ANNUAL LONG TERM MONITORING REPORT FOR 2011

Site:
Utility Manufacturing/Wonder King, Operable Unit No. 2
700-712 Main Street
New Cassel, New York 11590

Submitted to:
New York State Department of Environmental Conservation (NYSDEC)
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1 INTRODUCTION

AECOM Technical Services Northeast, Inc. (AECOM) has been issued Work Assignment #D004436-32 under the New York State Department of Environmental Conservation (NYSDEC) State Superfund Standby Program. The site under this work assignment is Utility Manufacturing/Wonder King (Utility Manufacturing), Operable Unit 2 (Site No. 130043H). The location of the site is shown on Figure 1.

The initial scope of work for this project, as defined by the NYSDEC, was project scoping, preparation of plans and specifications, oversight of construction services including sub-slab depressurization system installation at three facilities and installation of six monitoring wells, and one round of groundwater and indoor air sampling. The work was performed in accordance with NYSDEC Division of Environmental Remediation Final DER-10 Technical Guidance for Site Investigation and Remediation (NYSDEC, May 2010) and the Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH; Final, October 2006). The work conducted under the initial scope (well installation, groundwater sampling, and indoor air sampling) was completed in 2010 and documented in the Final Annual Long Term Monitoring Report (AECOM, 2011).

In August 2011, NYSDEC amended the budget to include two rounds of monitoring well sampling and vapor intrusion sampling at two structures. This report documents one round of monitoring well sampling and the soil vapor intrusion sampling at one structure conducted in 2011.

1.1 Background

The Utility Manufacturing site is located at 700-712 Main Street (south side) between Bond Street and Frost Street, approximately 500 feet (ft) north of Old Country Road in the New Cassel Industrial Area (NCIA), Westbury, Nassau County, New York. The site and study area for Operable Unit No. 2 are located within the NCIA (Figure 1), which is a 170-acre industrial and commercial area on the north side of Old Country Road. The sites within the Operable Unit No. 2 consist mostly of commercial and industrial operations including auto repair, auto garage, office spaces, warehouse, and machine tool shop.

1.2 Previous Investigations Conducted at the Utility Manufacturing Site

A summary of the site investigations conducted for the Utility Manufacturing site between 1986 and 2007 is provided in the Record of Decision (ROD) dated March 2008 for Operable Unit No. 2 (NYSDEC, 2008).

1.3 Selected Remedy

A ROD presenting the selected remedy for Operable Unit 2 was finalized by NYSDEC in March 2008. The elements of the selected remedy are as follows:

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program.
2. Sub-slab depressurization systems will be installed in three off-site buildings that have vapor intrusion impacts.
3. Periodic sub-slab vapor, indoor air and outdoor air samples will be obtained at three properties where the potential for vapor intrusion exists. Periodic sampling will continue until sampling results indicate that continued sampling is no longer required.
4. Groundwater contamination within the study area will be allowed to naturally attenuate.
5. Imposition of an institutional control in the form of an environmental easement on the site that will require: (a) compliance with the approved site management plan; and (b) the property owner to complete and submit to NYSDEC (the Department) a periodic certification of institutional and engineering controls.
6. Development of a site management plan which will include the following institutional and engineering controls: (a) monitoring of groundwater, sub-slab vapor, indoor air and outdoor air;

and (b) provisions for the continued proper operation and maintenance of the components of the remedy.

7. The property owner will provide a periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed.
8. The operation of the components of the remedy will continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impracticable or not feasible.
9. Since the remedy results in untreated hazardous waste remaining at the site, a long-term monitoring program will be instituted. Up to nine monitoring wells will be sampled periodically for VOCs to track the progress of the natural attenuation. In addition, sub-slab vapor, indoor air and outdoor air samples will be obtained and analyzed for VOCs at three buildings with potential vapor intrusion impacts. This program will allow the effectiveness of the natural attenuation and soil vapor intrusion mitigation measures to be monitored and will be a component of the operation, maintenance, and monitoring for the site.

Vapor intrusion sampling at three structures (item 3) and groundwater monitoring sampling (item 9) was conducted in 2010 and documented in AECOM (2011). Of the three off-site buildings identified for installation of sub-slab depressurization systems (item 2), property managers for two of the structures (6 and 9) have declined to have the systems installed. NYSDEC has proposed to collect vapor intrusion samples from these structures instead. To date, the firm managing Structure 9 has declined to have the vapor intrusion samples collected. Vapor intrusion sampling at Structure 6 and one round of groundwater sampling is documented in this report. The structure locations are shown in Figure 2. The monitoring well locations are shown in Figure 3.

2 FIELD INVESTIGATION

Groundwater sampling and collection of groundwater elevation measurements was conducted 2011. Groundwater samples were collected from the two existing wells and six newly installed wells shown on Figure 3. AECOM collected samples from six of the wells in August 2011, but was denied access to two of the wells on 1025 Old Country Road, Westbury, NY. Recent heavy rainfall caused erosion under the pavement where the wells (MW-11S and MW-11D) are located making the area unstable. AECOM returned in October 2011 to sample the wells using a bucket truck to elevate the samplers over the wells and permit sampling. In addition, AECOM repaired a well at 1025 Old Country Road, Westbury, NY at the request of the property manager.

Indoor air samples were collected from Structure 6. AECOM contacted the owner and tenant to schedule the appointment for indoor air sampling. Laboratory analyses were conducted by Spectrum Analytical, Inc. for the groundwater samples and TestAmerica for the air samples. YEC, Inc. participated in field activities as a subcontractor to AECOM. Field forms are provided in Appendix A. The indoor air property questionnaire is provided in Appendix B. The occupants were provided with information on indoor air sampling and a handout prior to sampling listing activities which could influence the results of the sampling (Appendix A).

2.1 Groundwater Sampling

AECOM collected one round of samples from two wells installed for the off-site remedial investigation (MW-1S and MW-1D) and six wells installed in May 2010 (MW-11S, MW-11D, MW-12S, MW-12D, MW-13S, and MW-13D). Well sampling forms showing compliance with EPA low-flow sampling procedures (EPA SOP, 1998) are provided in Appendix A. A bladder pump was used. The pump intake was set at the midpoint of the screened interval. Dedicated Teflon-lined tubing was used for all groundwater sample collection. Field measurements recorded during purging included flow rate, depth to water, temperature, pH, conductivity, dissolved oxygen (DO), oxidation-reduction potential (ORP) and turbidity. The measurements were recorded on a well sampling form. Measurements were collected approximately

every five minutes. A flow-through cell was used to measure most of the parameters. Purging was considered complete when the indicator parameters stabilized over three consecutive readings. If the groundwater did not stabilize, the samples were collected after two hours of purging. Stabilization parameters are:

- depth to water: less than 0.3 ft drawdown during purging;
- pH: ± 0.1
- conductivity: ± 3%
- DO: ± 10 %
- ORP: ±10 mV and
- Turbidity: less than 50 nephelometric turbidity units (NTU).

During sample collection, the flow cell was disconnected and the sample tubing discharge was poured directly into the laboratory supplied sample containers and field vials. Water samples were collected in pre-preserved bottles provided by the laboratory, cooled to 4ºC after collection, and shipped to the subcontract laboratory for analysis of VOCs, dissolved iron (field filtered), sulfates, nitrates, carbon dioxide, and methane. All parameters other than VOCs are referred to as monitored natural attenuation (MNA) parameters. Analyses were performed by Spectrum Analytical, Inc. in Warwick, Rhode Island, a NYSDOH Environmental Laboratory Approval Program (ELAP) certified laboratory (ELAP #11522).

A round of water table elevation data for the existing monitoring wells was collected on August 9, 2011, prior to groundwater sampling. The results are presented in Table 2. Groundwater elevations are shown on Figure 4 for the shallow wells and Figure 5 for the deep wells. The groundwater flow direction appears to be to the south.

2.2 Monitoring Well Repair

The property manager for Structure 9, Kellum Realty Corp., contacted NYSDEC regarding a damaged monitoring well located in the parking lot of Structure 9. The top of the casing was damaged. NYSDEC directed AECOM to repair the damaged well. AECOM replaced the damaged well casing for MW-11D on October 11, 2011.

2.3 Indoor Air Sampling

AECOM collected indoor air, outdoor ambient air and sub-slab soil vapor samples at Structure 6 in November 2011 in accordance with the Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH; Final, October 2006). The location of Structure 6 is shown on Figure 2. A photo log is shown in Appendix C.

Prior to sampling, an inspection of general site conditions was performed. The inspection also included the preparation of a chemical product inventory, collection of ambient air organic vapor readings, and the completion of a property owner questionnaire (Appendix B).

Two indoor air samples were collected in summa canisters within the one-story building. One outdoor ambient air sample was collected concurrently with the indoor air samples. Two sub-slab vapor samples were collected at Structure 6. One canister was submitted to the laboratory as a trip blank.

Where possible, sub-slab vapor samples were located central to the building and away from the foundation walls and apparent penetrations such as water pipes and floor drains. AECOM used a photoionization detector (PID) to screen indoor air and inspected the floor for penetrations (e.g., concrete floor cracks, floor drains) prior to collecting the air samples. No products containing chlorinated solvents were identified which required removal from the interior of the buildings prior to and during the sampling effort. Product inventories for each structure are provided in Appendix B.

The air samples were collected using 6-liter batch certified summa canisters equipped with 24-hour flow controller valves pre-calibrated at the laboratory.

Indoor air samples were collected by placing the summa canister in the breathing zone (4-6 ft above the floor).

Outdoor air sampling locations were away from outdoor operations known to generate VOCs. The outdoor air samples were collected near the entrance at Structure 6.

For the sub-slab samples, after the basement flooring/foundation slab had been inspected, the location of subsurface utilities determined, and the ambient air surrounding the proposed sampling location screened with a PID, an electric drill was used to advance a boring to a depth of no more than 2 inches beneath the basement flooring/foundation slab. Temporary probes were constructed with Teflon tubing. The annular space between the drilled hole and the ¼" ID sample tubing was filled with modeling clay and the sampling probe sealed to the floor with beeswax, a non-VOC-containing and non-shrinking product. After installation, one to three volumes (i.e., the volume of the sample probe and tube) were purged prior to collecting the samples by connecting the tube to a SKC Model 222-3 pump. After purging, the end of the tubing was connected directly to the summa canister's regulator intake valve. At the completion of the sampling of temporary points, each borehole was patched to restore the area to pre-sample condition. Appendix A contains the field information collected during sampling.

All sub-slab, indoor air, and outdoor air samples were sent to TestAmerica in South Burlington, Vermont, a NYSDOH Environmental Laboratory Approval Program (ELAP #10391). Proper chain-of-custody (COC) procedures were maintained throughout the sampling event. The samples were analyzed for VOCs by USEPA Method TO-15 with a detection limit of 1.0 µg/m^3 (0.25 µg/m^3 for TCE). Site-specific quality control (QC) measures included the submission of a trip blank. In addition, the laboratory performed batch QC as required by the analytical method.

3 LABORATORY ANALYTICAL RESULTS

3.1 Groundwater Samples

3.1.1 VOC Data

Groundwater samples were collected from eight wells and submitted VOCs (EPA SW-846 Method 8260), dissolved iron (EPA SW-846 Method 6010B), sulfates (EPA 300.0), nitrates (EPA 300.0), carbon dioxide (EPA 3C), and methane (EPA RSK-175). The VOC groundwater results are compared to the NYS Class GA Groundwater Criteria and are presented in Table 3. VOC detections are summarized on Figure 6. A summary of concentrations exceeding the NYS Class GA Groundwater Criteria are provided below:

- 1,1-Dichloroethene was detected in all wells except MW-11S, MW-12S, and MW-1S. The concentrations exceed the NYS Class GA criterion of 5 µg/L in MW-11D (5.2 µg/L) and MW-13D (5.6 µg/L).
- Total and cis-1,2-dichloroethene were detected in all wells except MW-11S and MW-12D. The concentrations exceed the NYS Class GA criterion of 5 µg/L in MW-1D (5.7 µg/L), MW-13S (6.1 µg/L [5.3 µg/L duplicate]), MW-13D (8.5 µg/L), and MW-1S (20 µg/L). Trans-1,2-dichloroethene was not detected in any of the wells.
- Tetrachloroethene (PCE) was detected in all of the wells. The concentrations exceed the NYS Class GA criterion of 5 µg/L in five of the eight wells with concentrations ranging from 5.5 µg/L (MW-11S) to 18 µg/L (MW-12S).
- Trichloroethene (TCE) was detected in all wells. The concentrations exceed the NYS Class GA criterion of 5 µg/L in MW-11D (5.3 µg/L), MW-13S (16 µg/L [14 µg/L in the field duplicate]), MW-1D (65 µg/L), and MW-13D (88 µg/L).

Groundwater samples collected from monitoring wells in 2005 (ERM, 2005) exceeded the NYS Class GA criteria for five VOCs with the following maximum concentrations for the 2005, 2010, and 2011 events summarized below:

	2005	2010	2011
• PCE	220 µg/L	18 µg/L	18 µg/L
• TCE	54 µg/L	200 µg/L	88 µg/L
• cis-1,2-Dichloroethene	84 µg/L	18 µg/L	20 µg/L
• 1,1-Dichloroethene	22 µg/L	30 µg/L	5.6 µg/L
• 1,1,1-Trichloroethane	17 µg/L	15 µg/L	4.7 µg/L

The decline in the maximum concentration detected for these compounds since 2005 indicates limited dechlorination through natural attenuation is occurring at the site.

The maximum concentration for PCE is unchanged from the previous round of sampling in 2010. The maximum concentration for PCE decreased from 220 µg/L in 2005 to 18 µg/L in 2010, and has remained at 18 µg/L in 2011. There were reductions in PCE concentration at all wells except MW-11D, MW-12S, and MW-13S. The increase in PCE concentration may be due to migration of the plume.

The maximum TCE concentration detected increased from 54 µg/L in 2005 to 200 µg/L in 2010. However, the maximum detection in 2010 was from a downgradient location (MW-13D) which was not sampled during the 2005 RI. In 2011, the maximum TCE concentration of 88 µg/L, also detected in MW-13D, was less than half the concentration detected in 2010. Natural attenuation may be occurring in this area. The TCE concentrations declined in 2011 in all wells except MW-11D and MW-13S.

The maximum concentration for cis-1,2-dichloroethene increased slightly in 2011. The maximum concentration for cis-1,2-dichloroethene decreased from 84 µg/L in 2005 to 18 µg/L in 2010, but increased slightly to 20 µg/L in 2011. Concentrations of cis-1,2-dichloroethene in 2011 samples were below the NYS Class GA standard or showed a decrease in concentration for five wells. The concentration of cis-1,2-dichloroethene increased at wells MW-1S, MW-1D, and MW-13S.

The maximum concentrations for 1,1-dichloroethene, 1,1,1-trichloroethane and TCE show a reduction in 2011 compared to the previous sampling rounds. The maximum concentration of 1,1-dichloroethene increased from 22 µg/L in 2005 to 30 µg/L in 2010 possibly as a result of dechlorination from TCE or PCE, but has since decreased to 5.6 µg/L in 2011 which is just above the NYS Class GA standard. The maximum concentration for 1,1,1-trichloroethane decreased from 15 µg/L in 2010 to 4.7 µg/L in 2011 which is below the NYS Class GA standard.

3.1.2 MNA Data

The results for MNA parameters are provided in Table 4. A summary of the results is provided below.

- Methane: An increase in methane may be an indicator of reducing conditions or be a present as a byproduct microbial degradation using carbon dioxide as an electron acceptor. Methane concentrations were detected in all wells with concentrations ranging from 0.61 µg/L (MW-12S) to 1.9 µg/L (MW-11D).
- Carbon dioxide: An increase in carbon dioxide may provide an indication of biodegradation. Carbon dioxide was detected in all wells with concentrations ranging from 1,750 µg/L (MW-11S) to 13,600 µg/L (MW-13D).
- Sulfate: A decrease in sulfate, relative to background, may indicate that sulfate is serving as an electron acceptor under anaerobic conditions. Sulfate was detected in all wells at concentrations ranging from 12 µg/L (MW-11S and MW-13D) to 37 µg/L (MW-12S).
- Nitrate: A decrease in nitrate, relative to background, may indicate nitrate is serving as an electron acceptor under slightly reducing conditions. Nitrate was detected in all wells with

concentrations ranging from 1.3 µg/L (MW-11S and MW-11D) to 4.6 µg/L (MW-13D). This parameter may indicate of biological activity at this site.

- Dissolved iron: An increase in dissolved iron (Fe II), relative to background, may indicate that insoluble iron (Fe III) is serving as an electron acceptor in anaerobic biodegradation. Iron was not detected in any wells.
- Dissolved oxygen: Dissolved oxygen is a microbial electron acceptor and a redox indicator. High concentrations were measured and may indicate aerobic conditions.

The concentrations for 2010 and 2011 are shown on Figure 7 for methane, carbon dioxide, sulfate, nitrate, and VOCs exceeding the NYS Class GA Groundwater Criteria. There is no clear relationship between the VOC and other parameter concentrations. None of the other parameters appear to be an indicator of biological activity at this site. For instance, the largest change in VOC concentration between 2010 and 2011 occurred at MW-13D, but the changes in concentration for the MNA parameters at MW-13D do not differ from the other wells.

3.2 Air Samples

A total of five air samples were collected in 2011. The air samples include two sub-slab soil vapor samples, two indoor air samples, and an outdoor air sample. All air samples were analyzed for VOCs by USEPA method TO-15. The analytical results are presented in Table 5. Detected VOCs included chlorinated aliphatics (e.g., TCE and PCE), and petroleum-related compounds (e.g., m/p-xylene). Detections at each sample location are shown in Figure 8.

Indoor air and outdoor air sample data compared to background concentrations are presented in Table 6 and Table 7, respectively. The background concentrations are the 75th percentiles reported in the NYSDOH 2003 Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes and the EPA 2001 Building Assessment and Survey Evaluation (BASE) database (Appendix C of NYSDOH, 2006). No background concentrations were exceeded.

A comparison of the concentrations of TCE and PCE in the sub-slab vapor and indoor air samples with the Decision Matrices from NYSDOH (2006) is presented in Table 8. In 2007, identification of sources and reduction in exposure was indicated for PCE with the maximum sub-slab sample PCE concentration was 80.7 µg/m^3 and the maximum indoor air concentration of 3.58 µg/m^3. In 2011, monitoring is indicated for the Structure 6 based on one PCE concentration exceeding 100 ug/m^3 in a sub-slab sample (120 µg/m^3 [SS-2]). Indoor air PCE concentrations are less than 3 µg/m^3 (0.53 µg/m^3 [IAQ-1] and not detected at a reporting limit of 0.27 µg/m^3 [IAQ-2]).

In 2007, the TCE concentrations indicated mitigation was required with a sub-slab sample concentration of 22.7 µg/m^3 and an indoor air sample concentration of 5.47 µg/m^3. In 2011, TCE concentrations indicate no further action is required with p1
concentrations of 3.9 µg/m^3 and 13 µg/m^3 in the indoor air samples and no detections in the sub-slab samples.

In 2007 and 2011, carbon tetrachloride concentrations indicate that identification of sources and reduction of exposure is indicated. However, carbon tetrachloride was not detected in any of the sub-slab samples. The source of the carbon tetrachloride in the indoor air may be from industrial activities in Structure 6 and not related to the Utility Manufacturing site.

In 2007 and 2011, vapor intrusion sample concentrations for 1,1,1-trichloroethane indicate no further action is required.

4 DATA VALIDATION

Data validation was provided by Environmental Data Services, Inc. (EDS) of Williamsburg, Virginia, an independent chemist under subcontract to AECOM. Data Usability Summary Reports (DUSRs) for each

sample delivery group (SDG) are included in Appendix E. Complete copies of the laboratory analytical data reports are included on CD as Appendix D.

4.1 Groundwater Sample Data

Groundwater data from samples collected in August 2011 were reported by Spectrum Analytical, Inc., Warwick, Rhode Island as one sample delivery group (SDG), K1470. A total of 10 analyses were validated, including one trip blank, one MS/MSD pair, one field duplicate, and six environmental samples. There were several rejections of data. These data cannot be used in the decision-making process for the project:

- Acetone was rejected in all samples due to a low initial calibration relative response factor values.

The remaining data are acceptable for the intended purposes. Data were qualified as estimated (J qualifier) for the following deficiencies:

- 2-Butanone, 1,2-dibromo-3-chloropropane, and methyl acetate were qualified as estimated in all samples due to high initial calibration percent relative standard deviation values.

Groundwater data from samples collected in October 2011 were reported by Spectrum Analytical as one sample delivery group (SDG), K1905. A total of three analyses were validated, including one trip blank and two environmental samples. There were several rejections of data. These data cannot be used in the decision-making process for the project:

- Acetone and 2-butanone were rejected in all samples due to a low initial calibration relative response factor values. Data for these analytes are unusable.

The remaining data are acceptable for the intended purposes. Data were qualified for the following deficiencies:

- Chloroform, bromoform, and 1,2-dibromo-3-chloropropane were qualified as estimated (J qualifier) in all samples due to high initial calibration percent relative standard deviation values.
- Carbon disulfide and PCE were qualified as estimated (J qualifier) in all samples due to high continuing calibration percent relative standard deviation values.

The rejection of acetone and 2-butanone groundwater data does not impact the evaluation of the data because neither compound is a contaminant of concern for the Utility Manufacturing site. Acetone was detected in samples from two of the eight monitoring wells in 2010, but the concentrations did not exceed the NYS Class GA criterion. 2-Butanone was not detected in samples from any of the monitoring wells in 2010.

4.2 Air Sample Data

Air sample data from samples collected in November 2011 were reported by TestAmerica, South Burlington, Vermont as one sample delivery group (SDG), 200-8255. A total of six analyses were validated. The data are acceptable for the intended purposes. Data were qualified for the following deficiencies:

- 1,1,2,2-Tetrachloroethane was qualified as estimated (J qualifier) in two samples due to low recovery in the laboratory control sample (LCS).
- Reported concentrations of cyclohexane, n-heptane, toluene, m,p-xylene, and total xylenes were negated (qualified as not detected) in several samples due to trip blank contamination.

