

**VOLATILE VAPOR INTRUSION (VVI)
REPORT**

**BETHPAGE HIGH SCHOOL
10 CHERRY AVENUE
BETHPAGE, NEW YORK 11714**

**PREPARED FOR:
BETHPAGE UNION FREE SCHOOL DISTRICT
10 CHERRY AVENUE
BETHPAGE, NEW YORK 11714**

**JCB PROJECT #: 13-26273
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Section No. 1.0: Introduction

J.C. Broderick and Associates (JCB) was retained by the Bethpage Union Free School District (Bethpage) to perform Volatile Vapor Intrusion (VVI) sampling further investigate any possible impacts from the active spill site across Stewart Avenue. The sampling protocol was performed essentially in accordance with the requirements of the New York State Department of Health (NYSDOH) "Guidance for Evaluating Soil Vapor Intrusion in the State of New York", Final Version, October 2006.

Section No. 2.0: Site Description and Location

The Subject Site is located at 10 Cherry Avenue Bethpage, New York 11714. The Subject Site is located on the southeast corner of the intersection formed by Stewart and Cherry Avenues. According to the United States Geological Survey (USGS) *Huntington, New York, 1979 7.5 Minute Series Topographical Map*, the Subject Site is situated at an approximate elevation of 121 feet (ft) above mean sea level. The location of the Subject Site is shown on the Site Location Map, Appendix-A Figure-1.

Section No. 3.0: Volatile Vapor Intrusion (VVI) Evaluation

The design scope outlined in the Volatile Vapor Intrusion (VVI) Investigation Work Plan (IWP) was followed during the volatile vapor intrusion evaluations. The following sections describe the procedures taken.

Section No. 3.1: Pre-Work Field Preparations

Prior to mobilization, a pre-sampling inspection was performed to evaluate the physical layout and conditions of the school building, to specifically determine the location of each sample, identify conditions that may affect or interfere with the proposed sampling and to prepare the building for sampling.

- To document conditions during indoor air sampling and ultimately to aid in the interpretation of the sampling results, the following actions were taken:
 - The storage of volatile chemicals was identified.
 - A product inventory survey was completed, documenting possible sources of volatile chemicals present in the building during the indoor air sampling which could potentially influence the sample results. This inventory was completed utilizing the NYSDOH product inventory sheet provided in the NYSDOH "Guidance for Evaluating Soil Vapor Intrusion in the State of New York", Final Version, October 2006. Please refer to Appendix D - Indoor Air Quality Questionnaire and Building Survey for additional details.
 - The use of heating or air conditioning systems during sampling was noted.
 - Floor plan sketches were drawn which include: the floor layout with sampling locations, chemical storage areas, garages, doorways, stairways, locations of basement sumps or subsurface drains and utility perforations through building foundations, HVAC system supply and return registers, compass orientation (north) and footings that create separate foundation sections. Photographs were taken to accompany the floor plan sketches.

- Any pertinent observations, including readings from a Photo-Ionization Detector (PID) and other field instrumentation, were recorded.

Section No. 3.2: Subsurface Vapor Sample Collection

The following summarizes the manner in which subsurface vapor samples were collected. Please refer to Figure No. 2 - Subsurface, Crawlspace and Basement Sample Locations for additional details.

- For the collection of the subsurface vapor samples, a probe was fabricated from ½-inch diameter, threaded brass pipe with a barbed tubing connection. The two (2) layers of 6-mil polyethylene sheeting were penetrated and a one (1) inch diameter hole was drilled, utilizing a hammer drill, into the sand floor of the crawlspace extending approximately two (2) inches below the top of the sand. The pipe was lowered into the hole, but not flush to the bottom and set into place utilizing hydrated bentonite powder, which contains no Volatile Organic Compounds (VOCs). A five (5) gallon plastic container was placed on top of the plastic sheeting and above the vapor point. The container was sealed to the plastic sheeting utilizing modeling clay and duct tape. A Teflon-lined, ¼-inch I.D. disposable polyethylene tubing was then utilized to connect the barbed connection of the vapor point to a clean-certified, 1-liter SUMMA[®] canister, provided by Centek Laboratories, LLC (Centek) through a flow controller pre-set for an eight (8) hour long sample duration. The tubing included a tee connection and valve to a purging vacuum pump calibrated for a flow rate of less than 0.2 liters per minute. The tubing, probe and subsurface soil was purged of at least one (1) liter of vapor prior to sample collection. Upon completion of the sampling, the polyethylene sheeting was replaced on the floor and secured in place with duct tape.
- Helium (He) was introduced into the atmosphere under the pail, as a tracer gas, to assure the viability of the vapor point seals with the atmosphere. The tracer gas was monitored in the purge air before sampling and outside of all seals before, during and after sampling, utilizing a Myron Helium Detector. In addition, Helium (He) was analyzed for in the SUMMA[®] canister and if detected at more than ten (10) percent, the sample would be considered invalid and retaken.
- A total of two (2) subsurface vapor samples were collected.
 - One (1) subsurface sample was collected from beneath the north end of the west crawlspace under the west side school entrance.
 - One (1) subsurface sample was collected from beneath the south end of the west crawlspace under the southwest cafeteria "A".

Section No. 3.3: Indoor Air Sample Collection

The following summarizes the manner in which indoor air samples were collected:

- Sample flow rates conformed to the specifications in the sample collection method (less than 0.2 liters per minute) and were consistent with the hours of operation of the school building. Samples were taken from areas where personnel and occupants would not interfere with the sampling. The samples were collected, utilizing conventional sampling methods, in laboratory clean-certified, 1-liter SUMMA[®] canisters, provided by Centek Laboratories, LLC (Centek) equipped with a flow controller pre-set for an eight (8) hour long sample duration. As per the guidance requirements, the samples were collected at a height approximately three (3) feet above the floor to represent a height at which occupants are normally seated.

Section No. 3.3.1: Crawlspace/Basement Air Sample Collection

Please refer to Figure No. 2 - Subsurface, Crawlspace and Basement Sample Locations for additional details.

- A total of two (2) crawlspace and one (1) basement air samples were collected.
 - One (1) air sample was collected from the north end of the west crawlspace under the west side school entrance.
 - One (1) air sample was collected from the south end of the west crawlspace under the south west cafeteria.
 - One (1) air sample was collected from the intersection of the two (2) hallways in the basement of the administration building.

Section No. 3.3.2: 1st Floor Air Sample Collection

Please refer to Figure No. 3 - 1st Floor and Ambient Sample Locations for additional details.

- One (1) first floor air sample was collected.
 - One (1) air sample was collected from within Cafeteria-A located in the southwest corner of the high school building.

Section No. 3.4: Outdoor (Ambient) Air Sample Collection

An outdoor (ambient) air sample was collected simultaneously with subsurface and indoor samples to evaluate the potential influence, if any, of outdoor air on indoor air quality. To obtain a representative sample which meets the data quality objectives, the outdoor air sample was collected in a manner consistent with that for indoor air samples. The sample was collected, utilizing conventional sampling methods, in a laboratory clean-certified, 1-liter SUMMA[®] canister, provided by Centek Laboratories, LLC (Centek) equipped with a flow controller pre-set for an eight (8) hour sample duration. As per the guidance requirements, the sample was collected at a height approximately three (3) feet above the floor. Please refer to Figure No. 3 - 1st Floor and Ambient Sample Locations for additional details.

- One (1) outdoor (ambient) air sample was collected.
 - One (1) air sample was collected from outside the west side of the high school building adjacent to Classroom Number 117.

Section No. 4.0: Laboratory Analytical Summary

The air samples were collected into laboratory supplied, clean-certified, 1-liter SUMMA[®] canisters, and assigned individual identification numbers. Chain of custody documents were prepared and the samples were then delivered to an independent New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory for analysis.

Centek Laboratories, LLC (Centek) provided laboratory analytical services. Copies of Centek's NYSDOH certifications are available upon request.

Air samples submitted for laboratory analysis were analyzed for Volatile Organic Compounds (VOCs) utilizing the Environmental Protection Agency Toxic Organics 15 (EPA TO-15) list.

The laboratory analysis results for the air samples collected were reviewed and compared to the 90th percentile as listed in Table C1 NYSDOH 2003 Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes of the NYSDOH's "Final NYSDOH CEH BEEI Soil Vapor Intrusion Guidance" dated October 2006.

The following table summarizes the Air Sampling Analytical Results of Detected Compounds.

Table No. 1: Volatile Vapor Intrusion Analytical Results of Detected Compounds via EPA Method TO-15								
Client Sample ID	Background Values	North Subsurface¹ 2013	South Subsurface¹ 2013	North Crawlspace 2013	South Crawlspace 2013	1st Floor Cafeteria "A" 2013	Admin Basement 2013	Ambient 2013
TO-15 List	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
1,1,1-Trichloroethane (TCA)	3.1	ND	ND	ND	ND	ND	2.7	ND
1,2,4-Trichlorobenzene	3.4	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	9.5	1,600	3,700	2.1	3.2	3.5	4.3	5.4
1,3,5-Trimethylbenzene	3.6	260	140	0.75	1.6	2.6	2.4	2.2
1,4-Dichlorobenzene	1.3	ND	ND	ND	ND	0.79	1.1	2.6
2,2,4-Trimethylpentane	NA	920	1,200	0.66	2.0	0.66	0.71	0.62
4-Ethyltoluene	NA	370	220	ND	ND	0.80	0.80	0.80
4-Isopropyltoluene	NA	4,000	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone (MIBK)	NA	ND	ND	ND	ND	ND	ND	ND
Acetone	110	ND	9,600	37	35	29	53	29
Benzene	15	1,200	2,100	0.58	1.2	0.52	0.65	0.49
Carbon Disulfide	ND	17	11	0.38	0.47	0.41	0.54	0.95
Carbon Tetrachloride	0.8	ND	ND	0.70	0.70	0.64	0.64	0.70
Chloroform	1.4	ND	ND	0.60	0.60	ND	0.89	ND
Chloromethane	3.3	2.7	ND	1.8	1.8	1.6	2.2	1.6
Cyclohexane	8.1	960	1,400	ND	ND	0.77	1.9	ND
Trichlorofluoromethane (Freon 11)	17	21	20	22	24	22	23	28
Trichlorotrifluoroethane (Freon 113)	NA	ND	ND	1.0	1.0	0.93	1.0	1.0

Table No. 1:
Volatile Vapor Intrusion Analytical Results of Detected Compounds via EPA Method TO-15

Client Sample ID	Background Values	North Subsurface ¹ 2013	South Subsurface ¹ 2013	North Crawlspace 2013	South Crawlspace 2013	1 st Floor Cafeteria "A" 2013	Admin Basement 2013	Ambient 2013
TO-15 List	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³
Dichlorodifluoromethane (Freon 12)	15	4.6	4.6	7.1	7.2	6.9	6.9	9.7
Ethanol	1,400	ND	ND	ND	ND	ND	ND	ND
Ethyl Acetate	NA	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	7.3	930	2,600	0.71	ND	0.66	1.7	0.75
Heptane	19	1,100	1,900	ND	ND	ND	ND	ND
Hexane	18	2,000	4,600	1.4	1.7	ND	11	ND
Isopropyl Alcohol	NA	50	55	3.4	8.7	14	15	3.0
Isopropylbenzene	0.9	ND	ND	ND	ND	ND	ND	ND
m&p-Xylenes	12	2,900	9,300	2.0	2.9	2.0	2.4	2.0
Methyl Ethyl Ketone	16	ND	ND	ND	3.1	2.3	3.2	2.7
Methylene Chloride	22	2.4	ND	0.81	0.85	ND	2.8	1.2
n-Butylbenzene	1.2	ND	ND	ND	ND	ND	ND	ND
o-Xylene	7.6	1,100	2,100	0.62	0.93	0.71	0.97	0.66
Styrene	1.3	ND	ND	ND	ND	ND	1.8	0.61
Tetrachloroethene (PCE)	2.9	6.0	2.5	0.76	0.76	0.83	0.76	13
Tetrahydrofuran	3.3	ND	ND	ND	ND	ND	ND	ND
Toluene	58	6,900	22,000	3.8	4.7	3.9	7.4	4.7
Trichloroethene (TCE)	0.5	ND	ND	0.38	1.5	0.60	0.55	ND

Notes: µg/m³ = parts per billion NA = Background Value Not Established

ND=Not Detected above the laboratory minimum detection limit

Background Values = NYSDOH 2003 Study of Volatile Organic Compounds in Air or Fuel Oil Heated Homes 90th Percentile

¹ The State of New York does not have any standards, criteria, or guidance values for concentrations of volatile chemicals in subsurface vapors

BOLD Indicates Result Above Background Value

Compounds in Gray are used in Decision Matrices 1 & 2. - See Section 5.0 and Table No. 2 for additional information.

Section No. 5.0: Decision Matrices

Decision matrices are risk management tools developed by the NYSDOH to provide guidance on a cases-by-case basis about actions that should be taken to address current and potential exposures related to soil vapor intrusion. The matrices are intended to be used when evaluating the results from buildings with full slab foundations. Due to the presence of polyethylene sheeting covering the crawlspace sand, the structure was deemed to contain a full slab for the purpose of this investigation.

