July 15, 2016

Ms. Jamie Verrigni
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau C
625 Broadway – 11th Floor
Albany, New York 12233-7014

RE: Periodic Review Report
Orangeburg Shopping Center, Orangetown, NY
NYSDEC Site Number C344066

Dear Ms. Verrigni:

Enclosed is the *Periodic Review Report* for the above referenced site prepared by Groundwater & Environmental Services, Inc. (GES) on behalf of UB Orangeburg, LLC. The report summarizes work performed at the site from June 16, 2015 through June 24, 2016.

If you have any questions or comments regarding this submittal, please contact Dan Konchan or Herb Woike of GES at (866) 839-5195 at extensions 3835 and 3534 respectively.

Sincerely,

Dan Konchan
Digitally signed by Dan Konchan
DN: cn=Dan Konchan, o=GES, ou=LHV, email=dkonchan@gesonline.com, c=US
Date: 2016.07.13 13:54:33 -04'00'

Dan Konchan
Junior Geologist

Herb Woike
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2016.07.14 10:45:48 -04'00'

Herbert E. Woike
Senior Project Manager

cc: Monica Roth, UB Orangeburg, LLC
Stephan Rapaglia, UB Orangeburg, LLC (e-copy)
Miyun Sung, UB Orangeburg, LLC (e-copy)
Renata Ockerby, New York State Department of Health
Amen Omorogbe, New York State Department of Environmental Conservation
Hilton Soniker, Esq., JLJ Management
Gerald H. Cresap, Jr., P.E., Groundwater & Environmental Services, Inc.

Attachment

PERIODIC REVIEW REPORT
July 2016

Orangeburg (Orangetown) Shopping Center
Rockland County, New York

NYSDEC Site Number: C344066

Prepared for:

UB Orangeburg, LLC
321 Railroad Avenue
Greenwich, Connecticut 06830

Prepared by:

Groundwater & Environmental Services, Inc.
16 Mount Ebo Road South, Suite 21
Brewster, New York 10509

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APPENDICES

1.0 EXECUTIVE SUMMARY

This document is required as an element of the remedial program at the Orangeburg (Orangetown) Shopping Center, located in the Town of Orangetown (Orangeburg), County of Rockland, New York (hereinafter referred to as the "site") under the New York State (NYS) Brownfield Cleanup Program (BCP) administered by the New York State Department of Environmental Conservation (NYSDEC). The site remediation activities have been conducted in accordance with the Brownfield Cleanup Agreement (BCA) Index #A3-0563-0906, site #C344066. JLJ Management Company (hereinafter referred to as the "JLJ") entered into a BCA with the NYSDEC in January of 2007 to remediate a 1.33-acre portion of the approximately 11-acre property containing chlorinated solvent compounds above NYSDEC standards. The subject property was purchased from JLJ by UB Orangeburg, LLC in 2012. On March 28, 2012, the Certificate of Completion was officially transferred from JLJ to UB Orangeburg, LLC.

Overall, the remedial activities outlined in the Site Management Plan (SMP) have been successful. Groundwater concentrations of tetrachloroethene, trichloroethene, Cis-1,2-dichloroethene, Trans-1,2-dichloroethene, 1,1-Dichloroethene, and Vinyl Chloride (constituents of concern) in down gradient well MW-10 have been reduced to below NYSDEC standards. Concentrations of constituents of concern (COCs) in the source area have also been reduced, with the exception of vinyl chloride which has increased at several wells. Based on the observed decreases of tetrachloroethene, trichloroethene, Cis-1,2-dichloroethene, Trans-1,2-dichloroethene and 1,1-Dichloroethene and the observed increases of vinyl chloride and ethene, bio-augmented degradation of chlorinated solvent compounds is occurring. Based on data trends, the ability for the remedial program to achieve the remedial objectives for the site appears plausible.

No major non-compliance issues have been identified during the monitoring period.

GES, on behalf of UB Orangeburg, LLC, requests the following changes to the Site Management Plan (SMP):

- Permanent decommissioning of the sub-slab depressurization systems (SSDSs) was denied by the NYSDEC and the New York State Department of Health (NYSDOH). Based on the review of the April and December 2015 SVI sampling results the NYSDOH felt it was not appropriate to permanently decommission the SSDSs, however they stated the SSDSs could remain shut down for the majority of the 2016 Calendar year and will be re-evaluated after the November 2016 groundwater and SVI sampling events.

2.0 SITE OVERVIEW

The approximate geographical coordinates for the Property are 41 degrees, 2 minutes, 41.6 seconds North (Latitude) by 73 degrees, 57 minutes, 10.4 seconds West (Longitude). The Property is comprised of one (1) parcel (Section, Lot & Block: 74.10-67-1) that covers an area of approximately 11 acres. Included are the following: a Site Location Map (**Figure 1**) for the general Property location, a Site Map (**Figure 2**) showing the current key site features at the

subject Property, and a Bio-Augmentation System Well Location Map (**Figure 3**) showing the current locations of active injection and monitoring well points in the vicinity of building #2.

Contamination was first observed at the site after a broken sewer line leaving the former Sparkle Cleaners Dry Cleaners was identified. The first remedial activity consisted of source removal activities and the repair of the sewer line in January of 2009. After completion of the remedial work described in Construction Completion Report #1: Source Removal (CCR-1), some contamination was left in the subsurface at this site, which is hereafter referred to as "remaining contamination." A SMP was prepared to manage remaining contamination at the site until the Environmental Easement (EE) is extinguished in accordance with ECL Article 71, Title 36. Components of the selected remedy consist of a sub-surface depressurization system (SSDS) and a bio-augmented injection gallery.

- Because of the residual contaminated subsurface soil and contaminated groundwater, the SSDS was designed to mitigate potential vapor intrusion from residual chlorinated VOC contamination into the southern portion of building #2, which businesses include: former Sparkle Cleaners (currently vacant), former The Deli Spot (currently vacant), and New China House. The SSDS is configured to create a negative pressure (relative to the indoor environment) within the area beneath the concrete floor slabs of the businesses within the southern portion of building #2 thereby minimizing the potential for migration of contaminant vapor into the indoor air of the tenant spaces. The system was installed between February and May 2010, and it was activated in May 2010. The system as originally designed did not achieve the performance standard, and it was subsequently modified. Additional system performance testing was completed in June 2010 and a modified plan prepared and approved by NYSDEC in August 2010. Modifications were implemented between August and September 2010. The system was re-started with additional blowers in place on September 29, 2010, and verified operation with another performance (vacuum response) test. Late in 2010, it was observed that ongoing heating, venting, and air conditioning (HVAC) issues in the building potentially affected system performance. These issues were the result of foundation leaking and back draft issues associated with furnaces and other fans. These issues were resolved in early 2011. The system was re-inspected in March to verify resolution of the issues. In late April 2011, three vapor-monitoring points were replaced in the New China Restaurant and another system check performed. This test verified that the system achieved measured vacuum greater than 0.0025 in-wc across the slab in the three tenant spaces.

- Because of the presence of contaminated groundwater and residual soil contamination under building #2, a bioaugmentation treatment system was designed. This treatment promotes in situ microbial degradation of contaminants in saturated soil and groundwater. Addition of a bio-stimulant (molasses) to subsurface soil and groundwater act as an electron donor that stimulates metabolic reduction of chlorinated VOCs to ethene via microorganisms that have been detected as being present at a site, as have bacteria of the genus *Dehalococcoides* (in MW-5 and MW-6) and *Dehalobacter* (in MW-5). Bioaugmentation injection points and manifold piping were installed after the source removal excavation between February and April 2010. A batch injection tank connects to the manifold via manual gate valves to direct electron donor solution (a 10% molasses solution) to control flow to the injection points. Additional injection points were installed during April and May of 2012 and January of

2014 in accordance to the *Remedial Action Work Plan* (RAWP). Baseline and post-injection sampling (from a network of monitoring wells), monitoring, and laboratory analysis provide the means to monitor treatment effectiveness. The initial round of injections was completed in May, July and November 2010 and monitored. The first round of treatment indicated bioaugmentation was enhancing biodegradation and dechlorination of the contaminants. The results also suggest that additional injections of electron donor solution would enhance treatment.

A work plan for permanent SSDSs shutdown was submitted to the NYSDEC and NYSDOH (the departments) on July 8, 2015. On July 29, 2015 permanent decommissioning of the sub-slab depressurization systems (SSDSs) was denied by the departments. Based on the review of the April and December 2015 SVI sampling results the departments felt it was not appropriate to permanently decommission the SSDSs, however they stated the SSDSs could remain temporarily shut down for the majority of the 2016 Calendar year. Temporary shut-down activities were completed on August 17, 2015. Regulatory correspondences are attached as **Appendix A**.

Bioaugmentation monitoring and treatment of groundwater will continue, as determined by the NYSDEC, until residual groundwater concentrations are found to be consistently below NYSDEC standards or have become asymptotic at an acceptable level over an extended period. This treatment will continue until permission to discontinue is granted in writing by the NYSDEC. If groundwater contaminant concentrations become asymptotic at a level that is not acceptable to the NYSDEC, additional source removal, treatment, and/or control measures will be evaluated.

Conditions that warrant discontinuing the bioaugmentation treatment system include contaminant concentrations in groundwater that: (1) reach levels that are consistently below GWQS, (2) have become asymptotic to a low level over an extended period of time as accepted by the NYSDEC, or (3) the NYSDEC has determined that the bioaugmentation treatment system has reached the limit of its effectiveness. This assessment will be based in part on post-remediation contaminant levels in groundwater collected from monitoring wells located throughout the site. Systems will remain in place and operational until permission to discontinue their use is granted in writing by the NYSDEC.

3.0 EVALUATION OF REMEDY PERFORMANCE AND EFFECTIVNESS

3.1 Sub-Slab Depressurization System Evaluation

Quarterly Operation Maintenance and Monitoring (OM&M) visits were not conducted during the previous year due to the temporary shutdown of the SSDSs.

3.2 Bioaugmentation System Evaluation

Baseline and post-injection sampling (from a network of monitoring wells), monitoring, and laboratory analysis provide the means to monitor treatment effectiveness. Overall, a

total of 11 injection events have been completed since August 2012. A total approximate volume of 7,700 gallons of 10% molasses solution has been injected over this period.

The last molasses injection event was completed in June of 2014. Since that time, total organic carbon (TOC) levels in the targeted area (MW-5) have been within range indicating that molasses injections were not needed at the time. If TOC levels are above or below the targeted range, further molasses injection activities will be conducted.

A review of the data collected during this monitoring period indicates the selected remedy has been effective. Data indicates that reactions associated with the reductive transformation pathway for chlorinated solvents are occurring. Concentrations of the COCs at monitoring well MW-4 have been below GWQS levels for the last year except for the March 2016 sampling event. COC concentrations in MW-5 have been slightly increasing over the current monitoring period. Although the recent concentration has indicated an increase, the overall groundwater concentrations indicate a decreasing trend at monitoring well MW-5 and within the aquifer. MW-5 has historically had the highest concentrations of COCs. Please refer to **Figures 6** and **Table 4** for a summary of the concentrations and trends of the constituents of concerns. As illustrated on **Figure 5** and presented in **Tables 2** and **3**, bio-parameter levels in monitoring well MW-5 have achieved the optimal geochemical target range for both TOC concentration (50 mg/L to 500 mg/L) and pH (6 to 8).

Although the concentrations of TOC and pH have been within the optimal range for bioaugmentation, due to the short-term concentration trends at monitoring well MW-5an additional injection event is being proposed in the area of monitoring well MW-5.

4.0 INSTITUTIONAL CONTROL & ENGINEERING CONTROL PLAN COMPLIANCE

4.1 Institutional Controls

Institutional Controls (ICs) at the site include compliance with the EE (**Appendix C**). The EE contains the following stipulations: no new drinking water wells can be installed and new business and residences must be connected to city water. The SMP stipulates all engineering controls (ECs) must be operated and maintained as specified in the SMP, all ECs on the controlled property must be inspected at a frequency and in a manner defined in the SMP, groundwater and other environmental monitoring must be performed as defined in this SMP and data and information pertinent to site management of the control property must be reported at a frequency and in a manner specified in the SMP.

During the monitoring period all ICs have been in compliance with the EE. No new drinking wells have been installed and no new businesses have been built which would require a connection to city water. All ECs have been operated and maintained as specified in the SMP. ECs are inspected in accordance to the required frequency set forth by the SMP. Groundwater and other environmental monitoring have been performed as defined in the SMP. Progress reports summarizing groundwater and other environmental monitoring are submitted to the NYSDEC

and NYSDOH as they are completed. Approval to discontinue submittal of monthly progress reports was granted by the NYSDEC in a letter dated August 25, 2014. Regulatory correspondences are attached as **Appendix A.**

4.2 Engineering Controls

The SMP requires that three separate ECs be maintained at the site: the SSDS, the bioaugmentation system and the composite cover system. Maintenance and inspections of the ECs at the site are reported to the NYSDEC and NYDOH as they are completed. Approval to discontinue submittal of monthly progress reports was granted by the NYSDEC in a letter dated August 25, 2014. Regulatory correspondences are attached as **Appendix A**.

Maintenance and inspections of the composite cover system consisting of existing impermeable surfaces (concrete slabs and asphalt paving) was conducted during the monitoring period. Photographs of the composite cover system are included in **Appendix D**.

Exposure to vapor intrusion within the southern portion of building #2 was mitigated by the operation of the SSDSs. This system is comprised of extraction piping, sub-slab ventilation blowers and associated appurtenances at former Sparkle Cleaners, the former Deli Spot, and New China House tenant spaces. The SSDSs creates a negative pressure which intercepts potential soil vapor from beneath the concrete floor using eight branches (SSD-1 through SSD-8) and transfers extracted vapors using in-line blowers to discharge locations outside the building (above the roof). Thirteen extraction points were installed between the three tenant spaces. Additional extraction points were added to each tenant space after the SSDSs was initially installed. Fifteen SSD vacuum monitoring points were also installed within the three tenant spaces and can be measured to verify vacuum beneath the concrete slab. A manometer was installed on the suction side of the in-line blower on each of the SSD branches to provide a visual indicator that the SSDSs is operating properly.

Because of the presence of contaminated groundwater and residual soil contamination under building #2, a bioaugmentation treatment system was designed. This treatment promotes in situ microbial degradation of contaminants in saturated soil and groundwater. Addition of a molasses solution to subsurface soil and groundwater acts as an electron donor that stimulates metabolic reduction of chlorinated VOCs to ethene. Bioaugmentation injection points and manifold piping were installed after the source removal excavation between February and April 2010. An additional nine nested bioaugmentation injection points and four additional monitoring wells were installed between April and May of 2012 and January of 2014 in accordance to the RAWP, submitted by Kleinfelder on December 19, 2011. Details regarding the installation of additional monitoring points and nested injection wells can be referenced in the *May 2012, January 2014 and February 2014 Monthly Progress Report*, submitted to the NYSDEC. The last molasses injection event was completed in June of 2014. Since that time, TOC levels in the targeted area (MW-5) have been within range. If TOC levels are above or below the targeted range, further molasses injection activities will be conducted. IC and EC certifications have been provided in **Appendix E**.

5.0 MONITORING PLAN COMPLIANCE

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the site, the composite cover system, and all affected site media identified in the SMP. Monitoring results and performance evaluation of the ECs are reported to the NYSDEC and NYDOH as they are completed. Approval to discontinue submittal of monthly progress reports was granted by the NYSDEC in a letter dated August 25, 2014. Regulatory correspondences are attached as **Appendix A**.

Components and schedule of the monitoring plan are summarized in **Chart 1** (on the following page).

Chart 1
Monitoring / Inspection Schedule

Monitoring Program	Frequency	Matrix	Analysis
Composite Cover System	Annual (minimum) or during other (more frequent) inspections as time and conditions warrant	Soil	Visual Inspection of Cover
SSDS	Shut down temporarily	Soil Vapor	Negative Pressure
Bioaugmentation system	Only when TOC levels are out of range	Groundwater	Total Organic Carbon
Groundwater	Quarterly	Groundwater	Chlorinated VOCs, ethene

5.1 Composite Cover Monitoring Compliance

On March 7, 2016, the composite cover system was inspected by a qualified environmental professional. The composite cover system was determined to be intact and impervious to surface water infiltration. Photographs of the composite cover system are provided in **Appendix D.** Additional inspections occurred during one or more of the following activities: quarterly groundwater sampling, quarterly SSDS OM&Ms, and/or site visits.

5.2 Sub-Slab Depressurization System Monitoring Compliance

SSDSs inspections and monitoring were not conducted this year due to the temporary shutdown of the SSDSs.

On December 16, 2015 a SVI investigation was performed. Ambient air and sub slab samples were taken from the Deli Spot, Sparkle Cleaners, and New China House. Sample areas are illustrated in **Figure 7**. Samples were submitted to Accutest Laboratories of Dayton, New Jersey (Accutest) and were analyzed for VTO15NYSVLL Volatiles. Concentrations for all COCs were below the NYSDOH Soil Vapor Indoor standards. These data are presented in **Table 6** and

Table 7. A work plan for permanent SSDSs shutdown was submitted to the NYSDEC and New York State Department of Health (NYSDOH) on July 8, 2015. On July 29, 2015 permanent decommissioning of the sub-slab depressurization systems (SSDSs) was denied by the NYSDEC and the NYSDOH. Based on the review of the April and December 2015 SVI sampling results the NYSDEC and DOH felt it was not appropriate to permanently decommission the SSDSs, however they stated the SSDSs could remain temporarily shut down for the majority of the 2016 Calendar year. Temporary shut-down activities were completed on August 17, 2015. Regulatory correspondences are attached as **Appendix A**.

5.3 Bioaugmentation System Monitoring Compliance

Inspections and monitoring of the bioaugmentation system were completed as described in the SMP. Overall, a total of 11 injection events have been completed since August 2012. A total approximate volume of 7,700 gallons of 10% molasses solution has been injected over this period. Injection volumes for each injection event have been summarized in the July 17, 2014 *Periodic Review Report.*

The last molasses injection event was completed in June of 2014. Since that time, TOC levels in the targeted area (MW-5) have been within range indicating that molasses injections were not needed at the time. If TOC levels are below the targeted range, further molasses injection activities will be conducted.

Quarterly groundwater monitoring and annual baseline sampling were completed as specified in the SMP and the NYSDEC SMP and PRR Response Letter dated August 25, 2014. Monitoring wells MW-3, MW-4, MW-5, MW-8A, MW-8B, and MW-10 were sampled each quarter. Samples were submitted to Accutest for the following analysis: VOCs, ethene, TOC, nitrate, iron (total, ferrous and ferric) and sulfate. Analytical data provided by Accutest have been included as **Appendix F** and are represented in **Tables 2, 4,** and **5**, and **Figures 4a** through **4c.** Each quarter the Category B laboratory analytical reports provided by Accutest were submitted to RemVer for review of data quality. Subsequent to the data review, RemVer provided a data usability summary report (DUSR), included with **Appendix G**. Groundwater monitoring logs have been included in **Appendix B** and have served as the inspection form for the groundwater monitoring network.

Once annually, down gradient well (MW-10) and centrally located well (MW-5) are submitted for the additional analysis of PCBs. Approval to eliminate the analyses for pesticides, semi-volatile organic compounds (SVOCs) and metals, was granted by the NYSDEC in a letter dated August 25, 2014. Annual baseline sampling was completed at monitoring wells MW-3, MW-4, MW-5, MW-8A, MW-8B, and MW-10 on March 7, 2016. Analytical data provided by Accutest have been included as **Appendix F**. Results from the annual baseline sampling can be referenced in **Tables 2, 4,** and **5**.

6.0 OPERATION, MONITORING & MAINTENANCE PLAN COMPLIANCE

The Operation, Monitoring & Maintenance Plans describe the measures necessary to operate, monitor, and maintain the mechanical components of the remedy selected for the site. This section has two specific OM&M plans: one for the SSDS and one for the bioaugmentation treatment system.

Annually, copies of the OM&M forms generated from field activities at the site are placed inside the on-site hazardous communications box. Additionally, a copy of the Sub-Slab Depressurization Operation, Monitoring, and Maintenance Plan, Bioaugmentation System Operation, Maintenance, and Monitoring Plan and manuals provided by the equipment manufacturer are stored in the hazardous communications box for reference.

6.1 Sub-Slab Depressurization OM&M Compliance

A work plan for permanent SSDSs shutdown was submitted to the NYSDEC and New York State Department of Health (NYSDOH) on July 8, 2015. On July 29, 2015 permanent decommissioning of the sub-slab depressurization systems (SSDSs) was denied by the NYSDOH. Based on the review of the April and December 2015 SVI sampling results the NYSDEC and DOH felt it was not appropriate to permanently decommission the SSDSs, however they stated the SSDSs could remain temporarily shut down for the majority of the 2016 Calendar year. Temporary shut-down activities were completed on August 17, 2015. Due to the shut down of the SSDSs, OM&M's were not completed this year. Regulatory correspondences are attached as **Appendix A**.

6.2 Bioaugmentation System OM&M Compliance

Bioaugmentation System OM&M visits were completed during quarterly sampling events, pre-/post-injection sampling events and molasses injection events as described in the Bioaugmentation System Operation, Maintenance, and Monitoring Plan. Each visit included the following activities to evaluate performance and operation of the system: an inspection for security issues, vandalism, system damage, equipment or conveyance malfunction, connection integrity, or environmental effects, gauging of BAS monitoring well network, collection of general groundwater chemistry parameters, pH adjustment titration for each monitoring point with field measured outside of the target range, visual inspection of piping stub-ups and BAS monitoring well road boxes and well pads and injection road boxes and road pads.

No groundwater titrations were performed during this monitoring period as all pH readings were within the optimal geochemical target range.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 Site Management Plan Compliance

During this monitoring period, all requirements set forth in the SMP have been completed. ICs described in the SMP are in place and in compliance. Monitoring and OM&M of the two ECs (composite cover and bioaugmentation system) were conducted during the monitoring period as specified in the SMP. OM&M of SSDSs have been suspended while the system is temporarily shut down. Inspections of the composite cover system were performed at a minimum frequency of once annually. Monitoring and OM&M of the bioaugmentation system were completed on a quarterly basis during the quarterly groundwater sampling events.

7.2 Performance and Effectiveness of Remedy

As outlined in the NYSDECs letter dated March 4, 2016, re-evaluation for permanent shutdown of the SSDS will require at least two additional rounds of SVI sampling. The next round of SVI sampling should be performed in conjunction with the 2016 Fourth Quarter groundwater monitoring event in order to provide data from both media. The second round of SVI sampling shall be determined based on a review of the data.

A total of 11 bioaugmentation injection events have been completed to date with an approximate total of 7,700 gallons of 10% molasses introduced into the subsurface. TOC concentrations are within the optimal geochemical target range in monitoring well MW-5. TOC concentrations in MW-5 can be referenced on **Table 2** and are graphically represented on **Figure 5**. Please refer to **Table 4** for a summary of the concentrations of the COCs for all currently sampled site monitoring wells. As demonstrated, monitoring well MW-5 exhibits an overall decreasing trend in groundwater concentrations since the initiation of the bioaugmentation remedy in August 2012. Based on the most recent groundwater data from March 2016, monitoring well MW-5 exhibits elevated concentrations of cis-1,2-Dichlorethene (458 ug/L)(**Figure 6**). In addition, monitoring well MW-5 exhibits low ORP levels over the monitoring period, ranging from -70.5 to -118.1 millivolts (mv). This indicates that favorable reducing conditions have been maintained during the application of the bioaugmentation remedy within the targeted treatment area.

GES evaluated VOC concentrations in groundwater using the Mann-Kendall analysis to identify potential trends. The results of this analysis indicate that concentrations of COCs in groundwater are decreasing or stable. Ethene, a byproduct of the reductive dechlorination of chlorinated ethenes (PCE, TCE, DCE, VC) was detected in the groundwater during the August 2015 sampling event. Bioaugmentation monitoring indicates that critical parameters (e.g. TOC, pH, ORP) are within target ranges. The combination of these factors strongly indicates the bioaugmentation remedy is effective and working as designed.

Based on this analysis GES recommends continued monitoring of the TOC analytical data with an additional bioaugmentation injection event as proposed below to re-activate the area around monitoring well MW-5:

- Target MW-5 for continued bioremediation by utilizing injection wells IP-3, IP-4, INJ-3 and INJ-4;
- Perform molasses injection (using a 10% solution) at a frequency of 4 to 6 months. This exact frequency will be determined based on the TOC data collected from MW-5;
- A total volume of 80 gallons of solution of molasses solution will be injected into each of the injection wells referenced above (320 gallons in total);
- Monitoring well MW-5 will be monitored for TOC, pH, DO, ORP, temperature, pH and conductivity to assess performance of the bioaugmentation remedy;
- Monitoring well MW-4 will be utilized as a control well, and will also be monitored for the parameters above;
- Continue to monitor trends for groundwater COC concentrations in MW-4 and MW-8A.

Groundwater monitoring will be conducted on a quarterly basis to evaluate the effectiveness of the bioaugmentation remedy. The groundwater quality parameters (TOC, pH, DO, ORP, temperature, pH and conductivity) will also be collected during quarterly sampling events for MW-4 and MW-5. These parameters will also be collected within 4 weeks after the completion of each injection event.

Prepared by:

Dan Konchan

Digitally signed by Dan Konchan
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Date: 2016.07.13 13:54:07 -04'00'

7/15/16

Dan Konchan Date
Junior Geologist

Reviewed by:

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2016.07.14 10:44:34 -04'00'

7/15/16

Herbert E. Woike Date
Senior Project Manager

Digitally signed by Gerald Cresap
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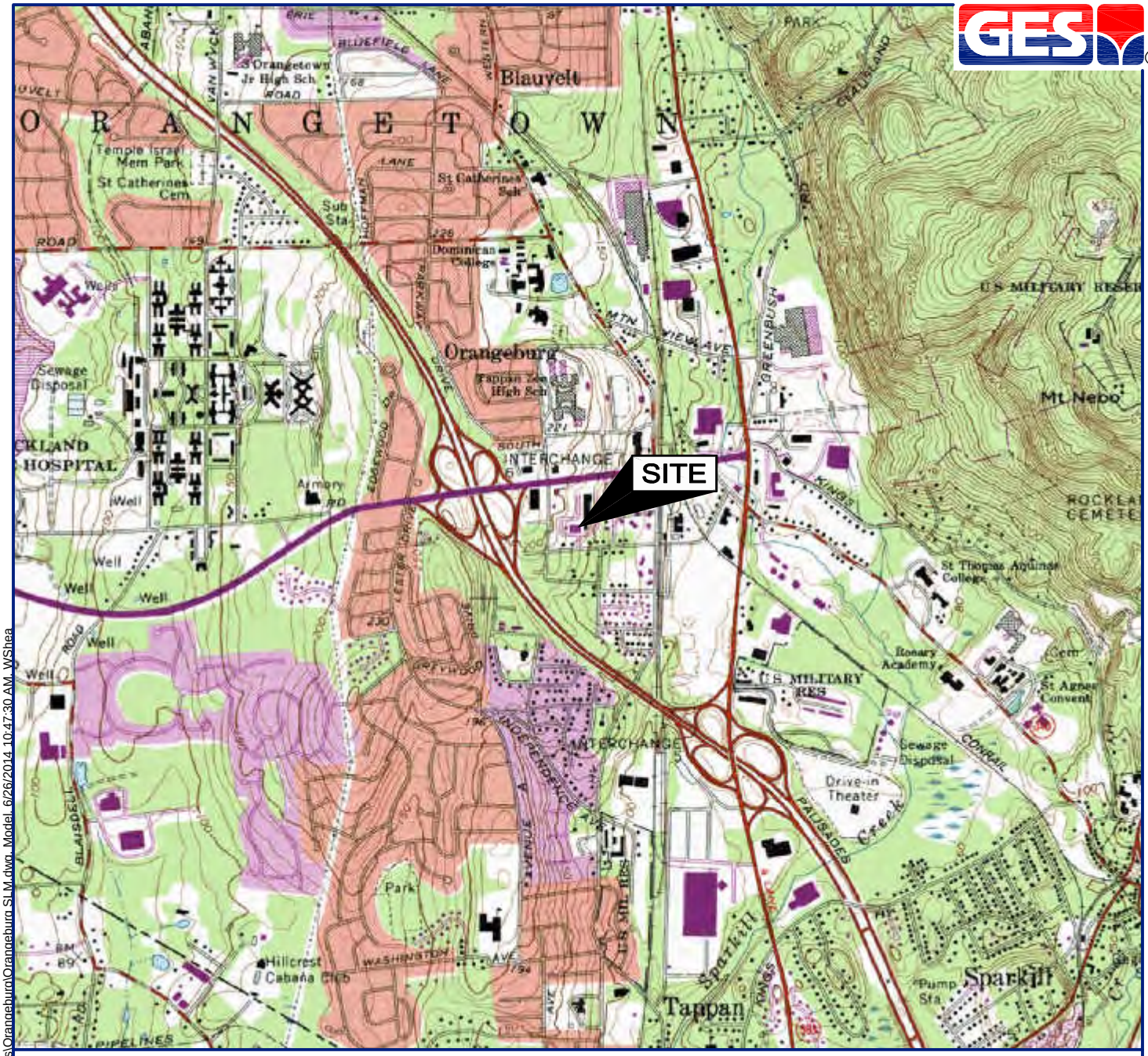
7/15/16

Gerald Cresap Jr, P.E. Date
Regional Engineering Manager

FIGURES



SOURCE: USGS 7.5 MINUTE SERIES
TOPOGRAPHIC QUADRANGLE 1979
NYACK, NEW YORK
CONTOUR INTERVAL = 10'

QUADRANGLE LOCATION

DRAFTED BY: W.G.S. (N.J.)	SITE LOCATION MAP
CHECKED BY: CA	UB ORANGEBURG, LLC 1-45 ORANGETOWN SHOPPING CENTER ORANGEBURG, NEW YORK
REVIEWED BY: MD	Groundwater & Environmental Services, Inc. 16 MT. EBO ROAD SOUTH, SUITE 21, BREWSTER, NEW YORK 10509
NORTH	SCALE IN FEET: 0 — 2000 / DATE: 6-26-14 / FIGURE: 1

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LEGEND

- PROPERTY BOUNDARY
- CHAIN LINK FENCE
- CATCH BASIN
- UTILITY MANHOLE
- UTILITY POLE
- LIGHT POLE
- FIRE HYDRANT
- MONITORING WELL
- DESTROYED MONITORING WELL
- SOIL VAPOR EXTRACTION WELL
- SS — UNDERGROUND SANITARY SEWER LINE
- OHU — OVERHEAD UTILITIES

DRAFTED BY: W.G.S. (N.J.)	SITE MAP
CHECKED BY: CA	UB ORANGEBURG, LLC 1-45 ORANGETOWN SHOPPING CENTER ORANGEBURG, NEW YORK
REVIEWED BY: MD	Groundwater & Environmental Services, Inc. 16 MT. EBO ROAD SOUTH, SUITE 21, BREWSTER, NEW YORK 10509
NORTH	SCALE IN FEET: 0 APPROXIMATE 50 / DATE: 6-26-14 / FIGURE: 2

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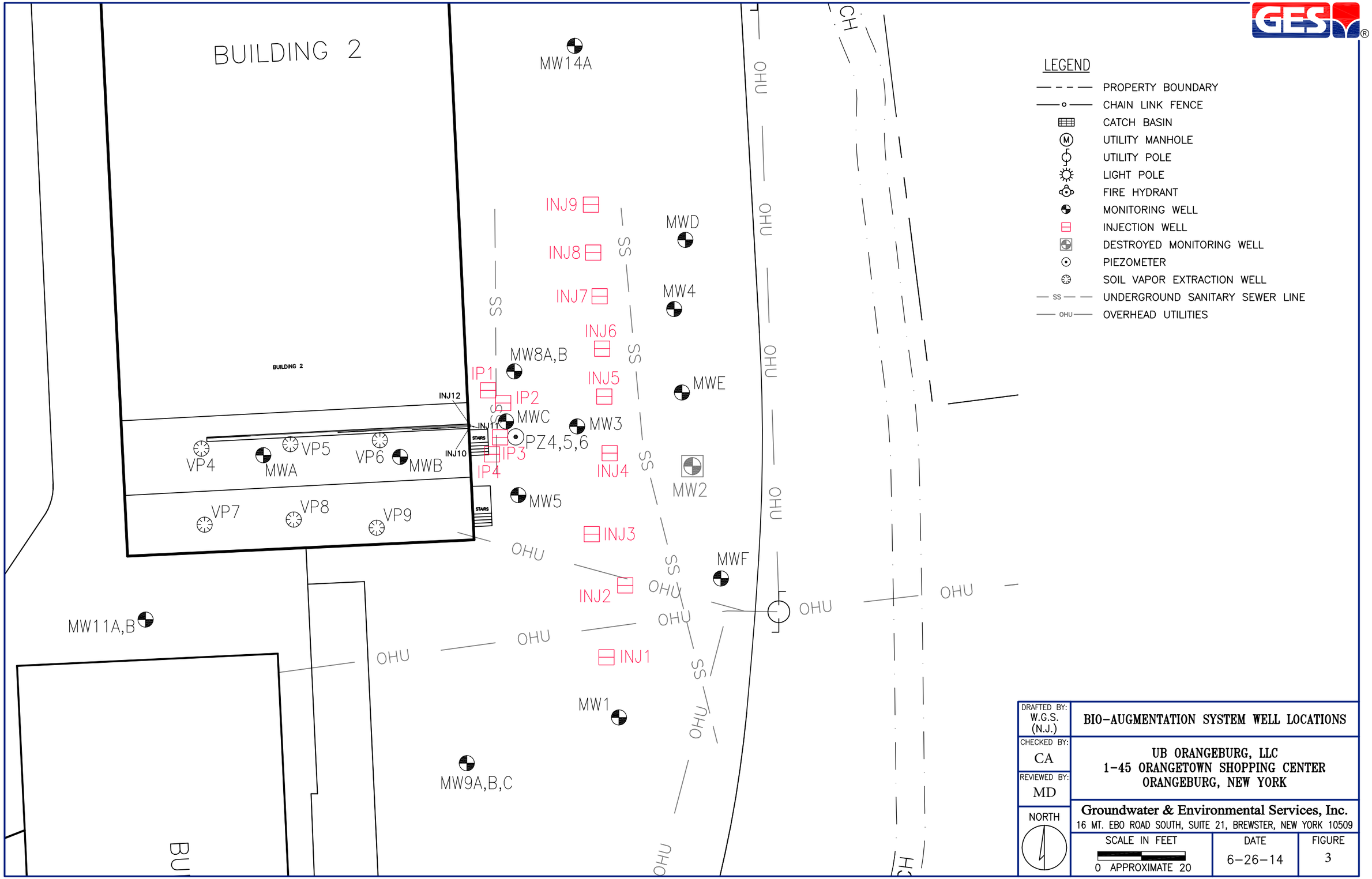

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LEGEND

- PROPERTY BOUNDARY
- CHAIN LINK FENCE
- CATCH BASIN
- UTILITY MANHOLE
- UTILITY POLE
- LIGHT POLE
- FIRE HYDRANT
- MONITORING WELL
- INJECTION WELL
- DESTROYED MONITORING WELL
- PIEZOMETER
- SS — UNDERGROUND SANITARY SEWER LINE
- OHU — OVERHEAD UTILITIES

125.00 — HISTORIC GROUNDWATER FLOW DIRECTION (inferred)
GROUNDWATER CONTOUR INTERVAL (FEET)

MW-5	WELL IDENTIFICATION
125.38	GROUNDWATER ELEVATION (feet)
ND<5.0	TETRACHLOROETHENE CONCENTRATION (µg/L)
9.6	TRICHLOROETHENE CONCENTRATION (µg/L)
783	CIS-1,2-DICHLOROETHENE CONCENTRATION (µg/L)
ND<5.0	TRANS-1,2- DICHLOROETHENE CONCENTRATION (µg/L)
ND<5.0	1,1-DICHLOROETHENE CONCENTRATION (µg/L)
41.3	VINYL CHLORIDE CONCENTRATION (µg/L)
0.32	ETHENE (ug/L)

NOTES
ND -Non-Detect
NA -Not available or not sampled for that parameter
µg/L -Microgram per liter
Red -Value exceeds NYSDEC TOGS 1.1.1 GWQS
MW-8B not used to generate groundwater contours

DRAFTED BY: BCS	DEEP AQUIFER CONTOUR AUGUST 17, 2015
CHECKED BY: DK	UB ORANGEBURG, LLC 1-45 ORANGETOWN SHOPPING CENTER ORANGEBURG, NEW YORK
REVIEWED BY: HW	Groundwater & Environmental Services, Inc. 16 MOUNT EBO ROAD SOUTH, SUITE 21, BREWSTER, NY 10509
NORTH	SCALE IN FEET: 0 Approximate 50 / DATE: 10-5-15 / FIGURE: 4a

LEGEND

- PROPERTY BOUNDARY
- CHAIN LINK FENCE
- CATCH BASIN
- UTILITY MANHOLE
- UTILITY POLE
- LIGHT POLE
- FIRE HYDRANT
- MONITORING WELL
- INJECTION WELL
- DESTROYED MONITORING WELL
- PIEZOMETER
- SS — UNDERGROUND SANITARY SEWER LINE
- OHU — OVERHEAD UTILITIES

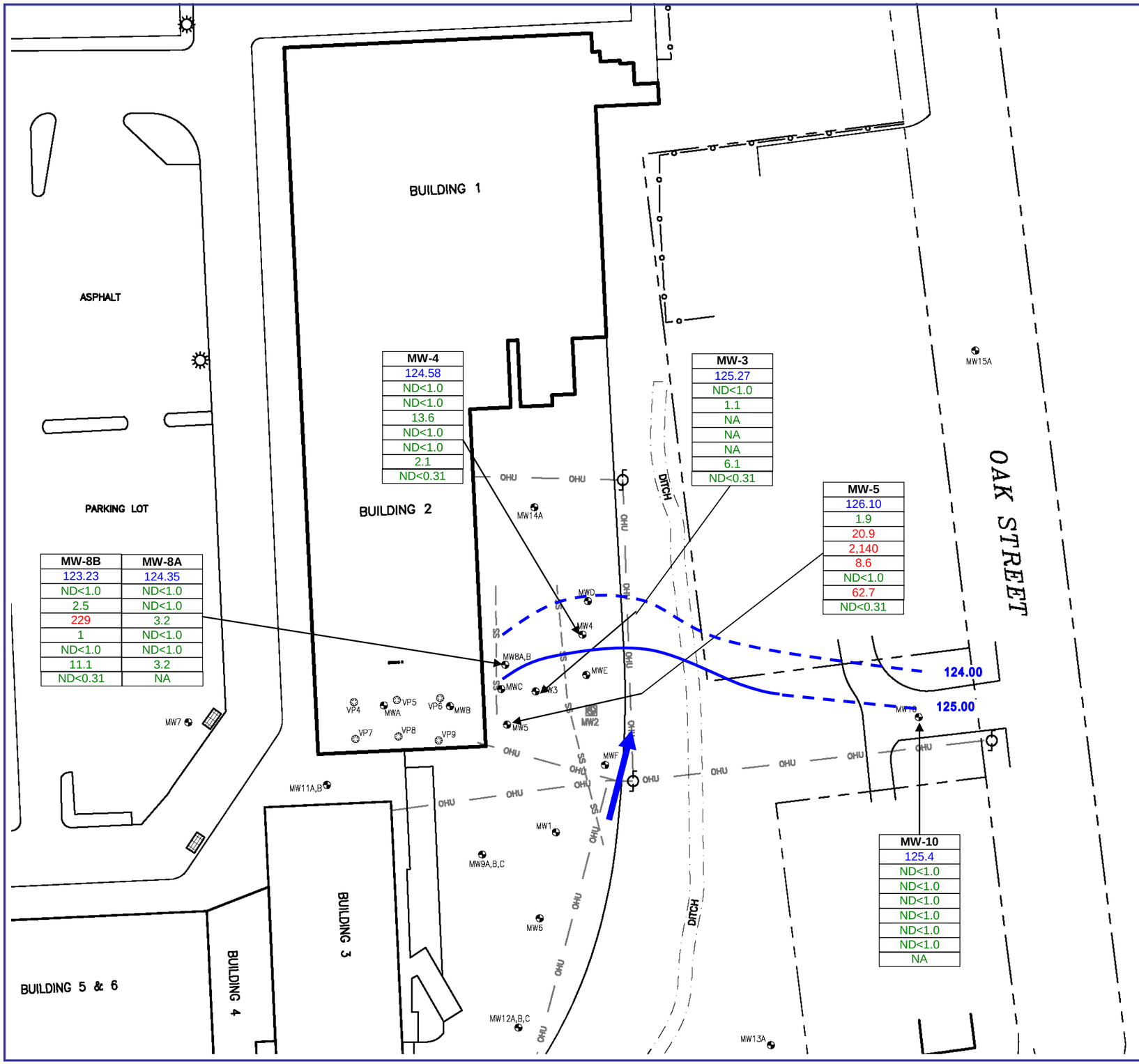
125.00 — HISTORIC GROUNDWATER FLOW DIRECTION (inferred)

MW-5	GROUNDWATER CONTOUR INTERVAL (FEET)
125.89	WELL IDENTIFICATION
ND<5.0	GROUNDWATER ELEVATION (feet)
19.8	TETRACHLOROETHENE CONCENTRATION (µg/L)
1,390	TRICHLOROETHENE CONCENTRATION (µg/L)
7.7	CIS-1,2-DICHLOROETHENE CONCENTRATION (µg/L)
ND<5.0	TRANS-1,2- DICHLOROETHENE CONCENTRATION (µg/L)
45.7	1,1-DICHLOROETHENE CONCENTRATION (µg/L)
ND<0.31	VINYL CHLORIDE CONCENTRATION (µg/L)
	ETHENE (ug/L)

NOTES

ND	-Non-Detect
NA	-Not available or not sampled for that parameter
µg/L	-Microgram per liter
Red	-Value exceeds NYSDEC TOGS 1.1.1 GWQS

DRAFTED BY: BCS	DEEP AQUIFER CONTOUR NOVEMBER 11, 2015
CHECKED BY: DK	UB ORANGEBURG, LLC 1-45 ORANGETOWN SHOPPING CENTER ORANGEBURG, NEW YORK
REVIEWED BY: HW	Groundwater & Environmental Services, Inc. 16 MOUNT EBO ROAD SOUTH, SUITE 21, BREWSTER, NY 10509
NORTH	SCALE IN FEET: 0 Approximate 50 / DATE: 12-3-15 / FIGURE: 4b



LEGEND

- PROPERTY BOUNDARY
- CHAIN LINK FENCE
- CATCH BASIN
- UTILITY MANHOLE
- UTILITY POLE
- LIGHT POLE
- FIRE HYDRANT
- MONITORING WELL
- INJECTION WELL
- DESTROYED MONITORING WELL
- PIEZOMETER
- SS — UNDERGROUND SANITARY SEWER LINE
- OHU — OVERHEAD UTILITIES

125.00 — HISTORIC GROUNDWATER FLOW DIRECTION (inferred)
GROUNDWATER CONTOUR INTERVAL (FEET)

MW-5	WELL IDENTIFICATION
126.10	GROUNDWATER ELEVATION (feet)
1.9	TETRACHLOROETHENE CONCENTRATION (µg/L)
20.9	TRICHLOROETHENE CONCENTRATION (µg/L)
2,140	CIS-1,2-DICHLOROETHENE CONCENTRATION (µg/L)
8.6	TRANS-1,2- DICHLOROETHENE CONCENTRATION (µg/L)
ND<1.0	1,1-DICHLOROETHENE CONCENTRATION (µg/L)
62.7	VINYL CHLORIDE CONCENTRATION (µg/L)
ND<0.31	ETHENE (ug/L)

