID Reading (ppm)			Particulate Reading (mg/m3)		
			Upwind	Work Zone	Downwind	Upwind	Work Zone	Downwind

PLAN ACCEPTANCE FORM

PROJECT HEALTH & SAFETY PLAN

INSTRUCTIONS: This form is to be completed by each Leggette, Brashears & Graham, Inc. employee to work on the subject project work site and returned to the Office Safety Coordinator prior to site activities.

Client/Project: Forest Avenue Shoppers Town
Staten Island, New York

Date: _____

I represent that I have read and understand the contents of the above Plan and agree to perform my work in accordance with it.

_____ _____	_ _____
Signed	Signed
_____ _____	_ _____
Print Name	Print Name
_____ _____	_ _____
Date	Date
_____ _____	_ _____
Signed	Signed
_____ _____	_ _____
Print Name	Print Name
_____ _____	_ _____

Date Date

EXCLUSION ZONE LOG SHEET

LEGGETTE, BRASHEARS & GRAHAM, INC.
110 CORPORATE PARK DRIVE, SUITE 112
WHITE PLAINS, NEW YORK 10604

Client: Forest Avenue Shoppers Town

Location: Staten Island, New York

Name	Date	Time In	Time Out	Elapsed Time

APPENDIX A

LBG SAFETY POLICY
AND
GENERAL DRUG AND ALCOHOL POLICY

LEGGETTE, BRASHEARS & GRAHAM, INC.

SAFETY POLICY

Job safety is a common-sense part of everyone's life, but requires constant alertness to possible dangers. When we work on industrial sites, LBG employees are expected to observe the safety rules of our Client hosts.

You are the first line of defense for your own personal safety. In the field, appropriate clothing should be worn at all times. Where appropriate, work shoes with hard toes and/or ankle protection should be worn at all times. **Sneakers/tennis shoes should never be worn in the field, regardless of the circumstances.**

LBG provides hard hats that should be worn around any drilling operations and in any other "hard hat zones". Where required, safety glasses, goggles, protective gloves, respirators, and other safety clothing or equipment should be worn and disposed of as specified by the Project Safety Officer.

Periodically, LBG provides special safety seminars which satisfy the OSHA requirements for work on hazardous waste sites. In-house safety training is conducted on an ongoing basis and as dictated by case-by-case needs. There is a Corporate Safety Officer in the Trumbull, Connecticut headquarters and a designated Safety Officer in each regional office to whom questions and problems relating to job safety should be referred.

Any project that involves or may involve hazardous or toxic waste or any potentially dangerous condition requires the preparation, filing, use and compliance with a Health and Safety Plan (HASP). LBG has a petroleum related work HASP that can be readily adapted to most petroleum jobs and has numerous site-specific HASPs that comply with state and federal CERCLA requirements that can be used for guidance in developing site-specific HASPs.

LEGGETTE, BRASHEARS & GRAHAM, INC.
GENERAL DRUG AND ALCOHOL POLICY

In any company, certain common-sense rules of conduct and performance must be established for the employees to follow in order to avoid any misunderstanding and to protect the right of all concerned. Breaches of acceptable conduct which include, but are not limited to, abusive language, insubordination, intoxication, moral turpitude, or substance abuse/possession can lead to disciplinary action or to dismissal.

While performing any service for LBG or LBG's clients, employees, agents, and subcontractors of LBG shall not: (1) be under the influence of alcohol or any controlled substance; (2) use, possess, distribute, or sell illicit or unprescribed controlled drugs, drug paraphernalia, or alcoholic beverages; or (3) misuse legitimate prescription drugs.

LBG may remove from active project status any of its employees any time there is a reasonable basis for suspicion of alcohol/drug use, possession, or impairment involving such employee, and at any time an incident occurs where drug or alcohol use could have been a contributing factor. In such cases, employee may only be considered for return to work after LBG certifies as a result of a for-cause test, conducted immediately following removal, that said employee is in compliance with this policy.

LBG reserves the right to require drug and alcohol testing for its employees, either for its own purposes or at the direction of Clients. Such testing may take place periodically, or for specific projects. The testing will be in compliance with Department of Transportation drug testing regulations.