The NYSDOH has currently developed two (2) matrices to use as tools in making decisions when soil vapor may be entering buildings. JCB implemented the matrices and the following table summarizes the results:

Table No. 2: Volatile Chemicals Utilized in NYSDOH Decision Matrices		
Compound	Soil Vapor/Indoor Air Decision Matrix	Result
1,1,1-Trichloroethane (TCA)	Matrix 2	No Further Action
Carbon Tetrachloride	Matrix 1	Take Reasonable Action
Tetrachloroethene (PCE)	Matrix 2	No Further Action
Trichloroethene (TCE)	Matrix 1	Take Reasonable Action
Notes: Only four (4) chemicals have been assigned to decision matrices by the NYSDOH to date.		

The results of the matrices indicate that “No Further Action” is required for 1,1,1-Trichloroethane and Tetrachloroethene. However, the results of the matrices also recommend to “Take reasonable and practical actions to identify sources and reduce exposures” for Carbon Tetrachloride and Trichloroethene.

The concentrations detected in the indoor air samples are likely due to the daily operations within the building or outdoor sources rather than soil vapor intrusion given the concentrations detected in the subsurface vapor sample.

Section No. 6.0: Quality Assurance and Quality Control (QA/QC) Procedures

- In order to prevent cross-contamination between sampling locations, all re-usable sampling equipment which came into contact with sample materials was decontaminated prior to each use. Equipment used for sample collection was wiped clean, washed in a solution of Alconox and thoroughly rinsed with potable water. New and dedicated polyethylene tubing was used for collection of each subsurface sample. All sampling personnel wore disposable latex, nylon, or nitrile gloves during sampling events. At a minimum, gloves were changed between locations and before each laboratory sample was collected.
- The field sampling team maintained sampling log sheets summarizing the following:
 - Sample identification;
 - Canister ID Number;
 - Regulator ID Number;
 - Date and time of sample collection;
 - Sampling height;
 - Sampling methods and devices;
 - The volume of air sampled;
 - The vacuum of canisters before and after sample collection;
 - Chain of custody protocols and records used to track samples from sampling point to analysis.
- Subsequent to sample collection, the Summa[®] canister was labeled with the sampling location, time, and samplers initials.

Section No. 7.0: Findings

Based upon the review of the VVI laboratory analysis results all detectable concentrations observed were reported well below published occupational health guidelines. In addition, with the exception of Freon 11, TCE and Styrene, all detectable concentrations observed in the occupied spaces of the school building were below their background values as reported in the NYSDOH 2003 Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes 90th Percentile.

- The concentration of Freon 11 in the ambient sample collected from outside the building was higher than the results collected from inside the building or within the soil gas. This suggests that the concentration of Freon 11 within the building is not attributable to VVI.
- The detection of TCE within the building and no detection in the soil gas or ambient samples suggest that the reported concentration is most likely associated with the building's operation and not attributable to VVI.
- An investigation revealed that the presence of styrene at its reported concentration is most likely associated with the building's operation and not attributable to VVI.

Based upon these findings, no hazardous condition or immediate health concern was identified associated with VVI.

Section No. 7.1: Previous Analytical Results Trend Analysis

On July 25, 2012, JCB performed the same volatile vapor intrusion sampling. The analytical results collected last year was compared to this year's results and the following observations were made:

Table No. 3: Comparison of Current Analytical Results to Previous Years			
Location	Number of Additional Compounds Detected	Number of Compounds with Increased Concentrations	Number of Compounds with Decreased Concentrations
North Subsurface	5	13	9
South Subsurface	4	13	14
North Crawlspace	12	6	5
South Crawlspace	9	9	5
1 st Floor Cafeteria "A"	13	10	4
Admin Basement	11	7	7
Ambient	13	10	8

It should be noted that the high number of additional compounds detected in the ambient sample collected from outside of the building is consistent with those identified in the Admin Basement, 1st Floor Cafeteria and the Crawl Spaces suggesting that the increase in the number of compounds detected in these samples are not attributable to VVI.

Section No. 8.0: Conclusions

A careful evaluation of the indoor air sampling results compared to the ambient results did reveal the presence of a discernible pattern suggesting that the building is being impacted with VVI. Coincidentally, it appears that the plastic barrier installed in the crawlspace of the building, although not its intended purpose has been relatively effectively in preventing the subsurface volatile vapors from migrating into the crawlspace and occupied portions of the school building.

Section No. 9.0: Recommendations

It is recommended that periodic VVI sampling be performed to monitor site conditions.

It is also recommended that an investigation be performed to identify any possible sources of styrene, 1,1,1-Trichlorethane, and Carbon Tetrachloride associated with building operations. Steps should taken to reduce the presence of these parameters such as, keeping containers tightly capped or storing VOC containing products in ventilated areas.

Section No. 10.0: Certification

I certify that this Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the New York State Department of Health (NYSDOH) "Guidance for Evaluating Soil Vapor Intrusion in the State of New York", Final Version, October 2006 and that all activities were performed in full accordance with the work plan.

Sincerely,
J.C. Broderick & Associates, Inc.

Jeffrey V. Nannini
Environmental Scientist

Steven Muller, CEC
Project Manager

Additional Tables

Table No. 4: Volatile Vapor Intrusion Analytical Results of Detected Compounds via EPA Method TO-15					
Client Sample ID	Background Values	North Subsurface ¹ 2012	North Subsurface ¹ 2013	South Subsurface ¹ 2012	South Subsurface ¹ 2013
TO-15 List	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³
1,1,1-Trichloroethane (TCA)	3.1	ND	ND	ND	ND
1,2,4-Trichlorobenzene	3.4	658	ND	717	ND
1,2,4-Trimethylbenzene	9.5	ND	1,600	ND	3,700
1,3,5-Trimethylbenzene	3.6	ND	260	ND	140
1,4-Dichlorobenzene	1.3	ND	ND	ND	ND
2,2,4-Trimethylpentane	NA	ND	920	ND	1,200
4-Ethyltoluene	NA	152	370	184	220
4-Isopropyltoluene	NA	15.2	4,000	16.3	ND
4-Methyl-2-pentanone (MIBK)	NA	9.21	ND	8.76	ND
Acetone	110	444	ND	536	9,600
Benzene	15	237	1,200	213	2,100
Carbon Disulfide	ND	ND	17	ND	11
Carbon Tetrachloride	0.8	0.503	ND	0.503	ND
Chloroform	1.4	ND	ND	1.66	ND
Chloromethane	3.3	ND	2.7	ND	ND
Cyclohexane	8.1	44.4	960	40.6	1,400
Trichlorofluoromethane (Freon 11)	17	13.2	21	11.6	20
Trichlorotrifluoroethane (Freon 113)	NA	ND	ND	ND	ND
Dichlorodifluoromethane (Freon 12)	15	2.92	4.6	2.87	4.6
Ethanol	1,400	612	ND	540	ND
Ethyl Acetate	NA	12.3	ND	8.46	ND
Ethylbenzene	7.3	755	930	824	2,600
Heptane	19	205	1,100	149	1,900
Hexane	18	164	2,000	139	4,600
Isopropyl Alcohol	NA	8.62	50	10.4	55
Isopropylbenzene	0.9	37.9	ND	45.6	ND
m&p-Xylenes	12	2,690	2,900	3,000	9,300
Methyl Ethyl Ketone	16	155	ND	113	ND
Methylene Chloride	22	3.12	2.4	2.71	ND
n-Butylbenzene	1.2	56.5	ND	55.4	ND
o-Xylene	7.6	772	1,100	890	2,100
Styrene	1.3	27.5	ND	31.4	ND
Tetrachloroethene (PCE)	2.9	8.81	6.0	2.91	2.5
Tetrahydrofuran	3.3	64.8	ND	60.1	ND
Toluene	58	5,120	6,900	5,350	22,000
Trichloroethene (TCE)	0.5	ND	ND	0.322	ND
Notes: µg/m ³ = parts per billion NA = Background Value Not Established ND=Not Detected above the laboratory minimum detection limit Background Values = NYSDOH 2003 Study of Volatile Organic Compounds in Air or Fuel Oil Heated Homes 90 th Percentile ¹ The State of New York does not have any standards, criteria, or guidance values for concentrations of volatile chemicals in subsurface vapors BOLD Indicates Result Above Background Value					

Table No. 5: Volatile Vapor Intrusion Analytical Results of Detected Compounds via EPA Method TO-15					
Client Sample ID	Background Values	North Crawlspace 2012	North Crawlspace 2013	South Crawlspace 2012	South Crawlspace 2013
TO-15 List	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³
1,1,1-Trichloroethane (TCA)	3.1	ND	ND	ND	ND
1,2,4-Trichlorobenzene	3.4	1.23	ND	1.72	ND
1,2,4-Trimethylbenzene	9.5	ND	2.1	ND	3.2
1,3,5-Trimethylbenzene	3.6	ND	0.75	ND	1.6
1,4-Dichlorobenzene	1.3	ND	ND	ND	ND
2,2,4-Trimethylpentane	NA	ND	0.66	ND	2.0
4-Ethyltoluene	NA	ND	ND	ND	ND
4-Isopropyltoluene	NA	ND	ND	ND	ND
4-Methyl-2-pentanone (MIBK)	NA	ND	ND	ND	ND
Acetone	110	10.1	37	15.3	35
Benzene	15	ND	0.58	ND	1.2
Carbon Disulfide	ND	ND	0.38	ND	0.47
Carbon Tetrachloride	0.8	0.440	0.70	0.440	0.70
Chloroform	1.4	ND	0.60	ND	0.60
Chloromethane	3.3	1.24	1.8	1.01	1.8
Cyclohexane	8.1	ND	ND	ND	ND
Trichlorofluoromethane (Freon 11)	17	1.85	22	1.85	24
Trichlorotrifluoroethane (Freon 113)	NA	ND	1.0	ND	1.0
Dichlorodifluoromethane (Freon 12)	15	1.63	7.1	2.32	7.2
Ethanol	1,400	15.3	ND	13.4	ND
Ethyl Acetate	NA	ND	ND	ND	ND
Ethylbenzene	7.3	ND	0.71	ND	ND
Heptane	19	ND	ND	ND	ND
Hexane	18	2.18	1.4	1.97	1.7
Isopropyl Alcohol	NA	3.56	3.4	4.05	8.7
Isopropylbenzene	0.9	ND	ND	ND	ND
m&p-Xylenes	12	2.04	2.0	2.56	2.9
Methyl Ethyl Ketone	16	1.47	ND	1.47	3.1
Methylene Chloride	22	ND	0.81	1.28	0.85
n-Butylbenzene	1.2	ND	ND	ND	ND
o-Xylene	7.6	ND	0.62	1.26	0.93
Styrene	1.3	ND	ND	ND	ND
Tetrachloroethene (PCE)	2.9	ND	0.76	ND	0.76
Tetrahydrofuran	3.3	ND	ND	ND	ND
Toluene	58	2.67	3.8	2.82	4.7
Trichloroethene (TCE)	0.5	ND	0.38	ND	1.5
Notes: µg/m ³ = parts per billion NA = Background Value Not Established ND=Not Detected above the laboratory minimum detection limit Background Values = NYSDOH 2003 Study of Volatile Organic Compounds in Air or Fuel Oil Heated Homes 90 th Percentile ¹ The State of New York does not have any standards, criteria, or guidance values for concentrations of volatile chemicals in subsurface vapors BOLD Indicates Result Above Background Value Compounds in Gray are used in Decision Matrices 1 & 2. - See Table No. 4 for additional information.					

Table No. 6:
Volatile Vapor Intrusion Analytical Results of Detected Compounds via EPA Method TO-15

Client Sample ID	Background Values	1 st Floor Cafeteria 2012	1 st Floor Cafeteria 2013	Admin Basement 2012	Admin Basement 2013	Ambient 2012	Ambient 2013
TO-15 List	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³
1,1,1-Trichloroethane (TCA)	3.1	ND	ND	3.0	2.7	ND	ND
1,2,4-Trichlorobenzene	3.4	1.42	ND	1.13	ND	ND	ND
1,2,4-Trimethylbenzene	9.5	ND	3.5	ND	4.3	ND	5.4
1,3,5-Trimethylbenzene	3.6	ND	2.6	ND	2.4	ND	2.2
1,4-Dichlorobenzene	1.3	ND	0.79	ND	1.1	ND	2.6
2,2,4-Trimethylpentane	NA	ND	0.66	ND	0.71	ND	0.62
4-Ethyltoluene	NA	ND	0.80	ND	0.80	ND	0.80
4-Isopropyltoluene	NA	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone (MIBK)	NA	ND	ND	ND	ND	ND	ND
Acetone	110	10.6	29	52.7	53	13.0	29
Benzene	15	ND	0.52	ND	0.65	ND	0.49
Carbon Disulfide	ND	ND	0.41	ND	0.54	ND	0.95
Carbon Tetrachloride	0.8	0.440	0.64	0.503	0.64	0.566	0.70
Chloroform	1.4	ND	ND	ND	0.89	ND	ND
Chloromethane	3.3	1.24	1.6	1.86	2.2	1.34	1.6
Cyclohexane	8.1	ND	0.77	ND	1.9	ND	ND
Trichlorofluoromethane (Freon 11)	17	1.91	22	3.20	23	2.47	28
Trichlorotrifluoroethane (Freon 113)	NA	ND	0.93	ND	1.0	ND	1.0
Dichlorodifluoromethane (Freon 12)	15	2.62	6.9	3.06	6.9	2.67	9.7
Ethanol	1,400	17.7	ND	136	ND	11.2	ND
Ethyl Acetate	NA	ND	ND	2.88	ND	ND	ND
Ethylbenzene	7.3	ND	0.66	1.04	1.7	ND	0.75
Heptane	19	ND	ND	4.63	ND	ND	ND
Hexane	18	2.46	ND	16.8	11	1.62	ND
Isopropyl Alcohol	NA	5.23	14	18.6	15	8.97	3.0
Isopropylbenzene	0.9	ND	ND	2.31	ND	ND	ND
m&p-Xylenes	12	1.39	2.0	3.56	2.4	ND	2.0
Methyl Ethyl Ketone	16	1.44	2.3	4.30	3.2	1.27	2.7
Methylene Chloride	22	1.98	ND	4.69	2.8	ND	1.2
n-Butylbenzene	1.2	ND	ND	ND	ND	ND	ND
o-Xylene	7.6	ND	0.71	2.26	0.97	ND	0.66
Styrene	1.3	ND	ND	1.66	1.8	ND	0.61
Tetrachloroethene (PCE)	2.9	0.542	0.83	0.339	0.76	0.339	13
Tetrahydrofuran	3.3	ND	ND	ND	ND	ND	ND
Toluene	58	2.26	3.9	8.81	7.4	1.62	4.7
Trichloroethene (TCE)	0.5	ND	0.60	ND	0.55	ND	ND