5 CONCLUSIONS AND RECOMMENDATIONS

Groundwater and air sampling was performed at the Utility Manufacturing site in Westbury, NY with field work conducted in 2011. A summary of the sampling effort is provided below:

- Groundwater VOC concentrations in samples from one or more monitoring wells exceed the NYS Class GA criteria for 1,1-dichloroethene, cis-1,2-dichloroethene, PCE, and TCE. The maximum concentrations have declined for 1,1-dichloroethene and TCE. The 1,1,1-trichloroethane concentration exceeded the NYS Class GA standard in previous sampling rounds, but was not detected in the 2011 sampling. The maximum concentration for cis-1,2-dichloroethene in 2011 is the same as in 2010. The maximum concentration for PCE in 2011 (20 µg/L) is slightly higher than in 2010 (18 µg/L). As shown in Figure 7, VOC concentrations generally appear to be declining over time. This is most apparent for samples with more elevated VOC concentrations. Another round of sampling in 2012 is recommended to further illustrate the effectiveness of the selected remedy. Sampling in 2012 could be limited to VOCs only, since the indicator parameters do not appear to show that biodegradation is occurring.
- Soil vapor intrusion air sampling was conducted at Structure 6. Based on the results of this sampling event, mitigation is not required at this structure. NYSDEC may consider another round of monitoring at this structure due to the elevated concentration of PCE in the sub-slab samples.

6 REFERENCES

AECOM, 2007. Supplemental Remedial Investigation Report (Off-Site Soil Vapor Intrusion Site Characterization), Utility Manufacturing/Wonder King, OU 2, Town of North Hempstead, New York. October.

AECOM, 2011. Final Annual Long Term Monitoring Report, Utility Manufacturing/Wonder King, OU 2, Town of North Hempstead, New York. January.

Environmental Resources Management (ERM), 2005. Off-Site Remedial Investigation Report, Utility Manufacturing, New Cassel, Town of North Hempstead, Nassau County, NY. December.

New York State Department of Health (NYSDOH), 2003. Fact Sheet: Tetrachloroethene (Perc) In Indoor and Outdoor Air. May.

NYSDOH, 2006. Guidance for Evaluating Soil Vapor Intrusion in the State of New York. October.

New York State Department of Environmental Conservation (NYSDEC), 1994. Technical and Administrative Guidance Memorandum #4046. Determination of Soil Cleanup Objectives and Cleanup Levels. January.

NYSDEC, 2008. Record of Decision Utility Manufacturing/Wonder King Site Operable Unit No. 2 Town of North Hempstead, Nassau County, New York. Site Number 130043H. March.

NYSDEC, 2010. NYSDEC Division of Environmental Remediation DER-10 Technical Guidance for Site Investigation and Remediation. May.

Table 1
Well Construction Data

Well Number	Northing	Easting	Ground Elevation	Top of Casing Elevation	Total Depth of Well
MW-11D	214,701.44	1,106,744.20	119.77	119.51	124
MW-11S	214,706.18	1,106,741.07	119.96	119.66	95
MW-12D	214,675.55	1,106,597.69	118.56	118.26	125
MW-12S	214,670.11	1,106,598.27	118.51	117.88	95
MW-13D	214,630.74	1,106,353.23	116.82	116.41	126
MW-13S	214,625.69	1,106,354.25	116.66	116.32	96
MW-1S	214,708.46	1,106,651.34	120.28	119.82	90
MW-1D	214,707.10	1,106,646.90	120.18	119.77	130

Notes:
All elevations and depths are in feet.
Vertical datum: NAVD88
Horizontal datum: NY State Plane NAD83

Table 2
Groundwater Elevations

Well Number	Ground Elevation	Depth To Water 5/12/10	Groundwater Elevation 5/12/10	Depth To Water 8/9/11	Groundwater Elevation 8/9/11
MW-1S	120.28	41.85	78.43	45.58	74.7
MW-1D	120.18	42.4	77.78	45.59	74.59
MW-11D	119.77	42.74	77.03	46.65	73.12
MW-11S	119.96	42.76	77.2	46.5	73.46
MW-12D	118.56	41.47	77.09	45.25	73.31
MW-12S	118.51	41.08	77.43	44.82	73.69
MW-13D	116.82	39.74	77.08	43.5	73.32
MW-13S	116.66	39.68	76.98	43.4	73.26

Notes:
All elevations and depths are in feet.
Vertical datum: NAVD88

Table 3
VOCs in Groundwater

	NYS	MW11S				MW11D				MW12S		MW12S (dup)		MW-12S		MW12D			
	Class GA	5/12/2010		10/3/2011		5/12/2010		10/3/2011		5/11/2010		5/11/2010		8/9/2011		5/11/2010		8/9/2011	
ANALYTE	ug/L	µg/L				µg/L				µg/L		µg/L				µg/L			
1,1,1-Trichloroethane	5	1	U	0.78	J	1.8		2.1		1	U	1	U	5	U	**8.8**		0.91	J
1,1,2,2-Tetrachloroethane	5	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
1,1,2-Trichloroethane	1	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
1,1,2-Trichlorotrifluoroethane	5	1	U	1	U	1	U	1	U	1	U	1	U	5	U	2.2		5	U
1,1-Dichloroethane	5	1	U	1	U	2.5		3		1	U	1	U	5	U	2.4		5	U
1,1-Dichloroethene	5	1	U	1	U	4		**5.2**		1	U	1	U	5	U	**17**		1.5	J
1,2,4-Trichlorobenzene	5	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
1,2-Dibromo-3-chloropropane	0.04	1	U	1	UJ	1	U	1	UJ	1	UJ	1	U	5	UJ	1	U	5	UJ
1,2-Dibromoethane (EDB)	5	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
1,2-Dichlorobenzene	3	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
1,2-Dichloroethane	0.6	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
1,2-Dichloroethene, Total	5	2	U	1	U	1.2	J	1.9		**15**		**15**		2.2	J	1.8	J	5	U
1,2-Dichloropropane	1	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
1,3-Dichlorobenzene	3	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
1,4-Dichlorobenzene	3	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
2-Butanone (MEK)	5	5	U		R	5	UJ		R	5	U	5	U	5	UJ	5	U	5	UJ
2-Hexanone	5	5	U	5	U	5	UJ	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone (MIBK)	5	5	U	5	U	5	UJ	5	U	5	U	5	U	5	U	5	U	5	U
Acetone	5	5	U		R	4.8	J		R	5	U	5	U		R	5	U		R
Benzene	1	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
Bromodichloromethane	5	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
Bromoform	5	1	U	1	UJ	1	UJ	1	UJ	1	U	1	U	5	U	1	U	5	U
Bromomethane	5	1	UJ	1	U	1	U	1	U	1	U	1	UJ	5	U	1	UJ	5	U
Carbon disulfide	60	1	U	1	UJ	1	U	1	UJ	1	U	1	U	5	U	1	U	5	U
Carbon Tetrachloride	5	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
Chlorobenzene	5	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
Chlorodibromomethane	NA	1	U	1	U	1	U	1	U	1	UJ	1	U	5	U	1	U	5	U
Chloroethane	5	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
Chloroform	7	1	U	1	UJ	1	U	1	UJ	1	U	1	U	5	U	1	U	5	U
Chloromethane	5	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
cis-1,2-Dichloroethene	5	1	U	1	U	1.2		1.9		**15**		**15**		2.2	J	1.8		5	U
cis-1,3-Dichloropropene	0.4	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
Cyclohexane	NA	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
Dichlorodifluoromethane	5	1	U	1	U	1	U	1	U	1	UJ	1	U	5	U	1	U	5	U
Ethylbenzene	5	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
Isopropylbenzene	5	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
Methyl Acetate	NA	1	U	1	U	1	UJ	1	U	1	U	1	U	5	UJ	1	U	5	UJ
Methyl tert-Butyl Ether	5	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U

Table 3

VOCs in Groundwater

	NYS	MW11S				MW11D				MW12S		MW12S (dup)		MW-12S		MW12D			
	Class GA	5/12/2010		10/3/2011		5/12/2010		10/3/2011		5/11/2010		5/11/2010		8/9/2011		5/11/2010		8/9/2011	
ANALYTE	ug/L	µg/L				µg/L				µg/L		µg/L				µg/L			
Methylcyclohexane	NA	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
Methylene Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
Styrene	5	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
Tetrachloroethene (PCE)	5	**8.7**		**5.5**	J	**8.1**		**17**	J	**10**		**10**		**18**		**7.1**		1.8	J
Toluene	5	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
trans-1,2-Dichloroethene	5	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
trans-1,3-Dichloropropene	0.4	1	U	1	U	1	U	1	U	1	UJ	1	U	5	U	1	U	5	U
Trichloroethene (TCE)	5	1	U	0.71	J	3	U	**5.3**		2.5		2.4		1.9	J	**25**		1.4	J
Trichlorofluoromethane	5	1	U	1	U	1	U	1	U	1	UJ	1	U	5	U	1	U	5	U
Vinyl chloride	2	1	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	5	U
Xylenes, total	5	2	U	2	U	2	U	2	U	2	U	2	U	5	U	2	U	5	U

U Not detected

J Concentrations are estimated.

Bolded concentrations exceed the NYS Class GA groundwater criteria.

Table 3
VOCs in Groundwater

	NYS	MW13S				MW13S (dup)		MW13D				MW1S				MW1D			
	Class GA	5/11/2010		8/9/2011		8/9/2011		5/11/2010		8/9/2011		5/12/2010		8/10/2011		5/12/2010		8/10/2011	
ANALYTE	ug/L	µg/L						µg/L				µg/L				µg/L			
1,1,1-Trichloroethane	5	1	U	2.1	J	1.8	J	4.2		4.7	J	1	U	5	U	**15**		3.7	J
1,1,2,2-Tetrachloroethane	5	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
1,1,2-Trichloroethane	1	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
1,1,2-Trichlorotrifluoroethane	5	1	U	5	U	5	U	1.2		5	U	1	U	5	U	3.5		5	U
1,1-Dichloroethane	5	1	U	4.2	J	3.6	J	1.2		0.72	J	1	U	5	U	4.3		2.2	J
1,1-Dichloroethene	5	1	U	0.82	J	0.74	J	**7**		**5.6**		1	U	5	U	**30**		4.3	J
1,2,4-Trichlorobenzene	5	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
1,2-Dibromo-3-chloropropane	0.04	1	UJ	5	UJ	5	UJ	1	UJ	5	UJ	1	U	5	UJ	1	U	5	UJ
1,2-Dibromoethane (EDB)	5	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
1,2-Dichlorobenzene	3	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
1,2-Dichloroethane	0.6	1	U	5	U	5	U	0.58	J	5	U	1	U	5	U	1	U	5	U
1,2-Dichloroethene, Total	5	0.74	J	**6.1**		**5.3**		**17**		**8.5**		**18**		**20**		4.4		**5.7**	
1,2-Dichloropropane	1	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
1,3-Dichlorobenzene	3	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
1,4-Dichlorobenzene	3	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
2-Butanone (MEK)	5	5	U	5	UJ	5	UJ	5	U	5	UJ	5	UJ	5	UJ	5	U	5	UJ
2-Hexanone	5	5	U	5	U	5	U	5	U	5	U	5	UJ	5	U	5	U	5	U
4-Methyl-2-pentanone (MIBK)	5	5	U	5	U	5	U	5	U	5	U	5	UJ	5	U	5	U	5	U
Acetone	5	5	U		R		R	5	U		R	5	J		R	5	U		R
Benzene	1	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
Bromodichloromethane	5	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
Bromoform	5	1	U	5	U	5	U	1	U	5	U	1	UJ	5	U	1	U	5	U
Bromomethane	5	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	UJ	5	U
Carbon disulfide	60	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
Carbon Tetrachloride	5	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
Chlorobenzene	5	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
Chlorodibromomethane	NA	1	UJ	5	U	5	U	1	UJ	5	U	1	U	5	U	1	U	5	U
Chloroethane	5	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
Chloroform	7	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
Chloromethane	5	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
cis-1,2-Dichloroethene	5	1	U	**6.1**		**5.3**		**17**		**8.5**		**18**		**20**		4.4		**5.7**	
cis-1,3-Dichloropropene	0.4	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
Cyclohexane	NA	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
Dichlorodifluoromethane	5	1	UJ	5	U	5	U	1	UJ	5	U	1	U	5	U	1	U	5	U
Ethylbenzene	5	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
Isopropylbenzene	5	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
Methyl Acetate	NA	1	U	5	UJ	5	UJ	1	U	5	UJ	1	UJ	5	UJ	1	U	5	UJ
Methyl tert-Butyl Ether	5	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U

Table 3

VOCs in Groundwater

	NYS	MW13S				MW13S (dup)		MW13D				MW1S				MW1D			
	Class GA	5/11/2010		8/9/2011		8/9/2011		5/11/2010		8/9/2011		5/12/2010		8/10/2011		5/12/2010		8/10/2011	
ANALYTE	ug/L	µg/L						µg/L				µg/L				µg/L			
Methylcyclohexane	NA	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
Methylene Chloride	5	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
Styrene	5	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
Tetrachloroethene (PCE)	5	1.2		3.5	J	3.3	J	**9.4**		**5.5**		**8.9**		4.4	J	**18**		**6.6**	
Toluene	5	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
trans-1,2-Dichloroethene	5	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
trans-1,3-Dichloropropene	0.4	1	UJ	5	U	5	U	1	UJ	5	U	1	U	5	U	1	U	5	U
Trichloroethene (TCE)	5	1.7		**16**		**14**		**200**		**88**		3.1	U	2.2	J	**74**		**65**	
Trichlorofluoromethane	5	1	UJ	5	U	5	U	1	UJ	5	U	1	U	5	U	1	U	5	U
Vinyl chloride	2	1	U	5	U	5	U	1	U	5	U	1	U	5	U	1	U	5	U
Xylenes, total	5	2	U	5	U	5	U	2	U	5	U	2	U	5	U	2	U	5	U

Table 4

MNA Parameters in Groundwater

ANALYTE	UNITS	MW11S		MW11S		MW11D		MW11D		MW12S		MW12S (dup)		MW12S		MW12D		MW12D		MW13S		MW13S	
		5/12/2010		10/3/2011		5/12/2010		10/3/2011		5/11/2010		5/11/2010		8/9/2011		5/11/2010		8/9/2011		5/11/2010		8/9/2011	
Methane	µg/L	1	U	1.9		0.63	J	1.7		1	U	1	U	0.61		1	U	0.63		1	U	0.63	
Carbon Dioxide	µg/L	5200		1750		1000		7350		3500		3400		6400		3500		2300		17000		11000	
Sulfate	mg/L	16.1	B	12		28.4	B	17		28.9		29		37		46.8		25		47.9		28	
Nitrogen, Nitrate	mg/L-N	1.42		1.3	B	1.62		1.3	B	2.97		2.97		4	B	3.38	D08	2.4	B	3.81	D08	4.4	B
Iron - Dissolved	mg/L	0.05	U	0.2	U	0.05	U	0.2	U	0.05	U	0.05	U	0.2	U	0.05	U	0.2	U	0.05	U	0.2	U
Dissolved Oxygen	mg/L	10.5		33.6		10.6		35.6		11.3		11.3		37.2		9.9		47.4		12.2		16.9	

U Not detected

J Concentrations are estimated.

D08 Dilution required due to high concentration of target analyte(s)

B Analyte was detected in the associated Method Blank

Table 4

MNA Parameters in Groundwater

ANALYTE	UNITS	MW13D				MW1S				MW1D			
		5/11/2010		8/9/2011		5/12/2010		8/10/2011		5/12/2010		8/10/2011	
Methane	µg/L	1	U	0.67		1	U	0.7		1	U	0.78	
Carbon Dioxide	µg/L	9000		13600		7700		10400		15000		3860	
Sulfate	mg/L	12.4		12		25.9	B	13		24.4	B	16	
Nitrogen, Nitrate	mg/L-N	6.39	D08	4.6	B	1.85		2.2	B	2.8		2.5	B
Iron - Dissolved	mg/L	0.05	U	1.17	U	0.05	U	0.2	U	0.029	J	0.2	U
Dissolved Oxygen	mg/L	9.3		16.0		6.6		25.2		4.2		38.0	

Table 5

VOCs in Vapor Intrusion Samples

	Indoor Air		Sub-Slab		Outdoor
Building	B06	B06	B06	B06	B06
Sample	IAQ-1	IAQ-2	SS-1	SS-2	AMBIENT
Sample Date	11/17/2011	11/17/2011	11/17/2011	11/17/2011	11/17/2011
Parameter	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
1,1,1-Trichloroethane	0.49	0.22	5.7	16	0.22 U
1,1,2,2-Tetrachloroethane	0.27 U	0.27 UJ	1.4 U	1.4 U	0.27 U
1,1,2-Trichloroethane	0.22 U	0.22 U	1.1 U	1.1 U	0.22 U
1,1-Dichloroethane	0.16 U	0.16 U	0.81 U	0.81 U	0.16 U
1,1-Dichloroethene	0.16 U	0.16 U	0.79 U	0.79 U	0.16 U
1,2-Dibromoethane (Ethylene Dibromide)	0.31 U	0.31 U	1.5 U	1.5 U	0.31 U
1,2-Dichloroethane	0.32 U	0.32 U	0.81 U	0.81 U	0.32 U
1,2-Dichloropropane	0.37 U	0.37 U	0.92 U	0.92 U	0.37 U
1,2-Dichlorotetrafluoroethane	0.28 U	0.28 U	1.4 U	1.4 U	0.28 U
1,3,5-Trimethylbenzene (Mesitylene)	0.39 U	0.39 U	0.98 U	0.98 U	0.39 U
1,3-Butadiene	0.18 U	0.18 U	0.44 U	0.44 U	0.18 U
2,2,4-Trimethylpentane	0.19 U	0.19 U	0.93	0.93 U	0.26
4-Ethyltoluene	0.2 U	0.2 U	0.98 U	0.98 U	0.2 U
Allyl Chloride (3-Chloropropene)	0.25 U	0.25 U	1.6 U	1.6 U	0.25 U
Benzene	0.6	0.24	2	0.63	0.49
Bromodichloromethane	0.27 U	0.27 U	1.3 U	1.3 U	0.27 U
Bromoethene	0.35 U	0.35 U	0.87 U	0.87 U	0.35 U
Bromoform	0.41 U	0.41 U	2.1 U	2.1 U	0.41 U
Bromomethane	0.31 U	0.31 U	0.78 U	0.78 U	0.31 U
Carbon Tetrachloride	0.47	0.33	1.3 U	1.3 U	0.46
Chloroethane	0.21 U	0.21 U	1.3 U	1.3 U	0.21 U
Chloroform	0.2 U	0.2 U	0.98 U	0.98 U	0.2 U
cis-1,2-Dichloroethylene	0.16 U	0.16 U	0.81	0.79 U	0.16 U
cis-1,3-Dichloropropene	0.18 U	0.18 U	0.91 U	0.91 U	0.18 U
Cyclohexane	0.43 U	0.31 U	0.69 U	1.1 U	0.47 U
Dibromochloromethane	0.34 U	0.34 U	1.7 U	1.7 U	0.34 U
Dichlorodifluoromethane	2.5	2.2	2.8	2.5	2.2
Dichloroethylenes	0.16 U	0.16 U	2.4	0.79 U	0.16 U
Ethylbenzene	1.6	0.17 U	2.1	2.5	0.21
m,p-Xylenes	3.9	0.17 U	4.8	10	0.63 U
Methylene Chloride	1.4 U	1.4 U	1.7 U	1.7 U	1.4 U
n-Heptane	0.68 U	0.16 U	2	1.1	0.34 U
n-Hexane	0.5	0.28 U	2.7	0.92	0.46
o-Xylene (1,2-Dimethylbenzene)	0.71	0.17 U	0.89	2.8	0.2
tert-Butyl Methyl Ether	0.14 U	0.14 U	0.72 U	0.72 U	0.14 U
Tetrachloroethylene (PCE)	0.53	0.27 U	52	120	0.28
Toluene	2.1 U	0.17 U	14	8 U	2.2 U
trans-1,2-Dichloroethene	0.16 U	0.16 U	1.6	0.79 U	0.16 U
trans-1,3-Dichloropropene	0.18 U	0.18 U	0.91 U	0.91 U	0.18 U
Trichloroethylene (TCE)	0.21 U	0.21 U	13	3.9	0.21 U
Trichlorofluoromethane	1.4	1.2	1.8	1.5	1.1
Vinyl Chloride	0.2 U	0.2 U	0.51 U	0.51 U	0.2 U
Xylenes, Total	4.7	0.17 U	5.6	13	0.84 U

Table 6

VOCs Comparison to 75th Percentile NYSDOH Background – Indoor Air Samples 2011

Building	NYSDOH	B06	B06
Sample	Background	IAQ-1	IAQ-2
Sample Date	75th Percentile	11/17/2011	11/17/2011
Parameter	µg/m³	µg/m³	µg/m³
1,1,1-Trichloroethane	1.1	0.49	0.22
Benzene	5.9	0.6	0.24
Carbon Tetrachloride	0.6	0.47	0.33
Dichlorodifluoromethane	4.1	2.5	2.2
Ethylbenzene	2.8	1.6	0.17 U
m,p-Xylenes	4.6	3.9	0.17 U
n-Hexane	5.9	0.5	0.28 U
o-Xylene (1,2-Dimethylbenzene)	3.1	0.71	0.17 U
Tetrachloroethylene (PCE)	1.1	0.53	0.27 U
Trichlorofluoromethane	5.4	1.4	1.2
Xylenes, Total	7.7	4.7	0.17 U

