FINAL
Binghamton Plaza Inc.
BROOME COUNTY, NEW YORK
Site Management Plan

NYSDEC Site Number: C704049

Prepared for:
BINGHAMTON PLAZA, INC.
30 GALESI DRIVE, SUITE 301
WAYNE, NEW JERSEY 07470

Prepared by:
BRICKHOUSE ENVIRONMENTAL
515 SOUTH FRANKLIN STREET
WEST CHESTER, PENNSYLVANIA 19382
610-692-5770

Revisions to Final Approved Site Management Plan:

Revision #	Submitted Date	Summary of Revision	DEC Approval Date
1		Quarterly IA Sampling	9/2/16
2	03/21/2022	IA Monitoring Reduction	3/25/2022

DECEMBER 2014

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 7
615 Erie Boulevard West, Syracuse, NY 13204-2400
P: (315) 426-7519, (315) 426-7551 | F: (315) 426-2653
www.dec.ny.gov

March 25, 2022

Michael Tomasulo
Binghamton Plaza, Inc.
c/o Galesi Real Estate Corp.
30 Galesi Drive, Suite 302
Wayne, NJ 07470

Re: Binghamton Plaza, Site ID No. C704049
City of Binghamton, Broome County
Indoor Air Monitoring Reduction

Dear Michael Tomasulo:

The New York State Department of Environmental Conservation (Department) and the New York State Department of Health (NYSDOH) have reviewed the request to reduce the indoor air monitoring schedule for Buildings 31 and 32 at the Binghamton Plaza site which was submitted March 8, 2022 and resubmitted with minor revisions on March 21, 2022 by Brickhouse Environmental (Brickhouse) on behalf of Binghamton Plaza, Inc. The request is approved. Brickhouse proposed conducting the next monitoring event in November or December 2022. That is also acceptable.

Please append the March 21st request, this approval letter, and the attached revision sheet to the front of all copies of the Site Management Plan. If you have any questions, please do not hesitate to contact me at 315-426-7411 or joshua.cook@dec.ny.gov.

Sincerely,

Joshua P. Cook, P.E.
Professional Engineer 1

ec: Gary Priscott (NYSDEC)
Joshua Cook (NYSDEC)
Scarlett McLaughlin (NYSDOH)
Eamonn O'Neil (NYSDOH)
Michael Tomasulo (Binghamton Plaza, Inc.)
Douglas Schott (Brickhouse Environmental)

Brickhouse Environmental
Consultants and Engineers

515 South Franklin Street
West Chester, PA 19382
Phone 610.692.5770
Fax 610.692.8650

www.brickhouse-environmental.com

March 21, 2022

Mr. Joshua P. Cook, P.E.
Project Manager
Division of Environmental Remediation
New York State Department of Environmental Conservation
615 Erie Boulevard West
Syracuse, NY 13204-2400

Re: Indoor Air Monitoring Frequency Reduction Buildings 31 and 32 – *Revision 1*
Binghamton Plaza Inc. #C704049
Binghamton, New York
BE Project No. 06-2175-7

Dear Mr. Cook,

On behalf of Binghamton Plaza, Inc. (BPI), Brickhouse Environmental is submitting this formal request to modify the indoor air sampling frequency requirements for Buildings 31 and 32 as set forth in the Binghamton Plaza, Inc. - Site Management Plan (SMP) (as modified). The following provides background information and the rationale behind the request for reduction of sampling frequency in Buildings 31 and 32.

The SMP for the Binghamton Plaza was originally approved by the New York State Department of Environmental Conservation (NYSDEC) in December 2014 under a Brownfield Cleanup Agreement (Index No. B7-0702-05-08). At the time of the SMP preparation, both Buildings 31 and 32 were used as daycare facilities. The original sampling frequency was established as semi-annual and was subsequently increased to quarterly in June 2016 due to TCE concentrations occasionally exceeding the Indoor Air Guidance Value (IAGV) of 2.0 $\mu g/m^3$ in Building 31. The elevated TCE indoor air concentrations were obtained at a time when elevated sub-slab vapor pressures were known to exist beneath Building 31 despite active sub-slab depressurization.

The positive sub-slab pressures and occasionally elevated TCE concentrations in Building 31 triggered the need for corrective measures in 2019. The corrective measures workplan included the placement of concrete flowable fill beneath Building 31 in an effort to reduce vapor migration into the void space below the building slab and enhance the sub-slab depressurization (SSD) system performance. Since the implementation of the corrective measures in September 2020, TCE indoor air concentrations in Building 31 have decreased and are consistently below the IAGV of 2.0 $\mu g/m^3$ and below the typical background concentration of 1 $\mu g/m^3$. Acceptable negative sub-slab pressures beneath Building 31 have been achieved with the placement of the flowable fill.

The following table presents the quarterly TCE indoor air concentrations reported for Building 31 between March 2020 and December 2021. This timespan includes three quarterly events prior to the implementation of the corrective measures in September 2020, which included the placement of flowable fill beneath the concrete sub-slab in Building 31 followed by the continued operation and maintenance of the SSD system.

Building 31 TCE Concentrations		
Sampling Date	**IA-1 TCE Concentration ($\mu g/m^3$)**	**IA-2 TCE Concentration ($\mu g/m^3$)**
Mar-2020	1.65	1.24
May-2020	2.72	1.25
Aug-2020	0.50	0.494
Nov-2020	<0.033	<0.033
Feb-2021	<0.033	<0.033
May-2021	0.129	<0.033
Aug-2021	0.124	0.124
Dec-2021	<0.033	<0.033

Note: Laboratory analytical reports are attached for the August and December 2021 monitoring events.

Additionally, the attached graph illustrates the decrease in TCE concentrations from March 2020 through December 2021. As is show on the graph, the indoor air TCE concentrations are being maintained below the IAGV and typical background concentrations following the corrective measures in September 2020.

The sub-slab depressurization system in Building 32 continues to maintain sufficiently negative sub-slab pressures and is functioning as designed. Also, TCE concentrations in Building 32 have remained below the IAGV with no indication of active vapor intrusion. It is also important to note that the use of Building 32 changed between September 2019 and December 2019 from a daycare to a convenience store. Based on discussions with the BPI, additional changes in use for Building 32 are not anticipated at this time.

The SSD systems are operating and functioning as designed in Buildings 31 and 32. Based on a continued demonstrated reduction in TCE indoor air concentrations, NYSDEC/NYDOH approval is requested to decrease the indoor air sampling frequency in Building 31 from quarterly to annually (once during the heating season), and to eliminate the indoor air sampling in Building 32. The operations and maintenance of the SSD systems are proposed to continue as currently outlined in the SMP.

If you have any questions or require additional information to consider this request, please contact me directly. Thank you for your assistance.

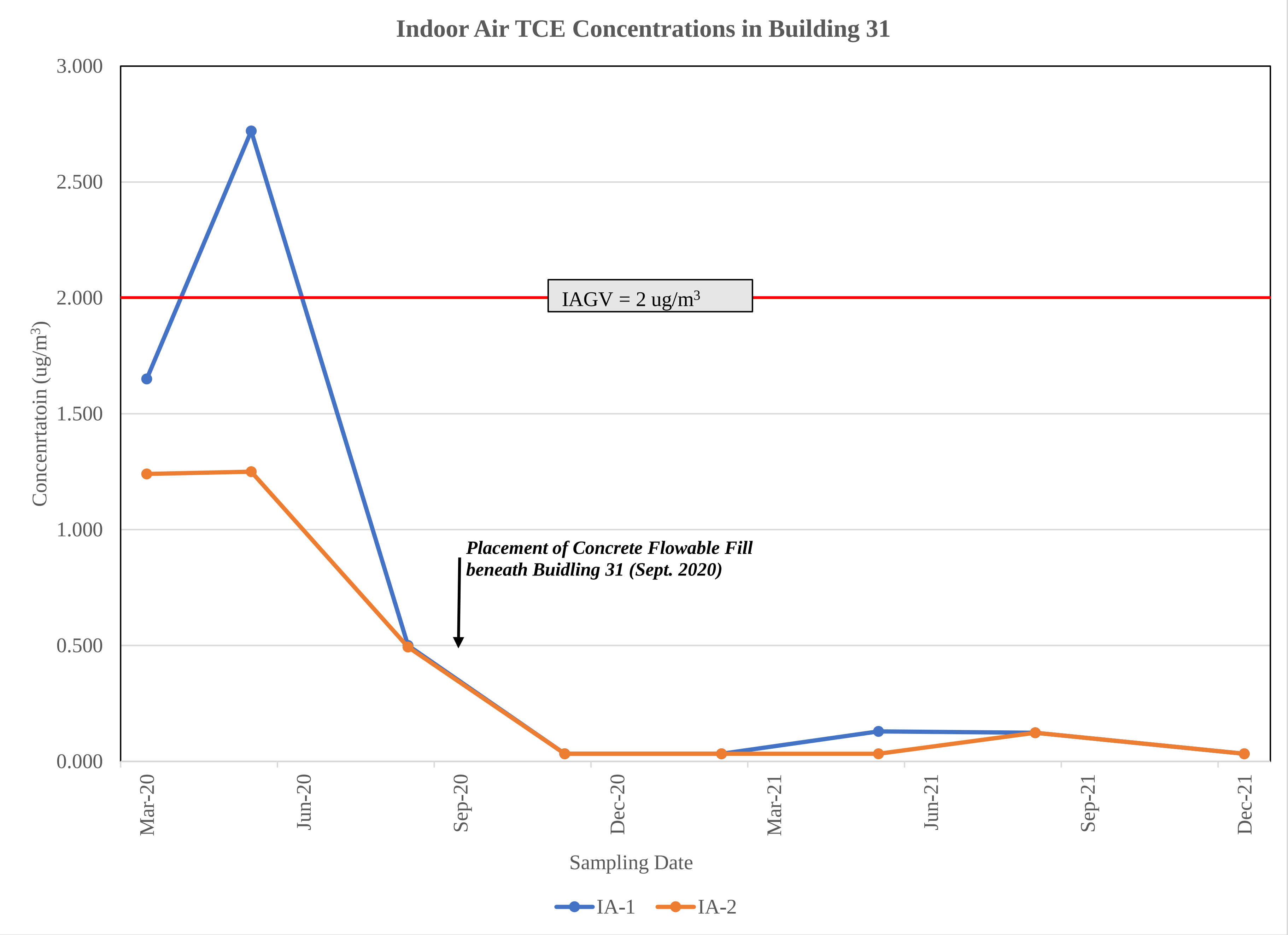
Sincerely,

Douglas B. Schott

Douglas B. Schott, P.G.
Director of Geologic Services

cc: Eamonn O’Neil (NYSDOH)
Scarlett E. McLaughlin (NYSDOH)
Gary W. Priscott (NYSDEC)
Michael Tomasulo (Binghamton Plaza. Inc.)