APPENDIX B

AIR MONITORING EQUIPMENT OPERATION

LEGGETTE, BRASHEARS & GRAHAM, INC.
AIR MONITORING EQUIPMENT OPERATION

Instrument Calibration

All applicable instruments will be calibrated daily before use. Readings will be recorded on the Air Monitoring form.

Background Readings

Before any field activities commence, the background levels of the site must be read and noted. Daily background readings must be conducted away from areas of potential contamination to obtain accurate results.

Air Monitoring Frequency

All site readings must be noted on the Air Monitoring form along with the date, time, background level, weather conditions, wind direction and speed, and the location where the background level was recorded.

OVM 580B Photoionization Detector Calibration

- Turn the OVM on by pressing the ON/OFF switch.
- With the OVM running, press the MODE/STORE switch and then press the -/CRSR switch when the OVM reads if "logging is desired".
- Keep pressing the -/CRSR switch until OVM will display "reset to calibrate".
- Enter the calibration mode by pressing the RESET switch. The OVM will then display "restore backup + = Yes".
- Press the -/INC switch and the OVM will display "zero gas reset when ready".
- Connect zero gas to OVM and press RESET switch. The OVM will display "Model 580B zeroing".
- After the OVM calibrates the zero gas, it will display "span gas reset when ready".
- Connect span gas to OVM and press RESET switch.
- When OVM displays "reset to calibrate", the OVM has calibrated the span gas.
- To exit calibration mode, press MODE/STORE switch.

MiniRAE 2000 Photoionization Detector Calibration

- Press [MODE] to turn on. Wait for startup to finish
- To calibrate, from "Ready" or "0.0ppm", press and hold [N/-] and [MODE] for 3 seconds.
- "Calibration/select gas?" press [Y/+]
- "Fresh Air Cal?" press [Y/+], unit zeros in about 15 seconds, press [N/-]
- "Span Cal?" press [Y/+], unit will tell when to apply Span Gas (typically isobutylene) from tedlar bag. Calibration takes about 30 seconds. Reading should be very near the Span Gas concentration (eg. 100 ppm). Unit will tell when to turn gas off.
- Press [MODE] twice to return to Survey Mode.

Thermo MIE Mod. PDR-1000AN Dust Monitor Calibration

- Press [ON/OFF] to turn unit on. To zero-calibrate unit, press [ENTER]. Note unit must be in a dust-free environment (eg. a very clean office) to zero-calibrate.
- Unit will display "ZEROING" then "CALIBRATION: OK".
- To start measurement run press [ENTER].

APPENDIX C

VOLATILE ORGANIC COMPOUNDS
PROJECT WORK ZONE CONSIDERATIONS

LEGGETTE, BRASHEARS & GRAHAM, INC.
VOLATILE ORGANIC COMPOUNDS
PROJECT WORK ZONE CONSIDERATIONS

1.0 DRILLING SAFETY

1.1 Basic Requirements

Employees will not proceed with work on, or in the proximity of, hazardous equipment until they have been properly trained and have received a safety briefing. If drilling is at a hazardous substance site, the site-specific safety plan must be reviewed onsite and discussed in the safety briefing.

Potential hazards (e.g., overhead or underground power, oil, or gas lines in the immediate vicinity of the drilling location) must be removed, avoided by relocating the drill site, or adequately barricaded to eliminate the hazard.

The use of unsafe or defective equipment is not permitted. Equipment must be inspected regularly and, if found to be defective, must be immediately removed from use and either repaired or replaced.

Employees will be familiar with the location of first-aid kits and fire extinguishers. Telephone numbers for emergency assistance must be prominently posted and kept current.

1.2 General Requirements at Drilling Operations

1.2.1 Housekeeping

Good housekeeping conditions should be observed in and around the work area. Suitable storage places should be provided for all materials and supplies. Pipe, drill rods, etc., must be securely stacked on solid, level sills.

Work surfaces, platforms, stairways, walkways, scaffolding, and accessways will be kept free of obstructions. All debris will be collected and stored in piles or containers for removal and disposal.

1.2.2 Flammable Liquids

All highly flammable liquids should be stored and handled only in approved containers. Portable containers must be the approved red safety containers equipped with flame arresters and self-closing lids.

