SITE CHARACTERIZATION REPORT
FOR THE TOP HAT DRY CLEANERS
152 Graham Avenue
Brooklyn, East Williamsburg Section of Brooklyn,
Kings County, New York

Prepared For:

New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, NY 12233-7012

Prepared By:

PARSONS

301 Plainfield Road, Suite 350
Syracuse, New York 13212

MARCH 2016

TABLE OF CONTENTS

Page

TABLE OF CONTENTS (CONTINUED)

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ACRONYMS AND ABBREVIATIONS

AGV	Air-Guideline Value
bgs	Below Ground Surface
DER	Division of Environmental Remediation
DUSR	Data Usability Summary Report
ELAP	Environmental Laboratory Accreditation Program
ft.	feet/foot
HSA	Hollow stem auger
IDW	Investigation Derived Waste
µg/L	micrograms per liter
NAD	North American Datum
NAVD	North American Vertical Datum
NELAP	National Environmental Laboratory Approval Program
NYCRR	New York State Codes, Rules and Regulations
NYCSWA	New York City Sewer and Water Authority
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOT	New York State Department of Transportation
OBG	O'Brien & Gere
PCE	Tetrachloroethylene
PID	Photoionization Detector
PVC	Polyvinyl chloride
SCO	Soil Cleanup Objective
sq. ft.	Square feet
TAL	Test America Laboratories
TCE	Trichloroethylene
THDC	Top Hat Dry Cleaners
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

I, Thomas Drachenberg, certify that I am currently a NYS registered professional engineer or Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

Program Manager: 

SITE CHARACTERIZATION REPORT
TOP HAT DRY CLEANERS
BROOKLYN, NEW YORK

1.0 INTRODUCTION

This Site Characterization Report documents results from the investigation conducted at Top Hat Dry Cleaners (THDC) located at 152 Graham Avenue in the East Williamsburg section of Brooklyn, Kings County, New York. Parsons conducted the fieldwork during the early fall 2015 under contract with the New York State Department of Environmental Conservation (NYSDEC). Sampling and analyses were conducted pursuant to a work scope accepted in advance by the NYSDEC. Data obtained during the site characterization have been compiled and are summarized in this report.

2.0 PROJECT OBJECTIVES AND BACKGROUND

The THDC property being investigated (herein referred to as the Site) is located at the intersection of Graham and Johnson Avenues. A site location map is included as Figure 1.

The THDC Site measure 2,500 square feet (sq. ft.) (0.057 acres) and houses a 3,000-sq. ft., three-story building with an open courtyard area behind the building. The first floor of the building is currently used as a drop off dry cleaner (THDC). Residential apartments are located on the second and third floor.

The THDC Site is roughly rectangular in shape. It is bounded by Graham Avenue to the west, a three-story mixed commercial/residential building to the north, a four-story mixed commercial/residential building with a one-story annex and a three-story mixed commercial/ residential building to the south, and a four-story residential building to the east. The three-story commercial building to the south also includes a dry cleaner operating on the first floor (Martinez Dry Cleaning).

The three-story building on the THDC Site was built in 1920. Historical records indicate that the dry cleaner has occupied the location since the 1960s. Although dry cleaning activities are not currently performed at the THDC Site, active dry cleaning is reported to have been performed in the building previously, and an inactive dry cleaning machine was observed on the premises during the initial site walk.

A vapor intrusion investigation was performed at 154 Graham Avenue, which is adjacent to the THDC building. Two sub-slab samples, one basement indoor air sample, and one ambient air sample were collected and submitted for laboratory analysis. Elevated concentrations of tetrachloroethylene (PCE), trichloroethylene (TCE), and cis-1,2-dichloroethylene were detected in the sub-slab vapor samples. PCE concentrations were detected in the basement indoor air sample above the New York State Final Guidance Air Guideline Value (AGV). The Vapor Intrusion Report (Merritt 2014) identifies the THDC Site as the most likely source of the PCE contamination. No soil or groundwater samples were collected during the vapor intrusion investigation at 154 Graham Avenue, and no known soil or groundwater data are currently available for this site.

3.0 SITE CHARACTERIZATION SCOPE AND RESULTS

Parsons' findings from its 2015 investigation are described in the following sections. Each portion of the investigation followed NYSDEC guidelines outlined in the Division of Environmental Remediation, Ch. 10 (DER-10) (NYSDEC 2010). The investigation consisted of the following elements:

1. A geophysical investigation/survey to locate underground utilities and other structures
2. A subsurface soil investigation that consisted of drilling soil borings and collecting soil samples
3. Monitoring well installations and a groundwater investigation
4. A survey of final monitoring well locations and elevations

Field activities were conducted in accordance with the Quality Assurance Project Plan (Parsons and O'Brien & Gere [OBG] 2011a) and the Generic Health and Safety Plan (Parsons and OBG 2011b) prepared and approved for Parsons' contract with NYSDEC. Site-specific elements and specific job safety analyses for soil sampling, monitoring well installation, and groundwater sampling were added to the Health and Safety Plan. A site map showing soil boring and groundwater monitoring well locations is provided as Figure 2.

Results of the 2015 site characterization indicate the following:

1. Soil lithology consisted of two main types of soils. The first soil type was "fill" material that consisted of fine to medium sand to silt with fine to coarse gravel and traces of brick and other miscellaneous debris. The second type was "natural material" composed of fine to coarse sand to silt with fine to coarse gravel and little clay.
2. Groundwater was encountered between 17.5 ft. (THPMW-02) and 22.5 ft. (THPMW-01) below ground surface (bgs). Groundwater flow was determined to be in the north to northwest direction under a hydraulic gradient of approximately

0.023 vertical feet per each horizontal foot. Refer to Table 1 for depth to water measurements.

3. No subsurface soil contamination was observed surrounding the THDC Site based on soil samples collected during field activities. All soil sample concentrations were below the NYSDEC "Division of Environmental Remediation, 6 New York State Codes, Rules and Regulations (6 NYSCRR), Part 375, Environmental Remediation Programs Subparts 375-1 to 375-4 and 375-6, Effective December 14, 2006, Unrestricted Soil Criteria."
4. Groundwater analytical results indicated the presence of PCE in exceedance of the Class GA New York State Groundwater Quality Standards and Guidance Values in monitoring wells THPMW-01 and THPMW-03. Chloroform was observed in exceedance of the Class GA standard at monitoring well THPMW-02.

3.1 ANALYTICAL SERVICES AND DATA VALIDATION

Analytical services for water, soil, and waste samples were provided by TestAmerica Laboratories (TAL) of Edison, New Jersey. TAL is accredited under the National Environmental Laboratory Approval Program (NELAP) and Department of Defense Environmental Laboratory Accreditation Program (ELAP) and is a New York State Department of Health (NYSDOH) ELAP-certified laboratory (Lab ID 11452). A United States Environmental Protection Agency (USEPA) Level IV data validation was conducted on 10 percent of the chemical samples (i.e., full data validation), and a USEPA Level III data validation was conducted on the remaining 90 percent of the samples, as described in the Data Usability Summary Report (DUSR), which is provided in Appendix A.

3.2 GEOPHYSICAL INVESTIGATION/SURVEY

A geophysical investigation/survey was performed at the THDC Site to locate subsurface utility lines and any structures that might exist in the drilling areas. The geophysical survey was performed by NAEVA Geophysics, Inc. from Congers, New York. A combination of electrical tracing, magnetic techniques, and ground penetrating radar was used at the THDC Site to complete the investigation. The owners of the THDC Site and adjacent buildings allowed Parsons and subcontractor personnel access to trace service lines into the building at the THDC Site. Several utility lines were noted and marked in the investigation areas.

A Dig Safely New York utility notification request was also made prior to mobilizing to the THDC Site (ticket numbers 152540245 and 152540235, which are provided in Appendix B). A representative from Premier (a subcontractor firm hired by the utility agencies to mark out subsurface utilities) arrived onsite and confirmed that all public utilities except those owned by the New York City Sewer and Water Authority (NYCSWA) had been marked out during the geophysical survey. On October 21st, Parsons visited the local NYCSWA office in Brooklyn and obtained utility maps for sewer and water for the intersection of Graham and Johnson Avenues.

The maps were given to the geophysical subcontractor, and utility locations were marked out prior to drilling activities. Utilities found in the four drilling areas included sewer, gas, water, electric, and unknown miscellaneous structures.

3.3 SUBSURFACE INVESTIGATION

3.3.1 Soil Borings

As shown on Figure 2, soil borings were advanced to delineate potential contamination, namely PCE and daughter products, in subsurface soils surrounding the THDC Site. Drilling activities performed in each area are discussed below.

3.3.1.1 Soil Borings Advanced Along Public Sidewalks

Prior to the start of drilling activities, a concrete saw was used to remove the overlying concrete from the sidewalk flags. Three borings (THPMW-01, THPMW-02, and THPMW-03) were then hand cleared to 5 ft. bgs. The soil borings were then advanced to a target depth of 10 ft. into the underlying water table utilizing 4.25-inch-inner–diameter, hollow-stem augers (HSAs). Stainless steel split-spoon samplers were used to continuously sample soil during drilling.

The augers and samplers were advanced with a Geoprobe® 7822DT rig at THPMW-01 and a CME 55 Track Rig at locations THPMW-02 and THPMW-03. The larger track rig was mobilized to the THDC Site during the advancement of the THPMW-03 boring when subsurface soils were too dense for the Geoprobe® unit to continue advancing drill tools. Boring logs are provided in Appendix C.

Soil samples were visually classified for soil type, grain size, texture, moisture content, and visible evidence of staining or impacts. Each sample was also screened for the presence of volatile organic compounds (VOCs) using a photoionization detector (PID).

Two samples were selected at each boring location for VOC analysis by USEPA Method SW8260C. The first sample at each location was collected from the interval with the highest PID measurement within the impacted zone. The second sample was collected from a clean interval below the impacted zone (based on PID measurements and visual observations) for vertical delineation. Intervals submitted for laboratory analysis are noted on the boring logs included as Appendix C.

3.3.1.2 Soil Borings Installed in Courtyard

Three attempts were made at advancing the soil boring designated as THPMW-04 in the courtyard area behind the onsite building following the methodology described in Section 3.3.1.1. However, the three boring attempts could only be advanced to a maximum depth of 6 ft. bgs because of an obstruction encountered within the borehole. Attempts were made to break through the obstruction using a pry-bar and a solid-pointed coned shaped Geoprobe® drilling point. All drilling attempts were unsuccessful, and the three soil borings were backfilled

with original drill cuttings and finished with concrete at the surface to match the surrounding area.

One soil sample was collected from 5 to 6 ft. bgs and analyzed for VOCs by USEPA Method SW8260C. The analytical program used the data quality objectives and quality assurance objectives as described in Section 3.1.

The validated results for detected compounds in soil are summarized in Table 2. No soil samples exhibited concentrations that exceeded the 6 NYCRR Part 375 Soil Cleanup Objectives (SCOs).

3.3.2 Groundwater Monitoring Well Installations

As shown on Figure 2, three of the four soil boring locations were converted to overburden groundwater monitoring wells (THPMW-01, THPMW-02, and THPMW-03). The wells were installed to delineate potential contamination in groundwater and to determine if the source of the contamination at the THDC Site is one or both of the dry cleaners located at and south of the THDC Site. The monitoring well locations were also selected to provide hydraulic gradient information in the area of the THDC Site. The boring located in the courtyard was not converted to a monitoring well because the three attempted borings for that one location could not be advanced to the water table due to an obstruction encountered at depths of 4 to 6 ft. bgs (see Section 3.3.1.2). In addition, the monitoring well initially installed at THPMW-02 had to be abandoned and re-installed adjacent to the original monitoring well location (approximately 3 feet from original well) because the original monitoring well screen broke during installation and compromised the well (filter sand flowed into well). The original well was abandoned by over drilling the well, removing all well materials, and grouting the borehole up to the surface. The replacement well was reinstalled without additional soil sampling.

The monitoring wells were constructed of 2-inch polyvinyl chloride (PVC) casing with a 10-ft.-long, 10-slot screen. Each well was screened a minimum of 3 ft. above the water table to account for seasonal fluctuations of the water table. The annulus around the outside of the screen was backfilled with filter sand (Fipro U.S. Silica Sand - WG#2) to a minimum 2.5 ft. above the screen, followed by a bentonite seal (minimum 2.5 ft. thick) above the sand pack. The seal in each well was allowed to hydrate prior to placement of grout from above it to near the ground surface. Each well was completed with an 8-inch, steel, protective flush-mount cover and locking adjustable cap. Well construction logs are included in Appendix C.

Following well installation, the new monitoring wells were developed to remove material that may have settled in and around the well screen. Development consisted of the removal of greater than 10 well volumes. Well development logs are included in Appendix D. After well development activities were completed, the entire sidewalk flag where each well was installed was replaced to comply with New York State Department to Transportation (NYSDOT) permit requirements for drilling on public sidewalks. Photos of the restored sidewalk flags are included in Appendix E.

3.3.3 Surveying of Groundwater Monitoring Wells

Each newly installed groundwater monitoring well was surveyed by a New York State licensed surveyor (Borbas Surveying and Mapping, LLC, from Boonton, New Jersey) and survey data are provided in Appendix F. At each well location, the elevation of the top of the PVC well casing was determined to within ±0.01 ft. The top of the PVC casing was marked with a permanent marker inside the curb box at the point surveyed, so that any groundwater monitoring event can be based on the same reference elevation. Coordinates were measured in the 1983 North American Datum (NAD83) for the horizontal datum, while the vertical datum used was the 1988 North American Vertical Datum (NAVD88).

3.3.4 Groundwater Sampling and Analysis

Once well installations and development were completed, the three new groundwater monitoring wells were sampled using low-flow sampling techniques on October 12 and 13, 2015. Groundwater sample logs are included in Appendix G. Water levels were collected at each location prior to sampling. The water levels were converted to elevations and plotted to determine groundwater contours and flow direction. Water level elevations are recorded on Table 1, and groundwater contours and flow direction are depicted on Figure 3. In general, the groundwater flow was determined to be in the north to northwest direction under a hydraulic gradient of approximately 0.023 vertical feet per each horizontal foot.

Groundwater samples were analyzed for VOCs by USEPA Method 8260C. The analytical program used the data quality objectives and quality assurance objectives described in Section 3.1

Groundwater analytical results were compared to New York State Groundwater Quality Standards and Guidance Values. Table 3 summarizes the validated results for detected compounds in groundwater. Groundwater analytical results indicated the presence of PCE in exceedance of the Class GA New York State Groundwater Quality Standards and Guidance Values in monitoring wells THPMW-01 (56 micrograms per liter [µg/L]) and THPMW-03 (10 µg/L). Chloroform was observed in exceedance of the Class GA standard at monitoring well THPMW-02 (8.7 µg/L). Exceedences of the Class GA standards are graphically depicted on Figure 4.

3.3.5 Photographic Documentation

A photographic log documenting typical field activities at the THDC Site is provided as Appendix E.

3.4 WASTE CHARACTERIZATION

Investigation derived waste (IDW), including excess soils, well development water, purge water, and personal protective equipment were placed in NYSDOT–approved, 55-gallon 17-H

type drums and staged at a central waste accumulation area for daily pickup by a qualified waste hauler (Cycle Chem of Elizabeth, New Jersey).

Samples from each waste stream were collected during the first day it was generated and analyzed for waste characterization. A waste profile for subsequent disposal was developed for each waste stream based on the initial sampling. Results from the waste profile sampling indicated that all the IDW was nonhazardous. During subsequent sampling of waste drums performed by the Cycle Chem, two drums were characterized with high pH concentrations that exceeded the initial characterization. These drums were characterized as hazardous waste. All IDW drums were disposed of in accordance with applicable NYSDEC regulations. Waste manifests are provided in Appendix H.

3.5 COMMUNITY AIR MONITORING PROGRAM

There was a potential to generate large quantities of airborne matter during drilling activities if it were not properly controlled. Therefore, continuous air-monitoring was performed during drilling activities in accordance with the THDC Site's Health and Safety Plan. No significant, long lasting, airborne measurements were observed during drilling activities that violated air-monitoring protocols. Air-monitoring data are provided in Appendix I.

4.0 REFERENCES

Merritt Environmental Consulting Corp., 2014, *Vapor Intrusion Investigation* (VII) 154 Graham Avenue, Brooklyn, New York 11206, Prepared for Mr. Fred Levine. December.

NYSDEC, 2006, *6 NYCRR Part 375 Environmental Remediation Programs, Subparts 375-1 to 375-4 and 375-6*, New York State Department of Environmental Conservation. September.

NYSDEC, 2010, *DEC Program Policy DER-10 / Technical Guidance for Site Investigation and Remediation.* New York State Department of Environmental Conservation. May.

Parsons and OBG, 2011a, *Generic Quality Assurance Project Plan*, Prepared for the New York State Department of Environmental Conservation, Albany, New York. May.

Parsons and OBG, 2011b, *Generic/Site-Specific Health and Safety Plan.* Prepared for the New York State Department of Environmental Conservation, Albany, NY. May.

TABLES

TABLE 1
GROUNDWATER ELEVATION SUMMARY
OCTOBER 12, 2015
TOP HAT DRY CLEANERS
152 GRAHAM AVENUE
BROOKLYN, NEW YORK 11206
SITE CHARACTERIZATION

Well ID	Top of Casing Elevation (feet) [1a][1b]	Depth to Product (feet)	Depth to Water (feet)	Depth to Thickness (feet)	Elevation of Water (feet)
THPMW-01	27.71	22.50	22.50	0.0	5.21
THPMW-02	26.85	17.61	17.61	0.0	9.24
THPMW-03	27.48	18.20	18.20	0.0	9.28

Notes:

(1a) Horizontal datum is via NY Long Island State Plane Coordination System NAD 83.
(1b) Vertical datum is the North American vertical datum of 1988 (NAVD88).