Table 7

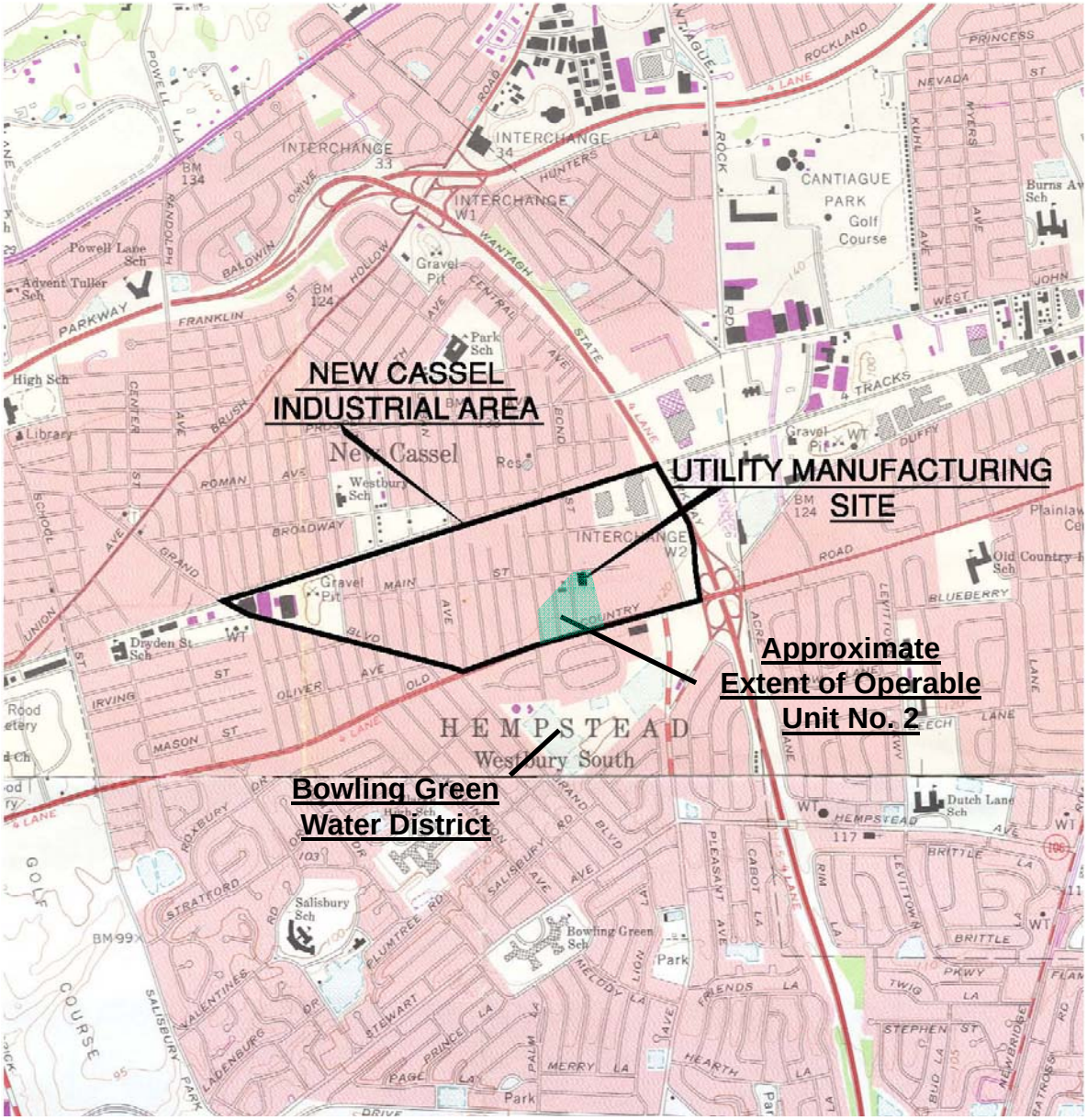
VOCs Comparison to 75th Percentile NYSDOH Background – Outdoor Air Samples 2011

Building	NYSDOH	B06
Sample	Background	AMBIENT
Sample Date	75th Percentile	11/17/2011
Parameter	µg/m³	µg/m³
2,2,4-Trimethylpentane	NA	0.26
Benzene	2.2	0.49
Carbon Tetrachloride	0.6	0.46
Dichlorodifluoromethane	4.2	2.2
Ethylbenzene	0.5	0.21
n-Hexane	1	0.46
o-Xylene (1,2-Dimethylbenzene)	0.7	0.2
Tetrachloroethylene (PCE)	0.3	0.28
Trichlorofluoromethane	2.2	1.1

Table 8
Comparison of Indoor Air Levels to the NYSDOH Decision Matricies

Units: µg/m³	Tetrachloroethene (PCE)							Trichloroethene (TCE)						
Structure	Indoor Air	Q	Sub-Slab	Q	Outdoor Air	Q	Matrix 2	Indoor Air	Q	Sub-Slab	Q	Outdoor Air	Q	Matrix 1
2007														
6	0.88		18.2		0.26	U	1. No further action	5.47		3.21		0.12	U	4. Identify sources, reduce exposure
	3.58		80.7				2. Identify sources, reduce exposure	0.91		22.7				8. Mitigate (Note 2.)
2011														
6	0.53		52		0.28		1. No further action	0.21	U	13		0.21	U	5. No further action
	0.27	U	120				5. Monitor	0.21	U	3.9				1. No further action
Units: ug/m3	Carbon Tetrachloride							1,1,1-Trichloroethane						
Structure	Indoor Air	Q	Sub-Slab	Q	Outdoor Air	Q	Matrix 1	Indoor Air	Q	Sub-Slab	Q	Outdoor Air	Q	Matrix 2
2007														
6	0.57	J	0.38	U	0.19	U	2. Identify sources, reduce exposure	1.36		2.39		0.12	U	1. No further action
	0.32	U	0.38	U			2. Identify sources, reduce exposure	0.74	J	45.6				1. No further action
2011														
6	0.47		1.3	U	0.46		2. Identify sources, reduce exposure	0.49		5.7		0.22	U	1. No further action
	0.33		1.3	U			2. Identify sources, reduce exposure	0.22		16				1. No further action

Notes:
1. Soil/Vapor Matrix as shown in NYSDOH (2006); recommended action and numbering taken from corresponding matrix.
2. The mitigate action is based on the 5.47 µg/m³ indoor air and the 22.7 µg/m³ sub-slab sample results.
U = Not detected



From ERM (2005):
USGS Hicksville & Freeport NY Quadrangle, 1979

100 Red Schoolhouse Road, Suite B-1
Chestnut Ridge , NY 10977-6715

ENVIRONMENTAL CONSULTING ENGINEERS

AECOM	PROJECT: **REMEDIAL DESIGN/ CONSTRUCTION OVERSIGHT** **Utility Manufacturing/Wonder King, OU2** 700 – 712 Main Street, Westbury, New York	SITE LOCATION MAP Project No: 60134954 Figure No: 1 January 12, 2012

AECOM

Utility Manufacturing/Wonder King
700 – 712 Main Street
Westbury, New York

0 30 60 120
Feet

Legend

- Indoor Air Sample Structures
- Site

Indoor Air Sampling Locations

Project No: 60134954

Figure No: 2

January 12, 2012

AECOM

Utility Manufacturing/Wonder King
700 – 712 Main Street
Westbury, New York

0 20 40 80
Feet

Legend

Monitoring Wells

- Installed March 2010
- Installed by ERM
- No Monitoring Well Found
- Indoor Air Sample Structures

Monitoring Well Locations

Project No: 60134954

Figure No: 3

January 12, 2012

AECOM

Utility Manufacturing/Wonder King
700 – 712 Main Street
Westbury, New York

0 15 30 60
Feet

Legend

Monitoring Well

Groundwater elevations are in NAVD88.

Indoor Air Sample Structures

Groundwater Elevations
Shallow Wells - August 2011

Project No: 60134954

Figure No: 4

January 12, 2012

AECOM

Utility Manufacturing/Wonder King
700 – 712 Main Street
Westbury, New York

0 15 30 60
Feet

Legend

Monitoring Well

Groundwater elevations are in NAVD88.

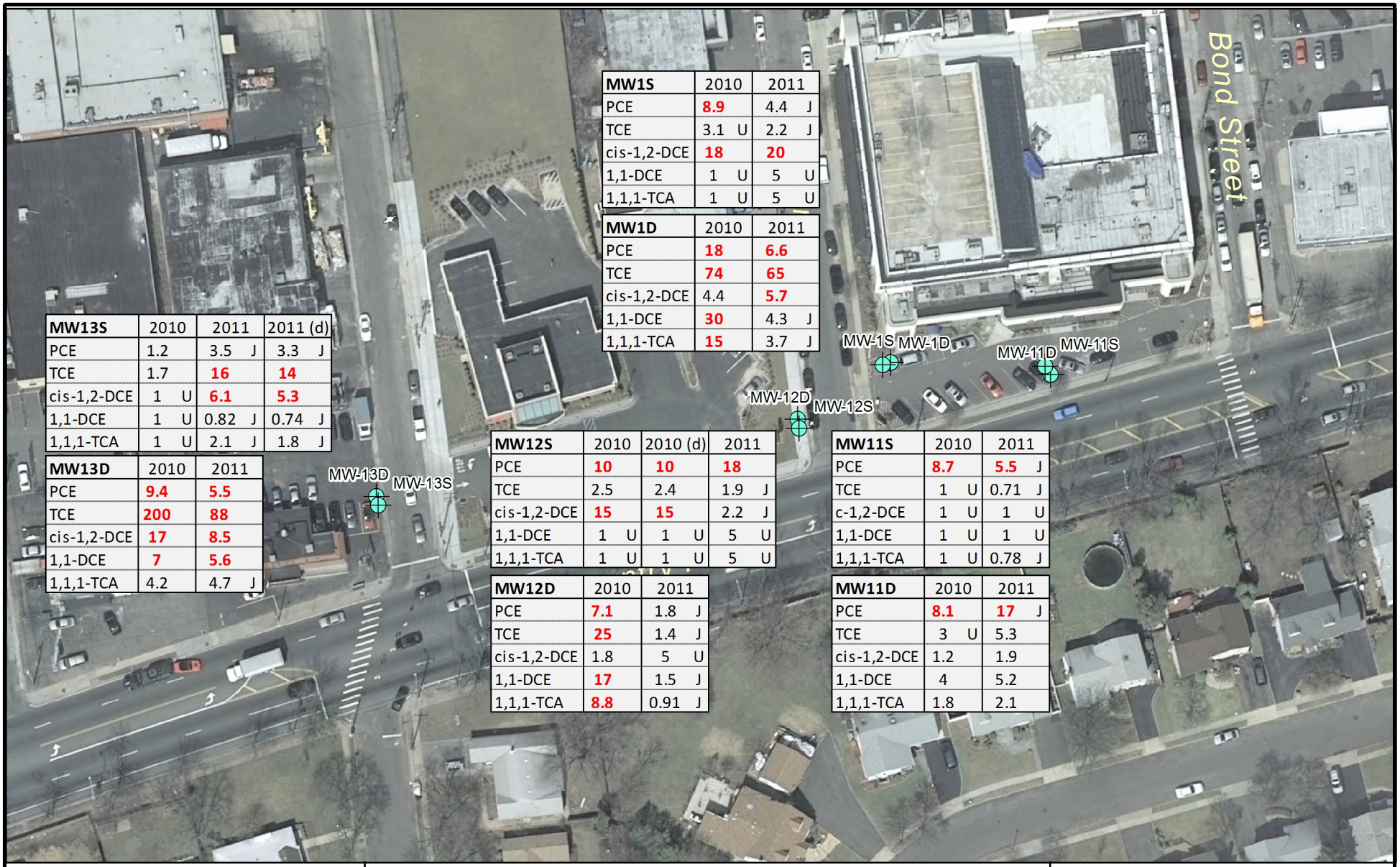
Indoor Air Sample Structures

Groundwater Elevations
Deep Wells - August 2011

Project No: 60134954

Figure No: 5

January 12, 2012



MW1S	2010	2011
PCE	8.9	4.4 J
TCE	3.1 U	2.2 J
cis-1,2-DCE	18	20
1,1-DCE	1 U	5 U
1,1,1-TCA	1 U	5 U

MW1D	2010	2011
PCE	18	6.6
TCE	74	65
cis-1,2-DCE	4.4	5.7
1,1-DCE	30	4.3 J
1,1,1-TCA	15	3.7 J

MW13S	2010	2011	2011 (d)
PCE	1.2	3.5 J	3.3 J
TCE	1.7	16	14
cis-1,2-DCE	1 U	6.1	5.3
1,1-DCE	1 U	0.82 J	0.74 J
1,1,1-TCA	1 U	2.1 J	1.8 J

MW13D	2010	2011
PCE	9.4	5.5
TCE	200	88
cis-1,2-DCE	17	8.5
1,1-DCE	7	5.6
1,1,1-TCA	4.2	4.7 J

MW12S	2010	2010 (d)	2011
PCE	10	10	18
TCE	2.5	2.4	1.9 J
cis-1,2-DCE	15	15	2.2 J
1,1-DCE	1 U	1 U	5 U
1,1,1-TCA	1 U	1 U	5 U

MW12D	2010	2011
PCE	7.1	1.8 J
TCE	25	1.4 J
cis-1,2-DCE	1.8	5 U
1,1-DCE	17	1.5 J
1,1,1-TCA	8.8	0.91 J

MW11S	2010	2011
PCE	8.7	5.5 J
TCE	1 U	0.71 J
c-1,2-DCE	1 U	1 U
1,1-DCE	1 U	1 U
1,1,1-TCA	1 U	0.78 J

MW11D	2010	2011
PCE	8.1	17 J
TCE	3 U	5.3
cis-1,2-DCE	1.2	1.9
1,1-DCE	4	5.2
1,1,1-TCA	1.8	2.1

AECOM

Utility Manufacturing/Wonder King
700 – 712 Main Street
Westbury, New York

0 20 40 80
Feet

Legend

Monitoring Well

Concentrations exceeding the NYS Class GA criteria are in red.

The NYS Class GA criterion for 1,2-dichloroethane is 0.6 µg/L.

The NYS Class GA criteria for all other parameters shown are 5 µg/L.

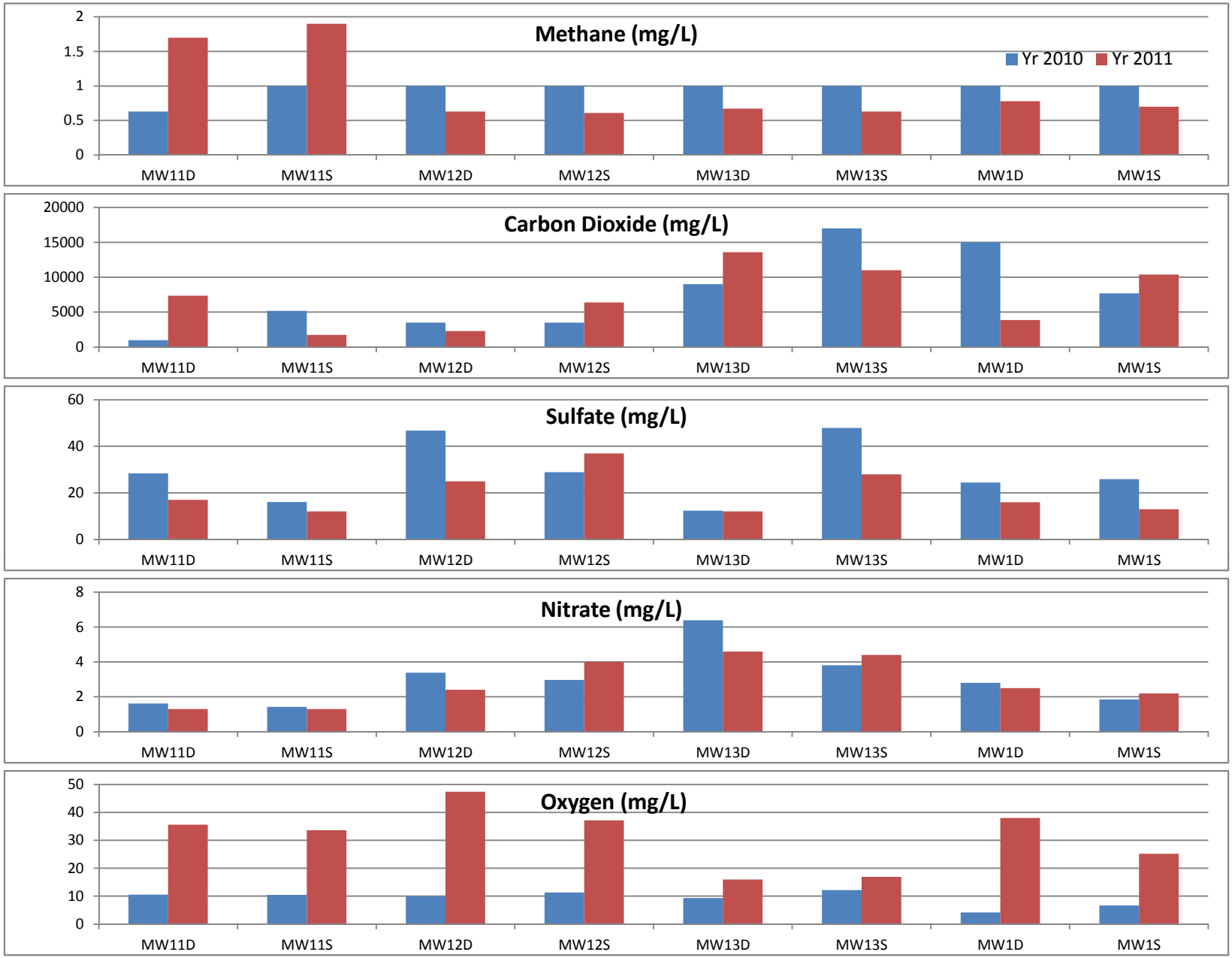
(d) Environmental duplicate sample

Groundwater Sampling Results

Project No: 60134954

Figure No: 6

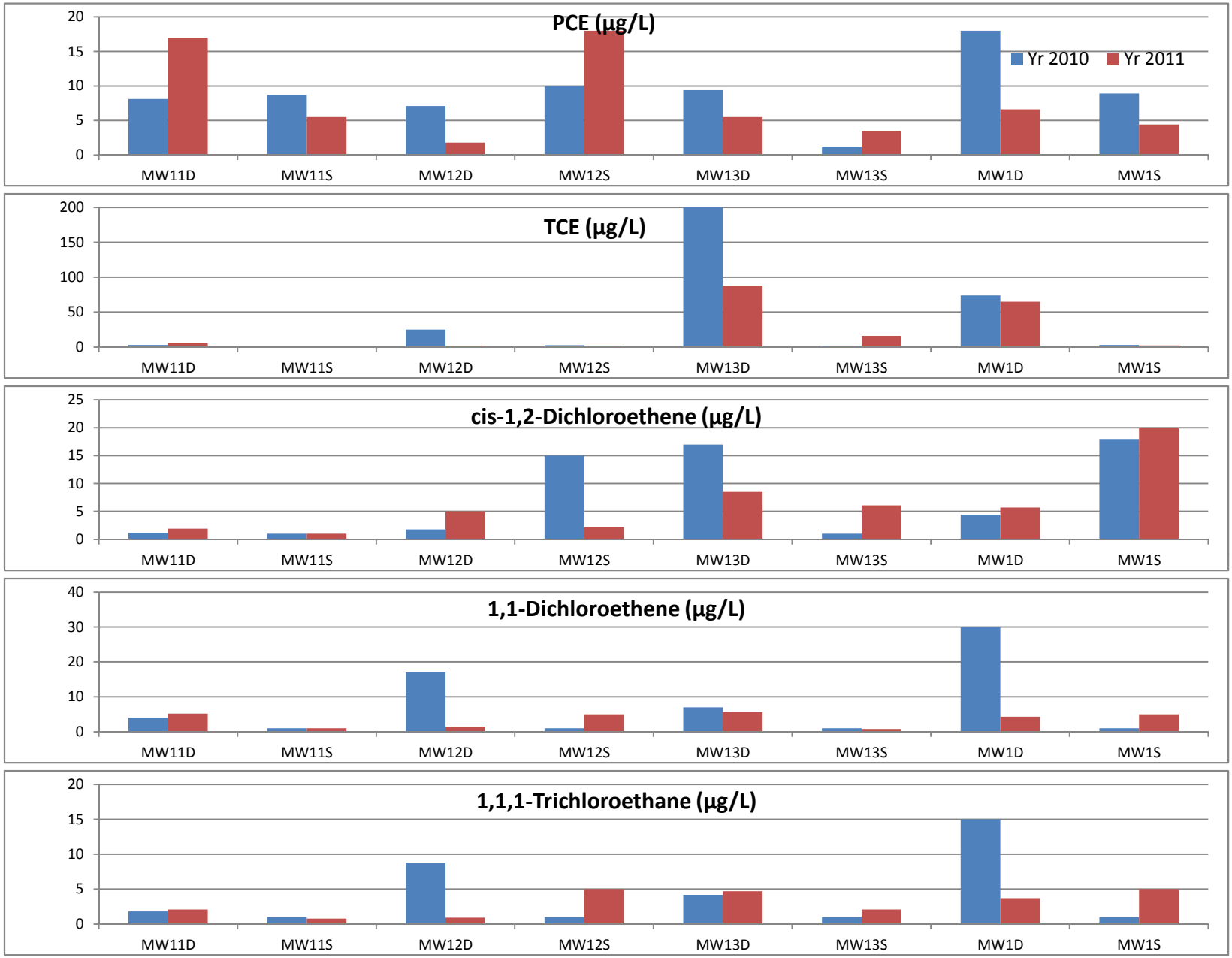
January 12, 2012



NYSDEC
Utility Manufacturing/Wonder King Site

Figure 7
Groundwater Concentrations by Year

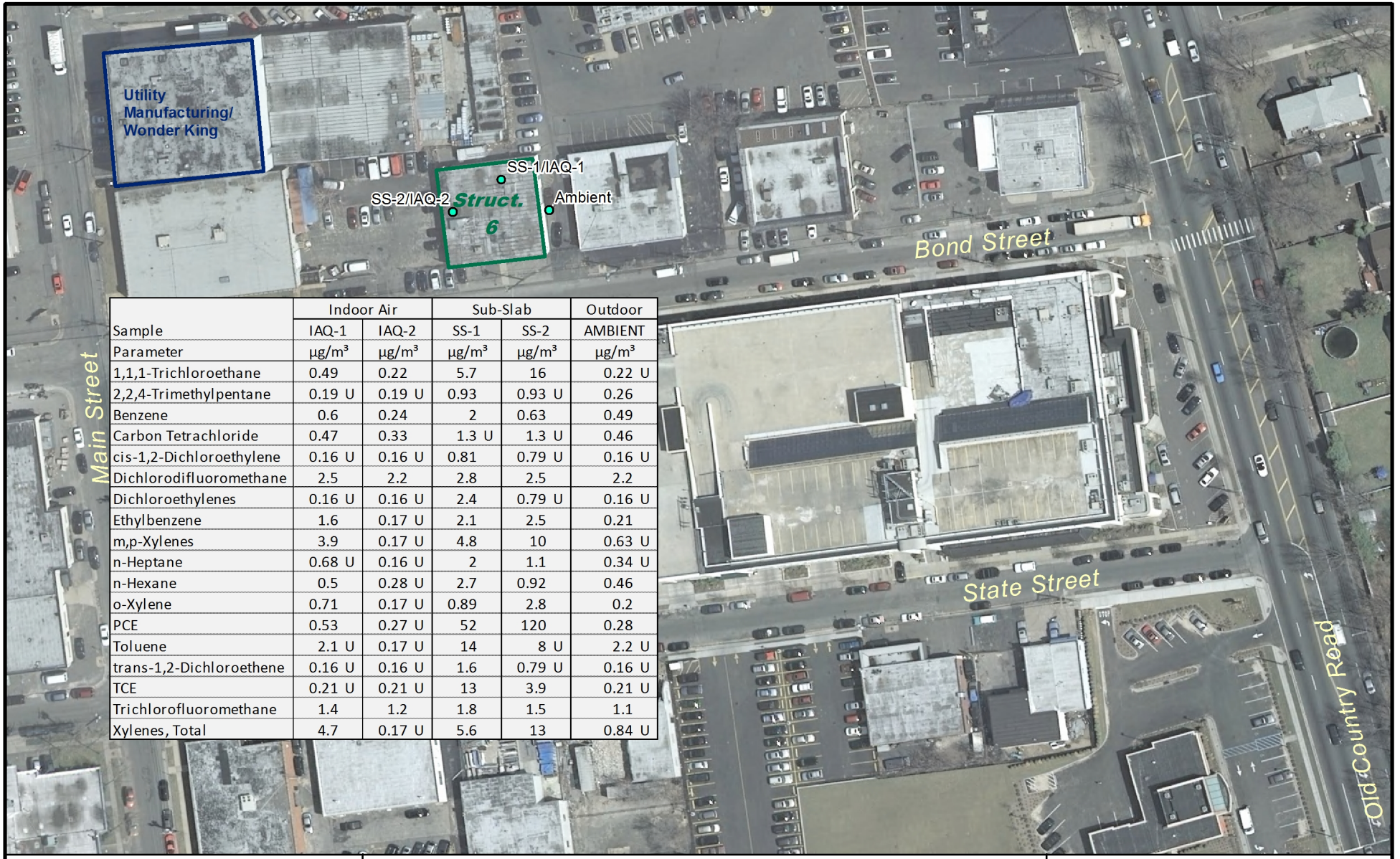
January 12, 2012



NYSDEC
Utility Manufacturing/Wonder King Site

Figure 7
Groundwater Concentrations by Year

January 12, 2012



	Indoor Air		Sub-Slab		Outdoor
Sample	IAQ-1	IAQ-2	SS-1	SS-2	AMBIENT
Parameter	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
1,1,1-Trichloroethane	0.49	0.22	5.7	16	0.22 U
2,2,4-Trimethylpentane	0.19 U	0.19 U	0.93	0.93 U	0.26
Benzene	0.6	0.24	2	0.63	0.49
Carbon Tetrachloride	0.47	0.33	1.3 U	1.3 U	0.46
cis-1,2-Dichloroethylene	0.16 U	0.16 U	0.81	0.79 U	0.16 U
Dichlorodifluoromethane	2.5	2.2	2.8	2.5	2.2
Dichloroethylenes	0.16 U	0.16 U	2.4	0.79 U	0.16 U
Ethylbenzene	1.6	0.17 U	2.1	2.5	0.21
m,p-Xylenes	3.9	0.17 U	4.8	10	0.63 U
n-Heptane	0.68 U	0.16 U	2	1.1	0.34 U
n-Hexane	0.5	0.28 U	2.7	0.92	0.46
o-Xylene	0.71	0.17 U	0.89	2.8	0.2
PCE	0.53	0.27 U	52	120	0.28
Toluene	2.1 U	0.17 U	14	8 U	2.2 U
trans-1,2-Dichloroethene	0.16 U	0.16 U	1.6	0.79 U	0.16 U
TCE	0.21 U	0.21 U	13	3.9	0.21 U
Trichlorofluoromethane	1.4	1.2	1.8	1.5	1.1
Xylenes, Total	4.7	0.17 U	5.6	13	0.84 U

AECOM

Utility Manufacturing/Wonder King
700 – 712 Main Street
Westbury, New York

0 30 60 120
Feet

Legend

- Air Samples
- Indoor Air Sample Structures
- Site

Only detected parameters are shown.