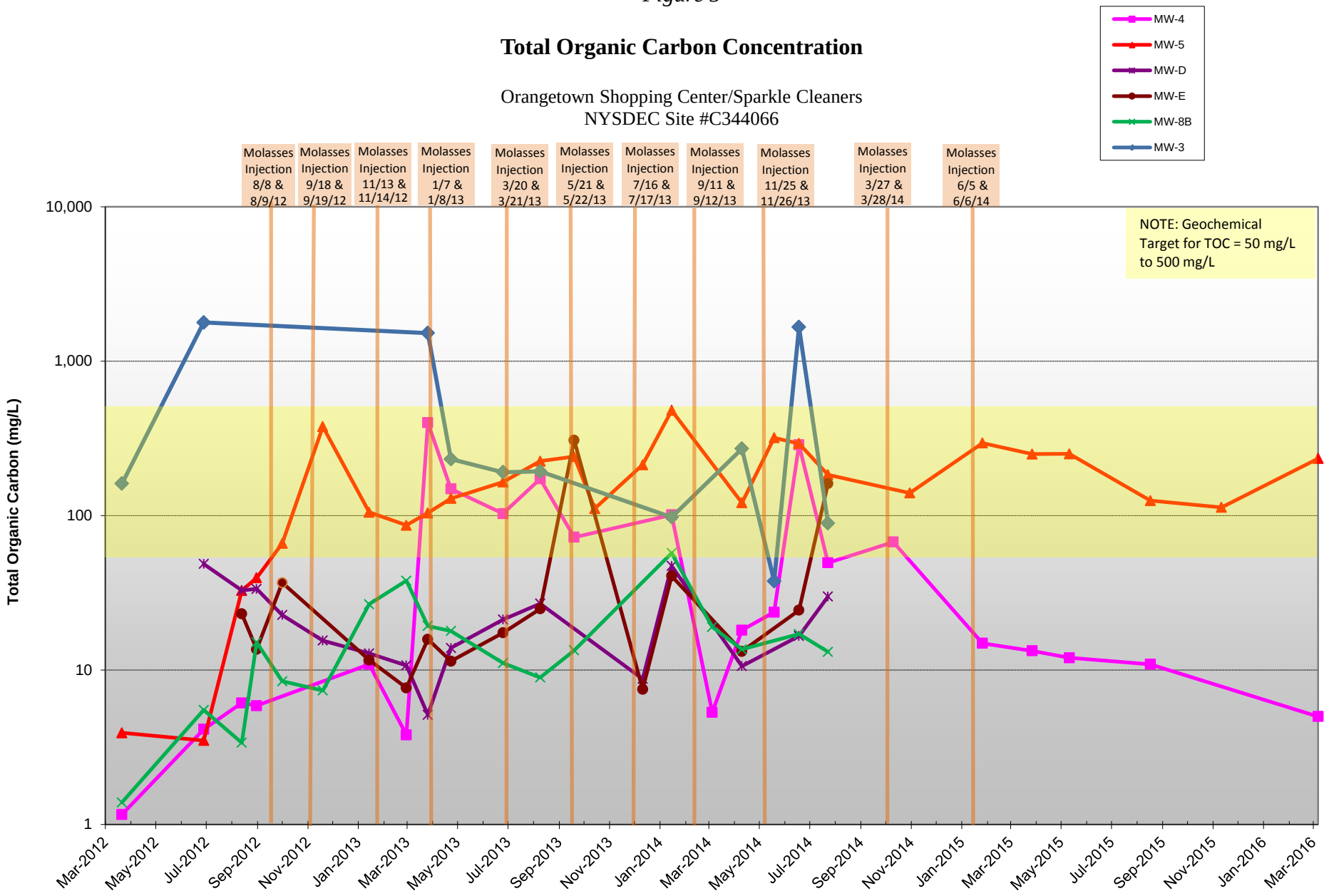
NOTES
ND -Non-Detect
NA -Not available or not sampled for that parameter
µg/L -Microgram per liter
Red -Value exceeds NYSDEC TOGS 1.1.1 GWQS
MW-8B not used to generate groundwater contours

DRAFTED BY: BCS	REGIONAL AQUIFER CONTOUR MARCH 7, 2016
CHECKED BY: DK	UB ORANGEBURG, LLC 1-45 ORANGETOWN SHOPPING CENTER ORANGEBURG, NEW YORK
REVIEWED BY: HW	Groundwater & Environmental Services, Inc. 16 MOUNT EBO ROAD SOUTH, SUITE 21, BREWSTER, NY 10509
NORTH	SCALE IN FEET: 0 Approximate 50 / DATE: 4-6-16 / FIGURE: 4c

Figure 5

Total Organic Carbon Concentration

Orangetown Shopping Center/Sparkle Cleaners
NYSDEC Site #C344066

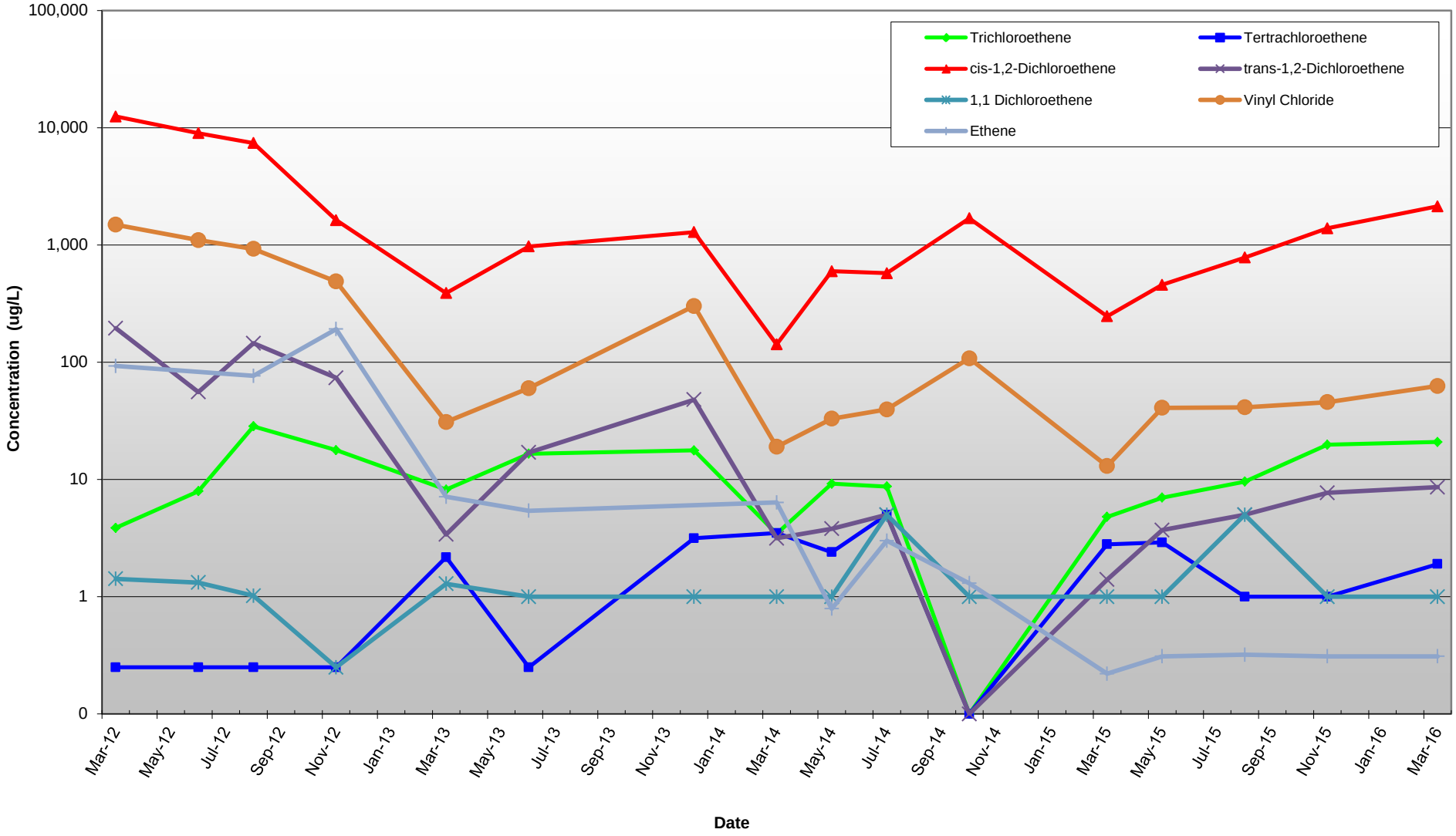


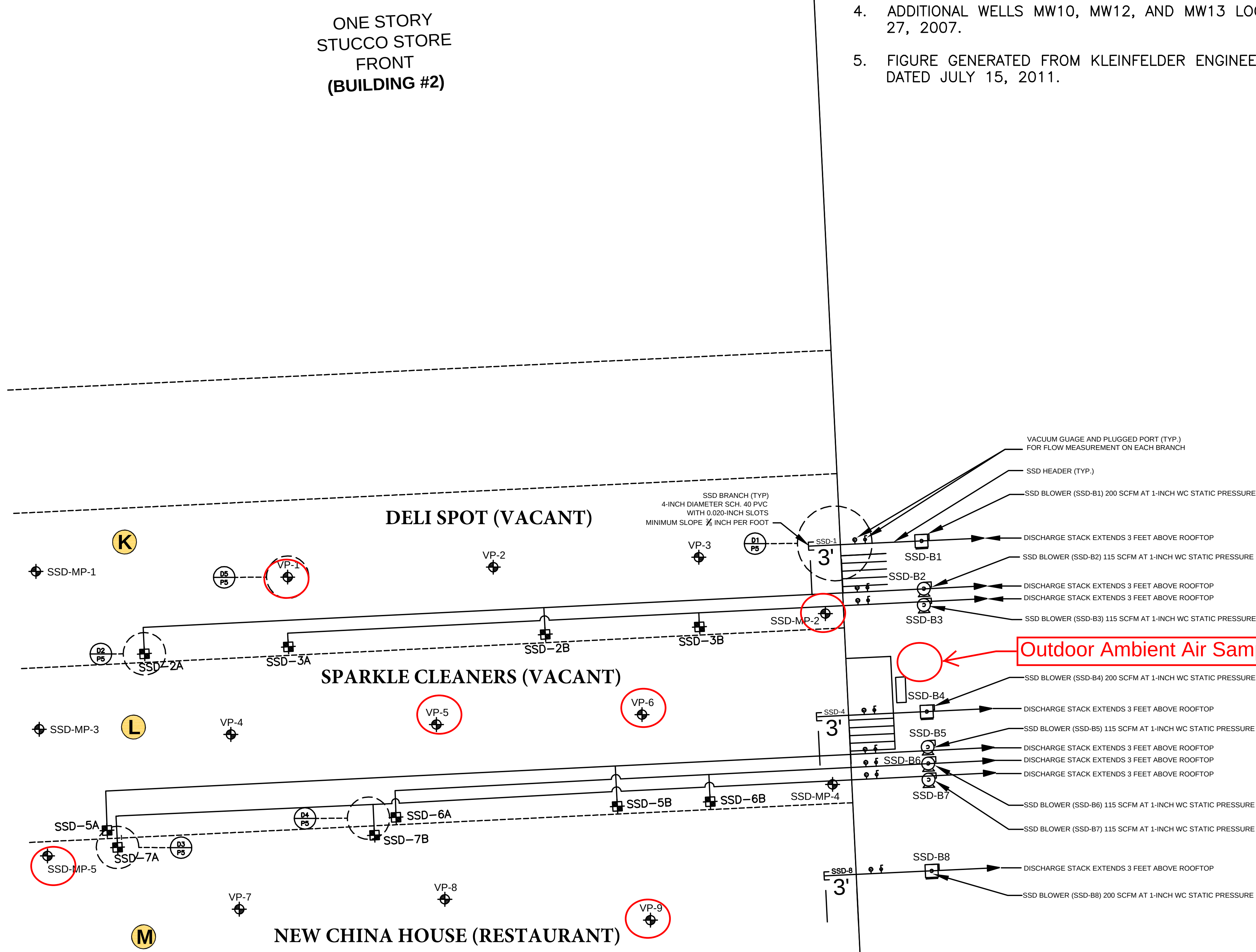
Date

Figure 6

MW-5
Chlorinated Solvent Reductive Transformation Pathway

Orangetown Shopping Center/Sparkle Cleaners
NYSDEC Site #C344066





SOURCE:

1. LAND LINK SURVEYORS P.C. SURVEY MAP DATED NOVEMBER 4, 2003.
2. SURVEY AMENDED TO SHOW NEW CERTIFICATION JUNE 1, 2005.
3. SURVEY AMENDED WELL LOCATION DECEMBER 19, 2007.
4. ADDITIONAL WELLS MW10, MW12, AND MW13 LOCATED DECEMBER 27, 2007.
5. FIGURE GENERATED FROM KLEINFELDER ENGINEERING FIGURE DATED JULY 15, 2011.

LEGEND

- SSD-MP-6 — SUB-SLAB MONITORING PORT
- SUB-SLAB VAPOR EXTRACTION WELL
- D1 / P5 — DETAIL NUMBER / PLATE NUMBER
- SSD BLOWER (115 SCFM)
- SSD BLOWER (200 SCFM)
- VACUUM GAUGE
- PLUGGED PORT

COMMERCIAL STORE ID TABLE (BUILDING #2)

- K — FORMER THE DELI SPOT
- L — FORMER SPARKLE CLEANERS
- M — NEW CHINA HOUSE

Sub-slab and/or ambient air sampling locations

NOTES:

1. THE EXTRACTION PIPING INSIDE THE BUILDING IS ROUTED ABOVE THE SUB-CEILING OR ALONG THE EXTERIOR WALL.
2. DISCHARGE STACKS EXTEND 3 FEET ABOVE THE ROOFTOP (TYP.).

DRAFTED BY: W.G.S. (N.J.)	Sub-Slab and Ambient Air Sampling Locations		
CHECKED BY: CA	UB ORANGEBURG, LLC 1-45 ORANGETOWN SHOPPING CENTER ORANGEBURG, NEW YORK		
REVIEWED BY: KB	Groundwater & Environmental Services, Inc. 16 MT. EBO ROAD SOUTH, SUITE 21, BREWSTER, NEW YORK 10509		
	NOT TO SCALE	DATE 10-24-14	FIGURE 7

M:\Graphics\1100-Patterson-LHV\Misc\Urstadt Biddle Properties\Orangeburg\Engineering\Orangeburg (KLF-details).dwg, B- (3), 10/24/2014 10:14:39 AM, WShea

TABLES

Orangetown Shopping Center/Sparkle Cleaners
NYSDEC Site # C344066

Table 1 - Groundwater Gauging

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Detector Reading (ppm)
MW-3	3/22/2012	166.67	38.37	128.30	0.9
	6/28/2012	166.67	41.68	124.99	0.3
	8/13/2012	166.67	-		0
	8/31/2012	166.67	43.20	123.47	0
	10/1/2012	166.67	42.55	124.12	0
	11/19/2012	166.67	42.47	124.20	0
	1/14/2013	166.67	42.85	123.82	0
	2/28/2013	166.67	42.40	124.27	0
	3/26/2013	166.67	39.30	127.37	0
	4/23/2013	166.67	40.00	126.67	0
	6/25/2013	166.67	36.63	130.04	NS
	12/11/2013	166.67	42.39	124.28	NS
	1/15/2014	166.67	42.27	124.40	NS
	3/5/2014	166.67	38.76	127.91	0
	4/10/2014	166.67	38.76	127.91	0
	5/19/2014	166.67	34.95	131.72	0
	6/18/2014	166.67	35.58	131.09	0
	7/23/2014	166.67	39.60	127.07	0
	10/10/2014	166.67	DRY	NS	0
	3/27/2015	166.67	34.02	132.65	0
	5/11/2015	166.67	40.10	126.57	0
	8/17/2015	166.67	42.50	124.17	0
	11/11/2015	166.67	36.14	130.53	0
	3/7/2016	166.67	41.40	125.27	0
MW-4	3/21/2012	165.88	37.50	128.38	4.0
	6/28/2012	165.88	42.15	123.73	0.8
	8/13/2012	165.88	43.75	122.13	0
	8/31/2012	165.88	44.55	121.33	0
	10/1/2012	165.88	46.20	119.68	0
	11/19/2012	165.88	45.60	120.28	0
	1/14/2013	165.88	44.30	121.58	0
	2/28/2013	165.88	42.12	123.76	0
	3/26/2013	165.88	38.85	127.03	0
	4/23/2013	165.88	39.65	126.23	20.0
	6/25/2013	165.88	35.85	130.03	NS
	12/11/2013	165.88	46.05	119.83	NS
	1/15/2014	165.88	45.41	120.47	NS
	3/5/2014	165.88	43.31	122.57	0
	4/10/2014	165.88	38.21	127.67	0
	5/19/2014	165.88	34.18	131.70	0
	6/18/2014	165.88	34.52	131.36	0
	7/23/2014	165.88	37.45	128.43	0
	10/10/2014	165.88	44.53	121.35	0
	1/26/2015	165.88	42.90	122.98	0
	3/27/2015	165.88	38.82	127.06	0
	5/11/2015	165.88	37.76	128.12	0
	8/17/2015	165.88	44.30	121.58	0
	11/11/2015	165.88	45.58	120.30	0
	3/7/2016	165.88	41.30	124.58	0

Table 1 - Groundwater Gauging

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Detector Reading (ppm)
MW-5	3/21/2012	166.70	39.70	127.00	22.6
	6/28/2012	166.70	40.31	126.39	0.6
	8/13/2012	166.70	40.27	126.43	0.7
	8/31/2012	166.70	40.30	126.40	0
	10/1/2012	166.70	40.40	126.30	1.0
	11/19/2012	166.70	40.42	126.28	0
	1/14/2013	166.70	40.25	126.45	0
	2/28/2013	166.70	40.35	126.35	1.7
	3/26/2013	166.70	39.85	126.85	6.9
	4/23/2013	166.70	40.27	126.43	0
	6/25/2013	166.70	37.11	129.59	NS
	12/11/2013	166.70	40.65	126.05	NS
	1/15/2014	166.70	37.22	129.48	NS
	3/5/2014	166.70	40.11	126.59	0
	4/10/2014	166.70	39.41	127.29	0
	5/19/2014	166.70	34.98	131.72	0
	6/18/2014	166.70	35.42	131.28	0
	7/23/2014	166.70	38.44	128.26	0
	10/10/2014	166.70	40.55	126.15	0
	1/26/2015	166.70	39.01	127.69	0
	3/27/2015	166.70	34.77	131.93	0
	5/11/2015	166.70	38.76	127.94	0
	8/17/2015	166.70	41.32	125.38	0
	11/11/2015	166.70	40.81	125.89	0
	3/7/2016	166.70	40.60	126.10	0
MW-6	3/22/2012	166.14	36.85	129.29	0
	6/28/2012	166.14	41.41	124.73	0
	8/13/2012	166.14	41.11	125.03	0
	11/19/2012	166.14	47.15	118.99	0
	3/26/2013	166.14	39.65	126.49	0
	6/25/2013	166.14	36.61	129.53	NS
	12/11/2013	166.14	49.83	116.31	NS
	3/5/2014	166.14	41.53	124.61	0
	5/19/2014	166.14	34.71	131.43	0
	7/23/2014	166.14	36.50	129.64	0
	3/27/2015	166.14	39.22	126.92	0
MW-7	3/21/2012	171.49	39.30	132.19	0
	6/29/2012	171.49	42.18	129.31	0
	8/13/2012	171.49	46.97	124.52	0
	11/19/2012	171.49	47.80	123.69	0
	3/26/2013	171.49	44.98	126.51	0
	4/23/2013	171.49	42.73	128.76	NS
	6/25/2013	171.49	38.30	133.19	NS
	12/11/2013	171.49	47.27	124.22	NS
	3/5/2014	171.49	46.16	125.33	0
	5/19/2014	171.49	37.32	134.17	0
	7/23/2014	171.49	39.74	131.75	0
	3/27/2015	171.49	44.72	126.77	0
MW-8A	3/21/2012	166.15	41.90	124.25	38.0
	6/28/2012	166.15	42.00	124.15	43.5

Table 1 - Groundwater Gauging

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Detector Reading (ppm)
MW-8A	8/13/2012	166.15	DRY	-	34.6
(Cont.)	8/31/2012	166.15	41.80	124.35	24.0
	10/1/2012	166.15	42.10	124.05	12.2
	11/19/2012	166.15	42.40	123.75	39.4
	1/14/2013	166.15	42.95	123.13	0
	2/28/2013	166.15	42.60	123.55	37.6
	3/26/2013	166.15	-	-	0.1
	4/23/2013	166.15	42.05	124.10	35.5
	6/25/2013	166.15	39.95	126.20	NS
	12/11/2013	166.15	41.80	124.35	NS
	1/15/2014	166.15	42.68	123.47	NS
	3/5/2014	166.15	42.63	123.52	0
	4/10/2014	166.15	39.67	126.48	0
	5/19/2014	166.15	42.83	123.32	0
	6/18/2014	166.15	37.12	129.03	0
	7/23/2014	166.15	42.05	124.10	0
	10/10/2014	166.15	DRY	NS	0
	3/27/2015	166.15	40.31	125.84	0
	5/11/2015	166.15	42.08	124.07	0
	8/17/2015	166.15	42.30	123.85	0
	11/11/2015	166.15	41.82	124.33	0
	3/7/2016	166.15	41.80	124.35	0
MW-8B	3/21/2012	166.08	39.13	126.95	14.6
	6/28/2012	166.08	42.55	123.53	5.1
	8/13/2012	166.08	45.30	120.78	0.7
	8/31/2012	166.08	46.40	119.68	0
	10/1/2012	166.08	49.40	116.68	0.1
	11/19/2012	166.08	48.45	117.63	0
	1/14/2013	166.08	47.07	119.01	0
	2/28/2013	166.08	44.00	122.08	0
	3/26/2013	166.08	40.32	125.76	4.6
	4/23/2013	166.08	40.08	126.00	30.2
	6/25/2013	166.08	37.20	128.88	NS
	12/11/2013	166.08	49.63	116.45	NS
	1/15/2014	166.08	49.63	116.45	NS
	3/5/2014	166.08	45.07	121.01	0
	4/10/2014	166.08	39.69	126.39	0
	5/19/2014	166.08	35.55	130.53	0
	6/18/2014	166.08	36.05	130.03	0
	7/23/2014	166.08	38.95	127.13	0
	10/10/2014	166.08	47.21	118.87	0
	3/27/2015	166.08	40.21	125.87	0
	5/11/2015	166.08	39.15	126.93	0
	8/17/2015	166.08	45.32	120.76	0
	11/11/2015	166.08	41.56	124.52	0
	3/7/2016	166.08	42.85	123.23	0
MW-10	3/21/2012	137.86	9.37	128.49	0
	6/29/2012	137.86	12.58	125.28	0
	8/13/2012	137.86	15.38	122.48	0
	11/19/2012	137.86	18.00	119.86	0

Table 1 - Groundwater Gauging

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Detector Reading (ppm)
MW-10	3/26/2013	137.86	9.90	127.96	0
(Cont.)	6/25/2013	137.86	8.05	129.81	NS
	12/11/2013	137.86	19.71	118.15	NS
	3/5/2014	137.86	9.33	128.53	0
	4/10/2014	137.86	9.33	128.53	0
	5/19/2014	137.86	5.75	132.11	0
	7/23/2014	137.86	9.87	127.99	0
	10/10/2014	137.86	18.12	119.74	0
	3/27/2015	137.86	9.55	128.31	0
	5/11/2015	137.86	9.92	127.94	0
	8/17/2015	137.86	15.80	122.06	0
	11/11/2015	137.86	21.47	116.39	0
	3/7/2016	137.86	12.46	125.4	0

Notes:

DRY = No water for sampling
NA = Not Available or not analyzed for that specific compound
NP = No Product Detected
NS = Not Sampled
ft = Feet
ppm = parts per million

Orangetown Shopping Center/Sparkle Cleaners
NYSDEC Site # C344066

Table 2 - General Chemistry Analytical Results

Monitoring Well	Date	Iron, Ferric (mg/l)	Iron, Ferro s (mg/l)	Iron, Total (mg/l)	Nitrate Nitrogen (mg/l)	Sulfate (mg/l)	Total Organic Carbon (mg/l)	Ethene (mg/l)
NY TOGS 1.1.1 GWQS		NA	NA	NA	NA	NA	NA	NA
MW-3	3/22/2012	NA	NA	NA	ND<0.0500	8.94	161	0.00628 B
	6/28/2012	NA	NA	NA	NA	NA	1,780	NA
	8/13/2012	NS	NS	NS	NS	NS	NS	NS
	8/31/2012	NS	NS	NS	NS	NS	NS	NS
	10/1/2012	NS	NS	NS	NS	NS	NS	NS
	11/19/2012	NS	NS	NS	NS	NS	NS	NS
	1/14/2013	NS	NS	NS	NS	NS	NS	NS
	2/28/2013	NS	NS	NS	NS	NS	NS	NS
	3/26/2013	5.60	41.6	47.2	NA	8.01	1520 B	ND<0.0025
	4/23/2013	NA	NA	NA	NA	NA	232 B	NA
	6/25/2013	6.50	24.4	30.9	NA	29.4	191	ND<0.0025
	12/11/2013	NS	NS	NS	NS	NS	NS	NS
	1/15/2014	NA	NA	NA	NA	NA	97.6	NA
	3/5/2014	NS	NS	NS	NS	NS	NS	NS
	4/10/2014	NA	NA	NA	NA	NA	271	NA
	5/19/2014	8.9	0.52	9.39	ND<0.11	ND<10	37.6	ND<0.00031
	6/18/2014	NA	NA	NA	NA	NA	1,660	NA
	7/24/2014	17.5	3.5	21.0	ND<0.10	ND<10	89.3	ND<0.00031
	10/10/2014	NS	NS	NS	NS	NS	NS	NS
	3/27/2015	102.0	ND<0.20	102	0.29	19.8	NS	ND<0.00031
	5/11/2015	36.0	0.52	36.5	ND<0.11	ND<20	NS	ND<0.00031
	8/17/2015	NA	NA	NA	NA	NA	NA	ND<0.00031
	11/11/2015	30.1	ND<0.20	30.1	ND<0.010	10.4	NA	ND<0.00031
	3/7/2016	31.1	ND<2.0	31.1	ND<0.11	ND<10	NA	ND<0.00031
MW-4	3/21/2012	0.0560	ND<50.0 J	0.0560	0.993	24.9	1.16	ND<0.00250
	6/28/2012	NA	NA	NA	NA	NA	4.13 B	NA
	8/13/2012	NA	7.01	6.97	NA	28.9	NA	ND<0.005
	8/31/2012	NA	NA	NA	NA	NA	5.87	NA
	10/1/2012	NS	NS	NS	NS	NS	NS	NS
	11/19/2012	NA	NA	NA	NA	NA	NA	ND<0.005
	1/14/2013	NA	NA	NA	NA	NA	10.9	NA
	2/28/2013	NA	NA	NA	NA	NA	3.8	NA
	3/26/2013	0.300	10.6	10.3	NA	12.2	399 B	0.0083
	4/23/2013	NA	NA	NA	NA	NA	149	NA
	6/25/2013	1.70	12.1	13.8	NA	ND<0.6	103	0.00609
	12/11/2013	NS	NS	NS	NS	NS	NS	NS
	1/15/2014	NA	NA	NA	NA	NA	101	NA
	3/5/2014	ND<0.100	NA	4.03 B	NA	27.4	5.31	ND<0.00500
	4/10/2014	NA	NA	NA	NA	NA	18.1	NA
	5/19/2014	4.1	ND<0.20	4.23	ND<0.11	10.6	23.7	0.00043
	6/18/2014	NA	NA	NA	NA	NA	287	NA
	7/24/2014	3.4	2.41	5.81	ND<0.10	ND<10	49.5	ND<0.00031
	10/10/2014	NA	NA	NA	ND<0.10	ND<10	67.4	ND<0.00031
	1/26/2015	NA	NA	NA	NA	NA	14.9	NA
	3/27/2015	3.3	0.50	3.83	ND<0.10	ND<10	13.3	ND<0.00031
	5/11/2015	3.4	ND<0.20	3.60	0.23	20.9	12.0	ND<0.00031
	8/17/2015	NA	1.8	NA	ND<0.11	12	10.9	ND<0.00031
	11/11/2015	NA	NA	NA	NA	NA	NA	ND<0.00031
	3/7/2016	2.2	ND<0.20	2.2	ND<0.11	32.6	5.0	ND<0.00031
MW-5	3/21/2012	2.27	0.253 J	2.52	ND<0.0500	7.65	3.92	0.0929
	6/28/2012	NA	NA	NA	NA	NA	3.5 B	NA
	8/13/2012	NA	3.37	4.1	NA	10.1	NA	0.0766
	8/31/2012	NA	NA	NA	NA	NA	39.5	NA
	10/1/2012	NA	NA	NA	NA	NA	66.1	NA
	11/19/2012	0.430	6.74	7.17	NA	26.5	377	0.192
	1/14/2013	NA	NA	NA	NA	NA	105	NA
	2/28/2013	NA	NA	NA	NA	NA	86.6	NA
	3/26/2013	4.10	12.5	16.6	NA	15.9	104 B	0.00712

Table 2 - General Chemistry Analytical Results

Monitoring Well	Date	Iron, Ferric (mg/l)	Iron, Ferro s (mg/l)	Iron, Total (mg/l)	Nitrate Nitrogen (mg/l)	Sulfate (mg/l)	Total Organic Carbon (mg/l)	Ethene (mg/l)
NY TOGS 1.1.1 GWQS		NA	NA	NA	NA	NA	NA	NA
MW-5	4/23/2013	NA	NA	NA	NA	NA	129 B	NA
(cont)	6/25/2013	0.900	9.03	8.13	NA	1.47	165	0.00541
	12/11/2013	ND<0.100	NA	3.75	NA	12.8	213	NA
	1/15/2014	NA	NA	NA	NA	NA	480	NA
	3/5/2014	5.80	NA	16.5 B	NA	1.69	NA	0.00637
	4/10/2014	NA	NA	NA	NA	NA	121	NA
	5/19/2014	13.6	4.4	18	ND<0.15	14.0	319	0.00079
	6/18/2014	NA	NA	NA	NA	NA	293	NA
	7/24/2014	13.7	2	15.70	ND<0.10	ND<10	184	ND<0.00030
	10/10/2014	NA	NA	NA	ND<0.10	12.0	NA	0.0013
	10/30/2014	NA	NA	NA	NA	NA	140	0.0013
	1/26/2015	NA	NA	NA	NA	NA	295	NA
	3/27/2015	31.0	1.9	32.9	ND<0.10	94.6	250	0.00022
	5/11/2015	NS	5.8	NS	ND<0.11	ND<200	251	ND<0.00031
	8/17/2015	8.3	3.5	11.8	ND<0.11	ND<10	125	0.83
	11/11/2015	8.9	0.9	9.8	0.02	ND<10	113	ND<0.00031
	3/7/2016	61.1	18	79.1	ND<0.11	ND<10	234	ND<0.00031
MW-8A	3/21/2012	NS	NS	NS	NS	NS	NS	NS
	6/28/2012	NS	NS	NS	NS	NS	NS	NS
	8/13/2012	NS	NS	NS	NS	NS	NS	NS
	8/31/2012	NS	NS	NS	NS	NS	NS	NS
	10/1/2012	NA	NA	NA	NA	NA	2.75	NA
	11/19/2012	NS	NS	NS	NS	NS	NS	NS
	1/14/2013	NS	NS	NS	NS	NS	NS	NS
	2/28/2013	NS	NS	NS	NS	NS	NS	NS
	3/26/2013	NS	NS	NS	NS	NS	NS	NS
	4/23/2013	NS	NS	NS	NS	NS	NS	NS
	6/25/2013	NS	NS	NS	NS	NS	NS	NS
	12/11/2013	NS	NS	NS	NS	NS	NS	NS
	1/15/2014	NS	NS	NS	NS	NS	NS	NS
	3/5/2014	NS	NS	NS	NS	NS	NS	NS
	4/10/2014	NA	NA	NA	NA	NA	12.0	NA
	5/19/2014	NS	NS	NS	NS	NS	NS	NS
	7/24/2014	NS	NS	NS	NS	NS	NS	NS
	10/10/2014	NS	NS	NS	NS	NS	NS	NS
MW-8B	3/21/2012	ND<0.0500	0.113 J	0.0733	0.91	17.5	1.39	ND<0.00250
	6/28/2012	NA	NA	NA	NA	NA	5.51	NA
	8/13/2012	NA	3.92	4.27	NA	20.7	NA	0.00978
	8/31/2012	NA	NA	NA	NA	NA	15.1	NA
	10/1/2012	NA	NA	NA	NA	NA	8.45	NA
	11/19/2012	NA	NA	NA	NA	NA	7.37	0.0204
	1/14/2013	NA	NA	NA	NA	NA	26.7	NA
	2/28/2013	NA	NA	NA	NA	NA	37.9	NA
	3/26/2013	1.44	5.91	7.35	NA	1.48	19.3 B	ND<0.0025
	4/23/2013	NA	NA	NA	NA	NA	17.9 B	NA
	6/25/2013	ND<0.0800	5.74	5.73	NA	1.73	11.1	0.0317
	12/11/2013	NS	NS	NS	NS	NS	NS	NS
	1/15/2014	NA	NA	NA	NA	NA	57.3	NA
	3/5/2014	ND<0.100	NA	9.28 B	NA	5.68	19.0	ND<0.00500
	4/10/2014	NA	NA	NA	NA	NA	13.6	NA
	5/19/2014	NA	0.32	NA	NA	NA	NA	0.00020
	6/18/2014	NA	NA	NA	NA	NA	17.1	NA

Table 2 - General Chemistry Analytical Results

Monitoring Well	Date	Iron, Ferric (mg/l)	Iron, Ferro s (mg/l)	Iron, Total (mg/l)	Nitrate Nitrogen (mg/l)	Sulfate (mg/l)	Total Organic Carbon (mg/l)	Ethene (mg/l)
NY TOGS 1.1.1 GWQS		NA	NA	NA	NA	NA	NA	NA
MW-8B	7/24/2014	2.4	0.2	2.6	ND<0.10	11.8	13.1	ND<0.00031
(cont)	10/10/2014	NA	NA	NA	ND<0.10	15.5	NA	0.0022
	3/27/2015	NA	NA	NA	ND<0.10	15.5	NA	0.00026
	5/11/2015	7.4	0.82	8.22	ND<0.11	ND<20	NA	0.00067
MW-10	8/17/2015	5.2	0.57	5760	ND<0.11	23	NA	0.83
	3/21/2012	0.0631	ND<50.0 J	0.0631	2.13	27.6	0.935 J	ND<0.00250
	6/29/2012	NS	NS	NS	NS	NS	NS	NS
	8/13/2012	NA	ND<0.100	0.139	NA	24.6	1.56	ND<0.005
	11/19/2012	5.18	0.610	5.79	NA	24.3	3.39	ND<0.005
	3/26/2013	0.291	ND<0.0800	0.291	NA	20.6	1.26 B	ND<0.0025
	6/25/2013	0.704	ND<0.0800	0.704	NA	24.5	1.13	ND<0.0025
	12/11/2013	NS	NS	NS	NS	NS	NS	NS
	3/5/2014	NS	NS	NS	NS	NS	NS	NS
	4/10/2014	NS	NS	NS	NS	NS	NS	NS
	5/19/2014	NS	NS	NS	NS	NS	NS	NS
	7/24/2014	NS	NS	NS	NS	NS	NS	NS
	10/10/2014	NS	NS	NS	NS	NS	NS	NS
	8/17/2015	NA	NA	NA	NA	NA	NA	NA

Notes:

mg/L	= Milligrams per liter (parts per million)
NA	= Not available/not analyzed for that specific compo nd
ND	= Not detected (# is method detection limit)
J	#NAME?
J*	= Holding time for this test is immediate
HF	= Field parameter with holding time of 15 minutes
B1	= Analyte was detected in the associated method blank. Analyte concentration in the sample is greater than 10x the concentration found in the method blank.
B	= Analyte was detected in associated method blank
NYSDEC	= New York State Department of Conservation
TOGS	= Technical and Operational Guidance Series 1.1.1
GWQS	= Groundwater Quality Standards or Guidance Values

Table 3 - General Groundwater Chemistry

Monitoring Well	Date	pH	Temperature (°C)	Specific Conductivity (uS/cm or umhos/cm)	Dissolved Oxygen (mg/L)	Oxygen Reduction Potential (mV)	Turbidity (NTUs)
MW-3	03/22/2012	7.36	16.59	3,090	1.42	-39.0	309
	06/28/2012	6.25	21.29	2,370	0.48	-101.2	149.6
	03/26/2013	6.07	13.13	3,551	2.10	99.1	406.0
	04/23/2013	6.58	13.88	1,925	1.30	-88.4	NA
	06/25/2013	6.37	19.73	2,051	0.42	-88.8	397.4
	08/09/2013	6.33	17.72	2,252	1.13	-77.3	NA
	09/19/2013	5.77	15.77	3,462	0.45	-70.9	68.9
	01/15/2014	6.41	14.53	2,422	0.62	-73.3	NA
	05/19/2014	6.13	18.58	2,171	5.47	-11.9	21.2
	06/18/2014	6.51	17.20	3,874	0.96	-45.5	NA
	07/24/2014	6.27	15.76	2,047	0.54	441.4	41.4
	10/10/2014	NA	NA	NA	NA	NA	NA
	03/27/2015	7.67	10.49	1,405	3.69	-269.8	NA
	05/11/2015	6.56	15.59	1,951	0.10	-173.2	NA
	08/17/2015	6.51	15.75	1,895	0.51	-136.8	NA
	11/11/2015	7.23	14.10	546	4.73	-83.0	NA
	03/07/2016	7.77	16.39	1,956	1.55	-77.6	NA
MW-4	03/21/2012	7.31	15.25	1,400	1.09	147.0	6.2
	06/28/2012	6.69	19.46	764	3.61	47.9	28.1
	08/13/2012	6.59	17.75	1,621	6.21	9.1	152.1
	08/31/2012	6.07	17.45	1,450	1.08	-21.4	NA
	11/19/2012	6.32	11.63	1,126	1.59	70.6	85.28
	01/14/2013	6.36	14.62	1,486	1.75	-56.9	NA
	02/28/2013	6.51	13.92	2,014	1.45	-35.1	NA
	03/26/2013	5.90	14.32	2,212	2.16	-49.0	64.7
	04/23/2013	6.54	13.31	1,685	2.02	-24.1	NA
	06/25/2013	6.51	18.03	1,982	0.82	-70.1	55.5
	08/09/2013	6.18	17.27	1,872	1.43	-39.3	NA
	09/19/2013	6.22	14.79	2,101	0.55	-72.5	143.3
	01/15/2014	6.11	14.74	10,411	0.91	-26.4	NA
	03/05/2014	6.01	12.86	3,755	1.70	-52.2	22.4
	05/19/2014	6.28	18.76	13	13.01	-54.8	21.8
	06/18/2014	7.23	17.09	2,770	1.73	-29.6	NA
	07/24/2014	6.32	14.92	2,284	0.89	-155.1	9.47
	10/10/2014	6.64	19.02	2,345	1.50	-34.8	20.30
	01/26/2015	6.49	12.42	5,329	2.80	-118.7	NA
	03/27/2015	6.78	12.84	2,480	0.82	-213.0	NA
	05/11/2015	6.60	17.24	2,328	2.78	-142.2	NA
	08/17/2015	6.51	15.91	4,455	0.52	-121.9	NA
	11/11/2015	6.48	14.20	2,059	1.40	-71.1	NA
	03/07/2016	6.78	14.73	1,882	1.07	-13.5	NA
MW-5	03/21/2012	7.37	16.16	3,900	3.06	-30.0	0.0
	06/28/2012	6.88	22.10	1,399	1.74	28.6	29.6
	08/13/2012	6.43	19.91	2,188	1.54	-17.6	88.0
	08/31/2012	6.25	20.12	1,580	2.22	-22.5	NA
	10/01/2012	6.19	17.02	2,433	1.36	3.8	NA
	11/19/2012	6.60	14.24	13,900	1.27	70.4	1025
	01/14/2013	6.38	15.36	8,535	0.95	-103.6	NA
	02/28/2013	6.67	14.21	5,230	2.06	-63.4	NA
	03/26/2013	6.91	13.16	6,468	1.02	-27.6	171.6
	04/23/2013	6.85	14.40	6,231	1.56	-71.2	NA
	06/25/2013	6.82	20.21	8,587	0.82	-87.2	77.7
	08/09/2013	6.75	17.51	7,434	1.88	-71.7	NA
	09/19/2013	6.56	16.06	7,413	0.94	-118.8	87.9

Table 3 - General Groundwater Chemistry

Monitoring Well	Date	pH	Temperature (°C)	Specific Conductivity (uS/cm or umhos/cm)	Dissolved Oxygen (mg/L)	Oxygen Reduction Potential (mV)	Turbidity (NTUs)
MW-5	10/14/2013	6.51	15.93	3,671	3.55	-66.8	104.3
(Cont.)	12/11/2013	6.59	11.53	8,003	5.48	-135.6	52.0
	01/15/2014	6.63	12.97	19,214	1.45	-123.4	NA
	03/05/2014	6.61	11.20	14,120	0.21	-73.3	203.7
	04/10/2014	6.54	15.05	10,980	1.59	-65.5	NA
	05/19/2014	6.76	16.82	10,036	0.96	-41.4	43.0
	06/18/2014	7.94	17.14	14,984	1.00	-90.4	NA
	07/24/2014	6.72	15.85	1,271	0.51	-113.5	35.3
	10/10/2014	6.82	17.40	1,477	0.50	-66.9	147.6
	01/26/2015	6.59	9.46	17,539	1.30	-133.8	NA
	03/27/2015	7.17	12.35	15,077	0.51	-211.1	NA
	05/11/2015	6.67	24.60	16,764	0.41	-156.9	NA
	08/17/2015	6.56	16.29	9,737	0.21	-118.1	NA
	11/11/2015	6.57	13.80	9,937	1.57	-101.0	NA
	03/07/2016	7.92	14.53	2,299	1.34	-70.5	NA
MW-6	03/22/2012	7.49	16.43	1,130	2.62	-13.0	221.0
	03/26/2013	6.59	16.42	1,463	3.55	-27.8	59.1
	03/05/2014	6.40	13.59	11,770	2.50	-23.0	226.7
	03/27/2015	7.39	12.71	5,356	0.65	-209.6	NA
MW-7	03/21/2012	8.37	14.25	2,700	1.14	119.0	17.0
	06/29/2012	6.89	17.71	2,960	4.78	159.8	151.6
	08/13/2012	6.17	20.76	2,380	4.39	80.1	250.1
	03/26/2013	6.69	13.98	11,320	3.21	171.2	125.6
	06/25/2013	6.02	17.49	2,625	4.45	292.5	37.3
	09/19/2013	6.95	18.24	10,986	2.07	191.2	37.0
	10/14/2013	7.02	17.13	2,533	1.26	130.6	43.9
	12/11/2013	6.80	9.60	5.129	4.94	63.8	95.6
	03/05/2014	6.24	12.15	4,919	2.02	104.7	29.8
	05/19/2014	6.76	16.48	4,881	3.43	145.4	57.9
	07/23/2014	7.07	18.62	2,688	3.91	55.7	35.3
	03/27/2015	6.60	13.71	44,406	0.50	-205.4	NA
MW-8A	06/28/2012	6.93	23.61	33	7.43	-43.1	275.6
	10/01/2012	6.33	19.60	1,323	1.52	-4.3	NA
	06/25/2013	6.02	23.16	1,535	4.44	-20.8	326.1
	12/11/2013	6.70	11.55	1,531	9.49	-48.9	905.0
	10/10/2014	NA	NA	NA	NA	NA	NA
	03/27/2015	7.09	14.25	2,376	0.98	-165.7	NA
	11/11/2015	6.55	14.20	1,657	1.67	-87.4	NA
	03/07/2016	8.02	14.80	1,938	3.95	-15.9	NA
MW-8B	03/21/2012	6.80	17.09	1,580	6.74	-12.0	216.0
	06/28/2012	6.82	20.11	1,196	2.75	-3.9	30.4
	08/13/2012	6.51	19.15	791	1.79	59.2	105.4
	08/31/2012	6.30	21.40	535	3.08	46.7	NA
	10/01/2012	6.46	17.43	1,122	1.66	-21.7	NA
	11/19/2012	6.83	16.96	1,350	0.85	75.7	1,311
	01/14/2013	6.87	14.33	1,501	1.95	-50.7	NA
	02/28/2013	6.98	15.73	1,592	2.21	-74.3	NA
	03/26/2013	6.70	13.22	3,372	0.52	-80.1	75.1
	04/23/2013	7.16	12.33	1,865	3.15	-74.2	NA
	06/25/2013	6.02	20.37	1,808	3.24	-4.0	20.2
	08/09/2013	6.90	19.41	1,577	2.75	-68.9	NA
	09/19/2013	6.99	17.89	1,537	1.85	-70.1	1.85
	01/15/2014	6.44	12.22	1,865	1.30	-3.1	NA