MA/DBS/
J:\062175.7\Indoor Air Reduction\2022.03.IA Reduction Letter (revision 1).docx


Indoor Air TCE Concentrations in Building 31
3.000
2.500
2.000
1.500
1.000
0.500
0.000
Concenrtatoin (ug/m3)
IAGV = 2 ug/m3
Placement of Concrete Flowable Fill beneath Buidling 31 (Sept. 2020)
Mar-20
Jun-20
Sep-20
Dec-20
Mar-21
Jun-21
Sep-21
Dec-21
Sampling Date
IA-1
IA-2

ANALYTICAL REPORT

Lab Number:	L2146468
Client:	Keystone Environmental Services 58 Exchange Street Binghamton, NY 13901
ATTN:	Christian Tarnowski
Phone:	(607) 770-9098
Project Name:	BINGHAMTON PLAZA
Project Number:	426.01214.7
Report Date:	09/03/21

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2146468-01	OA-1	AIR	33 W. STATE ST. BINGHAMTON, NY	08/28/21 15:46	08/30/21
L2146468-02	OA-2	AIR	33 W. STATE ST. BINGHAMTON, NY	08/28/21 15:59	08/30/21
L2146468-03	IA-1	AIR	33 W. STATE ST. BINGHAMTON, NY	08/28/21 16:10	08/30/21
L2146468-04	IA-2	AIR	33 W. STATE ST. BINGHAMTON, NY	08/28/21 16:06	08/30/21
L2146468-05	IA-3	AIR	33 W. STATE ST. BINGHAMTON, NY	08/28/21 16:15	08/30/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Case Narrative (continued)

Volatile Organics in Air

Canisters were released from the laboratory on August 25, 2021. The canister certification results are provided as an addendum.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Christopher J. Anderson Christopher J. Anderson

Title: Technical Director/Representative Date: 09/03/21

AIR

SAMPLE RESULTS

Lab ID:	L2146468-01	Date Collected:	08/28/21 15:46
Client ID:	OA-1	Date Received:	08/30/21
Sample Location:	33 W. STATE ST. BINGHAMTON, NY	Field Prep:	Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 08/31/21 18:35
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.465	0.200	--	2.30	0.989	--		1
Chloromethane	0.492	0.200	--	1.02	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	5.50	5.00	--	10.4	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	3.42	1.00	--	8.12	2.38	--		1
Trichlorofluoromethane	0.202	0.200	--	1.14	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	0.759	0.500	--	2.24	1.47	--		1

SAMPLE RESULTS

Lab ID:	L2146468-01	Date Collected:	08/28/21 15:46
Client ID:	OA-1	Date Received:	08/30/21
Sample Location:	33 W. STATE ST. BINGHAMTON, NY	Field Prep:	Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1

Project Name:	BINGHAMTON PLAZA	***Lab Number:***	L2146468
Project Number:	426.01214.7	***Report Date:***	09/03/21

SAMPLE RESULTS

Lab ID:	L2146468-01	Date Collected:	08/28/21 15:46
Client ID:	OA-1	Date Received:	08/30/21
Sample Location:	33 W. STATE ST. BINGHAMTON, NY	Field Prep:	Not Specified

Sample Depth:

	ppbV			**ug/m3**				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	98		60-140
Bromochloromethane	100		60-140
chlorobenzene-d5	98		60-140

SAMPLE RESULTS

Lab ID: L2146468-01
Client ID: OA-1
Sample Location: 33 W. STATE ST. BINGHAMTON, NY

Date Collected: 08/28/21 15:46
Date Received: 08/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 08/31/21 18:35
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.076	0.020	--	0.478	0.126	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	91		60-140
bromochloromethane	96		60-140
chlorobenzene-d5	96		60-140

SAMPLE RESULTS

Lab ID: L2146468-02
Client ID: OA-2
Sample Location: 33 W. STATE ST. BINGHAMTON, NY

Date Collected: 08/28/21 15:59
Date Received: 08/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 08/31/21 19:15
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.478	0.200	--	2.36	0.989	--		1
Chloromethane	0.513	0.200	--	1.06	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	8.66	5.00	--	16.3	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	3.13	1.00	--	7.44	2.38	--		1
Trichlorofluoromethane	0.206	0.200	--	1.16	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	0.862	0.500	--	2.54	1.47	--		1

SAMPLE RESULTS

Lab ID: L2146468-02
Client ID: OA-2
Sample Location: 33 W. STATE ST. BINGHAMTON, NY

Date Collected: 08/28/21 15:59
Date Received: 08/30/21
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Cyclohexane	0.209	0.200	--	0.719	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.335	0.200	--	1.26	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1

SAMPLE RESULTS

Lab ID: L2146468-02
Client ID: OA-2
Sample Location: 33 W. STATE ST. BINGHAMTON, NY

Date Collected: 08/28/21 15:59
Date Received: 08/30/21
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	96		60-140
Bromochloromethane	101		60-140
chlorobenzene-d5	104		60-140

Project Name:	BINGHAMTON PLAZA	**Lab Number:**	L2146468
Project Number:	426.01214.7	**Report Date:**	09/03/21

SAMPLE RESULTS

Lab ID:	L2146468-02	Date Collected:	08/28/21 15:59
Client ID:	OA-2	Date Received:	08/30/21
Sample Location:	33 W. STATE ST. BINGHAMTON, NY	Field Prep:	Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 08/31/21 19:15
Analyst: TS

Parameter	**ppbV Results**	**ppbV RL**	**ppbV MDL**	**ug/m3 Results**	**ug/m3 RL**	**ug/m3 MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.077	0.020	--	0.484	0.126	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	90		60-140
bromochloromethane	96		60-140
chlorobenzene-d5	101		60-140

Project Name: BINGHAMTON PLAZA
Project Number: 426.01214.7

Lab Number: L2146468
Report Date: 09/03/21

SAMPLE RESULTS

Lab ID: L2146468-03
Client ID: IA-1
Sample Location: 33 W. STATE ST. BINGHAMTON, NY

Date Collected: 08/28/21 16:10
Date Received: 08/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 08/31/21 19:56
Analyst: RY

	ppbV			**ug/m3**				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.475	0.200	--	2.35	0.989	--		1
Chloromethane	0.570	0.200	--	1.18	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	422	5.00	--	795	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	8.22	1.00	--	19.5	2.38	--		1
Trichlorofluoromethane	0.266	0.200	--	1.49	1.12	--		1
Isopropanol	10.2	0.500	--	25.1	1.23	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	0.527	0.500	--	1.55	1.47	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	0.605	0.500	--	1.78	1.47	--		1

Project Name: BINGHAMTON PLAZA
Lab Number: L2146468
Project Number: 426.01214.7
Report Date: 09/03/21

SAMPLE RESULTS

Lab ID: L2146468-03
Client ID: IA-1
Sample Location: 33 W. STATE ST. BINGHAMTON, NY

Date Collected: 08/28/21 16:10
Date Received: 08/30/21
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	0.229	0.200	--	0.938	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.456	0.200	--	1.72	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1

Project Name:	BINGHAMTON PLAZA	***Lab Number:***	L2146468
Project Number:	426.01214.7	***Report Date:***	09/03/21

SAMPLE RESULTS

Lab ID:	L2146468-03	Date Collected:	08/28/21 16:10
Client ID:	IA-1	Date Received:	08/30/21
Sample Location:	33 W. STATE ST. BINGHAMTON, NY	Field Prep:	Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,2,4-Trimethylbenzene	0.208	0.200	--	1.02	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	98		60-140
Bromochloromethane	102		60-140
chlorobenzene-d5	102		60-140

SAMPLE RESULTS

Lab ID: L2146468-03
Client ID: IA-1
Sample Location: 33 W. STATE ST. BINGHAMTON, NY

Date Collected: 08/28/21 16:10
Date Received: 08/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 08/31/21 19:56
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.088	0.020	--	0.554	0.126	--		1
Trichloroethene	0.023	0.020	--	0.124	0.107	--		1
Tetrachloroethene	0.020	0.020	--	0.136	0.136	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	91		60-140
bromochloromethane	97		60-140
chlorobenzene-d5	100		60-140

SAMPLE RESULTS

Lab ID: L2146468-04
Client ID: IA-2
Sample Location: 33 W. STATE ST. BINGHAMTON, NY

Date Collected: 08/28/21 16:06
Date Received: 08/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 08/31/21 21:18
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.518	0.200	--	2.56	0.989	--		1
Chloromethane	0.593	0.200	--	1.22	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	434	5.00	--	818	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	7.89	1.00	--	18.7	2.38	--		1
Trichlorofluoromethane	0.295	0.200	--	1.66	1.12	--		1
Isopropanol	10.6	0.500	--	26.1	1.23	--		1
Tertiary butyl Alcohol	0.539	0.500	--	1.63	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	0.521	0.500	--	1.54	1.47	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	1.53	0.500	--	4.51	1.47	--		1

SAMPLE RESULTS

Lab ID: L2146468-04
Client ID: IA-2
Sample Location: 33 W. STATE ST. BINGHAMTON, NY

Date Collected: 08/28/21 16:06
Date Received: 08/30/21
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Cyclohexane	0.248	0.200	--	0.854	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	0.232	0.200	--	0.951	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.503	0.200	--	1.90	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1

SAMPLE RESULTS

Lab ID: L2146468-04
Client ID: IA-2
Sample Location: 33 W. STATE ST. BINGHAMTON, NY

Date Collected: 08/28/21 16:06
Date Received: 08/30/21
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	96		60-140
Bromochloromethane	100		60-140
chlorobenzene-d5	106		60-140

SAMPLE RESULTS

Lab ID: L2146468-04
Client ID: IA-2
Sample Location: 33 W. STATE ST. BINGHAMTON, NY

Date Collected: 08/28/21 16:06
Date Received: 08/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 08/31/21 21:18
Analyst: TS

	ppbV			**ug/m3**				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.084	0.020	--	0.528	0.126	--		1
Trichloroethene	0.023	0.020	--	0.124	0.107	--		1
Tetrachloroethene	0.026	0.020	--	0.176	0.136	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	89		60-140
bromochloromethane	95		60-140
chlorobenzene-d5	104		60-140

Project Name: BINGHAMTON PLAZA
Project Number: 426.01214.7

Lab Number: L2146468
Report Date: 09/03/21

SAMPLE RESULTS

Lab ID: L2146468-05
Client ID: IA-3
Sample Location: 33 W. STATE ST. BINGHAMTON, NY

Date Collected: 08/28/21 16:15
Date Received: 08/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 08/31/21 21:59
Analyst: RY

	ppbV			**ug/m3**				**Dilution Factor**
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.858	0.200	--	4.24	0.989	--		1
Chloromethane	0.552	0.200	--	1.14	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	137	5.00	--	258	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	11.3	1.00	--	26.8	2.38	--		1
Trichlorofluoromethane	0.749	0.200	--	4.21	1.12	--		1
Isopropanol	1.19	0.500	--	2.93	1.23	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	1.35	0.500	--	4.69	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1

SAMPLE RESULTS

Lab ID: L2146468-05
Client ID: IA-3
Sample Location: 33 W. STATE ST. BINGHAMTON, NY

Date Collected: 08/28/21 16:15
Date Received: 08/30/21
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.627	0.200	--	2.36	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1

Project Name:	BINGHAMTON PLAZA	***Lab Number:***	L2146468
Project Number:	426.01214.7	***Report Date:***	09/03/21

SAMPLE RESULTS

Lab ID:	L2146468-05	Date Collected:	08/28/21 16:15
Client ID:	IA-3	Date Received:	08/30/21
Sample Location:	33 W. STATE ST. BINGHAMTON, NY	Field Prep:	Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	95		60-140
Bromochloromethane	99		60-140
chlorobenzene-d5	103		60-140