Air Sampling
Results - November 2011

Project No: 60134954

Figure No: 8

January 12, 2012

APPENDIX A

Field Forms

AECOM

WELL NO. MW-1S

WELL SAMPLING FORM	PROJECT: Utility Manufacturing	PROJECT No.	SHEET 1 OF SHEETS 1
LOCATION: Westbury, NY	DATE WELL STARTED: August 10, 2011	DATE WELL COMPLETED: August 10, 2011	
CLIENT: NYSDEC	NAME OF INSPECTOR: Celest Foster (AECOM)/Pete Lawler (YEC Inc.)		
DRILLING COMPANY: E.A.R./Clearwater Drilling, Inc.	SIGNATURE OF INSPECTOR		

Time	Depth to Water (ft)	Purge Rate (ml/min)	FIELD MEASUREMENTS: Temp. (ºC)	pH	Conduct. (ms/cm)	DO (mg/L)	ORP (mV)	Turbidity (ntu)	REMARKS
0829	45.59								Static
0905									Pump On
0910	45.42	250	18.90	5.35	0.414	10.7	257	109.0	
0917	45.49	250	18.70	4.74	0.458	11.1	298	99.6	
0922	45.46	200	18.70	4.37	0.450	11.3	324	91.1	
0927	45.53	230	18.70	4.20	0.438	11.6	335	118.0	
0932	45.56	240	18.50	4.22	0.435	11.9	336	64.2	
0937	45.45	240	18.20	4.25	0.434	12.0	336	49.1	
0942	45.56	260	18.10	4.32	0.444	12.1	332	56.6	
0947	45.48	260	17.90	4.39	0.441	12.20	330	44.0	
1000									Sampled MW-1S

Pump Type: Bladder pump with dedicated tubing for sampling

Analytical Parameters: VOCs, methane, carbon dioxide, dissolved oxygen, iron

AECOM

WELL NO. MW-1D

WELL SAMPLING FORM	PROJECT: Utility Manufacturing	PROJECT No.	SHEET 1 OF SHEETS 1
LOCATION: Westbury, NY	DATE WELL STARTED: August 10, 2011	DATE WELL COMPLETED: August 10, 2011	
CLIENT: NYSDEC	NAME OF INSPECTOR: Celest Foster (AECOM)/Pete Lawler (YEC Inc.)		
DRILLING COMPANY: E.A.R./Clearwater Drilling, Inc.	SIGNATURE OF INSPECTOR		

Time	Depth to Water (ft)	Purge Rate (ml/min)	FIELD MEASUREMENTS						REMARKS
			Temp. (ºC)	pH	Conduct. (ms/cm)	DO (mg/L)	ORP (mV)	Turbidity (ntu)	
0825	45.57								Static
0855	45.48								Pump On
0910	43.51	150	18.40	7.63	0.147	9.46	139	-5.0	
0915	42.19	130	18.99	7.31	0.138	14.77	159	-5.0	
0920	42.20	150	18.98	7.38	0.136	15.45	170	-5.0	
0925	41.62	160	18.77	7.65	0.133	14.01	177	-5.0	
0930	41.65	130	19.40	7.65	0.132	16.48	181	-5.0	
0940	41.11	100	19.68	8.18	0.126	15.52	198	-5.0	
0950	41.85	120	19.36	8.50	0.110	16.83	195	-5.0	
1005	41.41	100	20.04	9.03	0.128	17.25	207	-5.0	
1020	41.57	120	19.50	9.16	0.129	15.53	215	704	
1030	41.72	120	19.55	9.33	0.124	16.58	220	595	
1040	41.51	120	19.86	9.18	0.122	16.53	225	550	
1045	41.65	120	19.48	9.34	0.121	18.32	229	504	
1050	41.68	100	19.70	9.35	0.12	16.85	229	445	
1055	41.59	100	20.83	8.97	0.124	16.83	229	432	
1100									Sampled MW-1D

Pump Type: Bladder pump with dedicated tubing for sampling

Analytical Parameters: VOCs, methane, carbon dioxide, dissolved oxygen, iron

AECOM

WELL NO. MW-11S

WELL SAMPLING FORM	PROJECT: Utility Manufacturing	PROJECT No.	SHEET 1 OF SHEETS 1
LOCATION: Westbury, NY	DATE WELL STARTED: October 3, 2011	DATE WELL COMPLETED: October 3, 2011	
CLIENT: NYSDEC	NAME OF INSPECTOR: Celest Foster (AECOM)/Pete Lawler (YEC Inc.)		
DRILLING COMPANY: E.A.R./Clearwater Drilling, Inc.	SIGNATURE OF INSPECTOR		

Time	Depth to Water (ft)	Purge Rate (ml/min)	FIELD MEASUREMENTS: Temp. (ºC)	pH	Conduct. (ms/cm)	DO (mg/L)	ORP (mV)	Turbidity (ntu)	REMARKS
1015	43.60								Static
1055									Pump on
1110	43.38	150	18.2	5.29	0.39	15.68	253	280	
1120	43.34	150	18.3	5.18	0.33	15.36	253	140	
1130	43.34	125	18.3	5.34	0.29	15.09	242	160	
1145	43.34	125	18.2	5.40	0.28	14.96	238	110	
1200	43.34	125	18.2	5.48	0.27	14.80	233	130	
1215	43.34	125	18.0	5.56	0.26	14.57	233	110	
1225	43.34	125	18.2	5.63	0.26	14.35	224	140	
1233	43.33	125	18.1	5.70	0.26	14.07	221	150	
1245	43.33	125	17.9	5.78	0.26	13.68	218	270	
1255	43.33	125	17.9	5.84	0.26	13.40	216	350	
1300									Sampled MW-11S

Pump Type: Bladder pump with dedicated tubing for sampling

Analytical Parameters: VOCs, methane, carbon dioxide, dissolved oxygen, iron

AECOM

WELL NO. MW-11D

WELL SAMPLING FORM	PROJECT: Utility Manufacturing	PROJECT No.	SHEET 1 OF SHEETS 1
LOCATION: Westbury, NY	DATE WELL STARTED: October 3, 2011	DATE WELL COMPLETED: October 3, 2011	
CLIENT: NYSDEC	NAME OF INSPECTOR: Celest Foster (AECOM)/Pete Lawler (YEC Inc.)		
DRILLING COMPANY: E.A.R./Clearwater Drilling, Inc.	SIGNATURE OF INSPECTOR		

Time	Depth to Water (ft)	Purge Rate (ml/min)	FIELD MEASUREMENTS						REMARKS
			Temp. (ºC)	pH	Conduct. (ms/cm)	DO (mg/L)	ORP (mV)	Turbidity (ntu)	
1016	43.33								Static
1039									Pump On
1055	43.55	100	19.48	9.54	0.091	7.03	37	30	
1110	43.59	50	19.69	8.40	0.096	5.79	94	92	
1120	43.55	100	19.26	7.54	0.100	5.16	118	108	
1130	43.81	100	19.47	6.40	0.127	3.87	152	550	
1145	43.74	100	19.49	6.06	0.147	3.52	163	708	
1200	43.75	100	19.36	6.01	0.150	3.32	167	827	
1215	43.78	100	19.18	5.99	0.149	3.33	170	722	
1225	43.80	100	19.31	5.99	0.147	3.26	170	538	
1235	43.75	100	19.15	5.97	0.146	3.23	172	659	
1249	43.75	100	19.05	5.94	0.146	3.19	174	652	
1255	43.75	100	19.01	5.93	0.144	3.11	175	598	
1305									Sampled MW-11D

Pump Type: Bladder pump with dedicated tubing for sampling

Analytical Parameters: VOCs, methane, carbon dioxide, dissolved oxygen, iron

AECOM

WELL NO. MW-12S

WELL SAMPLING FORM	PROJECT: Utility Manufacturing	PROJECT No.	SHEET 1 OF SHEETS 1
LOCATION: Westbury, NY	DATE WELL STARTED: August 9, 2011	DATE WELL COMPLETED: August 9, 2011	
CLIENT: NYSDEC	NAME OF INSPECTOR: Celest Foster (AECOM)/Pete Lawler (YEC Inc.)		
DRILLING COMPANY: E.A.R./Clearwater Drilling, Inc.	SIGNATURE OF INSPECTOR		

Time	Depth to Water (ft)	Purge Rate (ml/min)	FIELD MEASUREMENTS: Temp. (ºC)	pH	Conduct. (ms/cm)	DO (mg/L)	ORP (mV)	Turbidity (ntu)	REMARKS
1435									Pump On
1456	44.83	150	20.45	6.84	0.23	8.51	267	615.0	
1505	44.84	160	20.55	6.95	0.22	8.38	270	438.0	
1510	44.82	150	21.11	6.94	0.22	8.10	274	305.0	
1517	44.84	150	21.40	6.91	0.22	8.03	275	242.0	
1522	44.86	120	21.36	6.98	0.22	8.02	277	225.0	
1529	44.85	150	20.90	7.37	0.24	8.11	270	161.1	
1534	44.55	120	20.75	7.43	0.24	7.69	276	100.2	
1539	44.55	150	20.07	7.47	0.23	7.50	278	43.1	
1545									Sampled MW-12S

Pump Type: Bladder pump with dedicated tubing for sampling

Analytical Parameters: VOCs, methane, carbon dioxide, dissolved oxygen, iron

AECOM

WELL NO. MW-12D

WELL SAMPLING FORM	PROJECT: Utility Manufacturing	PROJECT No.	SHEET 1 OF SHEETS 1
LOCATION: Westbury, NY	DATE WELL STARTED: August 9, 2011	DATE WELL COMPLETED: August 9, 2011	
CLIENT: NYSDEC	NAME OF INSPECTOR: Celest Foster (AECOM)/Pete Lawler (YEC Inc.)		
DRILLING COMPANY: E.A.R./Clearwater Drilling, Inc.	SIGNATURE OF INSPECTOR		

Time	Depth to Water (ft)	Purge Rate (ml/min)	FIELD MEASUREMENTS: Temp. (ºC)	pH	Conduct. (ms/cm)	DO (mg/L)	ORP (mV)	Turbidity (ntu)	REMARKS
1430									Pump On
1500	41.80	190	24.1	6.20	0.285	9.2	236	-5.0	
1508	41.80	150	20.6	7.10	0.316	13.5	215	-5.0	
1511	41.80	200	19.9	7.99	0.321	13.4	210	-5.0	
1519	41.80	200	20.7	8.42	0.317	15.3	196	-5.0	
1527	42.15	220	20.3	8.53	0.329	16.1	186	-5.0	
1533	42.15	220	18.5	8.34	0.369	16.1	191	-5.0	
1537	42.15	230							
1550	42.15	240	18.5	7.78	0.362	15.7	200	756.0	
1555	42.15	250	18.4	7.60	0.360	16.0	202	587.0	
1605	42.15	225	16.5	7.37	0.310	15.1	205	603.0	
1612	42.15	200	18.1	7.41	0.371	15.1	202	330.0	
1619	42.15	200	18.5	7.10	0.327	15.8	205	367.0	
1625	42.15	200	18.8	7.06	0.333	15.6	206	305.0	
1630	42.15	200	18.7	7.06	0.336	15.8	206	287.0	
1635									Sampled MW-12D

Pump Type: Bladder pump with dedicated tubing for sampling

Analytical Parameters: VOCs, methane, carbon dioxide, dissolved oxygen, iron

AECOM

WELL NO. MW-13S

WELL SAMPLING FORM	PROJECT: Utility Manufacturing	PROJECT No.	SHEET 1 OF 1 SHEETS
LOCATION: Westbury, NY		DATE WELL STARTED: August 9, 2011	DATE WELL COMPLETED: August 9, 2011
CLIENT: NYSDEC		NAME OF INSPECTOR: Celest Foster (AECOM)/Pete Lawler (YEC Inc.)	
DRILLING COMPANY: E.A.R./Clearwater Drilling, Inc.		SIGNATURE OF INSPECTOR	

Time	Depth to Water (ft)	Purge Rate (ml/min)	FIELD MEASUREMENTS: Temp. (ºC)	pH	Conduct. (ms/cm)	DO (mg/L)	ORP (mV)	Turbidity (ntu)	REMARKS
0929	43.40								Static
1011									Pump on
1022	43.45	200	22.92	6.35	0.261	7.28	244	-5.0	
1032	43.45	200	18.28	6.79	0.254	7.88	269	154.0	
1042	43.45	200	19.22	6.89	0.254	7.67	274	101.0	
1052	43.45	200	19.00	7.31	0.257	7.73	285	52.8	
1102	43.45	200	19.23	7.94	0.254	7.70	276	103.0	
1112	43.45	170	19.00	8.21	0.252	7.67	278	63.2	
1122	43.45	170	19.26	7.81	0.249	7.50	281	43.6	
1127	43.45	170	19.44	7.80	0.249	7.44	281	47.3	
1133	43.45	170	19.64	7.91	0.248	7.45	280	45.4	
1137	43.45	180	19.42	8.12	0.249	7.58	280	45.8	
1142	43.42	160	19.55	8.04	0.248	7.48	284	49.1	
1152	43.43	180	19.54	8.00	0.248	7.49	285	49.5	
1202	43.43	160	19.42	7.96	0.245	7.49	289	49.7	
1215									Sampled MW-13S and MS/MSD
1225									Sampled MW-63S

Pump Type: Bladder pump with dedicated tubing for sampling

Analytical Parameters: VOCs, methane, carbon dioxide, dissolved oxygen, iron

AECOM

WELL NO. MW-13D

WELL SAMPLING FORM	PROJECT: Utility Manufacturing	PROJECT No.	SHEET 1 OF 1 SHEETS
LOCATION: Westbury, NY		DATE WELL STARTED: August 9, 2011	DATE WELL COMPLETED: August 9, 2011
CLIENT: NYSDEC		NAME OF INSPECTOR: Celest Foster (AECOM)/Pete Lawler (YEC Inc.)	
DRILLING COMPANY: E.A.R./Clearwater Drilling, Inc.		SIGNATURE OF INSPECTOR	

Time	Depth to Water (ft)	Purge Rate (ml/min)	FIELD MEASUREMENTS						REMARKS
			Temp. (ºC)	pH	Conduct. (ms/cm)	DO (mg/L)	ORP (mV)	Turbidity (ntu)	
0934	43.50								Static
0948									Pump On
1010	43.60	80	24.6	5.83	0.348	7.1	224	-5.0	
1020	43.61	90	26.2	5.76	0.363	6.4	232	-5.0	
1030	43.61	100	24.6	5.87	0.440	6.4	235	-5.0	
1040	43.61	175	22.0	5.45	0.423	6.0	258	-5.0	
1050	43.61	175	21.2	5.21	0.522	5.5	267	-5.0	
1100	43.61	175	22.2	5.67	0.581	5.3	239	-5.0	
1110	43.65	175	21.5	5.28	0.595	5.5	233	-5.0	
1120	43.65	110	22.0	5.81	0.604	5.1	238	-5.0	
1125	43.70	200	19.9	5.85	0.641	5.6	238	-5.0	
1130	43.75	200	19.0	5.73	0.617	5.4	248	-5.0	
1135	43.80	200	18.7	5.57	0.627	5.3	258	-5.0	
1145	43.76	200	18.5	5.58	0.572	5.1	262	-5.0	
1155	43.80	200	18.8	5.69	0.627	4.9	256	-5.0	
1205	43.74	200	18.7	5.74	0.628	4.9	253	-5.0	
1215	43.71	200	18.3	5.76	0.617	4.8	251	-5.0	
1225	43.73	200	18.2	5.77	0.593	4.6	249	-5.0	
1235	43.72	200	18.4	5.80	0.609	4.5	246	-5.0	
1245	43.72	200	18.4	5.78	0.586	4.5	247	-5.0	
1255	43.72	200	18.3	5.76	0.580	4.5	297	-5.0	
1300									Sampled MW-13D

Pump Type: Bladder pump with dedicated tubing for sampling

Analytical Parameters: VOCs, methane, carbon dioxide, dissolved oxygen, iron

Summa Canister Sampling Field Data Sheet

Site: Utility Manufacturing / Wonder King Site (130043H)

Samplers: Kevin Seise (AECOM), Brian Caccioppoli (YEC)

Date: 11/17/2011 - 11/18/2011

Sample#	SS-1	IAQ-1	SS-2	IAQ-2	AMBIENT	TRIP BLANK
Structure	6	6	6	6	6	6
Summa Canister ID	4010	4923	3559	4133	5096	4383
Flow Controler ID	3993	4510	3772	4930	3949	NA
Additional Tubing Added How much (ft)?	2		2			
Purge Time (Start)	910	NA	935	NA	NA	NA
Purge Time (Stop)	930	NA	945	NA	NA	NA
Total Purge Time (min)	20	NA	10	NA	NA	NA
Pressure Gauge - Before Sampling (" Hg)	-30	-30	-30	-30	-30	-30
Sample Time (Start)	1106	1106	1110	1110	1114	NA
Sample Time (Stop)	0857	0858	0904	0905	0910	NA
Total Sample Time (min)	1431	1432	1374	1375	1376	NA
Pressure Gauge - After Sampling (" Hg)	-13	-12	-4	-8	-11	NA
Sample Volume (L)	6	6	6	6	6	NA
Canister Pressure Went to Ambient Pressure?	No	No	No	No	No	No
Weather 24 hours before and during sampling	~60^{o}F, wind - 16 mph to the north, no precipitation					
General Comments						

Indoor Air Sampling

To avoid potential interferences and dilution effects, occupants should make a reasonable effort to avoid the following for 24 hours prior to and during sampling:

a. opening any windows, fireplace dampers, openings or vents;
b. operating ventilation fans unless special arrangements are made;
c. smoking in the building;
d. painting;
e. using a wood stove, fireplace or other auxiliary heating equipment (e.g., kerosene heater);
f. operating or storing automobile in an attached garage;
g. allowing containers of gasoline or oil to remain within the house or garage area, except for fuel oil tanks;
h. cleaning, waxing or polishing furniture, floors or other woodwork with petroleum- or oil-based products;
i. using air fresheners, scented candles or odor eliminators;
j. engaging in any hobbies that use materials containing volatile chemicals;
k. using cosmetics including hairspray, nail polish, nail polish removers, perfume/cologne, etc.;
l. lawn mowing, paving with asphalt, or snow blowing;
m. applying pesticides;
n. using building repair or maintenance products, such as caulk or roofing tar; and
o. bringing freshly dry-cleaned clothing or furnishings into the building.

APPENDIX B

Indoor Air Quality Questionnaire and Building Inventory

OSR – 3

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 Kevin Seise Date/Time Prepared 11/17/2011

Preparer's Affiliation AECOM Phone No. 201-923-7155

Purpose of Investigation Vapor Intrusion Sampling

1. OCCUPANT:

Interviewed: (Y) N

Structure 6

Number of Occupants/persons at this location 20 Age of Occupants 20-70

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

Interviewed: Y (N)

Last Name: Spiegel Associates First Name: _____

Address: 375 North Broadway, Jericho, NY

County: USA

Home Phone: _____ Office Phone: 516-935-1100

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:_____

If multiple units, how many? _____

If the property is commercial, type?

Business Type(s) _____

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

Other characteristics:

Number of floors 1 Building age 1

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

N/A

Airflow near source

N/A

Outdoor air infiltration

Doors and windows

Infiltration into air ducts

N/A

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 No
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 _____	
f. Foundation walls:	poured	(block)	stone	other _____
g. Foundation walls:	(unsealed)	sealed	sealed with _____	
h. The basement is:	wet	damp	dry	moldy N/A
i. The basement is:	finished	unfinished	partially finished	N/A
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)

Concrete floor in good condition

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 Roof

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.