Approved hand pumps will be used to dispense gasoline from barrels. Gasoline must not be used for degreasing or to start fires. Also, gasoline containers should be clearly labeled, and storage areas should be posted with "No Smoking" signs. Fire extinguishers should be installed in all areas that contain flammable liquids.

1.2.3 Public Safety

Work areas will be regulated so that the public will be protected from injury or accident. Adequate danger signs, barriers, etc., will be placed to effectively warn the public of hazards as well as to restrict access to dangerous areas.

1.3 Drilling Equipment

1.3.1 Skid-Mounted Units

Labels clearly indicating the function and direction of control levers should be posted on the lower unit controls of all drills.

An emergency safety power shutoff device should be installed within reach of the operator on all units. The device should be clearly labeled or otherwise made readily identifiable and checked daily to ensure that it is operable. The power unit should be operated only by authorized and qualified personnel.

Equipment will be shut down during manual lubrication and while repairs or adjustments are being made. Equipment such as internal combustion engines will not be refueled while running. Where practical, the gasoline tank should be positioned or shielded to avoid accidental spillage of fuel on the engine or exhaust manifold during refueling operations. Hazardous gears and moving parts also should be shielded to prevent accidental contact.

A dry chemical or carbon dioxide fire extinguisher, rated 5 pounds or larger, should be carried on the unit and removed to a position within 25 feet of the work site during drilling operations. Extinguishers will be inspected and tagged at least once every 3 months.

Engine exhaust systems should be equipped with spark arresters when operated in areas where sparks constitute a fire hazard.

1.3.2 Overhead and Underground Utilities

Special precaution must be taken when using a drill rig on a site within the vicinity of electrical power lines and other utilities. Electricity can shock, burn, and cause death.

Overhead and underground utilities should be located, noted, and emphasized on all boring location plans and assignment sheets. When overhead electrical power lines exist at or near a drilling site, all wires should be considered dangerous.

A check should be made for sagging power lines before a site is entered. Power lines should not be lifted to gain entrance. The appropriate utility company should be contacted and a request should be made that it lift or raise and cut off power to the lines.

The area around the drill rig should be inspected before the drill rig mast (derrick) is raised at a site in the vicinity of power lines. The minimum distance from any point on the drill rig to the nearest power line should be determined when the mast is raised or is being raised. The mast should not be raised and the drill rig should not be operated if this distance is less than 20 feet, because hoist lines and overhead power lines can be moved toward each other by the wind.

The existence of underground utilities, such as electric power, gas, petroleum, telephone, sewer, and water lines, should always be suspected. These underground electric lines are as dangerous as overhead lines, so a utility locating service should always be contacted.

There are generally two types of utility locating services. One is a "free" service that is paid for by companies with underground pipes, lines, etc., to protect the public and to prevent costly repairs. However, these services have access only to drawings for primary pipes or lines, typically on public property or right-of-way easements, but not to drawings showing supply or feeder lines from a primary system to the interior of a property. Therefore, they are not required, and in fact hesitate, to locate interior lines. Sites can be cleared for drilling by such services, but without the drill operator's knowledge of the locations of underground feeder or supply lines.

A second type of locating service is provided by a paid subcontractor who physically sweeps or clears interior locations using locating equipment. Locating costs can be minimized by obtaining all available maps, drawings, and employee interview information before contracting with the locating company. This is especially important at large industrial plants or military

bases, which can have an intricate network of underground utilities. It is important that every location be cleared, even those for hand-auger borings.

If a sign warning of underground utilities is located on a site boundary, it should not be assumed that underground utilities are located on or near the boundary or property line under the sign; they may be a considerable distance from the sign. The utility company should be contacted to check it out.

The owners of utility lines or the nearest underground utility location service should always be contacted before drilling is started. However, remember that some services provide information on utilities going to, but not within, a site. Metal detectors or other locating equipment may be necessary to determine the presence of shallow (surface) utilities onsite. The utility personnel should mark or flag the location of the underground lines and determine what specific precautions must be taken to ensure safety.

1.4 Surface Drilling Operations

Before the mast of a drill rig is raised and drilling is commenced, the drill rig must first be leveled and stabilized with leveling jacks and/or solid cribbing. The drill rig should be releveled if it settles after the initial setup. The mast should only be lowered when the leveling jacks are down, and the leveling jack pads should not be raised until the mast is completely lowered. Before drilling operations start, the mast should be secured or locked, if required by the drill's manufacturer.