TABLE 2
SOIL SAMPLE ANALYTICAL DATA SUMMARY TABLE
TOP HAT DRY CLEANERS
152 GRAHAM AVENUE
BROOKLYN, NEW YORK 11206
SITE CHARACTERIZATION

NYSDEC-Top Hat Site 2015 Site Investigation Validated Soil Analytical Data Detected Compounds Only		NYSDEC Subpart 375 Unrestricted Use Soil Cleanup Objectives[1]	Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	THPMW-01 THPMW-01 (9-11)-20150922 460-101583-1 TALED 4601015831 SOIL 9/22/2015 11:00 11/6/2015	THPMW-01[*] THPMW-101 (9-11)-20150922 460-101583-2 TALED 4601015831 SOIL 9/22/2015 12:01 11/6/2015	THPMW-01 THPMW-01 (21-23)-20150922 460-101583-3 TALED 4601015831 SOIL 9/22/2015 14:00 11/6/2015	THPMW-02 THPMW-02 (12'-14')-20150923 460-101691-1 TALED 4601016911 SOIL 9/23/2015 14:00 11/6/2015	THPMW-02 THPMW-02 (17'-19')-20150924 460-101691-2 TALED 4601016911 SOIL 9/24/2015 9:00 11/6/2015
CAS NO.	COMPOUND		UNITS					
	VOLATILES[2]							
67-64-1	Acetone	50	ug/kg	ND	ND	ND	ND	ND
75-27-4	Bromodichloromethane	NS	ug/kg	ND	ND	ND	ND	ND
67-66-3	Chloroform	370	ug/kg	ND	ND	ND	ND	ND
78-93-3	Methyl Ethyl Ketone	120	ug/kg	ND	ND	ND	ND	ND
127-18-4	Tetrachloroethylene (PCE)	1300	ug/kg	ND	ND	0.36 J	0.27 J	3.6
108-88-3	Toluene	700	ug/kg	ND	ND	ND	0.24 J	0.27 J

TABLE 2
SOIL SAMPLE ANALYTICAL DATA SUMMARY TABLE
TOP HAT DRY CLEANERS
152 GRAHAM AVENUE
BROOKLYN, NEW YORK 11206
SITE CHARACTERIZATION

NYSDEC-Top Hat Site 2015 Site Investigation Validated Soil Analytical Data Detected Compounds Only		NYSDEC Subpart 375 Unrestricted Use Soil Cleanup Objectives[1]	Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	THPMW-03 THPMW-03(14'-15')-20150924 460-101771-1 TALED 4601017711 SOIL 9/24/2015 16:00 11/6/2015	THPMW-03 THPMW-03(15'-17')-20150925 460-101771-2 TALED 4601017711 SOIL 9/25/2015 9:00 11/6/2015	THPMW-004 THPMW-004 (5'-6')-20150929 460-101970-1 TALED 4601019701 SOIL 9/29/2015 11:00 11/6/2015
CAS NO.	COMPOUND		UNITS			
	VOLATILES[2]					
67-64-1	Acetone	50	ug/kg	ND	12 J	ND
75-27-4	Bromodichloromethane	NS	ug/kg	ND	ND	ND
67-66-3	Chloroform	370	ug/kg	ND	ND	ND
78-93-3	Methyl Ethyl Ketone	120	ug/kg	ND	2.5 J	ND
127-18-4	Tetrachloroethylene (PCE)	1300	ug/kg	0.96	0.33 J	1.7
108-88-3	Toluene	700	ug/kg	ND	ND	0.33 J

Notes for Table 2

J	The analyte was positively identified, but the quantitation is an estimation.
ND	Parameter deteted below or at method detection limit.
NS	Not specified.
ug/Kg	Micrograms per kilograms
*	Duplicate sample
(1)	Soil criteria obtained from the NYSDEC document entitled, "Division of Enviromental Remediation, 6NYCRR Part 375, Enviromental Remediation Programs, Subparts 375-1 to 375-4 and 375-6, Effective December 14, 2006." Compated soil data to Unrestricted Soil Criteria.
(2)	Only parameters exhibiting concentrations above method detection limit shown on table.

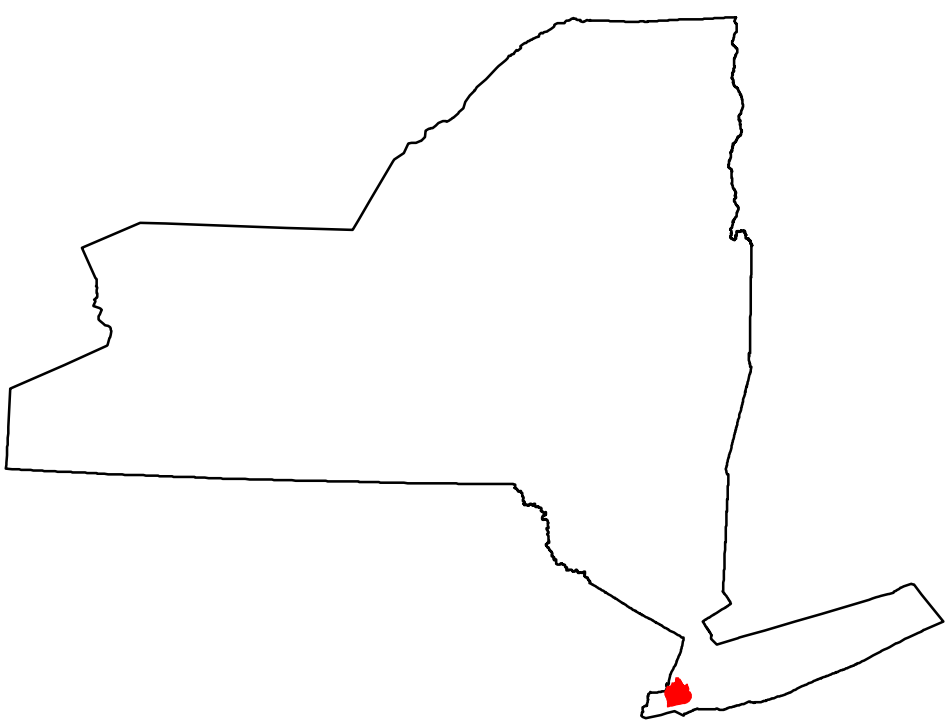
Table 3
GROUNDWATER SAMPLE ANALYTICAL SUMMARY TABLE
TOP HAT DRY CLEANERS
152 GRAHAM AVENUE
BROOKLYN, NEW YORK 11206
SITE CHARACTERIZATION

NYSDEC-Top Hat Site 2015 Site Investigation Validated Water Analytical Data Detected Compounds Only		NYSDEC Class GA Groundwater TOGs[1]	Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	THPMW-01 THPMW-01-20151012 460-102788-1 TALED 4601027881 WATER 10/12/2015 11:25 11/6/2015	THPMW-02 THPMW-02-20151013 460-102788-2 TALED 4601027881 WATER 10/13/2015 7:00 11/6/2015	THPMW-02[*] THPMW-102-20151013 460-102788-3 TALED 4601027881 WATER 10/13/2015 7:15 11/6/2015	THPMW-03 THPMW-03-20151013 460-102788-4 TALED 4601027881 WATER 10/13/2015 8:15 11/6/2015
CAS NO.	COMPOUND		UNITS:				
	VOLATILES[2]						
67-64-1	Acetone	50	ug/l	ND	15 J	ND	ND
71-43-2	Benzene	1	ug/l	ND	0.12 J	ND	ND
67-66-3	Chloroform	7	ug/l	0.66 J	**8.3**	**8.7**	1.2
156-59-2	Cis-1,2-Dichloroethylene	5	ug/l	2	ND	ND	ND
100-41-4	Ethylbenzene	5	ug/l	ND	0.6 J	0.54 J	ND
179601-23-1	M,P-Xylenes	5	ug/l	ND	0.38 J	0.42 J	0.34 J
98-82-8	Isopropylbenzene (Cumene)	5	ug/l	ND	0.41 J	ND	ND
78-93-3	Methyl Ethyl Ketone (2-Butanone)	50	ug/l	ND	6.5 J	ND	ND
108-87-2	Methylcyclohexane	NS	ug/l	ND	0.28 J	ND	ND
75-09-2	Methylene Chloride	5	ug/l	ND	0.32 J	ND	ND
95-47-6	O-Xylene (1,2-Dimethylbenzene)	5	ug/l	ND	2.3	2.4	ND
1634-04-4	Tert-Butyl Methyl Ether	10	ug/l	ND	0.34 J	0.4 J	ND
127-18-4	Tetrachloroethylene (PCE)	5	ug/l	**56**	3.1	3.2	**10**
108-88-3	Toluene	5	ug/l	ND	0.38 J	0.35 J	0.42 J
79-01-6	Trichloroethylene (TCE)	5	ug/l	0.43 J	ND	0.26 J	0.5 J

Notes for Table 3

	Concentration of parameter(s) exceeds New York State Department of Environmental Conservation (NYSDEC) Class GA Groundwater Standards. Standard Class used is for "Source of Drinking Water".
J	The analyte was positively identified, but the quantitation is an estimation.
ND	Parameter deteted below or at method detection limit.
NS	Not specified.
ug/L	Micrograms per liter
*	Duplicate sample
(1)	Groundwater criteria obtained from the NYSDEC document entitled, "Division of Water Technical and Operational Guidance Series (1.1.1.), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, June 1998; Errata Sheet for June 1998 Edition.
(2)	Only parameters exhibiting concentrations above method detection limit shown on table.

FIGURES



Brooklyn, NY

Figure 1

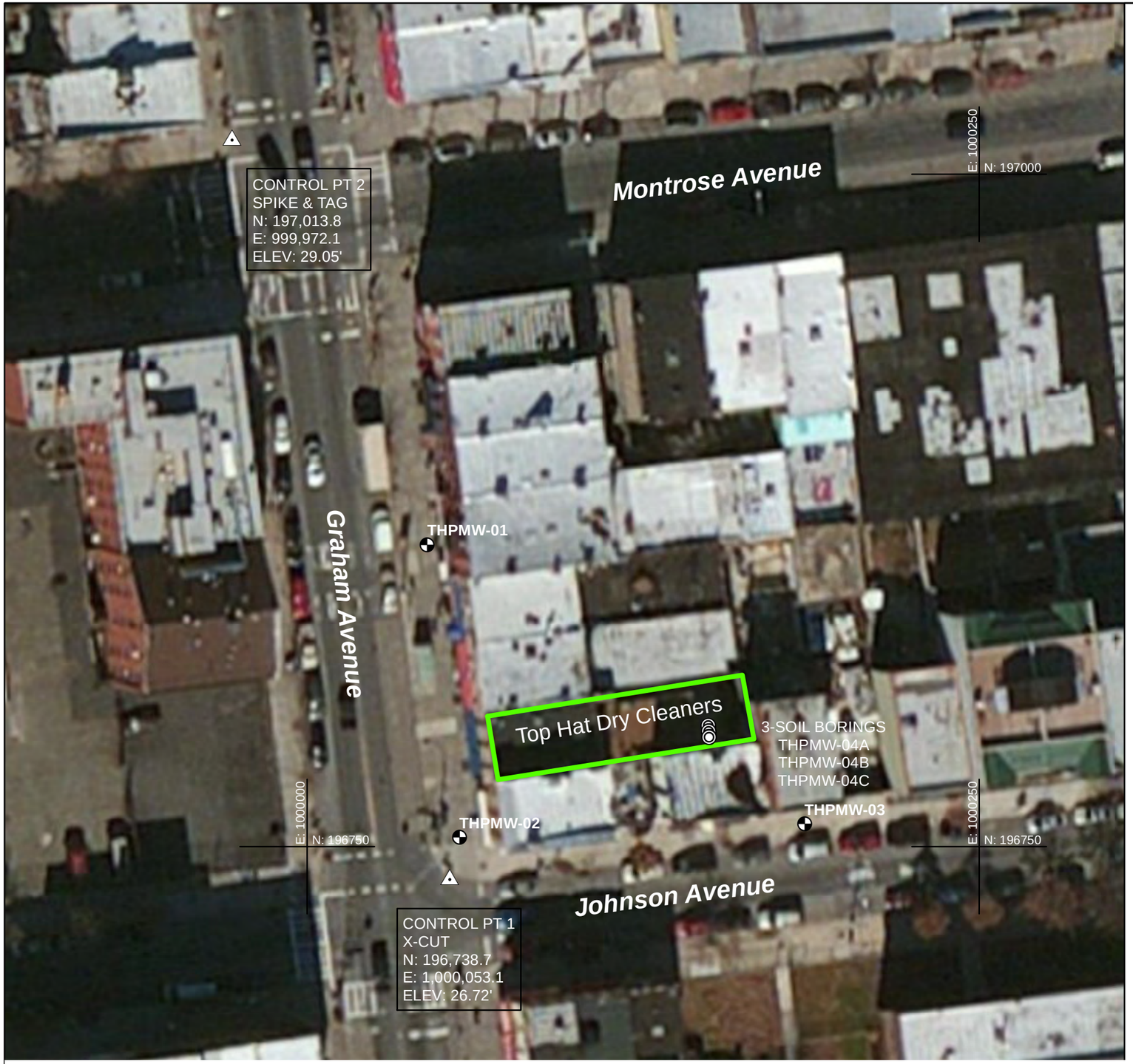
New York State Department
of Environmental Conservation

Top Hat Dry Cleaners
152 Graham Avenue
Brooklyn, New York 11206

Site Location Map

PARSONS

301 PLAINFIELD RD, SUITE 350, SYRACUSE, NY 13212, Phone 315-451-9560



Legend:

- Investigation Area Boundary
- THPMW-4A — Soil Boring Locations
- THPMW-1 — Monitoring Well Locations
- Survey Control Point

Notes:

1. THE HORIZONTAL DATUM IS THE NEW YORK LONG ISLAND STATE PLANE COORDINATE SYSTEM NAD 83 DETERMINED BY DIFFERENTIAL GPS ON OCTOBER 12, 2015 USING THE NGS CORS SYSTEM, REFERANCE STATION NYBK.

2. THE VERTICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) GEOID12A DETERMINED BY DIFFERENTIAL GPS OBSERVATIONS FROM THE NGS CORS NETWORK ON OCTOBER 12, 2015. BENCHMARK REFERENCE STATION: NYBK (ORTHOMETRIC HEIGHT=54.3776').

3. THIS BASE MAP DEPICTS LIMITED PHYSICAL IMPROVEMENTS AS THEY EXISTED ON OCTOBER 12, 2015, IN THE AREA OF THE EXISTING GROUNDWATER MONITORING WELLS. NO ATTEMPT HAS BEEN MADE TO DETERMINE THE LOCATION OF PROPERTY LINES, EASEMENTS OR RIGHT-OF-WAY LINES.

4. ALL COORDINATES AND ELEVATIONS SHOWN HEREON ARE IN U.S. SURVEY FEET.

Note:

"EDUCATION LAW ARTICLE 145 SECTION 7209:2 IT IS A VIOLATION OF EDUCATION LAW ARTICLE 145 SECTION 7209:2 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY."

Figure 2

New York State Department of Environmental Conservation

Top Hat Dry Cleaners
152 Graham Avenue
Brooklyn, New York 11206

Site Map

PARSONS
301 PLAINFIELD RD, SUITE 350, SYRACUSE, NY 13212, Phone 315-451-9560

Legend:

- Monitoring Well Locations
- Investigation Area Boundary
- Groundwater Flow Direction
- Groundwater Contour Line (Interval = 1 foot MSL)
- (5.21) Groundwater Elevation (Feet) (October 12, 2015)[3]

Notes:

1. Soil borings not shown on figure.
2. Control points and other related survey information not shown on figure.
3. a. Horizontal datum is via NY Long Island State Plane Coordination System NAD 83
   b. Vertical Datum is the North American Vertical Datum of 1988 (NAVD88)

Figure 3

New York State Department of Environmental Conservation

Top Hat Dry Cleaners
152 Graham Avenue
Brooklyn, New York 11206

Groundwater Contour Map
(October 2015)

PARSONS

301 PLAINFIELD RD, SUITE 350, SYRACUSE, NY 13212, Phone 315-451-9560

Legend:

Investigation Area Boundary

THPMW-01 — Monitoring Well Locations

THPMW-#	
10-12-15	
PCE	56
Chloroform	8.7

Well ID
Sample Date
Parameter / concentration of parameter (1) (2) (3)

Notes:

(1) Concentrations in micrograms per liter (ug/L).

(2) Only parameters that exceeded NYSDEC Ambient Water Quality Standards presented in TOGS 1.1.1 Groundwater Criteria shown on figure.

(3) Refer to table 3 within report for detailed analysis of groundwater sampling event.

(*) Duplicate sample collected at location. Higher concentration of parameter shown.

0 25 50 100
Feet

N

Figure 4

New York State Department of Environmental Conservation

Top Hat Dry Cleaners
152 Graham Avenue
Brooklyn, New York 11206

Groundwater Analytical Data Summary Map (October 2015)

PARSONS
301 PLAINFIELD RD, SUITE 350, SYRACUSE, NY 13212, Phone 315-451-9560

APPENDIX A

DATA USABILITY SUMMARY REPORT

DATA USABILITY SUMMARY REPORT

TOP HAT CLEANERS

Prepared For:

New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, NY 12233-7012

Prepared By:

PARSONS

301 Plainfield Road
Suite 350
Syracuse, NY 13212
Phone: (315) 451-9560
Fax: (315) 451-9570

MARCH 2016

TABLE OF CONTENTS

Page

LIST OF ATTACHMENTS

LIST OF ACRONYMS

%D	Percent Difference
%R	Percent Recovery
ASP	Analytical Services Protocol
SOP	Standard Operating Procedures
COC	Chain-of-Custody
ELAP	Environmental Laboratory Approval Program
LCS	Laboratory Control Sample
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NYSDOH	New York State Department of Health
PARCCS	Precision, Accuracy, Representativeness, Completeness, Comparability, and Sensitivity
QC	Quality Control
RPD	Relative Percent Difference
RRF	Relative Response Factor
SDG	Sample Delivery Groups
TAL	Test America Laboratories
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compounds

SECTION 1

DATA USABILITY SUMMARY

Soil and groundwater samples were collected from the Top Hat Cleaners site in Brooklyn, New York from September 22, 2015 through October 13, 2015. Analytical results from these samples were validated and reviewed by Parsons for usability with respect to the following requirements:

- Work Plan,
- NYSDEC Analytical Services Protocol (ASP), and
- USEPA Region II Standard Operating Procedures (SOPs) for organic and inorganic data review.

The analytical laboratory for this project was Test America Laboratories (TAL) in Edison, New Jersey. This laboratory is certified to perform project analyses through the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP).

1.1 LABORATORY DATA PACKAGES

The laboratory data package turnaround time, defined as the time from sample receipt by the laboratory to receipt of the analytical data packages by Parsons, was 10-20 days for the project samples.

The data packages received from TAL were paginated, complete, and overall were of good quality. Comments on specific quality control (QC) and other requirements are discussed in detail in the attached data validation report which is summarized by sample media in Section 2.

1.2 SAMPLING AND CHAIN-OF-CUSTODY

The samples were collected, properly preserved, shipped under a chain-of-custody (COC) record, and received at TAL within one day of sampling. All samples were received intact and in good condition at the laboratory.

1.3 LABORATORY ANALYTICAL METHODS

The soil and groundwater samples that were collected from the site were analyzed for volatile organic compounds (VOCs). Summaries of issues concerning this laboratory analysis are presented in Subsection 1.3.1. The data qualifications resulting from the data validation review and statements on the laboratory analytical precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) are discussed for each analytical method by media in Section 2. The laboratory data were reviewed and may be qualified with the following validation flags:

"U" - not detected at the value given,

"UJ" - estimated and not detected at the value given,

"J" - estimated at the value given,

"J+" - estimated biased high at the value given,

"J-" - estimated biased low at the value given,

"N" - presumptive evidence at the value given, and

"R" - unusable value.

The validated laboratory data were tabulated and are presented in Attachment A.

1.3.1 Volatile Organic Analysis

The project samples were analyzed for VOCs using the United States Environmental Protection Agency (USEPA) SW-846 8260C analytical method. Certain reported results for these samples were qualified as estimated based upon instrument calibrations and field duplicate precision. The reported VOC analytical results were 100% complete (i.e., usable) for the project data. PARCCS requirements were met.

SECTION 2

DATA VALIDATION REPORT

2.1 SOIL

Data review has been completed for data packages generated by TAL containing soil samples collected from the site. Analytical results from these samples were contained within sample delivery groups (SDGs) 460-101583-1, 460-101691-1, 460-101771-1, and 460-101970-1. All of these samples were properly preserved, shipped under a COC record, and received intact by the analytical laboratory. The validated laboratory data are presented in Attachment A-1.