SAMPLE RESULTS

Lab ID: L2146468-05
Client ID: IA-3
Sample Location: 33 W. STATE ST. BINGHAMTON, NY

Date Collected: 08/28/21 16:15
Date Received: 08/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 08/31/21 21:59
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.079	0.020	--	0.497	0.126	--		1
Trichloroethene	0.061	0.020	--	0.328	0.107	--		1
Tetrachloroethene	0.101	0.020	--	0.685	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	88		60-140
bromochloromethane	95		60-140
chlorobenzene-d5	100		60-140

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15-SIM
Analytical Date: 08/31/21 15:22

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01-05 Batch: WG1541372-4								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 08/31/21 14:43

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab for sample(s): 01-05 Batch: WG1541373-4								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 08/31/21 14:43

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab for sample(s): 01-05 Batch: WG1541373-4								
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1

Project Name: BINGHAMTON PLAZA **Lab Number:** L2146468
Project Number: 426.01214.7 **Report Date:** 09/03/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 08/31/21 14:43

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab for sample(s): 01-05 Batch: WG1541373-4								
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Lab Control Sample Analysis
Batch Quality Control

Project Name: BINGHAMTON PLAZA
Lab Number: L2146468
Project Number: 426.01214.7
Report Date: 09/03/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-05 Batch: WG1541372-3								
Vinyl chloride	84		-		70-130	-		25
1,1-Dichloroethene	83		-		70-130	-		25
cis-1,2-Dichloroethene	84		-		70-130	-		25
1,1,1-Trichloroethane	84		-		70-130	-		25
Carbon tetrachloride	89		-		70-130	-		25
Trichloroethene	89		-		70-130	-		25
Tetrachloroethene	108		-		70-130	-		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: BINGHAMTON PLAZA

Project Number: 426.01214.7

Lab Number: L2146468

Report Date: 09/03/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-05 Batch: WG1541373-3								
Dichlorodifluoromethane	87		-		70-130	-		
Chloromethane	87		-		70-130	-		
Freon-114	93		-		70-130	-		
Vinyl chloride	85		-		70-130	-		
1,3-Butadiene	90		-		70-130	-		
Bromomethane	92		-		70-130	-		
Chloroethane	93		-		70-130	-		
Ethanol	82		-		40-160	-		
Vinyl bromide	91		-		70-130	-		
Acetone	63		-		40-160	-		
Trichlorofluoromethane	88		-		70-130	-		
Isopropanol	66		-		40-160	-		
1,1-Dichloroethene	85		-		70-130	-		
Tertiary butyl Alcohol	77		-		70-130	-		
Methylene chloride	106		-		70-130	-		
3-Chloropropene	88		-		70-130	-		
Carbon disulfide	92		-		70-130	-		
Freon-113	97		-		70-130	-		
trans-1,2-Dichloroethene	82		-		70-130	-		
1,1-Dichloroethane	85		-		70-130	-		
Methyl tert butyl ether	92		-		70-130	-		
2-Butanone	88		-		70-130	-		
cis-1,2-Dichloroethene	87		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: BINGHAMTON PLAZA
Lab Number: L2146468
Project Number: 426.01214.7
Report Date: 09/03/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-05 Batch: WG1541373-3								
Ethyl Acetate	90		-		70-130	-		
Chloroform	96		-		70-130	-		
Tetrahydrofuran	84		-		70-130	-		
1,2-Dichloroethane	79		-		70-130	-		
n-Hexane	87		-		70-130	-		
1,1,1-Trichloroethane	87		-		70-130	-		
Benzene	88		-		70-130	-		
Carbon tetrachloride	96		-		70-130	-		
Cyclohexane	87		-		70-130	-		
1,2-Dichloropropane	86		-		70-130	-		
Bromodichloromethane	92		-		70-130	-		
1,4-Dioxane	93		-		70-130	-		
Trichloroethene	92		-		70-130	-		
2,2,4-Trimethylpentane	90		-		70-130	-		
Heptane	89		-		70-130	-		
cis-1,3-Dichloropropene	99		-		70-130	-		
4-Methyl-2-pentanone	92		-		70-130	-		
trans-1,3-Dichloropropene	86		-		70-130	-		
1,1,2-Trichloroethane	95		-		70-130	-		
Toluene	97		-		70-130	-		
2-Hexanone	101		-		70-130	-		
Dibromochloromethane	112		-		70-130	-		
1,2-Dibromoethane	113		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: BINGHAMTON PLAZA

Project Number: 426.01214.7

Lab Number: L2146468

Report Date: 09/03/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-05 Batch: WG1541373-3								
Tetrachloroethene	112		-		70-130	-		
Chlorobenzene	114		-		70-130	-		
Ethylbenzene	107		-		70-130	-		
p/m-Xylene	109		-		70-130	-		
Bromoform	120		-		70-130	-		
Styrene	116		-		70-130	-		
1,1,2,2-Tetrachloroethane	114		-		70-130	-		
o-Xylene	111		-		70-130	-		
4-Ethyltoluene	116		-		70-130	-		
1,3,5-Trimethylbenzene	117		-		70-130	-		
1,2,4-Trimethylbenzene	121		-		70-130	-		
Benzyl chloride	114		-		70-130	-		
1,3-Dichlorobenzene	124		-		70-130	-		
1,4-Dichlorobenzene	124		-		70-130	-		
1,2-Dichlorobenzene	124		-		70-130	-		
1,2,4-Trichlorobenzene	123		-		70-130	-		
Hexachlorobutadiene	122		-		70-130	-		

Lab Duplicate Analysis
Batch Quality Control

Project Name: BINGHAMTON PLAZA
Project Number: 426.01214.7
Lab Number: L2146468
Report Date: 09/03/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1541372-5 QC Sample: L2146468-03 Client ID: IA-1						
Vinyl chloride	ND	ND	ppbV	NC		25
1,1-Dichloroethene	ND	ND	ppbV	NC		25
cis-1,2-Dichloroethene	ND	ND	ppbV	NC		25
1,1,1-Trichloroethane	ND	ND	ppbV	NC		25
Carbon tetrachloride	0.088	0.088	ppbV	0		25
Trichloroethene	0.023	0.023	ppbV	0		25
Tetrachloroethene	0.020	ND	ppbV	NC		25

Lab Duplicate Analysis

Batch Quality Control

Project Name: BINGHAMTON PLAZA

Project Number: 426.01214.7

Lab Number: L2146468

Report Date: 09/03/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1541373-5 QC Sample: L2146468-03 Client ID: IA-1						
Dichlorodifluoromethane	0.475	0.505	ppbV	6		25
Chloromethane	0.570	0.590	ppbV	3		25
Freon-114	ND	ND	ppbV	NC		25
1,3-Butadiene	ND	ND	ppbV	NC		25
Bromomethane	ND	ND	ppbV	NC		25
Chloroethane	ND	ND	ppbV	NC		25
Ethanol	422	427	ppbV	1		25
Vinyl bromide	ND	ND	ppbV	NC		25
Acetone	8.22	8.21	ppbV	0		25
Trichlorofluoromethane	0.266	0.272	ppbV	2		25
Isopropanol	10.2	10.1	ppbV	1		25
Tertiary butyl Alcohol	ND	ND	ppbV	NC		25
Methylene chloride	ND	ND	ppbV	NC		25
3-Chloropropene	ND	ND	ppbV	NC		25
Carbon disulfide	ND	ND	ppbV	NC		25
Freon-113	ND	ND	ppbV	NC		25
trans-1,2-Dichloroethene	ND	ND	ppbV	NC		25
1,1-Dichloroethane	ND	ND	ppbV	NC		25
Methyl tert butyl ether	ND	ND	ppbV	NC		25
2-Butanone	0.527	0.516	ppbV	2		25
Ethyl Acetate	ND	ND	ppbV	NC		25

Lab Duplicate Analysis

Batch Quality Control

Project Name: BINGHAMTON PLAZA
Project Number: 426.01214.7

Lab Number: L2146468
Report Date: 09/03/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1541373-5 QC Sample: L2146468-03 Client ID: IA-1						
Chloroform	ND	ND	ppbV	NC		25
Tetrahydrofuran	0.605	0.599	ppbV	1		25
1,2-Dichloroethane	ND	ND	ppbV	NC		25
n-Hexane	ND	ND	ppbV	NC		25
Benzene	ND	ND	ppbV	NC		25
Cyclohexane	ND	ND	ppbV	NC		25
1,2-Dichloropropane	ND	ND	ppbV	NC		25
Bromodichloromethane	ND	ND	ppbV	NC		25
1,4-Dioxane	ND	ND	ppbV	NC		25
2,2,4-Trimethylpentane	ND	ND	ppbV	NC		25
Heptane	0.229	0.225	ppbV	2		25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC		25
4-Methyl-2-pentanone	ND	ND	ppbV	NC		25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC		25
1,1,2-Trichloroethane	ND	ND	ppbV	NC		25
Toluene	0.456	0.428	ppbV	6		25
2-Hexanone	ND	ND	ppbV	NC		25
Dibromochloromethane	ND	ND	ppbV	NC		25
1,2-Dibromoethane	ND	ND	ppbV	NC		25
Chlorobenzene	ND	ND	ppbV	NC		25
Ethylbenzene	ND	ND	ppbV	NC		25

Lab Duplicate Analysis

Batch Quality Control

Project Name: BINGHAMTON PLAZA

Project Number: 426.01214.7

Lab Number: L2146468

Report Date: 09/03/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1541373-5 QC Sample: L2146468-03 Client ID: IA-1						
p/m-Xylene	ND	ND	ppbV	NC		25
Bromoform	ND	ND	ppbV	NC		25
Styrene	ND	ND	ppbV	NC		25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC		25
o-Xylene	ND	ND	ppbV	NC		25
4-Ethyltoluene	ND	ND	ppbV	NC		25
1,3,5-Trimethylbenzene	ND	ND	ppbV	NC		25
1,2,4-Trimethylbenzene	0.208	ND	ppbV	NC		25
Benzyl chloride	ND	ND	ppbV	NC		25
1,3-Dichlorobenzene	ND	ND	ppbV	NC		25
1,4-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2,4-Trichlorobenzene	ND	ND	ppbV	NC		25
Hexachlorobutadiene	ND	ND	ppbV	NC		25

Project Name: BINGHAMTON PLAZA

Lab Number: L2146468

Project Number: 426.01214.7

Report Date: 09/03/21

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controler Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L2146468-01	OA-1	01371	Flow 5	08/25/21	361843		-	-	-	Pass	4.5	4.4	2
L2146468-01	OA-1	3227	2.7L Can	08/25/21	361843	L2144248-04	Pass	-29.5	-6.5	-	-	-	-
L2146468-02	OA-2	0001	Flow 5	08/25/21	361843		-	-	-	Pass	4.5	4.5	0
L2146468-02	OA-2	171	2.7L Can	08/25/21	361843	L2144248-04	Pass	-29.1	-5.6	-	-	-	-
L2146468-03	IA-1	0482	Flow 5	08/25/21	361843		-	-	-	Pass	4.5	4.7	4
L2146468-03	IA-1	164	2.7L Can	08/25/21	361843	L2144248-04	Pass	-29.3	-5.1	-	-	-	-
L2146468-04	IA-2	0470	Flow 5	08/25/21	361843		-	-	-	Pass	4.5	5.0	10
L2146468-04	IA-2	2428	2.7L Can	08/25/21	361843	L2144248-04	Pass	-29.5	-6.5	-	-	-	-
L2146468-05	IA-3	0967	Flow 5	08/25/21	361843		-	-	-	Pass	4.5	4.5	0
L2146468-05	IA-3	3239	2.7L Can	08/25/21	361843	L2144248-04	Pass	-29.3	-6.8	-	-	-	-