Notes: µg/m³ = parts per billion NA = Background Value Not Established

ND=Not Detected above the laboratory minimum detection limit

Background Values = NYSDOH 2003 Study of Volatile Organic Compounds in Air or Fuel Oil Heated Homes 90th Percentile

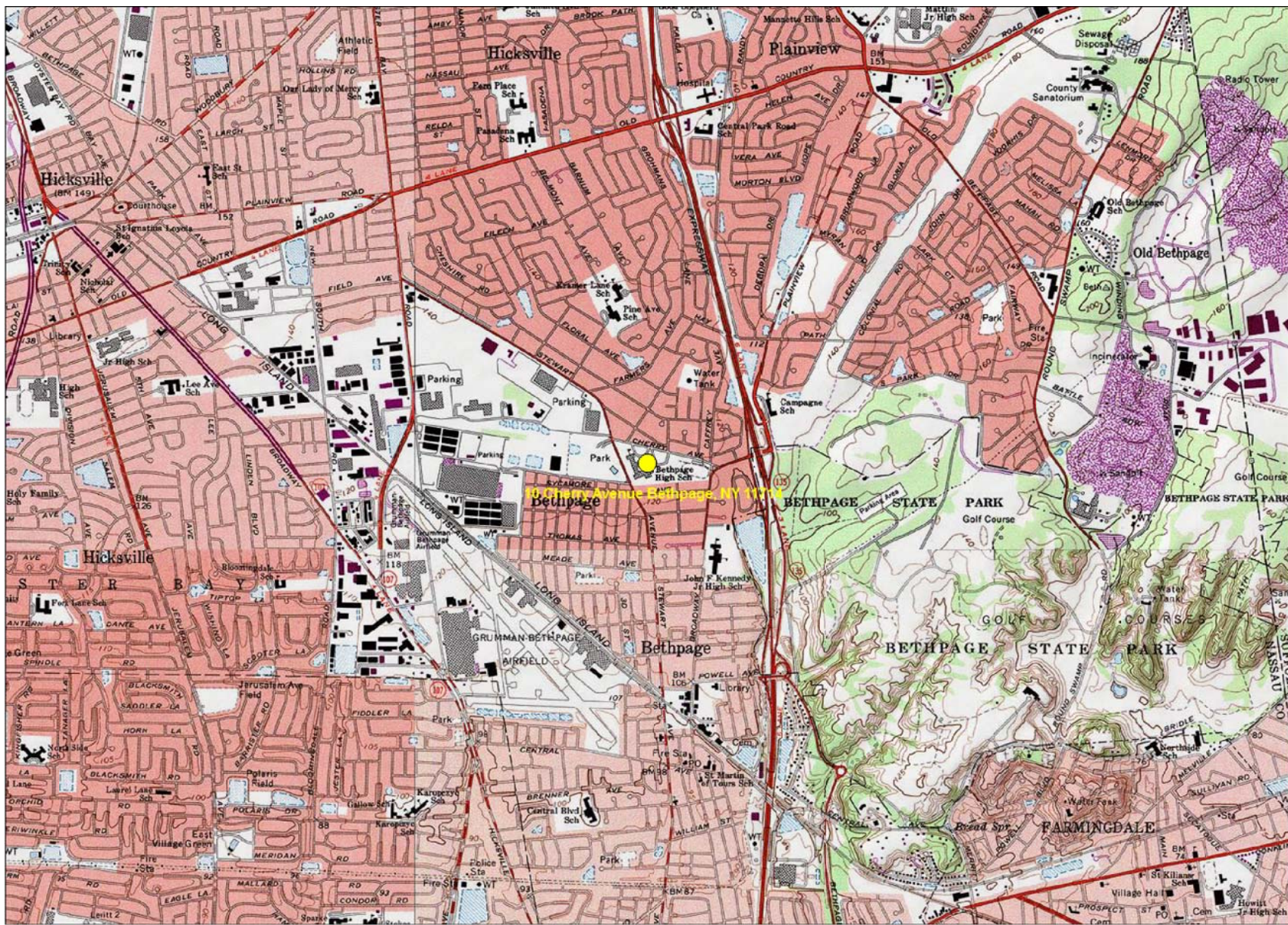
¹ The State of New York does not have any standards, criteria, or guidance values for concentrations of volatile chemicals in subsurface vapors

BOLD Indicates Result Above Background Value

Compounds in Gray are used in Decision Matrices 1 & 2. - See Table No. 4 for additional information.

Appendix A

Figures



MN 14°

Map created with TOPO!® ©2003 National Geographic (www.nationalgeographic.com/topo)

JCB LEGEND
 ● SUBJECT SITE



J.C. BRODERICK

& Associates

Environmental Consulting and
Testing

1775 Express Drive North

Hauppauge, NY 11788

Phone: (631).584.5492

Fax: (631).584.3395

Notes:

Bethpage High School

10 Cherry Avenue

Bethpage, NY 11714

Drawing Title

Figure No. 1

Site Location Map

Scale	Project No.	Date
As Noted	13-26273	07-09-13

Drawn By	Checked By	Page No.
J.V.N.	S.W.M.	1 of 3

Drawing No.

1



J.C. BRODERICK

& Associates

Environmental Consulting and
Testing

1775 Express Drive North
Hauppauge, New York 11788

Phone: (631).584.5492

Fax: (631).584.3395

Notes:

Bethpage High School
10 Cherry Avenue
Bethpage, NY 11714

Drawing Title

Figure No. 2

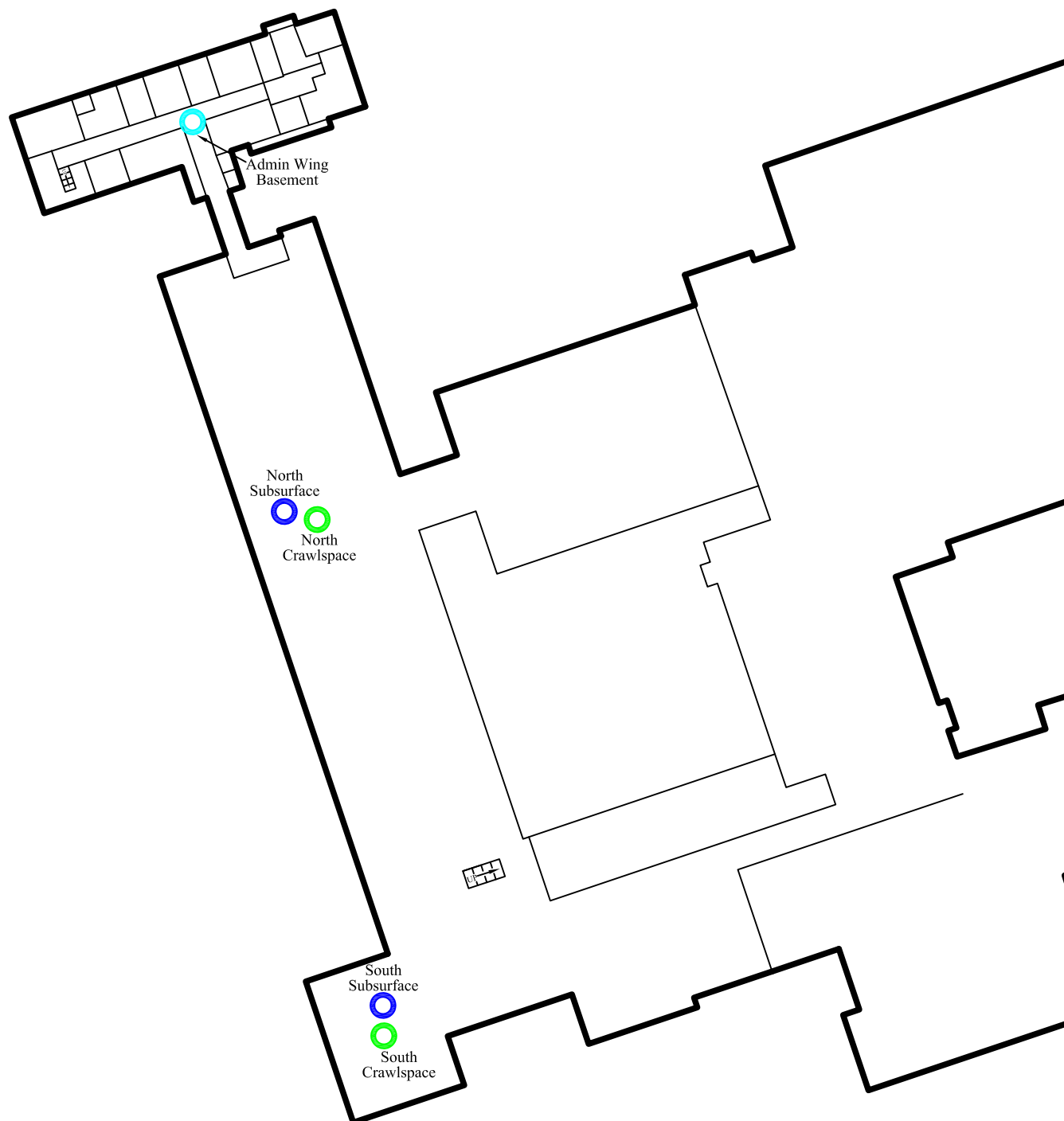
Subsurface,
Crawlspace
and
Basement
Sampling
Locations

Scale	Project No.	Date
N.T.S.	13-26273	07-09-13

Drawn By	Checked By	Page No.
J.V.N.	S.W.M.	2 of 3

Drawing No.

2



PROJECT



JCB LEGEND

- SUBSURFACE SAMPLING LOCATION
- CRAWLSPACE SAMPLING LOCATION
- BASEMENT SAMPLING LOCATION



J.C. BRODERICK

& Associates

Environmental Consulting and
Testing

1775 Express Drive North
Hauppauge, New York 11788

Phone: (631).584.5492

Fax: (631).584.3395

Notes:

Bethpage High School
10 Cherry Avenue
Bethpage, NY 11714

Drawing Title

Figure No. 3

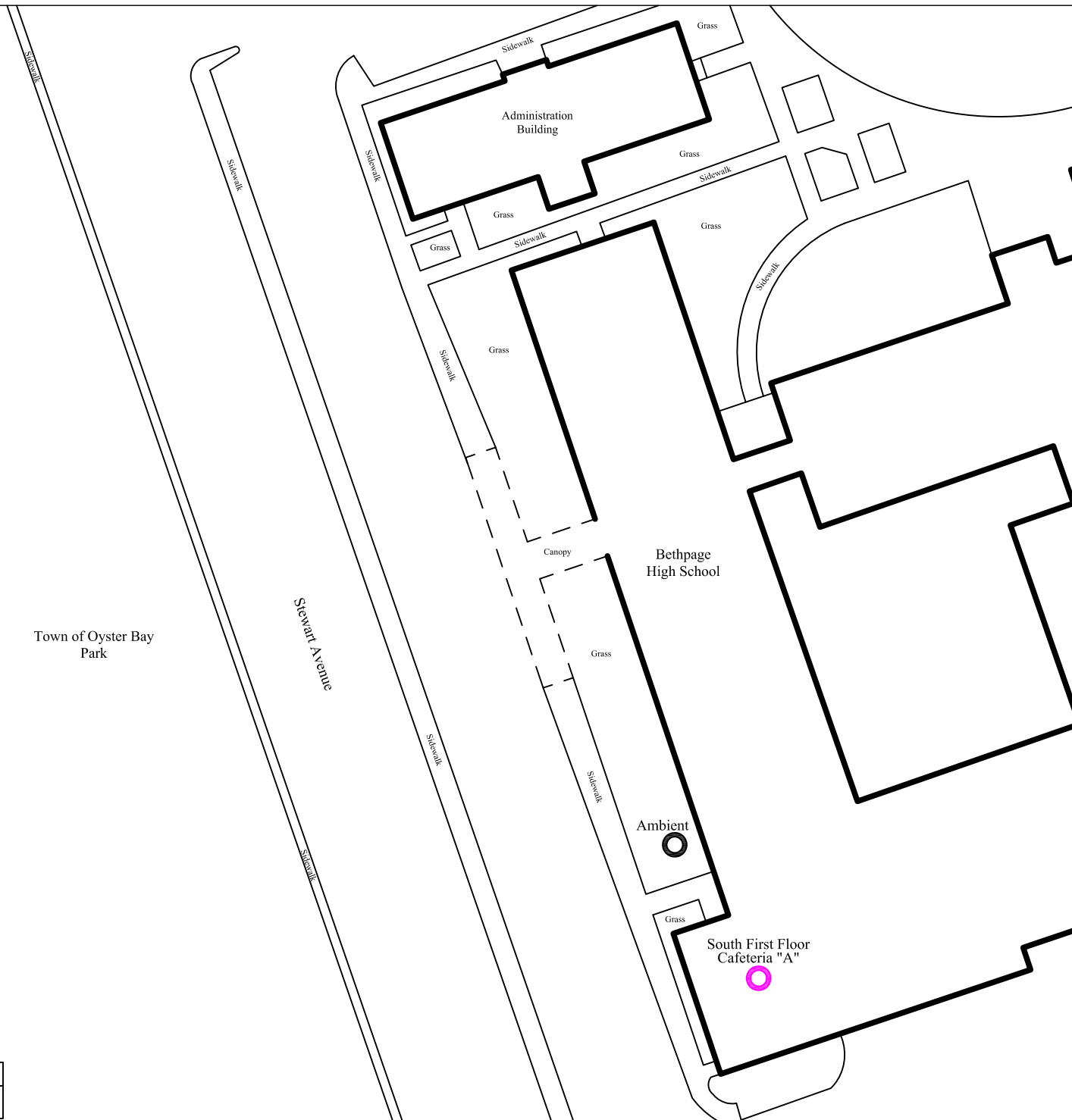
**1st Floor
and
Ambient
Sampling
Locations**

Scale	Project No.	Date
N.T.S.	13-26273	07-09-13

Drawn By	Checked By	Page No.
J.V.N.	S.W.M.	3 of 3

Drawing No.