Data validation was performed for all samples in accordance with the most current editions of the USEPA Region II SOPs for organic and inorganic data review. This data validation and usability report is presented by analysis type.

2.1.1 Volatiles

The following items were reviewed for compliancy in the volatile analysis:

- Custody documentation
- Holding times
- Surrogate recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) precision and accuracy
- Laboratory control sample (LCS) recoveries
- Laboratory method blank contamination and trip/equipment blank contamination
- GC/MS instrument performance
- Initial and continuing calibrations
- Internal standard area counts and retention times
- Field duplicate precision
- Sample result verification and identification
- Quantitation limits
- Data completeness

These items were considered compliant and acceptable in accordance with the validation protocols with the exception of MS/MSD precision and accuracy, LCS recoveries, blank contamination, and continuing calibrations as discussed below.

MS/MSD Precision and Accuracy

All precision (relative percent difference; RPD) and accuracy (percent recovery; %R) measurements for designated spiked project samples were considered acceptable and within QC limits with the exception of the low MSD accuracy results for 1,1,2-trichloro-1,1,2-trifluoroethane (82%R; QC limit 83-136%R), 1,2,3-trichlorobenzene (75%R; QC limit 77-116%R), 1,2,4-trichlorobenzene (75%R; QC limit 77-116%R), and methylcyclohexane (83%R; QC limit 84-127%R) during the spiked analyses of sample THPMW-01(21-23). Validation qualification of this parent sample was not required.

LCS Recoveries

All LCS recoveries associated with project samples were considered acceptable and within QC limits with the exception of the high LCS recoveries for 2-butanone (173%R; QC limit 56-150%R), 2-hexanone (161%R; QC limit 64-150%R), and acetone (199%R; QC limit 19-150%R) associated with the trip blank samples collected on 9/22/15 and 9/23/15. Validation qualification of these samples was not required.

Blank Contamination

The equipment blank TOP HAT EB associated with samples in SDG 460-101691-1 contained chloroform and bromodichloromethane below the reporting limits at concentrations of 0.38 and 0.18 micrograms per liter (µg/L), respectively. Validation qualification of the associated samples was not required.

Continuing Calibrations

All continuing calibration compounds were compliant with a minimum relative response factor (RRF) of 0.05 and a maximum percent difference (%D) within $\pm$20% with the exception of 1,1,2,2-tetrachloroethane (-25.2%D), 1,2,3-trichlorobenzene (-21.5%D), and bromoform (-26.6%D) in the continuing calibration associated with trip blank samples collected on 9/22/15 and 9/23/15; bromomethane (34.5%D), acetone (44.3%D), methyl acetate (-40.5%D), 2-butanone (41.9%D), bromoform (-28.7%D), 1,2-dibromo-3-chloropropane (-42.2%D), and 1,2,3-trichlorobenzene (-26.6%D) in the continuing calibration associated with TOP HAT EB; acetone 87.8%D) in the continuing calibration associated with samples in SDG 460-101771-1; and bromomethane (23.8%D) in the continuing calibration associated with samples in SDG 460-101970-1. Therefore, the sample results for these compounds were considered estimated with positive results qualified “J” and nondetected results qualified “UJ” for the affected samples.

Usability

All volatile soil sample results were considered usable following data validation.

Summary

The quality assurance objectives for measurement data included considerations for precision, accuracy, representativeness, completeness, comparability, and sensitivity. The volatile soil data

presented by TAL were 100% complete (i.e., usable). The validated volatile laboratory data are tabulated and presented in Attachment A-1.

2.2 GROUNDWATER SAMPLES

Data review has been completed for data packages generated by TAL containing analytical results from groundwater samples collected from the site. All of these samples were properly preserved, shipped under a COC record, and received intact by the analytical laboratory. Analytical results from these samples were contained within SDG 460-102788-1. The validated laboratory data are presented in Attachment A-2.

Data validation was performed for all samples in accordance with the most current editions of the USEPA Region II SOPs for organic and inorganic data review. This data validation and usability report is presented by analysis type.

2.2.1 Volatiles

The following items were reviewed for compliancy in the volatile analysis:

- Custody documentation
- Holding times
- Surrogate recoveries
- MS/MSD precision and accuracy
- LCS recoveries
- Laboratory method blank and trip blank contamination
- GC/MS instrument performance
- Initial and continuing calibrations
- Internal standard area counts and retention times
- Field duplicate precision
- Sample result verification and identification
- Quantitation limits
- Data completeness

These items were considered compliant and acceptable in accordance with the validation protocols with the exception of MS/MSD precision and accuracy, LCS recoveries, continuing calibrations, and field duplicate precision as discussed below.

MS/MSD Precision and Accuracy

All of the MS/MSD precision RPD and accuracy %R) measurements for designated spiked project samples were considered acceptable and within QC limits with the exception of the low MS/MSD accuracy results for methylene chloride (79%R; QC limit 80-126%R) and

tetrachloroethene (49%R/49%R; QC limit 71-132%R) during the spiked analyses of sample THPMW-01. Validation qualification of this parent sample was not required.

LCS Recoveries

All LCS recoveries were considered acceptable and within QC limits with the exception of the high LCS recoveries for bromomethane (152%R; QC limit 10-150%R) and chloroethane (174%R; QC limit 40-150%R) associated with the groundwater samples. Validation qualification of these samples was not required since these compounds were not detected.

Continuing Calibrations

All continuing calibration compounds were compliant with a minimum RRF of 0.05 and a maximum %D within ±20% with the exception of bromomethane (64.6%D) and chloroethane (51.7%D) in the continuing calibration associated with all groundwater samples except TRIP BLANK. Therefore, the sample results for these compounds which were nondetects were considered estimated and qualified "UJ" for the affected samples.

Field Duplicate Precision

All field duplicate results were considered acceptable for sample THPMW-02 and its field duplicate sample THPMW-102 with the exception of the results for 2-butanone (6.5 µg/L and nondetect, respectively) and acetone (15 µg/L and nondetect, respectively). Therefore, these results were considered estimated with the positive results qualified "J" and the nondetected results qualified "UJ" for these samples.

Usability

All groundwater sample results were considered usable following data validation.

Summary

The quality assurance objectives for measurement data included considerations for precision, accuracy, representativeness, completeness, comparability, and sensitivity. The volatile groundwater data presented by TAL were 100% complete (i.e., usable). The validated volatile laboratory data are tabulated and presented in Attachment A-2.

ATTACHMENT A

VALIDATED LABORATORY DATA

ATTACHMENT A-1

VALIDATED LABORATORY DATA FOR SOIL SAMPLES

NYSDEC-Top Hat Site 2015 Site Investigation Validated Soil Analytical Data				Field Duplicate				
		Location ID:	THPMW-01	THPMW-01	THPMW-01	THPMW-02	THPMW-02	THPMW-03
		Sample ID:	THPMW-01 (9-11)-20150922	THPMW-101 (9-11)-20150922	THPMW-01 (21-23)-20150922	THPMW-02 (12'-14')-20150923	THPMW-02 (17'-19')-20150924	THPMW-03(14'-15')-20150924
		Lab Sample Id:	460-101583-1	460-101583-2	460-101583-3	460-101691-1	460-101691-2	460-101771-1
		Source:	TALED	TALED	TALED	TALED	TALED	TALED
		SDG:	4601015831	4601015831	4601015831	4601016911	4601016911	4601017711
		Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Sampled:	9/22/2015 11:00	9/22/2015 12:01	9/22/2015 14:00	9/23/2015 14:00	9/24/2015 9:00	9/24/2015 16:00
		Validated:	11/6/2015	11/6/2015	11/6/2015	11/6/2015	11/6/2015	11/6/2015
CAS NO.	COMPOUND	UNITS:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	VOLATILES							
71-55-6	1,1,1-Trichloroethane		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
79-34-5	1,1,2,2-Tetrachloroethane		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
79-00-5	1,1,2-Trichloroethane		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
75-34-3	1,1-Dichloroethane		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
75-35-4	1,1-Dichloroethene		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
87-61-6	1,2,3-Trichlorobenzene		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
120-82-1	1,2,4-Trichlorobenzene		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
96-12-8	1,2-Dibromo-3-Chloropropane		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
106-93-4	1,2-Dibromoethane		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
95-50-1	1,2-Dichlorobenzene		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
107-06-2	1,2-Dichloroethane		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
78-87-5	1,2-Dichloropropane		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
541-73-1	1,3-Dichlorobenzene		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
106-46-7	1,4-Dichlorobenzene		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
123-91-1	1,4-Dioxane (P-Dioxane)		19 U	18 U	20 U	17 U	16 U	15 U
591-78-6	2-Hexanone		4.7 U	4.5 U	5.1 U	4.2 U	4.1 U	3.8 U
67-64-1	Acetone		4.7 U	4.5 U	5.1 U	4.2 U	4.1 U	3.8 UJ
71-43-2	Benzene		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
74-97-5	Bromochloromethane		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
75-27-4	Bromodichloromethane		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
75-25-2	Bromoform		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
74-83-9	Bromomethane		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
75-15-0	Carbon Disulfide		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
56-23-5	Carbon Tetrachloride		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
108-90-7	Chlorobenzene		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
75-00-3	Chloroethane		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
67-66-3	Chloroform		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
74-87-3	Chloromethane		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
156-59-2	Cis-1,2-Dichloroethylene		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
10061-01-5	Cis-1,3-Dichloropropene		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
110-82-7	Cyclohexane		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
124-48-1	Dibromochloromethane		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
75-71-8	Dichlorodifluoromethane		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
100-41-4	Ethylbenzene		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
179601-23-1	M,P-Xylenes		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
98-82-8	Isopropylbenzene (Cumene)		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
79-20-9	Methyl Acetate		4.7 U	4.5 U	5.1 U	4.2 U	4.1 U	3.8 U
78-93-3	Methyl Ethyl Ketone (2-Butanone)		4.7 U	4.5 U	5.1 U	4.2 U	4.1 U	3.8 U
108-10-1	Methyl Isobutyl Ketone		4.7 U	4.5 U	5.1 U	4.2 U	4.1 U	3.8 U
108-87-2	Methylcyclohexane		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
75-09-2	Methylene Chloride		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
95-47-6	O-Xylene (1,2-Dimethylbenzene)		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
100-42-5	Styrene		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
1634-04-4	Tert-Butyl Methyl Ether		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
127-18-4	Tetrachloroethylene (PCE)		0.94 U	0.89 U	0.36 J	0.27 J	3.6	0.96
108-88-3	Toluene		0.94 U	0.89 U	1 U	0.24 J	0.27 J	0.77 U
156-60-5	Trans-1,2-Dichloroethene		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
10061-02-6	Trans-1,3-Dichloropropene		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
79-01-6	Trichloroethylene (TCE)		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
75-69-4	Trichlorofluoromethane		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U
75-01-4	Vinyl Chloride		0.94 U	0.89 U	1 U	0.84 U	0.82 U	0.77 U

NYSDEC-Top Hat Site 2015 Site Investigation Validated Soil Analytical Data		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	THPMW-03 THPMW-03(15'-17')-20150925 460-101771-2 TALED 4601017711 SOIL 9/25/2015 9:00 11/6/2015	THPMW-004 THPMW-004 (5'-6')-20150929 460-101970-1 TALED 4601019701 SOIL 9/29/2015 11:00 11/6/2015	FIELDQC Top Hat EB-20150923 460-101766-1 TALED 4601016911 WATER 9/23/2015 8:00 11/6/2015	FIELDQC Trip Blank-20150922 460-101583-4 TALED 4601015831 WATER 9/22/2015 14:00 11/6/2015	FIELDQC Trip Blank-20150923 460-101766-2 TALED 4601016911 WATER 9/23/2015 8:00 11/6/2015
CAS NO.	COMPOUND	UNITS:	ug/kg	ug/kg	ug/l	ug/l	ug/l
	VOLATILES						
71-55-6	1,1,1-Trichloroethane		0.74 U	0.93 U	1 U	1 U	1 U
79-34-5	1,1,2,2-Tetrachloroethane		0.74 U	0.93 U	1 U	1 UJ	1 UJ
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane		0.74 U	0.93 U	1 U	1 U	1 U
79-00-5	1,1,2-Trichloroethane		0.74 U	0.93 U	1 U	1 U	1 U
75-34-3	1,1-Dichloroethane		0.74 U	0.93 U	1 U	1 U	1 U
75-35-4	1,1-Dichloroethene		0.74 U	0.93 U	1 U	1 U	1 U
87-61-6	1,2,3-Trichlorobenzene		0.74 U	0.93 U	1 UJ	1 UJ	1 UJ
120-82-1	1,2,4-Trichlorobenzene		0.74 U	0.93 U	1 U	1 U	1 U
96-12-8	1,2-Dibromo-3-Chloropropane		0.74 U	0.93 U	1 UJ	1 U	1 U
106-93-4	1,2-Dibromoethane		0.74 U	0.93 U	1 U	1 U	1 U
95-50-1	1,2-Dichlorobenzene		0.74 U	0.93 U	1 U	1 U	1 U
107-06-2	1,2-Dichloroethane		0.74 U	0.93 U	1 U	1 U	1 U
78-87-5	1,2-Dichloropropane		0.74 U	0.93 U	1 U	1 U	1 U
541-73-1	1,3-Dichlorobenzene		0.74 U	0.93 U	1 U	1 U	1 U
106-46-7	1,4-Dichlorobenzene		0.74 U	0.93 U	1 U	1 U	1 U
123-91-1	1,4-Dioxane (P-Dioxane)		15 U	19 U	50 U	50 U	50 U
591-78-6	2-Hexanone		3.7 U	4.7 U	5 U	5 U	5 U
67-64-1	Acetone		12 J	4.7 U	5 UJ	5 U	5 U
71-43-2	Benzene		0.74 U	0.93 U	1 U	1 U	1 U
74-97-5	Bromochloromethane		0.74 U	0.93 U	1 U	1 U	1 U
75-27-4	Bromodichloromethane		0.74 U	0.93 U	0.18 J	1 U	1 U
75-25-2	Bromoform		0.74 U	0.93 U	1 UJ	1 UJ	1 UJ
74-83-9	Bromomethane		0.74 U	0.93 UJ	1 UJ	1 U	1 U
75-15-0	Carbon Disulfide		0.74 U	0.93 U	1 U	1 U	1 U
56-23-5	Carbon Tetrachloride		0.74 U	0.93 U	1 U	1 U	1 U
108-90-7	Chlorobenzene		0.74 U	0.93 U	1 U	1 U	1 U
75-00-3	Chloroethane		0.74 U	0.93 U	1 U	1 U	1 U
67-66-3	Chloroform		0.74 U	0.93 U	0.38 J	1 U	1 U
74-87-3	Chloromethane		0.74 U	0.93 U	1 U	1 U	1 U
156-59-2	Cis-1,2-Dichloroethylene		0.74 U	0.93 U	1 U	1 U	1 U
10061-01-5	Cis-1,3-Dichloropropene		0.74 U	0.93 U	1 U	1 U	1 U
110-82-7	Cyclohexane		0.74 U	0.93 U	1 U	1 U	1 U
124-48-1	Dibromochloromethane		0.74 U	0.93 U	1 U	1 U	1 U
75-71-8	Dichlorodifluoromethane		0.74 U	0.93 U	1 U	1 U	1 U
100-41-4	Ethylbenzene		0.74 U	0.93 U	1 U	1 U	1 U
179601-23-1	M,P-Xylenes		0.74 U	0.93 U	1 U	1 U	1 U
98-82-8	Isopropylbenzene (Cumene)		0.74 U	0.93 U	1 U	1 U	1 U
79-20-9	Methyl Acetate		3.7 U	4.7 U	5 UJ	5 U	5 U
78-93-3	Methyl Ethyl Ketone (2-Butanone)		2.5 J	4.7 U	5 UJ	5 U	5 U
108-10-1	Methyl Isobutyl Ketone		3.7 U	4.7 U	5 U	5 U	5 U
108-87-2	Methylcyclohexane		0.74 U	0.93 U	1 U	1 U	1 U
75-09-2	Methylene Chloride		0.74 U	0.93 U	1 U	1 U	1 U
95-47-6	O-Xylene (1,2-Dimethylbenzene)		0.74 U	0.93 U	1 U	1 U	1 U
100-42-5	Styrene		0.74 U	0.93 U	1 U	1 U	1 U
1634-04-4	Tert-Butyl Methyl Ether		0.74 U	0.93 U	1 U	1 U	1 U
127-18-4	Tetrachloroethylene (PCE)		0.33 J	1.7	1 U	1 U	1 U
108-88-3	Toluene		0.74 U	0.33 J	1 U	1 U	1 U
156-60-5	Trans-1,2-Dichloroethene		0.74 U	0.93 U	1 U	1 U	1 U
10061-02-6	Trans-1,3-Dichloropropene		0.74 U	0.93 U	1 U	1 U	1 U
79-01-6	Trichloroethylene (TCE)		0.74 U	0.93 U	1 U	1 U	1 U
75-69-4	Trichlorofluoromethane		0.74 U	0.93 U	1 U	1 U	1 U
75-01-4	Vinyl Chloride		0.74 U	0.93 U	1 U	1 U	1 U