Table 3 - General Groundwater Chemistry

Monitoring Well	Date	pH	Temperature (°C)	Specific Conductivity (uS/cm or umhos/cm)	Dissolved Oxygen (mg/L)	Oxygen Reduction Potential (mV)	Turbidity (NTUs)
MW-8B	03/05/2014	6.47	12.62	3,725	2.64	-24.4	57.50
(Cont.)	05/19/2014	6.51	19.90	1,252	2.68	-29.5	15.70
	06/18/2014	7.73	18.93	2,728	1.95	2.9	NA
	07/24/2014	6.75	20.09	2,227	2.98	-72.8	23.00
	10/10/2014	7.24	18.60	110	3.90	-35.5	211.30
	03/27/2015	7.00	13.24	3,702	2.89	-149.2	NA
	05/11/2015	6.85	19.72	4,042	2.29	-98.0	NA
	08/17/2015	6.77	20.18	1,847	2.09	-82.8	NA
	03/07/2016	7.66	15.46	1,982	4.02	13.1	NA
MW-10	03/21/2012	7.36	12.98	1,310	4.56	150.0	5.2
	06/29/2012	6.73	16.09	1,338	11.37	138.7	159.6
	08/13/2012	6.29	15.29	1,413	7.11	56.1	129.6
	11/19/2012	6.80	12.51	1,009	7.23	102.7	NA
	03/26/2013	6.89	11.57	521	8.86	219.7	79.2
	06/25/2013	6.17	17.89	655	9.27	205.3	26.4
	09/19/2013	6.86	15.64	1,093	5.75	211.7	106.7
	10/14/2013	7.01	15.13	1,349	7.97	37.2	37.2
	12/11/2013	6.85	12.52	555	6.32	-45.5	7.5
	04/10/2014	6.16	12.48	424	8.29	23.1	NA
	05/19/2014	6.35	12.73	529	7.98	169.4	53.5
	07/23/2014	6.65	16.76	1,190	5.06	122.1	55.1
	10/10/2014	6.64	15.67	451	6.74	150.0	41.0
	03/27/2015	7.23	9.35	287	7.21	-133.1	NA
	05/11/2015	6.51	15.96	1,593	6.66	-23.2	NA
	08/17/2015	6.65	17.28	1,486	5.48	22.2	NA
	11/11/2015	6.63	13.30	1,034	6.17	140.1	NA
	03/07/2016	7.66	15.46	1,982	4.02	13.1	NA

Notes:

mg/L = Milligrams per Liter
uS/cm = Micro-Siemens per centimeter
umhos/cm = Micro-mhos/centimeter
mV = Millivolts
Spec.Cond. = Specific conductance
°C = Degrees Celsius
pH = Potential of Hydrogen

Table 4 - Constituents of Concern Table

Monitoring Well	Date	Tetrachloro-ethene (mg/l)	Trichloro-ethene (mg/l)	cis-1,2-Dichloro-ethene (mg/l)	trans-1,2-Dichloro-ethene (mg/l)	1,1-Dichloro-ethene (mg/l)	Vinyl Chloride (mg/l)	Ethene (mg/l)
NY TOGS 1.1.1 GWQS		5	5	5	5	5	2	NA
MW-3	3/22/2012	ND<5.00 J	ND<5.00 J	60.1	ND<5.00 J	ND<5.00 J	23.4	6.28 B
	6/28/2012	ND<5.00	ND<5.00	143	ND<5.00	ND<5.00	47.5	NA
	8/13/2012	NS	NS	NS	NS	NS	NS	NS
	8/31/2012	NS	NS	NS	NS	NS	NS	NS
	10/1/2012	NS	NS	NS	NS	NS	NS	NS
	11/19/2012	NS	NS	NS	NS	NS	NS	NS
	1/14/2013	NS	NS	NS	NS	NS	NS	NS
	2/28/2013	NS	NS	NS	NS	NS	NS	NS
	3/26/2013	ND<0.250	0.327 J	2.62	0.269 J	ND<0.250	2.26	ND<2.5
	4/23/2013	NS	NS	NS	NS	NS	NS	NS
	6/25/2013	ND<0.250	ND<0.200	7.02	0.617 J	ND<0.250	3.43	ND<2.5
	12/11/2013	NS	NS	NS	NS	NS	NS	NS
	1/15/2014	NS	NS	NS	NS	NS	NS	NS
	3/5/2014	NS	NS	NS	NS	NS	NS	NS
	4/10/2014	NS	NS	NS	NS	NS	NS	NS
	5/19/2014	ND<1.0	ND<1.0	12.6	ND<1.0	ND<1.0	2.2	ND<0.31
	7/24/2014	ND<1.0	ND<1.0	1.2	ND<1.0	ND<1.0	ND<1.0	ND<0.31
	10/10/2014	NS	NS	NS	NS	NS	NS	NS
	3/27/2015	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<0.31
	5/11/2015	ND<1.0	ND<1.0	8.6	ND<1.0	ND<1.0	2.9	ND<0.31
	8/17/2015	ND<1.0	ND<1.0	2.8	ND<1.0	ND<1.0	3.6	ND<0.31
	11/11/2015	ND<1.0	ND<1.0	7.8	ND<1.0	ND<1.0	ND<1.0	ND<0.31
	3/7/2016	ND<1.0	1.1	11.9	ND<1.0	ND<1.0	6.1	ND<0.31
MW-4	3/21/2012	ND<0.500	5.28	276	0.680 J	ND<0.500	1.59	ND<2.50
	6/28/2012	ND<0.500	7.71	495	4.29	ND<0.500	21.9	NA
	8/13/2012	ND<1.00	4.51	197	1.16	ND<1.00	8.66	ND<5
	8/31/2012	NS	NS	NS	NS	NS	NS	NS
	10/1/2012	NS	NS	NS	NS	NS	NS	NS
	11/19/2012	ND<1.00	3.48	200	ND<1.00	ND<1.00	13.1	ND<5
	1/14/2013	NS	NS	NS	NS	NS	NS	NS
	2/28/2013	NS	NS	NS	NS	NS	NS	NS
	3/26/2013	ND<0.250	1.20	39.8	0.634 J	ND<0.250	57.7	8.3
	4/23/2013	NS	NS	NS	NS	NS	NS	NS
	6/25/2013	ND<0.250	ND<0.200	3.88	0.288 J	ND<0.250	2.84	6.09
	12/11/2013	NS	NS	NS	NS	NS	NS	NS
	1/15/2014	NS	NS	NS	NS	NS	NS	NS
	3/5/2014	ND<1.00	ND<1.00	4.25	0.336 J	ND<1.00	5.03	ND<5.00
	4/10/2014	NS	NS	NS	NS	NS	NS	NS
	5/19/2014	ND<1.0	3.4	104	ND<1.0	ND<1.0	35.1	0.43
	7/24/2014	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	1.2	ND<0.31
	10/10/2014	ND<1.0	ND<1.0	2.3	ND<1.0	ND<1.0	1.8	ND<0.31
	3/27/2015	ND<1.0	ND<1.0	3.4	ND<1.0	ND<1.0	5.8	ND<0.31
	5/11/2015	ND<1.0	ND<1.0	2.1	ND<1.0	ND<1.0	1.7	ND<0.31
	8/17/2015	ND<1.0	ND<1.0	1	ND<1.0	ND<1.0	1.8	ND<0.31
	11/11/2015	ND<1.0	ND<1.0	4	ND<1.0	ND<1.0	ND<1.0	ND<0.31
	3/7/2016	ND<1.0	ND<1.0	13.6	ND<1.0	ND<1.0	2.1	ND<0.31
MW-5	3/21/2012	ND<0.500	3.86	12,500	195	1.42	1,490	92.9
	6/28/2012	ND<0.500	7.93	9,000	55.7	1.32	1,100	NA

Table 4 - Constituents of Concern Table

Monitoring Well	Date	Tetrachloro-ethene (mg/l)	Trichloro-ethene (mg/l)	cis-1,2-Dichloro-ethene (mg/l)	trans-1,2-Dichloro-ethene (mg/l)	1,1-Dichloro-ethene (mg/l)	Vinyl Chloride (mg/l)	Ethene (mg/l)
NY TOGS 1.1.1 GWQS		5	5	5	5	5	2	NA
MW-5	8/13/2012	ND<1.00	28.4	7,410	145	1.02	928	76.6
(Cont.)	8/31/2012	NS	NS	NS	NS	NS	NS	NS
	10/1/2012	NS	NS	NS	NS	NS	NS	NS
	11/19/2012	ND<1.00	17.8	1,630	73.6	ND<1.00	489	192
	1/14/2013	NS	NS	NS	NS	NS	NS	NS
	2/28/2013	NS	NS	NS	NS	NS	NS	NS
	3/26/2013	2.17	8.19	389	3.40	1.29	30.9	7.12
	4/23/2013	NS	NS	NS	NS	NS	NS	NS
	6/25/2013	ND<2.50	16.6	972	17.0	ND<2.50	60.0	5.41
	12/11/2013	3.15 J	17.7	1,290	48.0	ND<10.0	302	NA
	1/15/2014	NS	NS	NS	NS	NS	NS	NS
	3/5/2014	3.49 J	3.45 J	142	3.15 J	ND<10.0	19.0	6.37
	4/10/2014	NS	NS	NS	NS	NS	NS	NS
	5/19/2014	2.4	9.2	598	3.8	ND<1.0	33.0	0.79
	7/24/2014	ND<5.0	8.7	575	ND<5.0	ND<5.0	39.6	3.00
	10/10/2014	ND<10	ND<10	1,690	ND<10	ND<10	108	1.3
	3/27/2015	2.8	4.8	247	1.4	ND<1.0	13	0.22
	5/11/2015	2.9	7.0	458	3.7	ND<1.0	40.9	ND<0.31
	8/17/2015	ND<5.0	9.6	783	ND<5.0	ND<5.0	41.3	0.32
	11/11/2015	ND<5.0	19.8	1,390	7.7	ND<5.0	45.7	ND<0.31
	3/7/2016	1.9	20.9	2,140	8.6	ND<1.0	62.7	ND<0.31
MW-8A	3/21/2012	NS	NS	NS	NS	NS	NS	NS
	6/28/2012	1.20	46.2	786	8.66	ND<0.500	29.4	NA
	8/13/2012	NS	NS	NS	NS	NS	NS	NS
	8/31/2012	NS	NS	NS	NS	NS	NS	NS
	10/1/2012	NS	NS	NS	NS	NS	NS	NS
	11/19/2012	NS	NS	NS	NS	NS	NS	NS
	1/14/2013	NS	NS	NS	NS	NS	NS	NS
	2/28/2013	NS	NS	NS	NS	NS	NS	NS
	3/26/2013	NS	NS	NS	NS	NS	NS	NS
	4/23/2013	NS	NS	NS	NS	NS	NS	NS
	6/25/2013	ND<0.250	14.8	358	4.17	ND<0.250	59.3	NA
	12/11/2013	ND<1.00	ND<1.00	7.70	0.300 J	ND<1.00	0.665 J	NA
	1/15/2014	NS	NS	NS	NS	NS	NS	NS
	3/5/2014	NS	NS	NS	NS	NS	NS	NS
	4/10/2014	NS	NS	NS	NS	NS	NS	NS
	5/19/2014	NS	NS	NS	NS	NS	NS	NS
	7/24/2014	NS	NS	NS	NS	NS	NS	NS
	10/10/2014	NS	NS	NS	NS	NS	NS	NS
	3/27/2015	ND<1.0	3.4	17.4	ND<1.0	ND<1.0	ND<1.0	NS
	3/27/2015	NS	NS	NS	NS	NS	NS	NS
	8/17/2015	NS	NS	NS	NS	NS	NS	NS
	11/11/2015	ND<1.0	ND<1.0	2.4	ND<1.0	ND<1.0	ND<1.0	NA
	3/7/2016	ND<1.0	ND<1.0	3.2	ND<1.0	ND<1.0	3.2	NA
MW-8B	3/21/2012	ND<0.500	9.02	387	1.49	ND<0.500 J	26.0 J	ND<2.50
	6/28/2012	ND<0.500	6.40	331	2.28	ND<0.500	1.39	NA
	8/13/2012	ND<1.00	6.29	265	1.16	ND<1.00	8.60	9.78
	8/31/2012	NS	NS	NS	NS	NS	NS	NS

Table 4 - Constituents of Concern Table

Monitoring Well	Date	Tetrachloro-ethene (mg/l)	Trichloro-ethene (mg/l)	cis-1,2-Dichloro-ethene (mg/l)	trans-1,2-Dichloro-ethene (mg/l)	1,1-Dichloro-ethene (mg/l)	Vinyl Chloride (mg/l)	Ethene (mg/l)
NY TOGS 1.1.1 GWQS		5	5	5	5	5	2	NA
MW-8B	10/1/2012	NS	NS	NS	NS	NS	NS	NS
(Cont.)	11/19/2012	ND<1.00	11.7	786	23.5	ND<1.00	43.6	20.4
	1/14/2013	NS	NS	NS	NS	NS	NS	NS
	2/28/2013	NS	NS	NS	NS	NS	NS	NS
	3/26/2013	ND<0.250	0.479 J	6.75	0.725 J	ND<0.250	3.06	ND<2.5
	4/23/2013	NS	NS	NS	NS	NS	NS	NS
	6/25/2013	ND<0.250	0.811 J	36.6	1.61	ND<0.250	93.9	31.7
	12/11/2013	NS	NS	NS	NS	NS	NS	NS
	1/15/2014	NS	NS	NS	NS	NS	NS	NS
	3/5/2014	ND<1.00	ND<1.00	2.55	0.359 J	ND<1.00	2.24	ND<5.00
	4/10/2014	NS	NS	NS	NS	NS	NS	NS
	5/19/2014	ND<1.0	ND<1.0	3.6	ND<1.0	ND<1.0	4.5	0.20
	7/24/2014	ND<1.0	ND<1.0	4.0	ND<1.0	ND<1.0	3.3	ND<0.31
	10/10/2014	ND<1.0	ND<1.0	234	1.7	ND<1.0	121	2.2
	3/27/2015	ND<1.0	ND<1.0	14.2	ND<1.0	ND<1.0	1.2	0.26
	5/11/2015	ND<1.0	ND<1.0	10.1	ND<1.0	ND<1.0	23.3	0.67
	8/17/2015	ND<1.0	ND<1.0	39.6	1.1	ND<1.0	40.5	0.83
	3/7/2016	ND<1.0	2.5	229.0	1	ND<1.0	11.1	ND<0.31
MW-10	3/21/2012	ND<0.500	1.41	74.8	0.780 J	ND<0.500	ND<0.500	ND<2.50
	6/29/2012	ND<0.500	ND<0.500	21.1	ND<0.500	ND<0.500	ND<0.500	NA
	8/13/2012	ND<1.00	ND<1.00	17.2	ND<1.00	ND<1.00	ND<1.00	ND<5
	11/19/2012	ND<1.00	ND<1.00	1.84	ND<1.00	ND<1.00	ND<1.00	ND<5
	3/26/2013	ND<0.250	ND<0.200	1.16	ND<0.230	ND<0.250	ND<0.180	ND<2.5
	6/25/2013	ND<0.250	ND<0.200	0.798 J	ND<0.230	ND<0.250	ND<0.180	ND<2.5
	12/11/2013	ND<1.00	ND<1.00	0.667 J	ND<1.00	ND<1.00	ND<1.00	NA
	3/5/2014	NS	NS	NS	NS	NS	NS	NS
	4/10/2014	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	NA
	5/19/2014	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	NA
	7/23/2014	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	NA
	10/10/2014	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	NA
	3/27/2015	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	NS
	5/11/2015	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	NS
	8/17/2015	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	NA
	11/11/2015	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	NA
	3/7/2016	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	NA

Notes:

µg/L = Micrograms/liter
BDL = Below Detection Limit
DRY = No water for sampling
GWQS = Gro ndwater Q ality Standards
NA = Not Available or not analyzed for that specific compo nd
ND = Not detected (# is method detection limit)
TOGS = Technical and Operational G idance Series 1.1.1
J = Estimated Val e

Table 5
Orangetown Shopping Center/Sparkle Cleaners
NYSDEC Site # C344066

Polychlorinated Biphenyls (EPA Method 8082) Analytical Results

Monitoring Well	Date	Aroclor 1016 (ug/l)	Aroclor 1221 (ug/l)	Aroclor 1232 (ug/l)	Aroclor 1242 (ug/l)	Aroclor 1248 (ug/l)	Aroclor 1254 (ug/l)	Aroclor 1260 (ug/l)
NY TOGS 1.1.1 GWQS		0.09	0.09	0.09	0.09	0.09	0.09	0.09
MW-5	3/21/2012	ND<0.25 U	ND<0.25 U	ND<0.25 U	ND<0.25 U	ND<0.25 U	ND<0.25 U	ND<0.25 U
	3/26/2013	ND<3.06 U	ND<16.3 U	ND<4.38 U	ND<4 U	431	ND<0.438 U	ND<0.75 U
	4/23/2013	ND<0.0485 U	ND<0.257 U	ND<0.0693 U	ND<0.0634 U	ND<0.0683 U	ND<0.00693 U	ND<0.0119 U
	3/27/2015	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050
	3/7/2016	ND<0.067	ND<0.067	ND<0.067	ND<0.067	ND<0.067	ND<0.067	ND<0.067
MW-6	3/22/2012	ND<0.24 U	ND<0.24 U	ND<0.24 U	ND<0.24 U	ND<0.24 U	ND<0.24 U	ND<0.24 U
	3/26/2013	ND<0.0458 U	ND<0.243 U	ND<0.0654 U	ND<0.0598 U	ND<0.0645 U	ND<0.00654 U	ND<0.0112 U
	3/5/2014	ND<0.521 U	ND<0.521 U	ND<0.521 U	ND<0.521 U	ND<0.521 U	ND<0.521 U	ND<0.521 U
	3/27/2015	ND<0.050	ND<0.050	ND<0.050	0.35	ND<0.050	ND<0.050	ND<0.050
	3/7/2016	NA	NA	NA	NA	NA	NA	NA
MW-7	3/21/2012	ND<0.243 U	ND<0.243 U	ND<0.243 U	ND<0.243 U	ND<0.243 U	ND<0.243 U	ND<0.243 U
	4/23/2013	ND<0.048 U	ND<0.255 U	ND<0.0686 U	ND<0.0627 U	0.528	ND<0.00686 U	ND<0.0118 U
	6/25/2013	ND<0.0485 U	ND<0.257 U	ND<0.0693 U	0.22 J	ND<0.0683 U	ND<0.00693 U	ND<0.0119 U
	3/5/2014	ND<0.446 U	ND<0.446 U	ND<0.446 U	ND<0.446 U	ND<0.446 U	ND<0.446 U	ND<0.446 U
	3/27/2015	ND<0.042	ND<0.042	ND<0.042	ND<0.042	ND<0.042	ND<0.042	ND<0.042
	3/7/2016	NA	NA	NA	NA	NA	NA	NA
MW-10	3/21/2012	ND<0.243 U	ND<0.243 U	ND<0.243 U	2.99	ND<0.243 U	ND<0.243 U	ND<0.243 U
	6/29/2012	ND<0.263 U	ND<0.263 U	ND<0.263 U	ND<0.263 U	ND<0.263 U	ND<0.263 U	ND<0.263 U
	3/26/2013	ND<0.0458 U	ND<0.243 U	ND<0.0654 U	ND<0.0598 U	ND<0.0645 U	ND<0.00654 U	ND<0.0112 U
	3/27/2015	ND<0.053	ND<0.053	ND<0.053	ND<0.053	ND<0.053	ND<0.053	ND<0.053
	3/7/2016	ND<0.053	ND<0.053	ND<0.053	ND<0.053	ND<0.053	ND<0.053	ND<0.053

Notes

µg/L = Micrograms per liter (parts per billion)
ND = Not detected (# is method detection limit)
NYSDEC = New York State Department of Conservation
TOGS = Technical and Operational Guidance Series 1.1.1
GWQS = Groundwater Quality Standards or Guidance Values
NA = Not analyzed

Table 6
GC/MS Volatiles (TO-15) - ug/m3

UB Orangeburg
1-45 Orangetown Shopping Center
Orangeburg, New York

Client Sample ID:	DELI MP-2	DELI MP-2 AMB	DELI VP-1	DELI VP-1 AMB	SPARKLE VP-6	SPARKLE VP-6 AMB	SPARKLE VP-5	SPARKLE VP-5 AMB	CHINA MP-5	CHINA MP-5 AMB	CHINA VP-9	CHINA VP-9 AMB	OUTSIDE AMB	REGULATORY GUIDANCE		
Lab Sample ID:	JC10996-1	JC10996-2	JC10996-3	JC10996-4	JC10996-5	JC10996-6	JC10996-7	JC10996-8	JC10996-10	JC10996-11	JC10996-12	JC10996-13	JC10996-9	NYSDOH 2003 Soil Vapor Indoor 95th Percentile (1)	NYSDOH 2003 Soil Vapor Intrusion Air Guidance Value (2)	EPA 2001 BASE 90th Percentile (3)
Date Sampled:	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015			
Matrix:	Soil Vapor Comp.	Ambient Air Comp.	Soil Vapor Comp.	Ambient Air Comp.	Soil Vapor Comp.	Ambient Air Comp.	Soil Vapor Comp.	Ambient Air Comp.	Soil Vapor Comp.	Ambient Air Comp.	Soil Vapor Comp.	Ambient Air Comp.	Ambient Air Comp.			
Acetone	37.1	57	30.9	48	31.6	24.9	20	34.4	155	463	159	461	4.5	140	NS	98.9
1,3-Butadiene	ND (0.80)	ND (0.75)	ND (0.84)	ND (0.71)	ND (0.44)	ND (0.71)	ND (0.80)	ND (0.64)	ND (0.84)	ND (0.80)	ND (0.80)	ND (0.80)	ND (0.80)	NS	NS	<3.0
Benzene	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.0)	4.5	ND (1.0)	ND (1.2)	1.6	ND (1.2)	ND (1.2)	ND (1.2)	ND (1.2)	ND (1.2)	29	NS	9.4
Bromodichloromethane	ND (1.2)	ND (1.1)	ND (1.3)	ND (1.1)	ND (0.67)	ND (1.1)	ND (1.2)	ND (1.0)	ND (1.3)	ND (1.2)	ND (1.2)	ND (1.2)	ND (1.2)	NS	NS	NS
Bromoform	ND (0.74)	ND (0.70)	ND (0.79)	ND (0.66)	ND (0.41)	ND (0.66)	ND (0.74)	ND (0.61)	ND (0.79)	ND (0.74)	ND (0.74)	ND (0.74)	ND (0.74)	NS	NS	NS
Bromomethane	ND (1.4)	ND (1.3)	ND (1.5)	ND (1.2)	ND (0.78)	ND (1.2)	ND (1.4)	ND (1.1)	ND (1.5)	ND (1.4)	ND (1.4)	ND (1.4)	ND (1.4)	0.9	NS	<1.7
Bromoethene	ND (1.6)	ND (1.5)	ND (1.7)	ND (1.4)	ND (0.87)	ND (1.4)	ND (1.6)	ND (1.3)	ND (1.7)	ND (1.6)	ND (1.6)	ND (1.6)	ND (1.6)	NS	NS	NS
Benzyl Chloride	ND (1.9)	ND (1.8)	ND (2.0)	ND (1.6)	ND (1.0)	ND (1.6)	ND (1.9)	ND (1.5)	ND (2.0)	ND (1.9)	ND (1.9)	ND (1.9)	ND (1.9)	NS	NS	<6.8
Carbon disulfide	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.0)	ND (0.62)	ND (1.0)	ND (1.1)	ND (0.90)	ND (1.2)	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.1)	NS	NS	4.2
Chlorobenzene	ND (1.7)	ND (1.6)	ND (1.8)	ND (1.5)	ND (0.92)	ND (1.5)	ND (1.7)	ND (1.3)	ND (1.8)	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.7)	<0.25	NS	<0.9
Chloroethane	ND (0.95)	ND (0.90)	ND (1.0)	ND (0.84)	ND (0.53)	ND (0.84)	ND (0.95)	ND (0.77)	ND (1.0)	ND (0.95)	ND (0.95)	ND (0.95)	ND (0.95)	0.6	NS	<1.1
Chloroform	ND (1.8)	ND (1.7)	ND (1.9)	ND (1.6)	ND (0.98)	ND (1.6)	ND (1.8)	ND (1.4)	ND (1.9)	ND (1.8)	ND (1.8)	ND (1.8)	ND (1.8)	4.6	NS	1.1
Chloromethane	0.87	ND (0.70)	ND (0.78)	0.68	0.66	0.87	ND (0.74)	0.93	ND (0.78)	0.76	ND (0.74)	0.91	ND (0.74)	5.2	NS	3.7
3-Chloropropene	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.0)	ND (0.63)	ND (1.0)	ND (1.1)	ND (0.91)	ND (1.2)	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.1)	NS	NS	NS
2-Chlorotoluene	ND (1.9)	ND (1.8)	ND (2.0)	ND (1.7)	ND (1.0)	ND (1.7)	ND (1.9)	ND (1.5)	ND (2.0)	ND (1.9)	ND (1.9)	ND (1.9)	ND (1.9)	NS	NS	NS
Carbon tetrachloride	ND (0.45)	ND (0.43)	ND (0.48)	ND (0.40)	ND (0.25)	ND (0.40)	ND (0.45)	ND (0.37)	ND (0.48)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	1.1	NS	<1.3
Cyclohexane	ND (1.2)	ND (1.2)	ND (1.3)	ND (1.1)	ND (0.69)	ND (1.1)	ND (1.2)	ND (1.0)	ND (1.3)	ND (1.2)	ND (1.2)	ND (1.2)	ND (1.2)	19	NS	NS
1,1-Dichloroethane	ND (1.5)	ND (1.4)	ND (1.5)	ND (1.3)	ND (0.81)	ND (1.3)	ND (1.5)	ND (1.2)	ND (1.5)	ND (1.5)	ND (1.5)	ND (1.5)	ND (1.5)	<0.25	NS	<0.7
1,1-Dichloroethylene	ND (1.4)	ND (1.3)	ND (1.5)	ND (1.3)	ND (0.79)	ND (1.3)	ND (1.4)	ND (1.1)	ND (1.5)	ND (1.4)	ND (1.4)	ND (1.4)	ND (1.4)	<0.25	NS	<1.4
1,2-Dibromoethane	ND (1.4)	ND (1.3)	ND (1.5)	ND (1.2)	ND (0.77)	ND (1.2)	ND (1.4)	ND (1.2)	ND (1.5)	ND (1.4)	ND (1.4)	ND (1.4)	ND (1.4)	<0.25	NS	<1.5
1,2-Dichloroethane	ND (1.5)	ND (1.4)	ND (1.5)	ND (1.3)	ND (0.81)	ND (1.3)	ND (1.5)	ND (1.2)	ND (1.5)	ND (1.5)	ND (1.5)	ND (1.5)	ND (1.5)	<0.25	NS	<0.9
1,2-Dichloropropane	ND (1.7)	ND (1.6)	ND (1.8)	ND (1.5)	ND (0.92)	ND (1.5)	ND (1.7)	ND (1.3)	ND (1.8)	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.7)	<0.25	NS	<1.6
1,4-Dioxane	ND (1.3)	ND (1.2)	ND (1.4)	ND (1.2)	ND (0.72)	ND (1.2)	ND (1.3)	ND (1.0)	ND (1.4)	ND (1.3)	ND (1.3)	ND (1.3)	ND (1.3)	NS	NS	NS
Dichlorodifluoromethane	2.1	2	ND (1.9)	1.9	3.7	2.3	2	2.6	2.1	2.1	2	2.3	2	26	NS	16.5
Dibromochloromethane	ND (1.5)	ND (1.4)	ND (1.6)	ND (1.4)	ND (0.85)	ND (1.4)	ND (1.5)	ND (1.3)	ND (1.6)	ND (1.5)	ND (1.5)	ND (1.5)	ND (1.5)	NS	NS	NS
trans-1,2-Dichloroethylene	ND (1.4)	ND (1.3)	ND (1.5)	ND (1.3)	ND (0.79)	ND (1.3)	ND (1.4)	ND (1.1)	ND (1.5)	ND (1.4)	ND (1.4)	ND (1.4)	ND (1.4)	NS	NS	NS
cis-1,2-Dichloroethylene	ND (1.4)	ND (1.3)	ND (1.5)	ND (1.3)	ND (0.79)	ND (1.3)	ND (1.4)	ND (1.1)	ND (1.5)	ND (1.4)	ND (1.4)	ND (1.4)	ND (1.4)	1.2	NS	<1.9
cis-1,3-Dichloropropene	ND (1.6)	ND (1.5)	ND (1.7)	ND (1.5)	ND (0.91)	ND (1.5)	ND (1.6)	ND (1.3)	ND (1.7)	ND (1.6)	ND (1.6)	ND (1.6)	ND (1.6)	<0.25	NS	<2.3
m-Dichlorobenzene	ND (1.1)	ND (1.0)	ND (1.1)	ND (0.96)	ND (0.60)	ND (0.96)	ND (1.1)	ND (0.90)	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.1)	1	NS	<2.4
o-Dichlorobenzene	ND (0.43)	ND (0.41)	ND (0.46)	ND (0.38)	ND (0.24)	ND (0.38)	ND (0.43)	ND (0.35)	ND (0.46)	ND (0.43)	ND (0.43)	ND (0.43)	ND (0.43)	0.9	NS	<1.2
p-Dichlorobenzene	ND (1.1)	ND (1.0)	ND (1.1)	ND (0.96)	ND (0.60)	ND (0.96)	ND (1.1)	ND (0.90)	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.1)	2.6	NS	5.5
trans-1,3-Dichloropropene	ND (1.6)	ND (1.5)	ND (1.7)	ND (1.5)	ND (0.91)	ND (1.5)	ND (1.6)	ND (1.3)	ND (1.7)	ND (1.6)	ND (1.6)	ND (1.6)	ND (1.6)	<0.25	NS	<1.3
Ethanol	38.4	43.3	37.7	41.6	56.7	55.8	51.1	39.4	112	142	109	127	3.4	NS	NS	210
Ethylbenzene	ND (1.6)	ND (1.5)	ND (1.7)	ND (1.4)	ND (0.87)	ND (1.4)	ND (1.6)	ND (1.3)	ND (1.7)	ND (1.6)	ND (1.6)	ND (1.6)	ND (1.6)	13.0	NS	5.7
Ethyl Acetate	8.6	32	18	47.5	120	41	7.6	149	11	21	11	24	4	NS	NS	5.4
4-Ethyltoluene	ND (1.8)	ND (1.7)	ND (1.9)	ND (1.6)	3	ND (1.6)	ND (1.8)	ND (1.4)	ND (1.9)	ND (1.8)	ND (1.8)	ND (1.8)	ND (1.8)	NS	NS	NS
Freon 113	ND (1.4)	ND (1.3)	ND (1.5)	ND (1.2)	ND (0.77)	ND (1.2)	ND (1.4)	ND (1.1)	ND (1.5)	ND (1.4)	ND (1.4)	ND (1.4)	ND (1.4)	NS	NS	3.5
Freon 114	ND (1.3)	ND (1.2)	ND (1.3)	ND (1.1)	ND (0.70)	ND (1.1)	ND (1.3)	ND (1.0)	ND (1.3)	ND (1.3)	ND (1.3)	ND (1.3)	ND (1.3)	NS	NS	NS
Heptane	ND (1.5)	ND (1.4)	ND (1.6)	ND (1.3)	2.1	ND (1.3)	ND (1.5)	ND (1.2)	ND (1.6)	ND (1.5)	ND (1.5)	ND (1.5)	ND (1.5)	NS	NS	NS
Hexachlorobutadiene	ND (1.7)	ND (1.6)	ND (1.8)	ND (1.5)	ND (0.96)	ND (1.5)	ND (1.7)	ND (1.4)	ND (1.8)	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.7)	11.0	NS	<6.8
Hexane	2.3	3.3	4.2	3	7	3.5	2.7	9.5	4.2	1.5	3.3	1.7	ND (1.3)	NS	NS	NS
2-Hexanone	ND (1.5)	ND (1.4)	ND (1.6)	ND (1.3)	ND (0.82)	ND (1.3)	ND (1.5)	ND (1.2)	2	ND (1.5)	ND (1.5)	ND (1.5)	ND (1.5)	NS	NS	NS
Isopropyl Alcohol	5.4	9.8	8.1	9.3	18	6.9	5.2	9.8	ND (0.93)	121	19	121	ND (0.88)	NS	NS	250
Methylene chloride	2.4	3.1	3.4	2.2	1.4	1.8	ND (1.3)	2.5	2	ND (1.3)	1.6	ND (1.3)	ND (1.3)	45.0	60	10
Methyl ethyl ketone	2.8	ND (1.0)	2.8	ND (0.94)	4.4	ND (0.94)	5.3	1.1	7.4	ND (1.1)	2.5	ND (1.1)	ND (1.1)	39.0	NS	NS
Methyl Isobutyl Ketone	ND (1.5)	ND (1.4)	ND (1.6)	ND (1.3)	ND (0.82)	ND (1.3)	ND (1.5)	ND (1.2)	ND (1.6)	ND (1.5)	ND (1.5)	ND (1.5)	ND (1.5)	5.3	NS	NS
Methyl Tert Butyl Ether	ND (1.3)	ND (1.2)	ND (1.4)	ND (1.2)	ND (0.72)	ND (1.2)	ND (1.3)	ND (1.0)	ND (1.4)	ND (1.3)	ND (1.3)	ND (1.3)	ND (1.3)	71.0	NS	11.5
Methylmethacrylate	ND (1.5)	ND (1.4)	ND (1.6)	ND (1.3)	ND (0.82)	ND (1.3)	ND (1.5)	ND (1.2)	ND (1.6)	ND (1.5)	ND (1.5)	ND (1.5)	ND (1.5)	1.1	NS	NS
Propylene	1.7	ND (1.5)	ND (1.6)	ND (1.4)	ND (0.86)	ND (1.4)	ND (1.5)	1.4	ND (1.6)	ND (1.5)	ND (1.5)	ND (1.5)	ND (1.5)	NS	NS	NS
Styrene	ND (1.5)	ND (1.4)	ND (1.6)	ND (1.4)	ND (0.85)	ND (1.4)	ND (1.5)	ND (1.2)	ND (1.6)	ND (1.5)	ND (1.5)	ND (1.5)	ND (1.5)	2.3	NS	1.9
1,1,1-Trichloroethane	ND (0.98)	ND (0.93)	ND (1.0)	ND (0.87)	ND (0.55)	ND (0.87)	ND (0.98)	ND (0.82)	ND (1.0)	ND (0.98)	ND (0.98)	ND (0.98)	ND (0.98)	6.9	NS	20.6
1,1,2,2-Tetrachloroethane	ND (1.2)	ND (1.2)	ND (1.3)	ND (1.1)	ND (0.69)	ND (1.1)	ND (1.2)	ND (1.0)	ND (1.3)	ND (1.2)	ND (1.2)	ND (1.2)	ND (1.2)	<0.25	NS	NS
1,1,2-Trichloroethane	ND (0.98)	ND (0.93)	ND (1.0)	ND (0.87)	ND (0.55)	ND (0.87)	ND (0.98)	ND (0.82)	ND (1.0)	ND (0.98)	ND (0.98)	ND (0.98)	ND (0.98)	<0.25	NS	<1.5
1,2,4-Trichlorobenzene	ND (1.3)	ND (1.3)	ND (1.4)	ND (1.2)	ND (0.74)	ND (1.2)	ND (1.3)	ND (1.1)	ND (1.4)	ND (1.3)	ND (1.3)	ND (1.3)	ND (1.3)	6.3	NS	<6.8

Table 6
GC/MS Volatiles (TO-15) - ug/m3

UB Orangeburg
1-45 Orangetown Shopping Center
Orangeburg, New York

Client Sample ID:	DELI MP-2	DELI MP-2 AMB	DELI VP-1	DELI VP-1 AMB	SPARKLE VP-6	SPARKLE VP-6 AMB	SPARKLE VP-5	SPARKLE VP-5 AMB	CHINA MP-5	CHINA MP-5 AMB	CHINA VP-9	CHINA VP-9 AMB	OUTSIDE AMB	REGULATORY GUIDANCE		
Lab Sample ID:	JC10996-1	JC10996-2	JC10996-3	JC10996-4	JC10996-5	JC10996-6	JC10996-7	JC10996-8	JC10996-10	JC10996-11	JC10996-12	JC10996-13	JC10996-9	NYSDOH 2003 Soil Vapor Indoor 95th Percentile (1)	NYSDOH 2003 Soil Vapor Intrusion Air Guidance Value (2)	EPA 2001 BASE 90th Percentile (3)
Date Sampled:	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015			
Matrix:	Soil Vapor Comp.	Ambient Air Comp.	Soil Vapor Comp.	Ambient Air Comp.	Soil Vapor Comp.	Ambient Air Comp.	Soil Vapor Comp.	Ambient Air Comp.	Soil Vapor Comp.	Ambient Air Comp.	Soil Vapor Comp.	Ambient Air Comp.	Ambient Air Comp.			
1,2,4-Trimethylbenzene	2.4	ND (1.7)	2.9	ND (1.6)	4.6	ND (1.6)	2.9	ND (1.4)	2.2	ND (1.8)	2	ND (1.8)	ND (1.8)	18	NS	9.5
1,3,5-Trimethylbenzene	ND (1.8)	ND (1.7)	ND (1.9)	ND (1.6)	2.8	ND (1.6)	ND (1.8)	ND (1.4)	ND (1.9)	ND (1.8)	ND (1.8)	ND (1.8)	ND (1.8)	6.5	NS	NS
2,2,4-Trimethylpentane	ND (1.7)	ND (1.6)	ND (1.8)	ND (1.5)	2.1	ND (1.5)	ND (1.7)	ND (1.4)	ND (1.8)	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.7)	NS	NS	NS
Tertiary Butyl Alcohol	ND (1.1)	ND (1.0)	ND (1.2)	ND (0.97)	ND (0.61)	ND (0.97)	ND (1.1)	ND (0.88)	ND (1.2)	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.1)	NS	NS	NS
Tetrachloroethylene	ND (0.49)	ND (0.46)	3.3	ND (0.43)	2.9	ND (0.43)	ND (0.49)	ND (0.40)	ND (0.52)	ND (0.49)	1.1	2	ND (0.49)	4.1	30	15.9
Tetrahydrofuran	9.7	ND (1.0)	12	ND (0.94)	12	ND (0.94)	60.8	ND (0.86)	17	ND (1.1)	13	ND (1.1)	ND (1.1)	9.4	NS	NS
Toluene	2.2	1.9	3.3	2.2	9.4	1.8	2.1	4.9	3.6	3.2	4.1	3.5	ND (1.4)	110	NS	43
Trichloroethylene	ND (0.39)	ND (0.37)	ND (0.41)	ND (0.34)	0.35	ND (0.34)	ND (0.39)	ND (0.32)	ND (0.41)	ND (0.39)	ND (0.39)	ND (0.39)	ND (0.39)	0.8	2	4.2
Trichlorofluoromethane	1.5	1.4	1.3	1.3	1.6	1.4	1.5	1.6	1.6	1.5	1.6	1.6	1.3	30	NS	18.1
Vinyl chloride	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.16)	ND (0.10)	ND (0.16)	ND (0.18)	ND (0.15)	ND (0.19)	ND (0.18)	ND (0.18)	ND (0.18)	ND (0.18)	<0.25	NS	<1.9
Vinyl Acetate	ND (1.3)	ND (1.2)	ND (1.3)	ND (1.1)	ND (0.70)	ND (1.1)	ND (1.3)	ND (1.0)	ND (1.3)	ND (1.3)	ND (1.3)	ND (1.3)	ND (1.3)	NS	NS	NS
m,p-Xylene	ND (1.6)	ND (1.5)	ND (1.7)	ND (1.4)	2.2	ND (1.4)	1.9	ND (1.3)	ND (1.7)	ND (1.6)	ND (1.6)	ND (1.6)	ND (1.6)	21.0	NS	22.2
o-Xylene	ND (1.6)	ND (1.5)	ND (1.7)	ND (1.4)	1.1	ND (1.4)	ND (1.6)	ND (1.3)	ND (1.7)	ND (1.6)	ND (1.6)	ND (1.6)	ND (1.6)	13.0	NS	7.9
Xylenes (total)	ND (1.6)	ND (1.5)	ND (1.7)	ND (1.4)	3.3	ND (1.4)	1.9	ND (1.3)	ND (1.7)	ND (1.6)	ND (1.6)	ND (1.6)	ND (1.6)	NS	NS	NS

Results and Standards expressed in micrograms per cubic meter (µg/m3)
NS = No Standard
ND = Not detected above laboratory reporting limits
E = The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
B = Analyte is found in the associated analysis batch blank. For volatiles, methylene chloride and acetone are common lab contaminants. Data users should consider anything <10x the blank value as artifact.
(1) 95th percentile indoor air values from "Table C1. NYSDOH 2003: Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes', published in the NYSDOH Soil Vapor Intrusion Guidance Document, Appendix C" (October 2006)
(2) NYSDOH Air Guidance Values (AGVs) presented in the Final Guidance for evaluating Soil Vapor Intrusion in the State of New York, dated October 2006 ("NYSDOH Vapor Intrusion Guidance Document"); however, Tetrachloroethene (PCE) guidance was revised to 30 ug/m3 in September of 2013 and the trichloroethylene (TCE) Air Guidline Value was reduced to 2 ug/m3 in August of 2015.
(3) 90th percentile indoor air values from "Table C-2. EPA 2001: Building Assessment and Survey Evaluation (BASE) Database, SUMMA canister method" published in the NYSDOH Soil Vapor Intrusion Guidance Document, Appendix C" (October 2006)

Table 7
Constituents of Concern - ug/m3

UB Orangeburg
1-45 Orangetown Shopping Center
Orangeburg, New York

Client Sample ID:	DELI MP-2	DELI MP-2 AMB	DELI VP-1	DELI VP-1 AMB	SPARKLE VP-6	SPARKLE VP-6 AMB	SPARKLE VP-5	SPARKLE VP-5 AMB	CHINA MP-5	CHINA MP-5 AMB	CHINA VP-9	CHINA VP-9 AMB	OUTSIDE AMB	REGULATORY GUIDANCE		
Lab Sample ID:	JC10996-1	JC10996-2	JC10996-3	JC10996-4	JC10996-5	JC10996-6	JC10996-7	JC10996-8	JC10996-10	JC10996-11	JC10996-12	JC10996-13	JC10996-9	NYSDOH 2003 Soil Vapor Indoor 95th Percentile (1)	NYSDOH 2003 Soil Vapor Intrusion Air Guidance Value (2)	EPA 2001 BASE 90th Percentile (3)
Date Sampled:	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015			
Matrix:	Soil Vapor Comp.	Ambient Air Comp.	Soil Vapor Comp.	Ambient Air Comp.	Soil Vapor Comp.	Ambient Air Comp.	Soil Vapor Comp.	Ambient Air Comp.	Soil Vapor Comp.	Ambient Air Comp.	Soil Vapor Comp.	Ambient Air Comp.	Ambient Air Comp.			
Carbon tetrachloride	ND (0.45)	ND (0.43)	ND (0.48)	ND (0.40)	ND (0.25)	ND (0.40)	ND (0.45)	ND (0.37)	ND (0.48)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	1.1	NS	<1.3
1,1-Dichloroethylene	ND (1.4)	ND (1.3)	ND (1.5)	ND (1.3)	ND (0.79)	ND (1.3)	ND (1.4)	ND (1.1)	ND (1.5)	ND (1.4)	ND (1.4)	ND (1.4)	ND (1.4)	<0.25	NS	<1.4
trans-1,2-Dichloroethylene	ND (1.4)	ND (1.3)	ND (1.5)	ND (1.3)	ND (0.79)	ND (1.3)	ND (1.4)	ND (1.1)	ND (1.5)	ND (1.4)	ND (1.4)	ND (1.4)	ND (1.4)	NS	NS	NS
cis-1,2-Dichloroethylene	ND (1.4)	ND (1.3)	ND (1.5)	ND (1.3)	ND (0.79)	ND (1.3)	ND (1.4)	ND (1.1)	ND (1.5)	ND (1.4)	ND (1.4)	ND (1.4)	ND (1.4)	1.2	NS	<1.9
1,1,1-Trichloroethane	ND (0.98)	ND (0.93)	ND (1.0)	ND (0.87)	ND (0.55)	ND (0.87)	ND (0.98)	ND (0.82)	ND (1.0)	ND (0.98)	ND (0.98)	ND (0.98)	ND (0.98)	6.9	NS	20.6
Tetrachloroethylene	ND (0.49)	ND (0.46)	3.3	ND (0.43)	2.9	ND (0.43)	ND (0.49)	ND (0.40)	ND (0.52)	ND (0.49)	1.1	2	ND (0.49)	4.1	30	15.9
Trichloroethylene	ND (0.39)	ND (0.37)	ND (0.41)	ND (0.34)	0.35	ND (0.34)	ND (0.39)	ND (0.32)	ND (0.41)	ND (0.39)	ND (0.39)	ND (0.39)	ND (0.39)	0.8	2	4.2
Vinyl chloride	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.16)	ND (0.10)	ND (0.16)	ND (0.18)	ND (0.15)	ND (0.19)	ND (0.18)	ND (0.18)	ND (0.18)	ND (0.18)	<0.25	NS	<1.9

Results and Standards expressed in micrograms per cubic meter (µg/m3)
NS = No Standard
ND = Not detected above laboratory reporting limits
E = The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
B = Analyte is found in the associated analysis batch blank. For volatiles, methylene chloride and acetone are common lab contaminants. Data users should consider anything <10x the blank value as artifact.
(1) 95th percentile indoor air values from "Table C1. NYSDOH 2003: Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes', published in the NYSDOH Soil Vapor Intrusion Guidance Document, Appendix C" (October 2006)
(2) NYSDOH Air Guidance Values (AGVs) presented in the Final Guidance for evaluating Soil Vapor Intrusion in the State of New York, dated October 2006 ("NYSDOH Vapor Intrusion Guidance Document"); however, Tetrachloroethene (PCE) guidance was revised to 30 ug/m3 in September of 2013 and the trichloroethylene (TCE) Air Guidline Value was reduced to 2 ug/m3 in August of 2015.
(3) 90th percentile indoor air values from "Table C-2. EPA 2001: Building Assessment and Survey Evaluation (BASE) Database, SUMMA canister method" published in the NYSDOH Soil Vapor Intrusion Guidance Document, Appendix C" (October 2006)

APPENDIX A

Correspondences

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau C
625 Broadway, 11th Floor, Albany, NY 12233-7014
P: (518) 402-9662 I F: (518) 402-9679
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July 29, 2015

UB Orangeburg, LLC
Dan Logue
Urstadt Biddle Properties Inc
321 Railroad Avenue
Greenwich, CT 06830

Re: Site Management (SM) Periodic Review Report (PRR) Response Letter
Orangeburg (Orangetown) Shopping Center,
Orangetown, Rockland County
Site No: C344066

Dear Mr. Logue:

The New York State Department of Environmental Conservation (Department) has reviewed your Periodic Review Report (PRR) and IC/EC Certification for the following period: June 17, 2014 to June 17, 2015.