3



JCB LEGEND

- AMBIENT SAMPLING LOCATION
- 1ST FLOOR SAMPLING LOCATION

Appendix B

Field Photograph Logs

North Subsurface Sampling Location



Field Photograph Log

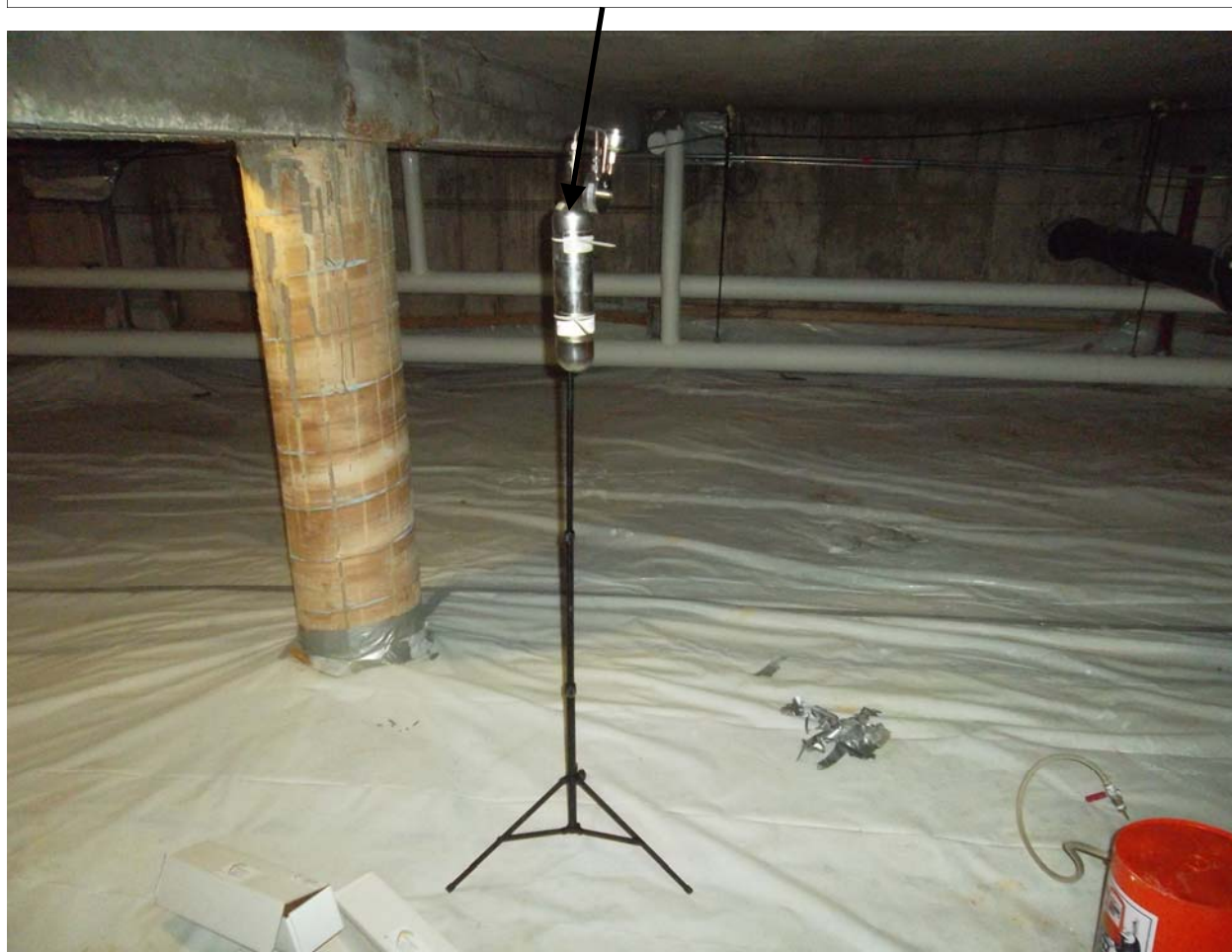
Volatile Vapor Intrusion Report

Bethpage High School
10 Cherry Avenue
Bethpage, New York 11714

Photo No. 01

JCB#: 13-26273

North Crawlspace Sampling Location



Field Photograph Log

Volatile Vapor Intrusion Report

Bethpage High School
10 Cherry Avenue
Bethpage, New York 11714

Photo No. 02

JCB#: 13-26273

South Subsurface Sampling Location



Field Photograph Log

Volatile Vapor Intrusion Report

**Bethpage High School
10 Cherry Avenue
Bethpage, New York 11714**

Photo No. 03

JCB#: 13-26273

South Crawlspace Sampling Location



Field Photograph Log

Volatile Vapor Intrusion Report

**Bethpage High School
10 Cherry Avenue
Bethpage, New York 11714**

Photo No. 04

JCB#: 13-26273

South First Floor Cafeteria "A" Sampling Location



Field Photograph Log

Volatile Vapor Intrusion Report

Bethpage High School
10 Cherry Avenue
Bethpage, New York 11714

Photo No. 05

JCB#: 13-26273

Administration Wing Basement Sampling Location



Field Photograph Log

Volatile Vapor Intrusion Report

Bethpage High School
10 Cherry Avenue
Bethpage, New York 11714

Photo No. 06

JCB#: 13-26273

Ambient Sampling Location



Field Photograph Log

Volatile Vapor Intrusion Report

Bethpage High School
10 Cherry Avenue
Bethpage, New York 11714

Photo No. 07

JCB#: 13-26273

Typical Subsurface Sampling Equipment and Setup



Field Photograph Log

Volatile Vapor Intrusion Report

Bethpage High School
10 Cherry Avenue
Bethpage, New York 11714

Photo No. 08

JCB#: 13-26273

Typical Summa® Canister Starting Pressure



Field Photograph Log

Volatile Vapor Intrusion Report

Bethpage High School
10 Cherry Avenue
Bethpage, New York 11714

Photo No. 09

JCB#: 13-26273

Typical Summa® Canister Ending Pressure



Field Photograph Log

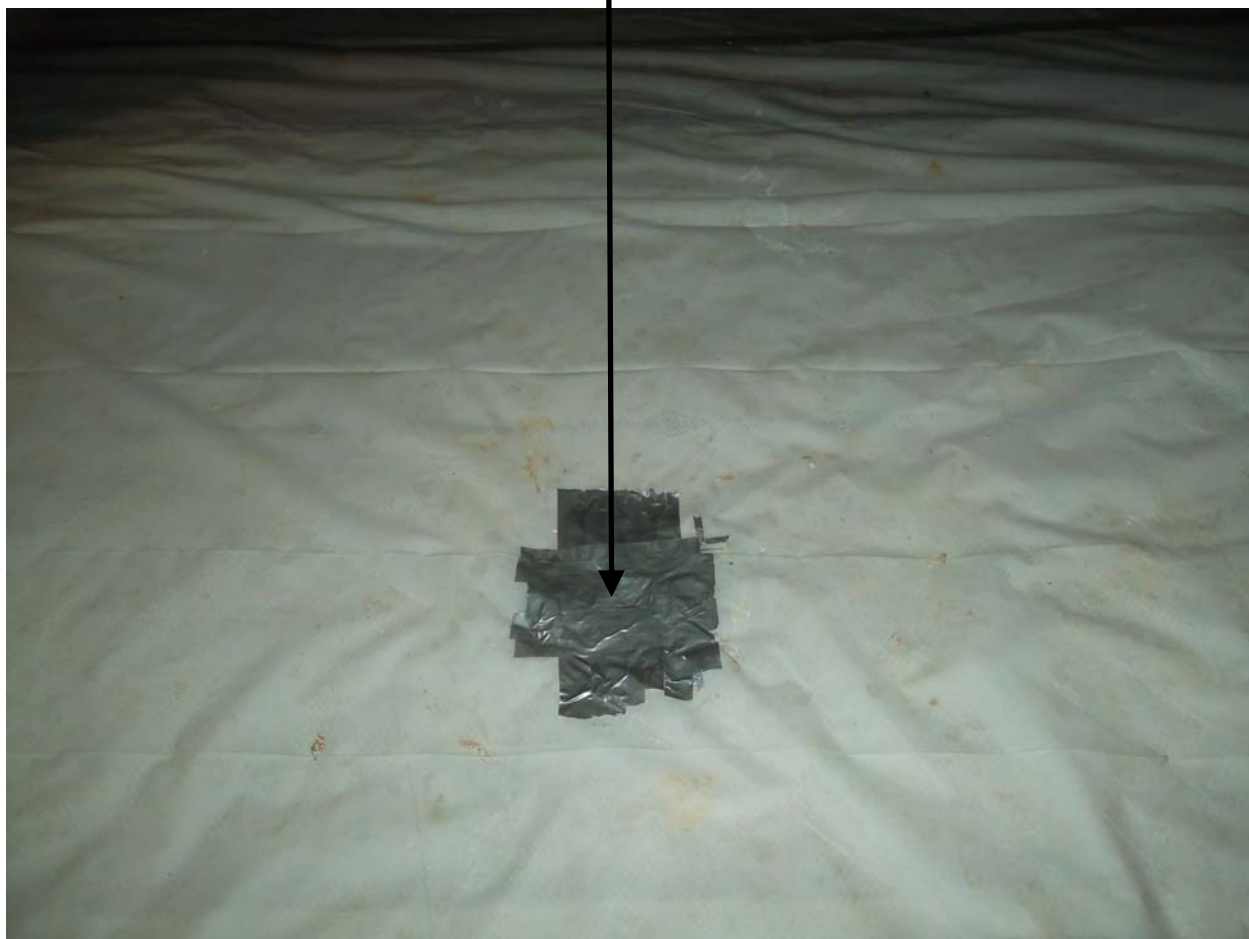
Volatile Vapor Intrusion Report

Bethpage High School
10 Cherry Avenue
Bethpage, New York 11714

Photo No. 10

JCB#: 13-26273

Typical Subsurface Sampling Location Subsequent to Repair



Field Photograph Log

Volatile Vapor Intrusion Report

**Bethpage High School
10 Cherry Avenue
Bethpage, New York 11714**

Photo No. 11

JCB#: 13-26273

Appendix C

Laboratory Analysis Report

Centek Laboratories, LLC

Date: 17-Jul-13

CLIENT: JC Broderick & Associates, Inc
Lab Order: C1307039
Project: Bethpage HS 13-26273
Lab ID: C1307039-001A