ATTACHMENT A-2

VALIDATED LABORATORY DATA FOR GROUNDWATER SAMPLES

NYSDEC-Top Hat Site 2015 Site Investigation Validated Water Analytical Data		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	THPMW-01 THPMW-01-20151012 460-102788-1 TALED 4601027881 WATER 10/12/2015 11:25 11/6/2015	THPMW-02 THPMW-02-20151013 460-102788-2 TALED 4601027881 WATER 10/13/2015 7:00 11/6/2015	Field Duplicate THPMW-02 THPMW-102-20151013 460-102788-3 TALED 4601027881 WATER 10/13/2015 7:15 11/6/2015	THPMW-03 THPMW-03-20151013 460-102788-4 TALED 4601027881 WATER 10/13/2015 8:15 11/6/2015	FIELDQC Trip Blank-20151013 460-102788-5 TALED 4601027881 WATER 10/13/2015 8:15 11/6/2015
CAS NO.	COMPOUND	UNITS:					
	VOLATILES						
71-55-6	1,1,1-Trichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
79-34-5	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/l	1 U	1 U	1 U	1 U	1 U
79-00-5	1,1,2-Trichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
75-34-3	1,1-Dichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
75-35-4	1,1-Dichloroethene	ug/l	1 U	1 U	1 U	1 U	1 U
87-61-6	1,2,3-Trichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U
120-82-1	1,2,4-Trichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U
96-12-8	1,2-Dibromo-3-Chloropropane	ug/l	1 U	1 U	1 U	1 U	1 U
106-93-4	1,2-Dibromoethane	ug/l	1 U	1 U	1 U	1 U	1 U
95-50-1	1,2-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U
107-06-2	1,2-Dichloroethane	ug/l	1 U	1 U	1 U	1 U	1 U
78-87-5	1,2-Dichloropropane	ug/l	1 U	1 U	1 U	1 U	1 U
541-73-1	1,3-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U
106-46-7	1,4-Dichlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U
123-91-1	1,4-Dioxane (P-Dioxane)	ug/l	50 U	50 U	50 U	50 U	50 U
591-78-6	2-Hexanone	ug/l	5 U	5 U	5 U	5 U	5 U
67-64-1	Acetone	ug/l	5 U	15 J	5 UJ	5 U	5 U
71-43-2	Benzene	ug/l	1 U	0.12 J	1 U	1 U	1 U
74-97-5	Bromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
75-27-4	Bromodichloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
75-25-2	Bromoform	ug/l	1 U	1 U	1 U	1 U	1 U
74-83-9	Bromomethane	ug/l	1 UJ	1 UJ	1 UJ	1 UJ	1 U
75-15-0	Carbon Disulfide	ug/l	1 U	1 U	1 U	1 U	1 U
56-23-5	Carbon Tetrachloride	ug/l	1 U	1 U	1 U	1 U	1 U
108-90-7	Chlorobenzene	ug/l	1 U	1 U	1 U	1 U	1 U
75-00-3	Chloroethane	ug/l	1 UJ	1 UJ	1 UJ	1 UJ	1 U
67-66-3	Chloroform	ug/l	0.66 J	8.3	8.7	1.2	1 U
74-87-3	Chloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
156-59-2	Cis-1,2-Dichloroethylene	ug/l	2	1 U	1 U	1 U	1 U
10061-01-5	Cis-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
110-82-7	Cyclohexane	ug/l	1 U	1 U	1 U	1 U	1 U
124-48-1	Dibromochloromethane	ug/l	1 U	1 U	1 U	1 U	1 U
75-71-8	Dichlorodifluoromethane	ug/l	1 U	1 U	1 U	1 U	1 U
100-41-4	Ethylbenzene	ug/l	1 U	0.6 J	0.54 J	1 U	1 U
179601-23-1	M,P-Xylenes	ug/l	1 U	0.38 J	0.42 J	0.34 J	1 U
98-82-8	Isopropylbenzene (Cumene)	ug/l	1 U	0.41 J	1 U	1 U	1 U
79-20-9	Methyl Acetate	ug/l	5 U	5 U	5 U	5 U	5 U
78-93-3	Methyl Ethyl Ketone (2-Butanone)	ug/l	5 U	6.5 J	5 UJ	5 U	5 U
108-10-1	Methyl Isobutyl Ketone	ug/l	5 U	5 U	5 U	5 U	5 U
108-87-2	Methylcyclohexane	ug/l	1 U	0.28 J	1 U	1 U	1 U
75-09-2	Methylene Chloride	ug/l	1 U	0.32 J	1 U	1 U	1 U
95-47-6	O-Xylene (1,2-Dimethylbenzene)	ug/l	1 U	2.3	2.4	1 U	1 U
100-42-5	Styrene	ug/l	1 U	1 U	1 U	1 U	1 U
1634-04-4	Tert-Butyl Methyl Ether	ug/l	1 U	0.34 J	0.4 J	1 U	1 U
127-18-4	Tetrachloroethylene (PCE)	ug/l	56	3.1	3.2	10	1 U
108-88-3	Toluene	ug/l	1 U	0.38 J	0.35 J	0.42 J	1 U
156-60-5	Trans-1,2-Dichloroethene	ug/l	1 U	1 U	1 U	1 U	1 U
10061-02-6	Trans-1,3-Dichloropropene	ug/l	1 U	1 U	1 U	1 U	1 U
79-01-6	Trichloroethylene (TCE)	ug/l	0.43 J	1 U	0.26 J	0.5 J	1 U
75-69-4	Trichlorofluoromethane	ug/l	1 U	1 U	1 U	1 U	1 U
75-01-4	Vinyl Chloride	ug/l	1 U	1 U	1 U	1 U	1 U

APPENDIX B

DIG SAFELY NEW YORK TICKETS INFORMATION

Ashton, Edward J

From: ny@occinc.com
Sent: Friday, September 11, 2015 8:26 AM
To: onecall1@aquiferdrilling.com
Subject: Ticket: 152540235

New York 811

Send To: C_EMAIL Seq No: 262

Ticket No: 152540235 ROUTINE

Start Date: 9/16/15 Time: 7:00 AM Lead Time: 20

State: NY County: KINGS Place: BROOKLYN
Dig Street: GRAHAM AVE Address: 152
Nearest Intersecting Street: JOHNSON AVE Second Intersecting Street: MONTROSE AVE

Type of Work : SOIL BORINGS
Type of Equipment : DRILL RIG
Work Being Done For: PARSONS

In Street: On Sidewalk: X Private Property: X Other:
On Property Location if Private: Front: X Rear: X Side: X

Location of Work: MARK FRONT REAR AND SIDE OF PRIVATE PROPERTY TO INCLUDE
: ENTIRE LOT AND SIDE WALK FRONTING PROPERTY

Remarks:

Nad: Lat: Lon: Zone:
ExCoord NW Lat: 40.7083537 Lon: -73.9450291 SE Lat: 40.7056051 Lon:
-73.9408628

Company : AQUIFER DRILLING AND TESTING Best Time:
Contact Name : SHAWN MILLER Phone: (516)616-6026
Field Contact : SHAWN MILLER Phone: (516)616-6026
Caller Address: 75 EAST 2ND STREET Fax Phone:
MINEOLA, NY 11501
Email Address : onecall1@aquiferdrilling.com

Additional Operators Notified:
ATTNY01 AT&T CORPORATION (903)753-3145
BUG NATIONAL GRID (718)270-5735
CBLBH01 CABLEVISION OF BROOKLYN (800)262-8600
CEB CONSOLIDATED EDISON CO. OF N.Y (800)778-9140
TWCNYC02 TIME WARNER CABLE - BROOKLYN (800)262-8600
VBK VERIZON COMMUNICATIONS (855)661-3861

Link To Map for C_EMAIL: https://urldefense.proofpoint.com/v2/url?u=http-3A__ny.itic.occinc.com_KN7Z-2DDF2-2DU2Z-2DTAK&d=BQICAw&c=Nwf-pp4xtYRe0sCRVM8_LWH54joYF7EKmrYIdfxIq10&r=V1IrOCLbclYEx7h8kd24RpwNxrTNg3A1Jult6gjhuB8&m=wZE27G_WQ2pQX4chO23ZbbXZ3zpKDtHRblAzpIORwlE&s=fmXDsFgLW0P9x3H7neBx9bk3k0L4Gncl2DciYlA0bBY&e=

Original Call Date: 9/11/15 Time: 8:05 AM Op: webusr
IMPORTANT NOTE: YOU MUST CONTACT ANY OTHER UTILITIES DIRECTLY.

Ashton, Edward J

From: ny@occinc.com
Sent: Friday, September 11, 2015 8:27 AM
To: onecall1@aquiferdrilling.com
Subject: Ticket: 152540245

New York 811

Send To: C_EMAIL Seq No: 269

Ticket No: 152540245 ROUTINE

Start Date: 9/16/15 Time: 7:00 AM Lead Time: 20

State: NY County: KINGS Place: BROOKLYN
Dig Street: JOHNSON AVE Address:
Nearest Intersecting Street: GRAHAM AVE Second Intersecting Street: HUMBOLDT ST

Type of Work : SOIL BORINGS
Type of Equipment : DRILL RIG
Work Being Done For: PARSONS

In Street: X On Sidewalk: X Private Property: Other:
On Property Location if Private: Front: Rear: Side:

Location of Work: MARK STREET AND NORTH SIDE WALK FOR 250 FEET STARTING FROM
: INTERSECTION OF GRAHAM AVE HEADING EAST

Remarks:

Nad: Lat: Lon: Zone:
ExCoord NW Lat: 40.7076597 Lon: -73.9438066 SE Lat: 40.7056888 Lon:
-73.9407722

Company : AQUIFER DRILLING AND TESTING Best Time:
Contact Name : SHAWN MILLER Phone: (516)616-6026
Field Contact : SHAWN MILLER Phone: (516)616-6026
Caller Address: 75 EAST 2ND STREET Fax Phone:
MINEOLA, NY 11501
Email Address : onecall1@aquiferdrilling.com

Additional Operators Notified:
ATTNY01 AT&T CORPORATION (903)753-3145
BUG NATIONAL GRID (718)270-5735
CBLBH01 CABLEVISION OF BROOKLYN (800)262-8600
CEB CONSOLIDATED EDISON CO. OF N.Y (800)778-9140
TWCNYC02 TIME WARNER CABLE - BROOKLYN (800)262-8600
VBK VERIZON COMMUNICATIONS (855)661-3861

Link To Map for C_EMAIL: https://urldefense.proofpoint.com/v2/url?u=http-3A__ny.itic.occinc.com_AU2N-2D2ZD-2DFZ7-2DATW&d=BQICAw&c=Nwf-pp4xtYRe0sCRVM8_LWH54joYF7EKmrYIdfxIq10&r=V1IrOCLbclYEx7h8kd24RpwNxrTNg3A1JuIt6gjhuB8&m=wZE27G_WQ2pQX4chO23ZbbXZ3zpKDtHRblAzpIORwlE&s=WEIheFZB7Cu7nFYI6sdXr-rU9TTtfMhUCM_-8QHOcBg&e=

Original Call Date: 9/11/15 Time: 8:08 AM Op: webusr
IMPORTANT NOTE: YOU MUST CONTACT ANY OTHER UTILITIES DIRECTLY.

APPENDIX C

BORING AND WELL CONSTRUCTION LOGS

Contractor ADT, Inc. **Driller:** Joe McGill **Inspector:** E. Ashton **Rig Type:** Geoprobe 7822DT	**PARSONS ENGINEERING SCIENCE, INC.** **DRILLING RECORD** **PROJECT NAME:** NYSDEC Top Hat Cleaners Investigation **PROJECT NUMBER:** 449485.02000	**BORING/ WELL NO.** THPMW-01 Sheet 1 of 2 **Location Description:** See Site Plan

GROUNDWATER OBSERVATIONS				
Water Level	22.5			
Date	10/12/15			
Time	0915			
Meas. From	TOC			

Weather: Partly Cloudy-62'F

Date/Time Start: September 22, 2015/0730

Date/Time Finish: September 22, 2015/1550

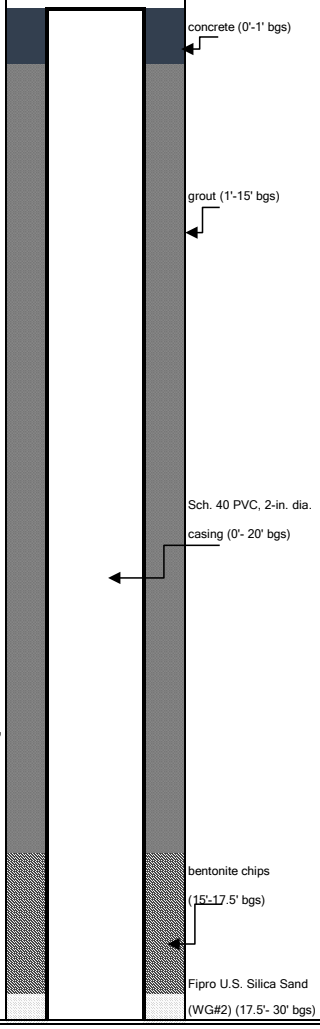
Location Plan

N

See Site Plan

Sample Depth	Sample I.D.	SPT	Rec. (inches)	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL
+3					
+2					
+1					Hand cleared from 0 to 5 feet bgs.
0					(0'-10") Concrete
					(10"-5') dry,-, brown, FINE-MEDIUM SAND, trace silt, little fine-coarse gravel,
1					trace cobbles. Encountered boulder at approx. 5 feet bgs.
					(Fill)
2					
3					
4					
5		10	24	17.5	(5'-7') dry, medium dense, brown, SILT, fine to medium sand, trace brick,
		11			little fine to medium gravel, no stains or odor. (Fill)
6		11			
		12			
7		8	16	15	(7'-9') dry, medium dense, brown, FINE TO MEDIUM SAND, little silt,
		9			trace fine gravel and brick, no stains or odor. (Fill)
8		10			
		11			
9	THPMW-01	20	16	18.2	(9'-11') dry, medium dense, brown, FINE TO MEDIUM SAND, some silt,
	(9-11)	14			trace fine gravel, no stains or odors. (SW/SM)
10		12			
		15			
11		18	22	15.4	(11'-13') Same as interval (9'-11') with the exception of mica flakes present
		15			and less silt. (SW)
12		16			
		17			
13		29	14	13.8	(13'-15') dry, dense, brown, FINE TO COARSE SAND, some fine to medium gravel,
		23			little coarse gravel, no order or stains. (SW/SP)
14		21			
		19			
15		25	18	13.1	(15'-17') Same as interval (13'-15') (SW/SP)
		23			
16		18			
		13			
17		13	16	12.5	(17'-19') dry to moist, medium dense, brown, FINE TO COARSE SAND,
		15			trace fine to coarse gravel, no stains or odor. (SW)
18		14			

SCHEMATIC



COMMENTS:

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

Collected soil samples THPMW-01 and 101 (duplicate sample) from 9-11 feet bgs and 21-23 feet bgs for VOCs via EPA Method 8260 using EPA Method 5035. Samples collected at 1100, 1201, and 1400; respectively. MS/MSD collected from 21-23 feet bgs.

Original well location abandoned and moved over to the south approx. 2 feet. Original location had hard object at approximately that could not be passed through. Moved to the south to avoid marked out gas lines.

Contractor ADT, Inc.
Driller: Joe McGill
Inspector: E. Ashton
Rig Type: Geoprobe 7822DT

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

PROJECT NAME: NYSDEC Top Hat Cleaners Investigation
PROJECT NUMBER: 449485.02000

BORING/ WELL NO. THPMW-01 Sheet 2 of 2

Location Description: See Site Plan

Location Plan N

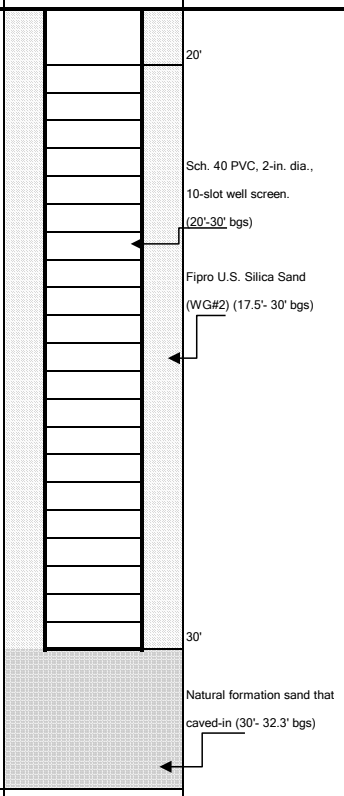
See Site Plan

Weather: Partly Cloudy-62'F
Date/Time Start: September 22, 2015/0730
Date/Time Finish: September 22, 2015/1550

GROUNDWATER OBSERVATIONS

Water Level	22.5			
Date	10/12/15			
Time	0915			
Meas. From	TOC			

Sample Depth	Sample I.D.	SPT	Rec. (inches)	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL
19		16			
		9	12	11	(19'-21') Same as interval (17'-19'). (SW)
20		6			
		8			
21	THPMW-01	10	14	7.3	(21'-23') Same as interval (19'-21') except less fine to coarse gravel present. (SW)
	(21-23)	9			
22		9			
		10			
23		12	18	11.8	(23'-25') wet, medium dense, brown, FINE TO MEDIUM SAND, trace silt,
		7			little fine to medium gravel, no odor or stains. (SW/SP)
24		10			
		11			
25		12	16	9.2	(25'-26.5') Same as interval (23'-25'). (SW/SP)
		10			(26.5'-27') wet, stiff, brown, SILT, some fine to medium sand, trace fine gravel,
26		4			no odor or stains. (SW/ML)
		7			
27		10	24	6.4	(27'-28.5') Same as interval (25'-26.5'). (SW/SP)
		3			(28.5'-29') Same as interval (26.5'-29'). (SM/ML)
28		6			
		15			
29		14	4	15.6	(29'-31') wet, dense, brown, FINE TO MEDIUM SAND, no odor or stains.
		12			Last two-inches weathered rock. (SM)
30		16			
		18			
31		22	24	11	(31'-32.3') wet, very dense, brown, FINE TO COARSE SAND, little silt,
		11			trace fine gravel, no odor or stains. (SW). Spoon refusal at 32.3 feet bgs.
32		13			
		50/.3			
33					Boring Terminated at 32.3 feet bgs.
34					
35					
36					
37					
38					
39					
40					



COMMENTS:
See page 1.

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

Contractor ADT, Inc.
Driller: Joe McGill
Inspector: E. Ashton
Rig Type: CME 55 Track Rig

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

PROJECT NAME: NYSDEC Top Hat Cleaners Investigation
PROJECT NUMBER: 449485.02000

BORING/ WELL NO. THPMW-02 Sheet 1 of 2
Location Description: See Site Plan

GROUNDWATER OBSERVATIONS				
Water Level	17.6			
Date	10/12/15			
Time	1200			
Meas. From	TOC			

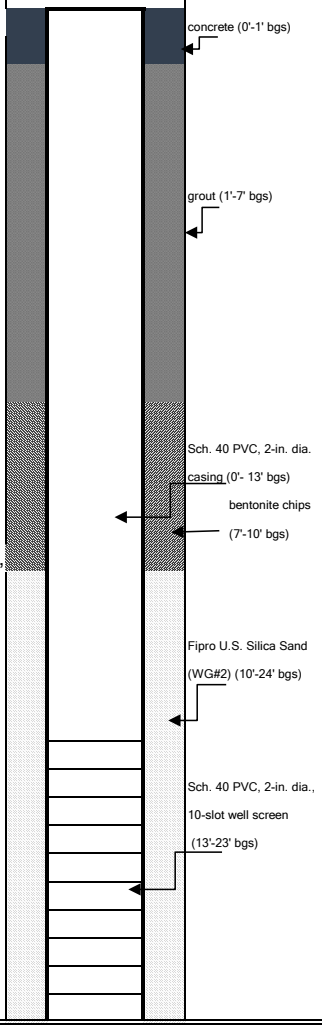
Weather: Partly Cloudy-62'F
Date/Time Start: September 29, 2015/1245
Date/Time Finish: September 29, 2015/1700

Location Plan N

See Site Plan

Sample Depth	Sample I.D.	SPT	Rec. (inches)	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
+3						
+2						
+1					Hand cleared from 0 to 5 feet bgs.	
0					(0'-8") Concrete	
					(8"-5') dry, -, brown, FINE TO MEDIUM SAND, trace silt, little fine to coarse gravel,	
1					trace cobbles. (Fill)	
2						
3						
4						
5		2	12	3	(5'-7') dry, loose, brown, FINE TO MEDIUM SAND, little silt, trace fine to	
		2			medium gravel and brick, no odor or stains. (Fill)	
6		2				
		2				
7		8	24	7.7	(7'-9') dry, medium dense, brown, FINE TO MEDIUM SAND, some silt and	
		11			fine to medium gravel, trace coarse gravel, no odor or stains. (Fill)	
8		11				
		10				
9		9	12	4.4	(9'-10') dry, very stiff, brown, SILT, some fine to medium sand, little fine to medium	
		10			gravel, trace coarse gravel, mica flakes present, no odor or stains. (SM)	
10		19	6	7.5	(10'-12') dry, medium dense, brown, SILT, some fine to medium sand, little fine gravel,	
		9			no odor or stains. (SM)	
11		7				
		10				
12	THPMW-02	6	24	13.5	(12'-14') dry to moist, stiff, brown, SILT, some fine sand, little fine to coarse gravel,	
	(12-14)	7			no odor or stains. (SM/ML).	
13		8				
		8				
14		-	-	-	(14'-15') Encountered spoon refusal at 14' bgs (50/.3 blow counts). Drilled through	
		-			object to 15' bgs. Same lithology observed from soil cuttings as seen at 12'-14' bgs.	
15		27	0	NA	(15'-17') No recovery. Rock in tip of spoon.	
		11				
16		10				
		10				
17	THPMW-02	16	24	9.6	(17'-19') moist to wet, very stiff, brown, SILT, some fine to medium sand,	
	(17-19)	12			little fine to medium gravel, trace coarse gravel, no odor or stains. (SM)	
18		14			More wet than observed on soil at 18'-19' bgs.	