Air Canister Certification Results

Lab ID: L2144248-04
Client ID: CAN 335 SHELF 2
Sample Location:

Date Collected: 08/18/21 09:00
Date Received: 08/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 08/22/21 18:08
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Air Canister Certification Results

Lab ID: L2144248-04

Client ID: CAN 335 SHELF 2

Sample Location:

Date Collected: 08/18/21 09:00

Date Received: 08/18/21

Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1

Air Canister Certification Results

Lab ID: L2144248-04
Client ID: CAN 335 SHELF 2
Sample Location:

Date Collected: 08/18/21 09:00
Date Received: 08/18/21
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2144248
Report Date: 09/03/21

Air Canister Certification Results

Lab ID: L2144248-04
Client ID: CAN 335 SHELF 2
Sample Location:
Date Collected: 08/18/21 09:00
Date Received: 08/18/21
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name:	BATCH CANISTER CERTIFICATION	**Lab Number:**	L2144248
Project Number:	CANISTER QC BAT	**Report Date:**	09/03/21

Air Canister Certification Results

Lab ID:	L2144248-04	Date Collected:	08/18/21 09:00
Client ID:	CAN 335 SHELF 2	Date Received:	08/18/21
Sample Location:		Field Prep:	Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								

	Results	**Qualifier**	**Units**	**RDL**	**Dilution Factor**
Tentatively Identified Compounds					

No Tentatively Identified Compounds

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	94		60-140
Bromochloromethane	94		60-140
chlorobenzene-d5	94		60-140

Air Canister Certification Results

Lab ID: L2144248-04
Client ID: CAN 335 SHELF 2
Sample Location:

Date Collected: 08/18/21 09:00
Date Received: 08/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 08/22/21 18:08
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acrolein	ND	0.050	--	ND	0.115	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1

Project Name: BATCH CANISTER CERTIFICATION
Lab Number: L2144248
Project Number: CANISTER QC BAT
Report Date: 09/03/21

Air Canister Certification Results

Lab ID: L2144248-04
Client ID: CAN 335 SHELF 2
Sample Location:
Date Collected: 08/18/21 09:00
Date Received: 08/18/21
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1

Air Canister Certification Results

Lab ID: L2144248-04
Client ID: CAN 335 SHELF 2
Sample Location:

Date Collected: 08/18/21 09:00
Date Received: 08/18/21
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	94		60-140
bromochloromethane	94		60-140
chlorobenzene-d5	93		60-140

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	*Custody Seal*
NA	Absent

Container Information

Container ID	*Container Type*	*Cooler*	*Initial pH*	*Final pH*	*Temp deg C*	*Pres*	*Seal*	*Frozen Date/Time*	*Analysis(*)*
L2146468-01A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30),TO15-SIM(30)
L2146468-02A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30),TO15-SIM(30)
L2146468-03A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-SIM(30),TO15-LL(30)
L2146468-04A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-SIM(30),TO15-LL(30)
L2146468-05A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30),TO15-SIM(30)

*Values in parentheses indicate holding time in days

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A	- Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
C	- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
D	- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
E	- Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
F	- The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
G	- The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
H	- The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
I	- The lower value for the two columns has been reported due to obvious interference.
J	- Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
M	- Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
ND	- Not detected at the reporting limit (RL) for the sample.
NJ	- Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where

Data Qualifiers

the identification is based on a mass spectral library search.

P	- The RPD between the results for the two columns exceeds the method-specified criteria.
Q	- The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
R	- Analytical results are from sample re-analysis.
RE	- Analytical results are from sample re-extraction.
S	- Analytical results are from modified screening analysis.

REFERENCES

48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

AIR ANALYSIS

CHAIN OF CUSTODY

PAGE_____ OF _____

ALPHA ANALYTICAL
320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 8/31/21

ALPHA Job #: L2146468

Client Information

Client: Keystone Environmental Services
Address: 58 Exchange Street
Binghamton, NY 13901
Phone: 607-770-9098
Fax:
Email: CTarnowski@KEcompanies.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Binghamton Plaza
Project Location: 33 W. State St. Bing, NY
Project #: 426.01214.7
Project Manager: C. Tarnow
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: Standard Time:

Report Information - Data Deliverables

☐ FAX
☒ ADEx
Criteria Checker:
(Default based on Regulatory Criteria Indicated)
Other Formats:
☒ EMAIL (standard pdf report)
☒ Additional Deliverables: CAT B
Report to: (if different than Project Manager)

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed	Program	Res / Comm

Other Project Specific Requirements/Comments:

Project-Specific Target Compound List: ☐ * Detection Limit - 1 ug + 0.2 NYS

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	COLLECTION End Date	Start Time	End Time	Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	I D Can	I D - Flow Controller	TO-15	TO-15 SIM	APH Subtract Non-petroleum HCs ☐	Fixed Gases	Sulfides & Mercaptans by TO-15	Sample Comments (i.e. PID)
46468-01	OA-1	8/28/21	8:53	3:46	29.2	-7	AA	CT	2.7L	3227	0001	X					out door Air
02	OA-2	↓	9:05	3:59	24.2	-7.2	↓	↓	↓	171	0482	X					out door Air
03	IA-1	↓	8:57	4:10	29.3	-6	↓	↓	↓	164	01371	X					BLD31
04	IA-2	↓	9:00	4:06	29.4	-7.5	↓	↓	↓	2428	0470	X					B1D31
05	IA-3	↓	9:10	4:15	29.1	-7.5	↓	↓	↓	3239	0967	X					B ID 32

*SAMPLE MATRIX CODES
AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

Container Type

Relinquished By:	Date/Time	Received By:	Date/Time:
	8/30/2021	AAL	8/30/21 12:20
	8/30/21 12:20		8/31/21 00:30
	8/31/21 4:00		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

(25-Sep-15)

ANALYTICAL REPORT

Lab Number:	L2200153
Client:	Keystone Environmental Services 58 Exchange Street Binghamton, NY 13901
ATTN:	Christian Tarnowski
Phone:	(607) 770-9098
Project Name:	BINGHAMTON, PLAZA
Project Number:	426.01214.7
Report Date:	01/17/22

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2200153-01	OA-1	AIR	33 W. STATE ST.	12/30/21 16:00	01/03/22
L2200153-02	OA-2	AIR	33 W. STATE ST.	12/30/21 16:05	01/03/22
L2200153-03	IA-1	AIR	33 W. STATE ST.	12/30/21 15:50	01/03/22
L2200153-04	IA-2	AIR	33 W. STATE ST.	12/30/21 15:57	01/03/22
L2200153-05	IA-3	AIR	33 W. STATE ST.	12/30/21 16:30	01/03/22

Project Name:	BINGHAMTON, PLAZA	**Lab Number:**	L2200153
Project Number:	426.01214.7	**Report Date:**	01/17/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Case Narrative (continued)

Volatile Organics in Air

Canisters were released from the laboratory on December 29, 2021. The canister certification results are provided as an addendum.

L2200153-01D and -03D: The samples were re-analyzed on dilution in order to quantitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

L2200153-05D: The sample has elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

The WG1594203-3 LCS recovery for trichlorofluoromethane (135%) is above the upper 130% acceptance limit. All samples associated with this LCS do not have reportable amounts of this analyte.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Christopher J. Anderson Christopher J. Anderson

Title: Technical Director/Representative Date: 01/17/22

AIR

Project Name: BINGHAMTON, PLAZA

Project Number: 426.01214.7

Lab Number: L2200153

Report Date: 01/17/22

SAMPLE RESULTS

Lab ID: L2200153-01
Client ID: OA-1
Sample Location: 33 W. STATE ST.

Date Collected: 12/30/21 16:00
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 01/13/22 20:50
Analyst: RY

	ppbV			**ug/m3**				**Dilution Factor**
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.683	0.200	--	3.38	0.989	--		1
Chloromethane	0.875	0.200	--	1.81	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	1130	5.00	--	2130	9.42	--	E	1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	19.6	1.00	--	46.6	2.38	--		1
Trichlorofluoromethane	0.310	0.200	--	1.74	1.12	--		1
Isopropanol	50.1	0.500	--	123	1.23	--		1
Tertiary butyl Alcohol	1.16	0.500	--	3.52	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	0.538	0.500	--	1.59	1.47	--		1
Ethyl Acetate	0.590	0.500	--	2.13	1.80	--		1
Chloroform	0.454	0.200	--	2.22	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1

Project Name: BINGHAMTON, PLAZA
Project Number: 426.01214.7

Lab Number: L2200153
Report Date: 01/17/22

SAMPLE RESULTS

Lab ID: L2200153-01
Client ID: OA-1
Sample Location: 33 W. STATE ST.

Date Collected: 12/30/21 16:00
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	0.303	0.200	--	0.968	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	3.93	0.200	--	16.1	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.325	0.200	--	1.22	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1

SAMPLE RESULTS

Lab ID: L2200153-01
Client ID: OA-1
Sample Location: 33 W. STATE ST.
Date Collected: 12/30/21 16:00
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	76		60-140
Bromochloromethane	78		60-140
chlorobenzene-d5	86		60-140

SAMPLE RESULTS

Lab ID: L2200153-01
Client ID: OA-1
Sample Location: 33 W. STATE ST.

Date Collected: 12/30/21 16:00
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 01/13/22 20:50
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.112	0.020	--	0.705	0.126	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
Tetrachloroethene	0.037	0.020	--	0.251	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	75		60-140
bromochloromethane	78		60-140
chlorobenzene-d5	86		60-140

SAMPLE RESULTS

Lab ID: L2200153-01 D
Client ID: OA-1
Sample Location: 33 W. STATE ST.

Date Collected: 12/30/21 16:00
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 01/14/22 08:16
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Ethanol	1610	31.2	--	3030	58.8	--		6.25

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	61		60-140
Bromochloromethane	65		60-140
chlorobenzene-d5	74		60-140

SAMPLE RESULTS

Lab ID: L2200153-02
Client ID: OA-2
Sample Location: 33 W. STATE ST.

Date Collected: 12/30/21 16:05
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 01/13/22 21:30
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.705	0.200	--	3.49	0.989	--		1
Chloromethane	0.658	0.200	--	1.36	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	5.56	1.00	--	13.2	2.38	--		1
Trichlorofluoromethane	0.278	0.200	--	1.56	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1

SAMPLE RESULTS

Lab ID: L2200153-02
Client ID: OA-2
Sample Location: 33 W. STATE ST.

Date Collected: 12/30/21 16:05
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	0.274	0.200	--	0.875	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.214	0.200	--	0.806	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1

SAMPLE RESULTS

Lab ID: L2200153-02
Client ID: OA-2
Sample Location: 33 W. STATE ST.