Client Sample ID: South Subsurface
Tag Number: 365,309
Collection Date: 7/9/2013
Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15			TO-15		Analyst: RJP	
1,1,1-Trichloroethane	< 0.83	0.83		ug/m3	1	7/12/2013 2:12:00 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		ug/m3	1	7/12/2013 2:12:00 PM
1,1,2-Trichloroethane	< 0.83	0.83		ug/m3	1	7/12/2013 2:12:00 PM
1,1-Dichloroethane	< 0.62	0.62		ug/m3	1	7/12/2013 2:12:00 PM
1,1-Dichloroethene	< 0.60	0.60		ug/m3	1	7/12/2013 2:12:00 PM
1,2,4-Trichlorobenzene	< 1.1	1.1		ug/m3	1	7/12/2013 2:12:00 PM
1,2,4-Trimethylbenzene	3700	1200		ug/m3	1620	7/16/2013 9:14:00 AM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	7/12/2013 2:12:00 PM
1,2-Dichlorobenzene	< 0.92	0.92		ug/m3	1	7/12/2013 2:12:00 PM
1,2-Dichloroethane	< 0.62	0.62		ug/m3	1	7/12/2013 2:12:00 PM
1,2-Dichloropropane	< 0.70	0.70		ug/m3	1	7/12/2013 2:12:00 PM
1,3,5-Trimethylbenzene	140	30		ug/m3	40	7/16/2013 7:11:00 AM
1,3-butadiene	< 0.34	0.34		ug/m3	1	7/12/2013 2:12:00 PM
1,3-Dichlorobenzene	< 0.92	0.92		ug/m3	1	7/12/2013 2:12:00 PM
1,4-Dichlorobenzene	< 0.92	0.92		ug/m3	1	7/12/2013 2:12:00 PM
1,4-Dioxane	< 1.1	1.1		ug/m3	1	7/12/2013 2:12:00 PM
2,2,4-trimethylpentane	1200	1100		ug/m3	1620	7/16/2013 9:14:00 AM
4-ethyltoluene	220	30		ug/m3	40	7/16/2013 7:11:00 AM
Acetone	9600	1200		ug/m3	1620	7/16/2013 9:14:00 AM
Allyl chloride	< 0.48	0.48		ug/m3	1	7/12/2013 2:12:00 PM
Benzene	2100	780		ug/m3	1620	7/16/2013 9:14:00 AM
Benzyl chloride	< 0.88	0.88		ug/m3	1	7/12/2013 2:12:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	7/12/2013 2:12:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	7/12/2013 2:12:00 PM
Bromomethane	< 0.59	0.59		ug/m3	1	7/12/2013 2:12:00 PM
Carbon disulfide	11	4.7		ug/m3	10	7/16/2013 6:38:00 AM
Carbon tetrachloride	< 0.96	0.96		ug/m3	1	7/12/2013 2:12:00 PM
Chlorobenzene	< 0.70	0.70		ug/m3	1	7/12/2013 2:12:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	7/12/2013 2:12:00 PM
Chloroform	< 0.74	0.74		ug/m3	1	7/12/2013 2:12:00 PM
Chloromethane	< 0.31	0.31		ug/m3	1	7/12/2013 2:12:00 PM
cis-1,2-Dichloroethene	< 0.60	0.60		ug/m3	1	7/12/2013 2:12:00 PM
cis-1,3-Dichloropropene	< 0.69	0.69		ug/m3	1	7/12/2013 2:12:00 PM
Cyclohexane	1400	840		ug/m3	1620	7/16/2013 9:14:00 AM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	7/12/2013 2:12:00 PM
Ethyl acetate	< 0.92	0.92		ug/m3	1	7/12/2013 2:12:00 PM
Ethylbenzene	2600	1100		ug/m3	1620	7/16/2013 9:14:00 AM
Freon 11	20	8.6		ug/m3	10	7/16/2013 6:38:00 AM
Freon 113	< 1.2	1.2		ug/m3	1	7/12/2013 2:12:00 PM
Freon 114	< 1.1	1.1		ug/m3	1	7/12/2013 2:12:00 PM

Qualifiers:	**	Reporting Limit	.	Results reported are not blank corrected
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
	JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: 17-Jul-13

CLIENT: JC Broderick & Associates, Inc
Lab Order: C1307039
Project: Bethpage HS 13-26273
Lab ID: C1307039-001A

Client Sample ID: South Subsurface
Tag Number: 365,309
Collection Date: 7/9/2013
Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15			TO-15		Analyst: RJP	
Freon 12	4.6	0.75		ug/m3	1	7/12/2013 2:12:00 PM
Heptane	1900	1000		ug/m3	1620	7/16/2013 9:14:00 AM
Hexachloro-1,3-butadiene	< 1.6	1.6		ug/m3	1	7/12/2013 2:12:00 PM
Hexane	4600	860		ug/m3	1620	7/16/2013 9:14:00 AM
Isopropyl alcohol	55	3.7		ug/m3	10	7/16/2013 6:38:00 AM
m&p-Xylene	9300	2200		ug/m3	1620	7/16/2013 9:14:00 AM
Methyl Butyl Ketone	< 1.2	1.2		ug/m3	1	7/12/2013 2:12:00 PM
Methyl Ethyl Ketone	< 0.90	0.90		ug/m3	1	7/12/2013 2:12:00 PM
Methyl Isobutyl Ketone	< 1.2	1.2		ug/m3	1	7/12/2013 2:12:00 PM
Methyl tert-butyl ether	< 0.55	0.55		ug/m3	1	7/12/2013 2:12:00 PM
Methylene chloride	< 0.53	0.53		ug/m3	1	7/12/2013 2:12:00 PM
o-Xylene	2100	1100		ug/m3	1620	7/16/2013 9:14:00 AM
Propylene	< 0.26	0.26		ug/m3	1	7/12/2013 2:12:00 PM
Styrene	< 0.65	0.65		ug/m3	1	7/12/2013 2:12:00 PM
Tetrachloroethylene	2.5	1.0		ug/m3	1	7/12/2013 2:12:00 PM
Tetrahydrofuran	< 0.45	0.45		ug/m3	1	7/12/2013 2:12:00 PM
Toluene	22000	1900		ug/m3	3240	7/16/2013 10:22:00 AM
trans-1,2-Dichloroethene	< 0.60	0.60		ug/m3	1	7/12/2013 2:12:00 PM
trans-1,3-Dichloropropene	< 0.69	0.69		ug/m3	1	7/12/2013 2:12:00 PM
Trichloroethene	< 0.82	0.82		ug/m3	1	7/12/2013 2:12:00 PM
Vinyl acetate	< 0.54	0.54		ug/m3	1	7/12/2013 2:12:00 PM
Vinyl Bromide	< 0.67	0.67		ug/m3	1	7/12/2013 2:12:00 PM
Vinyl chloride	< 0.39	0.39		ug/m3	1	7/12/2013 2:12:00 PM

Qualifiers:	**	Reporting Limit	.	Results reported are not blank corrected
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
	JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: 17-Jul-13

CLIENT: JC Broderick & Associates, Inc
Lab Order: C1307039
Project: Bethpage HS 13-26273
Lab ID: C1307039-002A

Client Sample ID: South Crawlspace
Tag Number: 322,1153
Collection Date: 7/9/2013
Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		TO-15		Analyst: RJP		
1,1,1-Trichloroethane	< 0.83	0.83		ug/m3	1	7/12/2013 12:29:00 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		ug/m3	1	7/12/2013 12:29:00 PM
1,1,2-Trichloroethane	< 0.83	0.83		ug/m3	1	7/12/2013 12:29:00 PM
1,1-Dichloroethane	< 0.62	0.62		ug/m3	1	7/12/2013 12:29:00 PM
1,1-Dichloroethene	< 0.60	0.60		ug/m3	1	7/12/2013 12:29:00 PM
1,2,4-Trichlorobenzene	< 1.1	1.1		ug/m3	1	7/12/2013 12:29:00 PM
1,2,4-Trimethylbenzene	3.2	0.75		ug/m3	1	7/12/2013 12:29:00 PM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	7/12/2013 12:29:00 PM
1,2-Dichlorobenzene	< 0.92	0.92		ug/m3	1	7/12/2013 12:29:00 PM
1,2-Dichloroethane	< 0.62	0.62		ug/m3	1	7/12/2013 12:29:00 PM
1,2-Dichloropropane	< 0.70	0.70		ug/m3	1	7/12/2013 12:29:00 PM
1,3,5-Trimethylbenzene	1.6	0.75		ug/m3	1	7/12/2013 12:29:00 PM
1,3-butadiene	< 0.34	0.34		ug/m3	1	7/12/2013 12:29:00 PM
1,3-Dichlorobenzene	< 0.92	0.92		ug/m3	1	7/12/2013 12:29:00 PM
1,4-Dichlorobenzene	< 0.92	0.92		ug/m3	1	7/12/2013 12:29:00 PM
1,4-Dioxane	< 1.1	1.1		ug/m3	1	7/12/2013 12:29:00 PM
2,2,4-trimethylpentane	2.0	0.71		ug/m3	1	7/12/2013 12:29:00 PM
4-ethyltoluene	0.75	0.75		ug/m3	1	7/12/2013 12:29:00 PM
Acetone	35	7.2		ug/m3	10	7/16/2013 4:55:00 AM
Allyl chloride	< 0.48	0.48		ug/m3	1	7/12/2013 12:29:00 PM
Benzene	1.2	0.49		ug/m3	1	7/12/2013 12:29:00 PM
Benzyl chloride	< 0.88	0.88		ug/m3	1	7/12/2013 12:29:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	7/12/2013 12:29:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	7/12/2013 12:29:00 PM
Bromomethane	< 0.59	0.59		ug/m3	1	7/12/2013 12:29:00 PM
Carbon disulfide	0.47	0.47		ug/m3	1	7/12/2013 12:29:00 PM
Carbon tetrachloride	0.70	0.26		ug/m3	1	7/12/2013 12:29:00 PM
Chlorobenzene	< 0.70	0.70		ug/m3	1	7/12/2013 12:29:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	7/12/2013 12:29:00 PM
Chloroform	0.60	0.74	J	ug/m3	1	7/12/2013 12:29:00 PM
Chloromethane	1.8	0.31		ug/m3	1	7/12/2013 12:29:00 PM
cis-1,2-Dichloroethene	< 0.60	0.60		ug/m3	1	7/12/2013 12:29:00 PM
cis-1,3-Dichloropropene	< 0.69	0.69		ug/m3	1	7/12/2013 12:29:00 PM
Cyclohexane	< 0.52	0.52		ug/m3	1	7/12/2013 12:29:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	7/12/2013 12:29:00 PM
Ethyl acetate	< 0.92	0.92		ug/m3	1	7/12/2013 12:29:00 PM
Ethylbenzene	0.79	0.66		ug/m3	1	7/12/2013 12:29:00 PM
Freon 11	24	8.6		ug/m3	10	7/16/2013 4:55:00 AM
Freon 113	1.0	1.2	J	ug/m3	1	7/12/2013 12:29:00 PM
Freon 114	< 1.1	1.1		ug/m3	1	7/12/2013 12:29:00 PM

Qualifiers:	**	Reporting Limit	.	Results reported are not blank corrected
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
	JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: 17-Jul-13

CLIENT: JC Broderick & Associates, Inc
Lab Order: C1307039
Project: Bethpage HS 13-26273
Lab ID: C1307039-002A

Client Sample ID: South Crawlspace
Tag Number: 322,1153
Collection Date: 7/9/2013
Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC			TO-15			Analyst: RJP
Freon 12	7.2	0.75		ug/m3	1	7/12/2013 12:29:00 PM
Heptane	< 0.62	0.62		ug/m3	1	7/12/2013 12:29:00 PM
Hexachloro-1,3-butadiene	< 1.6	1.6		ug/m3	1	7/12/2013 12:29:00 PM
Hexane	1.7	0.54		ug/m3	1	7/12/2013 12:29:00 PM
Isopropyl alcohol	8.7	3.7		ug/m3	10	7/16/2013 4:55:00 AM
m&p-Xylene	2.9	1.3		ug/m3	1	7/12/2013 12:29:00 PM
Methyl Butyl Ketone	< 1.2	1.2		ug/m3	1	7/12/2013 12:29:00 PM
Methyl Ethyl Ketone	3.1	0.90		ug/m3	1	7/12/2013 12:29:00 PM
Methyl Isobutyl Ketone	< 1.2	1.2		ug/m3	1	7/12/2013 12:29:00 PM
Methyl tert-butyl ether	< 0.55	0.55		ug/m3	1	7/12/2013 12:29:00 PM
Methylene chloride	0.85	0.53		ug/m3	1	7/12/2013 12:29:00 PM
o-Xylene	0.93	0.66		ug/m3	1	7/12/2013 12:29:00 PM
Propylene	< 0.26	0.26		ug/m3	1	7/12/2013 12:29:00 PM
Styrene	< 0.65	0.65		ug/m3	1	7/12/2013 12:29:00 PM
Tetrachloroethylene	0.76	1.0	J	ug/m3	1	7/12/2013 12:29:00 PM
Tetrahydrofuran	< 0.45	0.45		ug/m3	1	7/12/2013 12:29:00 PM
Toluene	4.7	0.57		ug/m3	1	7/12/2013 12:29:00 PM
trans-1,2-Dichloroethene	< 0.60	0.60		ug/m3	1	7/12/2013 12:29:00 PM
trans-1,3-Dichloropropene	< 0.69	0.69		ug/m3	1	7/12/2013 12:29:00 PM
Trichloroethene	1.5	0.22		ug/m3	1	7/12/2013 12:29:00 PM
Vinyl acetate	< 0.54	0.54		ug/m3	1	7/12/2013 12:29:00 PM
Vinyl Bromide	< 0.67	0.67		ug/m3	1	7/12/2013 12:29:00 PM
Vinyl chloride	< 0.10	0.10		ug/m3	1	7/12/2013 12:29:00 PM

Qualifiers:	**	Reporting Limit	.	Results reported are not blank corrected
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
	JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: 17-Jul-13

CLIENT: JC Broderick & Associates, Inc
Lab Order: C1307039
Project: Bethpage HS 13-26273
Lab ID: C1307039-003A

Client Sample ID: North Subsurface
Tag Number: 1187,174
Collection Date: 7/9/2013
Matrix:

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15			TO-15		Analyst: RJP	
1,1,1-Trichloroethane	< 0.83	0.83		ug/m3	1	7/12/2013 2:46:00 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		ug/m3	1	7/12/2013 2:46:00 PM
1,1,2-Trichloroethane	< 0.83	0.83		ug/m3	1	7/12/2013 2:46:00 PM
1,1-Dichloroethane	< 0.62	0.62		ug/m3	1	7/12/2013 2:46:00 PM
1,1-Dichloroethene	< 0.60	0.60		ug/m3	1	7/12/2013 2:46:00 PM
1,2,4-Trichlorobenzene	< 1.1	1.1		ug/m3	1	7/12/2013 2:46:00 PM
1,2,4-Trimethylbenzene	1600	1200		ug/m3	1620	7/16/2013 9:47:00 AM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	7/12/2013 2:46:00 PM
1,2-Dichlorobenzene	< 0.92	0.92		ug/m3	1	7/12/2013 2:46:00 PM
1,2-Dichloroethane	< 0.62	0.62		ug/m3	1	7/12/2013 2:46:00 PM
1,2-Dichloropropane	< 0.70	0.70		ug/m3	1	7/12/2013 2:46:00 PM
1,3,5-Trimethylbenzene	260	30		ug/m3	40	7/16/2013 8:19:00 AM
1,3-butadiene	< 0.34	0.34		ug/m3	1	7/12/2013 2:46:00 PM
1,3-Dichlorobenzene	< 0.92	0.92		ug/m3	1	7/12/2013 2:46:00 PM
1,4-Dichlorobenzene	< 0.92	0.92		ug/m3	1	7/12/2013 2:46:00 PM
1,4-Dioxane	< 1.1	1.1		ug/m3	1	7/12/2013 2:46:00 PM
2,2,4-trimethylpentane	920	1100	J	ug/m3	1620	7/16/2013 9:47:00 AM
4-ethyltoluene	370	30		ug/m3	40	7/16/2013 8:19:00 AM
Acetone	4000	1200		ug/m3	1620	7/16/2013 9:47:00 AM
Allyl chloride	< 0.48	0.48		ug/m3	1	7/12/2013 2:46:00 PM
Benzene	1200	780		ug/m3	1620	7/16/2013 9:47:00 AM
Benzyl chloride	< 0.88	0.88		ug/m3	1	7/12/2013 2:46:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	7/12/2013 2:46:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	7/12/2013 2:46:00 PM
Bromomethane	< 0.59	0.59		ug/m3	1	7/12/2013 2:46:00 PM
Carbon disulfide	17	4.7		ug/m3	10	7/16/2013 7:45:00 AM
Carbon tetrachloride	< 0.96	0.96		ug/m3	1	7/12/2013 2:46:00 PM
Chlorobenzene	< 0.70	0.70		ug/m3	1	7/12/2013 2:46:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	7/12/2013 2:46:00 PM
Chloroform	< 0.74	0.74		ug/m3	1	7/12/2013 2:46:00 PM
Chloromethane	2.7	0.31		ug/m3	1	7/12/2013 2:46:00 PM
cis-1,2-Dichloroethene	< 0.60	0.60		ug/m3	1	7/12/2013 2:46:00 PM
cis-1,3-Dichloropropene	< 0.69	0.69		ug/m3	1	7/12/2013 2:46:00 PM
Cyclohexane	960	840		ug/m3	1620	7/16/2013 9:47:00 AM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	7/12/2013 2:46:00 PM
Ethyl acetate	< 0.92	0.92		ug/m3	1	7/12/2013 2:46:00 PM
Ethylbenzene	930	1100	J	ug/m3	1620	7/16/2013 9:47:00 AM
Freon 11	21	8.6		ug/m3	10	7/16/2013 7:45:00 AM
Freon 113	< 1.2	1.2		ug/m3	1	7/12/2013 2:46:00 PM
Freon 114	< 1.1	1.1		ug/m3	1	7/12/2013 2:46:00 PM

Qualifiers:	**	Reporting Limit	.	Results reported are not blank corrected
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
	JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: 17-Jul-13

CLIENT: JC Broderick & Associates, Inc
Lab Order: C1307039
Project: Bethpage HS 13-26273
Lab ID: C1307039-003A

Client Sample ID: North Subsurface
Tag Number: 1187,174
Collection Date: 7/9/2013
Matrix:

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15		Analyst: RJP		
Freon 12	4.6	0.75		ug/m3	1	7/12/2013 2:46:00 PM
Heptane	1100	1000		ug/m3	1620	7/16/2013 9:47:00 AM
Hexachloro-1,3-butadiene	< 1.6	1.6		ug/m3	1	7/12/2013 2:46:00 PM
Hexane	2000	860		ug/m3	1620	7/16/2013 9:47:00 AM
Isopropyl alcohol	50	3.7		ug/m3	10	7/16/2013 7:45:00 AM
m&p-Xylene	2900	2200		ug/m3	1620	7/16/2013 9:47:00 AM
Methyl Butyl Ketone	< 1.2	1.2		ug/m3	1	7/12/2013 2:46:00 PM
Methyl Ethyl Ketone	< 0.90	0.90		ug/m3	1	7/12/2013 2:46:00 PM
Methyl Isobutyl Ketone	< 1.2	1.2		ug/m3	1	7/12/2013 2:46:00 PM
Methyl tert-butyl ether	< 0.55	0.55		ug/m3	1	7/12/2013 2:46:00 PM
Methylene chloride	2.4	0.53		ug/m3	1	7/12/2013 2:46:00 PM
o-Xylene	1000	1100	J	ug/m3	1620	7/16/2013 9:47:00 AM
Propylene	< 0.26	0.26		ug/m3	1	7/12/2013 2:46:00 PM
Styrene	< 0.65	0.65		ug/m3	1	7/12/2013 2:46:00 PM
Tetrachloroethylene	6.0	1.0		ug/m3	1	7/12/2013 2:46:00 PM
Tetrahydrofuran	< 0.45	0.45		ug/m3	1	7/12/2013 2:46:00 PM
Toluene	6900	920		ug/m3	1620	7/16/2013 9:47:00 AM
trans-1,2-Dichloroethene	< 0.60	0.60		ug/m3	1	7/12/2013 2:46:00 PM
trans-1,3-Dichloropropene	< 0.69	0.69		ug/m3	1	7/12/2013 2:46:00 PM
Trichloroethene	< 0.82	0.82		ug/m3	1	7/12/2013 2:46:00 PM
Vinyl acetate	< 0.54	0.54		ug/m3	1	7/12/2013 2:46:00 PM
Vinyl Bromide	< 0.67	0.67		ug/m3	1	7/12/2013 2:46:00 PM
Vinyl chloride	< 0.39	0.39		ug/m3	1	7/12/2013 2:46:00 PM

Qualifiers:	**	Reporting Limit	.	Results reported are not blank corrected
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
	JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: 17-Jul-13

CLIENT: JC Broderick & Associates, Inc
Lab Order: C1307039
Project: Bethpage HS 13-26273
Lab ID: C1307039-004A

Client Sample ID: North Crawlspace
Tag Number: 1182,300
Collection Date: 7/9/2013
Matrix:

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		TO-15		Analyst: RJP		
1,1,1-Trichloroethane	< 0.83	0.83		ug/m3	1	7/12/2013 1:03:00 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		ug/m3	1	7/12/2013 1:03:00 PM
1,1,2-Trichloroethane	< 0.83	0.83		ug/m3	1	7/12/2013 1:03:00 PM
1,1-Dichloroethane	< 0.62	0.62		ug/m3	1	7/12/2013 1:03:00 PM
1,1-Dichloroethene	< 0.60	0.60		ug/m3	1	7/12/2013 1:03:00 PM
1,2,4-Trichlorobenzene	< 1.1	1.1		ug/m3	1	7/12/2013 1:03:00 PM
1,2,4-Trimethylbenzene	2.1	0.75		ug/m3	1	7/12/2013 1:03:00 PM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	7/12/2013 1:03:00 PM
1,2-Dichlorobenzene	< 0.92	0.92		ug/m3	1	7/12/2013 1:03:00 PM
1,2-Dichloroethane	< 0.62	0.62		ug/m3	1	7/12/2013 1:03:00 PM
1,2-Dichloropropane	< 0.70	0.70		ug/m3	1	7/12/2013 1:03:00 PM
1,3,5-Trimethylbenzene	0.75	0.75		ug/m3	1	7/12/2013 1:03:00 PM
1,3-butadiene	< 0.34	0.34		ug/m3	1	7/12/2013 1:03:00 PM
1,3-Dichlorobenzene	< 0.92	0.92		ug/m3	1	7/12/2013 1:03:00 PM
1,4-Dichlorobenzene	< 0.92	0.92		ug/m3	1	7/12/2013 1:03:00 PM
1,4-Dioxane	< 1.1	1.1		ug/m3	1	7/12/2013 1:03:00 PM
2,2,4-trimethylpentane	0.66	0.71	J	ug/m3	1	7/12/2013 1:03:00 PM
4-ethyltoluene	< 0.75	0.75		ug/m3	1	7/12/2013 1:03:00 PM
Acetone	37	7.2		ug/m3	10	7/16/2013 5:29:00 AM
Allyl chloride	< 0.48	0.48		ug/m3	1	7/12/2013 1:03:00 PM
Benzene	0.58	0.49		ug/m3	1	7/12/2013 1:03:00 PM
Benzyl chloride	< 0.88	0.88		ug/m3	1	7/12/2013 1:03:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	7/12/2013 1:03:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	7/12/2013 1:03:00 PM
Bromomethane	< 0.59	0.59		ug/m3	1	7/12/2013 1:03:00 PM
Carbon disulfide	0.38	0.47	J	ug/m3	1	7/12/2013 1:03:00 PM
Carbon tetrachloride	0.70	0.26		ug/m3	1	7/12/2013 1:03:00 PM
Chlorobenzene	< 0.70	0.70		ug/m3	1	7/12/2013 1:03:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	7/12/2013 1:03:00 PM
Chloroform	0.60	0.74	J	ug/m3	1	7/12/2013 1:03:00 PM
Chloromethane	1.8	0.31		ug/m3	1	7/12/2013 1:03:00 PM
cis-1,2-Dichloroethene	< 0.60	0.60		ug/m3	1	7/12/2013 1:03:00 PM
cis-1,3-Dichloropropene	< 0.69	0.69		ug/m3	1	7/12/2013 1:03:00 PM
Cyclohexane	< 0.52	0.52		ug/m3	1	7/12/2013 1:03:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	7/12/2013 1:03:00 PM
Ethyl acetate	< 0.92	0.92		ug/m3	1	7/12/2013 1:03:00 PM
Ethylbenzene	0.71	0.66		ug/m3	1	7/12/2013 1:03:00 PM
Freon 11	22	8.6		ug/m3	10	7/16/2013 5:29:00 AM
Freon 113	1.0	1.2	J	ug/m3	1	7/12/2013 1:03:00 PM
Freon 114	< 1.1	1.1		ug/m3	1	7/12/2013 1:03:00 PM

Qualifiers:	**	Reporting Limit	.	Results reported are not blank corrected
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
	JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: 17-Jul-13

CLIENT: JC Broderick & Associates, Inc
Lab Order: C1307039
Project: Bethpage HS 13-26273
Lab ID: C1307039-004A

Client Sample ID: North Crawlspace
Tag Number: 1182,300
Collection Date: 7/9/2013
Matrix:

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		TO-15		Analyst: RJP		
Freon 12	7.1	0.75		ug/m3	1	7/12/2013 1:03:00 PM
Heptane	< 0.62	0.62		ug/m3	1	7/12/2013 1:03:00 PM
Hexachloro-1,3-butadiene	< 1.6	1.6		ug/m3	1	7/12/2013 1:03:00 PM
Hexane	1.4	0.54		ug/m3	1	7/12/2013 1:03:00 PM
Isopropyl alcohol	3.4	0.37		ug/m3	1	7/12/2013 1:03:00 PM
m&p-Xylene	2.0	1.3		ug/m3	1	7/12/2013 1:03:00 PM
Methyl Butyl Ketone	< 1.2	1.2		ug/m3	1	7/12/2013 1:03:00 PM
Methyl Ethyl Ketone	< 0.90	0.90		ug/m3	1	7/12/2013 1:03:00 PM
Methyl Isobutyl Ketone	< 1.2	1.2		ug/m3	1	7/12/2013 1:03:00 PM
Methyl tert-butyl ether	< 0.55	0.55		ug/m3	1	7/12/2013 1:03:00 PM
Methylene chloride	0.81	0.53		ug/m3	1	7/12/2013 1:03:00 PM
o-Xylene	0.62	0.66	J	ug/m3	1	7/12/2013 1:03:00 PM
Propylene	< 0.26	0.26		ug/m3	1	7/12/2013 1:03:00 PM
Styrene	< 0.65	0.65		ug/m3	1	7/12/2013 1:03:00 PM
Tetrachloroethylene	0.76	1.0	J	ug/m3	1	7/12/2013 1:03:00 PM
Tetrahydrofuran	< 0.45	0.45		ug/m3	1	7/12/2013 1:03:00 PM
Toluene	3.8	0.57		ug/m3	1	7/12/2013 1:03:00 PM
trans-1,2-Dichloroethene	< 0.60	0.60		ug/m3	1	7/12/2013 1:03:00 PM
trans-1,3-Dichloropropene	< 0.69	0.69		ug/m3	1	7/12/2013 1:03:00 PM
Trichloroethene	0.38	0.22		ug/m3	1	7/12/2013 1:03:00 PM
Vinyl acetate	< 0.54	0.54		ug/m3	1	7/12/2013 1:03:00 PM
Vinyl Bromide	< 0.67	0.67		ug/m3	1	7/12/2013 1:03:00 PM
Vinyl chloride	< 0.10	0.10		ug/m3	1	7/12/2013 1:03:00 PM