2-in. Flush mount



SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS:
Collected soil samples THPMW-02 from 12-14 feet bgs and 17-19 feet bgs for VOCs via EPA Method 8260 using EPA Method 5035.
Original well location had to be moved because well screen broke and filter sand moved into screen. Well abandoned and new location moved 2 feet to the west. Second well location abandoned because auger breaking off in hole at 24 feet bgs. Encountered solid object and could not break through. Third well location 2 feet from second well location. Encountered rough drilling at 24 feet bgs. Installed well as shown above.

Contractor ADT, Inc.
Driller: Joe McGill
Inspector: E. Ashton
Rig Type: CME 55 Track Rig

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

BORING/ WELL NO. THPMW-02 Sheet 2 of 2

Location Description: See Site Plan

PROJECT NAME: NYSDEC Top Hat Cleaners Investigation
PROJECT NUMBER: 449485.02000

GROUNDWATER OBSERVATIONS				
Water Level	17.6			
Date	10/12/15			
Time	1200			
Meas. From	TOC			

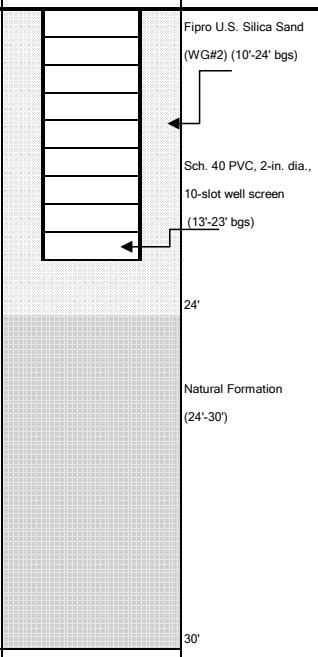
Weather: Partly Cloudy-62'F
Date/Time Start: September 29, 2015/1245
Date/Time Finish: September 29, 2015/1700

Location Plan

See Site Plan

Sample Depth	Sample I.D.	SPT	Rec. (inches)	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL
19		18			
		23	12	8.8	(19'-20') Same as interval 17'-19' bgs. (SM)
20		21			
		8	18	12.5	(20'-22') moist to wet, hard, brown, SILT, some fine sand, little fine to medium
21		12			gravel, no odor or stains. (SM)
		24			
22		15			
		17	20	9	(22'-24') Same as interval 20'-22' bgs. (SM)
23		20			
		20			
24		25			
		27	9	7.8	(24'-25') Same as interval 20'-22' bgs. (SM)
25		31			
		18	20	21.2	(25'-27') Same as interval 20'-22' bgs. (SM)
26		24			
		15			
27		12			
		10	16	25.9	(27'-29') Same as interval 20'-22' bgs. (SM)
28		10			
		7			
29		7			
		10	12	15.1	(29'-30') Same as interval 20'-22' bgs except more wet and less silt and
30		15			more fine to medium, sand, trace coarse gravel. Pre-dominantly silt. (SM)
					Boring Terminated at 30 feet bgs.
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					

SCHEMATIC



COMMENTS

COMMENTS:
See page 1.

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

Contractor ADT, Inc.
Driller: Joe McGill
Inspector: E. Ashton
Rig Type: CME 55 Track Rig

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

PROJECT NAME: NYSDEC Top Hat Cleaners Investigation
PROJECT NUMBER: 449485.02000

BORING/ WELL NO. THPMW-03 Sheet 1 of 2
Location Description: See Site Plan

GROUNDWATER OBSERVATIONS				
Water Level	18.20			
Date	10/12/15			
Time	1430			
Meas. From	TOC			

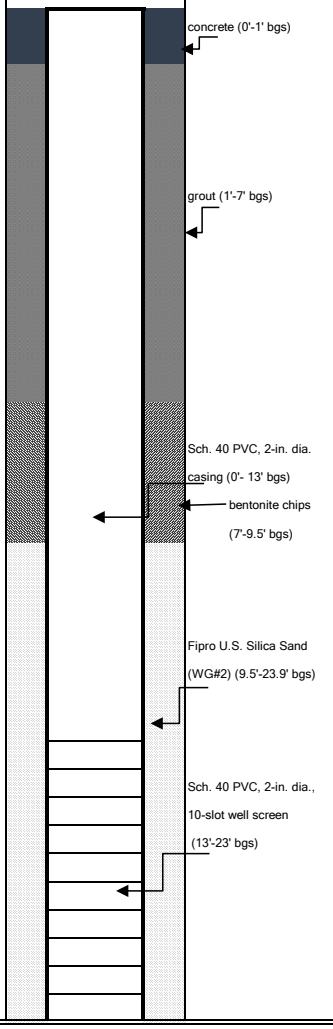
Weather: Partly Cloudy-70'F
Date/Time Start: September 24, 2015/1400
Date/Time Finish: September 25, 2015/1245

Location Plan N

See Site Plan

Sample Depth	Sample I.D.	SPT	Rec. (inches)	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL
+3					
+2					
+1					Hand cleared from 0 to 5 feet bgs.
0					(0'-8") Concrete
					(8"-5') dry, -, brown, FINE TO MEDIUM SAND, some silt & fine to medium
1					gravel, little boulders & concrete, fragments of brick,
					no odor or stains. (Fill)
2					
3					
4					
5		6	12	10.4	(5'-7') dry, medium dense, brown, FINE TO MEDIUM SAND, little silt, trace fine to
		6			medium gravel and concrete, no odor or stains. (Fill)
6		8			
		18			
7		30	18	17.5	(7'-9') dry, medium dense, brown, FINE TO MEDIUM SAND, some silt and
		13			fine to medium gravel, trace coarse gravel, no odor or stains. (Fill)
8		14			
		49			
9		33	12	19.8	(9'-10') dry to moist very dense, brown, FINE TO MEDIUM SAND, some silt,
		34			little fine to medium gravel, trace coarse gravel, no odor or stains. (Fill)
10		5	18	17.5	(10'-12') dry to moist, medium dense, brown, FINE TO MEDIUM SAND, some
		6			silt, little fine to coarse gravel, no odor or stains. (SM)
11		8			
		9			
12		10	18	19.1	(12'-14') dry to moist, medium dense, brown, FINE TO MEDIUM SAND, some silt,
		10			little fine to coarse gravel, no odor or stains. (SM)
13		13			
		13			
14	THPMW-03	18	12	23.5	(14'-15') Same as interval 12'-14' bgs. (SM)
	(14-15)	15			
15	THPMW-03	6	24	17.1	(15'-17') dry to moist, very stiff, brown, SILT, some fine to medium sand, little fine to
	(15-17)	13			medium gravel, trace coarse gravel, no odor or stains. (SM)
16		11			
		10			
17		17	20	17.9	(17'-18') wet, dense, brown, FINE TO MEDIUM SAND, some silt, little clay, trace
		14			fine to coarse gravel, no odor or stains. (SM/SC)
18		25			(18'-19') moist to wet, hard, brown, SILT, some fine to medium sand, little fine to

SCHEMATIC



COMMENTS

COMMENTS:
Collected soil samples THPMW-03 from 14-15 feet bgs and 15-17 feet bgs for VOCs via EPA Method 8260 using EPA Method 5035.

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

Contractor ADT, Inc.
Driller: Joe McGill
Inspector: E. Ashton
Rig Type: CME 55 Track Rig

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

PROJECT NAME: NYSDEC Top Hat Cleaners Investigation
PROJECT NUMBER: 449485.02000

BORING/ WELL NO. THPMW-03 Sheet 2 of 2

Location Description: See Site Plan

GROUNDWATER OBSERVATIONS				
Water Level	18.20			
Date	10/12/15			
Time	1430			
Meas. From	TOC			

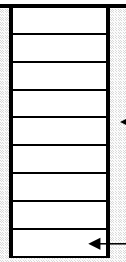
Weather: Partly Cloudy-70'F
Date/Time Start: September 24, 2015/1400
Date/Time Finish: September 25, 2015/1245

Location Plan N

See Site Plan

Sample Depth	Sample I.D.	SPT	Rec. (inches)	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL
19		26			medium gravel, no odor or stains. (SM/Till)
		17	10	21.9	(19'-21') wet, very stiff, brown, SILT, some fine to medium sand, little fine
20		14			to coarse gravel, no odor or stains. (SM/Till)
		20			
21		16			
		10	14	19.4	(21'-23') wet, very stiff, brown, SILT, some fine to medium sand, little fine to coarse
22		10			gravel, no odor or stains. (SM/Till)
		17			
23		24			
		13	6	23.5	(23'-23.9') moist to wet, hard, brown, SILT, some fine to medium sand, little fine to
24		50/.5			coarse gravel, no odor or stains. (SM/Till).
					Boring Terminated at 23.9 feet bgs.
25					
26					Spoon refusal at 23.9 feet bgs. Fragments of rock in tip of spoon.
					Attempted to drill through zone with no success. Could not advance further
27					in borehole. Discussed with Parsons PM and it was decided to install well
					from 13 to 23 feet bgs. Water identified at 17 to 19 feet bgs.
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					

SCHEMATIC



COMMENTS

COMMENTS:
See page 1.

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

Contractor ADT, Inc.
Driller: Daniel Johnson
Inspector: E. Ashton
Rig Type: Geoprobe 420M

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

PROJECT NAME: NYSDEC Top Hat Cleaners Investigation
PROJECT NUMBER: 449485.02000

BORING/ WELL NO. THPMW-04 Sheet 1 of 1
Location Description: See Site Plan

GROUNDWATER OBSERVATIONS				
Water Level	NA			
Date	NA			
Time	NA			
Meas. From	NA			

Weather: Partly Cloudy-70'F
Date/Time Start: September 25, 2015/1340
Date/Time Finish: September 29, 2015/1600

Location Plan

See Site Plan

Sample Depth	Sample I.D.	SPT	Rec. (inches)	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
+3							
+2							
+1					Hand cleared from 0 to 5 feet bgs.		
0					(0'-6") Concrete		
					(6"-12") dry, -, brown, FINE TO COARSE SAND, some brick and fine to coarse		
1					gravel, no odor or stains. (Fill)		
					(12"-15") concrete		
2					(15"-5') dry, -, brown, FINE TO COARSE SAND, some brick and fine to coarse		
					gravel, no odor or stains. (Fill)		
3							
4							
5		NA	4	13.1	(5'-6') dry, -, brown, FINE TO COARSE SAND, some fine to medium gravel,		
					trace brick, no odor or stains. (Fill).		
6					Encountered refusal at approx. 6 feet bgs. Attempted to drill/break through it.		
					No success. Offset twice from original drilling location; 1) 2.5 feet to the west and		
7					2.5 feet to the east. At each location, refusal was encountered		
					and break through was unsuccessful. Refusal encountered at 4.9 feet bgs		
8					and 6 feet bgs, respectively. Used various drilling tools to attempt break through.		
					Spoke with Parsons PM and NYSDEC PM and it was decided that no well will be		
9					installed in court yard behind Top Hat Cleaners. Boreholes backfilled with		
					soil cuttings and concrete cap place over borehole.		
10							
11							
12							
13							
14							
15							
16							
17							
18							

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS:
No soil samples for analysis.

APPENDIX D

WELL DEVELOPMENT LOGS

PARSONS
WELL DEVELOPMENT OBSERVATIONS

SITE NAME: NYSDEC Top Hat Cleaners Investigation
PROJECT NUMBER: 449485.02000

WELL NUMBER: THPMW-01 **WEATHER:** Cloudy-70's
DATE: 9/28/2015 and 9/30/15 **TIME:** 0915 and 1045

DEVELOPER: Carmine NaVarra of ADT, Inc.
Danial Johnson of ADT, Inc.

DESCRIPTION OF WELL

Total Depth: 30 feet TOC Diameter: 2-inch
Screen Depth: 20 to 30 feet bgs
Development Method: Waterra Pump & Whale Pump with dedicate tubing

GROUNDWATER PURGING

Initial Static Water Level: 22.5
One Well Volume: 10 Volumes

2-Inch Casing:	7.5	Feet of Water x 0.16 Gallons/Foot =	1.2	Gallons	12 gals/min
3-Inch Casing:		Feet of Water x 0.36 Gallons/Foot =		Gallons	
4-Inch Casing:		Feet of Water x 0.65 Gallons/Foot =		Gallons	

Volume of groundwater purged: 80 Gallons
Purging Device: Waterra Pump & Whale Pump with dedicate poly. tubing
Purge Water Disposition (e.g., contained): 55 gal. drum

FIELD MEASUREMENTS

Time	Temp. (Degrees C)	pH	Conductivity (mS/cm)	Turbidity (NTUs)	Comments
0915 (9/28/15)	NA	NA	NA	NA	Surging well with PVC surge block
0925 (9/28/15)	NA	NA	NA	NA	Start development
0935 (9/28/15)	20.50	7.50	5.59	> 4,000	Initial measurement turbid
0940 (9/28/15)	NA	NA	NA	NA	Water stopped. Hole in tubing/replaced
0955 (9/28/15)	NA	NA	NA	NA	Restarted Pump
1000 (9/28/15)	NA	NA	NA	NA	Purged dry, check valve clogged with fines.
1020 (9/28/15)	20.15	7.02	6.32	> 4,000	Steady flow established
1100 (9/28/15)	NA	NA	NA	NA	Check valve clogged with fines.
1130 (9/28/15)	20.68	6.79	6.84	> 4,000	Water appears to becoming less turbid
1145 (9/28/15)	20.20	6.69	6.32	3,567	
1215 (9/28/15)	20.35	6.53	5.77	3,675	
1230 (9/28/15)	20.39	6.59	5.47	3,338	
1245 (9/28/15)	20.41	6.60	5.09	3,243	Stopped development. Removed 30 gals. (9-28-15)

Turbidity not getting better. Thick turbid water removed. Pumped for over two hours and removed over ten wells volumes.

PARSONS
WELL DEVELOPMENT OBSERVATIONS

SITE NAME: NYSDEC Top Hat Cleaners Investigation
PROJECT NUMBER: 449485.02000

WELL NUMBER: THPMW-01 **WEATHER:** Cloudy-70's
DATE: 9/28/2015 and 9/30/15 **TIME:** 0915 and 1045

DEVELOPER: Carmine NaVarra of ADT, Inc.
Danial Johnson of ADT, Inc.

Time	Temp. (Degrees C)	pH	Conductivity (mS/cm)	Turbidity (NTUs)	Comments
On 9/30/15, put whale pump into well and developed further.					
1045 (9/30/15)	NA	NA	NA	NA	Started development
1110 (9/30/15)	21.69	6.35	4.97	2,274	
1140 (9/30/15)	21.28	6.89	5.03	13.0	
1215 (9/30/15)	21.83	6.86	4.86	17.9	Stopped development. Removed 50 gals.

PARSONS
WELL DEVELOPMENT OBSERVATIONS

SITE NAME: NYSDEC Top Hat Cleaners Investigation
PROJECT NUMBER: 449485.02000

WELL NUMBER: THPMW-02 **WEATHER:** Cloudy-70's
DATE: 9/30/2015 and 10/1/15 **TIME:** All Day Activity

DEVELOPER: Danial Johnson of ADT, Inc.
Ed Ashton of Parsons

DESCRIPTION OF WELL

Total Depth: 23 feet TOC Diameter: 2-inch
Screen Depth: 13 to 23 feet bgs
Development Method: Waterra Pump & Bailer with dedicated rope and tubing

GROUNDWATER PURGING

Initial Static Water Level: 13.10
One Well Volume: 10 Volumes

2-Inch Casing:	9.9	Feet of Water x 0.16 Gallons/Foot =	1.58	Gallons	15.84 gals/min
3-Inch Casing:		Feet of Water x 0.36 Gallons/Foot =		Gallons	
4-Inch Casing:		Feet of Water x 0.65 Gallons/Foot =		Gallons	

Volume of groundwater purged: 17.5 Gallons
Purging Device: Waterra Pump & Bailer with dedicated rope and tubing
Purge Water Disposition (e.g., contained): 55 gal. drum

FIELD MEASUREMENTS

Time	Temp. (Degrees C)	pH	Conductivity (mS/cm)	Turbidity (NTUs)	Comments
1340 (9/30/15)	NA	NA	NA	NA	Started development with Waterra pump
1350 (9/30/15)	23.50	9.05	0.259	>4,000	
1420 (9/30/15)	NA	NA	NA	NA	Well dry.
1430 (9/30/15)	NA	NA	NA	NA	Pump well dry again. Switched to bailer for development
1510 (9/30/15)	NA	NA	NA	NA	Added potable water to well, surged, and purged dry
1545 (9/30/15)	NA	NA	NA	NA	Added potable water to well, surged, and purged dry
1615 (9/30/15)	NA	NA	NA	NA	Added potable water to well, surged, and purged dry
1645 (9/30/15)	NA	NA	NA	NA	Added potable water to well, surged, and purged dry
1710 (9/30/15)	NA	NA	NA	NA	Added potable water to well, surged, and purged dry
0915 (10/1/15)	18.14	8.47	0.273	>4,000	Well dry.
0940 (10/1/15)	NA	NA	NA	NA	Added potable water to well, surged, and purged dry
Added potable water to well to assist in the development. Well formation tight and was surged with potable water many times.					

PARSONS
WELL DEVELOPMENT OBSERVATIONS

SITE NAME: NYSDEC Top Hat Cleaners Investigation
PROJECT NUMBER: 449485.02000

WELL NUMBER: THPMW-03 **WEATHER:** Cloudy-70's
DATE: 9/30/2015 and 10/1/15 **TIME:** All Day Activity

DEVELOPER: Danial Johnson of ADT, Inc.
Ed Ashton of Parsons

DESCRIPTION OF WELL

Total Depth: 23 feet TOC Diameter: 2-inch
Screen Depth: 13 to 23 feet bgs
Development Method: Waterra Pump & Bailer with dedicated rope and tubing

GROUNDWATER PURGING

Initial Static Water Level: 14.8
One Well Volume: 10 Volumes
2-Inch Casing: 8.2 Feet of Water x 0.16 Gallons/Foot = 1.3 Gallons 13 gals/min
3-Inch Casing: Feet of Water x 0.36 Gallons/Foot = Gallons
4-Inch Casing: Feet of Water x 0.65 Gallons/Foot = Gallons

Volume of groundwater purged: 13.5 Gallons
Purging Device: Waterra Pump & Bailer with dedicated rope and tubing
Purge Water Disposition (e.g., contained): 55 gal. drum

FIELD MEASUREMENTS

Time	Temp. (Degrees C)	pH	Conductivity (mS/cm)	Turbidity (NTUs)	Comments
0940 (9/30/15)	NA	NA	NA	NA	Started development with Waterra pump
0950 (9/30/15)	24.61	6.40	0.339	>4,000	
0951 (9/30/15)	NA	NA	NA	NA	Well dry. 5 gals removed.
1010 (9/30/15)	NA	NA	NA	NA	Restart pump
1015 (9/30/15)	NA	NA	NA	NA	Well dry. Pump rate, even at slowest speed to much for well recharge rate. Will use bailer to continue development
1030 (9/30/15)	NA	NA	NA	NA	Well dry again.
1050 (9/30/15)	NA	NA	NA	NA	A little water in bottom of well. Surged well and purged dry.
1410 (9/30/15)	22.43	8.80	0.341	>4,000	Purged dry
1510 (9/30/15)	NA	NA	NA	NA	Added potable water to well, surged, and purged dry
1530 (9/30/15)	NA	NA	NA	NA	Added potable water to well, surged, and purged dry
1630 (9/30/15)	22.47	8.59	0.231	>4,000	Purged dry
1710 (9/30/15)	NA	NA	NA	NA	Added potable water to well, surged, and purged dry. Removed ten gals total for day.
On 9/30/15, added potable water to well to assist in the development. Well formation tight and was surged with potable water many times.					