The Department hereby accepts the PRR and associated Certification. The frequency of Periodic Reviews for this site is 1 year, your next PRR is due in July 2016. You will receive a reminder letter and updated certification form prior to the due date.

Also, please provide the Department and NYSDOH clarification in the appropriate sections of the PRR (i.e. Section 2; 3.1; 4.2; 5.2; 6.1) that discuss the sub-slab depressurization system (SSDS). It is the Departments' understanding that three separate SSDSs are installed and operating underneath three retail units in the structure.

If you have any questions, or need additional forms, please contact me at (518) 402-9662 or e-mail: jamie.verrigni@dec.ny.gov.

Sincerely,

Jamie Verrigni, P.E.
Project Manager
Remedial Bureau C
Division of Environmental Remediation

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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March 04, 2016

Karen Bourque
Groundwater & Environmental Services, Inc.
16 Mr. Ebo South, Suite 21
Brewster, **NY** 10509

Re: Orangetown Shopping Center
Site ID No. C344066
Orangetown, Rockland County
Soil Vapor Intrusion Investigation Summary

Dear Ms. Bourque:

The New York State Department of Environmental Conservation and the New York State Department of Health (Departments) have reviewed the revised Soil Vapor Intrusion (SVI) Investigation Summary, dated February 2016, which recommends permanently decommissioning the sub-slab depressurization systems (SSDSs) at the site. Based on review of the April and December 2015 SVI sampling results and the remaining contamination at the site, the Departments do not feel it is appropriate to permanently decommission the SSDSs at this time. All three SSDs should remain in place. However, the SSDSs may remain shut down for the majority of the 2016 Calendar year.

Before re-evaluating for permanent shut-down, at least two additional rounds of SVI sampling should be conducted. The next round of SVI sampling should be performed in conjunction with the 2016 Fourth Quarter groundwater monitoring event (i.e., November 2016) in order to provide data from both media. The second round of SVI sampling (post-2016 event) shall be determined/scheduled based on a review of the data.

Also, notification is requested prior to the two vacant tenant units becoming re-occupied. Indoor air sampling may be warranted prior to occupancy.

If you have any questions or comments please feel free to contact me at (518) 402-9662 or jamie.verrigni@dec.ny.gov.

Sincerely,

Jamie Verrigni, P.E.
Project Manager
Remedial Bureau C
Division of Environmental Remediation

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March 01, 2016

Karen Bourque
Groundwater & Environmental Services, Inc.
16 Mr. Ebo South, Suite 21
Brewster, NY 10509

Re: Orangetown Shopping Center
Site ID No. C344066
Orangetown, Rockland County
Soil Vapor Intrusion Investigation Summary
New China House Restaurant Letter

Dear Ms. Bourque:

The New York State Department of Environmental Conservation and Health (Departments) have reviewed the letter to the New China House Restaurant documenting the results of the recent soil vapor study conducted for the Orangetown Shopping Center Site, dated February 20116. The following modifications are requested:

1) In the second sentence of the first paragraph and first sentence of the second paragraph please insert "with the site related contaminants of concern" after "soil vapor intrusion".

2) In the last sentence of the first paragraph please insert "to" between "In order" and "recreate".

3) Please add "and that no actions are necessary at this time" to the end of the first sentence of the second paragraph.

4) In addition to the tables provided please provide a copy of laboratory data sheets to the owner.

5) The Air Guideline Value for TCE was reduced from 5 mcg/m^3 to 2 mcg/m^3 in August of 2015. Please revise the Regulatory Guidance column in Tables 1 and 2 to reflect this.

6) In the second footnote of Tables 1 and 2, please add "and the trichloroethylene (TCE) Air Guideline Value was reduced to 2 mcg/m^3 in August of 2015".

Please provide a revised version of the letter to the Departments for final review. If you have any questions or comments please feel free to contact me at (518) 402-9662 or jamie.verrigni@dec.ny.gov.

Sincerely,

Jamie Verrigni, P.E.
Project Manager
Remedial Bureau C
Division of Environmental Remediation

ec: Amen Omorogbe
Jamie Verrigni
Ed Moore
Maureen Schuck – NYSDOH
Renata Ockerby – NYSDOH
Karen Bourque – GES – kbourque@gesonline.com
Monica Roth – UB Orangeburg, LLC – mroth@ubproperties.com
Stephan Rapaglia – UB Orangeburg, LLC – srapaglia@ubproperties.com

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau C
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March 04, 2016

Karen Bourque
Groundwater & Environmental Services, Inc.
16 Mr. Ebo South, Suite 21
Brewster, NY 10509

Re: Orangetown Shopping Center
Site ID No. C344066
Orangetown, Rockland County
Soil Vapor Intrusion Investigation Summary
New China House Restaurant Letter

Dear Ms. Bourque:

The New York State Department of Environmental Conservation and Health (Departments) have reviewed the revised letter to the New China House Restaurant documenting the results of the recent soil vapor study conducted for the Orangetown Shopping Center Site, dated March 4, 2016. The letter is hereby approved with the following modification:

1) The Data Package/Form 1's from the Lab should only contain the samples pertaining to the New China House Restaurant. Sample information from the Former Cleaners and Deli Units should be removed from the Data Package prior to mailing.

If you have any questions or comments please feel free to contact me at (518) 402-9662 or jamie.verrigni@dec.ny.gov.

Sincerely,

Jamie Verrigni, P.E.
Project Manager
Remedial Bureau C
Division of Environmental Remediation

ec: Amen Omorogbe
Jamie Verrigni
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Maureen Schuck – NYSDOH
Renata Ockerby – NYSDOH
Karen Bourque – GES – kbourque@gesonline.com
Monica Roth – UB Orangeburg, LLC – mroth@ubproperties.com
Stephan Rapaglia – UB Orangeburg, LLC – srapaglia@ubproperties.com

APPENDIX B

Field Forms

Well Condition Check Sheet

Date: 8/17/15

Well ID	Check if all Good	Road box size and condition	Well gripper and condition	Lock	Pad Condition	Comments:
MW-10	✓					
MW-4	✓					
MW-3	✓					
MW-5	✓					
MW-8A	✓					
MW-8B	✓					

Page ___ of ____.

Site Name: Orangeburg Shopping Center

Site Location: 1-45 Orangetown Shopping Ctr., Orangetown, NY

GES Instrument Calibration Sheet

Station Location: 1-45 Orangetown Shopping Center

Station Number: NYSDEC #C344066

Equipment Name- Photoionization Detector (Pid)
Serial Number- 110-012180
Calibration Technician GM
Calibration Gas or Calibration Method- span isobutylene
Concentration (ppm)- 100ppm
Comments-

Date- 8/17/15
Readings Before Calibration- 99.4
Readings After Calibration- 100.0
Span Check-

Equipment Name- YSI
Serial Number-
Calibration Technician GM

Date- 8/17/15

Parameter

_pH	Standard	Initial	Calibrated	Mid-Day Bump Check
	4.00	4.05	4.06	
	7.00	7.08	7.00	
	10.00	10.07	10.00	
Turbidity	**Standard**	**Initial**	**Calibrated**	**Mid-Day Bump Check**
DO	**Standard**	**Initial**	**Calibrated**	**Mid-Day Bump Check**
	100%			
Conductivity	**Standard**	**Initial**	**Calibrated**	**Mid-Day Bump Check**

Comments-

DAILY SIGN IN SHEET
Hazard Asessment Checklist

Site Name/Project #: Orangeburg Shopping Center

Site Address: 1-45 Orangetown Shopping Center, Orangetown, NY 10962 Date: 8/17/15

All GES employees and subcontractors must comply with the site HASP and GES Policies/Procedures.
Non-conformance shall prohibit admittance to the site.

Employee/Visitor Name (Print)	Signature	Company Representing	Tasks Assigned	LPS Training Type (Full or Awareness)	On-site Hours
Gregg Maranowski	Gregg Maranowski	GES	Groundwater Sampling	Full	3.50

On-Site Supervisor Signature:

DAILY SIGN IN SHEET
Hazard Asessment Checklist

Site Name/Project #: Orangeburg Shopping Center

Site Address: 1-45 Orangetown Shopping Center, Orangetown, NY 10962 Date: 8/17/15

The Site Supervisor will review the hazards of the job with all employees and visitors daily. If the work includes intrusive work, confined space, lockout/tagout, a plan or permit is required to be completed. Emergency response plans will be reviewed before work begins. Signatures are required for each day of work. Revisions to this form must be initialed and dated.

Description of Work (Tasks to be Completed)

Groundwater Sampling

Traffic Control Methods:

Cones, Flag / Signs

Site Hazards/PPE/Hazard Control: Prior to the start of work, take a few minutes to review and discuss the strategy to deal with each hazard associated with the job and document above in "Tailgate Meeting"

PERSONAL PROTECTION:
- X Chemical Resistant Gloves
- X Cloth/Leather Gloves
- ___ Tyvek Suit
- ___ Rubber Boots
- X Safety Goggles
- X Steel Toed Boots
- ___ Face Shield
- ___ Respirator
- ___ Hearing Protection
- ___ Hard Hat
- ___ Safety Glasses w/Shields
- ___ Saranex Suit
- ___ Safety Harness/Lanyard
- ___ Other _____

LEVELS OF PPE
- X D
- ___ Modified Level D
- ___ C (Respirator)

AIR MONITORING EQUIPMENT
- X PID
- ___ LEL/O2
- ___ Drager Pump/Tubes
- ___ Other_____

PERMITS
- ___ Hot/Cold (Attach Permit)
- ___ Traffic
- ___ Air Quality
- ___ One Call/Dig Safe NotificationCompleted

Number: _____
Expires: _____

Incident Reporting System
- X Emergency contacts listed
- X Understand Incident/Injury/Near Miss procedures and responsibilities

TOOLS:
- X Proper Tools for Job
- X Good Tool Condition

ACCESS:
- ___ Scaffolds Inspected & Tagged
- ___ Ladders Tied Off
- ___ Personal Man Basket
- ___ Confined Space (Attach Form)

EMERGENCY EQUIPMENT LOCATION KNOWN:
- ___ Site-specific Health & Safety Plan/MSDS's
- ___ Fire Monitors
- ___ Fire Extinguishers
- ___ Safety Showers
- ___ Eye Wash
- ___ Evacuation Route Reviewed
- ___ Local Emergency Numbers
- ___ Hospital
- ___ Emergency Shut Off Switch Location: _____

DRILLING:
- ___ Utility Clearance
- ___ Hearing Protection
- ___ Inspection by competent person
- ___ No loose clothing/jewelry worn
- ___ Established hand signals
- ___ Visual Contact
- ___ 25' Clearance from Overhead Power Lines
- ___ Pre-Drill checklist completed
- ___ Driller has current/valid license
License # _____

JLA:
- ✓ Available on site for all scheduled tasks
- ✓ Reviewed and understood by all

LIFTING/Materials Handling:
- ___ Cherry Picker (current inspection)
- ___ Scissor Lift (current inspection)
- ___ Fork Lift (current inspection)
- ___ Drum Dolly
- ___ Truck Ramps
- ___ Overhead Lines (clearance)
- ___ Manual Lifting
- ___ Valid Crane Operator's License

POTENTIAL HAZARDS:
- X Airborne Particles
- ___ Gases/Vapors
- ___ Fire/Explosion
- ___ Electrical Shock
- X Slips, Trips and Falls
- X Heat Stress
- ___ Cold Stress
- X Heavy Objects
- ___ Hot/Cold Surfaces
- ___ Inadequate Lighting
- X First Opening of Equipment
- ___ High Noise Level
- ___ Access/Egress
- X Sharp Objects
- X Poisonous Plants
- X Insects and Snakes
- X Body Pinch Points
- X Housekeeping
- X Traffic

TRAFFIC CONTROL ELEMENTS:
- X ORANGE TRAFFIC CONES
- X MEN WORKING SIGN(S)
- X TRAFFIC CONTROL PLAN?
- X ORANGE TRAFFIC FLAGS
- X CAUTIONS TAPE, PENNANT FLAGS
- ___ POLICE DETAIL
- ___ ABANDONED (PROPERLY BARRICADED)
- X HIGH VISIBILITY VEST/CLOTHING

ELECTRICAL:
- X Locked/Tagged Out
- ___ Bonding
- ___ Verify Isolation
- ___ GFCI Used
- ___ Condition of Electrical Cords
- ___ Other _____

EXCAVATION:
- ___ Visual Inspection of Trench
- ___ Soil Typing
- ___ Ladder Every 25' of Lateral Travel
- ___ Ladder Extends 3' above Trench
- ___ Adequate Shoring and Sloping
- ___ Accumulating Water Removal from Trench
- ___ Spoils Pile 2' from Edge of Trench
- ___ Surface Encumbrances
- ___ Barricade or Fill in Unattended Excavations

CLEANUP:
- X Cleanup is required after work completion
- X Pick up tools and misc. items to prevent tripping hazards
- X Discard trash

Training
- X Full Day LPS Training Session (ExxonMobil Projects)
- ___ Awareness Short Course (on-site)
- X LPS Cards verified for all personnel
- X OSHA 40/8 Hour Updates current?

Other: _____

GROUNDWATER PURGE AND SAMPLING FIELD SHEET

Well ID: MW-8B

1. PROJECT INFORMATION:

Site: Orangetown Shopping Center **Client:** UB Orangeburg, LLC **Date:** 8/17/18

Address: 1-45 Orangetown Shopping Ctr. **Project #:** 1102323-05-206 **Sampler:** CW

Orangeburg, New York **NYSDEC Site #:** C344066 **Weather:** Sunny

2. MONITORING WELL DATA:

Depth to Water: 45.32 **Depth to Bottom (last round):** 52.00

Casing Diameter: 1 **Calculated Purge Amount:** 0.8 *gallons*

Purge Volume Calculation:

(DTB - DTW)*X = _____ (1well volume in gallons)

X	0.041	0.163	0.367	0.653
Well Diameter	1"	2"	3"	4"

Remove at least 3 well volumes

3. PURGE DATA

Purge Method: Dedicated Teflon Bailers **Did well recharge?** Yes ☒ No ☐

Did well purge dry? Yes ☐ No ☒ **Depth to Water after purge:** 46.85

Actual Purge Amount: 0.8 gallons **Depth to Water after recharge:** 46.13

Water Quality Meter Model: _____ **Time elapsed for recharge:** 3 min

Observe water quality parameters following removal of each well volume:

	pH	Temperature	Conductivity	DO	ORP	Turbidity	Comments or Observations
First Volume	7.53	22.64	716	3.01	-32.0	-	
Second Volume	6.89	19.25	1550	1.97	-80.4	-	
Third Volume*	6.77	20.18	1847	2.09	-82.8	-	

** - Sample water parameters. If well ran dry, record the parameters of any remaining sample water here.*

4. SAMPLE DATA

Sample ID: MW-8B **Depth to Water at time of Sampling:** 45.87

Sample Time: 1400 **Number of Containers:** 10

Analyses: COC **Duplicate Sample Collected?** Yes ☐ No ☒

MS/MSD Sample Collected? Yes ☐ No ☒

Was there enough sample volume to fill all sample jars? Yes ☒ No ☐ explain: _____

Depth to Bottom of Well (measure after sampling): 52.00 **Depth to DNAPL:** _____

5. COMMENTS _____

GROUNDWATER PURGE AND SAMPLING FIELD SHEET

Well ID: MW-5

1. PROJECT INFORMATION:

Site: Orangetown Shopping Center **Client:** UB Orangeburg, LLC **Date:** 8/17/15

Address: 1-45 Orangetown Shopping Ctr. **Project #:** 1102323-05-206 **Sampler:** CM

Orangeburg, New York **NYSDEC Site #:** C344066 **Weather:** Sunny

2. MONITORING WELL DATA:

Depth to Water: 42.32 **Depth to Bottom (last round):** 45.20

Casing Diameter: 2 **Calculated Purge Amount:** 1.5 gallons

Purge Volume Calculation:

(DTB - DTW)*X = _____ (1well volume in gallons)

X	0.041	0.163	0.367	0.653
Well Diameter	1"	2"	3"	4"

Remove at least 3 well volumes

3. PURGE DATA

Purge Method: Dedicated Teflon Bailers **Did well recharge?** Yes ☐ No ☐

Did well purge dry? Yes ☐ No ☒ **Depth to Water after purge:** _____

Actual Purge Amount: 3 gallons **Depth to Water after recharge:** _____

Water Quality Meter Model: _____ **Time elapsed for recharge:** _____

Observe water quality parameters following removal of each well volume:

	pH	Temperature	Conductivity	DO	ORP	Turbidity	Comments or Observations
First Volume	6.56	16.29	9737	0.21	-118.1	—	
Second Volume							
Third Volume*							

** - Sample water parameters. If well ran dry, record the parameters of any remaining sample water here.*

4. SAMPLE DATA

Sample ID: MW-5 **Depth to Water at time of Sampling:** 42.50

Sample Time: 1325 **Number of Containers:** 14

Analyses: COC **Duplicate Sample Collected?** Yes ☒ No ☐

MS/MSD Sample Collected? Yes ☐ No ☒

Was there enough sample volume to fill all sample jars? Yes ☒ No ☐ explain: _____

Depth to Bottom of Well (measure after sampling): 45.22 **Depth to DNAPL:** _____

5. COMMENTS Water level went down significantly after one bailer purge, not going to have enough if continuing to purge drop ys. down well, begin sampling.

GROUNDWATER PURGE AND SAMPLING FIELD SHEET

Well ID: MW-3

1. PROJECT INFORMATION:

Site: Orangetown Shopping Center **Client:** UB Orangeburg, LLC **Date:**

Address: 1-45 Orangetown Shopping Ctr. **Project #:** 1102323-05-206 **Sampler:**

Orangeburg, New York **NYSDEC Site #:** C344066 **Weather:**

2. MONITORING WELL DATA:

Depth to Water: 42-50 **Depth to Bottom (last round):** 43.70

Casing Diameter: 2 **Calculated Purge Amount:** .5 *gallons*

Purge Volume Calculation:

(DTB - DTW)*X = _____ (1well volume in gallons)

X	0.041	0.163	0.367	0.653
Well Diameter	1"	2"	3"	4"

Remove at least 3 well volumes

3. PURGE DATA

Purge Method: Dedicated Teflon Bailers **Did well recharge?** *Yes* ☐ *No* ☒

Did well purge dry? *Yes* ☐ *No* ☒ **Depth to Water after purge:** —

Actual Purge Amount: 0 gallons **Depth to Water after recharge:** —

Water Quality Meter Model: _____ **Time elapsed for recharge:** —

Observe water quality parameters following removal of each well volume:

	pH	Temperature	Conductivity	DO	ORP	Turbidity	Comments or Observations
First Volume	6.51	15.75	1895	0.51	-136.7	—	
Second Volume							
Third Volume*							

** - Sample water parameters. If well ran dry, record the parameters of any remaining sample water here.*

4. SAMPLE DATA

Sample ID: MW-3 **Depth to Water at time of Sampling:** 42.50

Sample Time: 1255 **Number of Containers:** 7

Analyses: COC **Duplicate Sample Collected?** *Yes* ☐ *No* ☒

MS/MSD Sample Collected? *Yes* ☐ *No* ☒

Was there enough sample volume to fill all sample jars? *Yes* ☐ *No* ☒ explain: Not enough water

Depth to Bottom of Well (measure after sampling): 43.70 **Depth to DNAPL:** _____

5. COMMENTS Not enough to sample everything

Drop, one set of readings

GROUNDWATER PURGE AND SAMPLING FIELD SHEET

Well ID: MW-10

1. PROJECT INFORMATION:

Site: Orangetown Shopping Center **Client:** UB Orangeburg, LLC **Date:** _____

Address: 1-45 Orangetown Shopping Ctr. **Project #:** 1102323-05-206 **Sampler:** _____

Orangeburg, New York **NYSDEC Site #:** C344066 **Weather:** _____

2. MONITORING WELL DATA:

Depth to Water: 15.80 **Depth to Bottom (last round):** 33.62

Casing Diameter: 4 **Calculated Purge Amount:** 32.00 *gallons*

Purge Volume Calculation:

(DTB - DTW)*X = _____ (1well volume in gallons)

X	0.041	0.163	0.367	0.653
Well Diameter	1"	2"	3"	4"

Remove at least 3 well volumes

3. PURGE DATA

Purge Method: Dedicated Teflon Bailers **Did well recharge?** Yes ☒ No ☐

Did well purge dry? Yes ☒ No ☐ **Depth to Water after purge:** 30.75

Actual Purge Amount: 160 gallons **Depth to Water after recharge:** 20.50

Water Quality Meter Model: _____ **Time elapsed for recharge:** 10 min

Observe water quality parameters following removal of each well volume:

	pH	Temperature	Conductivity	DO	ORP	Turbidity	Comments or Observations
First Volume	6.65	20.33	1457	4.68	23.7	–	
Second Volume	6.62	18.55	1498	5.07	23.0	–	
Third Volume*	6.65	17.28	1486	5.48	22.2	–	

** - Sample water parameters. If well ran dry, record the parameters of any remaining sample water here.*

4. SAMPLE DATA

Sample ID: MW-10 **Depth to Water at time of Sampling:** 17.40

Sample Time: 1200 **Number of Containers:** 9

Analyses: COC **Duplicate Sample Collected?** Yes ☐ No ☒

MS/MSD Sample Collected? Yes ☒ No ☐

Was there enough sample volume to fill all sample jars? Yes ☒ No ☐ explain: _____

Depth to Bottom of Well (measure after sampling): 33.60 **Depth to DNAPL:** _____

5. COMMENTS _____

GROUNDWATER PURGE AND SAMPLING FIELD SHEET

Well ID: MW-4

1. PROJECT INFORMATION:

Site: Orangetown Shopping Center **Client:** UB Orangeburg, LLC **Date:** 8/17/15

Address: 1-45 Orangetown Shopping Ctr. **Project #:** 1102323-05-206 **Sampler:** CM

Orangeburg, New York **NYSDEC Site #:** C344066 **Weather:** Sunny

2. MONITORING WELL DATA:

Depth to Water: 44.30 **Depth to Bottom (last round):** 46.80

Casing Diameter: 2 **Calculated Purge Amount:** 1.2 *gallons*

Purge Volume Calculation:

(DTB - DTW)*X = _____ (1well volume in gallons)

X	0.041	0.163	0.367	0.653
Well Diameter	1"	2"	3"	4"

Remove at least 3 well volumes

3. PURGE DATA

Purge Method: Dedicated Teflon Bailers **Did well recharge?** *Yes* ☐ *No* ☒

Did well purge dry? *Yes* ☐ *No* ☒ **Depth to Water after purge:** —

Actual Purge Amount: 0 gallons **Depth to Water after recharge:** —

Water Quality Meter Model: _____ **Time elapsed for recharge:** —

Observe water quality parameters following removal of each well volume:

	pH	Temperature	Conductivity	DO	ORP	Turbidity	Comments or Observations
First Volume	6.51	15.91	4455	0.52	-121.9	—	
Second Volume							
Third Volume*							

** - Sample water parameters. If well ran dry, record the parameters of any remaining sample water here.*

4. SAMPLE DATA

Sample ID: MW-4 **Depth to Water at time of Sampling:** 44.30

Sample Time: 1235 **Number of Containers:** 10

Analyses: COC **Duplicate Sample Collected?** *Yes* ☐ *No* ☒

MS/MSD Sample Collected? *Yes* ☐ *No* ☒

Was there enough sample volume to fill all sample jars? *Yes* ☐ *No* ☒ explain: Was not Dry

Depth to Bottom of Well (measure after sampling): 46.77 **Depth to DNAPL:** _____

5. COMMENTS only one parameter taken not enough water. Drop Sample

GROUNDWATER PURGE AND SAMPLING FIELD SHEET

Well ID:

1. PROJECT INFORMATION:

Site: Orangetown Shopping Center **Client:** UB Orangeburg, LLC **Date:** _____

Address: 1-45 Orangetown Shopping Ctr. **Project #:** 1102323-05-206 **Sampler:** _____

Orangeburg, New York **NYSDEC Site #:** C344066 **Weather:** _____

2. MONITORING WELL DATA:

Depth to Water: _____ **Depth to Bottom (last round):** _____

Casing Diameter: _____ **Calculated Purge Amount:** _____ *gallons*

Purge Volume Calculation:

(DTB - DTW)*X = _____ (1well volume in gallons)

X	0.041	0.163	0.367	0.653
Well Diameter	1"	2"	3"	4"

Remove at least 3 well volumes

3. PURGE DATA

Purge Method: Dedicated Teflon Bailers **Did well recharge?** *Yes* ☐ *No* ☐

Did well purge dry? *Yes* ☐ *No* ☐ **Depth to Water after purge:** _____

Actual Purge Amount: _____ gallons **Depth to Water after recharge:** _____

Water Quality Meter Model: _____ **Time elapsed for recharge:** _____

Observe water quality parameters following removal of each well volume:

	pH	Temperature	Conductivity	DO	ORP	Turbidity	Comments or Observations
First Volume							
Second Volume							
Third Volume*							

** - Sample water parameters. If well ran dry, record the parameters of any remaining sample water here.*

4. SAMPLE DATA

Sample ID: _____ **Depth to Water at time of Sampling:** _____

Sample Time: _____ **Number of Containers:** _____

Analyses: _____ **Duplicate Sample Collected?** *Yes* ☐ *No* ☐

_____ **MS/MSD Sample Collected?** *Yes* ☐ *No* ☐

Was there enough sample volume to fill all sample jars? *Yes* ☐ *No* ☐ explain: _____

Depth to Bottom of Well (measure after sampling): _____ **Depth to DNAPL:** _____

5. COMMENTS _____

GROUNDWATER PURGE AND SAMPLING FIELD SHEET

Well ID:

1. PROJECT INFORMATION:

Site: Orangetown Shopping Center **Client:** UB Orangeburg, LLC **Date:** _____

Address: 1-45 Orangetown Shopping Ctr. **Project #:** 1102323-05-206 **Sampler:** _____

Orangeburg, New York **NYSDEC Site #:** C344066 **Weather:** _____

2. MONITORING WELL DATA:

Depth to Water: _____ **Depth to Bottom (last round):** _____

Casing Diameter: _____ **Calculated Purge Amount:** _____ *gallons*

Purge Volume Calculation:

(DTB - DTW)*X = _____ (1well volume in gallons)

X	0.041	0.163	0.367	0.653
Well Diameter	1"	2"	3"	4"

Remove at least 3 well volumes

3. PURGE DATA

Purge Method: Dedicated Teflon Bailers **Did well recharge?** *Yes* ☐ *No* ☐

Did well purge dry? *Yes* ☐ *No* ☐ **Depth to Water after purge:** _____

Actual Purge Amount: _____ gallons **Depth to Water after recharge:** _____

Water Quality Meter Model: _____ **Time elapsed for recharge:** _____

Observe water quality parameters following removal of each well volume:

	pH	Temperature	Conductivity	DO	ORP	Turbidity	Comments or Observations
First Volume							
Second Volume							
Third Volume*							

** - Sample water parameters. If well ran dry, record the parameters of any remaining sample water here.*

4. SAMPLE DATA

Sample ID: _____ **Depth to Water at time of Sampling:** _____

Sample Time: _____ **Number of Containers:** _____

Analyses: _____ **Duplicate Sample Collected?** *Yes* ☐ *No* ☐

_____ **MS/MSD Sample Collected?** *Yes* ☐ *No* ☐

Was there enough sample volume to fill all sample jars? *Yes* ☐ *No* ☐ explain: _____

Depth to Bottom of Well (measure after sampling): _____ **Depth to DNAPL:** _____

5. COMMENTS _____

Site: Orangetown Shopping Center **Tech:** GS

Address: 1-45 Orangetown Shopping Center **Date:** 8/17/15

Daily Field Log (Gauging Table) Orangeburg, New York **Weather:** GS

Well ID	PID (outer)	PID (inner)	Depth to Water	Depth to DNAPL	Depth to Bottom (last visit)	Depth to Bottom (measured)	Well Diameter	Well Volume	Comments	Analytical Parameters
MW-3	0.0	0.0	42.50		42.70	43.20	2"	0	Gauge & Sample	VOCs, Ethene, Electron Acceptors
MW-4	0.0	0.0	44.30		46.80	46.77	2"	0	Gauge & Sample	VOCs, Ethene, Electron Acceptors, and TOC
MW-5	0.0	0.0	41.32		45.20	45.22	2"	0	Gauge & Sample	VOCs, Ethene, Electron Acceptors, and TOC
MW-8A	0.0	0.0	42.30		43.15	43.22	1"	N/A	Gauge & Sample	VOCs, Ethene, Electron Acceptors
MW-8B	0.0	0.0	45.32		52.00	52.00	1"	0.8	Gauge & Sample	VOCs, Ethene, Electron Acceptors
MW-10	0.0	0.0	15.80		33.62	33.60	4"	16	Gauge & Sample	VOCs

Groundwater Sampling

(DTB - DTW)*X = _____ (1well volume in gallons) *Remove at least 3 well volumes*

X	0.041	0.163	0.367	0.653
Well Diameter	1"	2"	3"	4"

BOTTLEWARE:	Electron Acceptors:
VOCs: 3 HCL VOAs	Sulfate: 250 mL unpreserved plastic
Ethene: 3 HCL VOAs	Ferric, Ferrous, Total Iron: 500 mL w/HNO3 & 500 mL unpsreserved
TOC: 1-60 mL HCL	Nitrate: 250 mL w/H2SO4 and 250 mL unpreserved

8/17/15 Unstadt-Orangetown Shopping CTR GWS

- Sunny 85°

1000 leave for site

1100 on onsite

- review HASP, JSAs, H&S meeting, SDSs, PPE, traffic controls

- shutdown and lockout system.

- start GWS.

Well #	DTW	DTB	Diam
MW-3	42.50	43.76	2
MW-4	44.30	46.77	2
MW-5	41.32	45.22	2
MW-8A	42.30	43.22	1
MW-8B	45.32	52.00	1
MW-16	15.80	33.60	4

- Duplicate taken from MW-5

- close drum, need to schedule pick up,

- paper work

1430 offsite

1530 back at office

- sample pack

Site: Orangetown Shopping Center
Address: 1-45 Orangetown Shopping Center
Orangeburg, New York

Tech: LM
Date: 11-21-15
Weather: OVERCAST

Daily Field Log (Gauging Table)

Well ID	PID (outer)	PID (inner)	Depth to Water	Depth to DNAPL	Depth to Bottom (last visit)	Depth to Bottom (measured)	Well Diameter	Well Volume	Comments	Analytical Parameters
MW-3	0	0	36.14	ND	42.70	42.65	2"	1	Gauge & Sample	VOCs, Ethene, Electron Acceptors
MW-4	0	0	45.58	|	46.80	46.70	2"	1.2	Gauge & Sample	VOCs, Ethene, Electron Acceptors, and TOC
MW-5	0	0	40.81	|	45.20	45.30	2"	1.75	Gauge & Sample	VOCs, Ethene, Electron Acceptors, and TOC
MW-8A	0	0	41.82	|	43.15	43.20	1"	.2	Gauge & Sample	VOCs, Ethene, Electron Acceptors
MW-8B	0	0	41.56	|	52.00	49.00	1"	.3	Gauge & Sample	VOCs, Ethene, Electron Acceptors
MW-10	0	0	21.47	↓	33.62	33.60	4"	8	Gauge & Sample	VOCs 1220

Groundwater Sampling

(DTB - DTW)*X = _____ (1well volume in gallons) *Remove at least 3 well volumes*

X	0.041	0.163	0.367	0.653
Well Diameter	1"	2"	3"	4"

BOTTLEWARE:	Electron Acceptors:
VOCs: 3 HCL VOAs ✓	Sulfate: 250 mL unpreserved plastic ✓
Ethene: 3 HCL VOAs ✓	Ferric, Ferrous, Total Iron: 500 mL w/HNO3 & 500 mL unpsreserved
TOC: 1-60 mL HCL	Nitrate: 250 mL w/H2SO4 and 250 mL unpreserved

Site: Orangetown Shopping Ce Tech: CM

Address: 1-45 Orangetown Shoppin Date: 11-11-15

Orangeburg, New York Weather: OVERCAST

Daily Field Log (Gauging Table)

Groundwater Sampling Data Table

Sample Seq. Well No.	Sample Order	Well Depth (Approx)	Depth to Water	Well Diameter	DO (mg/L)	Temp (°C)	pH	ORP (mV)	Conductivity (µS/cm)
MW-7	1	CAR PARKED ON well →							
MW-13A	2	CANNOT LOCATE well IN WOODS							
MW-10	3	33.60	21.47	4	6.17	13.3	6.63	140.1	1034
MW-15A	4	CAN NOT LOCATE - UNDER PARKED CAR							
MW-C	5	9.30	DRY	2	→				
MW-8A	6	43.20	41.82	1	1.67	14.2	6.55	-87.4	1657
MW-8B	7	49.00	41.56	1	well CASING SHIFTED →				
MW-3	8	42.65	36.14	2	4.73	14.1	7.23	-83	546
MW-4	9	46.70	45.58	2	1.40	14.2	6.48	-71.1	2054
MW-D	10	38.70	34.31	2	2.84	14.5	6.61	-24.5	712
MW-E	11	35.60	30.63	2	1.43	14.9	6.84	-46.1	1158
MW-F	12	36.20	30.35	2	1.74	15.1	6.39	-40.9	686
MW-5	13	45.30	40.81	2	1.57	13.8	6.57	-101	9937

Comments:

11-11-15 CM

OB - Orangetown
I-45 Orangetown RD
Orangeburg, New York
11025/13-06-206
- overcast - 55°
1130 - CM onsite for GWS,
HASP/JSA'S, SPSA'S, PPE,
Traffic control
- START GWS offsite @
MW-10
- Duplicate + (MS/MSD)
collected from MW-10
- onsite wells -
- MW-4 only enough H_2O
to collect 6 VOAS
- MW-8A only enough H_2O
for 3 VOAS
- MW-8B - casing shifted?
bailer only goes down
approx 20' - NO SAMPLE
- CALL MADE to D.K.
1630 - CM offsite
1730 - finished - samples
packed + shipped to lab
VIA FED-EX

3-7-16 WBO Gas

Clear 45°F

[illegible] - RB onsite

- S. gen Hazy

- PPE / SWPS / JSP's.

Well	DTW	DTB	purge	Time
mw-3	41.40	42.70	0.2	1330
4	41.30	46.80	0.9	1400
5	40.60	45.20	0.75	1230
8A	41.80	43.15	0.05	1130
8B	42.85	52.00	0.3	1000
10	12.46	33.60	13.7	0900

mw-3 - not enough water for HNO3 & second sample for TFB3
- no recharge after 1.5hr

mw-4 - All bottles filled

mw-5 All filled

mw 8A only 3 VOA's filled - not much in well. - no recharge

mw-8B only 6 VOA's filled - not much water and well went dry - no recharge

mw10 - All bottles filled
- this is the dup well
- and ms/msd samples.

1515 - RB off site

DAILY SIGN IN SHEET
Hazard Asessment Checklist

Site Name/Project #: Orangeburg Shopping Center / 1102323

Site Address: 1-45 Orangetown Shopping Center, Orangetown, NY 10962 **Date:** 3-7-16

The Site Supervisor will review the hazards of the job with all employees and visitors daily. If the work includes intrusive work, confined space, lockout/tagout, a plan or permit is required to be completed. Emergency response plans will be reviewed before work begins. Signatures are required for each day of work. Revisions to this form must be initialed and dated.

Description of Work (Tasks to be Completed)

GW

Traffic Control Methods: Cones, Flags, WA 45mg

Site Hazards/PPE/Hazard Control: Prior to the start of work, take a few minutes to review and discuss the strategy to deal with each hazard associated with the job and document above in "Tailgate Meeting"

PERSONAL PROTECTION:
- [x] Chemical Resistant Gloves
- [x] Cloth/Leather Gloves
- [ ] Tyvek Suit
- [ ] Rubber Boots
- [x] Safety Goggles
- [x] Steel Toed Boots
- [ ] Face Shield
- [ ] Respirator
- [ ] Hearing Protection
- [x] Hard Hat
- [x] Safety Glasses w/Shields
- [ ] Saranex Suit
- [ ] Safety Harness/Lanyard
- [ ] Other _____

LEVELS OF PPE
- [x] D
- [ ] Modified Level D
- [ ] C (Respirator)

AIR MONITORING EQUIPMENT
- [x] PID
- [x] LEL/O2
- [ ] Drager Pump/Tubes
- [ ] Other_____

PERMITS
- [ ] Hot/Cold (Attach Permit)
- [ ] Traffic
- [ ] Air Quality
- [ ] One Call/Dig Safe NotificationCompleted

Number: _____
Expires: _____

Incident Reporting System
- [x] Emergency contacts listed
- [x] Understand Incident/Injury/Near Miss procedures and responsibilities

TOOLS:
- [x] Proper Tools for Job
- [x] Good Tool Condition

ACCESS:
- [ ] Scaffolds Inspected & Tagged
- [ ] Ladders Tied Off
- [ ] Personal Man Basket
- [ ] Confined Space (Attach Form)

EMERGENCY EQUIPMENT LOCATION KNOWN:
- [x] Site-specific Health & Safety Plan/MSDS's
- [x] Fire Monitors
- [x] Fire Extinguishers
- [x] Safety Showers
- [x] Eye Wash
- [x] Evacuation Route Reviewed
- [x] Local Emergency Numbers
- [x] Hospital
- [ ] Emergency Shut Off Switch

Location: _____

DRILLING:
- [ ] Utility Clearance
- [ ] Hearing Protection
- [ ] Inspection by competent person
- [ ] No loose clothing/jewelry worn
- [ ] Established hand signals
- [ ] Visual Contact
- [ ] 25' Clearance from Overhead
- [ ] Power Lines
- [ ] Pre-Drill checklist completed
- [ ] Driller has current/valid license

License # _____

JLA:
- [x] Available on site for all scheduled tasks
- [x] Reviewed and understood by all

LIFTING/Materials Handling:
- [ ] Cherry Picker (current inspection)
- [ ] Scissor Lift (current inspection)
- [ ] Fork Lift (current inspection)
- [ ] Drum Dolly
- [ ] Truck Ramps
- [ ] Overhead Lines (clearance)
- [ ] Manual Lifting
- [ ] Valid Crane Operator's License

POTENTIAL HAZARDS:
- [ ] Airborne Particles
- [x] Gases/Vapors
- [ ] Fire/Explosion
- [ ] Electrical Shock
- [x] Slips, Trips and Falls
- [ ] Heat Stress
- [ ] Cold Stress
- [ ] Heavy Objects
- [ ] Hot/Cold Surfaces
- [ ] Inadequate Lighting
- [ ] First Opening of Equipment
- [ ] High Noise Level
- [ ] Access/Egress
- [ ] Sharp Objects
- [ ] Poisonous Plants
- [ ] Insects and Snakes
- [ ] Body Pinch Points
- [ ] Housekeeping
- [x] Traffic

TRAFFIC CONTROL ELEMENTS:
- [x] ORANGE TRAFFIC CONES
- [x] MEN WORKING SIGN(S)
- [x] TRAFFIC CONTROL PLAN?
- [x] ORANGE TRAFFIC FLAGS
- [x] CAUTIONS TAPE, PENNANT FLAGS
- [ ] POLICE DETAIL
- [x] ABANDONED (PROPERLY BARRICADED)
- [x] HIGH VISIBILITY VEST/CLOTHING

ELECTRICAL:
- [ ] Locked/Tagged Out
- [ ] Bonding
- [ ] Verify Isolation
- [ ] GFCI Used
- [ ] Condition of Electrical Cords
- [ ] Other _____

EXCAVATION:
- [ ] Visual Inspection of Trench
- [ ] Soil Typing
- [ ] Ladder Every 25' of Lateral Travel
- [ ] Ladder Extends 3' above Trench
- [ ] Adequate Shoring and Sloping
- [ ] Accumulating Water Removal from Trench
- [ ] Spoils Pile 2' from Edge of Trench
- [ ] Surface Encumbrances
- [ ] Barricade or Fill in Unattended Excavations

CLEANUP:
- [x] Cleanup is required after work completion
- [x] Pick up tools and misc. items to prevent tripping hazards
- [x] Discard trash

Training
- [x] Full Day LPS Training Session (ExxonMobil Projects)
- [ ] Awareness Short Course (on-site)
- [x] LPS Cards verified for all personnel
- [x] OSHA 40/8 Hour Updates current?