7. OCCUPANCY

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

Level	**General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)**
Basement	
1st Floor	Office, machine shop, assembly
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

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? 1st Floor

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

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

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

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? Men's room

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

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? Petroleum Naphtha (Safety Clean) & Inventory

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

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

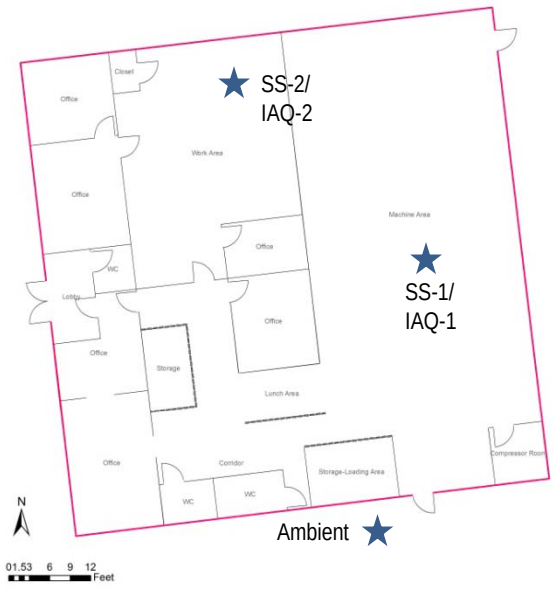
d. Relocation package provided and explained to residents? Y / N

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.

Basement: N/A

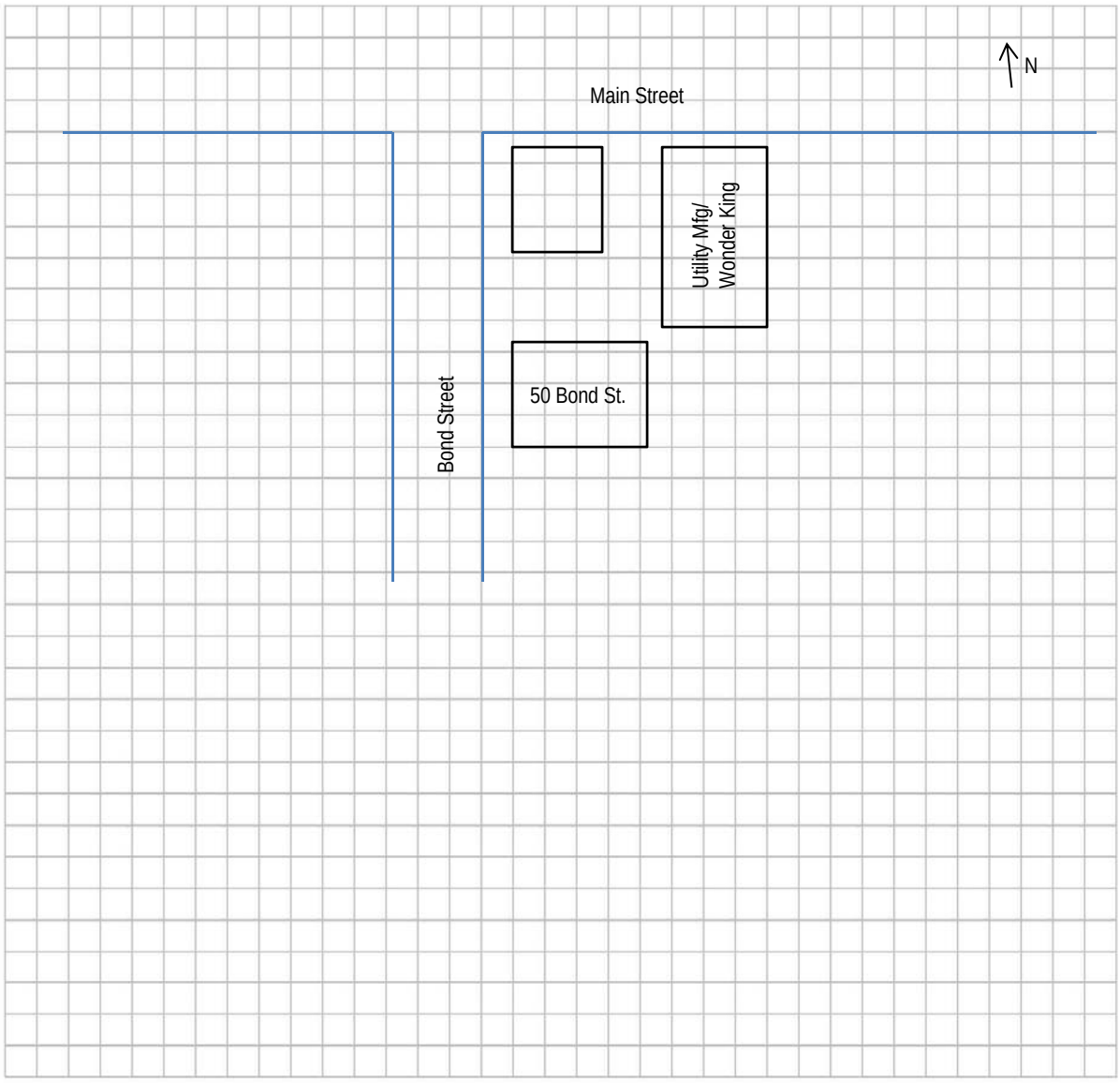
First Floor:



12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.



13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: PID Mini RAE 2000

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
	Coolant Oil		U		0	N
	Cutting Oil		U		0	N
	Tech Sol 4840		U		0	N
	Waste Oil		U		0	N
	Markem 320		U		0	N
	Tech Cool 3504g		U		0	N
	Compressor Oil		U		0	N
	Safety Kleen Solution		U		0	N
	Grease		U		0	N
	Isopropanol		U		0	N

* 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.

APPENDIX C

Photo Log

Indoor Air Sampling – 2011

Sampling Structure 6 Indoor Air (IAQ-2)

Sampling Structure 6 Sub-Slab (SS-2)

Sampling Structure 6 Indoor Air and Sub-Slab (IAQ-1 and SS-1)

APPENDIX D

Laboratory Data on CD

APPENDIX E

Data Usability Summary Reports

ENVIRONMENTAL
Data Services, Inc.

DATA USABILITY SUMMARY REPORT
UTILITY MANUFACTURING, WESTBURY, NEW YORK

Client: AECOM Technical Services, Inc., Chestnut Ridge, New York
SDG: 200-8255
Laboratory: Test America, South Burlington, Vermont
Site: Utility Manufacturing, Westbury, New York
Date: December 14, 2011

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1*	TRIP BLANK	200-8255-1	Air
2	SS-1	200-8255-2	Air
3*	IAQ-1	200-8255-3	Air
4	SS-2	200-8255-4	Air
5*	IAQ-2	200-8255-5	Air
6*	AMBIENT	200-8255-6	Air

* - Analyzed for TO15- Low Level

A Data Usability Summary Review was performed on the analytical data for six air samples collected on November 17, 2011 by AECOM Technical Services, Inc. at the Utility Manufacturing Wonderking Site in New York. The samples were analyzed under "*Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition January 1999, EPA/625/R-96/010B*", Compendium Method TO-15, "*Determination Of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canisters And Analyzed By Gas Chromatography/Mass Spectrometry (GC/MS)*".

The data have been evaluated according to the protocols and quality control (QC) requirements of the USEPA Region II Data Review Standard Operating Procedure (SOP) Number HW-31, Revision 4, October 2006: Validating Air Samples - Volatile Organic Analysis of Ambient Air in Canister and the reviewer's professional judgment.

Organics

The following items/criteria were reviewed for this report:

- Data Completeness
- Cover letter, Narrative, and Data Reporting Forms
- Canister Certification Blanks
- Canister Certification Pressures Differences
- Chains-of-Custody and Traffic Reports
- Holding Times
- Laboratory Control Samples
- Surrogate Spike Recoveries
- GC/MS Tuning

- Method Blank
- Initial Calibration
- Continuing Calibration
- Compound Quantitation
- Internal Standard (IS) Area Performance
- Field Duplicate Sample Precision

Overall Evaluation of Data and Potential Usability Issues

There were no rejections of data. Overall the data is acceptable for the intended purposes. Data were qualified for the following deficiencies.

- 1,1,2,2-Tetrachloroethane was qualified as estimated in two samples due to a low LCS percent recovery.
- Several compounds were qualified as non-detect in several samples due to trip blank contamination.

Data Completeness

- The data is a complete Category B data package as defined under the requirements for the NYS Department of Environmental Conservation Analytical Services Protocol.

Cover letter, Narrative, and Data Reporting Forms

- All criteria were met

Canister Certification Blanks

- The batch blank checks were non-detect or < RL.

Canister Certification Pressures Differences

- All criteria were met.

Chains-of-Custody and Traffic Reports

- All criteria were met

Holding Times

- All samples were analyzed within 30 days for air samples.

Laboratory Control Samples

- The LCS samples exhibited acceptable percent recoveries except the following.

LCS ID	Compound	%R	Qualifier	Affected Samples
200-29996/3	1,1,2,2-Tetrachloroethane	64%	J/UJ	1, 5

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

GC/MS Tuning

- All criteria were met.

Method Blank

- The method blanks were free of contamination.

Field and Trip Blanks

- The following table lists field QC samples with contamination and the samples associated with the blanks that had results qualified as a consequence of the blank contamination. Detected sample concentrations less than ten times (10x) the highest associated blank (after taking sample dilution levels, percent moisture and sample volume into account) are negated and qualified with a (U).

Blank ID	Compound	Conc. ppb(v/v)	Action Level ppb(v/v)	Qualifier	Affected Samples
TRIP BLANK	Cyclohexane	0.14	0.70	U	3-6
	n-Heptane	0.045	0.225	U	3, 6
	Toluene	0.57	2.85	U	3-6
	m-Xylene & p-Xylene	0.076	0.38	U	6
	Xylenes, total	0.10	0.50	U	6

Initial Calibration

- The initial calibration exhibited acceptable %RSD and mean RRF values.

Continuing Calibration

- The continuing calibrations exhibited acceptable %D and RRF values.

Compound Quantitation

- All criteria were met.

Sensitivity/Reporting Limits

- NYSDOH (2006) has established matrices for the evaluation of indoor air data. For the data to be fully usable, reporting limits for the three Matrix 1 compounds (vinyl chloride, carbon tetrachloride, and trichloroethene) must be 0.25 ug/m^3 or lower in indoor air samples. The four Matrix 2 compounds (tetrachloroethene, cis-1,2-dichloroethene, 1,1,1-trichloroethane and 1,1-dichloroethene) must be 3 ug/m^3 or lower in indoor air samples. The laboratory met these reporting limits in this data package.

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Field Duplicate Sample Precision

- Field duplicate samples were not analyzed.

Package Summary:

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed: Nancy Weaver Dated: 12/15/11

Nancy Weaver
Senior Chemist

Data Qualifiers

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was not detected above the sample reporting limit; and the reporting limit is approximate.

U = The analyte was analyzed for, but was not detected above the sample reporting limit.

R = The sample results is rejected due to serious deficiencies. The presence or absence of the analyte cannot be verified.

Client: AECOM, Inc.

Job Number: 200-8255-1
Sdg Number: 200-8255

Client Sample ID: TRIP BLANK

Lab Sample ID: 200-8255-1
Client Matrix: Air

Date Sampled: 11/17/2011 0000
Date Received: 11/23/2011 1115

TO15 LL Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS)

Analysis Method:	TO15 LL	Analysis Batch:	200-29996	Instrument ID:	E.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	eeqd005.d
Dilution:	4.0			Initial Weight/Volume:	125 mL
Analysis Date:	11/30/2011 1354			Final Weight/Volume:	500 mL
Prep Date:	11/30/2011 1354			Injection Volume:	500 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Dichlorodifluoromethane	0.040	U	0.040
1,2-Dichlorotetrafluoroethane	0.040	U	0.040
Vinyl chloride	0.080	U	0.080
1,3-Butadiene	0.080	U	0.080
Bromomethane	0.080	U	0.080
Chloroethane	0.080	U	0.080
Bromoethene(Vinyl Bromide)	0.080	U	0.080
Trichlorofluoromethane	0.040	U	0.040
1,1-Dichloroethene	0.040	U	0.040
3-Chloropropene	0.080	U	0.080
Methylene Chloride	0.40	U	0.40
Methyl tert-butyl ether	0.040	U	0.040
trans-1,2-Dichloroethene	0.040	U	0.040
n-Hexane	0.080	U	0.080
1,1-Dichloroethane	0.040	U	0.040
cis-1,2-Dichloroethene	0.040	U	0.040
Chloroform	0.040	U	0.040
1,1,1-Trichloroethane	0.040	U	0.040
Cyclohexane	0.14		0.040
Carbon tetrachloride	0.040	U	0.040
2,2,4-Trimethylpentane	0.040	U	0.040
Benzene	0.040	U	0.040
1,2-Dichloroethane	0.080	U	0.080
n-Heptane	0.045		0.040
Trichloroethene	0.040	U	0.040
1,2-Dichloropropane	0.080	U	0.080
Bromodichloromethane	0.040	U	0.040
cis-1,3-Dichloropropene	0.040	U	0.040
Toluene	0.57		0.040
trans-1,3-Dichloropropene	0.040	U	0.040
1,1,2-Trichloroethane	0.040	U	0.040
Tetrachloroethene	0.040	U	0.040
Dibromochloromethane	0.040	U	0.040
1,2-Dibromoethane	0.040	U	0.040
Ethylbenzene	0.040	U	0.040
o-Xylene	0.040	U	0.040
Bromoform	0.040	U	0.040
1,1,2,2-Tetrachloroethane	0.040	UJ U	0.040
4-Ethyltoluene	0.040	U	0.040
1,3,5-Trimethylbenzene	0.080	U	0.080
1,2-Dichloroethene, Total	0.040	U	0.040
m-Xylene & p-Xylene	0.076		0.040
Xylenes, Total	0.10		0.040

Analyte	Result (ug/m3)	Qualifier	RL
Dichlorodifluoromethane	0.20	U	0.20

Client: AECOM, Inc.

Job Number: 200-8255-1
Sdg Number: 200-8255

Client Sample ID: **TRIP BLANK**

Lab Sample ID: 200-8255-1
Client Matrix: Air

Date Sampled: 11/17/2011 0000
Date Received: 11/23/2011 1115

TO15 LL Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS)

Analysis Method:	TO15 LL	Analysis Batch:	200-29996	Instrument ID:	E.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	eeqd005.d
Dilution:	4.0			Initial Weight/Volume:	125 mL
Analysis Date:	11/30/2011 1354			Final Weight/Volume:	500 mL
Prep Date:	11/30/2011 1354			Injection Volume:	500 mL

Analyte	Result (ug/m3)	Qualifier	RL
1,2-Dichlorotetrafluoroethane	0.28	U	0.28
Vinyl chloride	0.20	U	0.20
1,3-Butadiene	0.18	U	0.18
Bromomethane	0.31	U	0.31
Chloroethane	0.21	U	0.21
Bromoethene(Vinyl Bromide)	0.35	U	0.35
Trichlorofluoromethane	0.22	U	0.22
1,1-Dichloroethene	0.16	U	0.16
3-Chloropropene	0.25	U	0.25
Methylene Chloride	1.4	U	1.4
Methyl tert-butyl ether	0.14	U	0.14
trans-1,2-Dichloroethene	0.16	U	0.16
n-Hexane	0.28	U	0.28
1,1-Dichloroethane	0.16	U	0.16
cis-1,2-Dichloroethene	0.16	U	0.16
Chloroform	0.20	U	0.20
1,1,1-Trichloroethane	0.22	U	0.22
Cyclohexane	0.50		0.14
Carbon tetrachloride	0.25	U	0.25
2,2,4-Trimethylpentane	0.19	U	0.19
Benzene	0.13	U	0.13
1,2-Dichloroethane	0.32	U	0.32
n-Heptane	0.19		0.16
Trichloroethene	0.21	U	0.21
1,2-Dichloropropane	0.37	U	0.37
Bromodichloromethane	0.27	U	0.27
cis-1,3-Dichloropropene	0.18	U	0.18
Toluene	2.2		0.15
trans-1,3-Dichloropropene	0.18	U	0.18
1,1,2-Trichloroethane	0.22	U	0.22
Tetrachloroethene	0.27	U	0.27
Dibromochloromethane	0.34	U	0.34
1,2-Dibromoethane	0.31	U	0.31
Ethylbenzene	0.17	U	0.17
o-Xylene	0.17	U	0.17
Bromoform	0.41	U	0.41
1,1,2,2-Tetrachloroethane	0.27	UJ ~~U~~	0.27
4-Ethyltoluene	0.20	U	0.20
1,3,5-Trimethylbenzene	0.39	U	0.39
1,2-Dichloroethene, Total	0.16	U	0.16
m-Xylene & p-Xylene	0.33		0.17
Xylenes, Total	0.45		0.17

Analytical Data

Client: AECOM, Inc.

Job Number: 200-8255-1
Sdg Number: 200-8255

Client Sample ID: SS-1

Lab Sample ID: 200-8255-2
Client Matrix: Air

Date Sampled: 11/17/2011 0857
Date Received: 11/23/2011 1115

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-29914	Instrument ID:	B.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	bkiq006.d
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	12/01/2011 1342			Final Weight/Volume:	200 mL
Prep Date:	12/01/2011 1342			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Dichlorodifluoromethane	0.57		0.50
1,2-Dichlorotetrafluoroethane	0.20	U	0.20
Vinyl chloride	0.20	U	0.20
1,3-Butadiene	0.20	U	0.20
Bromomethane	0.20	U	0.20
Chloroethane	0.50	U	0.50
Bromoethene(Vinyl Bromide)	0.20	U	0.20
Trichlorofluoromethane	0.32		0.20
1,1-Dichloroethene	0.20	U	0.20
3-Chloropropene	0.50	U	0.50
Methylene Chloride	0.50	U	0.50
Methyl tert-butyl ether	0.20	U	0.20
trans-1,2-Dichloroethene	0.40		0.20
n-Hexane	0.75		0.20
1,1-Dichloroethane	0.20	U	0.20
cis-1,2-Dichloroethene	0.20		0.20
1,2-Dichloroethene, Total	0.61		0.20
Chloroform	0.20	U	0.20
1,1,1-Trichloroethane	1.0		0.20
Cyclohexane	0.20	U	0.20
Carbon tetrachloride	0.20	U	0.20
2,2,4-Trimethylpentane	0.20		0.20
Benzene	0.62		0.20
1,2-Dichloroethane	0.20	U	0.20
n-Heptane	0.49		0.20
Trichloroethene	2.5		0.20
1,2-Dichloropropane	0.20	U	0.20
Bromodichloromethane	0.20	U	0.20
cis-1,3-Dichloropropene	0.20	U	0.20
Toluene	3.8		0.20
trans-1,3-Dichloropropene	0.20	U	0.20
1,1,2-Trichloroethane	0.20	U	0.20
Tetrachloroethene	7.7		0.20
Dibromochloromethane	0.20	U	0.20
1,2-Dibromoethane	0.20	U	0.20
Ethylbenzene	0.47		0.20
m,p-Xylene	1.1		0.50
Xylene, o-	0.21		0.20
Xylene (total)	1.3		0.20
Bromoform	0.20	U	0.20
1,1,2,2-Tetrachloroethane	0.20	U	0.20
4-Ethyltoluene	0.20	U	0.20
1,3,5-Trimethylbenzene	0.20	U	0.20

Analyte	Result (ug/m3)	Qualifier	RL
Dichlorodifluoromethane	2.8		2.5

Analytical Data

Client: AECOM, Inc.

Job Number: 200-8255-1
Sdg Number: 200-8255

Client Sample ID: SS-1

Lab Sample ID: 200-8255-2
Client Matrix: Air

Date Sampled: 11/17/2011 0857
Date Received: 11/23/2011 1115

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-29914	Instrument ID:	B.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	bkiq006.d
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	12/01/2011 1342			Final Weight/Volume:	200 mL
Prep Date:	12/01/2011 1342			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
1,2-Dichlorotetrafluoroethane	1.4	U	1.4
Vinyl chloride	0.51	U	0.51
1,3-Butadiene	0.44	U	0.44
Bromomethane	0.78	U	0.78
Chloroethane	1.3	U	1.3
Bromoethene(Vinyl Bromide)	0.87	U	0.87
Trichlorofluoromethane	1.8		1.1
1,1-Dichloroethene	0.79	U	0.79
3-Chloropropene	1.6	U	1.6
Methylene Chloride	1.7	U	1.7
Methyl tert-butyl ether	0.72	U	0.72
trans-1,2-Dichloroethene	1.6		0.79
n-Hexane	2.7		0.70
1,1-Dichloroethane	0.81	U	0.81
cis-1,2-Dichloroethene	0.81		0.79
1,2-Dichloroethene, Total	2.4		0.79
Chloroform	0.98	U	0.98
1,1,1-Trichloroethane	5.7		1.1
Cyclohexane	0.69	U	0.69
Carbon tetrachloride	1.3	U	1.3
2,2,4-Trimethylpentane	0.93		0.93
Benzene	2.0		0.64
1,2-Dichloroethane	0.81	U	0.81
n-Heptane	2.0		0.82
Trichloroethene	13		1.1
1,2-Dichloropropane	0.92	U	0.92
Bromodichloromethane	1.3	U	1.3
cis-1,3-Dichloropropene	0.91	U	0.91
Toluene	14		0.75
trans-1,3-Dichloropropene	0.91	U	0.91
1,1,2-Trichloroethane	1.1	U	1.1
Tetrachloroethene	52		1.4
Dibromochloromethane	1.7	U	1.7
1,2-Dibromoethane	1.5	U	1.5
Ethylbenzene	2.1		0.87
m,p-Xylene	4.8		2.2
Xylene, o-	0.89		0.87
Xylene (total)	5.6		0.87
Bromoform	2.1	U	2.1
1,1,2,2-Tetrachloroethane	1.4	U	1.4
4-Ethyltoluene	0.98	U	0.98
1,3,5-Trimethylbenzene	0.98	U	0.98

Analytical Data

Client: AECOM, Inc.