Date Collected: 12/30/21 16:05
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	73		60-140
Bromochloromethane	76		60-140
chlorobenzene-d5	81		60-140

SAMPLE RESULTS

Lab ID: L2200153-02
Client ID: OA-2
Sample Location: 33 W. STATE ST.

Date Collected: 12/30/21 16:05
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 01/13/22 21:30
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.098	0.020	--	0.616	0.126	--		1
Trichloroethene	0.022	0.020	--	0.118	0.107	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	73		60-140
bromochloromethane	77		60-140
chlorobenzene-d5	82		60-140

SAMPLE RESULTS

Lab ID: L2200153-03
Client ID: IA-1
Sample Location: 33 W. STATE ST.

Date Collected: 12/30/21 15:50
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 01/13/22 22:10
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.710	0.200	--	3.51	0.989	--		1
Chloromethane	0.886	0.200	--	1.83	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	923	5.00	--	1740	9.42	--	E	1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	15.3	1.00	--	36.3	2.38	--		1
Trichlorofluoromethane	0.325	0.200	--	1.83	1.12	--		1
Isopropanol	45.6	0.500	--	112	1.23	--		1
Tertiary butyl Alcohol	0.807	0.500	--	2.45	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	0.295	0.200	--	1.44	0.977	--		1
Tetrahydrofuran	0.580	0.500	--	1.71	1.47	--		1

SAMPLE RESULTS

Lab ID: L2200153-03
Client ID: IA-1
Sample Location: 33 W. STATE ST.

Date Collected: 12/30/21 15:50
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	0.300	0.200	--	0.958	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	1.88	0.200	--	7.70	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.317	0.200	--	1.19	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1

SAMPLE RESULTS

Lab ID: L2200153-03
Client ID: IA-1
Sample Location: 33 W. STATE ST.

Date Collected: 12/30/21 15:50
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	73		60-140
Bromochloromethane	74		60-140
chlorobenzene-d5	84		60-140

SAMPLE RESULTS

Lab ID: L2200153-03
Client ID: IA-1
Sample Location: 33 W. STATE ST.

Date Collected: 12/30/21 15:50
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 01/13/22 22:10
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.126	0.020	--	0.793	0.126	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
Tetrachloroethene	0.034	0.020	--	0.231	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	72		60-140
bromochloromethane	75		60-140
chlorobenzene-d5	83		60-140

SAMPLE RESULTS

Lab ID: L2200153-03 D
Client ID: IA-1
Sample Location: 33 W. STATE ST.

Date Collected: 12/30/21 15:50
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 01/14/22 08:53
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Ethanol	1200	25.0	--	2260	47.1	--		5

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	57	Q	60-140
Bromochloromethane	62		60-140
chlorobenzene-d5	73		60-140

SAMPLE RESULTS

Lab ID: L2200153-04
Client ID: IA-2
Sample Location: 33 W. STATE ST.

Date Collected: 12/30/21 15:57
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 01/13/22 23:31
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.726	0.200	--	3.59	0.989	--		1
Chloromethane	0.678	0.200	--	1.40	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	5.08	5.00	--	9.57	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	1.29	1.00	--	3.06	2.38	--		1
Trichlorofluoromethane	0.281	0.200	--	1.58	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1

SAMPLE RESULTS

Lab ID: L2200153-04
Client ID: IA-2
Sample Location: 33 W. STATE ST.

Date Collected: 12/30/21 15:57
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	0.276	0.200	--	0.882	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1

SAMPLE RESULTS

Lab ID: L2200153-04
Client ID: IA-2
Sample Location: 33 W. STATE ST.

Date Collected: 12/30/21 15:57
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	69		60-140
Bromochloromethane	72		60-140
chlorobenzene-d5	81		60-140

SAMPLE RESULTS

Lab ID: L2200153-04
Client ID: IA-2
Sample Location: 33 W. STATE ST.

Date Collected: 12/30/21 15:57
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 01/13/22 23:31
Analyst: RY

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.102	0.020	--	0.642	0.126	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	68		60-140
bromochloromethane	72		60-140
chlorobenzene-d5	82		60-140

SAMPLE RESULTS

Lab ID: L2200153-05
Client ID: IA-3
Sample Location: 33 W. STATE ST.

Date Collected: 12/30/21 16:30
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 01/14/22 00:11
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.700	0.200	--	3.46	0.989	--		1
Chloromethane	0.777	0.200	--	1.60	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	0.258	0.200	--	0.571	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	4720	5.00	--	8890	9.42	--	E	1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	5.90	1.00	--	14.0	2.38	--		1
Trichlorofluoromethane	0.292	0.200	--	1.64	1.12	--		1
Isopropanol	1.19	0.500	--	2.93	1.23	--		1
Tertiary butyl Alcohol	8.43	0.500	--	25.6	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	0.992	0.500	--	2.93	1.47	--		1
Ethyl Acetate	1.85	0.500	--	6.67	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	0.991	0.500	--	2.92	1.47	--		1

SAMPLE RESULTS

Lab ID: L2200153-05
Client ID: IA-3
Sample Location: 33 W. STATE ST.

Date Collected: 12/30/21 16:30
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	0.381	0.200	--	1.22	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.322	0.200	--	1.21	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1

SAMPLE RESULTS

Lab ID: L2200153-05
Client ID: IA-3
Sample Location: 33 W. STATE ST.

Date Collected: 12/30/21 16:30
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	69		60-140
Bromochloromethane	72		60-140
chlorobenzene-d5	82		60-140

SAMPLE RESULTS

Lab ID: L2200153-05
Client ID: IA-3
Sample Location: 33 W. STATE ST.

Date Collected: 12/30/21 16:30
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 01/14/22 00:11
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.096	0.020	--	0.604	0.126	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
Tetrachloroethene	0.072	0.020	--	0.488	0.136	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	68		60-140
bromochloromethane	73		60-140
chlorobenzene-d5	83		60-140

SAMPLE RESULTS

Lab ID: L2200153-05 D
Client ID: IA-3
Sample Location: 33 W. STATE ST.

Date Collected: 12/30/21 16:30
Date Received: 01/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 01/15/22 04:29
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Ethanol	9260	508	--	17400	957	--		101.6

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	95		60-140
Bromochloromethane	96		60-140
chlorobenzene-d5	95		60-140

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 01/13/22 17:01

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab for sample(s): 01-05 Batch: WG1593772-4								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 01/13/22 17:01

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab for sample(s): 01-05 Batch: WG1593772-4								
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 01/13/22 17:01

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab for sample(s): 01-05 Batch: WG1593772-4								
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15-SIM
Analytical Date: 01/13/22 17:41

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01-05 Batch: WG1593775-4								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 01/14/22 15:17

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 05 Batch: WG1594203-4								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 01/14/22 15:17

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab for sample(s): 05 Batch: WG1594203-4								
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 01/14/22 15:17

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab for sample(s): 05 Batch: WG1594203-4								
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Lab Control Sample Analysis

Batch Quality Control

Project Name: BINGHAMTON, PLAZA

Project Number: 426.01214.7

Lab Number: L2200153

Report Date: 01/17/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-05 Batch: WG1593772-3								
Dichlorodifluoromethane	119		-		70-130	-		
Chloromethane	113		-		70-130	-		
Freon-114	122		-		70-130	-		
Vinyl chloride	115		-		70-130	-		
1,3-Butadiene	122		-		70-130	-		
Bromomethane	117		-		70-130	-		
Chloroethane	113		-		70-130	-		
Ethanol	107		-		40-160	-		
Vinyl bromide	114		-		70-130	-		
Acetone	124		-		40-160	-		
Trichlorofluoromethane	115		-		70-130	-		
Isopropanol	115		-		40-160	-		
1,1-Dichloroethene	108		-		70-130	-		
Tertiary butyl Alcohol	104		-		70-130	-		
Methylene chloride	103		-		70-130	-		
3-Chloropropene	115		-		70-130	-		
Carbon disulfide	104		-		70-130	-		
Freon-113	109		-		70-130	-		
trans-1,2-Dichloroethene	104		-		70-130	-		
1,1-Dichloroethane	104		-		70-130	-		
Methyl tert butyl ether	116		-		70-130	-		
2-Butanone	107		-		70-130	-		
cis-1,2-Dichloroethene	108		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: BINGHAMTON, PLAZA
Lab Number: L2200153
Project Number: 426.01214.7
Report Date: 01/17/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-05 Batch: WG1593772-3								
Ethyl Acetate	107		-		70-130	-		
Chloroform	114		-		70-130	-		
Tetrahydrofuran	104		-		70-130	-		
1,2-Dichloroethane	114		-		70-130	-		
n-Hexane	105		-		70-130	-		
1,1,1-Trichloroethane	112		-		70-130	-		
Benzene	95		-		70-130	-		
Carbon tetrachloride	115		-		70-130	-		
Cyclohexane	103		-		70-130	-		
1,2-Dichloropropane	102		-		70-130	-		
Bromodichloromethane	114		-		70-130	-		
1,4-Dioxane	108		-		70-130	-		
Trichloroethene	104		-		70-130	-		
2,2,4-Trimethylpentane	107		-		70-130	-		
Heptane	109		-		70-130	-		
cis-1,3-Dichloropropene	116		-		70-130	-		
4-Methyl-2-pentanone	111		-		70-130	-		
trans-1,3-Dichloropropene	103		-		70-130	-		
1,1,2-Trichloroethane	107		-		70-130	-		
Toluene	94		-		70-130	-		
2-Hexanone	111		-		70-130	-		
Dibromochloromethane	114		-		70-130	-		
1,2-Dibromoethane	107		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: BINGHAMTON, PLAZA
Project Number: 426.01214.7