Other: _____

DAILY SIGN IN SHEET
Hazard Asessment Checklist

Site Name/Project #: Orangeburg Shopping Center / 1102323

Site Address: 1-45 Orangetown Shopping Center, Orangetown, NY 10962 Date: 3-7-16

All GES employees and subcontractors must comply with the site HASP and GES Policies/Procedures.
Non-conformance shall prohibit admittance to the site.

Employee/Visitor Name (Print)	Signature	Company Representing	Tasks Assigned	LPS Training Type (Full or Awareness)	On-site Hours
			GWS	FULL	8

On-Site Supervisor Signature:

Site: Orangetown Shopping Center **Tech:** Rich Brown

Address: 1-45 Orangetown Shopping Center **Date:** 3-7-16

Orangeburg, New York **Weather:** Clear 45°F

Daily Field Log (Gauging Table)

Well ID	PID (outer)	PID (inner)	Depth to Water	Depth to DNAPL	Depth to Bottom (last visit)	Depth to Bottom (measured)	Well Diameter	Well Volume	Comments	Analytical Parameters
MW-3	0.0	0.0	41.40	—	42.70	42.70	2"	0.2	Gauge & Sample	VOCs, Ethene, Electron Acceptors
MW-4	0.0	0.0	41.30	—	46.80	46.80	2"	0.9	Gauge & Sample	VOCs, Ethene, Electron Acceptors, and TOC
MW-5	0.0	0.0	40.60	—	45.20	45.20	2"	0.75	Gauge & Sample	VOCs, Ethene, Electron Acceptors, TOC, and PCBs
~~MW-6~~					~~51.20~~		2"		~~Gauge~~ & Sample	PCBs
~~MW-7~~					~~48.20~~		2"		Gauge & Sample	PCBs
MW-8A	0.0	0.0	41.80	—	43.15	43.15	1"	0.05	Gauge & Sample	VOCs, Ethene, Electron Acceptors
MW-8B	0.0	0.0	42.85	—	52.00	52.00	1"	0.3	Gauge & Sample	VOCs, Ethene, Electron Acceptors
MW-10	0.0	0.0	12.46	—	33.62	33.40	4"	13.1	Gauge & Sample	VOCs and PCBs + Dup + MS/MSD

Groundwater Sampling

(DTB - DTW)*X = _____ (1well volume in gallons) *Remove at least 3 well volumes*

X	0.041	0.163	0.367	0.653
Well Diameter	1"	2"	3"	4"

BOTTLEWARE:	Electron Acceptors:
VOCs: 3 HCL VOAs	Sulfate: 250 mL unpreserved plastic
Ethene: 3 HCL VOAs	Ferric, Ferrous, Total Iron: 500 mL w/HNO3 & 500 mL
TOC: 1-60 mL HCL	unpsreserved
PCB: 2-Amber Liters	Nitrate: 250 mL w/H2SO4 and 250 mL unpreserved

60mL HC

GROUNDWATER PURGE AND SAMPLING FIELD SHEET

Well ID: MW-3

1. PROJECT INFORMATION:

Site: Orangetown Shopping Center **Client:** UB Orangeburg, LLC **Date:** 3-7-16

Address: 1-45 Orangetown Shopping Ctr. **Project #:** 1102323-05-206 **Sampler:** RMS

Orangeburg, New York **NYSDEC Site #:** C344066 **Weather:** Clear 45°F

2. MONITORING WELL DATA:

Depth to Water: 41.40 **Depth to Bottom (last round):** 42.70

Casing Diameter: 2 **Calculated Purge Amount:** 0.2 x 3 0.6 gallons

Purge Volume Calculation:

(DTB - DTW)*X = _____ (1well volume in gallons)

X	0.041	0.163	0.367	0.653
Well Diameter	1"	2"	3"	4"

Remove at least 3 well volumes

3. PURGE DATA

Purge Method: Dedicated Teflon Bailers **Did well recharge?** Yes ☐ No ☒

Did well purge dry? Yes ☒ No ☐ **Depth to Water after purge:** 42.50

Actual Purge Amount: 0.75 gallons **Depth to Water after recharge:** 42.50

Water Quality Meter Model: YSI 556 **Time elapsed for recharge:** 1:30 hr

Observe water quality parameters following removal of each well volume:

	pH	Temperature	Conductivity	DO	ORP	Turbidity	Comments or Observations
First Volume	7.77	16.39	1956	1.55	~~77.6~~ -77.6	N/A	
Second Volume	N/A	—	—	—	—	↓	
Third Volume*	—	—	—	—	—	↓	

* - *Sample water parameters. If well ran dry, record the parameters of any remaining sample water here.*

4. SAMPLE DATA

Sample ID: MW-3 **Depth to Water at time of Sampling:** 42.00

Sample Time: 1330 **Number of Containers:** 10 → 9

Analyses: VOC **Duplicate Sample Collected?** Yes ☐ No ☒

MS/MSD Sample Collected? Yes ☐ No ☒

Was there enough sample volume to fill all sample jars? Yes ☐ No ☒ explain: not enough H2O

Depth to Bottom of Well (measure after sampling): 42.70 **Depth to DNAPL:** ND

5. COMMENTS Could not get HNO3 x 500mL sample for XFE3

GROUNDWATER PURGE AND SAMPLING FIELD SHEET

Well ID: MW-4

1. PROJECT INFORMATION:

Site: Orangetown Shopping Center **Client:** UB Orangeburg, LLC **Date:** 3-7-16

Address: 1-45 Orangetown Shopping Ctr. **Project #:** 1102323-05-206 **Sampler:** [illegible]

Orangeburg, New York **NYSDEC Site #:** C344066 **Weather:** Clear 45°F

2. MONITORING WELL DATA:

Depth to Water: 41.30 **Depth to Bottom (last round):** 46.80

Casing Diameter: 2 **Calculated Purge Amount:** 0.5 x 3 2.7 gallons

Purge Volume Calculation:

(DTB - DTW)*X = _____ (1well volume in gallons)

X	0.041	0.163	0.367	0.653
Well Diameter	1"	2"	3"	4"

Remove at least 3 well volumes

3. PURGE DATA

Purge Method: Dedicated Teflon Bailers **Did well recharge?** Yes ☒ No ☐

Did well purge dry? Yes ☐ No ☒ **Depth to Water after purge:** 44.56

Actual Purge Amount: 1 gallons **Depth to Water after recharge:** 44.56

Water Quality Meter Model: YSI **Time elapsed for recharge:** —

Observe water quality parameters following removal of each well volume:

	pH	Temperature	Conductivity	DO	ORP	Turbidity	Comments or Observations
First Volume	7.08	15.19	1759	1.20	-21.3	N/A	
Second Volume	6.99	14.63	1742	1.79	-7.3	↓	
Third Volume*	6.78	14.73	1882	1.07	13.5		

* - Sample water parameters. If well ran dry, record the parameters of any remaining sample water here.

4. SAMPLE DATA

Sample ID: MW-4 **Depth to Water at time of Sampling:** 44.56

Sample Time: 1420 **Number of Containers:** 11

Analyses: VOC **Duplicate Sample Collected?** Yes ☐ No ☒

MS/MSD Sample Collected? Yes ☐ No ☒

Was there enough sample volume to fill all sample jars? Yes ☒ No ☐ explain:

Depth to Bottom of Well (measure after sampling): 46.80 **Depth to DNAPL:** NO

5. COMMENTS None

GROUNDWATER PURGE AND SAMPLING FIELD SHEET

Well ID: MW-5

1. PROJECT INFORMATION:

Site: Orangetown Shopping Center **Client:** UB Orangeburg, LLC **Date:** 3-7-16

Address: 1-45 Orangetown Shopping Ctr. **Project #:** 1102323-05-206 **Sampler:** RB

Orangeburg, New York **NYSDEC Site #:** C344066 **Weather:** Clear 45F

2. MONITORING WELL DATA:

Depth to Water: 40.60 **Depth to Bottom (last round):** 45.20

Casing Diameter: 2 **Calculated Purge Amount:** 0.75 x 3 2.2 *gallons*

Purge Volume Calculation:

(DTB - DTW)*X = _____ (1well volume in gallons)

X	0.041	0.163	0.367	0.653
Well Diameter	1"	2"	3"	4"

Remove at least 3 well volumes

3. PURGE DATA

Purge Method: Dedicated Teflon Bailers **Did well recharge?** Yes ☐ No ☒

Did well purge dry? Yes ☒ No ☐ **Depth to Water after purge:** 45.05

Actual Purge Amount: 0.25 gallons **Depth to Water after recharge:** 45.05

Water Quality Meter Model: 45 556 **Time elapsed for recharge:** 20 m

Observe water quality parameters following removal of each well volume:

	pH	Temperature	Conductivity	DO	ORP	Turbidity	Comments or Observations
First Volume	7.64	16.53	21495	2.06	-73.2	n/a	none
Second Volume	8.03	14.55	22916	1.65	-73.9	↓	↓
Third Volume*	7.92	14.53	22904	1.34	-70.5	↓	↓

* - *Sample water parameters. If well ran dry, record the parameters of any remaining sample water here.*

4. SAMPLE DATA

Sample ID: MW-5 **Depth to Water at time of Sampling:** 45.05

Sample Time: 1230 **Number of Containers:** 13

Analyses: VOC TAL **Duplicate Sample Collected?** Yes ☐ No ☒

MS/MSD Sample Collected? Yes ☐ No ☒

Was there enough sample volume to fill all sample jars? Yes ☒ No ☐ explain: —

Depth to Bottom of Well (measure after sampling): 45.20 **Depth to DNAPL:** ND

5. COMMENTS none

GROUNDWATER PURGE AND SAMPLING FIELD SHEET

Well ID: MW-8A

1. PROJECT INFORMATION:

Site: Orangetown Shopping Center **Client:** UB Orangeburg, LLC **Date:** 3-7-16

Address: 1-45 Orangetown Shopping Ctr. **Project #:** 1102323-05-206 **Sampler:** BS

Orangeburg, New York **NYSDEC Site #:** C344066 **Weather:** Clear 45°F

2. MONITORING WELL DATA:

Depth to Water: 41.80 **Depth to Bottom (last round):** 43.15

Casing Diameter: 1.0 **Calculated Purge Amount:** 0.05 1 vol. gallons

Purge Volume Calculation:

(DTB - DTW)*X = _____ (1well volume in gallons)

X	0.041	0.163	0.367	0.653
Well Diameter	1"	2"	3"	4"

Remove at least 3 well volumes

3. PURGE DATA

Purge Method: Dedicated Teflon Bailers **Did well recharge?** Yes ☐ No ☒

Did well purge dry? Yes ☒ No ☐ **Depth to Water after purge:** 41.51

Actual Purge Amount: <1 gallons **Depth to Water after recharge:** 41.51

Water Quality Meter Model: YSI **Time elapsed for recharge:** 20 min

Observe water quality parameters following removal of each well volume:

	pH	Temperature	Conductivity	DO	ORP	Turbidity	Comments or Observations
First Volume	8.02	14.80	1938	3.55	25.9	N/A	
Second Volume	N/A					↓	
Third Volume*	N/A					↓	

* - *Sample water parameters. If well ran dry, record the parameters of any remaining sample water here.*

4. SAMPLE DATA

Sample ID: MW-8A **Depth to Water at time of Sampling:** 41.51

Sample Time: 1130 **Number of Containers:** 3

Analyses: _____ **Duplicate Sample Collected?** Yes ☐ No ☒

MS/MSD Sample Collected? Yes ☐ No ☒

Was there enough sample volume to fill all sample jars? Yes ☐ No ☒ explain: _____

Depth to Bottom of Well (measure after sampling): 43.15 **Depth to DNAPL:** ~~N/A~~ ND

5. COMMENTS only 3 vol's purged due to no water in well.

GROUNDWATER PURGE AND SAMPLING FIELD SHEET

Well ID: MW-8B

1. PROJECT INFORMATION:

Site: Orangetown Shopping Center **Client:** UB Orangeburg, LLC **Date:** 3-7-16

Address: 1-45 Orangetown Shopping Ctr. **Project #:** 1102323-05-206 **Sampler:** RS

Orangeburg, New York **NYSDEC Site #:** C344066 **Weather:** Clear 45°F

2. MONITORING WELL DATA:

Depth to Water: 42.85 **Depth to Bottom (last round):** ~~50.85~~ 52.00

Casing Diameter: 1 **Calculated Purge Amount:** 0.3 0.84 gallons

Purge Volume Calculation:

(DTB - DTW)*X = _____ (1well volume in gallons)

X	0.041	0.163	0.367	0.653
Well Diameter	1"	2"	3"	4"

Remove at least 3 well volumes

3. PURGE DATA

Purge Method: Dedicated Teflon Bailers **Did well recharge?** Yes ☐ No ☒

Did well purge dry? Yes ☒ No ☐ **Depth to Water after purge:** 49.59

Actual Purge Amount: 2.1 gallons **Depth to Water after recharge:** 49.57

Water Quality Meter Model: YSI 556 **Time elapsed for recharge:** 20 m

Observe water quality parameters following removal of each well volume:

	pH	Temperature	Conductivity	DO	ORP	Turbidity	Comments or Observations
First Volume	7.66	15.46	1982	4.02	13.1	N/A	
Second Volume	—						
Third Volume*	—						

* - *Sample water parameters. If well ran dry, record the parameters of any remaining sample water here.*

4. SAMPLE DATA

Sample ID: MW-8B **Depth to Water at time of Sampling:** 49.59

Sample Time: 1200 **Number of Containers:** 6

Analyses: COC **Duplicate Sample Collected?** Yes ☐ No ☒

MS/MSD Sample Collected? Yes ☐ No ☒

Was there enough sample volume to fill all sample jars? Yes ☐ No ☒ explain:

Depth to Bottom of Well (measure after sampling): 52.00 **Depth to DNAPL:** ~0

5. COMMENTS ~~Dried~~ only enough H2O for 6 VOAs

GROUNDWATER PURGE AND SAMPLING FIELD SHEET

Well ID: MW-10

1. PROJECT INFORMATION:

Site: Orangetown Shopping Center **Client:** UB Orangeburg, LLC **Date:** 3-7-16

Address: 1-45 Orangetown Shopping Ctr. **Project #:** 1102323-05-206 **Sampler:** RB

Orangeburg, New York **NYSDEC Site #:** C344066 **Weather:** Clear 45°F

2. MONITORING WELL DATA:

Depth to Water: 17.46 **Depth to Bottom (last round):** 33.60

Casing Diameter: 4 **Calculated Purge Amount:** 13.7 = 1 vol gallons

Purge Volume Calculation:

(DTB - DTW)*X = _____ (1well volume in gallons)

X	0.041	0.163	0.367	0.653
Well Diameter	1"	2"	3"	4"

Remove at least 3 well volumes

3. PURGE DATA

Purge Method: Dedicated Teflon Bailers **Did well recharge?** Yes ☒ No ☐

Did well purge dry? Yes ☐ No ☒ **Depth to Water after purge:** 17.30

Actual Purge Amount: 20 gallons **Depth to Water after recharge:** —

Water Quality Meter Model: YSI **Time elapsed for recharge:** —

Observe water quality parameters following removal of each well volume:

	pH	Temperature	Conductivity µS/cm	DO	ORP	Turbidity	Comments or Observations
First Volume	7.57	12.84	591	11.57	76.1	n/A	none
Second Volume	7.13	11.79	563	9.92	99.7	↓	↓
Third Volume*	6.97	11.69	569	9.97	104.6	↓	↓

* - *Sample water parameters. If well ran dry, record the parameters of any remaining sample water here.*

4. SAMPLE DATA

Sample ID: MW-10 **Depth to Water at time of Sampling:** 17.30

Sample Time: 0900 **Number of Containers:** 4

Analyses: CoC **Duplicate Sample Collected?** Yes ☒ No ☐

MS/MSD Sample Collected? Yes ☒ No ☐

Was there enough sample volume to fill all sample jars? Yes ☒ No ☐ explain: —

Depth to Bottom of Well (measure after sampling): 33.60 **Depth to DNAPL:** —

5. COMMENTS

GES Instrument Calibration Sheet

Station Location: 1-45 Orangetown Shopping Center

Station Number: NYSDEC #C344066

Equipment Name- Photoionization Detector (Pid)
Serial Number- 110 912447
Calibration Technician 103
Calibration Gas or Calibration Method- span isobutylene
Concentration (ppm)-
Comments-

Date- 3-7-16
Readings Before Calibration- 100
Readings After Calibration- 100
Span Check- 100

Equipment Name- YSI
Serial Number- 13D101141
Calibration Technician

Date- 3-7-16

Parameter

pH	Standard	Initial	Calibrated	Mid-Day Bump Check
	4.00	3.87	4	4
	7.00	6.99	7	7
	10.00	9.87	10	10
Turbidity	**Standard**	**Initial**	**Calibrated**	**Mid-Day Bump Check**
	N/A	—	—	—
DO	**Standard**	**Initial**	**Calibrated**	**Mid-Day Bump Check**
	100%	99.9	100	100
Conductivity	**Standard**	**Initial**	**Calibrated**	**Mid-Day Bump Check**
	—	—	—	—

Comments-

pH Titration Procedure

Equipment Needed: 100 ml container, (3) 8 oz glass jars, 0.1M solution of sodium bicarbonate, electronic pH meter, litmus paper, and pipette.

Procedure (to be completed only if pH value is below 6):

1) Collect 300 ml of groundwater from the well and segregate 100 ml each into glass jars.
2) Measure and record initial pH w/ electronic pH meter.
3) Use pipette to add 1 ml of 0.1M solution of sodium bicarbonate. Measure and record pH after adding sodium bicarbonate.
4) Repeat step 3 until pH value is equal to 7, record amount of sodium bicarbonate added and corresponding pH value.
5) Once pH value is at 7, confirm w/ litmus paper and record in notes.

12-16-15 SUI Investigation

Temp 46°F
Press 30.15" > start

0820 – Arrive onsite
- Sign JSA
- PPE - SSA - glasses.
- meet contractor and set Summa cans.

Deli PT	Start VAC	purge	Start Time	Stop Time	Stop VAC
mp-2	>30	1L	0910	1710	23
Stan					
mp-2 Amb	>30	–	911	1711	22.5
VP-1	29	1L	0920	1720	22.5
up-1 Amb	28.5	–	0921	1721	21
outside	29	–	0951	1751	21
Sparkle					
VP-6	28	1L	0930	1730	22.5
up6 Amb	30	–	0931	1731	26
VP-5	>30	1L	0943	1743	24.5
up-5 Amb	>30	–	0945	1745	23.5
Chuda					
mp-5	>30	1L	1050	1850	24
mp-5 Amb	30	–	1051	1851	22.5
VP-9	29	1L	1059	1859	21
VP9 Amb	>30	–	1100	1900	26

- purge All VP's + mp's @ 200 cc/min for 5 min > 1 liter purged.
- Test All pts via Helium trace
- All pts pass
- Taken inventory 1520 [illegible]
- [illegible] onsite 1615
- H+S meeting, review HASP, JSAs, SPSAs, PPE.
- turn off all Summas
- pack up equipment
- paperwork

1915 offsite

2015 back at office
- unload truck

DAILY SIGN IN SHEET
Hazard Asessment Checklist

Site Name/Project #: Orangeburg Shopping Center / 1102323

Site Address: 1-45 Orangetown Shopping Center, Orangetown, NY 10962 Date: 12-16-15

The Site Supervisor will review the hazards of the job with all employees and visitors daily. If the work includes intrusive work, confined space, lockout/tagout, a plan or permit is required to be completed. Emergency response plans will be reviewed before work begins. Signatures are required for each day of work. Revisions to this form must be initialed and dated.

Description of Work (Tasks to be Completed)

SVI Investigation

Traffic Control Methods: Cones / Flags / CT

Site Hazards/PPE/Hazard Control: Prior to the start of work, take a few minutes to review and discuss the strategy to deal with each hazard associated with the job and document above in "Tailgate Meeting"

PERSONAL PROTECTION:
- [x] Chemical Resistant Gloves
- [ ] Cloth/Leather Gloves
- [ ] Tyvek Suit
- [ ] Rubber Boots
- [ ] Safety Goggles
- [x] Steel Toed Boots
- [ ] Face Shield
- [ ] Respirator
- [ ] Hearing Protection
- [x] Hard Hat
- [x] Safety Glasses w/Shields
- [ ] Saranex Suit
- [ ] Safety Harness/Lanyard
- [ ] Other _____

LEVELS OF PPE
- [x] D
- [ ] Modified Level D
- [ ] C (Respirator)

AIR MONITORING EQUIPMENT
- [x] PID
- [ ] LEL/O2
- [ ] Drager Pump/Tubes
- [ ] Other_____

PERMITS
- [ ] Hot/Cold (Attach Permit)
- [ ] Traffic
- [ ] Air Quality
- [ ] One Call/Dig Safe NotificationCompleted

Number: _____
Expires: _____

Incident Reporting System
- [ ] Emergency contacts listed
- [ ] Understand Incident/Injury/Near Miss procedures and responsibilities

TOOLS:
- [x] Proper Tools for Job
- [x] Good Tool Condition

ACCESS:
- [ ] Scaffolds Inspected & Tagged
- [ ] Ladders Tied Off
- [ ] Personal Man Basket
- [ ] Confined Space (Attach Form)

EMERGENCY EQUIPMENT LOCATION KNOWN:
- [ ] Site-specific Health & Safety Plan/MSDS's
- [ ] Fire Monitors
- [ ] Fire Extinguishers
- [ ] Safety Showers
- [ ] Eye Wash
- [ ] Evacuation Route Reviewed
- [ ] Local Emergency Numbers
- [ ] Hospital
- [ ] Emergency Shut Off Switch Location: _____

DRILLING:
- [ ] Utility Clearance
- [ ] Hearing Protection
- [ ] Inspection by competent person
- [ ] No loose clothing/jewelry worn
- [ ] Established hand signals
- [ ] Visual Contact
- [ ] 25' Clearance from Overhead
- [ ] Power Lines
- [ ] Pre-Drill checklist completed
- [ ]
- [ ] Driller has current/valid license
- [ ] License # _____

JLA:
- [x] Available on site for all scheduled tasks
- [x] Reviewed and understood by all

LIFTING/Materials Handling:
- [ ] Cherry Picker (current inspection)
- [ ] Scissor Lift (current inspection)
- [ ] Fork Lift (current inspection)
- [ ] Drum Dolly
- [ ] Truck Ramps
- [ ] Overhead Lines (clearance)
- [ ] Manual Lifting
- [ ] Valid Crane Operator's License

POTENTIAL HAZARDS:
- [ ] Airborne Particles
- [ ] Gases/Vapors
- [ ] Fire/Explosion
- [ ] Electrical Shock
- [x] Slips, Trips and Falls
- [ ] Heat Stress
- [ ] Cold Stress
- [ ] Heavy Objects
- [ ] Hot/Cold Surfaces
- [x] Inadequate Lighting
- [ ] First Opening of Equipment
- [ ] High Noise Level
- [ ] Access/Egress
- [ ] Sharp Objects
- [ ] Poisonous Plants
- [ ] Insects and Snakes
- [ ] Body Pinch Points
- [x] Housekeeping
- [ ] Traffic

TRAFFIC CONTROL ELEMENTS:
- [x] ORANGE TRAFFIC CONES
- [x] MEN WORKING SIGN(S)
- [x] TRAFFIC CONTROL PLAN?
- [x] ORANGE TRAFFIC FLAGS
- [x] CAUTIONS TAPE, PENNANT FLAGS
- [ ] POLICE DETAIL
- [ ] ABANDONED (PROPERLY BARRICADED)
- [x] HIGH VISIBILITY VEST/CLOTHING

ELECTRICAL:
- [ ] Locked/Tagged Out
- [ ] Bonding
- [ ] Verify Isolation
- [ ] GFCI Used
- [ ] Condition of Electrical Cords
- [ ] Other _____

EXCAVATION:
- [ ] Visual Inspection of Trench
- [ ] Soil Typing
- [ ] Ladder Every 25' of Lateral Travel
- [ ] Ladder Extends 3' above Trench
- [ ] Adequate Shoring and Sloping
- [ ] Accumulating Water Removal from Trench
- [ ] Spoils Pile 2' from Edge of Trench
- [ ] Surface Encumbrances
- [ ] Barricade or Fill in Unattended Excavations

CLEANUP:
- [x] Cleanup is required after work completion
- [x] Pick up tools and misc. items to prevent tripping hazards
- [x] Discard trash

Training
- [x] Full Day LPS Training Session (ExxonMobil Projects)
- [x] Awareness Short Course (on-site)
- [x] LPS Cards verified for all personnel
- [x] OSHA 40/8 Hour Updates current?

Other: _____

DAILY SIGN IN SHEET
Hazard Asessment Checklist

Site Name/Project #: Orangeburg Shopping Center / 1102323

Site Address: 1-45 Orangetown Shopping Center, Orangetown, NY 10962 Date: 12-16-15

All GES employees and subcontractors must comply with the site HASP and GES Policies/Procedures.
Non-conformance shall prohibit admittance to the site.

Employee/Visitor Name (Print)	Signature	Company Representing	Tasks Assigned	LPS Training Type (Full or Awareness)	On-site Hours

On-Site Supervisor Signature:

Appendix B
Indoor air quality questionnaire and building inventory

As discussed in Section 2.11, products in buildings should be inventoried every time indoor air is sampled to provide an accurate assessment of the potential contribution of volatile chemicals. In addition, the type of structure, floor layout and physical conditions of the building being studied should be noted to identify (and minimize) conditions that may interfere with the proposed testing.

Toward this end, a blank copy of the NYSDOH Center for Environmental Health's Indoor Air Quality Questionnaire and Building Inventory is provided in this appendix. Also provided is an example that demonstrates how the form should be completed properly.

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NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name Richardson Date/Time Prepared 12-16-15 / 1200

Preparer's Affiliation GBS Phone No. 866 833 5195

Purpose of Investigation SVI Investigation

1. OCCUPANT:

Interviewed: Y / N

Last Name: _____ First Name: New China + Two vacant spaces

Address: 13 Orangeburg Shopping Center Orangeburg NY

County: Rockland

Home Phone: _____ Office Phone: _____

Number of Occupants/persons at this location 3-4 Age of Occupants _____

2. OWNER OR LANDLORD: (Check if same as occupant ___)

Interviewed: Y / N

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential	School	Commercial/Multi-use
Industrial	Church	Other: _____

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other: Strip MALL on Slab

If multiple units, how many? 3

If the property is commercial, type?

Business Type(s) 2 VACANT STORES and 1 Chinese restaurant

Does it include residences (i.e., multi-use)? Y (N) If yes, how many? _____

Other characteristics:

Number of floors 1 Building age 1966

Is the building insulated? (Y) / N How air tight? Tight / (Average) / Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

No change in airflow see photos in floor plans in drawer.

Airflow near source

Outdoor air infiltration

Infiltration into air ducts

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

a. Above grade construction:	wood frame	concrete	stone	brick
b. Basement type:	full	crawlspace	slab	other N/A
c. Basement floor:	concrete	dirt	stone	other N/A
d. Basement floor:	uncovered	covered	covered with N/A	
e. Concrete floor:	unsealed	sealed	sealed with Tile	
f. Foundation walls:	poured	block	stone	other
g. Foundation walls:	unsealed	sealed	sealed with paint	
h. The basement is: N/A	wet	damp	dry	moldy
i. The basement is: N/A	finished	unfinished	partially finished	
j. Sump present?	Y / N			
k. Water in sump?	Y / N / not applicable			

Basement/Lowest level depth below grade: N/A (feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

None Apparent

6. HEATING, VENTING and AIR CONDITIONING (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

Hot air circulation	Heat pump	Hot water baseboard	
Space Heaters	Stream radiation	Radiant floor	
Electric baseboard	Wood stove	Outdoor wood boiler	Other

The primary type of fuel used is:

Natural Gas	Fuel Oil	Kerosene
Electric	Propane	Solar
Wood	Coal	

Domestic hot water tank fueled by: Electric

Boiler/furnace located in:	Basement	Outdoors	Main Floor	Other
Air conditioning:	Central Air	Window units	Open Windows	None

Are there air distribution ducts present? (Y) / N

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

- Ducts visible in vacant space but not operational.
- New Chinese wok stove vents pull air up and out to roof

7. OCCUPANCY

Is basement/lowest level occupied? Full-time Occasionally Seldom Almost Never N/A

Level	**General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)**
Basement	N/A
1st Floor	Retail spaces & Bagby / Chinese Restaurant.
2nd Floor	—
3rd Floor	—
4th Floor	—

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. Is there an attached garage? Y / (N)

b. Does the garage have a separate heating unit? Y / N / (NA)

c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) (Y) / N / NA
Please specify 1 car / Gasoline is parked outside

d. Has the building ever had a fire? Y / (N) When? _____

e. Is a kerosene or unvented gas space heater present? Y / (N) Where? _____

f. Is there a workshop or hobby/craft area? Y / (N) Where & Type? _____

g. Is there smoking in the building? Y / (N) How frequently? _____

h. Have cleaning products been used recently? Y / (N) When & Type? _____

i. Have cosmetic products been used recently? Y / (N) When & Type? _____

j. Has painting/staining been done in the last 6 months? Y / (N) Where & When? _____

k. Is there new carpet, drapes or other textiles? Y / (N) Where & When? _____

l. Have air fresheners been used recently? Y / (N) When & Type? _____

m. Is there a kitchen exhaust fan? (Y) / N If yes, where vented? roof

n. Is there a bathroom exhaust fan? (Y) / N If yes, where vented? roof

o. Is there a clothes dryer? Y / (N) If yes, is it vented outside? Y / N

p. Has there been a pesticide application? Y / (N) When & Type? _____

Are there odors in the building? Y / (N)
If yes, please describe: _____

Do any of the building occupants use solvents at work? Y / (N)
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Y / (N)

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly)
Yes, use dry-cleaning infrequently (monthly or less)
Yes, work at a dry-cleaning service
No
Unknown

Is there a radon mitigation system for the building/structure? Y / (N) Date of Installation: _____
Is the system active or passive? Active/Passive

SSD off

9. WATER AND SEWAGE

Water Supply:	Public Water	Drilled Well	Driven Well	Dug Well	Other: _____
Sewage Disposal:	Public Sewer	Septic Tank	Leach Field	Dry Well	Other: _____

10. RELOCATION INFORMATION (for oil spill residential emergency)

a. Provide reasons why relocation is recommended: N/A

b. Residents choose to: remain in home relocate to friends/family relocate to hotel/motel

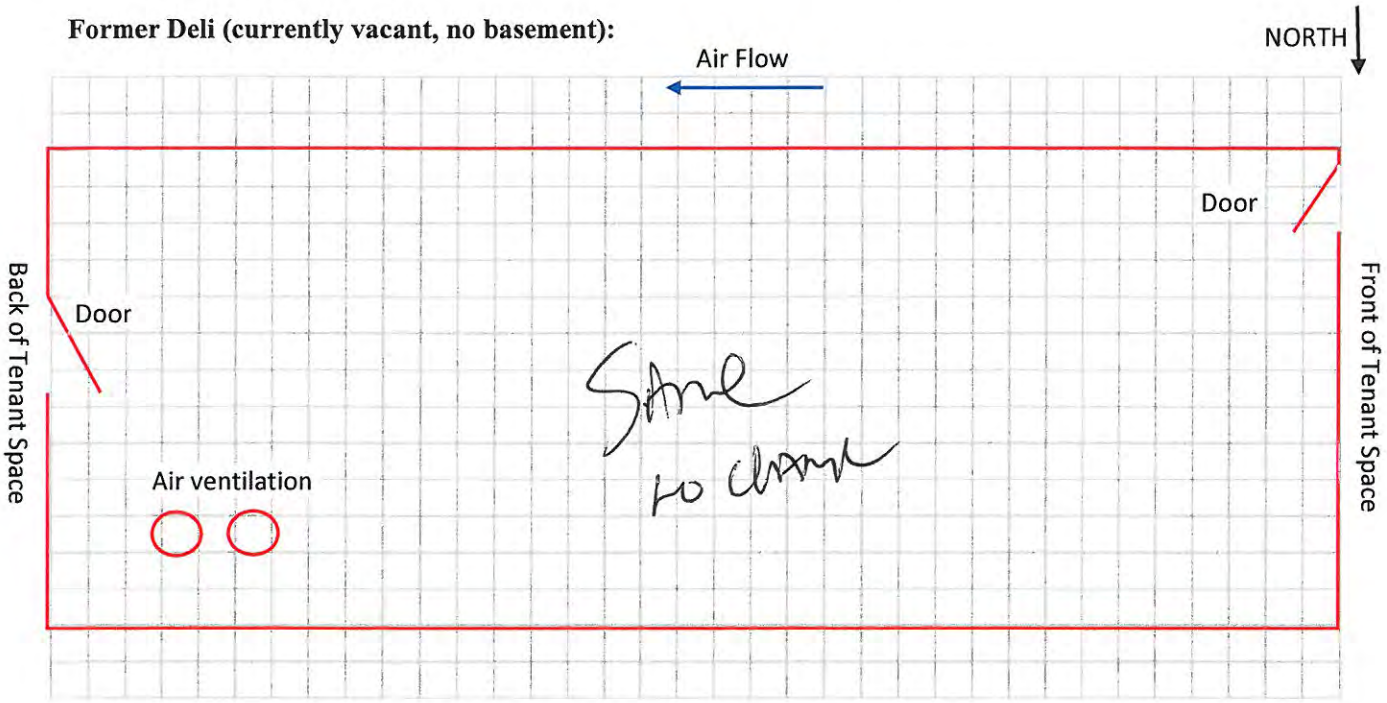
c. Responsibility for costs associated with reimbursement explained? Y / N

d. Relocation package provided and explained to residents? Y / N

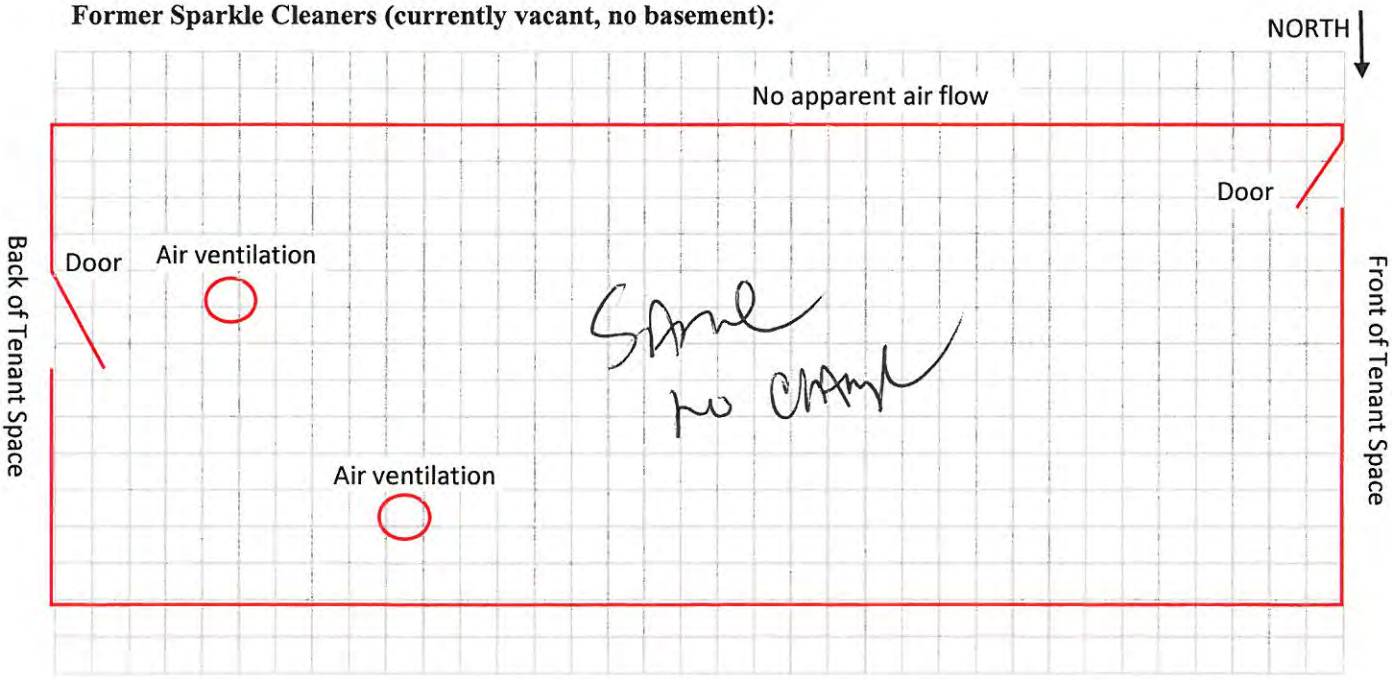
11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

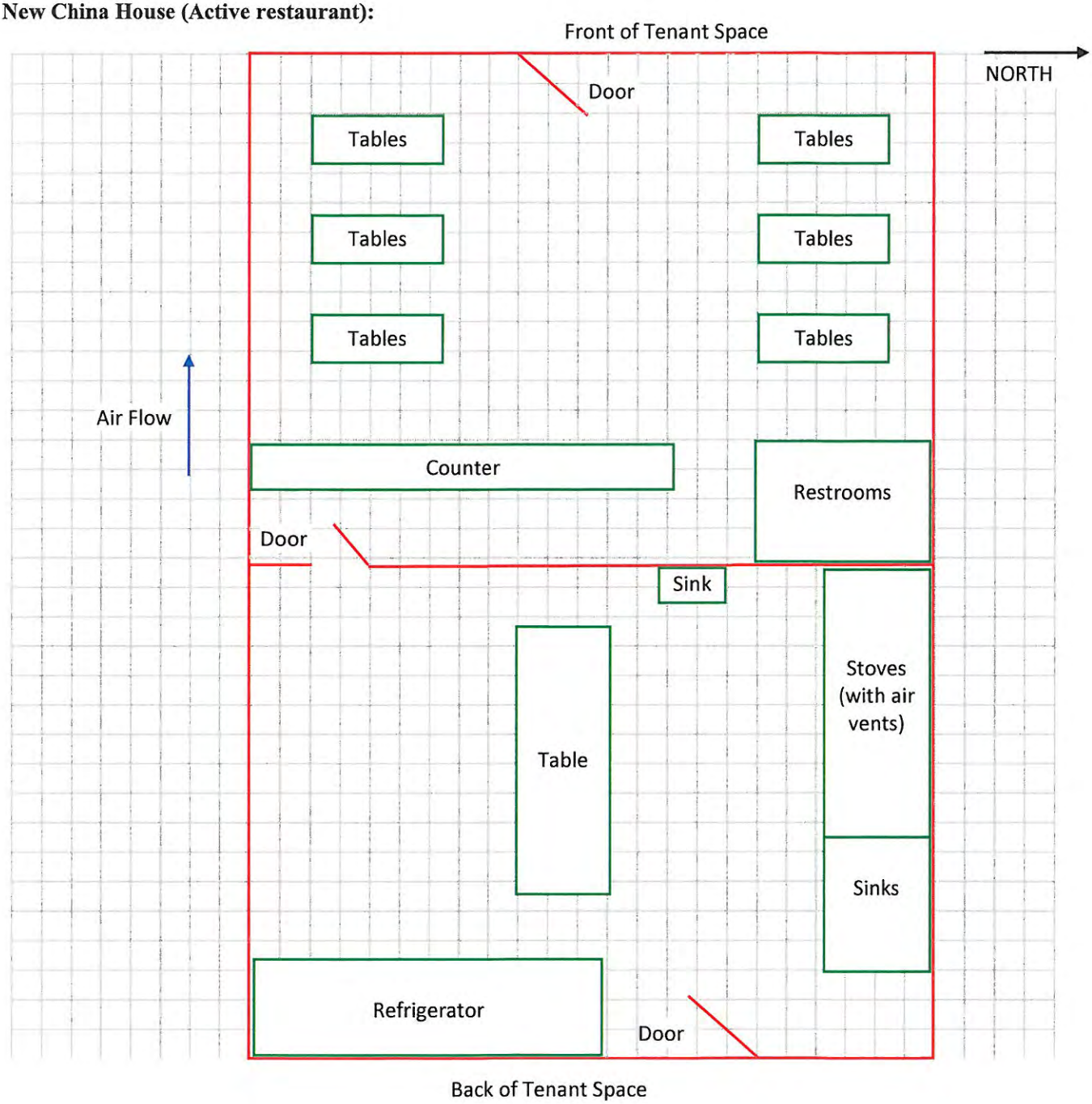
Former Deli (currently vacant, no basement):



Former Sparkle Cleaners (currently vacant, no basement):



New China House (Active restaurant):



13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: MX2 PID

List specific products found in the residence that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo ** Y / N
Deli	Paint	5 Gal	used	See manufacturer	0.0	Y
Deli	Dry Adhesive	50 lb	used	"	0.0	Y
Sprinkler	Gas Can	1 Gal	used	"	0.0	Y
Sprinkler	Ham Fuel	6.7 oz	new	"	0.0	Y
Sprinkler	Paint	1 Gal	used	"	0.0	Y
Chem	WD 40	Can	used	"	0.0	NO
Chem	Dishwashing Powder	5 Gal	used	"	0.0	Y

* Describe the condition of the product containers as **Unopened (UO), Used (U),** or **Deteriorated (D)**
** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

AIR

CHAIN OF CUSTODY

ACCUTEST LABORATORIES

Air Sampling Field Data Sheet

FED-EX Tracking #: | Bottle Order Control #: DA-4-10-2015-33 | PAGE 1 OF 2

Lab Quote #: | Lab Job #: JB93613

JB93613

Client / Reporting Information

Company Name: Groundwater and Environmental Services
Address: 16 Mount Ebo Rds.
City: Brewster State: NY Zip: 10509
Project Contact: Karen Bourque E-mail: kbourque@gesonline.com
Phone #: 866-839-5195 ex3833 Fax #:
Sampler(s) Name(s): Gregg Marenkowski

Project Name: Urstadt-Orangetown Shopping Ctr.
Street: I-45 Orangetown Shopping Ctr.
City: Orangeburg State: NY
Project #:
Client Purchase Order #:

Weather Parameters

Temperature (Fahrenheit): Start: 56° Maximum: 70° Stop: 68° Minimum: 56°
Atmospheric Pressure (Inches of Hg): Start: 30in Maximum: 30in Stop: 30in Minimum: 30in
Other weather comment:

Lab Sample #	Field ID / Point of Collection	Air Type: Indoor(I) Soil Vap(SV) Ambient(A)	Sampling Equipment Info: Canister Serial #	Canister Size 6L or 1L	Flow Controller Serial #	Start Sampling Information: Date	Time (24hr clock)	Canister Pressure ("Hg)	Interior Temp (F)	Sampler Init.	Stop Sampling Information: Date	Time (24hr clock)	Canister Pressure ("Hg)	Interior Temp (F)	Sampler Init.	Standard TO-15 Reporting List	Requested Analysis
1	Deli VP-1	SV	8227	6L	FC112	4/28/15	0854	>30	56°	GM	4/28/15	1654	8	68	GM		
2	Deli VP-1 Ambient	A	A235	6L	FC712	4/28/15	0858	29	56°	GM		1658	8	68			
3	Deli SSD-MP-2	SV	A444	6L	FC576	4/28/15	0906	29	56°	GM		1706	8	68			
4	Deli SSD-MP-2 Ambient	A	A1044	6L	FC146	4/28/15	0907	>30	56	GM		1707	8.5	68			
5	China SSD-MP-5	SV	A630	6L	FC099	4/28/15	1018	28.5	56	GM		1818	16	68			
6	China SSD-MP-5 Ambient	A	A469	6L	FC105	4/28/15	1020	28.0	56	GM		1820	5.5	68			
7	China VP-9	SV	A773	6L	FC481	4/28/15	1027	>30	56	GM		1827	11	68			
8	China VP-9 Ambient	A	A1198	6L	FC478	4/28/15	1028	>30	56	GM		1828	8.5	68			
9	Outside Ambient	A	A1648	6L	FC480	4/28/15	1033	27.5	56	GM	↓	1833	7.5	68	↓		

Turnaround Time (Business days)

Standard - 15 Days
10 Day
5 Day
3 Day
2 Day
1 Day
Other

Approved By:
Date:

Data Deliverable Information

All NJDEP TO-15 is mandatory Full T1
Comm A
Comm B
Reduced T2
Full T1
Other:

Comments / Remarks

INITIAL ASESSMENT NL 4A
LABEL VERIFICATION HL
SUMMA

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date Time:	Received By:
1 Gregg Marenkowski	4/27/15 15:30	1 FedEx
2 FedEx	4/30/15 10:05	2
3 Gregg Marenkowski	4/28/15 2000	3 GES Fridge
4	4-29-15 6:00	4 FedEx
5 FedEx	4/30/15 1005	5

Custody Seal #

7734 8471 0373, seal #991
7734 8610 8829, seal # 993
7734 8470 6186,
7734 8470 1368

Example COC (from April)

OSR – 3

Example (from Amy)

NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name Gregg Marcinkowski Date/Time Prepared 4/28/2015

Preparer's Affiliation GES/Consultant Phone No. 866-839-5195

Purpose of Investigation SVI Investigation

1. OCCUPANT:

Interviewed: Y / (N)

Last Name: _____ First Name: New China Restaurant & Two Vacant Spaces

Address: 13 Orangetown Shopping Center, Orangeburg, NY

County: Rockland

Home Phone: _____ Office Phone: _____

Number of Occupants/persons at this location 3-4 Age of Occupants _____

2. OWNER OR LANDLORD: (Check if same as occupant____)

Interviewed: Y / (N)

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential	School	(Commercial/Multi-use)
Industrial	Church	Other: _____

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other: Strip mall on slab

If multiple units, how many? 3

If the property is commercial, type?