Before the power unit is started, all gears should be disengaged, the cable drum brake should be set, and no rope should be in contact with the cathead.

Before the mast is raised, a check should be made for overhead obstructions. Everyone (with the exception of the operator) should be cleared from the areas immediately to the rear and sides of the mast and informed that the mast is being raised. The drill rig should not be driven from hole to hole with the mast in the raised position.

The drill rig should only be operated from the position of the controls. The operator should shut down the drill engine before leaving the vicinity of the drill. "Horsing around" in the vicinity of the drill rig and tool and supply storage areas is strictly prohibited, even when the drill rig is shut down. Caution should be taken when mounting/dismounting the platform.

Drill operations should be terminated during an electrical storm.

The consumption of alcoholic beverages, depressants, stimulants, or any other chemical substance while on the job is strictly prohibited. All unattended boreholes must be adequately covered or protected to prevent people or animals from stepping or falling into the hole. When the drilling project has been completed, all open boreholes should be adequately covered, protected, or backfilled, according to local or state regulations.

A safety chain and cable arrangement should be used to prevent water swivel and mud line whip. All water swivels and hoisting plugs should be checked for possible frozen bearings and should be properly lubricated before use. A frozen bearing could cause mud line whip, which could injure the operator.

Only drill operators should brake or set the chucks to prevent engagement of the transmission prior to removal of the chuck wrench. Also, the chuck jaws should be periodically checked and replaced as necessary.

A string of drill rods should not be braked by the chuck jaws during lowering into the hole. A catline or hoisting cable and plug should be used for braking prior to tightening of the chuck. Failure to follow this procedure could result in steel slivers on the rods, possible hand injuries, and loss of the rods into the hole. Following braking, drill rods should be allowed to drain completely before removal from the working area.

Drill rods will not be lowered into the hole with a pipe wrench. Serious back and hand injuries may result if the rods are lowered by this method.

When using drilling fluids, a rubber or other suitable wiper should be used to remove the material from the drill rods when removing them from the drill hole. When drilling with air, the exhaust and cuttings should be directed away from workers with devices such as diverter heads, the use of which should be stipulated on drilling agreements where appropriate.

Care must be exercised by the operator to avoid a sudden hoist release of the drill rod while the rod is being carried from the hole. The hoisting capacity and weight of the drill rod must be known to prevent collapse of the mast during drill string removal from the hole. The operating capacity of the mast and hoist also must be known and must not be exceeded.

When tool joints are broken on the ground or on a drilling platform, fingers should be positioned so they will not be caught between the wrench handle and the ground or the platform if the wrench slips or the joint suddenly lets go. Pipe wrench jaws should be checked periodically and replaced as they become worn.

APPENDIX D

DECONTAMINATION PROCEDURES

DECONTAMINATION PROCEDURES

Procedure for Level C Decontamination

Level C decontamination, if required, will take place on plastic sheeting so all contaminated material can be contained for proper disposal.

Station 1: Segregated Equipment Drop

Deposit equipment used onsite (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Segregation at the drop reduces the probability of cross-contamination.

Equipment:
- various size containers
- plastic liners
- plastic drop cloths

Station 2: Suit/Safety Boot Wash

Thoroughly wash splash suit and safety boots. Scrub with long-handle, soft-bristle scrub brush and copious amounts of decon solution or detergent/water. Repeat as many times as necessary.

Equipment:
- container (30-50 gallons)
- decon solution
- or
- detergent/water
- 2-3 long-handle, soft-bristle scrub brushes

Station 3: Suit/Safety Boot Rinse

Rinse off decon solution or detergent/water using copious amounts of water. Repeat as many times as necessary.

Equipment:
- container (30-50 gallons)
- or
- high-pressure spray unit
- water
- 2-3 long-handle, soft-bristle scrub brushes

Station 4: Canister or Mask Change

If worker leaves Exclusion Zone to change canister (or mask), this is the last step in the decontamination procedure. Worker's canisters will be exchanged, depositing the old canisters in containers with plastic liners. The worker will enter the work area and return to duty.