Job Number: 200-8255-1
Sdg Number: 200-8255

Client Sample ID: IAQ-1

Lab Sample ID: 200-8255-3
Client Matrix: Air

Date Sampled: 11/17/2011 0858
Date Received: 11/23/2011 1115

TO15 LL Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS)

Analysis Method:	TO15 LL	Analysis Batch:	200-29652	Instrument ID:	E.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	eeqc014.d
Dilution:	4.0			Initial Weight/Volume:	125 mL
Analysis Date:	11/28/2011 2045			Final Weight/Volume:	500 mL
Prep Date:	11/28/2011 2045			Injection Volume:	500 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Dichlorodifluoromethane	0.51		0.040
1,2-Dichlorotetrafluoroethane	0.040	U	0.040
Vinyl chloride	0.080	U	0.080
1,3-Butadiene	0.080	U	0.080
Bromomethane	0.080	U	0.080
Chloroethane	0.080	U	0.080
Bromoethene(Vinyl Bromide)	0.080	U	0.080
Trichlorofluoromethane	0.25		0.040
1,1-Dichloroethene	0.040	U	0.040
3-Chloropropene	0.080	U	0.080
Methylene Chloride	0.40	U	0.40
Methyl tert-butyl ether	0.040	U	0.040
trans-1,2-Dichloroethene	0.040	U	0.040
n-Hexane	0.14		0.080
1,1-Dichloroethane	0.040	U	0.040
cis-1,2-Dichloroethene	0.040	U	0.040
Chloroform	0.040	U	0.040
1,1,1-Trichloroethane	0.090		0.040
Cyclohexane	0.12 u		0.040
Carbon tetrachloride	0.075		0.040
2,2,4-Trimethylpentane	0.040	U	0.040
Benzene	0.19		0.040
1,2-Dichloroethane	0.080	U	0.080
n-Heptane	0.16 u		0.040
Trichloroethene	0.040	U	0.040
1,2-Dichloropropane	0.080	U	0.080
Bromodichloromethane	0.040	U	0.040
cis-1,3-Dichloropropene	0.040	U	0.040
Toluene	0.56 u		0.040
trans-1,3-Dichloropropene	0.040	U	0.040
1,1,2-Trichloroethane	0.040	U	0.040
Tetrachloroethene	0.078		0.040
Dibromochloromethane	0.040	U	0.040
1,2-Dibromoethane	0.040	U	0.040
Ethylbenzene	0.38		0.040
o-Xylene	0.16		0.040
Bromoform	0.040	U	0.040
1,1,2,2-Tetrachloroethane	0.040	U	0.040
4-Ethyltoluene	0.040	U	0.040
1,3,5-Trimethylbenzene	0.080	U	0.080
1,2-Dichloroethene, Total	0.040	U	0.040
m-Xylene & p-Xylene	0.91		0.040
Xylenes, Total	1.1		0.040

Analyte	Result (ug/m3)	Qualifier	RL
Dichlorodifluoromethane	2.5		0.20

Client: AECOM, Inc.

Job Number: 200-8255-1
Sdg Number: 200-8255

Client Sample ID: IAQ-1

Lab Sample ID: 200-8255-3
Client Matrix: Air

Date Sampled: 11/17/2011 0858
Date Received: 11/23/2011 1115

TO15 LL Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS)

Analysis Method:	TO15 LL	Analysis Batch:	200-29652	Instrument ID:	E.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	eeqc014.d
Dilution:	4.0			Initial Weight/Volume:	125 mL
Analysis Date:	11/28/2011 2045			Final Weight/Volume:	500 mL
Prep Date:	11/28/2011 2045			Injection Volume:	500 mL

Analyte	Result (ug/m3)	Qualifier	RL
1,2-Dichlorotetrafluoroethane	0.28	U	0.28
Vinyl chloride	0.20	U	0.20
1,3-Butadiene	0.18	U	0.18
Bromomethane	0.31	U	0.31
Chloroethane	0.21	U	0.21
Bromoethene(Vinyl Bromide)	0.35	U	0.35
Trichlorofluoromethane	1.4		0.22
1,1-Dichloroethene	0.16	U	0.16
3-Chloropropene	0.25	U	0.25
Methylene Chloride	1.4	U	1.4
Methyl tert-butyl ether	0.14	U	0.14
trans-1,2-Dichloroethene	0.16	U	0.16
n-Hexane	0.50		0.28
1,1-Dichloroethane	0.16	U	0.16
cis-1,2-Dichloroethene	0.16	U	0.16
Chloroform	0.20	U	0.20
1,1,1-Trichloroethane	0.49		0.22
Cyclohexane	0.43 u		0.14
Carbon tetrachloride	0.47		0.25
2,2,4-Trimethylpentane	0.19	U	0.19
Benzene	0.60		0.13
1,2-Dichloroethane	0.32	U	0.32
n-Heptane	0.68 u		0.16
Trichloroethene	0.21	U	0.21
1,2-Dichloropropane	0.37	U	0.37
Bromodichloromethane	0.27	U	0.27
cis-1,3-Dichloropropene	0.18	U	0.18
Toluene	2.1 u		0.15
trans-1,3-Dichloropropene	0.18	U	0.18
1,1,2-Trichloroethane	0.22	U	0.22
Tetrachloroethene	0.53		0.27
Dibromochloromethane	0.34	U	0.34
1,2-Dibromoethane	0.31	U	0.31
Ethylbenzene	1.6		0.17
o-Xylene	0.71		0.17
Bromoform	0.41	U	0.41
1,1,2,2-Tetrachloroethane	0.27	U	0.27
4-Ethyltoluene	0.20	U	0.20
1,3,5-Trimethylbenzene	0.39	U	0.39
1,2-Dichloroethene, Total	0.16	U	0.16
m-Xylene & p-Xylene	3.9		0.17
Xylenes, Total	4.7		0.17

Analytical Data

Client: AECOM, Inc.

Job Number: 200-8255-1
Sdg Number: 200-8255

Client Sample ID: SS-2

Lab Sample ID: 200-8255-4
Client Matrix: Air

Date Sampled: 11/17/2011 0904
Date Received: 11/23/2011 1115

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-29914	Instrument ID:	B.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	bkiq007.d
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	12/01/2011 1435			Final Weight/Volume:	200 mL
Prep Date:	12/01/2011 1435			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Dichlorodifluoromethane	0.51		0.50
1,2-Dichlorotetrafluoroethane	0.20	U	0.20
Vinyl chloride	0.20	U	0.20
1,3-Butadiene	0.20	U	0.20
Bromomethane	0.20	U	0.20
Chloroethane	0.50	U	0.50
Bromoethene(Vinyl Bromide)	0.20	U	0.20
Trichlorofluoromethane	0.26		0.20
1,1-Dichloroethene	0.20	U	0.20
3-Chloropropene	0.50	U	0.50
Methylene Chloride	0.50	U	0.50
Methyl tert-butyl ether	0.20	U	0.20
trans-1,2-Dichloroethene	0.20	U	0.20
n-Hexane	0.26		0.20
1,1-Dichloroethane	0.20	U	0.20
cis-1,2-Dichloroethene	0.20	U	0.20
1,2-Dichloroethene, Total	0.20	U	0.20
Chloroform	0.20	U	0.20
1,1,1-Trichloroethane	2.9		0.20
Cyclohexane	0.31 U		0.20
Carbon tetrachloride	0.20	U	0.20
2,2,4-Trimethylpentane	0.20	U	0.20
Benzene	0.20		0.20
1,2-Dichloroethane	0.20	U	0.20
n-Heptane	0.27		0.20
Trichloroethene	0.72		0.20
1,2-Dichloropropane	0.20	U	0.20
Bromodichloromethane	0.20	U	0.20
cis-1,3-Dichloropropene	0.20	U	0.20
Toluene	2.1 U		0.20
trans-1,3-Dichloropropene	0.20	U	0.20
1,1,2-Trichloroethane	0.20	U	0.20
Tetrachloroethene	18		0.20
Dibromochloromethane	0.20	U	0.20
1,2-Dibromoethane	0.20	U	0.20
Ethylbenzene	0.58		0.20
m,p-Xylene	2.4		0.50
Xylene, o-	0.64		0.20
Xylene (total)	3.0		0.20
Bromoform	0.20	U	0.20
1,1,2,2-Tetrachloroethane	0.20	U	0.20
4-Ethyltoluene	0.20	U	0.20
1,3,5-Trimethylbenzene	0.20	U	0.20

Analyte	Result (ug/m3)	Qualifier	RL
Dichlorodifluoromethane	2.5		2.5

Analytical Data

Client: AECOM, Inc.

Job Number: 200-8255-1
Sdg Number: 200-8255

Client Sample ID: SS-2

Lab Sample ID: 200-8255-4
Client Matrix: Air

Date Sampled: 11/17/2011 0904
Date Received: 11/23/2011 1115

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-29914	Instrument ID:	B.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	bkiq007.d
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	12/01/2011 1435			Final Weight/Volume:	200 mL
Prep Date:	12/01/2011 1435			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
1,2-Dichlorotetrafluoroethane	1.4	U	1.4
Vinyl chloride	0.51	U	0.51
1,3-Butadiene	0.44	U	0.44
Bromomethane	0.78	U	0.78
Chloroethane	1.3	U	1.3
Bromoethene(Vinyl Bromide)	0.87	U	0.87
Trichlorofluoromethane	1.5		1.1
1,1-Dichloroethene	0.79	U	0.79
3-Chloropropene	1.6	U	1.6
Methylene Chloride	1.7	U	1.7
Methyl tert-butyl ether	0.72	U	0.72
trans-1,2-Dichloroethene	0.79	U	0.79
n-Hexane	0.92		0.70
1,1-Dichloroethane	0.81	U	0.81
cis-1,2-Dichloroethene	0.79	U	0.79
1,2-Dichloroethene, Total	0.79	U	0.79
Chloroform	0.98	U	0.98
1,1,1-Trichloroethane	16		1.1
Cyclohexane	1.1 u		0.69
Carbon tetrachloride	1.3	U	1.3
2,2,4-Trimethylpentane	0.93	U	0.93
Benzene	0.63		0.64
1,2-Dichloroethane	0.81	U	0.81
n-Heptane	1.1		0.82
Trichloroethene	3.9		1.1
1,2-Dichloropropane	0.92	U	0.92
Bromodichloromethane	1.3	U	1.3
cis-1,3-Dichloropropene	0.91	U	0.91
Toluene	8.0 u		0.75
trans-1,3-Dichloropropene	0.91	U	0.91
1,1,2-Trichloroethane	1.1	U	1.1
Tetrachloroethene	120		1.4
Dibromochloromethane	1.7	U	1.7
1,2-Dibromoethane	1.5	U	1.5
Ethylbenzene	2.5		0.87
m,p-Xylene	10		2.2
Xylene, o-	2.8		0.87
Xylene (total)	13		0.87
Bromoform	2.1	U	2.1
1,1,2,2-Tetrachloroethane	1.4	U	1.4
4-Ethyltoluene	0.98	U	0.98
1,3,5-Trimethylbenzene	0.98	U	0.98

Analytical Data

Client: AECOM, Inc.

Job Number: 200-8255-1
Sdg Number: 200-8255

Client Sample ID: IAQ-2

Lab Sample ID: 200-8255-5
Client Matrix: Air

Date Sampled: 11/17/2011 0905
Date Received: 11/23/2011 1115

TO15 LL Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS)

Analysis Method:	TO15 LL	Analysis Batch:	200-29996	Instrument ID:	E.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	eeqd006.d
Dilution:	4.0			Initial Weight/Volume:	125 mL
Analysis Date:	11/30/2011 1449			Final Weight/Volume:	500 mL
Prep Date:	11/30/2011 1449			Injection Volume:	500 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Dichlorodifluoromethane	0.45		0.040
1,2-Dichlorotetrafluoroethane	0.040	U	0.040
Vinyl chloride	0.080	U	0.080
1,3-Butadiene	0.080	U	0.080
Bromomethane	0.080	U	0.080
Chloroethane	0.080	U	0.080
Bromoethene(Vinyl Bromide)	0.080	U	0.080
Trichlorofluoromethane	0.21		0.040
1,1-Dichloroethene	0.040	U	0.040
3-Chloropropene	0.080	U	0.080
Methylene Chloride	0.40	U	0.40
Methyl tert-butyl ether	0.040	U	0.040
trans-1,2-Dichloroethene	0.040	U	0.040
n-Hexane	0.080	U	0.080
1,1-Dichloroethane	0.040	U	0.040
cis-1,2-Dichloroethene	0.040	U	0.040
Chloroform	0.040	U	0.040
1,1,1-Trichloroethane	0.040		0.040
Cyclohexane	0.089 U		0.040
Carbon tetrachloride	0.052		0.040
2,2,4-Trimethylpentane	0.040	U	0.040
Benzene	0.074		0.040
1,2-Dichloroethane	0.080	U	0.080
n-Heptane	0.040	U	0.040
Trichloroethene	0.040	U	0.040
1,2-Dichloropropane	0.080	U	0.080
Bromodichloromethane	0.040	U	0.040
cis-1,3-Dichloropropene	0.040	U	0.040
Toluene	0.046 U		0.040
trans-1,3-Dichloropropene	0.040	U	0.040
1,1,2-Trichloroethane	0.040	U	0.040
Tetrachloroethene	0.040	U	0.040
Dibromochloromethane	0.040	U	0.040
1,2-Dibromoethane	0.040	U	0.040
Ethylbenzene	0.040	U	0.040
o-Xylene	0.040	U	0.040
Bromoform	0.040	U	0.040
1,1,2,2-Tetrachloroethane	0.040	UJ	0.040
4-Ethyltoluene	0.040	U	0.040
1,3,5-Trimethylbenzene	0.080	U	0.080
1,2-Dichloroethene, Total	0.040	U	0.040
m-Xylene & p-Xylene	0.040	U	0.040
Xylenes, Total	0.040	U	0.040

Analyte	Result (ug/m3)	Qualifier	RL
Dichlorodifluoromethane	2.2		0.20

Analytical Data

Client: AECOM, Inc.

Job Number: 200-8255-1
Sdg Number: 200-8255

Client Sample ID: IAQ-2

Lab Sample ID: 200-8255-5
Client Matrix: Air

Date Sampled: 11/17/2011 0905
Date Received: 11/23/2011 1115

TO15 LL Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS)

Analysis Method:	TO15 LL	Analysis Batch:	200-29996	Instrument ID:	E.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	eeqd006.d
Dilution:	4.0			Initial Weight/Volume:	125 mL
Analysis Date:	11/30/2011 1449			Final Weight/Volume:	500 mL
Prep Date:	11/30/2011 1449			Injection Volume:	500 mL

Analyte	Result (ug/m3)	Qualifier	RL
1,2-Dichlorotetrafluoroethane	0.28	U	0.28
Vinyl chloride	0.20	U	0.20
1,3-Butadiene	0.18	U	0.18
Bromomethane	0.31	U	0.31
Chloroethane	0.21	U	0.21
Bromoethene(Vinyl Bromide)	0.35	U	0.35
Trichlorofluoromethane	1.2		0.22
1,1-Dichloroethene	0.16	U	0.16
3-Chloropropene	0.25	U	0.25
Methylene Chloride	1.4	U	1.4
Methyl tert-butyl ether	0.14	U	0.14
trans-1,2-Dichloroethene	0.16	U	0.16
n-Hexane	0.28	U	0.28
1,1-Dichloroethane	0.16	U	0.16
cis-1,2-Dichloroethene	0.16	U	0.16
Chloroform	0.20	U	0.20
1,1,1-Trichloroethane	0.22		0.22
Cyclohexane	0.31 u		0.14
Carbon tetrachloride	0.33		0.25
2,2,4-Trimethylpentane	0.19	U	0.19
Benzene	0.24		0.13
1,2-Dichloroethane	0.32	U	0.32
n-Heptane	0.16	U	0.16
Trichloroethene	0.21	U	0.21
1,2-Dichloropropane	0.37	U	0.37
Bromodichloromethane	0.27	U	0.27
cis-1,3-Dichloropropene	0.18	U	0.18
Toluene	0.17 u		0.15
trans-1,3-Dichloropropene	0.18	U	0.18
1,1,2-Trichloroethane	0.22	U	0.22
Tetrachloroethene	0.27	U	0.27
Dibromochloromethane	0.34	U	0.34
1,2-Dibromoethane	0.31	U	0.31
Ethylbenzene	0.17	U	0.17
o-Xylene	0.17	U	0.17
Bromoform	0.41	U	0.41
1,1,2,2-Tetrachloroethane	0.27	UJ	0.27
4-Ethyltoluene	0.20	U	0.20
1,3,5-Trimethylbenzene	0.39	U	0.39
1,2-Dichloroethene, Total	0.16	U	0.16
m-Xylene & p-Xylene	0.17	U	0.17
Xylenes, Total	0.17	U	0.17

Analytical Data

Client: AECOM, Inc.

Job Number: 200-8255-1
Sdg Number: 200-8255

Client Sample ID: **AMBIENT**

Lab Sample ID: 200-8255-6
Client Matrix: Air

Date Sampled: 11/17/2011 0910
Date Received: 11/23/2011 1115

TO15 LL Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS)

Analysis Method:	TO15 LL	Analysis Batch:	200-29652	Instrument ID:	E.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	eeqc016.d
Dilution:	4.0			Initial Weight/Volume:	125 mL
Analysis Date:	11/28/2011 2232			Final Weight/Volume:	500 mL
Prep Date:	11/28/2011 2232			Injection Volume:	500 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Dichlorodifluoromethane	0.44		0.040
1,2-Dichlorotetrafluoroethane	0.040	U	0.040
Vinyl chloride	0.080	U	0.080
1,3-Butadiene	0.080	U	0.080
Bromomethane	0.080	U	0.080
Chloroethane	0.080	U	0.080
Bromoethene(Vinyl Bromide)	0.080	U	0.080
Trichlorofluoromethane	0.20		0.040
1,1-Dichloroethene	0.040	U	0.040
3-Chloropropene	0.080	U	0.080
Methylene Chloride	0.40	U	0.40
Methyl tert-butyl ether	0.040	U	0.040
trans-1,2-Dichloroethene	0.040	U	0.040
n-Hexane	0.13		0.080
1,1-Dichloroethane	0.040	U	0.040
cis-1,2-Dichloroethene	0.040	U	0.040
Chloroform	0.040	U	0.040
1,1,1-Trichloroethane	0.040	U	0.040
Cyclohexane	0.14 u		0.040
Carbon tetrachloride	0.073		0.040
2,2,4-Trimethylpentane	0.056		0.040
Benzene	0.15		0.040
1,2-Dichloroethane	0.080	U	0.080
n-Heptane	0.083 u		0.040
Trichloroethene	0.040	U	0.040
1,2-Dichloropropane	0.080	U	0.080
Bromodichloromethane	0.040	U	0.040
cis-1,3-Dichloropropene	0.040	U	0.040
Toluene	0.57 u		0.040
trans-1,3-Dichloropropene	0.040	U	0.040
1,1,2-Trichloroethane	0.040	U	0.040
Tetrachloroethene	0.041		0.040
Dibromochloromethane	0.040	U	0.040
1,2-Dibromoethane	0.040	U	0.040
Ethylbenzene	0.048		0.040
o-Xylene	0.047		0.040
Bromoform	0.040	U	0.040
1,1,2,2-Tetrachloroethane	0.040	U	0.040
4-Ethyltoluene	0.040	U	0.040
1,3,5-Trimethylbenzene	0.080	U	0.080
1,2-Dichloroethene, Total	0.040	U	0.040
m-Xylene & p-Xylene	0.15 u		0.040
Xylenes, Total	0.19 u		0.040

Analyte	Result (ug/m3)	Qualifier	RL
Dichlorodifluoromethane	2.2		0.20

Client: AECOM, Inc.

Job Number: 200-8255-1
Sdg Number: 200-8255

Client Sample ID: **AMBIENT**

Lab Sample ID: 200-8255-6
Client Matrix: Air

Date Sampled: 11/17/2011 0910
Date Received: 11/23/2011 1115

TO15 LL Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS)

Analysis Method:	TO15 LL	Analysis Batch:	200-29652	Instrument ID:	E.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	eeqc016.d
Dilution:	4.0			Initial Weight/Volume:	125 mL
Analysis Date:	11/28/2011 2232			Final Weight/Volume:	500 mL
Prep Date:	11/28/2011 2232			Injection Volume:	500 mL

Analyte	Result (ug/m3)	Qualifier	RL
1,2-Dichlorotetrafluoroethane	0.28	U	0.28
Vinyl chloride	0.20	U	0.20
1,3-Butadiene	0.18	U	0.18
Bromomethane	0.31	U	0.31
Chloroethane	0.21	U	0.21
Bromoethene(Vinyl Bromide)	0.35	U	0.35
Trichlorofluoromethane	1.1		0.22
1,1-Dichloroethene	0.16	U	0.16
3-Chloropropene	0.25	U	0.25
Methylene Chloride	1.4	U	1.4
Methyl tert-butyl ether	0.14	U	0.14
trans-1,2-Dichloroethene	0.16	U	0.16
n-Hexane	0.46		0.28
1,1-Dichloroethane	0.16	U	0.16
cis-1,2-Dichloroethene	0.16	U	0.16
Chloroform	0.20	U	0.20
1,1,1-Trichloroethane	0.22	U	0.22
Cyclohexane	0.47 U		0.14
Carbon tetrachloride	0.46		0.25
2,2,4-Trimethylpentane	0.26		0.19
Benzene	0.49		0.13
1,2-Dichloroethane	0.32	U	0.32
n-Heptane	0.34 U		0.16
Trichloroethene	0.21	U	0.21
1,2-Dichloropropane	0.37	U	0.37
Bromodichloromethane	0.27	U	0.27
cis-1,3-Dichloropropene	0.18	U	0.18
Toluene	2.2 U		0.15
trans-1,3-Dichloropropene	0.18	U	0.18
1,1,2-Trichloroethane	0.22	U	0.22
Tetrachloroethene	0.28		0.27
Dibromochloromethane	0.34	U	0.34
1,2-Dibromoethane	0.31	U	0.31
Ethylbenzene	0.21		0.17
o-Xylene	0.20		0.17
Bromoform	0.41	U	0.41
1,1,2,2-Tetrachloroethane	0.27	U	0.27
4-Ethyltoluene	0.20	U	0.20
1,3,5-Trimethylbenzene	0.39	U	0.39
1,2-Dichloroethene, Total	0.16	U	0.16
m-Xylene & p-Xylene	0.63 U		0.17
Xylenes, Total	0.84 U		0.17

ENVIRONMENTAL
Data Services, Inc.