Lab Number: L2200153
Report Date: 01/17/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-05 Batch: WG1593772-3								
Tetrachloroethene	106		-		70-130	-		
Chlorobenzene	104		-		70-130	-		
Ethylbenzene	105		-		70-130	-		
p/m-Xylene	106		-		70-130	-		
Bromoform	118		-		70-130	-		
Styrene	108		-		70-130	-		
1,1,2,2-Tetrachloroethane	112		-		70-130	-		
o-Xylene	110		-		70-130	-		
4-Ethyltoluene	112		-		70-130	-		
1,3,5-Trimethylbenzene	111		-		70-130	-		
1,2,4-Trimethylbenzene	118		-		70-130	-		
Benzyl chloride	123		-		70-130	-		
1,3-Dichlorobenzene	116		-		70-130	-		
1,4-Dichlorobenzene	114		-		70-130	-		
1,2-Dichlorobenzene	114		-		70-130	-		
1,2,4-Trichlorobenzene	122		-		70-130	-		
Hexachlorobutadiene	117		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: BINGHAMTON, PLAZA
Lab Number: L2200153
Project Number: 426.01214.7
Report Date: 01/17/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-05 Batch: WG1593775-3								
Vinyl chloride	112		-		70-130	-		25
1,1-Dichloroethene	102		-		70-130	-		25
cis-1,2-Dichloroethene	102		-		70-130	-		25
1,1,1-Trichloroethane	101		-		70-130	-		25
Carbon tetrachloride	111		-		70-130	-		25
Trichloroethene	99		-		70-130	-		25
Tetrachloroethene	98		-		70-130	-		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: BINGHAMTON, PLAZA
Lab Number: L2200153
Project Number: 426.01214.7
Report Date: 01/17/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 05 Batch: WG1594203-3								
Dichlorodifluoromethane	108		-		70-130	-		
Chloromethane	104		-		70-130	-		
Freon-114	113		-		70-130	-		
Vinyl chloride	103		-		70-130	-		
1,3-Butadiene	110		-		70-130	-		
Bromomethane	103		-		70-130	-		
Chloroethane	102		-		70-130	-		
Ethanol	89		-		40-160	-		
Vinyl bromide	107		-		70-130	-		
Acetone	120		-		40-160	-		
Trichlorofluoromethane	**135**	Q	-		70-130	-		
Isopropanol	102		-		40-160	-		
1,1-Dichloroethene	115		-		70-130	-		
Tertiary butyl Alcohol	102		-		70-130	-		
Methylene chloride	109		-		70-130	-		
3-Chloropropene	96		-		70-130	-		
Carbon disulfide	101		-		70-130	-		
Freon-113	96		-		70-130	-		
trans-1,2-Dichloroethene	85		-		70-130	-		
1,1-Dichloroethane	85		-		70-130	-		
Methyl tert butyl ether	98		-		70-130	-		
2-Butanone	84		-		70-130	-		
cis-1,2-Dichloroethene	96		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: BINGHAMTON, PLAZA
Lab Number: L2200153
Project Number: 426.01214.7
Report Date: 01/17/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 05 Batch: WG1594203-3								
Ethyl Acetate	97		-		70-130	-		
Chloroform	104		-		70-130	-		
Tetrahydrofuran	90		-		70-130	-		
1,2-Dichloroethane	105		-		70-130	-		
n-Hexane	96		-		70-130	-		
1,1,1-Trichloroethane	104		-		70-130	-		
Benzene	88		-		70-130	-		
Carbon tetrachloride	120		-		70-130	-		
Cyclohexane	96		-		70-130	-		
1,2-Dichloropropane	93		-		70-130	-		
Bromodichloromethane	115		-		70-130	-		
1,4-Dioxane	95		-		70-130	-		
Trichloroethene	100		-		70-130	-		
2,2,4-Trimethylpentane	98		-		70-130	-		
Heptane	98		-		70-130	-		
cis-1,3-Dichloropropene	101		-		70-130	-		
4-Methyl-2-pentanone	100		-		70-130	-		
trans-1,3-Dichloropropene	87		-		70-130	-		
1,1,2-Trichloroethane	97		-		70-130	-		
Toluene	84		-		70-130	-		
2-Hexanone	96		-		70-130	-		
Dibromochloromethane	123		-		70-130	-		
1,2-Dibromoethane	97		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: BINGHAMTON, PLAZA
Lab Number: L2200153
Project Number: 426.01214.7
Report Date: 01/17/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 05 Batch: WG1594203-3								
Tetrachloroethene	98		-		70-130	-		
Chlorobenzene	95		-		70-130	-		
Ethylbenzene	92		-		70-130	-		
p/m-Xylene	93		-		70-130	-		
Bromoform	127		-		70-130	-		
Styrene	92		-		70-130	-		
1,1,2,2-Tetrachloroethane	94		-		70-130	-		
o-Xylene	95		-		70-130	-		
4-Ethyltoluene	94		-		70-130	-		
1,3,5-Trimethylbenzene	105		-		70-130	-		
1,2,4-Trimethylbenzene	97		-		70-130	-		
Benzyl chloride	87		-		70-130	-		
1,3-Dichlorobenzene	96		-		70-130	-		
1,4-Dichlorobenzene	95		-		70-130	-		
1,2-Dichlorobenzene	96		-		70-130	-		
1,2,4-Trichlorobenzene	103		-		70-130	-		
Hexachlorobutadiene	110		-		70-130	-		

Lab Duplicate Analysis
Batch Quality Control

Project Name: BINGHAMTON, PLAZA
Project Number: 426.01214.7

Lab Number: L2200153
Report Date: 01/17/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1593772-5 QC Sample: L2200153-03 Client ID: IA-1						
Dichlorodifluoromethane	0.710	0.719	ppbV	1		25
Chloromethane	0.886	0.914	ppbV	3		25
Freon-114	ND	ND	ppbV	NC		25
1,3-Butadiene	ND	ND	ppbV	NC		25
Bromomethane	ND	ND	ppbV	NC		25
Chloroethane	ND	ND	ppbV	NC		25
Ethanol	923E	927E	ppbV	0		25
Vinyl bromide	ND	ND	ppbV	NC		25
Acetone	15.3	15.6	ppbV	2		25
Trichlorofluoromethane	0.325	0.328	ppbV	1		25
Isopropanol	45.6	45.3	ppbV	1		25
Tertiary butyl Alcohol	0.807	0.814	ppbV	1		25
Methylene chloride	ND	ND	ppbV	NC		25
3-Chloropropene	ND	ND	ppbV	NC		25
Carbon disulfide	ND	ND	ppbV	NC		25
Freon-113	ND	ND	ppbV	NC		25
trans-1,2-Dichloroethene	ND	ND	ppbV	NC		25
1,1-Dichloroethane	ND	ND	ppbV	NC		25
Methyl tert butyl ether	ND	ND	ppbV	NC		25
2-Butanone	ND	ND	ppbV	NC		25
Ethyl Acetate	ND	ND	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: BINGHAMTON, PLAZA
Project Number: 426.01214.7

Lab Number: L2200153
Report Date: 01/17/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1593772-5 QC Sample: L2200153-03 Client ID: IA-1						
Chloroform	0.295	0.300	ppbV	2		25
Tetrahydrofuran	0.580	0.592	ppbV	2		25
1,2-Dichloroethane	ND	ND	ppbV	NC		25
n-Hexane	ND	ND	ppbV	NC		25
Benzene	0.300	0.310	ppbV	3		25
Cyclohexane	ND	ND	ppbV	NC		25
1,2-Dichloropropane	ND	ND	ppbV	NC		25
Bromodichloromethane	ND	ND	ppbV	NC		25
1,4-Dioxane	ND	ND	ppbV	NC		25
2,2,4-Trimethylpentane	ND	ND	ppbV	NC		25
Heptane	1.88	1.92	ppbV	2		25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC		25
4-Methyl-2-pentanone	ND	ND	ppbV	NC		25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC		25
1,1,2-Trichloroethane	ND	ND	ppbV	NC		25
Toluene	0.317	0.330	ppbV	4		25
2-Hexanone	ND	ND	ppbV	NC		25
Dibromochloromethane	ND	ND	ppbV	NC		25
1,2-Dibromoethane	ND	ND	ppbV	NC		25
Chlorobenzene	ND	ND	ppbV	NC		25
Ethylbenzene	ND	ND	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name:	BINGHAMTON, PLAZA	**Lab Number:**	L2200153
Project Number:	426.01214.7	**Report Date:**	01/17/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1593772-5 QC Sample: L2200153-03 Client ID: IA-1						
p/m-Xylene	ND	ND	ppbV	NC		25
Bromoform	ND	ND	ppbV	NC		25
Styrene	ND	ND	ppbV	NC		25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC		25
o-Xylene	ND	ND	ppbV	NC		25
4-Ethyltoluene	ND	ND	ppbV	NC		25
1,3,5-Trimethylbenzene	ND	ND	ppbV	NC		25
1,2,4-Trimethylbenzene	ND	ND	ppbV	NC		25
Benzyl chloride	ND	ND	ppbV	NC		25
1,3-Dichlorobenzene	ND	ND	ppbV	NC		25
1,4-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2,4-Trichlorobenzene	ND	ND	ppbV	NC		25
Hexachlorobutadiene	ND	ND	ppbV	NC		25
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1593772-5 QC Sample: L2200153-03 Client ID: IA-1						
Ethanol	1200	1230	ppbV	2		25

Lab Duplicate Analysis

Batch Quality Control

Project Name: BINGHAMTON, PLAZA

Project Number: 426.01214.7

Lab Number: L2200153

Report Date: 01/17/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1593775-5 QC Sample: L2200153-03 Client ID: IA-1						
Vinyl chloride	ND	ND	ppbV	NC		25
1,1-Dichloroethene	ND	ND	ppbV	NC		25
cis-1,2-Dichloroethene	ND	ND	ppbV	NC		25
1,1,1-Trichloroethane	ND	ND	ppbV	NC		25
Carbon tetrachloride	0.126	0.120	ppbV	5		25
Trichloroethene	ND	ND	ppbV	NC		25
Tetrachloroethene	0.034	0.033	ppbV	3		25
Volatile Organics in Air - Mansfield Lab Associated sample(s): 05 QC Batch ID: WG1594203-5 QC Sample: L2200153-05 Client ID: IA-3						
Ethanol	9260	9030	ppbV	3		25

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controler Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L2200153-01	OA-1	0866	Flow 5	12/29/21	374354		-	-	-	Pass	4.5	4.6	2
L2200153-01	OA-1	360	2.7L Can	12/29/21	374354	L2170457-02	Pass	-29.3	-7.1	-	-	-	-
L2200153-02	OA-2	01644	Flow 5	12/29/21	374354		-	-	-	Pass	4.5	4.8	6
L2200153-02	OA-2	548	2.7L Can	12/29/21	374354	L2170457-02	Pass	-29.5	-7.0	-	-	-	-
L2200153-03	IA-1	02071	Flow 5	12/29/21	374354		-	-	-	Pass	4.5	4.7	4
L2200153-03	IA-1	2178	2.7L Can	12/29/21	374354	L2170457-02	Pass	-29.3	-7.6	-	-	-	-
L2200153-04	IA-2	02149	FLOW 5	12/29/21	374354		-	-	-	Pass	4.5	4.7	4
L2200153-04	IA-2	137	2.7L Can	12/29/21	374354	L2170457-02	Pass	-29.3	-7.2	-	-	-	-
L2200153-05	IA-3	0330	Flow 5	12/29/21	374354		-	-	-	Pass	4.5	4.6	2
L2200153-05	IA-3	404	2.7L Can	12/29/21	374354	L2170457-02	Pass	-29.3	-8.5	-	-	-	-

Air Canister Certification Results

Lab ID: L2170457-02
Client ID: CAN 3417 SHELF 13
Sample Location:

Date Collected: 12/21/21 14:00
Date Received: 12/22/21
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 12/23/21 23:41
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: BATCH CANISTER CERTIFICATION
Lab Number: L2170457
Project Number: CANISTER QC BAT
Report Date: 01/17/22

Air Canister Certification Results

Lab ID: L2170457-02
Client ID: CAN 3417 SHELF 13
Sample Location:
Date Collected: 12/21/21 14:00
Date Received: 12/22/21
Field Prep: Not Specified

Sample Depth:

	ppbV			**ug/m3**				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1

Air Canister Certification Results

Lab ID: L2170457-02

Client ID: CAN 3417 SHELF 13

Sample Location:

Date Collected: 12/21/21 14:00

Date Received: 12/22/21

Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1

Project Name: BATCH CANISTER CERTIFICATION
Lab Number: L2170457
Project Number: CANISTER QC BAT
Report Date: 01/17/22

Air Canister Certification Results

Lab ID: L2170457-02
Client ID: CAN 3417 SHELF 13
Sample Location:
Date Collected: 12/21/21 14:00
Date Received: 12/22/21
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Air Canister Certification Results