Equipment:
- canister (or mask)
- boot covers
- gloves

Station 5:

Step 1 - Tape, Safety Boot and Outer Glove Removal

Remove safety boots and gloves and deposit in container with plastic liner.

Equipment:
- container (30-50 gallons)
- plastic liners
- bench or stool
- boot jack

Step 2 - Splash Suit Removal

With assistance of helper, remove splash suit. Deposit in container with plastic liner.

Equipment:
- container (30-50 gallons)
- bench or stool
- liner

Step 3 - Facepiece Removal

Remove facepiece. Avoid touching face with gloves. Deposit facepiece in container with plastic liner.

Equipment: container (30-50 gallons)
plastic liners

Masks will be collected at a central location. Decontamination will be performed as follows:

- remove all cartridges, canisters and filters, plus gaskets or seals not affixed to their seats;
- remove elastic headbands;
- remove exhalation cover;
- remove speaking diaphragm or speaking diaphragm-exhalation valve assembly;
- remove inhalation valves;
- wash facepiece and breathing tube in cleaner mixed with warm water, preferably at 120^{o}F to 140^{o}F; wash components separately from the face mask; remove heavy soil from surfaces with a hand brush;
- remove all parts from the wash water and rinse twice in clean warm water;
- air dry parts in a designated clean area; and,
- wipe facepiece, valves and seats with a damp lint-free cloth to remove any remaining soap or other foreign materials.

Station 6: Inner Glove Removal

Remove inner gloves and deposit in container with plastic liner.

Equipment: container (20-30 gallons)
plastic liners

Station 7: Inner Clothing Removal (optional)

Remove clothing soaked with perspiration. Place in container with plastic liner. Do not wear inner clothing offsite if there is a possibility small amounts of contaminants might have been transferred in removing splash suit.

Equipment: container (30-50 gallons)
plastic liners

Station 8: Field Wash (optional)

Shower if highly toxic, skin-corrosive or skin-absorbable materials are known or suspected to be present. Wash hands and face if shower is not available.

Equipment: water
soap
tables
wash basins/buckets
field showers

Station 9: Redress

Put on clean clothes. A dressing trailer is needed in inclement weather.

APPENDIX E

CONTACT SHEET AND MAP TO HOSPITAL

CONTACT SHEET

Client:	KIOP Forest Ave., LP
	(212) 508-6700
Project:	Forest Avenue Shoppers Town
Location:	Forest Avenue
	Staten Island, New York
Client Contact:	Scott Furman, (Tannenbaum Helpern Syracuse & Hirschtritt LLP)

Leggette, Brashears & Graham, Inc.

Telephone:	(914) 694-5711 (914) 694-5744 (fax)
Field Supervisor (HSO):	Mike De Felice
Project Manager:	Paul Woodell
Principal-in-Charge:	Dan C. Buzea

Local Police Headquarters:	120th Precinct
	78 Richmond Terrace
	St. George, NY
	(718) 876-8500

Local Hospital:	Staten Island University Hospital
	500 Seaview Avenue
	Staten Island, NY
	(718) 979-0831

State Police:	Troop NYC,
	2 Pennyfield Avenue, Bronx, New York,
	(718) 319-5100

Miscellaneous:	New York State Department of Environmental Conservation
	(NYSDEC) Region 2, (718) 482-4933

Directions to the Hospital

Staten Island University Hospital
500 Seaview Avenue
Staten Island, New York

Total Distance: 5.4 miles
Approximate Travel Time: 17 minutes

- Go northeast on Forest Av, 0.9 mile.
- Turn right onto Clove Road, 2.1 miles.
- Turn right at Richmond Road, 0.9 mile.
- Turn left at Old Town Road, 0.4 mile.
- Turn right at Hylan Blvd., 0.7 mile.
- Turn left at Seaview Av., 0.4 mile.
- Hospital is on the left.

Driving Directions to SI University Hospital

Start **30 Barrett Ave**
Staten Island, NY 10302
End **500 Seaview Ave**
Staten Island, NY 10305
Travel **5.4 mi – about 17 mins**

ATTACHMENT III

PROJECT SCHEDULE

PROPOSED PROJECT SCHEDULE
FORMER CHARLTON CLEANERS
FOREST AVENUE SHOPPERS TOWN
STATEN ISLAND, NEW YORK
VCP #W3-0891-01-06