Business Type(s) 2 vacant spaces and 1 Chinese restaurant

Does it include residences (i.e., multi-use)? Y / (N) If yes, how many? _____

Other characteristics:

Number of floors 1 Building age 1966

Is the building insulated? (Y) / N How air tight? Tight / (Average) / Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

-

Air flow directions indicated on the site Floor Plans (page 6).

Airflow near source

Outdoor air infiltration

-

Infiltration into air ducts

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

a. Above grade construction:	wood frame	concrete	stone	brick
b. Basement type: NA	full	crawlspace	slab	other N/A
c. Basement floor: NA	concrete	dirt	stone	other N/A
d. Basement floor: NA	uncovered	covered	covered with N/A	
e. Concrete floor:	unsealed	sealed	sealed with _____	
f. Foundation walls:	Poured	block	stone	other _____
g. Foundation walls:	unsealed	sealed	sealed with Paint	
h. The basement is: NA	wet	damp	dry	moldy
i. The basement is: NA	finished	unfinished	partially finished	
j. Sump present?	Y / N			
k. Water in sump?	Y / N / not applicable			

Basement/Lowest level depth below grade: N/A (feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

None apparent.

6. HEATING, VENTING and AIR CONDITIONING (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

Hot air circulation	Heat pump	Hot water baseboard	
Space Heaters	Stream radiation	Radiant floor	
Electric baseboard	Wood stove	Outdoor wood boiler	Other _____

The primary type of fuel used is:

Natural Gas	Fuel Oil	Kerosene
Electric	Propane	Solar
Wood	Coal	

Domestic hot water tank fueled by: Electric

Boiler/furnace located in:	Basement	Outdoors	Main Floor	Other None
Air conditioning:	Central Air	Window units	Open Windows	None

Are there air distribution ducts present? (Y) / N

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

Air ducts visible in the vacant spaces, however, nothing was running at the time of the inspection.

7. OCCUPANCY

Is basement/lowest level occupied? Full-time Occasionally Seldom Almost Never – **N/A**

Level	**General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)**
Basement	N/A
1st Floor	Retail spaces (Chinese Restaurant) and vacant spaces
2nd Floor	N/A
3rd Floor	N/A
4th Floor	N/A

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. Is there an attached garage? Y / (N)

b. Does the garage have a separate heating unit? Y / N / (NA)

c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) (Y) / N / NA Please specify Gasoline & generator

d. Has the building ever had a fire? Y / (N) When? _____

e. Is a kerosene or unvented gas space heater present? Y / (N) Where? _____

f. Is there a workshop or hobby/craft area? (Y) / N Where & Type? Vacant space used as work area

g. Is there smoking in the building? (Y) / N How frequently? All-day

h. Have cleaning products been used recently? Y / (N) When & Type? _____

i. Have cosmetic products been used recently? Y / (N) When & Type? _____

j. Has painting/staining been done in the last 6 months? (Y) / N Where & When?
Front of buildings (within last few weeks)

k. Is there new carpet, drapes or other textiles? Y / (N) Where & When? _____

l. Have air fresheners been used recently? Y / (N) When & Type? _____

m. Is there a kitchen exhaust fan? (Y) / N If yes, where vented? Outside

n. Is there a bathroom exhaust fan? (Y) / N If yes, where vented? Outside

o. Is there a clothes dryer? Y / (N) If yes, is it vented outside? Y / N

p. Has there been a pesticide application? Y / (N) When & Type? _____

Are there odors in the building? Y / (N)
If yes, please describe: _____

Do any of the building occupants use solvents at work? Y / (N)
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Y / (N)

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly) — No
Yes, use dry-cleaning infrequently (monthly or less) — (Unknown)
Yes, work at a dry-cleaning service

Is there a radon mitigation system for the building/structure? Y / (N) Date of Installation: _____
Is the system active or passive? Active/Passive
Note- SVE system inactive at the time of testing

9. WATER AND SEWAGE

Water Supply: (Public Water) Drilled Well Driven Well Dug Well Other: _____

Sewage Disposal: (Public sewer) Septic Tank Leach Field Dry Well Other: _____

10. RELOCATION INFORMATION (for oil spill residential emergency)

a. Provide reasons why relocation is recommended: _____

b. Residents choose to: remain in home relocate to friends/family relocate to hotel/motel

c. Responsibility for costs associated with reimbursement explained? Y / N

d. Relocation package provided and explained to residents? Y / N

APPENDIX C

Environmental Easement

Rockland County, NY
Paul Piperato County Clerk

1 South Main St Ste 100
New City, NY 10956
Phone Number : (845) 638-5070

Official Receipt : 2011-00049305

Printed On : 10/13/2011 **at** 11:01:36 AM **By :** 76 **on** INDEX9

Customer :
CLASS ABSTRACT SERVICES INC
72 JERICHO TPKE SUITE 3
MINEOLA, NY 11501

Date Recorded : October 04, 2011

Instrument ID	Amount
File Number : 2011-00035889	$101.00

Transaction : Ease, Rightway, A/Rent
Name(s): JLJ MANAGEMENT CO
To : PEOPLE OF THE STATE OF NEW YORK
Remarks : HAH

Itemized Check Listing

Check Number : 13622	$101.00

Total Due :	$101.00
Paid by Check :	$101.00
Change Tendered :	$0.00

HAVE A NICE DAY!

Paul Piperato, County Clerk
1 South Main St Ste 100
New City, NY 10956
(845) 638-5070

Rockland County Clerk Recording Cover Sheet

Received From :
CLASS ABSTRACT SERVICES INC
72 JERICHO TPKE SUITE 3
MINEOLA, NY 11501

Return To :
CLASS ABSTRACT SERVICES INC L
72 JERICHO TPKE SUITE 3
MINEOLA, NY 11501

First GRANTOR
JLJ MANAGEMENT CO

First GRANTEE
PEOPLE OF THE STATE OF NEW YORK

Index Type : Land Records
Instr Number : 2011-00035889
Book : **Page :**

Type of Instrument : Easement
Type of Transaction : Ease, Rightway, A/Rent
Recording Fee : $101.00

Recording Pages : 11

The Property affected by this instrument is situated in Orangetown, in the County of Rockland, New York

Real Estate Transfer Tax

RETT # :	815
Deed Amount :	$0.00
RETT Amount :	$0.00
Total Fees :	$101.00

State of New York
County of Rockland
I hereby certify that the within and foregoing was recorded in the Clerk's office for Rockland County, New York

On (Recorded Date) : 10/04/2011
At (Recorded Time) : 10:58:00 AM

Doc ID - 023456330011

Paul Piperato, County Clerk

This sheet constitutes the Clerks endorsement required by Section 319 of Real Property Law of the State of New York

Entered By: HAH Printed On : 10/13/2011 At : 3:11:40PM

County: Rockland Site No: C 344066 BCA Index No: A3-0563-0906
CLC 407990

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 16th day of September, 2011, between Owner(s) JLJ Management Co., a New York Partnership, having an office at 197 Trenor Drive, New Rochelle, County of Rockland, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233.

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

Sec 74.10 Blk 1 part of Lot 67

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 1-45 Orangetown Shopping Center in the Town of Orangetown, County of Rockland and State of New York, known and designated on the tax map of the County Clerk of Rockland as tax map parcel numbers: Section 74.10 Block 1 Lot 67, being the same as that property conveyed to Grantor by deed dated April 4, 1990 recorded in the Rockland County Clerk's Office in Book 0404 at Page 2555, the Environmental Easement area of which comprising approximately 1.3308 ± acres, and hereinafter more fully described in the Land Title Survey dated April 27, 2011 prepared by Joseph R. Link of Link Land Surveyors P.C., which will be attached to the Site Management Plan. The property description and survey (the "Controlled Property") is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of human health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Brownfield Cleanup Agreement Number: A3-0563-0906, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement")

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP.

(4) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(5) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(6) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(7) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP.

(8) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP.

(9) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential or Restricted Residential purposes, and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall annually, or such time as NYSDEC may allow, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved b the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5 the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:
Site Number: C 344066
Office of General Counsel
NYSDEC
625 Broadway
Albany, New York 12233-5500

With a copy to:
Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by

the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Grantor: JLJ Management Co., a New York Partnership

DAFO Realty Corp., its General Partner

By: _____

Print Name: Hilton Soniker

Title: President Date: 9/2/11

ODAF Realty Corp., its General Partner

By: _____

Print Name: Hilton Soniker

Title: President Date: 9/2/11

County: Rockland Site No: C 344066 BCA Index No: A3-0563-0906

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF NY)

On the 2nd day of September, in the year 20 11, before me, the undersigned, personally appeared Hilton Sonitker, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Notary Public - State of New York

JEROME KAMERMAN
Notary Public, State of New York
No. 02KA7146175
Qualified in Westchester County
Certificate Filed in New York County
Commission Expires October 31, 20

STATE OF NEW YORK)
) ss:
COUNTY OF NY)

On the 2nd day of September, in the year 20 11, before me, the undersigned, personally appeared Hilton Sonitker, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Notary Public - State of New York

JEROME KAMERMAN
Notary Public, State of New York
No. 02KA7146175
Qualified in Westchester County
Certificate Filed in New York County
Commission Expires October 31, 20

County: Rockland Site No: C 344066 BCA Index No: A3-0563-0906

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation as Designee of the Commissioner.

By: _____
Dale A. Desnoyers, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF Albany)

On the 16th day of September, in the year 2011 before me, the undersigned, personally appeared Dale Desnoyers, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public - State of New York

David J. Chiusano
Notary Public, State of New York
No. 01CH6093246
Qualified in Schenectady County
Commission Expires August 22, 2014

County: Rockland Site No: C 344066 BCA Index No: A3-0563-0906

SCHEDULE "A" ENVIRONMENTAL EASEMENT PROPERTY DESCRIPTION

I-45 ORANGETOWN SHOPPING CENTER
ORANGETOWN, COUNTY OF ROCKLAND, NY
SECTION: 74.10 BLOCK: 1 LOT: 67

ALL THAT CERTAIN PLOT, PIECE OR PARCEL OF LAND, WITH IMPROVEMENTS THEREON ERECTED, SITUATED AND LYING AND BEING IN THE TOWN OF ORANGETOWN, COUNTY OF ROCKLAND AND STATE OF NEW YORK.

BEGINNING AT A POINT ON THE WESTERLY SIDE OF OAK STREET WHERE THE SAME IS INTERSECTED BY THE DIVISION LINE BETWEEN LAND NOW OR FORMERLY JLJ MANAGEMENT ON THE SOUTH AND LAND NOW OR FORMERLY SEEBACH ON THE NORTH, SAID POINT ALSO BEING 430.52 FEET SOUTHERLY FROM THE SOUTHERLY END OF A CURVE HAVING A RADIUS OF 36.15 LENGTH OF 56.81 FEET CONNECTING THE SOUTHERLY SIDE OF ORANGEBURG ROAD AND THE WESTERLY SIDE OF OAK STREET.

THENCE RUNNING ALONG THE WESTERLY SIDE OF OAK STREET SOUTH 7°24'00" EAST 66.89 FEET TO THE DIVISION LINE BETWEEN JLJ MANAGEMENT AND LAND NOW OR FORMERLY HOFFMAN;

THENCE ALONG SAID DIVISION LINE SOUTH 82° 36'00" WEST 100.00 FEET;
THENCE CONTINUING ALONG SAID DIVISION LINE AND ALONG THE DIVISION LINE BETWEEN JLJ MANAGEMENT AND LAND NOW OR FORMERLY FARINI SOUTH 7°24'00" EAST 88.00 FEET.

THENCE RUNNING THROUGH LANDS OF JLJ MANAGEMENT THE FOLLOWING FIVE (5) COURSES AND DISTANCES;

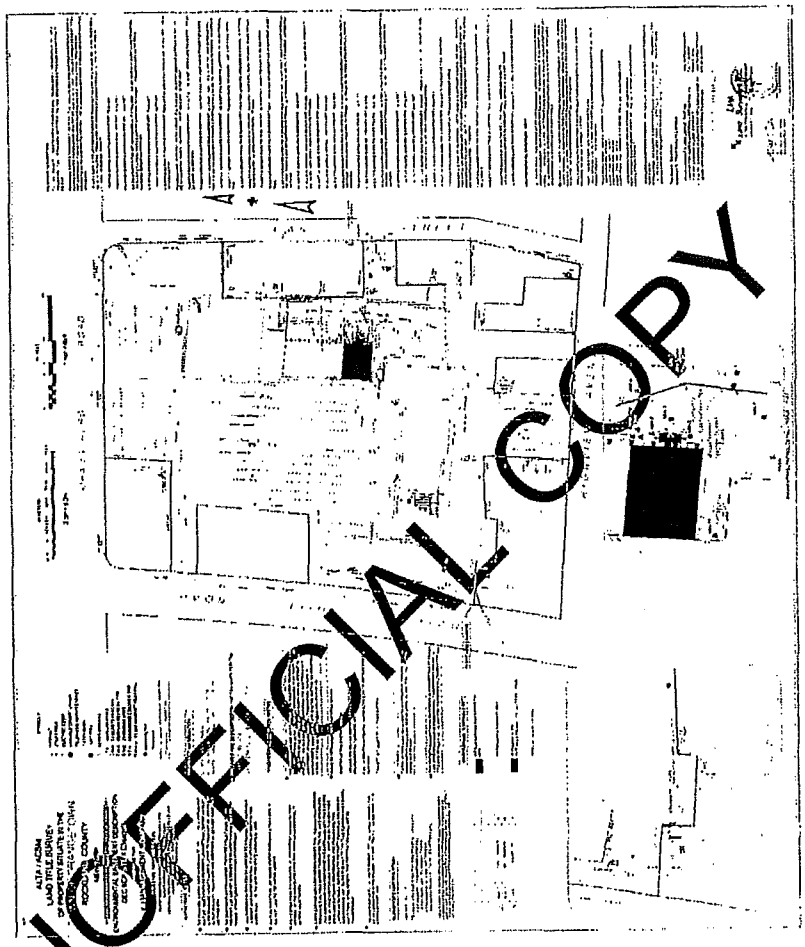
1. SOUTH 82° 36' 00" WEST 168.00 FEET;
2. NORTH 3° 04' 00" WEST 111.00 FEET;
3. SOUTH 87° 02' 00" WEST 56.00 FEET;
4. NORTH 2° 58' 00" WEST 182.10 FEET;
5. NORTH 87° 02' 00" EAST 176.89 FEET TO THE WESTERLY SIDE OF LAND NOW OR FORMERLY UCKER

THENCE RUNNING ALONG LAND OF UCKER AND CONTINUING ALONG LAND OF SEEBACH SOUTH 7° 24" 00" WEST 134.00 FEET AND NORTH 82° 36'00": EAST 125.00 FEET TO THE POINT AND PLACE OF BEGINNING.

CONTAINING 1.3308 ACRES / 57,970 SQ. FT.

County: Rockland Site No: C 344066 BCA Index No: A3-0563-0906

SURVEY



ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 16th day of September, 20 11, between Owner(s) JLJ Management Co., a New York Partnership, having an office at 197 Trenor Drive, New Rochelle, County of Rockland, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233.

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 1-45 Orangetown Shopping Center in the Town of Orangetown, County of Rockland and State of New York, known and designated on the tax map of the County Clerk of Rockland as tax map parcel numbers: Section 74.10 Block 1 Lot 67, being the same as that property conveyed to Grantor by deed dated April 4, 1990 recorded in the Rockland County Clerk's Office in Book 0404 at Page 2555, the Environmental Easement area of which comprising approximately 1.3308 ± acres, and hereinafter more fully described in the Land Title Survey dated April 27, 2011 prepared by Joseph R. Link of Link Land Surveyors P.C., which will be attached to the Site Management Plan. The property description and survey (the "Controlled Property") is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of human health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Brownfield Cleanup Agreement Number: A3-0563-0906, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement")

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP.

(4) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(5) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(6) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(7) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP.

(8) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP.

(9) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential or Restricted Residential purposes, and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall annually, or such time as NYSDEC may allow, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved b the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5 the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:

Site Number: C 344066
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by

the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Grantor: JLJ Management Co., a New York Partnership

DAFO Realty Corp., its General Partner

By: Hilton Sonker

Print Name: Hilton Sonker

Title: President Date: 9/2/11

ODAF Realty Corp., its General Partner

By: Hilton Sonker

Print Name: Hilton Sonker

Title: President Date: 9/2/11

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF NY)

On the 2nd day of September, in the year 20 11, before me, the undersigned, personally appeared Hilton Soniker, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Jerome Kamerman
Notary Public - State of New York

JEROME KAMERMAN
Notary Public, State of New York
No. 02KA7146175
Qualified in Westchester County
Certificate Filed in New York County
Commission Expires October 31, 2015

STATE OF NEW YORK)
) ss:
COUNTY OF NY)

On the 2nd day of September, in the year 20 11, before me, the undersigned, personally appeared Hilton Soniker, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Jerome Kamerman
Notary Public - State of New York

JEROME KAMERMAN
Notary Public, State of New York
No. 02KA7146175
Qualified in Westchester County
Certificate Filed in New York County
Commission Expires October 31, 2015

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation as Designee of the Commissioner.

By: _____
Dale A. Desnoyers, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF Albany)

On the 16th day of September, in the year 2011, before me, the undersigned, personally appeared Dale Desnoyers, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public - State of New York

David J. Chiusano
Notary Public, State of New York
No. 01CH5032146
Qualified in Schenectady County
Commission Expires August 22, 2014

SCHEDULE "A" ENVIRONMENTAL EASEMENT PROPERTY DESCRIPTION

1-45 ORANGETOWN SHOPPING CENTER
ORANGETOWN, COUNTY OF ROCKLAND, NY
SECTION: 74.10 BLOCK: 1 LOT: 67

ALL THAT CERTAIN PLOT, PIECE OR PARCEL OF LAND, WITH IMPROVEMENTS THEREON ERECTED, SITUATED AND LYING AND BEING IN THE TOWN OF ORANGETOWN, COUNTY OF ROCKLAND AND STATE OF NEW YORK.

BEGINNING AT A POINT ON THE WESTERLY SIDE OF OAK STREET WHERE THE SAME IS INTERSECTED BY THE DIVISION LINE BETWEEN LAND NOW OR FORMERLY JLJ MANAGEMENT ON THE SOUTH AND LAND NOW OR FORMERLY SEEBACH ON THE NORTH, SAID POINT ALSO BEING 430.52 FEET SOUTHERLY FROM THE SOUTHERLY END OF A CURVE HAVING A RADIUS OF 36.15 LENGTH OF 56.81 FEET CONNECTING THE SOUTHERLY SIDE OF ORANGEBURG ROAD AND THE WESTERLY SIDE OF OAK STREET.

THENCE RUNNING ALONG THE WESTERLY SIDE OF OAK STREET SOUTH 7°24'00" EAST 60.89 FEET TO THE DIVISION LINE BETWEEN JLJ MANAGEMENT AND LAND NOW OR FORMERLY HOFFMAN;

THENCE ALONG SAID DIVISION LINE SOUTH 82° 36'00" WEST 100.00 FEET;
THENCE CONTINUING ALONG SAID DIVISION LINE AND ALONG THE DIVISION LINE BETWEEN JLJ MANAGEMENT AND LAND NOW OR FORMERLY FARINI SOUTH 7°24"00" EAST 88.00 FEET.

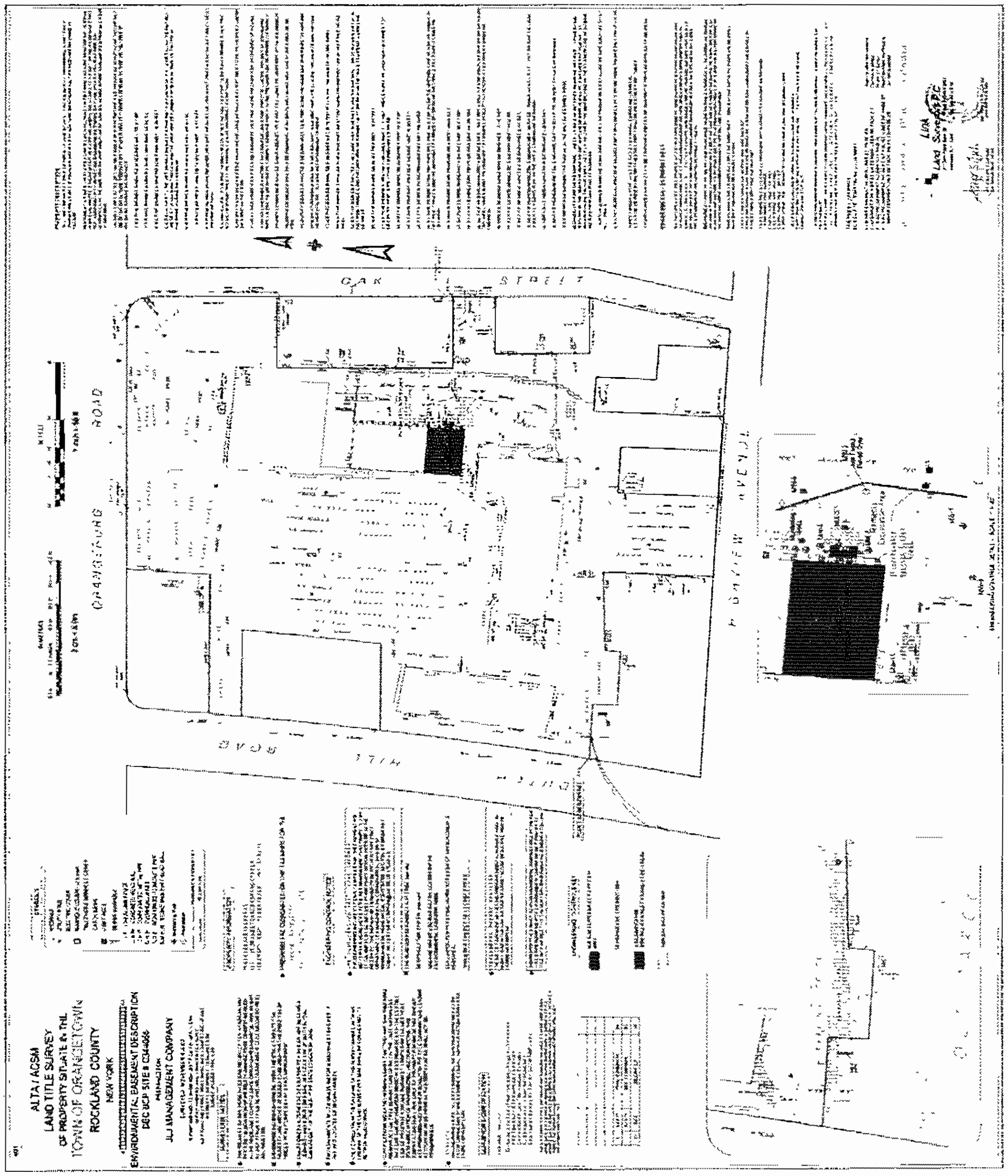
THENCE RUNNING THROUGH LANDS OF JLJ MANAGEMENT THE FOLLOWING FIVE (5) COURSES AND DISTANCES;

1. SOUTH 82° 36' 00" WEST 168.00 FEET;
2. NORTH 3° 04' 00" WEST 111.00 FEET;
3. SOUTH 87° 02' 00" WEST 56.00 FEET;
4. NORTH 2° 58' 00" WEST 182.10 FEET;
5. NORTH 87° 02' 00" EAST 176.89 FEET TO THE WESTERLY SIDE OF LAND NOW OR FORMERLY UCKER

THENCE RUNNING ALONG LAND OF UCKER AND CONTINUING ALONG LAND OF SEEBACH SOUTH 7° 24" 00" WEST 134.00 FEET AND NORTH 82° 36" 00": EAST 125.00 FEET TO THE POINT AND PLACE OF BEGINNING.

CONTAINING 1.3308 ACRES / 57,970 SQ. FT.

SURVEY



APPENDIX D

Photographs

View to the west of the waterline and gas line repairs made to the east of building #2 in November 2014

View to the south of the southeastern side of the side.

View to the southwest of the eastern side of the site

View to the north of the eastern side of the site

APPENDIX E

EC/IC Certifications

Enclosure 2

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Site Management Periodic Review Report Notice

Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. C344066

Site Name Orangeburg (Orangetown) Shopping Center

Site Address: 1-45 Orangetown Shopping Center Zip Code: 10962
City/Town: Orangetown
County: Rockland
Site Acreage: 1.3

Reporting Period: June 17, 2015 to June 17, 2016

	YES	NO
1. Is the information above correct?	☒	☐
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☒
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☒
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	☒
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?	☐	☒

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Commercial and Industrial	☒	☐
7. Are all ICs/ECs in place and functioning as designed?	☒	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

N/A
Signature of Owner, Remedial Party or Designated Representative

7-15-16
Date

Box 2A

	YES	NO
8. Has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid?	☐	☒

If you answered YES to question 8, include documentation or evidence that documentation has been previously submitted with this certification form.

9. Are the assumptions in the Qualitative Exposure Assessment still valid? (The Qualitative Exposure Assessment must be certified every five years)	☒	☐

If you answered NO to question 9, the Periodic Review Report must include an updated Qualitative Exposure Assessment based on the new assumptions.

SITE NO. C344066

Box 3

Description of Institutional Controls

Parcel	Owner	Institutional Control
74.10-1-67	UB Orangeburg, LLC	Ground Water Use Restriction Soil Management Plan Landuse Restriction Monitoring Plan Site Management Plan O&M Plan IC/EC Plan

The Controlled Property may be used for: Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv).

The use of groundwater underlying the site is restricted as a source of potable or process water, without necessary water quality treatment as determined by the Department, NYSDOH, or County DOH.

Box 4

Description of Engineering Controls

Parcel	Engineering Control
74.10-1-67	Groundwater Treatment System Vapor Mitigation Cover System

The site owner will be responsible for the operation and maintenance of the sub-slab depressurization system as discussed in the Site Management Plan.

The site owner will be responsible for the operation and maintenance of the bio-augmentation system as discussed in the Site Management Plan.

The site owner will be responsible for the operation and maintenance of the composite cover system as discussed in the Site Management Plan.

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
☒	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
☒	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

N/A
Signature of Owner, Remedial Party or Designated Representative

7-15-16
Date

IC CERTIFICATIONS
SITE NO. C344066

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Herbert E. Woike at 425B Hayden Station Rd. Windsor, CT. 06095
print name print business address

am certifying as Remedial Party (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Herbert E. Woike
Signature of Owner, Remedial Party, or Designated Representative Rendering Certification

7-15-16
Date

IC/EC CERTIFICATIONS

Box 7

Professional Engineer Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Gerald H. Cresap at GES, Inc., 364 Littleton Rd, Westford, MA
print name print business address

am certifying as a Professional Engineer for the ______________
(Owner or Remedial Party)

STATE OF NEW YORK
GERALD H. CRESAP, JR.
LICENSED PROFESSIONAL ENGINEER
087401

7/14/16

Signature of Professional Engineer, for the Owner or Remedial Party, Rendering Certification

Stamp (Required for PE)

Date

APPENDIX F

Laboratory Analytical Reports
(Included Separately on CD)

APPENDIX G

Data Usability Summary Reports (DUSR)

RemVer

Quality Assessment
Data Usability Summary Report

			RemVer Project #2014GE01 Client Project # 11022323-05-206
Site:	Orangetown Shopping Center	**Site #:**	C344066
Client:	GES, Inc.	**Site Owner:**	UB Orangeburg, LLC (UBO)
Sample Delivery Group (SDG)	JC8346		
Sample Matrix:	☐ Drinking water ☒ Groundwater ☐ Surface water ☐ Soil ☐ Sediment ☐ Air ☐ Biota (tissue, type: _____) ☐ Other: _____		

Introduction

RemVer performed a data quality assessment (DQA) on the analytical data reported in Sample Delivery Groups (SDGs) #JC8346 for groundwater samples. The DQA evaluated the performance of the analytical procedures and the quality of the resulting data. RemVer followed the requirements of the New York State Department of Environmental Conservation (NYSDEC) Data Usability Summary Report (DUSR) guidelines for an Analytical Services Protocol (ASP) Category B Data Deliverable. This report includes a narrative discussion of sample results qualified during the DQA. Table 1 describes qualification flags applied to the data either by Test America or during the DQA process.

Reported Methods

☐ Method 1311 TCLP
☐ Method 1312 SPLP
☒ Method 6010A, B & C / 6020 Trace Metals
☐ Method 7000 Metals
☐ Method 7196 Hexavalent Chromium (other:_____)
☐ Method 7470A or 7471 Mercury
☐ Method 8021 Volatile Organic Compounds (VOCs) GC
☐ Method 8081B Pesticides
☐ Method 8082 PCBs
☐ Method 8151 Chlorinated Herbicides
☒ Method 8260C VOCs GC/MS
☐ Method 8270D Semi-VOCs (sVOCs) GC/MS
☐ Method 9010/9012/9014 Cyanides (_____)

☐ Method TO-13A PAHs (air)
☐ Method TO-14A / -15 VOCs (air, summa) (_____)
☐ Method TO-17 VOCs (air, sorbent)
☐ Extractable Petroleum Hydrocarbons (EPH)
☐ Volatile Petroleum Hydrocarbons (VPH) Method
☐ EPH-total
☒ Other Methods:
Method 9060A Total Organic Carbon
Method MCAWW 300.0 Anions (IC)
Method RSK-175 Dissolved Gases
Method SM4500 Nitrite
Method 353 Nitrite & Nitrate

Quality Control Requirements Summary

☒ Duplicate
☒ Matrix Spike [MS] / Matrix Spike Duplicate [MSD]
☒ Trip Blank(s)
☒ Equipment, Method, &/or Rinsate Blank

☒ Other Field QC: Field notes regarding sampling
☐ Special QAPP Requirements: _____
_____

Intended Use of Data under Review

The client collected groundwater samples during a one-day collection event: November 11, 2015 at the referenced New York State Brownfields site. The site is under a Site Management Plan (SMP) that requires several kinds of monitoring. The sampling event provided gauging/biostimulant and quarterly groundwater monitoring (see §3.3 of Kleinfelder, 2011).

Significant Data Usability Issues Identified For SDG: #JC8346

Of the five samples (plus one duplicate and three blanks) discussed herein, RemVer rejected no results, but flagged certain analytes as estimated due to the quality of the analysis and the results are acceptable for use.

Some analytes had either matrix spike or other quality issues requiring UJ/J flagging for certain analytes.

All the Ferrous results were qualified (UJ or J) due to a holding violation, causing similar flagging of calculated Ferric results.

Please refer to the Lab Results and Data Usability Narrative section for further detail.

Detailed Quality Review

Field Notes Review

	Y	N	NA	COMMENTS
Sampling notes	☒	☐	☐	Summary sheets only
Field meteorological data	☐	☐	☒	No review required under QAPP
Associated sampling location and plan included	☒	☐	☐	See RAP/QAPP
Associated drilling logs available, reviewed	☐	☐	☒	No review required under QAPP
Identification of QC samples in notes	☒	☐	☐	
Sampling instrument decontamination records	☐	☐	☒	No review required under QAPP
Sampling instrument calibration logs	☐	☐	☒	No review required under QAPP
Chain of custody included	☒	☐	☐	With analytical report
Notes include communication logs	☐	☒	☐	
Any corrective action (CA) reports	☐	☒	☐	If so, CA documentation of results required.
Any deviation from methods noted? If so, explain	☐	☒	☐	None
Any electronic data deliverables	☒	☐	☐	See Attachment #4
Sampling Report (by Field Team Leader)	☒	☐	☐	

Lab Report Contents (Test America SDG Report: #JC8346)

☒ SDG Narrative
☒ Contract Lab Sample Information Sheets
☒ Data Package Summary Forms
☒ Chain-of-Custody (COC) Forms
☒ Test Results (no tentatively identified compounds [TICs])
☒ Calibration standards
☒ Surrogate recoveries
☒ Blank results
☒ Spike recoveries
☒ Duplicate results
☒ Confirmation (lab check/QC) samples
☒ Internal standard area & retention time summary
☒ Chromatograms
☒ Raw data files
☒ Other specific information

The SDG reported on the following samples:

Sample ID	SDG #JC8346– Sample #	Matrix	Sampled	Received
MW-3	#-1	Water	11/11/15	11/12/15
MW-4	#-2	Water	11/11/15	11/12/15
MW-5	#-3	Water	11/11/15	11/12/15
MW-6				
MW-7				
MW-8A	#-4	Water	11/11/15	11/12/15
MW-8B				
MW-10	#-5	Water	11/11/15	11/12/15
MW-15A				
MW-C				
MW-D				
MW-E				
MW-F				
MW-10 (MS/MSD)	#-5	Water	11/11/15	11/12/15
Field Duplicate (FD) (MW-10)	#-6	Water	11/11/15	11/12/15
Field Blank (FB)	#-7	Water	11/11/15	11/12/15
Equipment Blank (EB)	#-8	Water	11/11/15	11/12/15
Trip Blank (TB #1)	#-9	Water	11/11/15	11/12/15

The SDG included the following samples with their particular analyses:

JC8346:	Well	VOCs	Ethene	TOC	Iron	Fe^{+2}	Fe^{+3}	NO_3	SO_4	Pest/PCB	SVOCs	RCRA13
#-1	MW-3	X	X	X	X	X	X	X	X	—	—	—
#-2	MW-4	X	X	—	—	—	—	—	—	—	—	—
#-3	MW-5	X	X	X	X	X	X	X	X	—	—	—
None	MW-6	—	—	—	—	—	—	—	—	—	—	—
None	MW-7	—	—	—	—	—	—	—	—	—	—	—
#-4	MW-8A	X	—	—	—	—	—	—	—	—	—	—
None	MW-8B	—	—	—	—	—	—	—	—	—	—	—
#-5	MW-10	X	—	—	—	—	—	—	—	—	—	—
#-5MS	MW-10	X	—	—	—	—	—	—	—	—	—	—
#-5MSD	MW-10	X	—	—	—	—	—	—	—	—	—	—
None	MW-13A †	—	—	—	—	—	—	—	—	—	—	—
None	MW-15A †	—	—	—	—	—	—	—	—	—	—	—
None	MW-A †	—	—	—	—	—	—	—	—	—	—	—
None	MW-B †	—	—	—	—	—	—	—	—	—	—	—
None	MW-C †	—	—	—	—	—	—	—	—	—	—	—
None	MW-D †	—	—	—	—	—	—	—	—	—	—	—
None	MW-E †	—	—	—	—	—	—	—	—	—	—	—
None	MW-F †	—	—	—	—	—	—	—	—	—	—	—
#-6	FD (MW-10)	X	—	—	—	—	—	—	—	—	—	—
#-7	FB	X	—	—	—	—	—	—	—	—	—	—
#-8	EB	X	—	—	—	—	—	—	—	—	—	—
#-9	TB-1	X	—	—	—	—	—	—	—	—	—	—

TOC: Total Organic Carbon | Iron: Total Iron | Fe^{+2}: Ferrous Iron | Fe^{+3}: Ferric Iron | NO_3: Nitrate | SO_4: Sulfate
* Dry, no sample † No sample

Is the data package complete as defined under the requirements for the NYSDEC ASP Category B?		
Laboratory Report	**Complete (Y/N)**	**Comments**
JC8346	Y	Yes

Sample Preservation Requirements & Holding Times Met?			
Laboratory Report	**Hold Times (Y/N)**	**Preservation (Y/N)**	**Exception Comment**
JC8346	Y	Y	None Hold time for all Ferrous analysis missed, effects derivatives as well, flag UJ/J

Do all QC data fall within the protocol required limits and specifications? *(1) blanks, (2) instrument tunings, (3) calibration standards, (4) calibration verifications, (5) surrogate recoveries, (6) spike recoveries, (7) replicate analyses, (8) laboratory controls, (9) and sample data*									
SDG	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
JC8346	☐	☐	☐	☐	☐	☒	☐	☐	☒
The narrative section, below, discusses these deficiencies in detail, see Attachment 2 as well.									

Have all of the data been generated using established and agreed upon analytical protocols?		
Laboratory Report	**Protocols (Y/N)**	**Exception Comment**
JC8346	Y	None

Do the raw data confirm the results provided in the data summary sheets and quality control verification forms?		
Laboratory Report	**Confirmation (Y/N)**	**Exception Comment**
JC8346	Y	None

Have the correct data qualifiers been used and are they consistent with the most current guidance?		
Laboratory Report	**Qualifiers (Y/N)**	**Comment**
JC8346	Y	The laboratory generally applied appropriate qualifiers. To prepare the DUSR, it was necessary to apply additional qualifications or adjust qualifications to certain results as shown in Attachments 3 and 4.

Have any quality control (QC) exceedances been specifically noted in this DUSR and the corresponding QC summary sheets from the data packages referenced?		
Laboratory Report	**QC Exceedances Documented (Y/N)**	**Comment**
JC8346	Y	Several data qualifications were applied as described below

Data Quality and Usability Narrative

Field Notes Inspection

The groundwater samples came from a one-day collection event: November 11, 2015. A review of the field notes provided the following information pertaining to data usability.

Groundwater MWs	November-2015 Comments SDG #JC8346
MW-3	Bailer purge (1-gal), sampled
MW-4	Bailer purge (1.2-gal), sampled
MW-5	Bailer purge (<1-gal), sampled
MW-6	No sample
MW-7	No sample
MW-8A	Bailer purge (<1-gal), sampled
MW-8B	No sample; possible casing shift, cannot reach well bottom
MW-10	Bailer purge (8-gal), sampled; duplicate & MS/MSD samples came from this well
MW-13A	No sample
MW-15A	No sample
MW-A	No sample
MW-B	No sample
MW-C	No sample
MW-D	No sample
MW-E	No sample
MW-F	No sample

Laboratory Report Inspection

The laboratory produced SDG report #JC8346 (dated 1 December 2015). The final report contained the required data and information.

Chain of Custody (COC) Evaluation

GES produced one COC for the referenced fieldwork (#JC8346, single, one-page COC).

Sample Preservation & Holding Time Evaluation

Laboratory received one cooler with samples on 11/12/2015 @ 10:15 (designated as SDG-JC8346) in proper condition and, where required, on ice. The temperature of the cooler at receipt

time was 3.5ºC. All holding times and preservation requirements were met with the following exceptions:

- Ferrous—samples #-1 & #-3 received outside of holding for this analysis, all results flagged as UJ/J.
- Ferric—because this analyte is derived by calculation all results were similarly qualified as Ferrous (see Attachment 2 and 3).

Blank Evaluation

The TB had no detectable VOC analytes (above their respective the reporting limits). The Equipment and Field Blank (EB and FB, respectively) had no detectable VOC analytes (above their respective the RLs). Laboratory Method Blanks (MBs) had conforming parameters and analytes below their respective RLs.

Laboratory Control Samples (LCS)

The various LCS were within the acceptable range for their particular analyses in SDG JC8346.

Surrogates

Surrogates added to a sample allow testing of preparatory and instrument behavior resulting in recoveries within appropriate method ranges for all analytes.

Site-Specific Matrix Spikes and Matrix Spike Duplicates

The matrix spike/matrix spike duplicate (MS/MSD) runs for all analyses for JC8346 met the QA criteria, with the following exception(s):

- The MS/MSD recoveries for Batch V2B6086 for Samples: 1, 2, 3 (run 1), 4, 5, 7, & 8 were beyond (upper) control limits for Dichlorodifluoromethane and Trichlorofluoromethane due to matrix interference as indicated in Attachment 2. The compounds were 'UJ' flagged to indicate a suspect result.
- The MS/MSD recoveries for Batch V2B6087 for Sample #- 3 (run 2), 6, & 9 were beyond (upper) control limits for Tetrahydrofuran due to matrix interference as indicated in Attachment 2. The compounds were 'UJ' flagged to indicate a suspect result.

Duplicates

GES collected a field replicate of MW-10 (compare samples #-5 and #-6). The VOC analytes met the RPD performance criteria of <20% (see below Attachment #2).

Tentatively Identified Compounds (TICs)

This SDG had no analysis of TICs.

Other Quality Issues

Laboratory Contaminants

Several samples had low concentration VOC detections of common laboratory contaminants. Such compounds if they are less than 5-times the reported detection limit are typically flagged as 'B' and discounted as a real detectable site-related compound. RemVer wishes to note, however, that detections of this compound are consistent across at least two quarters. As such, RemVer recommends a review to consider possible explanations for this apparent consistency. In this report, the following were so labelled:

Sample #-3 (MW-3): Acetone
Sample #-2 (MW-4): Carbon Disulfide

In the case of Sample #-4 (MW-8a), there as a detection of Tetrahydrofuran just above the detection limit. As this compound is not a site-related chemical, as not detected in other samples, and it is common to laboratories, RemVer flagged the single detection with a 'J'. RemVer wishes to note, however, that detections of this compound are consistent across at least two quarters. As such, RemVer recommends a review to consider possible explanations for this apparent consistency.

Sample Result and Usability Evaluation

Due to certain sample issues or laboratory performance, some results were qualified; however, the data are usable. No data received an R (rejected) flag. If an analyte was above the MDL but below the RL, then it was flagged as "UJ".

Measurement of Total Iron used Inductively Coupled Plasma (ICP) based on nitric acid preserved samples; whereas measurement of Ferrous Iron used the Phenanthroline Method (SM3500), which is a colorimetric method using hydrochloric-preserved samples. Interferences resulting in positive bias in the ferrous result include strong oxidizing agents, cyanide, nitrite, phosphates (polyphosphates more so than orthophosphate), chromium, or zinc in concentrations exceeding 10X greater than iron, or cobalt and copper in excess of 5 mg/L, or nickel in excess of 2 mg/L; moreover, bismuth, cadmium, mercury, molybdate, and silver precipitate phenanthroline, which is the color reagent used for ferrous iron. Using the analytically estimated Total and Ferrous Iron concentrations, Test America calculated the concentration of Ferric Iron by difference. Any qualifier flags associated with analytic results automatically attach to the calculated results.

RemVer modified Test America's laboratory electronic data reports by adding quality flags, highlighted in yellow (see Attachment #4 [separate file]: Orangetown_2015Q4_DUSR.xls [EXCEL file]).