PARSONS
WELL DEVELOPMENT OBSERVATIONS

SITE NAME: NYSDEC Top Hat Cleaners Investigation
PROJECT NUMBER: 449485.02000

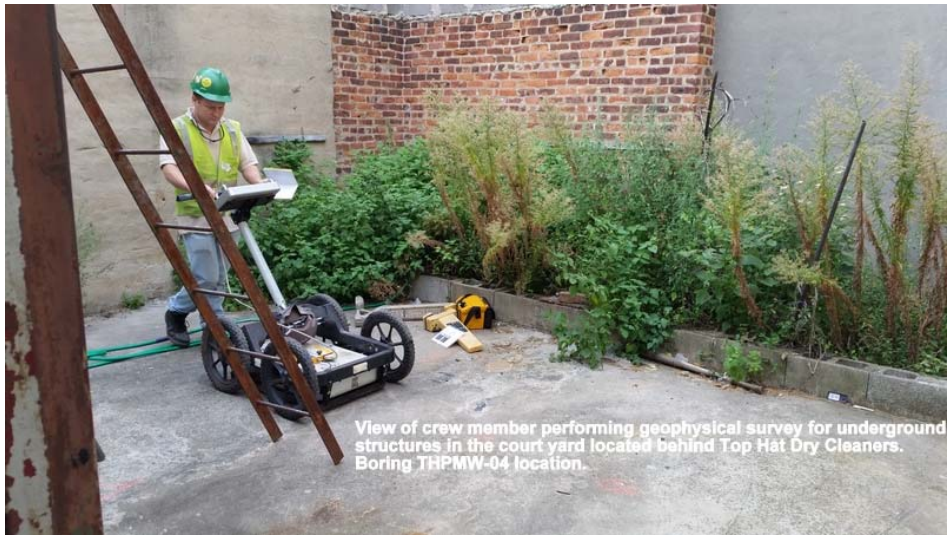
WELL NUMBER: THPMW-03 **WEATHER:** Cloudy-70's
DATE: 9/30/2015 and 10/1/15 **TIME:** All Day Activity

DEVELOPER: Danial Johnson of ADT, Inc.
Ed Ashton of Parsons

Time	Temp. (Degrees C)	pH	Conductivity (mS/cm)	Turbidity (NTUs)	Comments
On 10/1/15, added more potable water to well, surged, and purged dry. Removed 3.5 gals total					
0740 (10/1/15)	18.95	6.65	0.328	>1,000	
0800 (10/1/15)	NA	NA	NA	NA	Added potable water to well, surged, and purged dry

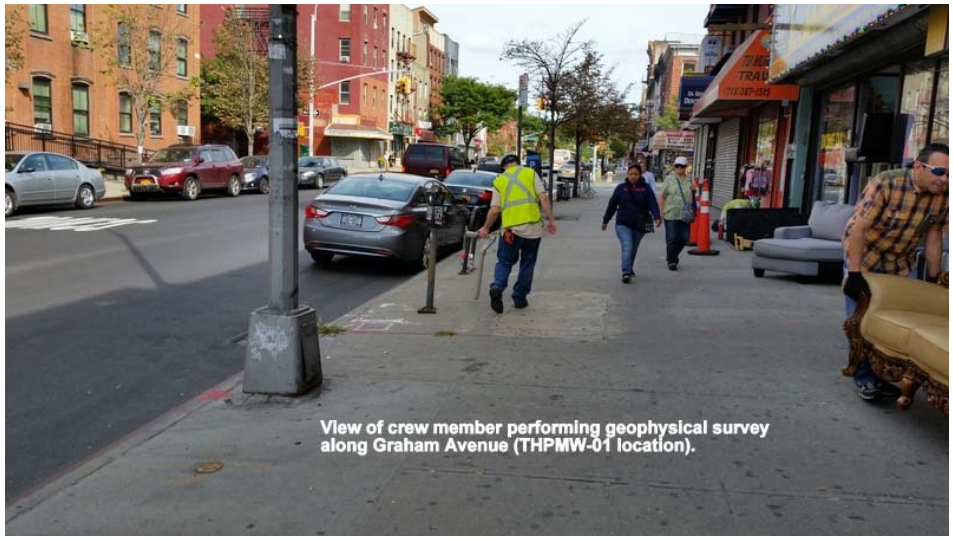
APPENDIX E

PHOTOGRAPHIC LOG



View of crew member performing geophysical survey for underground structures in the court yard located behind Top Hat Dry Cleaners. Boring THPMW-04 location.

View of mark outs of underground structures that exist in the soil boring THPMW-04 location. Mark outs detected from geophysical survey and location is the court yard located behind Top Hat Dry Cleaners facility. Cleared borehole location marked out by white circle with "X".



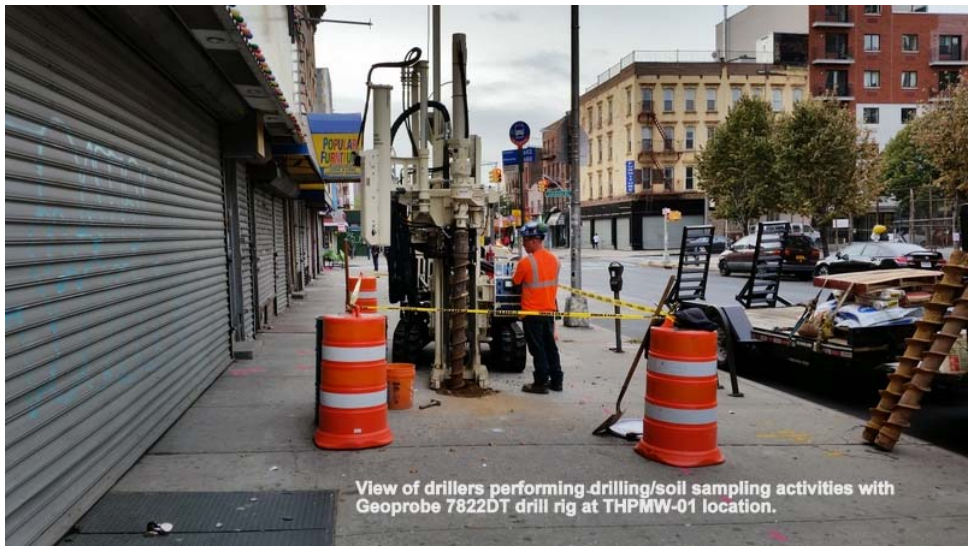
View of crew member performing geophysical survey along Graham Avenue (THPMW-01 location).

View of abandoned underground fuel oil tank vent piping and fill port located in front of Top Hat Dry Cleaners.

View of mark outs of underground structures located in the THPMW-01 area detected from geophysical survey. Asphalt over hand cleared borehole also shown.

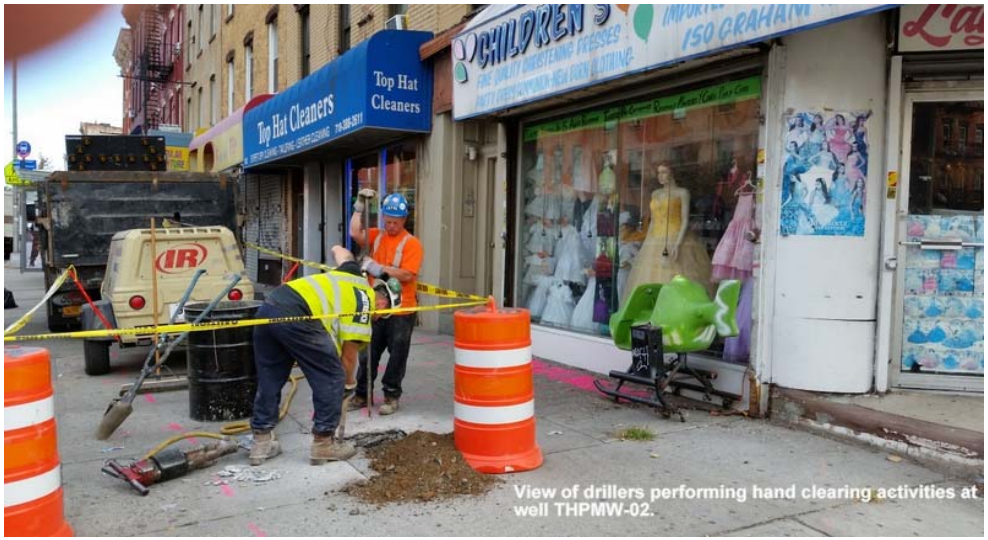
View of mark outs of underground structures located in the THPMW-03 area detected by geophysical survey. Cleared borehole location marked out by red circle with "X".

View of marked out structures located in THPMW-02 area. Cleared borehole location marked out with white circle with "X".



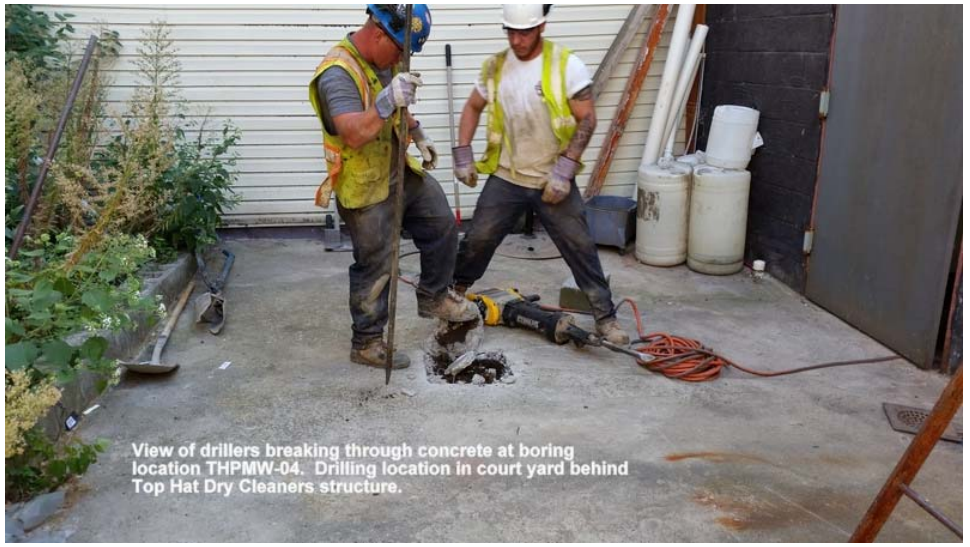
View of drillers performing drilling/soil sampling activities with Geoprobe 7822DT drill rig at THPMW-01 location.

View of well THPMW-01 installed with concrete pad and curb box.

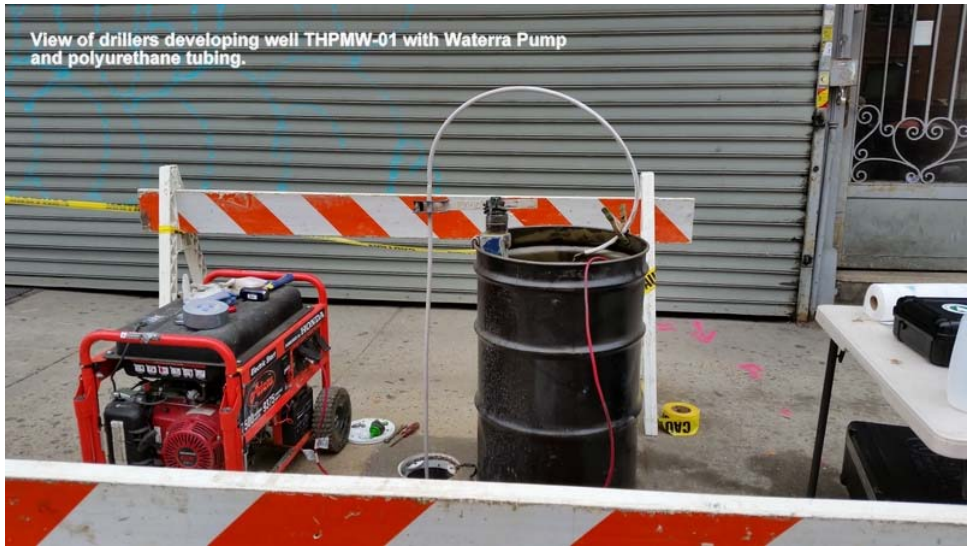


View of drillers performing hand clearing activities at well THPMW-02.

View of well THPMW-03 installed with concrete pad and curb box.



View of drillers breaking through concrete at boring location THPMW-04. Drilling location in court yard behind Top Hat Dry Cleaners structure.


View of drillers developing well THPMW-01 with Waterra Pump and polyurethane tubing.


View of drillers attempting to collect soil samples at borehole location THPMW-04. No soil samples collected beyond six feet bgs. because of obstruction encountered.


View of drillers hand clearing alternate THPMW-04 borehole drilling location.


View of drillers attempting to collect soil samples below six feet bgs at third alternate borehole location for well THPMW-04. Obstructions encountered at all three borehole locations.

View of all three boreholes drilled in an attempt to obtain soil samples and install well THPMW-04. Obstructions encountered at all three locations and no well installed. Boreholes backfilled with original soil cuttings and capped with concrete.

View of concrete being poured at THPMW-02 well location.

View of concrete sidewalk removed at well THPMW-01 prior to installation of new concrete plate.

View of new concrete plate installed at THPMW-01 well location.

View of concrete plates at well location THPMW-02 installed.

View of new concrete plate installed at well THPMW-03 location.

APPENDIX F

GROUNDWATER MONITORING WELLS SURVEY DATA

Borbas Surveying & Mapping, LLC

402 Main Street, Boonton, New Jersey 07005 Phone (973) 316-8743 Fax (973) 402-6627 www.borbas.com

MONITORING WELL CHART

Top Hat Cleaners
152 Graham Avenue
Borough of Brooklyn, Kings County, New York
October 27, 2015

Monitor Well ID	Grade Elev	Outer Casing	Inner Casing	Northing	Easting	Latitude North	Longitude West	Survey Date
THPMW-01	28.4	28.38	27.71	196862.2	1000044.7	40°42'25.21"	73°56'34.91"	10/12/2015
THPMW-02	27.3	27.26	26.85	196753.4	1000056.7	40°42'24.14"	73°56'34.76"	10/12/2015
THPMW-03	27.8	27.82	27.48	196758.4	1000185.0	40°42'24.19"	73°56'33.09"	10/12/2015
Soil Boring ID								
THPMW-04A	29.3	-	-	196794.9	1000149.2	40°42'24.55"	73°56'33.56"	10/12/2015
THPMW-04B	29.3	-	-	196792.7	1000149.4	40°42'24.53"	73°56'33.55"	10/12/2015
THPMW-04C	29.3	-	-	196790.7	1000149.5	40°42'24.51"	73°56'33.55"	10/12/2015

Notes:
1. The horizontal datum is the New York Long Island State Plane Coordinate System NAD 83 determined by differential GPS on October 12, 2015 using the NGS CORS system, Reference Station NYBK.
2. The vertical datum is the North American Vertical Datum of 1988 (NAVD88) Geoid 12A determined by differential GPS observations from the NGS CORS network on October 12, 2015. Benchmark: Reference Station: NYBK (orthometric height = 54.3776').
3. All coordinates and elevations shown hereon are in U.S. Survey Feet.

John D. Beattie
New York Professional Land Surveyor 050958-1
October 27, 2015

P\LP\2015\09\150904\Documents\150904_2015-10-27_Monitoring Well Chart

APPENDIX G

GROUNDWATER SAMPLING LOGS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Top Hat Cleaners* Well ID: THPMW-01 Well Diameter: 2 Inches

Samplers: Ed Ashton Monitored Natural Attenuation Sample Set (Y/N)? N

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot x 3 well vols				
(30 - 22.5) x 0.16 x 3 = 3.60 min. vols to be purged				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Peristaltic Pump

Method: Low Flow Date/Time: 10/12/15-0915

Time	DTW	Pump Rate	Vol.	Temp	pH	Redox	Spec. Cond.	Turbidity	DO	Comments
24 hr.	ft.	ml/min.	gal.	°C		mv	mS/cm	NTU	mg/l	
9:15	22.50	110	NA	NA	NA	NA	NA	NA	NA	start purging
9:25	22.55	110	NA	19.40	7.04	84.00	0.00	91.20	6.68	
9:50	22.58	110	NA	18.70	7.18	123.00	4.29	5.30	6.62	
9:55	22.58	110	NA	18.62	6.99	151.00	4.42	5.60	6.74	
10:05	22.60	110	NA	18.72	6.81	173.00	4.45	12.90	6.94	
10:15	22.61	110	NA	18.77	6.76	191.00	4.46	8.70	8.60	
10:20	NA	NA	NA	NA	NA	NA	NA	NA	NA	Tubing came apart. Stopped pump and restarted at 10:22
10:30	22.62	110	NA	18.77	6.85	193.00	4.50	0.00	6.97	
10:45	22.62	110	NA	18.98	6.86	206.00	4.48	0.00	6.31	
11:00	22.62	110	NA	19.05	6.90	211.00	4.50	0.00	6.71	
11:05	22.62	110	NA	19.06	6.91	213.00	4.50	0.00	7.07	
11:10	22.62	110	NA	19.09	6.91	214.00	4.49	0.00	6.63	
11:15	22.62	110	NA	19.12	6.91	215.00	4.50	0.00	6.79	
11:20	22.62	110	NA	19.13	6.91	216.00	4.50	0.00	6.71	
11:21	NA	NA	4.50	NA	NA	NA	NA	NA	NA	Stopped purging.

Sampling Data

Peristaltic Pump

Method: Low Flow Date/Time: 10/12/15 @1125 Total Volume of Water purged: 4.5 gal

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.91	Alkalinity (g/g)	NA
Spec. Cond.(mS/cm)	4.500	Carbon Dioxide (mg/L)	NA
Turbidity (NTU)	0.0	Ferrous Iron (mg/L)	NA
DO (mg/L)	6.7	Manganese (mg/L)	NA
Redox (mv)	216.0	Hydrogen Sulfide (mg/L)	NA
Temp.(°C)	19.13	-	-

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
TCL VOCs	3-40mL glass vial	HCl	EPA 8260

Comments: Sample ID = THPMW-01, THPMW-01MS, and THPMW-01MSD. PID measurement at Well Head = 0.0 ppm.