Qualifiers:	**	Reporting Limit	.	Results reported are not blank corrected
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
	JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: 17-Jul-13

CLIENT: JC Broderick & Associates, Inc
Lab Order: C1307039
Project: Bethpage HS 13-26273
Lab ID: C1307039-005A

Client Sample ID: Admin Wing Basement
Tag Number: 422,1164
Collection Date: 7/9/2013
Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC			TO-15			Analyst: RJP
1,1,1-Trichloroethane	2.7	0.83		ug/m3	1	7/12/2013 1:37:00 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		ug/m3	1	7/12/2013 1:37:00 PM
1,1,2-Trichloroethane	< 0.83	0.83		ug/m3	1	7/12/2013 1:37:00 PM
1,1-Dichloroethane	< 0.62	0.62		ug/m3	1	7/12/2013 1:37:00 PM
1,1-Dichloroethene	< 0.60	0.60		ug/m3	1	7/12/2013 1:37:00 PM
1,2,4-Trichlorobenzene	< 1.1	1.1		ug/m3	1	7/12/2013 1:37:00 PM
1,2,4-Trimethylbenzene	4.3	0.75		ug/m3	1	7/12/2013 1:37:00 PM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	7/12/2013 1:37:00 PM
1,2-Dichlorobenzene	< 0.92	0.92		ug/m3	1	7/12/2013 1:37:00 PM
1,2-Dichloroethane	< 0.62	0.62		ug/m3	1	7/12/2013 1:37:00 PM
1,2-Dichloropropane	< 0.70	0.70		ug/m3	1	7/12/2013 1:37:00 PM
1,3,5-Trimethylbenzene	2.4	0.75		ug/m3	1	7/12/2013 1:37:00 PM
1,3-butadiene	< 0.34	0.34		ug/m3	1	7/12/2013 1:37:00 PM
1,3-Dichlorobenzene	< 0.92	0.92		ug/m3	1	7/12/2013 1:37:00 PM
1,4-Dichlorobenzene	1.1	0.92		ug/m3	1	7/12/2013 1:37:00 PM
1,4-Dioxane	< 1.1	1.1		ug/m3	1	7/12/2013 1:37:00 PM
2,2,4-trimethylpentane	0.71	0.71		ug/m3	1	7/12/2013 1:37:00 PM
4-ethyltoluene	0.80	0.75		ug/m3	1	7/12/2013 1:37:00 PM
Acetone	53	7.2		ug/m3	10	7/16/2013 6:03:00 AM
Allyl chloride	< 0.48	0.48		ug/m3	1	7/12/2013 1:37:00 PM
Benzene	0.65	0.49		ug/m3	1	7/12/2013 1:37:00 PM
Benzyl chloride	< 0.88	0.88		ug/m3	1	7/12/2013 1:37:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	7/12/2013 1:37:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	7/12/2013 1:37:00 PM
Bromomethane	< 0.59	0.59		ug/m3	1	7/12/2013 1:37:00 PM
Carbon disulfide	0.54	0.47		ug/m3	1	7/12/2013 1:37:00 PM
Carbon tetrachloride	0.64	0.26		ug/m3	1	7/12/2013 1:37:00 PM
Chlorobenzene	< 0.70	0.70		ug/m3	1	7/12/2013 1:37:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	7/12/2013 1:37:00 PM
Chloroform	0.89	0.74		ug/m3	1	7/12/2013 1:37:00 PM
Chloromethane	2.2	0.31		ug/m3	1	7/12/2013 1:37:00 PM
cis-1,2-Dichloroethene	< 0.60	0.60		ug/m3	1	7/12/2013 1:37:00 PM
cis-1,3-Dichloropropene	< 0.69	0.69		ug/m3	1	7/12/2013 1:37:00 PM
Cyclohexane	1.9	0.52		ug/m3	1	7/12/2013 1:37:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	7/12/2013 1:37:00 PM
Ethyl acetate	< 0.92	0.92		ug/m3	1	7/12/2013 1:37:00 PM
Ethylbenzene	1.7	0.66		ug/m3	1	7/12/2013 1:37:00 PM
Freon 11	23	8.6		ug/m3	10	7/16/2013 6:03:00 AM
Freon 113	1.0	1.2	J	ug/m3	1	7/12/2013 1:37:00 PM
Freon 114	< 1.1	1.1		ug/m3	1	7/12/2013 1:37:00 PM

Qualifiers:	**	Reporting Limit	.	Results reported are not blank corrected
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
	JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: 17-Jul-13

CLIENT: JC Broderick & Associates, Inc
Lab Order: C1307039
Project: Bethpage HS 13-26273
Lab ID: C1307039-005A

Client Sample ID: Admin Wing Basement
Tag Number: 422,1164
Collection Date: 7/9/2013
Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC			TO-15			Analyst: RJP
Freon 12	6.9	0.75		ug/m3	1	7/12/2013 1:37:00 PM
Heptane	< 0.62	0.62		ug/m3	1	7/12/2013 1:37:00 PM
Hexachloro-1,3-butadiene	< 1.6	1.6		ug/m3	1	7/12/2013 1:37:00 PM
Hexane	11	5.4		ug/m3	10	7/16/2013 6:03:00 AM
Isopropyl alcohol	15	3.7		ug/m3	10	7/16/2013 6:03:00 AM
m&p-Xylene	2.4	1.3		ug/m3	1	7/12/2013 1:37:00 PM
Methyl Butyl Ketone	< 1.2	1.2		ug/m3	1	7/12/2013 1:37:00 PM
Methyl Ethyl Ketone	3.2	0.90		ug/m3	1	7/12/2013 1:37:00 PM
Methyl Isobutyl Ketone	< 1.2	1.2		ug/m3	1	7/12/2013 1:37:00 PM
Methyl tert-butyl ether	< 0.55	0.55		ug/m3	1	7/12/2013 1:37:00 PM
Methylene chloride	2.8	0.53		ug/m3	1	7/12/2013 1:37:00 PM
o-Xylene	0.97	0.66		ug/m3	1	7/12/2013 1:37:00 PM
Propylene	< 0.26	0.26		ug/m3	1	7/12/2013 1:37:00 PM
Styrene	1.8	0.65		ug/m3	1	7/12/2013 1:37:00 PM
Tetrachloroethylene	0.76	1.0	J	ug/m3	1	7/12/2013 1:37:00 PM
Tetrahydrofuran	< 0.45	0.45		ug/m3	1	7/12/2013 1:37:00 PM
Toluene	7.4	0.57		ug/m3	1	7/12/2013 1:37:00 PM
trans-1,2-Dichloroethene	< 0.60	0.60		ug/m3	1	7/12/2013 1:37:00 PM
trans-1,3-Dichloropropene	< 0.69	0.69		ug/m3	1	7/12/2013 1:37:00 PM
Trichloroethene	0.55	0.22		ug/m3	1	7/12/2013 1:37:00 PM
Vinyl acetate	< 0.54	0.54		ug/m3	1	7/12/2013 1:37:00 PM
Vinyl Bromide	< 0.67	0.67		ug/m3	1	7/12/2013 1:37:00 PM
Vinyl chloride	< 0.10	0.10		ug/m3	1	7/12/2013 1:37:00 PM

Qualifiers:	**	Reporting Limit	.	Results reported are not blank corrected
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
	JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: 17-Jul-13

CLIENT: JC Broderick & Associates, Inc
Lab Order: C1307039
Project: Bethpage HS 13-26273
Lab ID: C1307039-006A

Client Sample ID: Cafeteria A First Floor South
Tag Number: 420,345
Collection Date: 7/9/2013
Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		TO-15		Analyst: RJP		
1,1,1-Trichloroethane	< 0.83	0.83		ug/m3	1	7/12/2013 11:55:00 AM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		ug/m3	1	7/12/2013 11:55:00 AM
1,1,2-Trichloroethane	< 0.83	0.83		ug/m3	1	7/12/2013 11:55:00 AM
1,1-Dichloroethane	< 0.62	0.62		ug/m3	1	7/12/2013 11:55:00 AM
1,1-Dichloroethene	< 0.60	0.60		ug/m3	1	7/12/2013 11:55:00 AM
1,2,4-Trichlorobenzene	< 1.1	1.1		ug/m3	1	7/12/2013 11:55:00 AM
1,2,4-Trimethylbenzene	3.5	0.75		ug/m3	1	7/12/2013 11:55:00 AM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	7/12/2013 11:55:00 AM
1,2-Dichlorobenzene	< 0.92	0.92		ug/m3	1	7/12/2013 11:55:00 AM
1,2-Dichloroethane	< 0.62	0.62		ug/m3	1	7/12/2013 11:55:00 AM
1,2-Dichloropropane	< 0.70	0.70		ug/m3	1	7/12/2013 11:55:00 AM
1,3,5-Trimethylbenzene	2.6	0.75		ug/m3	1	7/12/2013 11:55:00 AM
1,3-butadiene	< 0.34	0.34		ug/m3	1	7/12/2013 11:55:00 AM
1,3-Dichlorobenzene	< 0.92	0.92		ug/m3	1	7/12/2013 11:55:00 AM
1,4-Dichlorobenzene	0.79	0.92	J	ug/m3	1	7/12/2013 11:55:00 AM
1,4-Dioxane	< 1.1	1.1		ug/m3	1	7/12/2013 11:55:00 AM
2,2,4-trimethylpentane	0.66	0.71	J	ug/m3	1	7/12/2013 11:55:00 AM
4-ethyltoluene	0.80	0.75		ug/m3	1	7/12/2013 11:55:00 AM
Acetone	29	7.2		ug/m3	10	7/16/2013 4:20:00 AM
Allyl chloride	< 0.48	0.48		ug/m3	1	7/12/2013 11:55:00 AM
Benzene	0.52	0.49		ug/m3	1	7/12/2013 11:55:00 AM
Benzyl chloride	< 0.88	0.88		ug/m3	1	7/12/2013 11:55:00 AM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	7/12/2013 11:55:00 AM
Bromoform	< 1.6	1.6		ug/m3	1	7/12/2013 11:55:00 AM
Bromomethane	< 0.59	0.59		ug/m3	1	7/12/2013 11:55:00 AM
Carbon disulfide	0.41	0.47	J	ug/m3	1	7/12/2013 11:55:00 AM
Carbon tetrachloride	0.64	0.26		ug/m3	1	7/12/2013 11:55:00 AM
Chlorobenzene	< 0.70	0.70		ug/m3	1	7/12/2013 11:55:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	7/12/2013 11:55:00 AM
Chloroform	< 0.74	0.74		ug/m3	1	7/12/2013 11:55:00 AM
Chloromethane	1.6	0.31		ug/m3	1	7/12/2013 11:55:00 AM
cis-1,2-Dichloroethene	< 0.60	0.60		ug/m3	1	7/12/2013 11:55:00 AM
cis-1,3-Dichloropropene	< 0.69	0.69		ug/m3	1	7/12/2013 11:55:00 AM
Cyclohexane	0.77	0.52		ug/m3	1	7/12/2013 11:55:00 AM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	7/12/2013 11:55:00 AM
Ethyl acetate	< 0.92	0.92		ug/m3	1	7/12/2013 11:55:00 AM
Ethylbenzene	0.66	0.66		ug/m3	1	7/12/2013 11:55:00 AM
Freon 11	22	8.6		ug/m3	10	7/16/2013 4:20:00 AM
Freon 113	0.93	1.2	J	ug/m3	1	7/12/2013 11:55:00 AM
Freon 114	< 1.1	1.1		ug/m3	1	7/12/2013 11:55:00 AM

Qualifiers:	**	Reporting Limit	.	Results reported are not blank corrected
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
	JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: 17-Jul-13

CLIENT: JC Broderick & Associates, Inc
Lab Order: C1307039
Project: Bethpage HS 13-26273
Lab ID: C1307039-006A

Client Sample ID: Cafeteria A First Floor South
Tag Number: 420,345
Collection Date: 7/9/2013
Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC			TO-15			Analyst: RJP
Freon 12	6.9	0.75		ug/m3	1	7/12/2013 11:55:00 AM
Heptane	< 0.62	0.62		ug/m3	1	7/12/2013 11:55:00 AM
Hexachloro-1,3-butadiene	< 1.6	1.6		ug/m3	1	7/12/2013 11:55:00 AM
Hexane	< 0.54	0.54		ug/m3	1	7/12/2013 11:55:00 AM
Isopropyl alcohol	14	3.7		ug/m3	10	7/16/2013 4:20:00 AM
m&p-Xylene	2.0	1.3		ug/m3	1	7/12/2013 11:55:00 AM
Methyl Butyl Ketone	< 1.2	1.2		ug/m3	1	7/12/2013 11:55:00 AM
Methyl Ethyl Ketone	2.3	0.90		ug/m3	1	7/12/2013 11:55:00 AM
Methyl Isobutyl Ketone	< 1.2	1.2		ug/m3	1	7/12/2013 11:55:00 AM
Methyl tert-butyl ether	< 0.55	0.55		ug/m3	1	7/12/2013 11:55:00 AM
Methylene chloride	< 0.53	0.53		ug/m3	1	7/12/2013 11:55:00 AM
o-Xylene	0.71	0.66		ug/m3	1	7/12/2013 11:55:00 AM
Propylene	< 0.26	0.26		ug/m3	1	7/12/2013 11:55:00 AM
Styrene	< 0.65	0.65		ug/m3	1	7/12/2013 11:55:00 AM
Tetrachloroethylene	0.83	1.0	J	ug/m3	1	7/12/2013 11:55:00 AM
Tetrahydrofuran	< 0.45	0.45		ug/m3	1	7/12/2013 11:55:00 AM
Toluene	3.9	0.57		ug/m3	1	7/12/2013 11:55:00 AM
trans-1,2-Dichloroethene	< 0.60	0.60		ug/m3	1	7/12/2013 11:55:00 AM
trans-1,3-Dichloropropene	< 0.69	0.69		ug/m3	1	7/12/2013 11:55:00 AM
Trichloroethene	0.60	0.22		ug/m3	1	7/12/2013 11:55:00 AM
Vinyl acetate	< 0.54	0.54		ug/m3	1	7/12/2013 11:55:00 AM
Vinyl Bromide	< 0.67	0.67		ug/m3	1	7/12/2013 11:55:00 AM
Vinyl chloride	< 0.10	0.10		ug/m3	1	7/12/2013 11:55:00 AM