Lab ID:	L2170457-02	Date Collected:	12/21/21 14:00
Client ID:	CAN 3417 SHELF 13	Date Received:	12/22/21
Sample Location:		Field Prep:	Not Specified
Sample Depth:			

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								

	Results	**Qualifier**	**Units**	**RDL**	**Dilution Factor**
Tentatively Identified Compounds					
No Tentatively Identified Compounds					

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	96		60-140
Bromochloromethane	97		60-140
chlorobenzene-d5	95		60-140

Project Name: BATCH CANISTER CERTIFICATION
Lab Number: L2170457
Project Number: CANISTER QC BAT
Report Date: 01/17/22

Air Canister Certification Results

Lab ID: L2170457-02
Client ID: CAN 3417 SHELF 13
Sample Location:
Date Collected: 12/21/21 14:00
Date Received: 12/22/21
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 12/23/21 23:41
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acrolein	ND	0.050	--	ND	0.115	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1

Project Name: BATCH CANISTER CERTIFICATION
Lab Number: L2170457
Project Number: CANISTER QC BAT
Report Date: 01/17/22

Air Canister Certification Results

Lab ID: L2170457-02
Client ID: CAN 3417 SHELF 13
Sample Location:
Date Collected: 12/21/21 14:00
Date Received: 12/22/21
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.100	--	ND	0.377	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1

Air Canister Certification Results

Lab ID: L2170457-02
Client ID: CAN 3417 SHELF 13
Sample Location:

Date Collected: 12/21/21 14:00
Date Received: 12/22/21
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	95		60-140
bromochloromethane	97		60-140
chlorobenzene-d5	95		60-140

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	*Custody Seal*
NA	Absent

Container Information

Container ID	*Container Type*	*Cooler*	*Initial pH*	*Final pH*	*Temp deg C*	*Pres*	*Seal*	*Frozen Date/Time*	*Analysis(*)*
L2200153-01A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30),TO15-SIM(30)
L2200153-02A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30),TO15-SIM(30)
L2200153-03A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30),TO15-SIM(30)
L2200153-04A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30),TO15-SIM(30)
L2200153-05A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30),TO15-SIM(30)

*Values in parentheses indicate holding time in days

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A	- Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
C	- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
D	- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
E	- Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
F	- The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
G	- The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
H	- The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
I	- The lower value for the two columns has been reported due to obvious interference.
J	- Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
M	- Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
ND	- Not detected at the reporting limit (RL) for the sample.
NJ	- Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where

Data Qualifiers

the identification is based on a mass spectral library search.

P	- The RPD between the results for the two columns exceeds the method-specified criteria.
Q	- The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
R	- Analytical results are from sample re-analysis.
RE	- Analytical results are from sample re-extraction.
S	- Analytical results are from modified screening analysis.
V	- The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
Z	- The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

REFERENCES

48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

AIR ANALYSIS

ALPHA ANALYTICAL

CHAIN OF CUSTODY

PAGE 1 OF 1

320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 1/4/22

ALPHA Job #: L2200183

Client Information

Client: Keystone Environmental Services

Address: 58 Exchange St.
Binghamton, NY 13901

Phone: 607-770-9098

Fax:

Email: CTarnowski@KEconsultants.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Binghamton, Pkbg

Project Location: 33 W. State St.

Project #: 426.01214.7

Project Manager: C. Tarnowski

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: Standard Time: —

Report Information - Data Deliverables

☐ FAX

☒ ADEx

Criteria Checker:

(Default based on Regulatory Criteria Indicated)

Other Formats:

☒ EMAIL (standard pdf report)

☐ Additional Deliverables: CAT B

Report to: (if different than Project Manager)

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed	Program	Res / Comm

Other Project Specific Requirements/Comments:

Project-Specific Target Compound List: ☐ → Detection Limit 1ug + 0.2 NYS

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	COLLECTION End Date	Start Time	End Time	Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	I D Can	I D - Flow Controller	TO-15	TO-15 SIM	APH ☐ Subtract Non-petroleum HCs	Fixed Gases	Sulfides & Mercaptans by TO-15			Sample Comments (i.e. PID)
00183-01	OA-1	12/30/21	8:21	4:06	-29	-8	AA	CT	2.7L	360	0866	X							Outdoor Air
02	OA-2		8:25	4:05	-28	-7				548	01644	X							Outdoor Air
03	IA-1		8:15	3:50	-29	-6.5				2178	02071	X							Bld 31
04	IA-2		8:17	3:57	-29	-6				137	02149	X							Bld 3.1
05	IA-3		10:00	4:30	-29	-7.5				404	0330	X							Bld -32

*SAMPLE MATRIX CODES

AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

Container Type

Relinquished By:	Date/Time:	Received By:	Date/Time:
	1/3/2022 11:30	AAL M Rodriguez	1-3-22 11:30
Mike Rodriguez	1-3-22 11:30	Wendy	1/4/22 12:25
Wendy	1/4/22 2:45		1/4/22 0245
AAL	1/4/22 0415		1/4/22 0415

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FINAL

Binghamton Plaza Inc.

BROOME COUNTY, NEW YORK

Site Management Plan

NYSDEC Site Number: C704049

Prepared for:
BINGHAMTON PLAZA, INC.
30 GALESI DRIVE, SUITE 301
WAYNE, NEW JERSEY 07470

Prepared by:
BRICKHOUSE ENVIRONMENTAL
515 SOUTH FRANKLIN STREET
WEST CHESTER, PENNSYLVANIA 19382
610-692-5770

Revisions to Final Approved Site Management Plan:

Revision #	Submitted Date	Summary of Revision	DEC Approval Date
1		Quarterly IA Sampling	9/2/16

DECEMBER 2014

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 7
615 Erie Boulevard West, Syracuse, NY 13204-2400
P: (315) 426-7519, (315) 426-7551 | F: (315) 426-2653
www.dec.ny.gov

September 2, 2016

Binghamton Plaza, Inc.
Michael Tomasulo
c/o Galesi Real Estate Corp., 30 Galesi Dr.
30 Galesi Drive
Wayne, NJ 07470

Re: Site Management (SM) Periodic Review Report (PRR) Response Letter

Binghamton Plaza, Binghamton
Broome County, Site No.: C704049

Dear Michael Tomasulo (as the Certifying Party):

The Department has reviewed your Periodic Review Report (PRR) and IC/EC Certification for following period: 12/23/2014 to 06/01/2016.

Based on the indoor air monitoring data collected from building 31 in May 2016, trichloroethene (TCE) was found at 1.5 and 1.6 micrograms per cubic meter (ug/m3). Consistent with the August 2015 *Trichloroethene (TCE) in Indoor and Outdoor Air* fact sheet prepared by the New York State Department of Health (NYSDOH), background concentrations for TCE are typically 1 ug/m3 or less. Due to the presence of TCE above background concentrations and the sensitive receptors (i.e. children and pregnant women) that occupy this building, the indoor air monitoring frequency should be revised so that sampling is conducted on a quarterly basis (rather than semi-annual). Quarterly indoor air sampling will allow the need to address exposures promptly, if needed, especially if pregnant women are present and are in their first trimester of pregnancy in which TCE may be a risk factor for fetal heart defects in humans.

With the condition above, the Department hereby accepts the PRR and associated Certification. The frequency of Periodic Reviews for this site is 1 year(s), your next PRR is due on July 1, 2016. You will receive a reminder letter and updated certification form 75-days prior to the due date.

If you have any questions, or need additional forms, please contact me at 315-426-7411 or e-mail: joshua.cook@dec.ny.gov.

Sincerely,

Joshua Cook

ec:

Harry D. Warner, RHWRE
Joshua Cook, Project Manager
Eamonn O'Neill, DOH Project Manager
Melissa Doroski, NYSDOH
Maureen Schuck, NYSDOH
Michael Tomasulo, Binghamton Plaza
Douglas Schott, Brickhouse Environmental

FINAL
Binghamton Plaza Inc.
BROOME COUNTY, NEW YORK
Site Management Plan

NYSDEC Site Number: C704049

Prepared for:

BINGHAMTON PLAZA, INC.
30 GALESI DRIVE, SUITE 301
WAYNE, NEW JERSEY 07470

Prepared by:

BRICKHOUSE ENVIRONMENTAL
515 SOUTH FRANKLIN STREET
WEST CHESTER, PENNSYLVANIA 19382
610-692-5770

Revisions to Final Approved Site Management Plan:

Revision #	Submitted Date	Summary of Revision	DEC Approval Date

DECEMBER 2014

Binghamton Plaza Inc.

BROOME COUNTY, NEW YORK

Site Management Plan

NYSDEC Site Number: C704049

Certification Statement:

I Douglas B. Schott certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Douglas B. Schott

Douglas B. Schott, P.G.
Director of Geologic Services

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Site Management Plan

1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 INTRODUCTION

This document is required as an element of the remedial program at the Binghamton Plaza Site. (hereinafter referred to as the “Site”) under the New York State (NYS) Brownfield Cleanup Program (BCP) administered by New York State Department of Environmental Conservation (NYSDEC). The site was remediated in accordance with Brownfield Cleanup Agreement (BCA) Index# B7-0702-05-08, Site # C704049, which was executed on February 8, 2006 and last amended on January 23, 2014.

1.1.1 General

Binghamton Plaza, Inc. entered into a BCA with the NYSDEC in February 2006 to remediate a 24.3-acre property located in the City of Binghamton, Broome County, New York (Figure 1). This BCA required the Remedial Party, Binghamton Plaza, Inc. to investigate and remediate contaminated media at the site. The BCA was amended in August 2006 to add Binghamton Plaza NY, LLC as a co-Volunteer and was amended again in January 2014 to modify the site boundaries. The areal extent of the site that is addressed under the amended BCA is approximately 21.5 acres. A figure showing the site location and boundaries of this 21.5-acre site is provided in Figure 2. The boundaries of the site are more fully described in the metes and bounds site description that is part of the Environmental Easement.

After completion of the remedial work described in the Remedial Action Work Plan (RAWP), some contamination was left in the subsurface at this site, which is hereafter referred to as ‘remaining contamination.” This Site Management Plan (SMP) was prepared to manage remaining contamination at the site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. All reports associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

This SMP was prepared by Brickhouse Environmental, on behalf of Binghamton Plaza, Inc., in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated May 2010, and the guidelines provided by NYSDEC. This SMP addresses the means for implementing the Institutional Controls (ICs) and Engineering Controls (ECs) that are required by the Environmental Easement for the site. In addition, this SMP includes an Excavation Work Plan (Appendix A) which describes the procedures and protocols necessary should any on-site excavation work be needed.

1.1.2 Purpose

The site contains contamination left after completion of the remedial action. ECs have been incorporated into the site remedy to control exposure to remaining contamination during the use of the site to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Broome County Clerk, will require compliance with this SMP and all ECs and ICs placed on the site. The boundaries of the site are more fully described in the metes and bounds site description (included as Appendix B) that is part of the Environmental Easement. The Environmental Easement is included as Appendix C. The ICs place restrictions on site use, and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs. This SMP specifies the methods necessary to ensure compliance with all ECs and ICs required by the Environmental Easement for contamination that remains at the site. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Environmental Easement and the grantor’s successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of all procedures required to manage remaining contamination at the site after completion of the Remedial Action, including: (1) implementation and management of all Engineering and Institutional Controls; (2) media monitoring; (3) operation and maintenance of all treatment, collection, containment, or recovery systems; (4) performance of periodic inspections, certification of results, and submittal of Periodic Review Reports; and (5) defining criteria for termination of treatment system operations.