Sample clear with no odor or sheen.

PARSONS

LOW FLOW WELL SAMPLING RECORD

Site Name: *Top Hat Cleaners* Well ID: THPMW-02 2 Inches

Samplers: Ed Ashton Monitored Natural Attenuation Sample Set (Y/N)? N

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot x 3 well vols				
(23 - 17.6) x 0.16 x 3 = 2.59 min. vols to be purged				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Peristaltic Pump

Method: Low Flow Date/Time: 10/12/15-1200

Time	DTW	Pump Rate	Vol.	Temp	pH	Redox	Spec. Cond.	Turbidity	DO	Comments
24 hr.	ft.	ml/min.	gal.	°C		mv	mS/cm	NTU	mg/l	
12:00	17.60	105	NA	NA	NA	NA	NA	NA	NA	Start purging.
12:08	18.00	105	NA	23.89	6.63	198.00	0.318	287.00	2.23	
12:15	18.20	105	NA	24.11	6.33	185.00	0.315	109.00	1.44	
12:20	18.44	105	NA	24.50	6.12	175.00	0.311	45.20	1.11	
12:30	18.88	105	NA	25.31	6.05	165.00	0.325	29.00	1.11	
12:40	19.08	105	NA	25.14	5.71	179.00	0.317	23.60	1.86	
12:50	19.70	105	NA	27.02	5.67	144.00	0.307	16.40	1.02	
13:00	20.10	105	NA	27.58	5.51	133.00	0.312	15.80	0.78	
13:10	20.58	105	NA	28.08	7.54	108.00	0.452	25.80	0.50	
13:20	20.95	105	NA	28.30	6.14	123.00	0.454	22.10	0.11	
13:30	21.30	105	NA	28.53	6.07	130.00	0.494	21.70	0.00	
13:35	NA	NA	NA	NA	NA	NA	NA	NA	NA	Pumped stopped. Valve clogged.
13:42	NA	NA	NA	NA	NA	NA	NA	NA	NA	Re-started pump
13:45	21.50	105	NA	28.95	7.33	127.00	0.552	29.40	2.73	
13:50	21.82	105	NA	29.38	6.75	126.00	0.546	24.20	0.51	
13:55	22.40	105	NA	29.67	7.09	125.00	0.537	24.20	0.27	
14:00	22.80	NA	3.50	NA	NA	NA	NA	NA	NA	Well purged dry.

Sampling Data

Peristaltic Pump

Method: Low Flow Date/Time: 10/13/15-0700 Total Volume of Water purged: 3.5

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.62	Alkalinity (g/g)	NA
Spec. Cond.(mS/cm)	0.616	Carbon Dioxide (mg/L)	NA
Turbidity (NTU)	158.0	Ferrous Iron (mg/L)	NA
DO (mg/L)	4.8	Manganese (mg/L)	NA
Redox (mv)	262.0	Hydrogen Sulfide (mg/L)	NA
Temp.(°C)	19.34	_	_

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET			
Parameter	**Bottle**	**Pres.**	**Method**
TCL VOCs	3-40mL glass vial	HCl	EPA 8260

Comments: Sample ID = THPMW-02 and THPMW-102 (Duplicate Sample. Collected at 0715). PID measurement at Well Head = 0.5 ppm.

Sample slighty turbid with no odor or sheen.

LOW FLOW WELL SAMPLING RECORD

Site Name: *Top Hat Cleaners* Well ID: THPMW-03 2 Inches

Samplers: Ed Ashton Monitored Natural Attenuation Sample Set (Y/N)? N

Purging Data

WATER VOLUME CALCULATION				
= (Total Depth of Well - Depth To Water) x Casing Volume per Foot x 3 well vols				
(23 - 18.35) x 0.16 x 3 = 2.23 min. vols to be purged				
1-inch=0.041	1.5-inch=0.092	2-inch=0.16	3-inch=0.36	
4-inch=0.64	6-inch=1.4	8-inch=2.5	10-inch=4	

Peristaltic Pump

Method: Low Flow Date/Time: 10/12/15-1430

Time	DTW	Pump Rate	Vol.	Temp	pH	Redox	Spec. Cond.	Turbidity	DO	Comments
24 hr.	ft.	ml/min.	gal.	°C		mv	mS/cm	NTU	mg/l	
14:30	18.20	100	NA	NA	NA	NA	NA	NA	NA	Start purging.
14:40	18.62	100	NA	33.54	7.71	161.00	0.863	1110.00	3.34	
14:45	18.85	100	NA	33.48	7.69	164.00	0.860	962.00	1.97	
14:50	19.00	100	NA	33.28	7.65	152.00	0.853	510.00	1.59	
14:55	19.14	100	NA	33.09	7.59	77.00	0.854	480.00	1.70	
15:00	19.28	100	NA	32.90	7.54	45.00	0.859	364.00	1.64	
15:05	19.45	100	NA	32.74	7.50	23.00	0.863	241.00	1.54	
15:10	19.62	100	NA	32.58	7.45	21.00	0.863	146.00	2.62	
15:15	19.75	100	NA	32.50	7.44	26.00	0.860	81.20	1.42	
15:20	19.90	100	NA	32.38	7.38	38.00	0.859	92.90	1.17	
15:25	20.00	100	NA	32.22	7.43	56.00	0.857	78.00	1.79	
15:30	20.16	100	NA	31.98	7.41	74.00	0.842	74.00	2.83	
15:35	20.35	100.00	NA	31.66	7.47	96.00	0.848	52.80	2.80	
15:40	20.45	100	NA	31.51	7.42	106.00	0.850	61.60	2.80	
15:45	20.70	100	NA	31.20	7.41	123.00	0.852	56.90	2.89	
15:50	21.00	NA	NA	NA	NA	NA	NA	NA	NA	Pumped well dry. Removed 2.50 gals.

Sampling Data

Peristaltic Pump

Method: Low Flow Date/Time: 10/13/15-0815 Total Volume of Water purged: 2.5

Field Parameters

HORRIBA		HACH TEST KITS	
pH	6.98	Alkalinity (g/g)	NA
Spec. Cond.(mS/cm)	0.897	Carbon Dioxide (mg/L)	NA
Turbidity (NTU)	117.0	Ferrous Iron (mg/L)	NA
DO (mg/L)	2.6	Manganese (mg/L)	NA
Redox (mv)	237.0	Hydrogen Sulfide (mg/L)	NA
Temp.(°C)	19.80	_	_

* NOTE * HACH test kits are only required for MNA analysis wells.

SAMPLE SET

Parameter	Bottle	Pres.	Method
TCL VOCs	3-40mL glass vial	HCl	EPA 8260

Comments: Sample ID = THPMW-03. PID measurement at Well Head = 7.7 ppm.

Sample slighty turbid with no odor or sheen.

APPENDIX H

INVESTIGATION DERIVED WASTE MANIFESTS

CleanVenture/CycleChem

CVCC 170330

The Environmental Services Source

NON-HAZARDOUS SOLID WASTE

BILL OF LADING

24 Hour Emergency Number (908) 354-0210

GENERATOR

Generator's Name and Mailing Address NYSDEC
625 BROADWAY 12TH FLOOR
Albany, NY 12233
Generator's Phone ((518) 402-9813

BOL

152 GRAHAM AVE.
Brooklyn NY 11206

Transporter 1 Company Name
CLEAN VENTURE INC.

State Trans. ID-NJDEPE 16755

Transporter 2 Company Name

Decal No.-

Transporter's Phone ((908) 355-5800

Designated Facility Name and Site Address
Cycle Chem Inc.
217 South First Street
Elizabeth, NJ 07206

10. US EPA ID Number
NJD002200046

State Trans. ID-NJDEPE

Decal No.-

Transporter's Phone ( )

Facility's Phone ((908) 355-5800

	US DOT Description (Including Proper Shipping Name, Hazard Class or Division, ID Number and Packing Group)	Containers No.	Containers Type	Total Quantity	Unit Wt/Vol	Waste No.
a.	Non-DOT CHEMICAL PROCESS SOLID Non-RCRA	02	DM	500	P	ID27
b.	Non-DOT CHEMICAL PROCESS LIQUID Non-RCRA	01	DM	1	G	ID72
c.	Non-DOT CHEMICAL PROCESS SOLID Non-RCRA					ID27
d.						

J. Additional Descriptions for Materials Listed Above

a. c.

b. d.

CCI Generator # and Product Codes: 975500/931440/180572/325508 (1)PC01-1 SOIL (2)REM002-2 LIQUIDS (3)PC01-3 DEBRIS/PPE

3 x 55 P

GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and are non-hazardous by USEPA & applicable state regulations.

PLACARDS REQUIRED

PLACARDS SUPPLIED ☐ YES ☐ NO- FURNISHED BY CARRIER

Printed/Typed Name	Signature	Month	Day	Year
KEVIN Ashton	Kevin Ashton	9	22	15

TRANSPORTER

Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Travis Dorman	T- D-	9	22	15

Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest.

Printed/Typed Name	Signature	Month	Day	Year

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

COPY 1 - WHITE - GENERATOR COPY 2 - PINK - TRANSPORTER COPY 3 - BLUE - CycleChem COPY 4 - CANARY - FACILITY

CVCC Clean Venture, Inc. **Trip Ticket #: 1818**

Driver: DOMNI,TRAVIS
Truck: ST114

Start Date: 9/22/2015	Start Time: 1:45PM	End Date: 9/22/15	End Time:
Start Miles: 218314	Start City: Brooklyn	End Miles:	End City: Brooklyn

Site Name & Address: Order #: 0 : Broker:

CYCLE CHEM - ELIZABETH (R)
217 South First Street

ELIZABETH,NJ/ 07206 (Union)
Contact: Connolly/Hughes
Phone: 908-355-5800 Cell: 908-246-2513

Trailer/RO:
Begin Empty Trl1: Trl2:

Time in:	Time out:	Date:

Manifest/BOL #:	Signature:

Site Name & Address: Order #: 1914 REF: 49779-1 (6134) Broker: PARSONS

NYSDEC TOP HAT CLEANERS
152 Graham Ave

Brooklyn,NY/Kin 11206 ()
Contact: Ed Ashton
Phone: 315-679-1170 Cell:

call contact when on the way- on site 1500- 1700. amoutn of drums generated may be different than what is scheduled.

Trailer/RO:
Live Load Trl1: Trl2:

3x 55 p

Time in: 3PM	Time out:	Date: 9/22/15

Manifest/BOL #: 101330	Signature:

Site Name & Address: Order #: 1914 REF: 49779-1 (6134) Broker: PARSONS

CYCLE CHEM - ELIZABETH (R)
217 South First Street

ELIZABETH,NJ/ 07206 (Union)
Contact: Connolly/Hughes
Phone: 908-355-5800 Cell: 908-246-2513

Trailer/RO:
Live Unload Trl1: Trl2:

Time in:	Time out:	Date:

Manifest/BOL #:	Signature:

CleanVenture/CycleChem

CVCC 170331

The Environmental Services Source

NON-HAZARDOUS SOLID WASTE

BILL OF LADING

24 Hour Emergency Number (908) 354-0210

GENERATOR

Generator's Name and Mailing Address NYSDEC
625 BROADWAY 12TH FLOOR
Albany, NY 12233

Generator's Phone ((518) 402-9813

BOL

152 GRAHAM AVE.
Brooklyn NY 11206

Transporter 1 Company Name
CLEAN VENTURE INC.

State Trans. ID-NJDEPE 16755

Transporter 2 Company Name

Decal No.-

Transporter's Phone ((908) 355-5800

Designated Facility Name and Site Address
Cycle Chem Inc.
217 South First Street
Elizabeth, NJ 07206

10. US EPA ID Number
NJD002200046

State Trans. ID-NJDEPE

Decal No.-

Transporter's Phone ( )

Facility's Phone ((908) 355-5800

	US DOT Description (Including Proper Shipping Name, Hazard Class or Division, ID Number and Packing Group)	Containers No.	Containers Type	Total Quantity	Unit Wt/Vol	Waste No.
a.	Non-DOT CHEMICAL PROCESS SOLID Non-RCRA	01	DM	300	P	ID27
b.	Non-DOT CHEMICAL PROCESS LIQUID Non-RCRA					ID72
c.	Non-DOT CHEMICAL PROCESS SOLID Non-RCRA					ID27
d.						

J. Additional Descriptions for Materials Listed Above

a. c.

b. d.

CCI Generator # and Product Codes: 975500/931440/130573/325509 (1)PC01-1 SOIL (2)REM002-2 LIQUIDS (3)PC01-3 DEBRIS/PPE

1X55

GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and are non-hazardous by USEPA & applicable state regulations.

PLACARDS REQUIRED

PLACARDS SUPPLIED ☐ YES ☐ NO- FURNISHED BY CARRIER

Printed/Typed Name	Signature	Month	Day	Year
Ed Ashton		9	23	15

TRANSPORTER

Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Travis Dowd		9	23	15

Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest.

Printed/Typed Name	Signature	Month	Day	Year

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

COPY 1 - WHITE - GENERATOR COPY 2 - PINK - TRANSPORTER COPY 3 - BLUE - CycleChem COPY 4 - CANARY - FACILITY

CVCC Clean Venture, Inc. **Trip Ticket #: 1847**

Driver: DOMNI,TRAVIS
Truck: ST114

Start Date: 9/23/2015	Start Time:	End Date:	End Time:
Start Miles:	Start City:	End Miles:	End City:

Site Name & Address: Order #: 0 : Broker:

CYCLE CHEM - ELIZABETH (R)
217 South First Street

ELIZABETH,NJ/ 07206 (Union)
Contact: Connolly/Hughes
Phone: 908-355-5800 Cell: 908-246-2513

Trailer/RO:
Begin Empty Trl1: Trl2:

Time in:	Time out:	Date:
Manifest/BOL #:	Signature:	

Site Name & Address: Order #: 1945 REF: 49779-1 (6134) Broker: PARSONS

NYSDEC TOP HAT CLEANERS
152 Graham Ave

Brooklyn,NY/Kin 11206 ()
Contact: Ed Ashton
Phone: 315-679-1170 Cell:

call contact when on the way- on site 1500- 1700. amoutn of drums generated may be different than what is scheduled.

Trailer/RO:
Live Load Trl1: Trl2:

1X55

Time in: 3:15	Time out:	Date: 9/23/15
Manifest/BOL #: 170331	Signature: X	

Site Name & Address: Order #: 1945 REF: 49779-1 (6134) Broker: PARSONS

CYCLE CHEM - ELIZABETH (R)
217 South First Street

ELIZABETH,NJ/ 07206 (Union)
Contact: Connolly/Hughes
Phone: 908-355-5800 Cell: 908-246-2513

Trailer/RO:
Live Unload Trl1: Trl2:

Time in:	Time out:	Date:
Manifest/BOL #:	Signature:	

V

CleanVenture/CycleChem

CVCC 170332

The Environmental Services Source

NON-HAZARDOUS SOLID WASTE

BILL OF LADING

Page 1 of 1 — 24 Hour Emergency Number (908) 354-0210

GENERATOR

Generator's Name and Mailing Address: NYSDEC
625 BROADWAY 12TH FLOOR
Albany, NY 12233
Generator's Phone ((518) 402-9813

BOL

152 GRAHAM AVE.
Brooklyn NY 11206

Transporter 1 Company Name: CLEAN VENTURE INC.
State Trans. ID-NJDEPE 16755
Transporter 2 Company Name
Decal No.-
Transporter's Phone ((908) 355-5800

Designated Facility Name and Site Address: Cycle Chem Inc.
217 South First Street
Elizabeth, NJ 07206
10. US EPA ID Number: NJD002200046
State Trans. ID-NJDEPE
Decal No.-
Transporter's Phone ( )
Facility's Phone ((908) 355-5800

	US DOT Description (Including Proper Shipping Name, Hazard Class or Division, ID Number and Packing Group)	Containers No.	Containers Type	Total Quantity	Unit Wt/Vol	Waste No.
a.	Non-DOT CHEMICAL PROCESS SOLID Non-RCRA	02	DM	400	P	ID27
b.	Non-DOT CHEMICAL PROCESS LIQUID Non-RCRA	01	DM	30	G	ID72
c.	Non-DOT CHEMICAL PROCESS SOLID Non-RCRA					ID27
d.						

J. Additional Descriptions for Materials Listed Above

a. c.

b. d.

CCI Generator # and Product Codes: 975500/931440/180574/325510 (1)PC01-1 SOIL (2)REM002-2 LIQUIDS (3)PC01-3 DEBRIS/PPE

3x55'

GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and are non-hazardous by USEPA & applicable state regulations.

PLACARDS REQUIRED — PLACARDS SUPPLIED ☐ YES ☐ NO- FURNISHED BY CARRIER

Printed/Typed Name	Signature	Month	Day	Year
X Ed Ashton	X Ed Ashton	9	24	15

TRANSPORTER

Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Travis Dimmi	T— D—	9	24	15

Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest.

Printed/Typed Name	Signature	Month	Day	Year

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

COPY 1 - WHITE - GENERATOR — COPY 2 - PINK - TRANSPORTER — COPY 3 - BLUE - CycleChem — COPY 4 - CANARY - FACILITY

CVCC Clean Venture, Inc. **Trip Ticket #: 1876**

Driver: DOMNI,TRAVIS
Truck: ST114

Start Date: 9/24/2015	Start Time: 12:30 PM	End Date: 10/1/15	End Time:
Start Miles: 524	Start City: Brooklyn	End Miles:	End City: Same

Site Name & Address: Order #: 0 : Broker:

CYCLE CHEM - ELIZABETH (R)
217 South First Street

ELIZABETH,NJ/ 07206 (Union)
Contact: Connolly/Hughes
Phone: 908-355-5800 Cell: 908-246-2513

Trailer/RO:
Begin Empty Trl1: Trl2:

Time in: Time out: Date:

Manifest/BOL #: Signature:

Site Name & Address: Order #: 1974 REF: 49779-1 (6134) Broker: PARSONS

NYSDEC TOP HAT CLEANERS
152 Graham Ave

Brooklyn,NY/Kin 11206 ()
Contact: Ed Ashton
Phone: 315-679-1170 Cell:

call contact when on the way- on site 1500- 1700. amoutn of drums generated may be different than what is scheduled.

Trailer/RO:
Live Load Trl1: Trl2:

Time in: 1:00 PM Time out: Date: 9/24/15

Manifest/BOL #: 190332 Signature: X

Site Name & Address: Order #: 1974 REF: 49779-1 (6134) Broker: PARSONS

CYCLE CHEM - ELIZABETH (R)
217 South First Street

ELIZABETH,NJ/ 07206 (Union)
Contact: Connolly/Hughes
Phone: 908-355-5800 Cell: 908-246-2513

Trailer/RO:
Live Unload Trl1: Trl2:

Time in: Time out: Date:

Manifest/BOL #: Signature:

CleanVenture/CycleChem

CVCC 170333

The Environmental Services Source

NON-HAZARDOUS SOLID WASTE

BILL OF LADING

24 Hour Emergency Number (908) 354-0210

GENERATOR

Generator's Name and Mailing Address NYSDEC
625 BROADWAY 12TH FLOOR
Albany, NY 12233

Generator's Phone ((518) 402-9813

BOL 0170333

152 GRAHAM AVE.
Brooklyn NY 11206

Transporter 1 Company Name
CLEAN VENTURE INC.