DATA USABILITY SUMMARY REPORT
UTILITY MANUFACTURING, WESTBURY, NEW YORK

Client: AECOM Technical Services, Inc., Chestnut Ridge, New York
SDG: K1470
Laboratory: Spectrum Analytical, Inc., Warwick, Rhode Island
Site: Utility Manufacturing, Westbury, New York
Date: December 12, 2011

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	MW-13S	K1470-01	Water
1MS	MW-13SMS	K1470-01MS	Water
1MSD	MW-13SMSD	K1470-01MSD	Water
2	MW-63S	K1470-02	Water
3	MW-13D	K1470-03	Water
4	MW-12S	K1470-04	Water
5	MW-12D	K1470-05	Water
6	MW-1S	K1470-06	Water
7	MW-1D	K1470-07	Water
8	TRIP BLANK	K1470-08	Water

A Data Usability Summary Review was performed on the analytical data for seven water samples and one aqueous trip blank sample collected on August 9-10, 2011 by AECOM at the Utility Manufacturing site in Westbury, New York. The samples were analyzed under Environmental Protection Agency (USEPA) *"Test Methods for the Evaluation of Solid Waste, USEPA SW-846, Third Edition, September 1986, with revisions"*.

Specific method references are as follows:

Analysis	*Method References*
VOCs	USEPA SW-846 Method 8260B

The data have been validated according to the protocols and quality control (QC) requirements of the analytical methods and the USEPA Region II Data Review Standard Operating Procedures (SOPs) as follows:

- SOP Number HW-24, Revision 2, August 2008: Validating Volatile Organic Compounds by SW-846 Method 8260B;
- and the reviewer's professional judgment.

Organics

The following items/criteria were reviewed for this report:

- Data Completeness
- Holding times and sample preservation
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Duplicate (LCS/LCSD) recoveries
- Method blank and field blank contamination
- Gas Chromatography (GC)/Mass Spectroscopy (MS) tuning
- Initial and continuing calibration summaries
- Compound Quantitation
- Internal standard area and retention time summary forms
- Field Duplicate sample precision

Overall Usability Issues:

There were several rejections of data. This data cannot be used in the decision-making process for this project.

- Acetone was rejected in all samples due to a low initial calibration RRF value.

Overall the remaining data is acceptable for the intended purposes as qualified for the following deficiencies.

- 2-Butanone, 1,2-dibromo-3-chloropropane, and methyl acetate were qualified as estimated in all samples due to high initial calibration %RSD values.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contaminations and actions from other exceedences of QC criteria.

Data Completeness

- The data is a complete Category B data package as defined under the requirements for the NYS Department of Environmental Conservation Analytical Services Protocol.

Volatile Organic Compounds (VOCs)

Holding Times

- All samples were analyzed within 14 days for preserved water samples.

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate recoveries.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Samples

- The LCS samples exhibited acceptable recoveries.

Method Blank

- The method blanks were free of contamination.

Field Blank

- The following table lists field QC samples with contamination and the samples associated with the blanks that had results qualified as a consequence of the blank contamination. Detected sample concentrations of acetone, 2-butanone and methylene chloride (common laboratory contaminants) less than ten times (10x) the highest associated blank (after taking sample dilution levels, percent moisture and sample volume into account) are negated and qualified with a (U). For all other compounds, an action level of five times (5x) the highest associated blank concentration is used.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
TRIP BLANK	None - ND	-	-	-	-

GC/MS Tuning

- All criteria were met.

Initial Calibration

- The following table presents compounds that exceeded 20 percent relative standard deviation (%RSD) and/or average RRF values <0.05 in the initial calibration (ICAL). A low RRF indicates poor indicates poor instrument sensitivity for these compounds. Positive results for these compounds in the affected samples are considered estimated and qualified (J). Non-detect results for these compounds in the affected samples are rejected (R) and are unusable for project objectives. A high %RSD may indicate a potential high or low bias. All results for

these compounds in affected samples are considered estimated and qualified (J/UJ).

ICAL Date	Compound	%RSD/RRF	Qualifier	Affected Samples
08/15/11	Acetone	36.4%/0.040 RRF	J/R	All samples
	2-Butanone	22.0%	J/UJ	
	1,2-Dibromo-3-chloropropane	28.3%	J/UJ	
	Methyl acetate	22.4%	J/UJ	

Continuing Calibration

- The following table presents compounds that exceeded 20 percent deviation (%D) and/or RRF values <0.05 in the continuing calibration (CCAL). A low RRF indicates poor instrument sensitivity for these compounds. Positive results for these compounds in the affected samples are considered estimated and qualified (J). Non-detect results for these compounds in the affected samples are rejected (R) and are unusable for project objectives. A high %D may indicate a potential high or low bias. All results for these compounds in affected samples are considered estimated and qualified (J/UJ).

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
08/16/11	Acetone	33.3%	None	See ICAL

Compound Quantitation

- All criteria were met.

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Field Duplicate Sample Precision

- Field duplicate results are summarized below. The precision is acceptable.

VOC				
Compound	MW-13S ug/L	MW-63S ug/L	RPD	Qualifier
1,1-Dichloroethene	0.82	0.74	10%	None
1,1-Dichloroethane	4.2	3.6	15%	None
cis-1,2-Dichloroethene	6.1	5.3	14%	None
1,1,1-Trichloroethane	2.1	1.8	15%	None
Trichloroethene	16	14	13%	None
Tetrachloroethene	3.5	3.3	6%	None

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Very truly yours,
Environmental Data Services, Inc.

Nancy Weaver 12/13/11

Nancy Weaver Date
Senior Chemist

Data Qualifiers

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was not detected above the sample reporting limit; and the reporting limit is approximate.

U = The analyte was analyzed for, but was not detected above the sample reporting limit.

R = The sample results is rejected due to serious deficiencies. The presence or absence of the analyte cannot be verified.

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1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW-13S

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: K1470 Mod. Ref No.: SDG No.: SK1470

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: K1470-01B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2M2328.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/12/2011

% Moisture: not dec. Date Analyzed: 08/16/2011

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) µG/L	Q	
75-71-8	Dichlorodifluoromethane	5.0	U	
74-87-3	Chloromethane	5.0	U	
75-01-4	Vinyl chloride	5.0	U	
74-83-9	Bromomethane	5.0	U	
75-00-3	Chloroethane	5.0	U	
75-69-4	Trichlorofluoromethane	5.0	U	
75-35-4	1,1-Dichloroethene	0.82	J	
67-64-1	Acetone	5.0	~~U~~	R
75-15-0	Carbon disulfide	5.0	U	
75-09-2	Methylene chloride	5.0	U	
156-60-5	trans-1,2-Dichloroethene	5.0	U	
1634-04-4	Methyl tert-butyl ether	5.0	U	
75-34-3	1,1-Dichloroethane	4.2	J	
78-93-3	2-Butanone	5.0	~~U~~	UJ
156-59-2	cis-1,2-Dichloroethene	6.1		
67-66-3	Chloroform	5.0	U	
71-55-6	1,1,1-Trichloroethane	2.1	J	
56-23-5	Carbon tetrachloride	5.0	U	
107-06-2	1,2-Dichloroethane	5.0	U	
71-43-2	Benzene	5.0	U	
79-01-6	Trichloroethene	16		
78-87-5	1,2-Dichloropropane	5.0	U	
75-27-4	Bromodichloromethane	5.0	U	
10061-01-5	cis-1,3-Dichloropropene	5.0	U	
108-10-1	4-Methyl-2-pentanone	5.0	U	
108-88-3	Toluene	5.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
79-00-5	1,1,2-Trichloroethane	5.0	U	
127-18-4	Tetrachloroethene	3.5	J	
591-78-6	2-Hexanone	5.0	U	
124-48-1	Dibromochloromethane	5.0	U	
106-93-4	1,2-Dibromoethane	5.0	U	
108-90-7	Chlorobenzene	5.0	U	
100-41-4	Ethylbenzene	5.0	U	
1330-20-7	m,p-Xylene	5.0	U	

NW 12/12/11

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW-13S

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: K1470 Mod. Ref No.: SDG No.: SK1470

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: K1470-01B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2M2328.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/12/2011

% Moisture: not dec. Date Analyzed: 08/16/2011

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) µG/L	Q	
95-47-6	o-Xylene	5.0	U	
1330-20-7	Xylene (Total)	5.0	U	
100-42-5	Styrene	5.0	U	
75-25-2	Bromoform	5.0	U	
98-82-8	Isopropylbenzene	5.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U	
541-73-1	1,3-Dichlorobenzene	5.0	U	
106-46-7	1,4-Dichlorobenzene	5.0	U	
95-50-1	1,2-Dichlorobenzene	5.0	U	
96-12-8	1,2-Dibromo-3-chloropropane	5.0	~~U~~	UJ
120-82-1	1,2,4-Trichlorobenzene	5.0	U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	
110-82-7	Cyclohexane	5.0	U	
79-20-9	Methyl acetate	5.0	~~U~~	UJ
108-87-2	Methylcyclohexane	5.0	U	

2

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW-63S

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: K1470 Mod. Ref No.: SDG No.: SK1470

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: K1470-02B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2M2329.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/12/2011

% Moisture: not dec. Date Analyzed: 08/16/2011

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) µG/L	Q	
75-71-8	Dichlorodifluoromethane	5.0	U	
74-87-3	Chloromethane	5.0	U	
75-01-4	Vinyl chloride	5.0	U	
74-83-9	Bromomethane	5.0	U	
75-00-3	Chloroethane	5.0	U	
75-69-4	Trichlorofluoromethane	5.0	U	
75-35-4	1,1-Dichloroethene	0.74	J	
67-64-1	Acetone	5.0	~~U~~	R
75-15-0	Carbon disulfide	5.0	U	
75-09-2	Methylene chloride	5.0	U	
156-60-5	trans-1,2-Dichloroethene	5.0	U	
1634-04-4	Methyl tert-butyl ether	5.0	U	
75-34-3	1,1-Dichloroethane	3.6	J	
78-93-3	2-Butanone	5.0	~~U~~	UJ
156-59-2	cis-1,2-Dichloroethene	5.3		
67-66-3	Chloroform	5.0	U	
71-55-6	1,1,1-Trichloroethane	1.8	J	
56-23-5	Carbon tetrachloride	5.0	U	
107-06-2	1,2-Dichloroethane	5.0	U	
71-43-2	Benzene	5.0	U	
79-01-6	Trichloroethene	14		
78-87-5	1,2-Dichloropropane	5.0	U	
75-27-4	Bromodichloromethane	5.0	U	
10061-01-5	cis-1,3-Dichloropropene	5.0	U	
108-10-1	4-Methyl-2-pentanone	5.0	U	
108-88-3	Toluene	5.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
79-00-5	1,1,2-Trichloroethane	5.0	U	
127-18-4	Tetrachloroethene	3.3	J	
591-78-6	2-Hexanone	5.0	U	
124-48-1	Dibromochloromethane	5.0	U	
106-93-4	1,2-Dibromoethane	5.0	U	
108-90-7	Chlorobenzene	5.0	U	
100-41-4	Ethylbenzene	5.0	U	
1330-20-7	m,p-Xylene	5.0	U	

2

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
MW-63S

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: K1470 Mod. Ref No.: SDG No.: SK1470

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: K1470-02B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2M2329.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/12/2011

% Moisture: not dec. Date Analyzed: 08/16/2011

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) µG/L	Q	
95-47-6	o-Xylene	5.0	U	
1330-20-7	Xylene (Total)	5.0	U	
100-42-5	Styrene	5.0	U	
75-25-2	Bromoform	5.0	U	
98-82-8	Isopropylbenzene	5.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U	
541-73-1	1,3-Dichlorobenzene	5.0	U	
106-46-7	1,4-Dichlorobenzene	5.0	U	
95-50-1	1,2-Dichlorobenzene	5.0	U	
96-12-8	1,2-Dibromo-3-chloropropane	5.0	~~U~~	UJ
120-82-1	1,2,4-Trichlorobenzene	5.0	U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	
110-82-7	Cyclohexane	5.0	U	
79-20-9	Methyl acetate	5.0	~~U~~	UJ
108-87-2	Methylcyclohexane	5.0	U	

NW 12/12/11

3

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW-13D

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: K1470 Mod. Ref No.: SDG No.: SK1470

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: K1470-03B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2M2330.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/12/2011

% Moisture: not dec. Date Analyzed: 08/16/2011

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) µG/L	Q	
75-71-8	Dichlorodifluoromethane	5.0	U	
74-87-3	Chloromethane	5.0	U	
75-01-4	Vinyl chloride	5.0	U	
74-83-9	Bromomethane	5.0	U	
75-00-3	Chloroethane	5.0	U	
75-69-4	Trichlorofluoromethane	5.0	U	
75-35-4	1,1-Dichloroethene	5.6		
67-64-1	Acetone	5.0	~~U~~	R
75-15-0	Carbon disulfide	5.0	U	
75-09-2	Methylene chloride	5.0	U	
156-60-5	trans-1,2-Dichloroethene	5.0	U	
1634-04-4	Methyl tert-butyl ether	5.0	U	
75-34-3	1,1-Dichloroethane	0.72	J	
78-93-3	2-Butanone	5.0	~~U~~	UJ
156-59-2	cis-1,2-Dichloroethene	8.5		
67-66-3	Chloroform	5.0	U	
71-55-6	1,1,1-Trichloroethane	4.7	J	
56-23-5	Carbon tetrachloride	5.0	U	
107-06-2	1,2-Dichloroethane	5.0	U	
71-43-2	Benzene	5.0	U	
79-01-6	Trichloroethene	88		
78-87-5	1,2-Dichloropropane	5.0	U	
75-27-4	Bromodichloromethane	5.0	U	
10061-01-5	cis-1,3-Dichloropropene	5.0	U	
108-10-1	4-Methyl-2-pentanone	5.0	U	
108-88-3	Toluene	5.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
79-00-5	1,1,2-Trichloroethane	5.0	U	
127-18-4	Tetrachloroethene	5.5		
591-78-6	2-Hexanone	5.0	U	
124-48-1	Dibromochloromethane	5.0	U	
106-93-4	1,2-Dibromoethane	5.0	U	
108-90-7	Chlorobenzene	5.0	U	
100-41-4	Ethylbenzene	5.0	U	
1330-20-7	m,p-Xylene	5.0	U	

MW 12/12/11

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO. 3

MW-13D

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: K1470 Mod. Ref No.: SDG No.: SK1470

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: K1470-03B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2M2330.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/12/2011

% Moisture: not dec. Date Analyzed: 08/16/2011

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) µG/L	Q	
95-47-6	o-Xylene	5.0	U	
1330-20-7	Xylene (Total)	5.0	U	
100-42-5	Styrene	5.0	U	
75-25-2	Bromoform	5.0	U	
98-82-8	Isopropylbenzene	5.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U	
541-73-1	1,3-Dichlorobenzene	5.0	U	
106-46-7	1,4-Dichlorobenzene	5.0	U	
95-50-1	1,2-Dichlorobenzene	5.0	U	
96-12-8	1,2-Dibromo-3-chloropropane	5.0	~~U~~	UJ
120-82-1	1,2,4-Trichlorobenzene	5.0	U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	
110-82-7	Cyclohexane	5.0	U	
79-20-9	Methyl acetate	5.0	~~U~~	UJ
108-87-2	Methylcyclohexane	5.0	U	

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1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW-12S

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: K1470 Mod. Ref No.: SDG No.: SK1470

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: K1470-04B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2M2331.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/12/2011

% Moisture: not dec. Date Analyzed: 08/16/2011

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) µG/L	Q	
75-71-8	Dichlorodifluoromethane	5.0	U	
74-87-3	Chloromethane	5.0	U	
75-01-4	Vinyl chloride	5.0	U	
74-83-9	Bromomethane	5.0	U	
75-00-3	Chloroethane	5.0	U	
75-69-4	Trichlorofluoromethane	5.0	U	
75-35-4	1,1-Dichloroethene	5.0	U	
67-64-1	Acetone	5.0	Ø	R
75-15-0	Carbon disulfide	5.0	U	
75-09-2	Methylene chloride	5.0	U	
156-60-5	trans-1,2-Dichloroethene	5.0	U	
1634-04-4	Methyl tert-butyl ether	5.0	U	
75-34-3	1,1-Dichloroethane	5.0	U	
78-93-3	2-Butanone	5.0	Ø	UJ
156-59-2	cis-1,2-Dichloroethene	2.2	J	
67-66-3	Chloroform	5.0	U	
71-55-6	1,1,1-Trichloroethane	5.0	U	
56-23-5	Carbon tetrachloride	5.0	U	
107-06-2	1,2-Dichloroethane	5.0	U	
71-43-2	Benzene	5.0	U	
79-01-6	Trichloroethene	1.9	J	
78-87-5	1,2-Dichloropropane	5.0	U	
75-27-4	Bromodichloromethane	5.0	U	
10061-01-5	cis-1,3-Dichloropropene	5.0	U	
108-10-1	4-Methyl-2-pentanone	5.0	U	
108-88-3	Toluene	5.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
79-00-5	1,1,2-Trichloroethane	5.0	U	
127-18-4	Tetrachloroethene	18		
591-78-6	2-Hexanone	5.0	U	
124-48-1	Dibromochloromethane	5.0	U	
106-93-4	1,2-Dibromoethane	5.0	U	
108-90-7	Chlorobenzene	5.0	U	
100-41-4	Ethylbenzene	5.0	U	
1330-20-7	m,p-Xylene	5.0	U	

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1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW-12S

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: K1470 Mod. Ref No.: SDG No.: SK1470

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: K1470-04B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2M2331.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/12/2011

% Moisture: not dec. Date Analyzed: 08/16/2011

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) µG/L	Q	
95-47-6	o-Xylene	5.0	U	
1330-20-7	Xylene (Total)	5.0	U	
100-42-5	Styrene	5.0	U	
75-25-2	Bromoform	5.0	U	
98-82-8	Isopropylbenzene	5.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U	
541-73-1	1,3-Dichlorobenzene	5.0	U	
106-46-7	1,4-Dichlorobenzene	5.0	U	
95-50-1	1,2-Dichlorobenzene	5.0	U	
96-12-8	1,2-Dibromo-3-chloropropane	5.0	~~U~~	UJ
120-82-1	1,2,4-Trichlorobenzene	5.0	U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	
110-82-7	Cyclohexane	5.0	U	
79-20-9	Methyl acetate	5.0	~~U~~	UJ
108-87-2	Methylcyclohexane	5.0	U	

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1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW-12D

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: K1470 Mod. Ref No.: SDG No.: SK1470

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: K1470-05B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2M2332.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/12/2011

% Moisture: not dec. Date Analyzed: 08/16/2011

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) µG/L	Q	
75-71-8	Dichlorodifluoromethane	5.0	U	
74-87-3	Chloromethane	5.0	U	
75-01-4	Vinyl chloride	5.0	U	
74-83-9	Bromomethane	5.0	U	
75-00-3	Chloroethane	5.0	U	
75-69-4	Trichlorofluoromethane	5.0	U	
75-35-4	1,1-Dichloroethene	1.5	J	
67-64-1	Acetone	5.0	~~U~~	R
75-15-0	Carbon disulfide	5.0	U	
75-09-2	Methylene chloride	5.0	U	
156-60-5	trans-1,2-Dichloroethene	5.0	U	
1634-04-4	Methyl tert-butyl ether	5.0	U	
75-34-3	1,1-Dichloroethane	5.0	U	
78-93-3	2-Butanone	5.0	~~U~~	UJ
156-59-2	cis-1,2-Dichloroethene	5.0	U	
67-66-3	Chloroform	5.0	U	
71-55-6	1,1,1-Trichloroethane	0.91	J	
56-23-5	Carbon tetrachloride	5.0	U	
107-06-2	1,2-Dichloroethane	5.0	U	
71-43-2	Benzene	5.0	U	
79-01-6	Trichloroethene	1.4	J	
78-87-5	1,2-Dichloropropane	5.0	U	
75-27-4	Bromodichloromethane	5.0	U	
10061-01-5	cis-1,3-Dichloropropene	5.0	U	
108-10-1	4-Methyl-2-pentanone	5.0	U	
108-88-3	Toluene	5.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
79-00-5	1,1,2-Trichloroethane	5.0	U	
127-18-4	Tetrachloroethene	1.8	J	
591-78-6	2-Hexanone	5.0	U	
124-48-1	Dibromochloromethane	5.0	U	
106-93-4	1,2-Dibromoethane	5.0	U	
108-90-7	Chlorobenzene	5.0	U	
100-41-4	Ethylbenzene	5.0	U	
1330-20-7	m,p-Xylene	5.0	U	

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW-12D

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: K1470 Mod. Ref No.: SDG No.: SK1470

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: K1470-05B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2M2332.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/12/2011

% Moisture: not dec. Date Analyzed: 08/16/2011

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) µG/L	Q	
95-47-6	o-Xylene	5.0	U	
1330-20-7	Xylene (Total)	5.0	U	
100-42-5	Styrene	5.0	U	
75-25-2	Bromoform	5.0	U	
98-82-8	Isopropylbenzene	5.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U	
541-73-1	1,3-Dichlorobenzene	5.0	U	
106-46-7	1,4-Dichlorobenzene	5.0	U	
95-50-1	1,2-Dichlorobenzene	5.0	U	
96-12-8	1,2-Dibromo-3-chloropropane	5.0	~~U~~	UJ
120-82-1	1,2,4-Trichlorobenzene	5.0	U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	
110-82-7	Cyclohexane	5.0	U	
79-20-9	Methyl acetate	5.0	~~U~~	UJ
108-87-2	Methylcyclohexane	5.0	U	

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO. 6

MW-1S

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: K1470 Mod. Ref No.: SDG No.: SK1470

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: K1470-06B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2M2333.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/12/2011

% Moisture: not dec. Date Analyzed: 08/16/2011

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) µG/L	Q	
75-71-8	Dichlorodifluoromethane	5.0	U	
74-87-3	Chloromethane	5.0	U	
75-01-4	Vinyl chloride	5.0	U	
74-83-9	Bromomethane	5.0	U	
75-00-3	Chloroethane	5.0	U	
75-69-4	Trichlorofluoromethane	5.0	U	
75-35-4	1,1-Dichloroethene	5.0	U	
67-64-1	Acetone	5.0	~~U~~	R
75-15-0	Carbon disulfide	5.0	U	
75-09-2	Methylene chloride	5.0	U	
156-60-5	trans-1,2-Dichloroethene	5.0	U	
1634-04-4	Methyl tert-butyl ether	5.0	U	
75-34-3	1,1-Dichloroethane	5.0	U	
78-93-3	2-Butanone	5.0	~~U~~	UJ
156-59-2	cis-1,2-Dichloroethene	20		
67-66-3	Chloroform	5.0	U	
71-55-6	1,1,1-Trichloroethane	5.0	U	
56-23-5	Carbon tetrachloride	5.0	U	
107-06-2	1,2-Dichloroethane	5.0	U	
71-43-2	Benzene	5.0	U	
79-01-6	Trichloroethene	2.2	J	
78-87-5	1,2-Dichloropropane	5.0	U	
75-27-4	Bromodichloromethane	5.0	U	
10061-01-5	cis-1,3-Dichloropropene	5.0	U	
108-10-1	4-Methyl-2-pentanone	5.0	U	
108-88-3	Toluene	5.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
79-00-5	1,1,2-Trichloroethane	5.0	U	
127-18-4	Tetrachloroethene	4.4	J	
591-78-6	2-Hexanone	5.0	U	
124-48-1	Dibromochloromethane	5.0	U	
106-93-4	1,2-Dibromoethane	5.0	U	
108-90-7	Chlorobenzene	5.0	U	
100-41-4	Ethylbenzene	5.0	U	
1330-20-7	m,p-Xylene	5.0	U	