References

Kleinfelder, 2011, *Site Management Plan, Orangetown Shopping Center, 1-45 Orangetown Shopping Center, Orangeburg, NY, NYSDEC Site #C344066*, Final, 21-November, 250p

NYSDEC, 2010, *Technical Guidance for Site Investigation and Remediation*, "DER-10," Division of Environmental Remediation: Albany, NY, May, 232p

NYSDEC, 2010, *Guidance for Data Deliverables and the Development of Data Usability Summary Reports*, Appendix 2B IN *Technical Guidance for Site Investigation and Remediation*, Division of Environmental Remediation: Albany, NY, May, 232p

USEPA, 2008, *Contract Laboratory Program National Functional Guidelines for Organic Data Review*, OSWER 9240.1-48, USEPA-540-R-08-01, Office of Superfund Remediation and Technology Innovation: Washington, DC, June, 225p

USEPA, 2010, *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, OSWER 9240.1-51, USEPA-540-R-10-011, Office of Superfund Remediation and Technology Innovation: Washington, DC, January, 110p

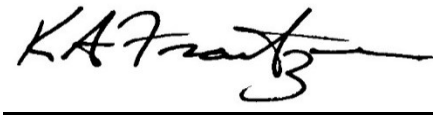
USEPA, 2012, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846*, Current Online Revision: http://www.epa.gov/epawaste/hazard/testmethods/sw846/online/index.htm, accessed April 2012

Tables

1. Qualifier Flags

Attachments

1. Data Usability Reviewer Qualifications
2. DQA Detail Worksheet
3. DQA Non-Conformance Summary Workheet
4. Separate EXCEL File: Orangetown_2015Q4_DUSR.xls [NOTE: RemVer modified the Test America work products by adding quality flags, which are in yellow highlight.]



Prepared by: Kurt A. Frantzen, PhD, CHMM
December 17, 2015

GES PO#567377

Table 1
Qualifier Flags

Qualifier	Quality Implication
U	Analyte analyzed for, but not detected above the sample's reported quantitation limit
J	Analyte positively identified at a numerical value that is the approximate concentration of the analyte in the sample
J +	Sample likely to have a high bias
J –	Sample likely to have a low bias
UJ	Analyte not detected above the sample quantitation limit; the associated quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample
N	The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
R	Sample result rejected due to serious deficiency in ability to analyze sample and meet quality control criteria; the presence or absence of the analyte cannot be confirmed. This qualifier also may apply when more than one sample result is generated for a target analyte (*i.e.*, dilutions or re-analyses), the most technically acceptable result is considered acceptable.
B | EB **TB | BB**	An analyte identified in method blank (B), aqueous equipment (EB), trip (TB), or bottle blanks (BB) used to assess field contamination associated with soil or sediment samples mandates these qualifiers for only soil and sediment sample results.
P	Use professional judgment based on data use. It usually has an "M" with it, which indicates that a manual check should be made if the data that are qualified with the "P" are important to the data user. In addition, "PM" also means a decision is necessary from the Project Manager (or a delegate) concerning the need for further review of the data (*see below*).
PM	A manual review of the raw data is recommended to determine if the defect affects data use, as in "R" above. This review should include consideration of potential affects that could result from using the "P" qualified data. For example, in the case of holding-time exceedance, the Project Manager or delegate can decide to use the data with no qualification when analytes of interest are known not to be adversely affected by holding-time exceedances. Another example is the case where soil sample duplicate analyses for metals exceed the precision criteria; because this is likely due to sample non-homogeneity rather than contract laboratory error, then the manager or delegate must decide how to use the data.

Attachment 1
Data Usability Reviewer: Kurt A. Frantzen, PhD, CHMM

Experience

2014-Present	AECC	Senior EHS Consultant
2013-Present	d/b/a RemVer	Owner
2011-2012	RemVer, Inc.	President
2006-2011	Kleinfelder	Senior Principal Scientist
2005	Kleinfelder	Principal Scientist, Part-Time/On Call
2004-2006	d/b/a Environmental Risk Group	Owner
2004-2006	RemVer, Inc., Larchmont, NY	Founder, President
1999-2004	VHB, Inc.	ERM Director & Associate
1997-1998	GEI Consultants, Inc.	Senior Project Manager
1992-1997	Ecology and Environment, Inc.	Technical Chief
1991-1992	EA Engineering, Science, & Technology, Inc.	Project Manager III
1990-1991	Ecology and Environment, Inc.	Technical Group Manager
1986-1990	Ecology and Environment, Inc.	Senior Environmental Scientist

Education

Am Cancer Soc. Post-Doctoral Fellow, U Washington 1985-1986

PhD—Life Sci. / Biochem, NU—Lincoln	1985
MS—Plant Pathology, Kansas State Univ.	1980
BS—Biology, NU—Omaha	1978

Registrations

Certified Hazardous Materials Manager, since 2007, #14143

Professional Affiliations

Society Risk Analysis ('09 & '11 Chair, Eco-Risk Assessment)
Am. Chemistry Society
Am. Assoc. Advance Science
NY Academy of Science
Am. Institute of Biological Sciences
LSP Association

Other

- CERCLA & RCRA experience, as well as DOD (Air Force & Army) & DOE (INEL)
- NE Regional Experience—NY BCP; Mass MCP; & various sites in CT, RI & NH
- National Experience: NE, SE, Gulf & West Coast, Mid-west, Inter-mountain, California, Alaska
- International: Germany, Israel, Kuwait, Australia
- Selected Publications
    - *Using Risk Appraisals to Manage Environmentally Impaired Properties*, 2000, VHB Site Works, Report 108
    - *Risk-Based Analysis for Environmental Managers*, 2001, CRC/Lewis
    - Chapter 7 Risk Assessment, *Managing Hazardous Materials*, 2002 & 2009, IHMM
    - Chapter 22 Cleanup Goals, *Brownfields Law & Practice*, 2004-Present, Lexis/Nexis
    - *Use of Risk Assessment in Risk Management of Contaminated Sites*, 2008, ITRC
- 60 Conference Papers & Invited Professional Presentations
    - 1999-2014, Visiting Lecturer, Brownfields Program, Harvard Graduate School of Design
    - 2010-2013, Invited Lecturer, Pace University Law School

Attachment 2
DQA Detail Worksheet

BLANKS	>RL?	Compounds	Notes
Method Blank: VOCs	No	—	No Comment
Method Blank: Ethene	No	—	No Comment
Method Blank: TOC	No	—	No Comment
Method Blank: Nitrate & Sulfate	No	—	No Comment
Method Blank: Iron	No	—	No Comment
Method Blank: Ferrous	No	—	No Comment
Field Blank (FB)	No	—	No Comment
Equip. Blank (EB)	No	—	No Comment
Trip Blank (TB)	No	—	No Comment

LCS	SV <10%	Low Bias > 10% & < LCL	High Bias >UCL	Compound(s)	Notes
VOCs	—	—	—	All other VOCs	No Comment
Ethene	—	—	—	Ethene	No Comment
Metals	—	—	—	Iron	No Comment
TOC	—	—	—	TOC	No Comment
NO_3 / SO_4	—	—	—	Nitrate & Sulfate	No Comment
Ferrous/Ferric	—	—	—	Iron +2 / Iron +3	No Comment

SURROGATES	SV <10%	Low Bias > 10% & < LCL	High Bias >UCL	Compound(s)	Notes
VOCs	—	—	—	—	No Comment
Dis. Gases	—	—	—	—	No Comment
TOC	—	—	—	—	No Comment
NO_3 / SO_4	—	—	—	—	No Comment
Ferrous/Ferric	—	—	—	Iron +2 / Iron +3	No Comment

Attachment 2 continued

MS/MSDs	SV <10%	Low Bias > 10% & < LCL	High Bias >UCL	QC Source	RPDs	Notes
VOCs All other samples	—	—	—	SDG Batch	—	No Comment
VOCs #-1, 2, 3 (run 1), 4, 5, 7, & 8	—	—	>UCL	SDG Batch V2B6086	—	Flag UJ/J Dichlorodifluoromethane Trichlorofluoromethane
VOCs #-3 (run 2), 6, & 9	—	—	>UCL	SDG Batch V2B6087	—	Flag UJ/J Tetrahydrofuran
Dis. Gases	—	—	—	SDG Batch	—	No Comment
TOC	—	—	—	SDG Batch	—	No Comment
Sulfate	—	—	—	SDG Batch	—	No Comment
Nitrate #-1, 2, 3, & 4	—	—	>UCL	SDG Batch	—	Flag UJ/J
Nitrite	—	—	>UCL	SDG Batch	—	Flag UJ/J

FIELD DUPLICATES RPDs	QC Source	Soil RPD > 50%	Water RPD > 20%	Compounds	Notes
VOCs	MW-10 (#-5 & #-6)	N/A	—	—	No Comment
Dissolved Gases		N/A	N/C	—	Not Collected
Total Iron		N/A	N/C	—	
Nitrate & Sulfate		N/A	N/C	—	
Total Metals (Iron)		N/A	N/C	—	
Iron, Ferrous & Ferric		N/A	N/C	—	
TOC		N/A	N/C	—	
LAB DUPLICATES					
JC8346	Batch	N/A	—	As listed	No Comment

Reasonable Confidence Achieved	☐ Y	☐ N—Not Applicable
Significant QC Variances Noted	☒ Y	☐ N
Requested Reporting Limits Achieved	☒ Y	☐ N
Preservation Requirements Met	☒ Y	☐ N
Holding Time Requirements Met	☐ Y	☒ N—Ferrous Iron samples, results qualified, as are ferric

Abbreviations:
RL = Reporting Limit LCS = Laboratory Control Sample SV = Significant QC Variance
RPD = Relative Percent Difference LCL= RCP Lower Control Limit UCL= RCP Upper Control Limit
VOCs = Volatile Organic Compounds SVOCs = Semi-volatile Organic Compounds Pest = Pesticides
EPH = Extractable Petroleum Hydrocarbons VPH = Volatile Petroleum Hydrocarbons ETPH = EPH-Total
PCBs = Polychlorinated Biphenyls N/A = Not Applicable N/C = Not Collected -- = nothing to report
Notes: * Typical lab contaminants, not site-related

Attachment 3
DQA Non-Conformance Summary Worksheet

Only Flagged Results Shown Below

Sample Number(s)	Compound(s)	QC Non-Conformance	% Recovery	% RPD †	High or Low Bias ‡	Comments
MW-3 #–1	Acetone	Possible Lab Contaminant	—	—	—	Flag BJ
	Dichlorodifluoro-methane & Tri-chlorofluoromethane	MS/MSD	>UCL	—	Hi	Flag UJ/J
	Ferrous (Ferric)	Holding Time	—	—	—	Flag UJ/J
MW-4 #–2	Carbon Disulfide	Possible Lab Contaminant	—	—	—	Flag BJ
	Dichlorodifluoro-methane & Tri-chlorofluoromethane	MS/MSD	>UCL	—	Hi	Flag UJ/J
MW-5 #–3	Dichlorodifluoro-methane & Tri-chlorofluoromethane	MS/MSD	>UCL	—	Hi	Flag UJ/J
MW-8A #–4	Tetrahydrofuran	Possible Lab Contaminant	—	—	—	Flag J
	Dichlorodifluoro-methane & Tri-chlorofluoromethane	MS/MSD	>UCL	—	Hi	Flag UJ/J
MW-10 #–5	Dichlorodifluoro-methane & Tri-chlorofluoromethane	MS/MSD	>UCL	—	Hi	Flag UJ/J
Duplicate (MW-10) #–6	—	—	—	—	—	—

Notes: † RPD—Relative Percent Difference
‡ Bias High—Reported result may be lower, Reporting Limit (RL) is acceptable as reported. Bias Low—Reported results may be higher, RL may be higher than reported.

RemVer

Quality Assessment
Data Usability Summary Report

			RemVer Project #2014GE01 Client Project # 11022323-05-206
Site:	Orangetown Shopping Center	**Site #:**	C344066
Client:	GES, Inc.	**Site Owner:**	UB Orangeburg, LLC (UBO)
Sample Delivery Group (SDG)	JC1723		
Sample Matrix:	☐ Drinking water ☒ Groundwater ☐ Surface water ☐ Soil ☐ Sediment ☐ Air ☐ Biota (tissue, type: _____) ☐ Other: _____		

Introduction

RemVer performed a data quality assessment (DQA) on the analytical data reported in Sample Delivery Groups (SDGs) #JC1723 for groundwater samples. The DQA evaluated the performance of the analytical procedures and the quality of the resulting data. RemVer followed the requirements of the New York State Department of Environmental Conservation (NYSDEC) Data Usability Summary Report (DUSR) guidelines for an Analytical Services Protocol (ASP) Category B Data Deliverable. This report includes a narrative discussion of sample results qualified during the DQA. Table 1 describes qualification flags applied to the data either by Test America or during the DQA process.

Reported Methods

☐ Method 1311 TCLP
☐ Method 1312 SPLP
☒ Method 6010A, B & C / 6020 Trace Metals
☐ Method 7000 Metals
☐ Method 7196 Hexavalent Chromium (other:_____)
☐ Method 7470A or 7471 Mercury
☐ Method 8021 Volatile Organic Compounds (VOCs) GC
☐ Method 8081B Pesticides
☐ Method 8082 PCBs
☐ Method 8151 Chlorinated Herbicides
☒ Method 8260C VOCs GC/MS
☐ Method 8270D Semi-VOCs (sVOCs) GC/MS
☐ Method 9010/9012/9014 Cyanides (_____)

☐ Method TO-13A PAHs (air)
☐ Method TO-14A / -15 VOCs (air, summa) (_____)
☐ Method TO-17 VOCs (air, sorbent)
☐ Extractable Petroleum Hydrocarbons (EPH)
☐ Volatile Petroleum Hydrocarbons (VPH) Method
☐ EPH-total
☒ Other Methods:
Method 9060A Total Organic Carbon
Method MCAWW 300.0 Anions (IC)
Method RSK-175 Dissolved Gases
Method SM4500 Nitrite
Method 353 Nitrite & Nitrate

Quality Control Requirements Summary

☒ Duplicate
☒ Matrix Spike [MS] / Matrix Spike Duplicate [MSD]
☒ Trip Blank(s)
☒ Equipment, Method, &/or Rinsate Blank

☒ Other Field QC: Field notes regarding sampling
☐ Special QAPP Requirements: _____
_____

Intended Use of Data under Review

The client collected groundwater samples during a one-day collection event: August 17, 2015 at the referenced New York State Brownfields site. The site is under a Site Management Plan (SMP) that requires several kinds of monitoring. The sampling event provided gauging/biostimulant and quarterly groundwater monitoring (see §3.3 of Kleinfelder, 2011).

Significant Data Usability Issues Identified For SDG: # JC1723

Of the five samples (plus one duplicate and three blanks) discussed herein, RemVer rejected no results, but flagged certain analytes as estimated due to the quality of the analysis and the results are acceptable for use.

Some analytes had either matrix spike or other quality issues requiring UJ/J flagging for certain analytes.

All the Ferrous results were qualified (UJ or J) due to a holding violation, causing similar flagging of calculated Ferric results.

Please refer to the Lab Results and Data Usability Narrative section for further detail.

Detailed Quality Review

Field Notes Review

	Y	N	NA	COMMENTS
Sampling notes	☒	☐	☐	Summary sheets only
Field meteorological data	☐	☐	☒	No review required under QAPP
Associated sampling location and plan included	☒	☐	☐	See RAP/QAPP
Associated drilling logs available, reviewed	☐	☐	☒	No review required under QAPP
Identification of QC samples in notes	☒	☐	☐	
Sampling instrument decontamination records	☐	☐	☒	No review required under QAPP
Sampling instrument calibration logs	☐	☐	☒	No review required under QAPP
Chain of custody included	☒	☐	☐	With analytical report
Notes include communication logs	☐	☒	☐	
Any corrective action (CA) reports	☐	☒	☐	If so, CA documentation of results required.
Any deviation from methods noted? If so, explain	☐	☒	☐	None
Any electronic data deliverables	☒	☐	☐	See Attachment #4
Sampling Report (by Field Team Leader)	☒	☐	☐	

Lab Report Contents (Test America SDG Report: #JC1723)

☒ SDG Narrative
☒ Contract Lab Sample Information Sheets
☒ Data Package Summary Forms
☒ Chain-of-Custody (COC) Forms
☒ Test Results (no tentatively identified compounds [TICs])
☒ Calibration standards
☒ Surrogate recoveries
☒ Blank results
☒ Spike recoveries
☒ Duplicate results
☒ Confirmation (lab check/QC) samples
☒ Internal standard area & retention time summary
☒ Chromatograms
☒ Raw data files
☒ Other specific information

The SDG reported on the following samples:

Sample ID	SDG # JC1723– Sample #	Matrix	Sampled	Received
MW-3	#-1	Water	8/17/15	8/18/15
MW-4	#-2	Water	8/17/15	8/18/15
MW-5	#-3	Water	8/17/15	8/18/15
MW-6				
MW-7				
MW-8A				
MW-8B	#-4	Water	8/17/15	8/18/15
MW-10	#-5	Water	8/17/15	8/18/15
MW-15A				
MW-C				
MW-D				
MW-E				
MW-F				
MW-10 (MS/MSD)	#-5	Water	8/17/15	8/18/15
Field Duplicate (FD) (MW-5)	#-6	Water	8/17/15	8/18/15
Field Blank (FB)	#-7	Water	8/17/15	8/18/15
Equipment Blank (EB)	#-8	Water	8/17/15	8/18/15
Trip Blank (TB #1)	#-9	Water	8/17/15	8/18/15

The SDG included the following samples with their particular analyses:

JC1723:	Well	VOCs	Ethene	TOC	Iron	Fe^{+2}	Fe^{+3}	NO_3	SO_4	Pest/PCB	SVOCs	RCRA13
#-1	MW-3	X	X	—	X	X	X	X	X	—	—	—
#-2	MW-4	X	X	X	X	X	X	X	X	—	—	—
#-3	MW-5	X	X	X	X	X	X	X	X	—	—	—
None	MW-6	—	—	—	—	—	—	—	—	—	—	—
None	MW-7	—	—	—	—	—	—	—	—	—	—	—
None	MW-8A	—	—	—	—	—	—	—	—	—	—	—
#-4	MW-8B	X	X	—	X	X	X	X	X	—	—	—
#-5	MW-10	X	—	—	—	—	—	—	—	—	—	—
#-5MS	MW-10	X	—	—	—	—	—	—	—	—	—	—
#-5MSD	MW-10	X	—	—	—	—	—	—	—	—	—	—
None	MW-13A †	—	—	—	—	—	—	—	—	—	—	—
None	MW-15A †	—	—	—	—	—	—	—	—	—	—	—
None	MW-A †	—	—	—	—	—	—	—	—	—	—	—
None	MW-B †	—	—	—	—	—	—	—	—	—	—	—
None	MW-C †	—	—	—	—	—	—	—	—	—	—	—
None	MW-D †	—	—	—	—	—	—	—	—	—	—	—
None	MW-E †	—	—	—	—	—	—	—	—	—	—	—
None	MW-F †	—	—	—	—	—	—	—	—	—	—	—
#-6	FD (MW-5)	X	—	—	—	—	—	—	—	—	—	—
#-7	FB	X	—	—	—	—	—	—	—	—	—	—
#-8	EB	X	—	—	—	—	—	—	—	—	—	—
#-9	TB-1	X	—	—	—	—	—	—	—	—	—	—

TOC: Total Organic Carbon | Iron: Total Iron | Fe^{+2}: Ferrous Iron | Fe^{+3}: Ferric Iron | NO_3: Nitrate | SO_4: Sulfate
* Dry, no sample † No sample

Is the data package complete as defined under the requirements for the NYSDEC ASP Category B?		
Laboratory Report	**Complete (Y/N)**	**Comments**
JC1723	Y	Yes

Sample Preservation Requirements & Holding Times Met?			
Laboratory Report	**Hold Times (Y/N)**	**Preservation (Y/N)**	**Exception Comment**
JC1723	Y	Y	None Hold time for all Ferrous analysis missed, effects derivatives as well, flag UJ/J

Do all QC data fall within the protocol required limits and specifications?
(1) blanks, (2) instrument tunings, (3) calibration standards, (4) calibration verifications, (5) surrogate recoveries, (6) spike recoveries, (7) replicate analyses, (8) laboratory controls, (9) and sample data

SDG	1	2	3	4	5	6	7	8	9
JC1723	☐	☐	☐	☐	☐	☒	☐	☐	☒

The narrative section, below, discusses these deficiencies in detail, see Attachment 2 as well.

Have all of the data been generated using established and agreed upon analytical protocols?		
Laboratory Report	**Protocols (Y/N)**	**Exception Comment**
JC1723	Y	None

Do the raw data confirm the results provided in the data summary sheets and quality control verification forms?		
Laboratory Report	**Confirmation (Y/N)**	**Exception Comment**
JC1723	Y	None

Have the correct data qualifiers been used and are they consistent with the most current guidance?		
Laboratory Report	**Qualifiers (Y/N)**	**Comment**
JC1723	Y	The laboratory generally applied appropriate qualifiers. To prepare the DUSR, it was necessary to apply additional qualifications or adjust qualifications to certain results as shown in Attachments 3 and 4.

Have any quality control (QC) exceedances been specifically noted in this DUSR and the corresponding QC summary sheets from the data packages referenced?		
Laboratory Report	**QC Exceedances Documented (Y/N)**	**Comment**
JC1723	Y	Several data qualifications were applied as described below

Data Quality and Usability Narrative

Field Notes Inspection

The groundwater samples came from a one-day collection event: August 17, 2015. A review of the field notes provided the following information pertaining to data usability.

Groundwater MWs	August-2015 Comments SDG #JC1723
MW-3	No purge (low recharge), sampled but went dry
MW-4	Bailer purge (0-gal), sampled but went dry
MW-5	Bailer purge (0-gal), sampled but low water, duplicate sample came from this well
MW-6	No sample
MW-7	No sample
MW-8A	No sample
MW-8B	Bailer purge (0.8-gal), sampled
MW-10	Bailer purge (16-gal), sampled; MS/MSD samples came from this well
MW-13A	No sample
MW-15A	No sample
MW-A	No sample
MW-B	No sample
MW-C	No sample
MW-D	No sample
MW-E	No sample
MW-F	No sample

Laboratory Report Inspection

The laboratory produced SDG report #JC1723 (dated 1 September 2015). The final report contained the required data and information.

Chain of Custody (COC) Evaluation

GES produced one COC for the referenced fieldwork (#JC1723, single, one-page COC).

Sample Preservation & Holding Time Evaluation

Laboratory received one cooler with samples on 8/18/2015 @ 9:50 (designated as SDG- JC1723) in proper condition and, where required, on ice. The temperature of the cooler at receipt time was 5.3ºC. All holding times and preservation requirements were met with the following exceptions:

- #-1 MW-3—received six VOA vials and one H_2SO_4 preserved bottle.
- #-2 MW-4—received insufficient preserved metals volume, resulting in missed analyses
- Ferrous—samples #-2, #-3, & -4 received outside of holding for this analysis, all results flagged as UJ/J.
- Ferric—because this analyte is derived by calculation all results were similarly qualified as Ferrous (see Attachment 2 and 3).

Blank Evaluation

The TB had no detectable VOC analytes (above their respective the reporting limits). The Equipment and Field Blank (EB and FB, respectively) had no detectable VOC analytes (above their respective the RLs). Laboratory Method Blanks (MBs) had conforming parameters and analytes below their respective RLs.

Laboratory Control Samples (LCS)

The various LCS were within the acceptable range for their particular analyses in SDG JC1723.

Surrogates

Surrogates added to a sample allow testing of preparatory and instrument behavior resulting in recoveries within appropriate method ranges for all analytes.

Site-Specific Matrix Spikes and Matrix Spike Duplicates

The matrix spike/matrix spike duplicate (MS/MSD) runs for all analyses for JC1723 met the QA criteria, with the following exception(s):

- The MS/MSD recoveries for Batch V2C5973 for Samples: 1, 3, 4, & 6 were beyond (upper) control limits for cis-1,2-Dichloroethene due to high level in sample relative to spike amount as indicated in Attachment 2. The compound was 'J' flagged to indicate a suspect detection.
- Sample #-1, #-2, #-3, & #-4—MS/MSD recovery for nitrite analysis and nitrate + nitrite analysis were beyond (upper) control limits, due to matrix interference, resulting in flagging the results UJ or J. Nitrate results are obtained by calculation ([Nitrate + Nitrite] – Nitrite); because the nitrate + nitrite results were flagged, the nitrate results were similarly flagged UJ or J.

Duplicates

GES collected a field replicate of MW-5 (compare samples #-3 and #-6). The VOC analytes met the RPD performance criteria of <20% (see below Attachment #2).

Tentatively Identified Compounds (TICs)

This SDG had no analysis of TICs.

Other Quality Issues

Laboratory Contaminants

Several samples had low concentration VOC detections of common laboratory contaminants. Such compounds if they are less than 5-times the reported detection limit are typically flagged as 'B' and discounted as a real detectable site-related compound. RemVer wishes to note, however, that detections of this compound are consistent across at least two quarters. As such, RemVer recommends a review to consider possible explanations for this apparent consistency. In this report, the following were so labelled: Sample #-3 (MW-5): Methylene Chloride.

In the case of Sample #-1 (MW-3), there as a detection of Tetrahydrofuran just above the detection limit. As this compound is not a site-related chemical, as not detected in other samples, and it is common to laboratories, RemVer flagged the single detection with a 'J'. RemVer wishes to note, however, that detections of this compound are consistent across at least two quarters. As such, RemVer recommends a review to consider possible explanations for this apparent consistency.

Sample Result and Usability Evaluation

Due to certain sample issues or laboratory performance, some results were qualified; however, the data are usable. No data received an R (rejected) flag. If an analyte was above the MDL but below the RL, then it was flagged as "UJ".

Measurement of Total Iron used Inductively Coupled Plasma (ICP) based on nitric acid preserved samples; whereas measurement of Ferrous Iron used the Phenanthroline Method (SM3500), which is a colorimetric method using hydrochloric-preserved samples. Interferences resulting in positive bias in the ferrous result include strong oxidizing agents, cyanide, nitrite, phosphates (polyphosphates more so than orthophosphate), chromium, or zinc in concentrations exceeding 10X greater than iron, or cobalt and copper in excess of 5 mg/L, or nickel in excess of 2 mg/L; moreover, bismuth, cadmium, mercury, molybdate, and silver precipitate phenanthroline, which is the color reagent used for ferrous iron. Using the analytically estimated Total and Ferrous Iron concentrations, Test America calculated the concentration of Ferric Iron by difference. Any qualifier flags associated with analytic results automatically attach to the calculated results.

RemVer modified Test America's laboratory electronic data reports by adding quality flags, highlighted in yellow (see Attachment #4 [separate file]: Orangetown_2015Q3_DUSR.xls [EXCEL file]).

References

Kleinfelder, 2011, *Site Management Plan, Orangetown Shopping Center, 1-45 Orangetown Shopping Center, Orangeburg, NY, NYSDEC Site #C344066*, Final, 21-November, 250p

NYSDEC, 2010, *Technical Guidance for Site Investigation and Remediation*, "DER-10," Division of Environmental Remediation: Albany, NY, May, 232p

NYSDEC, 2010, *Guidance for Data Deliverables and the Development of Data Usability Summary Reports*, Appendix 2B IN *Technical Guidance for Site Investigation and Remediation*, Division of Environmental Remediation: Albany, NY, May, 232p

USEPA, 2008, *Contract Laboratory Program National Functional Guidelines for Organic Data Review*, OSWER 9240.1-48, USEPA-540-R-08-01, Office of Superfund Remediation and Technology Innovation: Washington, DC, June, 225p

USEPA, 2010, *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, OSWER 9240.1-51, USEPA-540-R-10-011, Office of Superfund Remediation and Technology Innovation: Washington, DC, January, 110p

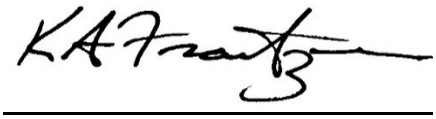
USEPA, 2012, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846*, Current Online Revision: http://www.epa.gov/epawaste/hazard/testmethods/sw846/online/index.htm, accessed April 2012

Tables

1. Qualifier Flags

Attachments

1. Data Usability Reviewer Qualifications
2. DQA Detail Worksheet
3. DQA Non-Conformance Summary Workheet
4. Separate EXCEL File: Orangetown_2015Q3_DUSR.xls [NOTE: RemVer modified the Test America work products by adding quality flags, which are in yellow highlight.]



Prepared by: Kurt A. Frantzen, PhD, CHMM
September 18, 2015

GES PO#556123

Table 1
Qualifier Flags

Qualifier	Quality Implication
U	Analyte analyzed for, but not detected above the sample's reported quantitation limit
J	Analyte positively identified at a numerical value that is the approximate concentration of the analyte in the sample
J +	Sample likely to have a high bias
J –	Sample likely to have a low bias
UJ	Analyte not detected above the sample quantitation limit; the associated quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample
N	The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
R	Sample result rejected due to serious deficiency in ability to analyze sample and meet quality control criteria; the presence or absence of the analyte cannot be confirmed. This qualifier also may apply when more than one sample result is generated for a target analyte (*i.e.*, dilutions or re-analyses), the most technically acceptable result is considered acceptable.
B | EB **TB | BB**	An analyte identified in method blank (B), aqueous equipment (EB), trip (TB), or bottle blanks (BB) used to assess field contamination associated with soil or sediment samples mandates these qualifiers for only soil and sediment sample results.
P	Use professional judgment based on data use. It usually has an "M" with it, which indicates that a manual check should be made if the data that are qualified with the "P" are important to the data user. In addition, "PM" also means a decision is necessary from the Project Manager (or a delegate) concerning the need for further review of the data (*see below*).
PM	A manual review of the raw data is recommended to determine if the defect affects data use, as in "R" above. This review should include consideration of potential affects that could result from using the "P" qualified data. For example, in the case of holding-time exceedance, the Project Manager or delegate can decide to use the data with no qualification when analytes of interest are known not to be adversely affected by holding-time exceedances. Another example is the case where soil sample duplicate analyses for metals exceed the precision criteria; because this is likely due to sample non-homogeneity rather than contract laboratory error, then the manager or delegate must decide how to use the data.

Attachment 1
Data Usability Reviewer: Kurt A. Frantzen, PhD, CHMM

Experience

2014-Present	AECC	Senior EHS Consultant
2013-Present	d/b/a RemVer	Owner
2011-2012	RemVer, Inc.	President
2006-2011	Kleinfelder	Senior Principal Scientist
2005	Kleinfelder	Principal Scientist, Part-Time/On Call
2004-2006	d/b/a Environmental Risk Group	Owner
2004-2006	RemVer, Inc., Larchmont, NY	Founder, President
1999-2004	VHB, Inc.	ERM Director & Associate
1997-1998	GEI Consultants, Inc.	Senior Project Manager
1992-1997	Ecology and Environment, Inc.	Technical Chief
1991-1992	EA Engineering, Science, & Technology, Inc.	Project Manager III
1990-1991	Ecology and Environment, Inc.	Technical Group Manager
1986-1990	Ecology and Environment, Inc.	Senior Environmental Scientist

Education

Am Cancer Soc. Post-Doctoral Fellow, U Washington 1985-1986

PhD—Life Sci. / Biochem, NU—Lincoln	1985
MS—Plant Pathology, Kansas State Univ.	1980
BS—Biology, NU—Omaha	1978

Registrations

Certified Hazardous Materials Manager, since 2007, #14143

Professional Affiliations

Society Risk Analysis ('09 & '11 Chair, Eco-Risk Assessment)
Am. Chemistry Society
Am. Assoc. Advance Science
NY Academy of Science
Am. Institute of Biological Sciences
LSP Association

Other

- CERCLA & RCRA experience, as well as DOD (Air Force & Army) & DOE (INEL)
- NE Regional Experience—NY BCP; Mass MCP; & various sites in CT, RI & NH
- National Experience: NE, SE, Gulf & West Coast, Mid-west, Inter-mountain, California, Alaska
- International: Germany, Israel, Kuwait, Australia
- Selected Publications
    - *Using Risk Appraisals to Manage Environmentally Impaired Properties*, 2000, VHB Site Works, Report 108
    - *Risk-Based Analysis for Environmental Managers*, 2001, CRC/Lewis
    - Chapter 7 Risk Assessment, *Managing Hazardous Materials*, 2002 & 2009, IHMM
    - Chapter 22 Cleanup Goals, *Brownfields Law & Practice*, 2004-Present, Lexis/Nexis
    - *Use of Risk Assessment in Risk Management of Contaminated Sites*, 2008, ITRC
- 60 Conference Papers & Invited Professional Presentations
    - 1999-2014, Visiting Lecturer, Brownfields Program, Harvard Graduate School of Design
    - 2010-2013, Invited Lecturer, Pace University Law School

Attachment 2
DQA Detail Worksheet

BLANKS	>RL?	Compounds	Notes
Method Blank: VOCs	No	—	No Comment
Method Blank: Ethene	No	—	No Comment
Method Blank: TOC	No	—	No Comment
Method Blank: Nitrate & Sulfate	No	—	No Comment
Method Blank: Iron	No	—	No Comment
Method Blank: Ferrous	No	—	No Comment
Field Blank (FB)	No	—	No Comment
Equip. Blank (EB)	No	—	No Comment
Trip Blank (TB)	No	—	No Comment

LCS	SV <10%	Low Bias > 10% & < LCL	High Bias >UCL	Compound(s)	Notes
VOCs	—	—	—	All other VOCs	No Comment
Ethene	—	—	—	Ethene	No Comment
Metals	—	—	—	Iron	No Comment
TOC	—	—	—	TOC	No Comment
NO_3 / SO_4	—	—	—	Nitrate & Sulfate	No Comment
Ferrous/Ferric	—	—	—	Iron +2 / Iron +3	No Comment

SURROGATES	SV <10%	Low Bias > 10% & < LCL	High Bias >UCL	Compound(s)	Notes
VOCs	—	—	—	—	No Comment
Dis. Gases	—	—	—	—	No Comment
TOC	—	—	—	—	No Comment
NO_3 / SO_4	—	—	—	—	No Comment
Ferrous/Ferric	—	—	—	Iron +2 / Iron +3	No Comment

Attachment 2 continued

MS/MSDs	SV <10%	Low Bias > 10% & < LCL	High Bias >UCL	QC Source	RPDs	Notes
VOCs All other samples	—	—	—	SDG Batch	—	No Comment
VOCs #-1, 3, 4, & 6	—	—	>UCL	SDG Batch	—	Cis-1,2-Dichloroethene
Dis. Gases	—	—	—	SDG Batch	—	No Comment
TOC	—	—	—	SDG Batch	—	No Comment
Sulfate	—	—	—	SDG Batch	—	No Comment
Nitrate #-1, 2, 3, & 4	—	—	>UCL	SDG Batch	—	Flag UJ/J
Nitrite	—	—	>UCL	SDG Batch	—	Flag UJ/J

FIELD DUPLICATES RPDs	QC Source	Soil RPD > 50%	Water RPD > 20%	Compounds	Notes
VOCs	MW-5 (#-3 & #-6)	N/A	—	—	No Comment
Dissolved Gases		N/A	N/C	—	Not Collected
Total Iron		N/A	N/C	—	
Nitrate & Sulfate		N/A	N/C	—	
Total Metals (Iron)		N/A	N/C	—	
Iron, Ferrous & Ferric		N/A	N/C	—	
TOC		N/A	N/C	—	
LAB DUPLICATES					
JC1723	Batch	N/A	—	As listed	No Comment

Reasonable Confidence Achieved	☐ Y	☐ N—Not Applicable
Significant QC Variances Noted	☒ Y	☐ N
Requested Reporting Limits Achieved	☒ Y	☐ N
Preservation Requirements Met	☒ Y	☐ N
Holding Time Requirements Met	☐ Y	☒ N—Ferrous Iron samples, results qualified, as are ferric

Abbreviations:
RL = Reporting Limit LCS = Laboratory Control Sample SV = Significant QC Variance
RPD = Relative Percent Difference LCL= RCP Lower Control Limit UCL= RCP Upper Control Limit
VOCs = Volatile Organic Compounds SVOCs = Semi-volatile Organic Compounds Pest = Pesticides
EPH = Extractable Petroleum Hydrocarbons VPH = Volatile Petroleum Hydrocarbons ETPH = EPH-Total
PCBs = Polychlorinated Biphenyls N/A = Not Applicable N/C = Not Collected -- = nothing to report
Notes: * Typical lab contaminants, not site-related

Attachment 3
DQA Non-Conformance Summary Worksheet

Only Flagged Results Shown Below

Sample Number(s)	Compound(s)	QC Non-Conformance	% Recovery	% RPD †	High or Low Bias ‡	Comments
MW-3 #–1	Tetrahydrofuran	Possible Lab Contaminant	—	—	—	Flag J
	cis-1,2-Dichloroethene	MS/MSD	>UCL	—	Hi	Flag UJ/J
	Ferrous (Ferric)	Holding Time	—	—	—	Flag UJ/J
	Nitrite (Nitrate)	MS/MSD	>UCL	>UCL	Hi	Flag UJ/J
MW-4 #–2	—	—	—	—	—	—
	Ferrous (Ferric)	Holding Time	—	—	—	Flag UJ/J
	Nitrite (Nitrate)	MS/MSD	>UCL	>UCL	Hi	Flag UJ/J
MW-5 #–3	Methylene Chloride	Lab Contaminant	—	—	—	Flag J
	cis-1,2-Dichloroethene	MS/MSD	>UCL	—	Hi	Flag UJ/J
	Ferrous (Ferric)	Holding Time	—	—	—	Flag UJ/J
	Nitrite (Nitrate)	MS/MSD	>UCL	>UCL	Hi	Flag UJ/J
MW-8B #–4	cis-1,2-Dichloroethene	MS/MSD	>UCL	—	Hi	Flag UJ/J
	Nitrite (Nitrate)	MS/MSD	>UCL	>UCL	Hi	Flag UJ/J
	Ferrous (Ferric)	Holding Time	—	—	—	Flag UJ/J
MW-10 #–5	—	—	—	—	—	—
Duplicate (MW-5) #–6	cis-1,2-Dichloroethene	MS/MSD	>UCL	—	Hi	Flag UJ/J

Notes: † RPD—Relative Percent Difference
‡ Bias High—Reported result may be lower, Reporting Limit (RL) is acceptable as reported. Bias Low—Reported results may be higher, RL may be higher than reported.

RemVer

Quality Assessment
Data Usability Summary Report

			RemVer Project #2016GE01 Client Project # 11022323-05-206
Site:	Orangetown Shopping Center	**Site #:**	C344066
Client:	GES, Inc.	**Site Owner:**	UB Orangeburg, LLC (UBO)
Sample Delivery Group (SDG)	JC15615		
Sample Matrix:	☐ Drinking water ☒ Groundwater ☐ Surface water ☐ Soil ☐ Sediment ☐ Air ☐ Biota (tissue, type: _____) ☐ Other: _____		

Introduction

RemVer performed a data quality assessment (DQA) on the analytical data reported in Sample Delivery Groups (SDGs) #JC15615 for groundwater samples. The DQA evaluated the performance of the analytical procedures and the quality of the resulting data. RemVer followed the requirements of the New York State Department of Environmental Conservation (NYSDEC) Data Usability Summary Report (DUSR) guidelines for an Analytical Services Protocol (ASP) Category B Data Deliverable. This report includes a narrative discussion of sample results qualified during the DQA. Table 1 describes qualification flags applied to the data either by Test America or during the DQA process.

Reported Methods

☐ Method 1311 TCLP
☐ Method 1312 SPLP
☒ Method 6010A, B & C / 6020 Trace Metals
☐ Method 7000 Metals
☐ Method 7196 Hexavalent Chromium (other:_____)
☐ Method 7470A or 7471 Mercury
☐ Method 8021 Volatile Organic Compounds (VOCs) GC
☐ Method 8081B Pesticides
☒ Method 8082 PCBs
☐ Method 8151 Chlorinated Herbicides
☒ Method 8260C VOCs GC/MS
☐ Method 8270D Semi-VOCs (sVOCs) GC/MS
☐ Method 9010/9012/9014 Cyanides (_____)

☐ Method TO-13A PAHs (air)
☐ Method TO-14A / -15 VOCs (air, summa) (_____)
☐ Method TO-17 VOCs (air, sorbent)
☐ Extractable Petroleum Hydrocarbons (EPH)
☐ Volatile Petroleum Hydrocarbons (VPH) Method
☐ EPH-total
☒ Other Methods:
Method 9060A Total Organic Carbon
Method MCAWW 300.0 Anions (IC)
Method RSK-175 Dissolved Gases
Method SM4500 Nitrite
Method 353 Nitrite & Nitrate

Quality Control Requirements Summary

☒ Duplicate
☒ Matrix Spike [MS] / Matrix Spike Duplicate [MSD]
☒ Trip Blank(s)
☒ Equipment, Method, &/or Rinsate Blank

☒ Other Field QC: Field notes regarding sampling
☐ Special QAPP Requirements: _____
_____

Intended Use of Data under Review

The client collected groundwater samples during a one-day collection event: March 7, 2016 at the referenced New York State Brownfields site. The site is under a Site Management Plan (SMP) that requires several kinds of monitoring. The sampling event provided gauging/biostimulant and quarterly groundwater monitoring (see §3.3 of Kleinfelder, 2011).

Significant Data Usability Issues Identified for SDG: # JC15615

Of the six samples (plus one duplicate and three blanks) discussed herein, RemVer rejected no results, but flagged certain analytes as estimated due to the quality of the analysis and the results are acceptable for use.

Some analytes had matrix spike or other quality issues requiring UJ/J flagging for certain analytes.

All the Ferrous results were qualified (UJ or J) due to a holding violation, causing similar flagging of calculated Ferric results.

Please refer to the Lab Results and Data Usability Narrative section for further detail.

Detailed Quality Review

Field Notes Review

	Y	N	NA	COMMENTS
Sampling notes	☒	☐	☐	
Field meteorological data	☐	☐	☒	No review required under QAPP
Associated sampling location and plan included	☒	☐	☐	See RAP/QAPP
Associated drilling logs available, reviewed	☐	☐	☒	No review required under QAPP
Identification of QC samples in notes	☒	☐	☐	
Sampling instrument decontamination records	☐	☐	☒	No review required under QAPP
Sampling instrument calibration logs	☐	☐	☒	No review required under QAPP
Chain of custody included	☒	☐	☐	With analytical report
Notes include communication logs	☐	☒	☐	
Any corrective action (CA) reports	☐	☒	☐	If so, CA documentation of results required.
Any deviation from methods noted? If so, explain	☐	☒	☐	None
Any electronic data deliverables	☒	☐	☐	See Attachment #4
Sampling Report (by Field Team Leader)	☒	☐	☐	

Lab Report Contents (Test America SDG Report: #JC15615)

☒ SDG Narrative
☒ Contract Lab Sample Information Sheets
☒ Data Package Summary Forms
☒ Chain-of-Custody (COC) Forms
☒ Test Results (no tentatively identified compounds [TICs])
☒ Calibration standards
☒ Surrogate recoveries
☒ Blank results
☒ Spike recoveries
☒ Duplicate results
☒ Confirmation (lab check/QC) samples
☒ Internal standard area & retention time summary
☒ Chromatograms
☒ Raw data files
☒ Other specific information

The SDG reported on the following samples:

Sample ID	SDG #JC15615– Sample #	Matrix	Sampled	Received
MW-3	#-1	Water	3/7/16	3/8/16
MW-4	#-2	Water	3/7/16	3/8/16
MW-5	#-3	Water	3/7/16	3/8/16
MW-6				
MW-7				
MW-8A	#-4	Water	3/7/16	3/8/16
MW-8B	#-5	Water	3/7/16	3/8/16
MW-10	#-6	Water	3/7/16	3/8/16
MW-15A				
MW-C				
MW-D				
MW-E				
MW-F				
MW-10 (MS/MSD)	#-6 MS/MSD	Water	3/7/16	3/8/16
Field Duplicate (FD) (MW-10)	#-7	Water	3/7/16	3/8/16
Field Blank (FB)	#-8	Water	3/7/16	3/8/16
Equipment Blank (EB)	#-9	Water	3/7/16	3/8/16
Trip Blank (TB #1)	#-10	Water	3/7/16	3/8/16

The SDG included the following samples with their particular analyses:

79034:	Well	VOCs	Ethene	TOC	Iron	Fe^{+2}	Fe^{+3}	NO_3	SO_4	Pest/PCB	SVOCs	RCRA13
#-1	MW-3	X	X	—	X	X	X	X	X	—	—	—
#-2	MW-4	X	X	X	X	X	X	X	X	—	—	—
#-3	MW-5	X	X	X	X	X	X	X	X	X	—	—
None	MW-6	—	—	—	—	—	—	—	—	—	—	—
None	MW-7	—	—	—	—	—	—	—	—	—	—	—
#-4	MW-8A	X	—	—	—	—	—	—	—	—	—	—
#-5	MW-8B	X	X	—	—	—	—	—	—	—	—	—
#-6	MW-10	X	—	—	—	—	—	—	—	X	—	—
#-6MS	MW-10	X	—	—	—	—	—	—	—	—	—	—
#-6MSD	MW-10	X	—	—	—	—	—	—	—	—	—	—
None	MW-13A †	—	—	—	—	—	—	—	—	—	—	—
None	MW-15A †	—	—	—	—	—	—	—	—	—	—	—
None	MW-A †	—	—	—	—	—	—	—	—	—	—	—
None	MW-B †	—	—	—	—	—	—	—	—	—	—	—
None	MW-C †	—	—	—	—	—	—	—	—	—	—	—
None	MW-D †	—	—	—	—	—	—	—	—	—	—	—
None	MW-E †	—	—	—	—	—	—	—	—	—	—	—
None	MW-F †	—	—	—	—	—	—	—	—	—	—	—
#-7	FD (MW-10)	X	—	—	—	—	—	—	—	—	—	—
#-8	FB	X	—	—	—	—	—	—	—	—	—	—
#-9	EB	X	—	—	—	—	—	—	—	—	—	—
#-10	TB-1	X	—	—	—	—	—	—	—	—	—	—

TOC: Total Organic Carbon | Iron: Total Iron | Fe^{+2}: Ferrous Iron | Fe^{+3}: Ferric Iron | NO_3: Nitrate | SO_4: Sulfate
* Dry, no sample † No sample

Is the data package complete as defined under the requirements for the NYSDEC ASP Category B?		
Laboratory Report	**Complete (Y/N)**	**Comments**
JC15615	Y	Yes

Sample Preservation Requirements & Holding Times Met?			
Laboratory Report	**Hold Times (Y/N)**	**Preservation (Y/N)**	**Exception Comment**
JC15615	Y	Y	Hold time for all Ferrous analysis missed, effects derivatives as well, flag UJ/J

Do all QC data fall within the protocol required limits and specifications? *(1) blanks, (2) instrument tunings, (3) calibration standards, (4) calibration verifications, (5) surrogate recoveries, (6) spike recoveries, (7) replicate analyses, (8) laboratory controls, (9) and sample data*									
SDG	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
JC15615	☐	☐	☐	☐	☐	☒	☐	☐	☒
The narrative section, below, discusses these deficiencies in detail, see Attachment 2 as well.									