State Trans. ID-NJDEPE 16755

Transporter 2 Company Name

Decal No.-

Transporter's Phone ((908) 355-5800

Designated Facility Name and Site Address
Cycle Chem Inc.
217 South First Street
Elizabeth, NJ 07206

10. US EPA ID Number
NJD002200046

State Trans. ID-NJDEPE

Decal No.-

Transporter's Phone ( )

Facility's Phone ((908) 355-5800

	US DOT Description (Including Proper Shipping Name, Hazard Class or Division, ID Number and Packing Group)	Containers No.	Containers Type	Total Quantity	Unit Wt/Vol	Waste No.
a.	Non-DOT CHEMICAL PROCESS SOLID Non-RCRA	01	DM	500	P	ID27
b.	Non-DOT CHEMICAL PROCESS LIQUID Non-RCRA					ID72
c.	Non-DOT CHEMICAL PROCESS SOLID Non-RCRA					ID27
d.						

J. Additional Descriptions for Materials Listed Above

a. c.

b. d.

CCI Generator # and Product Codes: 975500/931440/180575/325511 (1)PC01-1 SOIL (2)REM002-2 LIQUIDS (3)PC01-3 DEBRIS/PPE

GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and are non-hazardous by USEPA & applicable state regulations.

PLACARDS REQUIRED N/A

PLACARDS SUPPLIED ☐ YES ☑ NO- FURNISHED BY CARRIER

Printed/Typed Name	Signature	Month	Day	Year
Xo Ed Ashta	Xo Ed	9	25	15

TRANSPORTER

Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
GILBERTO VELEZ	Gilberto Velez	9	25	15

Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest.

Printed/Typed Name	Signature	Month	Day	Year

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

COPY 1 - WHITE - GENERATOR COPY 2 - PINK - TRANSPORTER COPY 3 - BLUE - CycleChem COPY 4 - CANARY - FACILITY

3/3

CVCC Clean Venture, Inc. **Trip Ticket #: 1902**

Driver: VELEZ,GILBERTO
Truck: ST4

Start Date: 9/25/2015	Start Time:	End Date:	End Time:
Start Miles:	Start City:	End Miles:	End City:

Site Name & Address: Order #: 0 : Broker:

CYCLE CHEM - ELIZABETH (R)
217 South First Street

ELIZABETH,NJ/ 07206 (Union)
Contact: Connolly/Hughes
Phone: 908-355-5800 Cell: 908-246-2513

Trailer/RO:
Begin Empty Trl1: Trl2:

Time in:	Time out:	Date:
Manifest/BOL #:	Signature:	

Site Name & Address: Order #: 1996 REF: 49779-1 (6134) Broker: PARSONS

NYSDEC TOP HAT CLEANERS
152 Graham Ave

call contact when on the way- on site 1500- 1700. amoutn of drums generated may be different than what is scheduled.

Brooklyn,NY/Kin 11206 ()
Contact: Ed Ashton
Phone: 315-679-1170 Cell:

Trailer/RO:
Live Load Trl1: Trl2:

WAIT STANDBY P/U 1X55

Time in: 11:15 AM	Time out: 300 PM	Date: 9/25/15
Manifest/BOL #: BOL# 0170333	Signature: X	

Site Name & Address: Order #: 1996 REF: 49779-1 (6134) Broker: PARSONS

CYCLE CHEM - ELIZABETH (R)
217 South First Street

ELIZABETH,NJ/ 07206 (Union)
Contact: Connolly/Hughes
Phone: 908-355-5800 Cell: 908-246-2513

Trailer/RO:
Live Unload Trl1: Trl2:

Time in:	Time out:	Date:
Manifest/BOL #:	Signature:	

CleanVenture/CycleChem

CVCC 170329

The Environmental Services Source

NON-HAZARDOUS SOLID WASTE

BILL OF LADING

24 Hour Emergency Number (908) 354-0210

GENERATOR

Generator's Name and Mailing Address NYSDEC
625 BROADWAY 12TH FLOOR
Albany, NY 12233

Generator's Phone ((518) 402-9813

BOL

152 GRAHAM AVE.
Brooklyn NY 11206

Transporter 1 Company Name
CLEAN VENTURE INC.

State Trans. ID-NJDEPE 16755

Transporter 2 Company Name

Decal No.-

Transporter's Phone ((908) 355-5800

Designated Facility Name and Site Address
Cycle Chem Inc.
217 South First Street
Elizabeth, NJ 07206

10. US EPA ID Number
NJD002200048

State Trans. ID-NJDEPE

Decal No.-

Transporter's Phone ( )

Facility's Phone ((908) 355-5800

	US DOT Description (Including Proper Shipping Name, Hazard Class or Division, ID Number and Packing Group)	Containers No.	Containers Type	Total Quantity	Unit Wt/Vol	Waste No.
a.	Non-DOT CHEMICAL PROCESS SOLID Non-RCRA					ID27
b.	Non-DOT CHEMICAL PROCESS LIQUID Non-RCRA	02	DM	60	G	ID72
c.	Non-DOT CHEMICAL PROCESS SOLID Non-RCRA					ID27
d.						

J. Additional Descriptions for Materials Listed Above

a.

b.

c.

d.

CCI Generator # and Product Codes: 975500/931440/180571/325507 (1)PC01-1 SOIL (2)REM002-2 LIQUIDS
(3)PC01-3 DEBRIS/PPE

2x55's

GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and are non-hazardous by USEPA & applicable state regulations.

PLACARDS REQUIRED

PLACARDS SUPPLIED ☐ YES ☐ NO- FURNISHED BY CARRIER

Printed/Typed Name	Signature	Month	Day	Year
Ed Ashta	Ed Ashta	9	28	15

TRANSPORTER

Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Travis Domm	T D	9	28	15

Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest.

Printed/Typed Name	Signature	Month	Day	Year

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

COPY 1 - WHITE - GENERATOR COPY 2 - PINK - TRANSPORTER COPY 3 - BLUE - CycleChem COPY 4 - CANARY - FACILITY

cvcc Clean Venture, Inc. **Trip Ticket #: 1938**

Driver: DOMNI,TRAVIS
Truck: ST114

Start Date: 9/28/2015	Start Time: 7:15AM	End Date: 9/28/15	End Time: 3:30pm
Start Miles: N/A	Start City: QUEENS	End Miles: N/A	End City:

Site Name & Address: Order #: 0 : Broker:

CYCLE CHEM - ELIZABETH (R)
217 South First Street

ELIZABETH,NJ/ 07206 (Union)
Contact: Connolly/Hughes
Phone: 908-355-5800 Cell: 908-246-2513

Trailer/RO:
Begin Empty Trl1: Trl2:

Time in:	Time out:	Date:

Manifest/BOL #: Signature:

Site Name & Address: Order #: 2032 REF: 49779-1 (6134) Broker: PARSONS

NYSDEC TOP HAT CLEANERS
152 Graham Ave

Brooklyn,NY/Kin 11206 ()
Contact: Ed Ashton
Phone: 315-679-1170 Cell:

call contact when on the way- on site 1500- 1700. amoutn of drums generated may be different than what is scheduled.

2 x 55

Trailer/RO:
Live Load Trl1: Trl2:

TRUCK PROBLEMS.

Time in: 3PM	Time out:	Date: 9/28/15

Manifest/BOL #: NJB 170329 Signature: X

Site Name & Address: Order #: 2032 REF: 49779-1 (6134) Broker: PARSONS

CYCLE CHEM - ELIZABETH (R)
217 South First Street

ELIZABETH,NJ/ 07206 (Union)
Contact: Connolly/Hughes
Phone: 908-355-5800 Cell: 908-246-2513

Trailer/RO:
Live Unload Trl1: Trl2:

Time in:	Time out:	Date:

Manifest/BOL #: Signature:

CleanVenture/CycleChem

CVCC 170458

The Environmental Services Source

NON-HAZARDOUS SOLID WASTE

BILL OF LADING

Page 1 of 1

24 Hour Emergency Number (908) 354-0210

GENERATOR

Generator's Name and Mailing Address NYSDEC
625 BROADWAY 12TH FLOOR
Albany, NY 12233
Generator's Phone ((518) 402-9813

BOL

152 GRAHAM AVE.
Brooklyn NY 11206

Transporter 1 Company Name
CLEAN VENTURE INC.

State Trans. ID-NJDEPE 16755

Transporter 2 Company Name

Decal No.-

Transporter's Phone ((908) 355-5800

Designated Facility Name and Site Address 10. US EPA ID Number
Cycle Chem Inc.
217 South First Street
Elizabeth, NJ 07206 NJD002200046

State Trans. ID-NJDEPE

Decal No.-

Transporter's Phone ( )

Facility's Phone ((908)) 355-5800

	US DOT Description (Including Proper Shipping Name, Hazard Class or Division, ID Number and Packing Group)	Containers No.	Containers Type	Total Quantity	Unit Wt/Vol	Waste No.
a.	Non-DOT CHEMICAL PROCESS SOLID Non-RCRA	02	DM	600	P	ID27
b.	Non-DOT CHEMICAL PROCESS LIQUID Non-RCRA	03	DM	150	P	ID72
c.	Non-DOT CHEMICAL PROCESS SOLID Non-RCRA					ID27
d.						

J. Additional Descriptions for Materials Listed Above

a. c.

b. d.

CCI Generator # and Product Codes: 975500/931440/180927/325798 (1)PC01-1 SOIL (2)REN002-2 LIQUIDS
(3)PC01-3 DEBRIS/PPE

5x 55p

GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and are non-hazardous by USEPA & applicable state regulations.

PLACARDS REQUIRED PLACARDS SUPPLIED ☐ YES ☐ NO- FURNISHED BY CARRIER

Printed/Typed Name	Signature	Month	Day	Year
Ed Ashton	Ed	9	29	15

TRANSPORTER

Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
T D	Travis Domici	9	29	15

Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest.

Printed/Typed Name	Signature	Month	Day	Year

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

COPY 1 - WHITE - GENERATOR COPY 2 - PINK - TRANSPORTER COPY 3 - BLUE - CycleChem COPY 4 - CANARY - FACILITY

cvcc Clean Venture, Inc. **Trip Ticket #: 1984**

Driver: DOMNI,TRAVIS
Truck: ST114

Start Date: 9/29/2015	Start Time: 5PM	End Date: 9/30/15	End Time:
Start Miles: N/A	Start City: BK	End Miles:	End City: Eliz

Site Name & Address: Order #: 0 : Broker:

CYCLE CHEM - ELIZABETH (R)
217 South First Street

ELIZABETH,NJ/ 07206 (Union)
Contact: Connolly/Hughes
Phone: 908-355-5800 Cell: 908-246-2513

Trailer/RO:
Begin Empty Trl1: Trl2:

Time in:	Time out:	Date:

Manifest/BOL #: Signature:

Site Name & Address: Order #: 2078 REF: 49779-1 (6134) Broker: PARSONS

NYSDEC TOP HAT CLEANERS
152 Graham Ave

Brooklyn,NY/Kin 11206 ()
Contact: Ed Ashton
Phone: 315-679-1170 Cell:

call contact when on the way- on site 1500- 1700. amoutn of drums generated may be different than what is scheduled.

Trailer/RO:
Live Load Trl1: Trl2:

5x55 e

Time in: 6PM	Time out:	Date: 9/30/15

Manifest/BOL #: 120458 Signature: x

Site Name & Address: Order #: 2078 REF: 49779-1 (6134) Broker: PARSONS

CYCLE CHEM - ELIZABETH (R)
217 South First Street

ELIZABETH,NJ/ 07206 (Union)
Contact: Connolly/Hughes
Phone: 908-355-5800 Cell: 908-246-2513

Trailer/RO:
Live Unload Trl1: Trl2:

Time in:	Time out:	Date:

Manifest/BOL #: Signature:

CleanVenture/CycleChem

CVCC 170459

The Environmental Services Source

NON-HAZARDOUS SOLID WASTE

BILL OF LADING

24 Hour Emergency Number (908) 354-0210

GENERATOR

Generator's Name and Mailing Address NYSDEC
625 BROADWAY 12TH FLOOR
Albany, NY 12233
Generator's Phone ((518) 402-9813

BOL

152 GRAHAM AVE.
Brooklyn NY 11206

Transporter 1 Company Name
CLEAN VENTURE INC.

State Trans. ID-NJDEPE 16755

Transporter 2 Company Name

Decal No.-

Transporter's Phone ((908) 355-5800

Designated Facility Name and Site Address
Cycle Chem Inc.
217 South First Street
Elizabeth, NJ 07206

10. US EPA ID Number
NJD002200046

State Trans. ID-NJDEPE

Decal No.-

Transporter's Phone ( )

Facility's Phone ((908) 355-5800

	US DOT Description (Including Proper Shipping Name, Hazard Class or Division, ID Number and Packing Group)	Containers No.	Containers Type	Total Quantity	Unit Wt/Vol	Waste No.
a.	Non-DOT CHEMICAL PROCESS SOLID Non-RCRA					ID27
b.	Non-DOT CHEMICAL PROCESS LIQUID Non-RCRA	03	DM	70	G	ID72
c.	Non-DOT CHEMICAL PROCESS SOLID Non-RCRA					ID27
d.						

J. Additional Descriptions for Materials Listed Above

a. c.

b. d.

CCI Generator # and Product Codes: 975500/931440/180928/325799 (1)PC01-1 SOIL (2)REM002-2 LIQUIDS
(3)PC01-3 DEBRIS/PPE

3x55p

GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and are non-hazardous by USEPA & applicable state regulations.

PLACARDS REQUIRED

PLACARDS SUPPLIED ☐ YES ☐ NO- FURNISHED BY CARRIER

Printed/Typed Name	Signature	Month	Day	Year
Ed Ashton		9	30	15

TRANSPORTER

Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Travis Domni		9	30	15

Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest.

Printed/Typed Name	Signature	Month	Day	Year

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

COPY 1 - WHITE - GENERATOR COPY 2 - PINK - TRANSPORTER COPY 3 - BLUE - CycleChem COPY 4 - CANARY - FACILITY

CVCC Clean Venture, Inc. **Trip Ticket #: 2032**

Driver: DOMNI,TRAVIS	
Truck: ST15	

Start Date: 9/30/2015	Start Time:	End Date:	End Time:
Start Miles:	Start City:	End Miles:	End City: Bronx

Site Name & Address: Order #: 0 : Broker:

CYCLE CHEM - ELIZABETH (R)
217 South First Street

ELIZABETH,NJ/ 07206 (Union)
Contact: Connolly/Hughes — Trailer/RO:
Phone: 908-355-5800 Cell: 908-246-2513 — Begin Empty Trl1: Trl2:

Time in:	Time out:	Date:
Manifest/BOL #:	Signature:	

Site Name & Address: Order #: 2126 REF: 50006-1 (6134) Broker: RETAIL ENVIRONMENTAL COMPLIANCE

SPEEDWAY 7824 — see map for drum location. you can sign "on behalf of" generator
285 East 233rd St

BRONX,NY/ 10470 ()
Contact: Mike Matri — Trailer/RO:
Phone: -- Cell: — Live Load Trl1: Trl2:

Time in:	Time out:	Date:
Manifest/BOL #:	Signature:	

Site Name & Address: Order #: 2126 REF: 50006-1 (6134) Broker: RETAIL ENVIRONMENTAL COMPLIANCE

CYCLE CHEM - ELIZABETH (R) — TOP HAT CLEANERS
217 South First Street — 157 ... AVE / BX

ELIZABETH,NJ/ 07206 (Union)
Contact: Connolly/Hughes — Trailer/RO:
Phone: 908-355-5800 Cell: 908-246-2513 — Live Unload Trl1: Trl2:

3x55

Time in:	Time out:	Date:
Manifest/BOL #:	Signature:	

CleanVenture/CycleChem

CVCC 170553

NON-HAZARDOUS SOLID WASTE

The Environmental Services Source

BILL OF LADING

24 Hour Emergency Number (908) 354-0210

Generator's Name and Mailing Address: NYSDEC
625 BROADWAY 12TH FLOOR
Albany, NY 12233
Generator's Phone ((518) 402-9813

BOL
152 GRAHAM AVE.
Brooklyn NY 11206

Transporter 1 Company Name: CLEAN VENTURE INC.

State Trans. ID-NJDEPE 16755
Decal No.-
Transporter's Phone ((908) 355-5800

Transporter 2 Company Name:

State Trans. ID-NJDEPE
Decal No.-
Transporter's Phone ( )

Designated Facility Name and Site Address:
Cycle Chem Inc.
217 South First Street
Elizabeth, NJ 07206

10. US EPA ID Number: NJD002200046

Facility's Phone ((908)) 355-5800

GENERATOR

	US DOT Description (Including Proper Shipping Name, Hazard Class or Division, ID Number and Packing Group)	Containers No.	Containers Type	Total Quantity	Unit Wt/Vol	Waste No.
a.	Non-DOT CHEMICAL PROCESS LIQUID Non-RCRA	01	DM	20	G	ID72
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above

a.
b.
c.
d.

CCI Generator # and Product Codes: 975500/931440/181191/326063 (1)REM002-2 LIQUIDS

1x55

GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and are non-hazardous by USEPA & applicable state regulations.

PLACARDS REQUIRED

PLACARDS SUPPLIED ☐ YES ☐ NO- FURNISHED BY CARRIER

Printed/Typed Name	Signature	Month	Day	Year
X Ed Ashton	X Ed Ashton	10	13	15

TRANSPORTER

Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Travis Domini	T R	10	13	15

Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest.

Printed/Typed Name	Signature	Month	Day	Year

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

COPY 1 - WHITE - GENERATOR COPY 2 - PINK - TRANSPORTER COPY 3 - BLUE - CycleChem COPY 4 - CANARY - FACILITY

cvcc Clean Venture, Inc. **Trip Ticket #: 2324**

Driver: DOMNI,TRAVIS
Truck: ST114

Start Date: 10/13/2015	Start Time: 1145PM	End Date: 10/13/15	End Time:
Start Miles: 246236	Start City: BK	End Miles:	End City:

Site Name & Address: Order #: 0 : Broker:

CYCLE CHEM - ELIZABETH (R)
217 South First Street

ELIZABETH,NJ/ 07206 (Union)
Contact: Connolly/Hughes Trailer/RO:
Phone: 908-355-5800 Cell: 908-246-2513 Begin Empty Trl1: Trl2:

Time in: Time out: Date:

Manifest/BOL #: Signature:

Site Name & Address: Order #: 2415 REF: 49799-2 (6134) Broker: PARSONS

NYSDEC TOP HAT CLEANERS 1500- 1700
152 Graham Ave

Brooklyn,NY/Kin 11206 ()
Contact: Ed Ashton Trailer/RO:
Phone: 315-679-1170 Cell: Live Load Trl1: Trl2:

1x55

Time in: Time out: Date: 10/13/15

Manifest/BOL #: 140553 Signature:

Site Name & Address: Order #: 2415 REF: 49799-2 (6134) Broker: PARSONS

CYCLE CHEM - ELIZABETH (R)
217 South First Street

ELIZABETH,NJ/ 07206 (Union)
Contact: Connolly/Hughes Trailer/RO:
Phone: 908-355-5800 Cell: 908-246-2513 Live Unload Trl1: Trl2:

Time in: Time out: Date:

Manifest/BOL #: Signature:

APPENDIX I

AIR MONITORING DATA LOGS (DATA PROVIDED ON DISK)