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1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW-1S

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: K1470 Mod. Ref No.: SDG No.: SK1470

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: K1470-06B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2M2333.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/12/2011

% Moisture: not dec. Date Analyzed: 08/16/2011

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) µG/L	Q	
95-47-6	o-Xylene	5.0	U	
1330-20-7	Xylene (Total)	5.0	U	
100-42-5	Styrene	5.0	U	
75-25-2	Bromoform	5.0	U	
98-82-8	Isopropylbenzene	5.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U	
541-73-1	1,3-Dichlorobenzene	5.0	U	
106-46-7	1,4-Dichlorobenzene	5.0	U	
95-50-1	1,2-Dichlorobenzene	5.0	U	
96-12-8	1,2-Dibromo-3-chloropropane	5.0	~~U~~	UJ
120-82-1	1,2,4-Trichlorobenzene	5.0	U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	
110-82-7	Cyclohexane	5.0	U	
79-20-9	Methyl acetate	5.0	~~U~~	UJ
108-87-2	Methylcyclohexane	5.0	U	

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1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW-1D

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: K1470 Mod. Ref No.: SDG No.: SK1470

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: K1470-07B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2M2334.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/12/2011

% Moisture: not dec. Date Analyzed: 08/16/2011

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) µG/L	Q	
75-71-8	Dichlorodifluoromethane	5.0	U	
74-87-3	Chloromethane	5.0	U	
75-01-4	Vinyl chloride	5.0	U	
74-83-9	Bromomethane	5.0	U	
75-00-3	Chloroethane	5.0	U	
75-69-4	Trichlorofluoromethane	5.0	U	
75-35-4	1,1-Dichloroethene	4.3	J	
67-64-1	Acetone	5.0	~~U~~	R
75-15-0	Carbon disulfide	5.0	U	
75-09-2	Methylene chloride	5.0	U	
156-60-5	trans-1,2-Dichloroethene	5.0	U	
1634-04-4	Methyl tert-butyl ether	5.0	U	
75-34-3	1,1-Dichloroethane	2.2	J	
78-93-3	2-Butanone	5.0	~~U~~	UJ
156-59-2	cis-1,2-Dichloroethene	5.7		
67-66-3	Chloroform	5.0	U	
71-55-6	1,1,1-Trichloroethane	3.7	J	
56-23-5	Carbon tetrachloride	5.0	U	
107-06-2	1,2-Dichloroethane	5.0	U	
71-43-2	Benzene	5.0	U	
79-01-6	Trichloroethene	65		
78-87-5	1,2-Dichloropropane	5.0	U	
75-27-4	Bromodichloromethane	5.0	U	
10061-01-5	cis-1,3-Dichloropropene	5.0	U	
108-10-1	4-Methyl-2-pentanone	5.0	U	
108-88-3	Toluene	5.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
79-00-5	1,1,2-Trichloroethane	5.0	U	
127-18-4	Tetrachloroethene	6.6		
591-78-6	2-Hexanone	5.0	U	
124-48-1	Dibromochloromethane	5.0	U	
106-93-4	1,2-Dibromoethane	5.0	U	
108-90-7	Chlorobenzene	5.0	U	
100-41-4	Ethylbenzene	5.0	U	
1330-20-7	m,p-Xylene	5.0	U	

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1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW-1D

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: K1470 Mod. Ref No.: SDG No.: SK1470

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: K1470-07B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2M2334.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/12/2011

% Moisture: not dec. Date Analyzed: 08/16/2011

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) µG/L	Q	
95-47-6	o-Xylene	5.0	U	
1330-20-7	Xylene (Total)	5.0	U	
100-42-5	Styrene	5.0	U	
75-25-2	Bromoform	5.0	U	
98-82-8	Isopropylbenzene	5.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U	
541-73-1	1,3-Dichlorobenzene	5.0	U	
106-46-7	1,4-Dichlorobenzene	5.0	U	
95-50-1	1,2-Dichlorobenzene	5.0	U	
96-12-8	1,2-Dibromo-3-chloropropane	5.0	~~U~~	UJ
120-82-1	1,2,4-Trichlorobenzene	5.0	U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	
110-82-7	Cyclohexane	5.0	U	
79-20-9	Methyl acetate	5.0	~~U~~	UJ
108-87-2	Methylcyclohexane	5.0	U	

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1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

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Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: K1470 Mod. Ref No.: SDG No.: SK1470

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: K1470-08A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2M2335.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/12/2011

% Moisture: not dec. Date Analyzed: 08/16/2011

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) µG/L	Q	
75-71-8	Dichlorodifluoromethane	5.0	U	
74-87-3	Chloromethane	5.0	U	
75-01-4	Vinyl chloride	5.0	U	
74-83-9	Bromomethane	5.0	U	
75-00-3	Chloroethane	5.0	U	
75-69-4	Trichlorofluoromethane	5.0	U	
75-35-4	1,1-Dichloroethene	5.0	U	
67-64-1	Acetone	5.0	~~U~~	R
75-15-0	Carbon disulfide	5.0	U	
75-09-2	Methylene chloride	5.0	U	
156-60-5	trans-1,2-Dichloroethene	5.0	U	
1634-04-4	Methyl tert-butyl ether	5.0	U	
75-34-3	1,1-Dichloroethane	5.0	U	
78-93-3	2-Butanone	5.0	~~U~~	UJ
156-59-2	cis-1,2-Dichloroethene	5.0	U	
67-66-3	Chloroform	5.0	U	
71-55-6	1,1,1-Trichloroethane	5.0	U	
56-23-5	Carbon tetrachloride	5.0	U	
107-06-2	1,2-Dichloroethane	5.0	U	
71-43-2	Benzene	5.0	U	
79-01-6	Trichloroethene	5.0	U	
78-87-5	1,2-Dichloropropane	5.0	U	
75-27-4	Bromodichloromethane	5.0	U	
10061-01-5	cis-1,3-Dichloropropene	5.0	U	
108-10-1	4-Methyl-2-pentanone	5.0	U	
108-88-3	Toluene	5.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
79-00-5	1,1,2-Trichloroethane	5.0	U	
127-18-4	Tetrachloroethene	5.0	U	
591-78-6	2-Hexanone	5.0	U	
124-48-1	Dibromochloromethane	5.0	U	
106-93-4	1,2-Dibromoethane	5.0	U	
108-90-7	Chlorobenzene	5.0	U	
100-41-4	Ethylbenzene	5.0	U	
1330-20-7	m,p-Xylene	5.0	U	

MW 12/12/11

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1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

TRIP BLANK

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: K1470 Mod. Ref No.: SDG No.: SK1470

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: K1470-08A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2M2335.D

Level: (TRACE/LOW/MED) LOW Date Received: 08/12/2011

% Moisture: not dec. Date Analyzed: 08/16/2011

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) µG/L	Q	
95-47-6	o-Xylene	5.0	U	
1330-20-7	Xylene (Total)	5.0	U	
100-42-5	Styrene	5.0	U	
75-25-2	Bromoform	5.0	U	
98-82-8	Isopropylbenzene	5.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U	
541-73-1	1,3-Dichlorobenzene	5.0	U	
106-46-7	1,4-Dichlorobenzene	5.0	U	
95-50-1	1,2-Dichlorobenzene	5.0	U	
96-12-8	1,2-Dibromo-3-chloropropane	5.0	~~U~~	UJ
120-82-1	1,2,4-Trichlorobenzene	5.0	U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	
110-82-7	Cyclohexane	5.0	U	
79-20-9	Methyl acetate	5.0	~~U~~	UJ
108-87-2	Methylcyclohexane	5.0	U	

ENVIRONMENTAL
Data Services, Inc.

DATA USABILITY SUMMARY REPORT
UTILITY MANUFACTURING, WESTBURY, NEW YORK

Client: AECOM Technical Services, Inc., Chestnut Ridge, New York
SDG: K1905
Laboratory: Spectrum Analytical, Inc., Warwick, Rhode Island
Site: Utility Manufacturing, Westbury, New York
Date: December 12, 2011

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	MW-11S	K1905-01	Water
2	MW-11D	K1905-02	Water
3	TRIP BLANK	K1905-03	Water

A Data Usability Summary Review was performed on the analytical data for two water samples and one aqueous trip blank sample collected on October 3, 2011 by AECOM at the Utility Manufacturing site in Westbury, New York. The samples were analyzed under Environmental Protection Agency (USEPA) *"Test Methods for the Evaluation of Solid Waste, USEPA SW-846, Third Edition, September 1986, with revisions"*.

Specific method references are as follows:

Analysis	*Method References*
VOCs	USEPA SW-846 Method 8260B

The data have been validated according to the protocols and quality control (QC) requirements of the analytical methods and the USEPA Region II Data Review Standard Operating Procedures (SOPs) as follows:

- SOP Number HW-24, Revision 2, August 2008: Validating Volatile Organic Compounds by SW-846 Method 8260B;
- and the reviewer's professional judgment.

Organics

The following items/criteria were reviewed for this report:

- Data Completeness
- Holding times and sample preservation
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Duplicate (LCS/LCSD) recoveries

- Method blank and field blank contamination
- Gas Chromatography (GC)/Mass Spectroscopy (MS) tuning
- Initial and continuing calibration summaries
- Compound Quantitation
- Internal standard area and retention time summary forms
- Field Duplicate sample precision

Overall Usability Issues:

There were several rejections of data. This data cannot be used in the decision-making process for this project.

- Acetone and 2-butanone were rejected in all samples due to low initial calibration RRF values.

Overall the remaining data is acceptable for the intended purposes as qualified for the following deficiencies.

- Chloroform, bromoform, and 1,2-dibromo-3-chloropropane were qualified as estimated in all samples due to high initial calibration %RSD values.
- Carbon disulfide and tetrachloroethene were qualified as estimated in all samples due to high initial calibration %RSD values.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contaminations and actions from other exceedences of QC criteria.

Data Completeness

- The data is a complete Category B data package as defined under the requirements for the NYS Department of Environmental Conservation Analytical Services Protocol.

Volatile Organic Compounds (VOCs)

Holding Times

- All samples were analyzed within 14 days for preserved water samples.

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate recoveries.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- A MS/MSD sample was not analyzed.

Laboratory Control Samples

- The LCS samples exhibited acceptable recoveries.

Method Blank

- The method blanks were free of contamination.

Field Blank

- The following table lists field QC samples with contamination and the samples associated with the blanks that had results qualified as a consequence of the blank contamination. Detected sample concentrations of acetone, 2-butanone and methylene chloride (common laboratory contaminants) less than ten times (10x) the highest associated blank (after taking sample dilution levels, percent moisture and sample volume into account) are negated and qualified with a (U). For all other compounds, an action level of five times (5x) the highest associated blank concentration is used.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
TRIP BLANK	None - ND	-	-	-	-

GC/MS Tuning

- All criteria were met.

Initial Calibration

- The following table presents compounds that exceeded 20 percent relative standard deviation (%RSD) and/or average RRF values <0.05 in the initial calibration (ICAL). A low RRF indicates poor indicates poor instrument sensitivity for these compounds. Positive results for these compounds in the affected samples are considered estimated and qualified (J). Non-detect results for these compounds in the affected samples are rejected (R) and are unusable for project objectives. A high %RSD may indicate a potential high or low bias. All results for these compounds in affected samples are considered estimated and qualified (J/UJ).

ICAL Date	Compound	%RSD/RRF	Qualifier	Affected Samples
10/06/11	Acetone	0.028 RRF	J/R	All samples
	2-Butanone	0.025 RRF	J/R	
	Chloroform	23.9%	J/UJ	
	Bromoform	27.4%	J/UJ	
	1,2-Dibromo-3-chloropropane	35.7%	J/UJ	

Continuing Calibration

- The following table presents compounds that exceeded 20 percent deviation (%D) and/or RRF values <0.05 in the continuing calibration (CCAL). A low RRF indicates poor instrument sensitivity for these compounds. Positive results for these compounds in the affected samples are considered estimated and qualified (J). Non-detect results for these compounds in the affected samples are rejected (R) and are unusable for project objectives. A high %D may indicate a potential high or low bias. All results for these compounds in affected samples are considered estimated and qualified (J/UJ).

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
10/06/11	Acetone	0.027 RRF	None	See ICAL
	2-Butanone	0.024 RRF	None	See ICAL
	Carbon disulfide	20.4%	J/UJ	All samples
	Chloroform	23.7%	None	See ICAL
	Tetrachloroethene	20.3%	J/UJ	All samples

Compound Quantitation

- All criteria were met.

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Field Duplicate Sample Precision

- Field duplicate samples were not analyzed.

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Very truly yours,
Environmental Data Services, Inc.

Nancy Weaver 12/13/11

Nancy Weaver Date
Senior Chemist

Data Qualifiers

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was not detected above the sample reporting limit; and the reporting limit is approximate.

U = The analyte was analyzed for, but was not detected above the sample reporting limit.

R = The sample results is rejected due to serious deficiencies. The presence or absence of the analyte cannot be verified.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-11S

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: K1905 Mod. Ref No.: SDG No.: SK1905

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: K1905-01B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V6I3182.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/04/2011

% Moisture: not dec. Date Analyzed: 10/06/2011

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	1.0	U	
74-87-3	Chloromethane	1.0	U	
75-01-4	Vinyl chloride	1.0	U	
74-83-9	Bromomethane	1.0	U	
75-00-3	Chloroethane	1.0	U	
75-69-4	Trichlorofluoromethane	1.0	U	
75-35-4	1,1-Dichloroethene	1.0	U	
67-64-1	Acetone	5.0	~~U~~	R
75-15-0	Carbon disulfide	1.0	~~U~~	UJ
75-09-2	Methylene chloride	1.0	U	
156-60-5	trans-1,2-Dichloroethene	1.0	U	
1634-04-4	Methyl tert-butyl ether	1.0	U	
75-34-3	1,1-Dichloroethane	1.0	U	
78-93-3	2-Butanone	5.0	~~U~~	R
156-59-2	cis-1,2-Dichloroethene	1.0	U	
67-66-3	Chloroform	1.0	~~U~~	UJ
71-55-6	1,1,1-Trichloroethane	0.78	J	
56-23-5	Carbon tetrachloride	1.0	U	
107-06-2	1,2-Dichloroethane	1.0	U	
71-43-2	Benzene	1.0	U	
79-01-6	Trichloroethene	0.71	J	
78-87-5	1,2-Dichloropropane	1.0	U	
75-27-4	Bromodichloromethane	1.0	U	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	
108-10-1	4-Methyl-2-pentanone	5.0	U	
108-88-3	Toluene	1.0	U	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	
79-00-5	1,1,2-Trichloroethane	1.0	U	
127-18-4	Tetrachloroethene	5.5		J
591-78-6	2-Hexanone	5.0	U	
124-48-1	Dibromochloromethane	1.0	U	
106-93-4	1,2-Dibromoethane	1.0	U	
108-90-7	Chlorobenzene	1.0	U	
100-41-4	Ethylbenzene	1.0	U	
1330-20-7	m,p-Xylene	1.0	U	

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-11S

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: K1905 Mod. Ref No.: SDG No.: SK1905

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: K1905-01B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V6I3182.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/04/2011

% Moisture: not dec. Date Analyzed: 10/06/2011

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
95-47-6	o-Xylene	1.0	U	
1330-20-7	Xylene (Total)	2.0	U	
100-42-5	Styrene	1.0	U	
75-25-2	Bromoform	1.0	~~U~~	UJ
98-82-8	Isopropylbenzene	1.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	
541-73-1	1,3-Dichlorobenzene	1.0	U	
106-46-7	1,4-Dichlorobenzene	1.0	U	
95-50-1	1,2-Dichlorobenzene	1.0	U	
96-12-8	1,2-Dibromo-3-chloropropane	1.0	~~U~~	UJ
120-82-1	1,2,4-Trichlorobenzene	1.0	U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	
110-82-7	Cyclohexane	1.0	U	
79-20-9	Methyl acetate	1.0	U	
108-87-2	Methylcyclohexane	1.0	U	

2

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-11D

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: K1905 Mod. Ref No.: SDG No.: SK1905

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: K1905-02B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V6I3183.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/04/2011

% Moisture: not dec. Date Analyzed: 10/06/2011

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	1.0	U	
74-87-3	Chloromethane	1.0	U	
75-01-4	Vinyl chloride	1.0	U	
74-83-9	Bromomethane	1.0	U	
75-00-3	Chloroethane	1.0	U	
75-69-4	Trichlorofluoromethane	1.0	U	
75-35-4	1,1-Dichloroethene	5.2		
67-64-1	Acetone	5.0	~~U~~	R
75-15-0	Carbon disulfide	1.0	~~U~~	UJ
75-09-2	Methylene chloride	1.0	U	
156-60-5	trans-1,2-Dichloroethene	1.0	U	
1634-04-4	Methyl tert-butyl ether	1.0	U	
75-34-3	1,1-Dichloroethane	3.0		
78-93-3	2-Butanone	5.0	~~U~~	R
156-59-2	cis-1,2-Dichloroethene	1.9		
67-66-3	Chloroform	1.0	~~U~~	UJ
71-55-6	1,1,1-Trichloroethane	2.1		
56-23-5	Carbon tetrachloride	1.0	U	
107-06-2	1,2-Dichloroethane	1.0	U	
71-43-2	Benzene	1.0	U	
79-01-6	Trichloroethene	5.3		
78-87-5	1,2-Dichloropropane	1.0	U	
75-27-4	Bromodichloromethane	1.0	U	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	
108-10-1	4-Methyl-2-pentanone	5.0	U	
108-88-3	Toluene	1.0	U	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	
79-00-5	1,1,2-Trichloroethane	1.0	U	
127-18-4	Tetrachloroethene	17		J
591-78-6	2-Hexanone	5.0	U	
124-48-1	Dibromochloromethane	1.0	U	
106-93-4	1,2-Dibromoethane	1.0	U	
108-90-7	Chlorobenzene	1.0	U	
100-41-4	Ethylbenzene	1.0	U	
1330-20-7	m,p-Xylene	1.0	U	

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1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
MW-11D

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: K1905 Mod. Ref No.: SDG No.: SK1905

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: K1905-02B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V6I3183.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/04/2011

% Moisture: not dec. Date Analyzed: 10/06/2011

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
95-47-6	o-Xylene	1.0	U	
1330-20-7	Xylene (Total)	2.0	U	
100-42-5	Styrene	1.0	U	
75-25-2	Bromoform	1.0	~~U~~	UJ
98-82-8	Isopropylbenzene	1.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	
541-73-1	1,3-Dichlorobenzene	1.0	U	
106-46-7	1,4-Dichlorobenzene	1.0	U	
95-50-1	1,2-Dichlorobenzene	1.0	U	
96-12-8	1,2-Dibromo-3-chloropropane	1.0	~~U~~	UJ
120-82-1	1,2,4-Trichlorobenzene	1.0	U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	
110-82-7	Cyclohexane	1.0	U	
79-20-9	Methyl acetate	1.0	U	
108-87-2	Methylcyclohexane	1.0	U	

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP BLANK

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: K1905 Mod. Ref No.: SDG No.: SK1905

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: K1905-03A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V6I3173.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/04/2011

% Moisture: not dec. Date Analyzed: 10/06/2011

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	1.0	U	
74-87-3	Chloromethane	1.0	U	
75-01-4	Vinyl chloride	1.0	U	
74-83-9	Bromomethane	1.0	U	
75-00-3	Chloroethane	1.0	U	
75-69-4	Trichlorofluoromethane	1.0	U	
75-35-4	1,1-Dichloroethene	1.0	U	
67-64-1	Acetone	5.0	~~U~~	R
75-15-0	Carbon disulfide	1.0	~~U~~	UJ
75-09-2	Methylene chloride	1.0	U	
156-60-5	trans-1,2-Dichloroethene	1.0	U	
1634-04-4	Methyl tert-butyl ether	1.0	U	
75-34-3	1,1-Dichloroethane	1.0	U	
78-93-3	2-Butanone	5.0	~~U~~	R
156-59-2	cis-1,2-Dichloroethene	1.0	U	
67-66-3	Chloroform	1.0	~~U~~	UJ
71-55-6	1,1,1-Trichloroethane	1.0	U	
56-23-5	Carbon tetrachloride	1.0	U	
107-06-2	1,2-Dichloroethane	1.0	U	
71-43-2	Benzene	1.0	U	
79-01-6	Trichloroethene	1.0	U	
78-87-5	1,2-Dichloropropane	1.0	U	
75-27-4	Bromodichloromethane	1.0	U	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	
108-10-1	4-Methyl-2-pentanone	5.0	U	
108-88-3	Toluene	1.0	U	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	
79-00-5	1,1,2-Trichloroethane	1.0	U	
127-18-4	Tetrachloroethene	1.0	~~U~~	UJ
591-78-6	2-Hexanone	5.0	U	
124-48-1	Dibromochloromethane	1.0	U	
106-93-4	1,2-Dibromoethane	1.0	U	
108-90-7	Chlorobenzene	1.0	U	
100-41-4	Ethylbenzene	1.0	U	
1330-20-7	m,p-Xylene	1.0	U	

3

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP BLANK

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: K1905 Mod. Ref No.: SDG No.: SK1905

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: K1905-03A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V6I3173.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/04/2011

% Moisture: not dec. Date Analyzed: 10/06/2011

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
95-47-6	o-Xylene	1.0	U	
1330-20-7	Xylene (Total)	2.0	U	
100-42-5	Styrene	1.0	U	
75-25-2	Bromoform	1.0	~~U~~	UJ
98-82-8	Isopropylbenzene	1.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	
541-73-1	1,3-Dichlorobenzene	1.0	U	
106-46-7	1,4-Dichlorobenzene	1.0	U	
95-50-1	1,2-Dichlorobenzene	1.0	U	
96-12-8	1,2-Dibromo-3-chloropropane	1.0	~~U~~	UJ
120-82-1	1,2,4-Trichlorobenzene	1.0	U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	
110-82-7	Cyclohexane	1.0	U	
79-20-9	Methyl acetate	1.0	U	
108-87-2	Methylcyclohexane	1.0	U	