Have all of the data been generated using established and agreed upon analytical protocols?		
Laboratory Report	**Protocols (Y/N)**	**Exception Comment**
JC15615	Y	None

Do the raw data confirm the results provided in the data summary sheets and quality control verification forms?		
Laboratory Report	**Confirmation (Y/N)**	**Exception Comment**
JC15615	Y	None

Have the correct data qualifiers been used and are they consistent with the most current guidance?		
Laboratory Report	**Qualifiers (Y/N)**	**Comment**
JC15615	Y	The laboratory generally applied appropriate qualifiers. To prepare the DUSR, it was necessary to apply additional qualifications or adjust qualifications to certain results as shown in Attachments 3 and 4.

Have any quality control (QC) exceedances been specifically noted in this DUSR and the corresponding QC summary sheets from the data packages referenced?		
Laboratory Report	**QC Exceedances Documented (Y/N)**	**Comment**
JC15615	Y	Several data qualifications were applied as described below

Data Quality and Usability Narrative

Field Notes Inspection

The groundwater samples came from a one-day collection event: March 27, 2015. A review of the field notes provided the following information pertaining to data usability.

Groundwater MWs	March-2015 Comments SDG #JC15615
MW-3	Bailer purge (<1-gal), sampled
MW-4	Bailer purge (<1-gal), sampled
MW-5	Bailer purge (<1-gal), sampled
MW-6	No sample
MW-7	No sample
MW-8A	Bailer purge (<1-gal), sampled
MW-8B	Bailer purge (<1-gal), sampled
MW-10	Bailer purge (13.7-gal), sampled; MS/MSD & duplicate samples came from this well
MW-13A	No sample
MW-15A	No sample
MW-A	No sample
MW-B	No sample
MW-C	No sample
MW-D	No sample
MW-E	No sample
MW-F	No sample

Laboratory Report Inspection

The laboratory produced SDG report #JC15615 (dated 23-Mar-16). The final reports contained the required data and information.

Chain of Custody (COC) Evaluation

GES produced one COC for the referenced fieldwork (#JC15615, single, one-page COC). The laboratory noted a couple of questions that had to be resolved, and noted successful resolution within 24-hours of sample receipt, with no impact to hold time or other quality parameters.

Sample Preservation & Holding Time Evaluation

Laboratory received one cooler with samples on 3/8/2016 @ 10:30 (designated as SDG-JC15615) in proper condition and, where required, on ice. The temperature of the cooler at receipt was measured as 2.4 ºC and corrected to 2.8ºC, respectively. All holding times and preservation requirements were met with the following exceptions:

- Ferrous—samples #-1, -2, & -3 received outside of holding for this analysis, all results flagged as UJ/J.
- Ferric—because this analyte is derived by calculation all results were similarly qualified as Ferrous (see Attachment 2 and 3).

Blank Evaluation

The TB had no detectable VOC analytes (above their respective the reporting limits). The Equipment and Field Blank (EB and FB, respectively) also had no detectable VOC analytes (above their respective the RLs). Laboratory Method Blanks (MBs) had conforming parameters and analytes below their respective RLs.

Laboratory Control Samples (LCS)

The various LCS' were within the acceptable range for their particular analyses in SDG JC15615.

Surrogates

Surrogates added to a sample allow testing of preparatory and instrument behavior resulting in recoveries within appropriate method ranges for all analytes, with no exceptions.

Site-Specific Matrix Spikes and Matrix Spike Duplicates

The matrix spike/matrix spike duplicate (MS/MSD) runs for all analyses for JC15615 met the QA criteria, with the following exception:

- Either the MS or MSD (or both) recoveries for the batch including Samples #-5 & #-9 were outside of control limits for cis-1,2-Dichloroethene as indicated in Attachment 2. This compound was flagged.
- Sample #-3 & #-6 had MS/MSD recoveries for Aroclor 1016 and 1260 outside control limits, most likely due to matrix interference, therefore, UJ/J flag all results.

Duplicates

GES collected a field replicate of MW-10 (compare samples #-6 and #-7). The VOC analytes met the RPD performance criteria of <20% (see below Attachment #2).

Tentatively Identified Compounds (TICs) & Detection Limits

This SDG had no analysis of TICs. Sample #-1 had elevated detection limits for Iron due to sample concentration, and was subsequently flagged 'J.'

Sample Result and Usability Evaluation

Due to certain sample issues or laboratory performance, some results were qualified; however, the data are usable. No data received an R (rejected) flag. If an analyte was above the MDL but below the RL, then it was flagged as "UJ".

Measurement of Total Iron used Inductively Coupled Plasma (ICP) based on nitric acid preserved samples; whereas measurement of Ferrous Iron used the Phenanthroline Method (SM3500), which is a colorimetric method using hydrochloric-preserved samples. Interferences resulting in positive bias in the ferrous result include strong oxidizing agents, cyanide, nitrite, phosphates (polyphosphates more so than orthophosphate), chromium, or zinc in concentrations exceeding 10X greater than iron, or cobalt and copper in excess of 5 mg/L, or nickel in excess of 2 mg/L; moreover, bismuth, cadmium, mercury, molybdate, and silver precipitate phenanthroline, which is the color reagent used for ferrous iron. Using the analytically estimated Total and Ferrous Iron concentrations, Test America calculated the concentration of Ferric Iron by difference. Any qualifier flags associated with analytic results automatically attach to the calculated results.

RemVer modified Test America's laboratory electronic data reports by adding quality flags, highlighted in yellow (see Attachment #4 [separate file]: Orangetown_2016Q1_DUSR.xls [EXCEL file]).

References

Kleinfelder, 2011, *Site Management Plan, Orangetown Shopping Center, 1-45 Orangetown Shopping Center, Orangeburg, NY, NYSDEC Site #C344066*, Final, 21-November, 250p

NYSDEC, 2010, *Technical Guidance for Site Investigation and Remediation*, "DER-10," Division of Environmental Remediation: Albany, NY, May, 232p

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USEPA, 2008, *Contract Laboratory Program National Functional Guidelines for Organic Data Review*, OSWER 9240.1-48, USEPA-540-R-08-01, Office of Superfund Remediation and Technology Innovation: Washington, DC, June, 225p

USEPA, 2010, *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, OSWER 9240.1-51, USEPA-540-R-10-011, Office of Superfund Remediation and Technology Innovation: Washington, DC, January, 110p

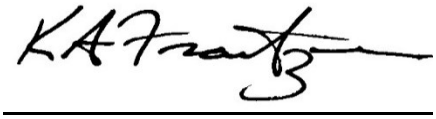
USEPA, 2012, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846*, Current Online Revision: http://www.epa.gov/epawaste/hazard/testmethods/sw846/online/index.htm, accessed April 2012

Tables

1. Qualifier Flags

Attachments

1. Data Usability Reviewer Qualifications
2. DQA Detail Worksheet
3. DQA Non-Conformance Summary Workheet
4. Separate EXCEL File: Orangetown_2016Q1_DUSR.xls [NOTE: RemVer modified the Test America work products by adding quality flags, which are in yellow highlight.]



Prepared by: Kurt A. Frantzen, PhD, CHMM
April 4, 2016

GES PO#586220

Table 1
Qualifier Flags

Qualifier	Quality Implication
U	Analyte analyzed for, but not detected above the sample's reported quantitation limit
J	Analyte positively identified at a numerical value that is the approximate concentration of the analyte in the sample
J +	Sample likely to have a high bias
J –	Sample likely to have a low bias
UJ	Analyte not detected above the sample quantitation limit; the associated quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample
N	The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
R	Sample result rejected due to serious deficiency in ability to analyze sample and meet quality control criteria; the presence or absence of the analyte cannot be confirmed. This qualifier also may apply when more than one sample result is generated for a target analyte (*i.e.*, dilutions or re-analyses), the most technically acceptable result is considered acceptable.
B | EB **TB | BB**	An analyte identified in method blank (B), aqueous equipment (EB), trip (TB), or bottle blanks (BB) used to assess field contamination associated with soil or sediment samples mandates these qualifiers for only soil and sediment sample results.
P	Use professional judgment based on data use. It usually has an "M" with it, which indicates that a manual check should be made if the data that are qualified with the "P" are important to the data user. In addition, "PM" also means a decision is necessary from the Project Manager (or a delegate) concerning the need for further review of the data (*see below*).
PM	A manual review of the raw data is recommended to determine if the defect affects data use, as in "R" above. This review should include consideration of potential affects that could result from using the "P" qualified data. For example, in the case of holding-time exceedance, the Project Manager or delegate can decide to use the data with no qualification when analytes of interest are known not to be adversely affected by holding-time exceedances. Another example is the case where soil sample duplicate analyses for metals exceed the precision criteria; because this is likely due to sample non-homogeneity rather than contract laboratory error, then the manager or delegate must decide how to use the data.

Attachment 1
Data Usability Reviewer: Kurt A. Frantzen, PhD, CHMM

Experience

2014-Present	AECC	Senior EHS Consultant
2013-Present	d/b/a RemVer	Owner
2011-2012	RemVer, Inc.	President
2006-2011	Kleinfelder	Senior Principal Scientist
2005	Kleinfelder	Principal Scientist, Part-Time/On Call
2004-2006	d/b/a Environmental Risk Group	Owner
2004-2006	RemVer, Inc., Larchmont, NY	Founder, President
1999-2004	VHB, Inc.	ERM Director & Associate
1997-1998	GEI Consultants, Inc.	Senior Project Manager
1992-1997	Ecology and Environment, Inc.	Technical Chief
1991-1992	EA Engineering, Science, & Technology, Inc.	Project Manager III
1990-1991	Ecology and Environment, Inc.	Technical Group Manager
1986-1990	Ecology and Environment, Inc.	Senior Environmental Scientist

Education

Am Cancer Soc. Post-Doctoral Fellow, U Washington 1985-1986

PhD—Life Sci. / Biochem, NU—Lincoln	1985
MS—Plant Pathology, Kansas State Univ.	1980
BS—Biology, NU—Omaha	1978

Registrations

Certified Hazardous Materials Manager, since 2007, #14143

Professional Affiliations

Society Risk Analysis ('09 & '11 Chair, Eco-Risk Assessment)
Am. Chemistry Society
Am. Assoc. Advance Science
NY Academy of Science
Am. Institute of Biological Sciences
LSP Association

Other

- CERCLA & RCRA experience, as well as DOD (Air Force & Army) & DOE (INEL)
- NE Regional Experience—NY BCP; Mass MCP; & various sites in CT, RI & NH
- National Experience: NE, SE, Gulf & West Coast, Mid-west, Inter-mountain, California, Alaska
- International: Germany, Israel, Kuwait, Australia
- Selected Publications
    - *Using Risk Appraisals to Manage Environmentally Impaired Properties*, 2000, VHB Site Works, Report 108
    - *Risk-Based Analysis for Environmental Managers*, 2001, CRC/Lewis
    - Chapter 7 Risk Assessment, *Managing Hazardous Materials*, 2002 & 2009, IHMM
    - Chapter 22 Cleanup Goals, *Brownfields Law & Practice*, 2004-Present, Lexis/Nexis
    - *Use of Risk Assessment in Risk Management of Contaminated Sites*, 2008, ITRC
- 60 Conference Papers & Invited Professional Presentations
    - 1999-2014, Visiting Lecturer, Brownfields Program, Harvard Graduate School of Design
    - 2010-2013, Invited Lecturer, Pace University Law School

Attachment 2
DQA Detail Worksheet

BLANKS	>RL?	Compounds	Notes
Method Blank: VOCs	No	—	No Comment
Method Blank: Ethene	No	—	No Comment
Method Blank: PCBs	No	—	No Comment
Method Blank: TOC	No	—	No Comment
Method Blank: Nitrate & Sulfate	No	—	No Comment
Method Blank: Iron	No	—	No Comment
Method Blank: Ferrous	No	—	No Comment
Field Blank (FB)	No	—	No Comment
Equip. Blank (EB)	No	—	No Comment
Trip Blank (TB)	No	—	No Comment

LCS	SV <10%	Low Bias > 10% & < LCL	High Bias >UCL	Compound(s)	Notes
VOCs	—	—	—	All other VOCs	No Comment
Ethene	—	—	—	Ethene	No Comment
PCBs	—	—	—	PCBs	No Comment
Metals	—	—	—	Iron	No Comment
TOC	—	—	—	TOC	No Comment
NO_3 / SO_4	—	—	—	Nitrate & Sulfate	No Comment
Ferrous/Ferric	—	—	—	Iron +2 / Iron +3	No Comment

SURROGATES	SV <10%	Low Bias > 10% & < LCL	High Bias >UCL	Compound(s)	Notes
VOCs	—	—	—	—	No Comment
Dis. Gases	—	—	—	—	No Comment
PCBs		—	—	—	No Comment
TOC	—	—	—	—	No Comment
NO_3 / SO_4	—	—	—	—	No Comment

MS/MSDs	SV <10%	Low Bias > 10% & < LCL	High Bias >UCL	QC Source	RPDs	Notes
VOCs	—	—	—	SDG Batch	—	No Comment
VOCs #-5 & -9	—	<LCL	—	VA8362	—	cis-1,2-Dichloroethene
Dis. Gases	—	—	—	SDG Batch	—	No Comment
PCBs	—	<LCL	—	SDG Batch	>UCL	1016 & 1260 only Flag UJ/J
TOC	—	—	—	SDG Batch	—	No Comment
Sulfate	—	—	—	SDG Batch	—	No Comment
Nitrate	—	—	—	SDG Batch	—	No Comment
Nitrite	—	—	—	SDG Batch	—	No Comment

Attachment 2 continued

FIELD DUPLICATES RPDs	QC Source	Soil RPD > 50%	Water RPD > 20%	Compounds	Notes
VOCs	MW-10 (#-6 & #-7)	N/A	—	—	No Comment
Dissolved Gases		N/A	N/C	—	Not Collected
Total Iron		N/A	N/C	—	
Nitrate & Sulfate		N/A	N/C	—	
Total Metals (Iron)		N/A	N/C	—	
Iron, Ferrous & Ferric		N/A	N/C	—	
TOC		N/A	N/C	—	
LAB DUPLICATES					
JC15615	Batch	N/A	—	As listed	No Comment

Reasonable Confidence Achieved	☐ Y	☐ N—Not Applicable
Significant QC Variances Noted	☒ Y	☐ N
Requested Reporting Limits Achieved	☐ Y	☒ N
Preservation Requirements Met	☒ Y	☐ N
Holding Time Requirements Met	☐ Y	☒ N—Ferrous Iron samples, results qualified, as are ferric

Abbreviations:
RL = Reporting Limit LCS = Laboratory Control Sample SV = Significant QC Variance
RPD = Relative Percent Difference LCL= RCP Lower Control Limit UCL= RCP Upper Control Limit
VOCs = Volatile Organic Compounds SVOCs = Semi-volatile Organic Compounds Pest = Pesticides
EPH = Extractable Petroleum Hydrocarbons VPH = Volatile Petroleum Hydrocarbons ETPH = EPH-Total
PCBs = Polychlorinated Biphenyls N/A = Not Applicable N/C = Not Collected -- = nothing to report
Notes: * Typical lab contaminants, not site-related

Attachment 3
DQA Non-Conformance Summary Worksheet

Only Flagged Results Shown Below

Sample Number(s)	Compound(s)	QC Non-Conformance	% Recovery	% RPD †	High or Low Bias ‡	Comments
MW-3 #–1	Ferrous (Ferric)	Holding Time	—	—	—	Flag UJ/J
	Iron	Elevated Detection Limits	—	—	Hi	Flag J
MW-4 #–2	—	—	—	—	—	—
	Ferrous (Ferric)	Holding Time	—	—	—	Flag UJ/J
	—	—	—	—	—	—
MW-5 #–3	cis-1,2-DCE	MS/MSD	<LCL	—	Lo	Flag UJ/J
	PCBs (1016 & 1260)	MS/MSD	<LCL	—	Lo	Flag UJ
	Ferrous (Ferric)	Holding Time	—	—	—	Flag UJ/J
	—	—	—	—	—	—
MW-8a #–4	—	—	—	—	—	—
MW-8B #-5	—	—	—	—	—	—
MW-10 #–6	PCBs (1016 & 1260)	MS/MSD	<LCL	—	Lo	Flag UJ
MW-10 dup #–7	—	—	—	—	—	—
MW-10 #–8	—	—	—	—	—	—
Eq. Blank #–9	cis-1,2-DCE	MS/MSD	<LCL	—	Lo	Flag UJ/J

Notes: † RPD—Relative Percent Difference
‡ Bias High—Reported result may be lower, Reporting Limit (RL) is acceptable as reported. Bias Low—Reported results may be higher, RL may be higher than reported.

RemVer

Quality Assessment
Data Usability Summary Report

			RemVer Project #2015GE01 Client Project # 11022323-05-206
Site:	Orangetown Shopping Center	**Site #:**	C344066
Client:	GES, Inc.	**Site Owner:**	UB Orangeburg, LLC (UBO)
Sample Delivery Group (SDG)	JC10996		
Sample Matrix:	☐ Drinking water ☐ Groundwater ☐ Surface water ☐ Soil ☐ Sediment ☒ Air ☐ Biota (tissue, type: _____) ☐ Other: _____		

Introduction

RemVer performed a data quality assessment (DQA) on the analytical data reported in Sample Delivery Groups (SDGs) #JC10996 for air samples. The DQA evaluated the performance of the analytical procedures and the quality of the resulting data. RemVer followed the requirements of the New York State Department of Environmental Conservation (NYSDEC) Data Usability Summary Report (DUSR) guidelines for an Analytical Services Protocol (ASP) Category B Data Deliverable. This report includes a narrative discussion of sample results qualified during the DQA. Table 1 describes qualification flags applied to the data either by Test America or during the DQA process.

Reported Methods

- ☐ Method 1311 TCLP
- ☐ Method 1312 SPLP
- ☐ Method 6010A, B & C / 6020 Trace Metals
- ☐ Method 7000 Metals
- ☐ Method 7196 Hexavalent Chromium (other:_____)
- ☐ Method 7470A or 7471 Mercury
- ☐ Method 8021 Volatile Organic Compounds (VOCs) GC
- ☐ Method 8081B Pesticides
- ☐ Method 8082 PCBs
- ☐ Method 8151 Chlorinated Herbicides
- ☐ Method 8260C VOCs GC/MS
- ☐ Method 8270D Semi-VOCs (sVOCs) GC/MS
- ☐ Method 9010/9012/9014 Cyanides (_____)
- ☐ Method TO-13A PAHs (air)
- ☒ Method TO-14A / -15 VOCs (air, summa) (_____)
- ☐ Method TO-17 VOCs (air, sorbent)
- ☐ Extractable Petroleum Hydrocarbons (EPH)
- ☐ Volatile Petroleum Hydrocarbons (VPH) Method
- ☐ EPH-total
- ☐ Other Methods:
  - Method 9060A Total Organic Carbon
  - Method MCAWW 300.0 Anions (IC)
  - Method RSK-175 Dissolved Gases
  - Method SM4500 Nitrite
  - Method 353 Nitrite & Nitrate

Quality Control Requirements Summary

- ☒ Duplicate (internal)
- ☐ Matrix Spike [MS] / Matrix Spike Duplicate [MSD]
- ☐ Trip Blank(s)
- ☐ Equipment, Method, &/or Rinsate Blank
- ☒ Other Field QC: Field notes regarding sampling
- ☐ Special QAPP Requirements: _____
  _____

Intended Use of Data under Review

The client collected air samples during a one-day collection event: December 16, 2015 at the referenced New York State Brownfields site. The site is under a Site Management Plan (SMP) that requires several kinds of monitoring. The sampling event provided ambient and sub-slab/soil vapor monitoring (see §3.3 of Kleinfelder, 2011).

Significant Data Usability Issues Identified for SDG: #JC10996

Of the thirteen samples (six soil gas, six indoor ambient air, and one outdoor ambient) discussed herein, RemVer rejected no results, but flagged certain analytes as estimated due to the quality of the analysis and the results are acceptable for use. Some analytes had quality issues associated with results failing beyond the calibrated range requiring UJ/J flagging for certain analytes.

Please refer to the Lab Results and Data Usability Narrative section for further detail.

Detailed Quality Review

Field Notes Review

	Y	N	NA	COMMENTS
Sampling notes	☒	☐	☐	Field Notes & COC sheets
Field meteorological data	☐	☐	☒	No review required under QAPP
Associated sampling location and plan included	☒	☐	☐	See RAP/QAPP
Associated drilling logs available, reviewed	☐	☐	☒	No review required under QAPP
Identification of QC samples in notes	☒	☐	☐	
Sampling instrument decontamination records	☐	☐	☒	No review required under QAPP
Sampling instrument calibration logs	☐	☐	☒	No review required under QAPP
Chain of custody included	☒	☐	☐	With analytical report
Notes include communication logs	☐	☒	☐	
Any corrective action (CA) reports	☐	☒	☐	If so, CA documentation of results required.
Any deviation from methods noted? If so, explain	☐	☒	☐	None
Any electronic data deliverables	☒	☐	☐	See Attachment #4
Sampling Report (by Field Team Leader)	☒	☐	☐	

Lab Report Contents (Test America SDG Report: #JC10996)

☒ SDG Narrative
☒ Contract Lab Sample Information Sheets
☒ Data Package Summary Forms
☒ Chain-of-Custody (COC) Forms
☒ Test Results (no tentatively identified compounds [TICs])
☒ Calibration standards
☒ Surrogate recoveries
☒ Blank results
☒ Spike recoveries
☒ Duplicate results
☒ Confirmation (lab check/QC) samples
☒ Internal standard area & retention time summary
☒ Chromatograms
☒ Raw data files
☒ Other specific information

The SDG reported on the following samples:

Sample ID	SDG #JC10996– Sample #	Matrix	Sampled	Received
Deli MP-2	#-1	SG	12/16/15	12/18/15
Deli MP-1 Amb	#-2	IA	12/16/15	12/18/15
Deli UP-1	#-3	SG	12/16/15	12/18/15
Deli UP-1Amb	#-4	IA	12/16/15	12/18/15
Sparkle UP-6	#-5	SG	12/16/15	12/18/15
Sparkle UP-6 Amb	#-6	IA	12/16/15	12/18/15
Sparkle UP-5	#-7	SG	12/16/15	12/18/15
Sparkle UP-5 Amb	#-8	IA	12/16/15	12/18/15
Outside Ambient	#-9	OA	12/16/15	12/18/15
China MP-5	#-10	SG	12/16/15	12/18/15
China MP-5 Amb	#-11	IA	12/16/15	12/18/15
China MP-9	#-12	SG	12/16/15	12/18/15
China MP-9 Amb	#-13	IA	12/16/15	12/18/15

NOTES: SG = Soil Gas (Vapor) IA = Indoor Air OA = Outdoor Air

All samples associated with SDG #JC10996 were analyzed using USEPA Method TO-15.

Is the data package complete as defined under the requirements for the NYSDEC ASP Category B?		
Laboratory Report	**Complete (Y/N)**	**Comments**
JC10996	Y	Yes

Sample Preservation Requirements & Holding Times Met?			
Laboratory Report	**Hold Times (Y/N)**	**Preservation (Y/N)**	**Exception Comment**
JC10996	Y	Y	None

Do all QC data fall within the protocol required limits and specifications? *(1) blanks, (2) instrument tunings, (3) calibration standards, (4) calibration verifications, (5) surrogate recoveries, (6) spike recoveries, (7) replicate analyses, (8) laboratory controls, (9) and sample data*									
SDG	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
JC10996	☐	☐	☒	☐	☐	☐	☐	☐	☐
The narrative section, below, discusses these deficiencies in detail, see Attachment 2 as well.									

Have all of the data been generated using established and agreed upon analytical protocols?		
Laboratory Report	**Protocols (Y/N)**	**Exception Comment**
JC10996	Y	None

Do the raw data confirm the results provided in the data summary sheets and quality control verification forms?		
Laboratory Report	**Confirmation (Y/N)**	**Exception Comment**
JC10996	Y	None

Have the correct data qualifiers been used and are they consistent with the most current guidance?		
Laboratory Report	**Qualifiers (Y/N)**	**Comment**
JC10996	Y	The laboratory generally applied appropriate qualifiers. To prepare the DUSR, it was necessary to apply additional qualifications or adjust qualifications to certain results as shown in Attachments 3 and 4.

Have any quality control (QC) exceedances been specifically noted in this DUSR and the corresponding QC summary sheets from the data packages referenced?		
Laboratory Report	**QC Exceedances Documented (Y/N)**	**Comment**
JC10996	Y	Several data qualifications were applied as described below

Data Quality and Usability Narrative

Field Notes Inspection

The air samples came from a one-day collection event: December 16, 2015. There were no specific field notes beyond the COC.

Laboratory Report Inspection

The laboratory produced SDG report #JC10996 (dated 1 Jan 2016). The final reports contained the required data and information.

Chain of Custody (COC) Evaluation

GES produced one COC for the referenced fieldwork (#JC10996, single, two-page COC). There were no quality issues.

Sample Preservation & Holding Time Evaluation

Laboratory received the canister samples on 12/18/2015 @ 9:45 (designated as SDG-JC10996) in proper condition. All holding times and preservation requirements were met. There were no issues noted with the canisters nor the flow controllers.

Blank Evaluation

There were no associated blanks, other than the ambient indoor and outdoor air samples. All laboratory method blanks performed within acceptable parameters.

Laboratory Control Samples (LCS)

The various LCS' were within the acceptable range for their particular analyses in SDG JC10996.

Surrogates

Surrogates added to a sample allow testing of preparatory and instrument behavior resulting in recoveries within appropriate method ranges for all analytes.

Site-Specific Matrix Spikes and Matrix Spike Duplicates

No matrix spike/matrix spike duplicate (MS/MSD) runs were required for the analyses per TO-15 Method.

Duplicates

The laboratory used internal duplicates for these VOC analytes; all duplicates met the RPD performance criteria of <20% (see below Attachment #2), except for Hexane in Batch VW2122 where the RPDs were beyond control limits.

Tentatively Identified Compounds (TICs)

This SDG had no analysis of TICs.

Sample Result and Usability Evaluation

All samples were run as Batch: VW2122 (Samples #1, 2, 3, 4, 5[run-1], 6, 7, 8, 9, 10, 11[run-1], 12, & 13[run-1]). Second analytical runs were as Batch: V3w1963 (Samples #5[run-2], 11[run-2], 13[run-2]).

Some samples (JC10996-1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, & 13) had limited volume and required dilution for analytical Batch VW2122. Due to certain sample issues or laboratory performance (result beyond calibration range), some results were qualified; however, the data are usable. No data received an R (rejected) flag. If an analyte was above the MDL but below the RL, then it was flagged as "UJ".

RemVer modified Test America's laboratory electronic data reports by adding quality flags, highlighted in yellow (see Attachment #4 [separate file]: Orangetown_2015Q4air_DUSR.xlsx [EXCEL file]).

References

Kleinfelder, 2011, *Site Management Plan, Orangetown Shopping Center, 1-45 Orangetown Shopping Center, Orangeburg, NY, NYSDEC Site #C344066*, Final, 21-November, 250p

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Tables

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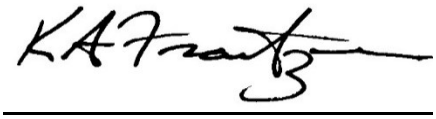
Attachments

1. Data Usability Reviewer Qualifications
2. DQA Detail Worksheet
3. DQA Non-Conformance Summary Workheet
4. Separate EXCEL File: Orangetown_2015Q2air_DUSR.xls [NOTE: RemVer modified the Test America work products by adding quality flags, which are in yellow highlight.]



Prepared by: Kurt A. Frantzen, PhD, CHMM
January 25, 2016

GES PO#573003

Table 1
Qualifier Flags

Qualifier	Quality Implication
U	Analyte analyzed for, but not detected above the sample's reported quantitation limit
J	Analyte positively identified at a numerical value that is the approximate concentration of the analyte in the sample
J +	Sample likely to have a high bias
J –	Sample likely to have a low bias
UJ	Analyte not detected above the sample quantitation limit; the associated quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample
N	The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
R	Sample result rejected due to serious deficiency in ability to analyze sample and meet quality control criteria; the presence or absence of the analyte cannot be confirmed. This qualifier also may apply when more than one sample result is generated for a target analyte (*i.e.*, dilutions or re-analyses), the most technically acceptable result is considered acceptable.
B | EB **TB | BB**	An analyte identified in method blank (B), aqueous equipment (EB), trip (TB), or bottle blanks (BB) used to assess field contamination associated with soil or sediment samples mandates these qualifiers for only soil and sediment sample results.
P	Use professional judgment based on data use. It usually has an "M" with it, which indicates that a manual check should be made if the data that are qualified with the "P" are important to the data user. In addition, "PM" also means a decision is necessary from the Project Manager (or a delegate) concerning the need for further review of the data (*see below*).
PM	A manual review of the raw data is recommended to determine if the defect affects data use, as in "R" above. This review should include consideration of potential affects that could result from using the "P" qualified data. For example, in the case of holding-time exceedance, the Project Manager or delegate can decide to use the data with no qualification when analytes of interest are known not to be adversely affected by holding-time exceedances. Another example is the case where soil sample duplicate analyses for metals exceed the precision criteria; because this is likely due to sample non-homogeneity rather than contract laboratory error, then the manager or delegate must decide how to use the data.

RemVer

Attachment 1
Data Usability Reviewer: Kurt A. Frantzen, PhD, CHMM

Experience

2014-Present	AECC	Senior EHS Consultant
2013-Present	d/b/a RemVer	Owner
2011-2012	RemVer, Inc.	President
2006-2011	Kleinfelder	Senior Principal Scientist
2005	Kleinfelder	Principal Scientist, Part-Time/On Call
2004-2006	d/b/a Environmental Risk Group	Owner
2004-2006	RemVer, Inc., Larchmont, NY	Founder, President
1999-2004	VHB, Inc.	ERM Director & Associate
1997-1998	GEI Consultants, Inc.	Senior Project Manager
1992-1997	Ecology and Environment, Inc.	Technical Chief
1991-1992	EA Engineering, Science, & Technology, Inc.	Project Manager III
1990-1991	Ecology and Environment, Inc.	Technical Group Manager
1986-1990	Ecology and Environment, Inc.	Senior Environmental Scientist

Education

Am Cancer Soc. Post-Doctoral Fellow, U Washington 1985-1986

PhD—Life Sci. / Biochem, NU—Lincoln	1985
MS—Plant Pathology, Kansas State Univ.	1980
BS—Biology, NU—Omaha	1978

Registrations

Certified Hazardous Materials Manager, since 2007, #14143

Professional Affiliations

Society Risk Analysis ('09 & '11 Chair, Eco-Risk Assessment) Am. Chemistry Society
Am. Assoc. Advance Science NY Academy of Science Am. Institute of Biological Sciences
LSP Association

Other

- CERCLA & RCRA experience, as well as DOD (Air Force & Army) & DOE (INEL)
- NE Regional Experience—NY BCP; Mass MCP; & various sites in CT, RI & NH
- National Experience: NE, SE, Gulf & West Coast, Mid-west, Inter-mountain, California, Alaska
- International: Germany, Israel, Kuwait, Australia
- Selected Publications
    - *Using Risk Appraisals to Manage Environmentally Impaired Properties*, 2000, VHB Site Works, Report 108
    - *Risk-Based Analysis for Environmental Managers*, 2001, CRC/Lewis
    - Chapter 7 Risk Assessment, *Managing Hazardous Materials*, 2002 & 2009, IHMM
    - Chapter 22 Cleanup Goals, *Brownfields Law & Practice*, 2004-Present, Lexis/Nexis
    - *Use of Risk Assessment in Risk Management of Contaminated Sites*, 2008, ITRC
- 60 Conference Papers & Invited Professional Presentations
    - 1999-2014, Visiting Lecturer, Brownfields Program, Harvard Graduate School of Design
    - 2010-2013, Invited Lecturer, Pace University Law School

Attachment 2
DQA Detail Worksheet

BLANKS	>RL?	Compounds	Notes
Method Blank: VOCs	No	—	No Comment
—	—	—	—

LCS	SV <10%	Low Bias > 10% & < LCL	High Bias >UCL	Compound(s)	Notes
VOCs	—	—	—	VOCs	No Comment
—	—	—	—	—	—

SURROGATES	SV <10%	Low Bias > 10% & < LCL	High Bias >UCL	Compound(s)	Notes
VOCs	—	—	—	—	No Comment
—	—	—	—	—	—

MS/MSDs	SV <10%	Low Bias > 10% & < LCL	High Bias >UCL	QC Source	RPDs	Notes
VOCs	—	—	—	—	—	No Comment, none required
—	—	—	—	—	—	—

FIELD DUPLICATES RPDs	QC Source	Soil RPD > 50%	Water RPD > 20%	Compounds	Notes
N/A	N/A	N/A	N/A	N/A	N/A
N/A		N/A	N/A	N/A	N/A
LAB DUPLICATES					
Batch VW2122 for Samples #1–13	JC1093 5-1DUP	N/A	N/A	Hexane All other TO-15 VOCs	Flag as UJ/J No Comment
Batch V3w1963 Samples second runs of #5, 11, & 13	JC1086 0-3DUP	N/A	N/A	All TO-15 VOCs	No Comment

Reasonable Confidence Achieved	☐ Y	☐ N—Not Applicable
Significant QC Variances Noted	☒ Y	☐ N
Requested Reporting Limits Achieved	☒ Y	☐ N
Preservation Requirements Met	☒ Y	☐ N
Holding Time Requirements Met	☒ Y	☐ N

Abbreviations:
RL = Reporting Limit LCS = Laboratory Control Sample SV = Significant QC Variance
RPD = Relative Percent Difference LCL= RCP Lower Control Limit UCL= RCP Upper Control Limit
VOCs = Volatile Organic Compounds SVOCs = Semi-volatile Organic Compounds Pest = Pesticides
EPH = Extractable Petroleum Hydrocarbons VPH = Volatile Petroleum Hydrocarbons ETPH = EPH-Total
PCBs = Polychlorinated Biphenyls N/A = Not Applicable N/C = Not Collected -- = nothing to report
Notes: * Typical lab contaminants, not site-related

Attachment 3
DQA Non-Conformance Summary Worksheet

Only Flagged Results Shown Below

Sample Number(s)	Compound(s)	QC Non-Conformance	% Recovery	% RPD †	High or Low Bias ‡	Comments
#-1	Hexane	Dup. out of range	—	>UCL	high	Flag J
	All Other VOCs	—	—	—	—	No Flag
#-2	Hexane	Dup. out of range	—	>UCL	high	Flag J
	All Other VOCs	—	—	—	—	No Flag
#-3	Hexane	Dup. out of range	—	>UCL	high	Flag J
	All Other VOCs	—	—	—	—	No Flag
#-4	Hexane	Dup. out of range	—	>UCL	high	Flag J
	All Other VOCs	—	—	—	—	No Flag
#-5	All Other VOCs	—	—	—	—	No Flag
#-6	Hexane	Dup. out of range	—	>UCL	high	Flag J
	All Other VOCs	—	—	—	—	No Flag
#-7	Hexane	Dup. out of range	—	>UCL	high	Flag J
	All Other VOCs	—	—	—	—	No Flag
#-8	Hexane	Dup. out of range	—	>UCL	high	Flag J
	All Other VOCs	—	—	—	—	No Flag
#-9	Hexane	Dup. out of range	—	>UCL	high	Flag J
	All Other VOCs	—	—	—	—	No Flag
#-10	Hexane	Dup. out of range	—	>UCL	high	Flag J
	All Other VOCs	—	—	—	—	No Flag
#-11	All Other VOCs	—	—	—	—	No Flag
#-12	Hexane	Dup. out of range	—	>UCL	high	Flag J
	All Other VOCs	—	—	—	—	No Flag
#-13	All Other VOCs	—	—	—	—	No Flag

Notes: † RPD—Relative Percent Difference
‡ Bias High—Reported result may be lower, Reporting Limit (RL) is acceptable as reported. Bias Low—Reported results may be higher, RL may be higher than reported.

APPENDIX H

Non-Hazardous Waste Manifest

ESMI of New York
304 Towpath Road, Fort Edward, New York, 12828
800.511.3764 Phone 518.747.1181 Fax

November 25, 2014

Michael DeGloria
Groundwater & Environmental Services, Inc.
70 Jon Barrett Road, Suite B
Patterson, New York 12563

Re: ESMI of New York
DEC Facility ID:58Z01
DEC Solid Waste Permit #: 5-5330-00038/00019

Subject: Orangeburg (Site ID c344066) Soil Acceptance

Dear Mr. DeGloria:

ESMI of New York (ESMI) is a Low Temperature Thermal Desorption facility permitted to accept soils contaminated with hydrocarbons and solvents such as Tetrachloroethylene (PCE) provided the soil is not deemed to be a characteristic hazardous waste. Soils contaminated by listed organic hazardous waste, such as PCE, and "contained-out" by the New York State Department of Environmental Conservation (NYSDEC) may be transported to ESMI for thermal treatment.

ESMI received 10.57 tons of Non-hazardous soil from this same Orangeburg Site in February and March of 2014. This soil was laboratory profiled and accepted for delivery to ESMI based on a "contained-in determination" letter from Jamie Verrigni, Project Manager, NYSDEC dated February 12, 2014. This letter is attached.

ESMI is in receipt of a composite sample result of soil tested for TPH-DRO, TPH-GRO, SVOCs by method 8270, and VOCs by method 8260. If a NYSDEC representative approves of the handling of this newly excavated soil as non-hazardous solid waste, ESMI can accept it for treatment.

Please do not hesitate to contact me if you require anything further.
Sincerely,

Peter C. Hansen
Compliance Manager – ESMI of New York

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau C, 11th Floor
625 Broadway, Albany, New York 12233-7014
Phone: (518) 402-9662 • **Fax:** (518) 402-9679
Website: www.dec.ny.gov

Joe Martens
Commissioner

February 12, 2014

Michael DeGloria
Groundwater & Environmental Services, Inc.
70 Jon Barrett Road
Robin Hill Corp Park, Suite B
Patterson, NY 12563

RE: Orangetown Shopping Center
Site ID No. C344066
Town of Orangetown, Rockland County
Waste Composite Sample

Dear Mr. DeGloria:

The New York State Department of Environmental Conservation (Department) has reviewed the analytical results of the waste characterization sampling performed for the soil generated during installation of monitoring wells MW-A and MW-B and the lateral injection gallery at the Orangetown Shopping Center site (Site) dated February 6, 2014. Based on the results provided the soil may be handled and disposed of as a non-hazardous solid waste, to be disposed of at a facility permitted under 6 NYCRR Part 360.

If you have any questions or comments please feel free to contact me at (518) 402-9662 or jlverrig@gw.dec.state.ny.us.

Sincerely,

Jamie Verrigni
Project Manager
Remedial Bureau C
Division of Environmental Remediation

ec: James Candiloro
Jamie Verrigni
Maureen Schuck – NYSDOH
Nate Walz – NYSDOH
Michael DeGloria – GES – MdeGloria@gesonline.com

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

2. Page 1 of

3. Emergency Response Phone (631) 586-2000

4. Waste Tracking Number 0603928

5. Generator's Name and Mailing Address

UB Orangeburg C-O GES
16 Mount Ebo Road-South, Suite 21
Brewster, NY 10509 USA

Generator's Phone:

Generator's Site Address (if different than mailing address)

Orangetown Shopping Center
1-45 Orangetown Shopping Center
Orangeburg, NY 10962

6. Transporter 1 Company Name

AMERICAN ENVIRONMENTAL ASSESSMENT CORP.

U.S. EPA ID Number

NYR000044412

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address

E.S.M.I of NY
304 Towpath Lane
Fort Edward, NY 12828 USA

U.S. EPA ID Number

Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	NON RCRA, NON DOT REGULATED (Impacted Soils)	XX1	CM	15	T
2.				12.69	
3.					
4.					

13. Special Handling Instructions and Additional Information

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Liam Mdie on behalf of UB orangeburg

Signature: Liam Mdie on behalf of UB orangeburg

Month: 12 Day: 11 Year: 14

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Peter Gaynor

Signature: Peter Gaynor

Month: 12 Day: 11 Year: 14

Transporter 2 Printed/Typed Name

Signature

Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)

U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name

Signature

Month: 12 Day: 11 Year: 14

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

2. Page 1 of

3. Emergency Response Phone (631) 586-2000

4. Waste Tracking Number 0603930

5. Generator's Name and Mailing Address

UB Orangeburg C-O GES
18 Mount Ebo Road-South,Suite 21
Brewster, NY 10509 USA

Generator's Phone:

Generator's Site Address (if different than mailing address)

Orangetown Shopping Center
1-45 Orangetown Shopping Center
Orangeburg, NY 10962

6. Transporter 1 Company Name

AMERICAN ENVIRONMENTAL ASSESSMENT CORP.

U.S. EPA ID Number NYR000044412

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address

E.S.M.I of NY
304 Towpath Lane
Fort Edward, NY 12828 USA

U.S. EPA ID Number

Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1	NON RCRA, NON DOT REGULATED (Impacted Soils)	XX1	CM	15	T
2.				13.43	T
3.					
4.					

13. Special Handling Instructions and Additional Information

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name C. Andreotto On Behalf of UB Orangeburg

Signature

Month 12 Day 12 Year 14

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name Peter Gagnon

Signature Peter Gagnon

Month 12 Day 12 Year 14

Transporter 2 Printed/Typed Name

Signature

Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)

U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name Robert Bell

Signature

Month 12 Day 12 Year 14

169-BLC-O 6 10498 (Rev. 9/09)

DESIGNATED FACILITY TO GENERATOR