Qualifiers:	**	Reporting Limit	.	Results reported are not blank corrected
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
	JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: 17-Jul-13

CLIENT: JC Broderick & Associates, Inc
Lab Order: C1307039
Project: Bethpage HS 13-26273
Lab ID: C1307039-007A

Client Sample ID: Ambient
Tag Number: 221,1155
Collection Date: 7/9/2013
Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		TO-15		Analyst: RJP		
1,1,1-Trichloroethane	< 0.83	0.83		ug/m3	1	7/12/2013 11:21:00 AM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		ug/m3	1	7/12/2013 11:21:00 AM
1,1,2-Trichloroethane	< 0.83	0.83		ug/m3	1	7/12/2013 11:21:00 AM
1,1-Dichloroethane	< 0.62	0.62		ug/m3	1	7/12/2013 11:21:00 AM
1,1-Dichloroethene	< 0.60	0.60		ug/m3	1	7/12/2013 11:21:00 AM
1,2,4-Trichlorobenzene	< 1.1	1.1		ug/m3	1	7/12/2013 11:21:00 AM
1,2,4-Trimethylbenzene	5.4	0.75		ug/m3	1	7/12/2013 11:21:00 AM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	7/12/2013 11:21:00 AM
1,2-Dichlorobenzene	< 0.92	0.92		ug/m3	1	7/12/2013 11:21:00 AM
1,2-Dichloroethane	< 0.62	0.62		ug/m3	1	7/12/2013 11:21:00 AM
1,2-Dichloropropane	< 0.70	0.70		ug/m3	1	7/12/2013 11:21:00 AM
1,3,5-Trimethylbenzene	2.2	0.75		ug/m3	1	7/12/2013 11:21:00 AM
1,3-butadiene	< 0.34	0.34		ug/m3	1	7/12/2013 11:21:00 AM
1,3-Dichlorobenzene	< 0.92	0.92		ug/m3	1	7/12/2013 11:21:00 AM
1,4-Dichlorobenzene	2.6	0.92		ug/m3	1	7/12/2013 11:21:00 AM
1,4-Dioxane	< 1.1	1.1		ug/m3	1	7/12/2013 11:21:00 AM
2,2,4-trimethylpentane	0.62	0.71	J	ug/m3	1	7/12/2013 11:21:00 AM
4-ethyltoluene	0.80	0.75		ug/m3	1	7/12/2013 11:21:00 AM
Acetone	29	7.2		ug/m3	10	7/16/2013 3:46:00 AM
Allyl chloride	< 0.48	0.48		ug/m3	1	7/12/2013 11:21:00 AM
Benzene	0.49	0.49		ug/m3	1	7/12/2013 11:21:00 AM
Benzyl chloride	< 0.88	0.88		ug/m3	1	7/12/2013 11:21:00 AM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	7/12/2013 11:21:00 AM
Bromoform	< 1.6	1.6		ug/m3	1	7/12/2013 11:21:00 AM
Bromomethane	< 0.59	0.59		ug/m3	1	7/12/2013 11:21:00 AM
Carbon disulfide	0.95	0.47		ug/m3	1	7/12/2013 11:21:00 AM
Carbon tetrachloride	0.70	0.26		ug/m3	1	7/12/2013 11:21:00 AM
Chlorobenzene	< 0.70	0.70		ug/m3	1	7/12/2013 11:21:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	7/12/2013 11:21:00 AM
Chloroform	< 0.74	0.74		ug/m3	1	7/12/2013 11:21:00 AM
Chloromethane	1.6	0.31		ug/m3	1	7/12/2013 11:21:00 AM
cis-1,2-Dichloroethene	< 0.60	0.60		ug/m3	1	7/12/2013 11:21:00 AM
cis-1,3-Dichloropropene	< 0.69	0.69		ug/m3	1	7/12/2013 11:21:00 AM
Cyclohexane	< 0.52	0.52		ug/m3	1	7/12/2013 11:21:00 AM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	7/12/2013 11:21:00 AM
Ethyl acetate	< 0.92	0.92		ug/m3	1	7/12/2013 11:21:00 AM
Ethylbenzene	0.75	0.66		ug/m3	1	7/12/2013 11:21:00 AM
Freon 11	28	8.6		ug/m3	10	7/16/2013 3:46:00 AM
Freon 113	1.0	1.2	J	ug/m3	1	7/12/2013 11:21:00 AM
Freon 114	< 1.1	1.1		ug/m3	1	7/12/2013 11:21:00 AM

Qualifiers:	**	Reporting Limit	.	Results reported are not blank corrected
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
	JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: 17-Jul-13

CLIENT: JC Broderick & Associates, Inc
Lab Order: C1307039
Project: Bethpage HS 13-26273
Lab ID: C1307039-007A

Client Sample ID: Ambient
Tag Number: 221,1155
Collection Date: 7/9/2013
Matrix: AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		TO-15		Analyst: RJP		
Freon 12	9.7	0.75		ug/m3	1	7/12/2013 11:21:00 AM
Heptane	< 0.62	0.62		ug/m3	1	7/12/2013 11:21:00 AM
Hexachloro-1,3-butadiene	< 1.6	1.6		ug/m3	1	7/12/2013 11:21:00 AM
Hexane	< 0.54	0.54		ug/m3	1	7/12/2013 11:21:00 AM
Isopropyl alcohol	3.0	0.37		ug/m3	1	7/12/2013 11:21:00 AM
m&p-Xylene	2.0	1.3		ug/m3	1	7/12/2013 11:21:00 AM
Methyl Butyl Ketone	< 1.2	1.2		ug/m3	1	7/12/2013 11:21:00 AM
Methyl Ethyl Ketone	2.7	0.90		ug/m3	1	7/12/2013 11:21:00 AM
Methyl Isobutyl Ketone	< 1.2	1.2		ug/m3	1	7/12/2013 11:21:00 AM
Methyl tert-butyl ether	< 0.55	0.55		ug/m3	1	7/12/2013 11:21:00 AM
Methylene chloride	1.2	0.53		ug/m3	1	7/12/2013 11:21:00 AM
o-Xylene	0.66	0.66		ug/m3	1	7/12/2013 11:21:00 AM
Propylene	< 0.26	0.26		ug/m3	1	7/12/2013 11:21:00 AM
Styrene	0.61	0.65	J	ug/m3	1	7/12/2013 11:21:00 AM
Tetrachloroethylene	13	1.0		ug/m3	1	7/12/2013 11:21:00 AM
Tetrahydrofuran	< 0.45	0.45		ug/m3	1	7/12/2013 11:21:00 AM
Toluene	4.7	0.57		ug/m3	1	7/12/2013 11:21:00 AM
trans-1,2-Dichloroethene	< 0.60	0.60		ug/m3	1	7/12/2013 11:21:00 AM
trans-1,3-Dichloropropene	< 0.69	0.69		ug/m3	1	7/12/2013 11:21:00 AM
Trichloroethene	1.1	0.22		ug/m3	1	7/12/2013 11:21:00 AM
Vinyl acetate	< 0.54	0.54		ug/m3	1	7/12/2013 11:21:00 AM
Vinyl Bromide	< 0.67	0.67		ug/m3	1	7/12/2013 11:21:00 AM
Vinyl chloride	< 0.10	0.10		ug/m3	1	7/12/2013 11:21:00 AM

Qualifiers:	**	Reporting Limit	.	Results reported are not blank corrected
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
	JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		



Appendix D

Indoor Air Quality Questionnaire and Building Survey

**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 Jeffrey Nannini Date/Time Prepared 7-9-13

Preparer's Affiliation _____ Phone No. 631-584-5492

Purpose of Investigation Volatile Vapor Intrusion (VVI) Report

1. OCCUPANT:

Interviewed: ☐ Y / ☐ N

Last Name: Bethpage High School First Name: _____

Address: 10 Cherry Avenue Bethpage, NY 11714

County: Nassau

Home Phone: _____ Office Phone: _____

Number of Occupants/persons at this location _____ Age of Occupants Various

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

Interviewed: ☐ Y / ☐ N

Last Name: Bethpage UFSD First Name: _____

Address: 10 Cherry Avenue Bethpage, NY 11714

County: Nassau

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

☐ Residential

☒ School

☐ Commercial/Multi-use

☐ Industrial

☐ Church

☐ Other: _____

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

- | | | |
|---------------------------------------|--|--|
| <input type="checkbox"/> Ranch | <input type="checkbox"/> 2-Family | <input type="checkbox"/> 3-Family |
| <input type="checkbox"/> Raised Ranch | <input type="checkbox"/> Split Level | <input type="checkbox"/> Colonial |
| <input type="checkbox"/> Cape Cod | <input type="checkbox"/> Contemporary | <input type="checkbox"/> Mobile Home |
| <input type="checkbox"/> Duplex | <input type="checkbox"/> Apartment House | <input type="checkbox"/> Townhouses/Condos |
| <input type="checkbox"/> Modular | <input type="checkbox"/> Log Home | <input type="checkbox"/> 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 2

Building age 54

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

Airflow near source

Outdoor air infiltration

Infiltration into air ducts

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

- a. Above grade construction: ☐ wood frame ☒ concrete ☐ stone ☐ brick
- b. Basement type: ☐ full ☒ crawlspace ☐ slab ☐ other _____
- c. Basement floor: ☒ concrete ☒ dirt ☐ stone ☐ other _____
- d. Basement floor: ☐ uncovered ☐ covered ☒ covered with Polyethylene Sheeting _____
- 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
- i. The basement is: ☐ finished ☐ unfinished ☒ partially finished
- j. Sump present? ☐ Y / N ☒
- k. Water in sump? ☐ Y / N / not applicable ☐ ☐ ☒

Basement/Lowest level depth below grade: 8 (feet)

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

Pit containing Steam Pump

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)

- | | | |
|--|---|---|
| <input type="checkbox"/> Hot air circulation | <input type="checkbox"/> Heat pump | <input type="checkbox"/> Hot water baseboard |
| <input type="checkbox"/> Space Heaters | <input checked="" type="checkbox"/> Steam radiation | <input type="checkbox"/> Radiant floor |
| <input type="checkbox"/> Electric baseboard | <input type="checkbox"/> Wood stove | <input type="checkbox"/> Outdoor wood boiler <input type="checkbox"/> Other _____ |

The primary type of fuel used is:

- | | | |
|---|--|-----------------------------------|
| <input checked="" type="checkbox"/> Natural Gas | <input checked="" type="checkbox"/> Fuel Oil | <input type="checkbox"/> Kerosene |
| <input type="checkbox"/> Electric | <input type="checkbox"/> Propane | <input type="checkbox"/> Solar |
| <input type="checkbox"/> Wood | <input type="checkbox"/> Coal | |

Domestic hot water tank fueled by: Natural Gas/Fuel oil

Boiler/furnace located in: ☒ Basement ☐ Outdoors ☐ Main Floor ☐ Other _____

Air conditioning: ☐ Central Air ☐ Window units ☒ Open Windows ☐ None

Are there air distribution ducts present? $\frac{Y}{N}$
☒ ☐

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	Storage, Boiler Room, Fitness Center
1 st Floor	Students and Faculty
2 nd Floor	Students and Faculty
3 rd Floor	
4 th 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? Wood Shops & Auto Shops _____
- g. Is there smoking in the building? ☐ Y / N ☒ How frequently? _____
- h. Have cleaning products been used recently? ☒ Y / N ☐ When & Type? Throughout First and Second Floors _____
- i. Have cosmetic products been used recently? ☐ Y / N ☒ When & Type? _____

- j. Has painting/staining been done in the last 6 months? ☐ Y / ☒ N Where & When? _____
- k. Is there new carpet, drapes or other textiles? ☐ Y / ☒ N Where & When? _____
- l. Have air fresheners been used recently? ☒ Y / ☐ N When & Type? _____
- m. Is there a kitchen exhaust fan? ☒ Y / ☐ N If yes, where vented? _____
- n. Is there a bathroom exhaust fan? ☐ Y / ☒ N If yes, where vented? _____
- 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? N/A

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:

See Attached Figure No. 2: Subsurface, Crawlspace
and Basement Sampling Locations, Appendix A
for Additional Details

First Floor:

See Attached Figure No. 3: 1st Floor and Ambient
Sampling Locations, Appendix A
for Additional Details

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.

See Attached Figure No. 3: 1st Floor and Ambient
Sampling Locations, Appendix A
for Additional Details

13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: MiniRae 3000

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 ** <u>Y / N</u>
	No Chemicals of Concern Were Observed Within Close Proximity of the Sampling Locations at the Time of Inspection					

* 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.