To address these needs, this SMP includes three plans: (1) an Engineering and Institutional Control Plan for implementation and management of ECs/ICs; (2) a Monitoring Plan for implementation of Site Monitoring; (3) an Operation and Maintenance Plan for implementation of remedial collection, containment, treatment, and recovery systems (including, where appropriate, preparation of an Operation and Maintenance Manual for complex systems).

This plan also includes a description of Periodic Review Reports for the periodic submittal of data, information, recommendations, and certifications to NYSDEC.

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of the environmental easement, which is grounds for revocation of the Certificate of Completion (COC);

- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the BCA (Index # B7-0702-05-08; Site #C704049) for the site, and thereby subject to applicable penalties.

1.1.3 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. In accordance with the Environmental Easement for the site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.2 SITE BACKGROUND

1.2.1 Site Location and Description

The site is located in the City of Binghamton, County of Broome, New York and is identified as Block 1 and Lots 1, 2, 7, 8, and 19 on the 144.74 City of Binghamton Tax Map, as well as Block 1 and Lot 17 on the 144.66 City of Binghamton Tax Map. The site is an approximately 21.5-acre area bounded by the Cheri Lindsey Park to the north, a McDonald's fast food restaurant to the south, West State Street to the east-southeast, and the Chenango River to the west (see Figure 2). The boundaries of the site are more fully described in Appendix B – Metes and Bounds. The BCP site includes only a portion of 144.74-1-1.

1.2.2 Site History

The following presents an excerpt from the February 15, 2006 Delta Environmental Site Investigation Work Plan (SIWP) describing the known site history. Brickhouse Environmental conducted an independent review of historic aerial to confirm the site development timeline presented in the excerpt. The following also describes prior and current tenants registered as EPA Resource Recovery and Conservation Act (RCRA) Small Quantity Generators (SQG) of hazardous waste. These prior and current tenants were highlighted as potential contributors to on-site contamination based on their status as SQG, although no specific documentation exists which indicates releases occurred at these establishments.

> *"According to available information generated from Delta's January- May 2005 due diligence work, the site was undeveloped in the early 1900s and was later used as a municipal "raw garbage" landfill by the City of Binghamton from 1946 until 1957. A municipal garbage incinerator was reportedly constructed by the City of Binghamton in 1957 south of the existing plaza and "behind" (west of) the existing McDonald's restaurant location. The ash from the incinerator was reportedly deposited at the site*

> *for the next several years until the early 1960s, at which time the use of the incinerator was discontinued. Thicknesses of the waste deposited at the site have been estimated to be approximately 20 feet; however, slightly less than 20 feet of waste was reported in the north end of the site, and up to 35 feet of waste in the south end of the site.*
>
> *Construction of the existing shopping plaza reportedly began in 1963. A review of available aerial photographs indicated that the plaza was present in 1967, with the plaza appearing in the 1967 photographs to be nearly the same as the existing plaza in 2005. The site was developed as a commercial strip mall and plaza and has been used as such since its construction in 1963.*
>
> *Typical onsite tenants have included food establishments, service stores (salons, etc.), large retail stores (Kmart), and various specialty retail stores (shoe stores, Radio Shack, etc.). Other tenants at the site have included a dry cleaner (Martin Brothers Cleaners and Dyers), an auto parts store (National Auto Stores) and a paint store (Sherwin Williams). The use of solvent-based materials has been documented at the site in association with the former dry cleaner (Martin Brothers). Although no longer present at the site, Martin Brothers was documented as a RCRA-SQG of hazardous waste in 1986. The paint store and the auto parts store referenced above were also documented as SQG's at the site.*
>
> *Neighboring properties to the site have included several fuel dispensing sites (i.e. gas stations), a dry cleaner, a park, residential areas, various commercial properties, and food establishments. Historical investigations at neighboring properties reported the presence of 'significant contamination' in the soil and groundwater at the McDonald's, and also beneath the Cheri Lindsey Park to the north. Reportedly, the entire Cheri Lindsey Park to the north is underlain by municipal landfill waste similar to the materials underlying the site."*

1.2.3 Geologic Conditions

Based on the findings of prior site characterization and remedial investigation activities, the waste materials placed on the site primarily consist of incinerator ash with lesser amounts of raw un-incinerated municipal waste. The waste appears highly degraded and non-putrescible. The average thickness of waste throughout the site is 12 feet. Approximately 5 feet of miscellaneous fill material is present above the waste layer. This fill material appears to be soil and rock used to grade the site and cap the waste following the cessation of landfill activities. Native soil consisting of grey silt and fine sand to coarse gravel is present beneath the waste layer. Silt was the first native material typically encountered beneath the waste and fill materials, based on observations made during soil boring and monitoring well installation. This silt layer appears to be generally continuous beneath the site and overlies gravel, sand and other silt layers. The silt layer may limit the migration of perched groundwater (contained in the waste and fill materials) to deeper native sand, gravel and silt. Geologic cross-sections are shown in Figures 3 through 5, based on the transects shown on Figure 2.

Seven shallow and four deep monitoring wells were installed at the site during the September 2008 remedial investigation to monitor groundwater within the waste mass and the underlying native soils, respectively (monitoring wells are shown on Figure 2). Based on groundwater elevation measurements, it appears that the shallow wells monitor a laterally discontinuous and seasonally absent perched groundwater zone at the base of the waste mass. The deep wells monitor a laterally continuous and regional water table aquifer that appears to discharge as baseflow to the Chenango River.

Each monitoring well was constructed of 2-inch diameter PVC riser and 10 feet of 0.01-inch slotted PVC well screen. In general, the shallow monitoring wells were installed near the transition between fill material and native soil (silt layer) to monitor perched or shallow groundwater within fill materials (if present). The native “silt layer” was identified during prior investigations at the site as a potential restrictive layer that could minimize the vertical migration of contaminants from the fill material into deeper native soil and aquifers. At the deep monitoring well locations, 2-inch diameter PVC casing was installed below the transition between fill material and native soil (silt layer) to depths of approximately 30 to 35 feet below grade. This construction was chosen to minimize the potential for cross-contamination between potentially impacted groundwater present in the fill material and groundwater present in relatively deeper native sand and gravel units beneath the silt layer and fill materials. In general, all of the deep monitoring wells were installed in the native silt, sand and gravel units beneath the fill materials.

The shallow wells were monitored for groundwater depth on several occasions during and following the completion of the remedial investigation and were generally dry during most monitoring events. The shallow wells occasionally contained water that was typically insufficient to allow for sample collection. The average groundwater elevation, based on measurements taken on April 2, 2009, was 834.19 feet above msl.

Based on groundwater depths obtained on April 2, 2009, the average groundwater elevation in the deep wells was 827.64 feet above msl. This elevation is approximately 6.5 feet lower than the average groundwater elevation observed in the shallow wells. The difference in groundwater elevation between the shallow and deep monitoring wells is particularly pronounced at the MW-6S/6D well cluster, where the difference in groundwater elevation is 11.71 feet.

The perched groundwater monitored by the shallow monitoring wells likely recharges the deeper water table aquifer monitored by the deep monitoring wells. However, the samples collected from the deep monitoring wells did not contain obvious indications of impacts from the overlying waste materials or other sources.

The water table aquifer, monitored by the deep monitoring wells, appears to discharge to the Chenango River along its eastern bank. Groundwater flows from east to west at an average gradient of 0.23% at an average rate of 0.29 feet/day. A groundwater flow map is shown on Figure 6.

1.3 SUMMARY OF REMEDIAL INVESTIGATION FINDINGS

Site Investigations and a Remedial Investigation (RI) were performed to characterize the nature and extent of contamination at and adjacent to the site. The results of the site investigations and RI are described in detail in the following reports:

- Limited Phase II Site Investigation, Whitestone Associates, September 19, 2002.
- Limited Site Investigation Report, Delta Environmental Consultants, Inc., March 30, 2005
- Site Investigation/Remedial Investigation Report, Brickhouse Environmental, July 2012.

Prior Environmental investigations were conducted within and on properties neighboring the Binghamton Plaza property. The Delta Environmental SIWP provides additional detail with regard to prior investigation and provides copies of available prior reports generated to document the investigations by Delta Environmental and Whitestone Associates. The 2012 Site Investigation/Remedial Investigation Report, prepared by Brickhouse Environmental, was submitted to and approved by the NYSDEC in October 2012. The following describes the prior investigation conducted at the adjacent McDonald’s restaurant property located south of the site. The subsequent sub-sections (1.3.1 through 1.3.3) summarize the findings of investigations performed within the boundaries of the site.

Whitestone Associates Inc. conducted a Limited Phase II Site Investigation on September 5, 2002 at the former Burger King Restaurant site, located at 3 West State Street immediately south of the Binghamton Plaza. This location is currently occupied by a McDonalds Restaurant. The primary goal of the investigation was to describe and log subsurface conditions and soil quality with respect to historic fill related to the municipal waste landfill/incinerator operations. A partial copy of the report is attached to the Delta Environmental SIWP. The following provides a brief summary of the investigation findings.

Nine soil borings were installed throughout the property to depths ranging from 12 feet to 20 feet below grade. Fill materials, similar to those described in the Delta Environmental Limited Site Investigation (above), were encountered. Native soils were not encountered in any of the soil borings. Groundwater was encountered in 7 of the 9 soil borings at inconsistent depths ranging from 10 to 17 feet below grade.

Four soil samples were collected for Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs) and Metals analysis. Groundwater samples were collected from two of the soil borings and analyzed for VOC and SVOC compounds. Each soil and groundwater sample contained detectable concentrations of the targeted analytes. In general, most concentrations were below their respective SCOs and NYS GWS.

1.3.1 Soil

Delta Environmental conducted a Limited Site Investigation during the week of March 7, 2005 to preliminarily investigate soil and shallow groundwater quality within the perimeter of the Binghamton Plaza property. Ten soil borings were advanced throughout the site to depths ranging from 8.2 feet to 24 feet. Six of the soil borings were converted to temporary monitoring wells for the purpose of collecting shallow groundwater samples and assessing groundwater depths.

Delta collected six soil samples from the 10 on-site soil borings for laboratory analysis. All samples were collected from fill materials containing municipal waste and incinerated municipal waste. All samples were analyzed for VOCs, SVOCs, Polychlorinated Biphenyls (PCBs) and RCRA Metals. All samples contained detectable concentrations of VOCs, SVOCs and Metals. PCBs were detected in 50% of the samples. All samples contained Metals at concentrations exceeding NYSDEC TAGM 4046 Soil SCOs (SCOs). Five of the six samples contained SVOCs in excess of SCOs and three samples contained the VOC Acetone slightly exceeding the SCO. PCBs were not detected in any of the samples at concentrations exceeding their respective SCO concentrations.

Consistent with the Delta Environmental SIWP, Brickhouse Environmental conducted a site-wide remedial investigation of soil and fill material in September 2008. Fifteen Geoprobe soil borings (designated B-1 through B-9, MW-1S and MW-4S, MW-2D, MW-3D, MW-6D, and MW-7D) were advanced at the approximate locations specified in the approved SIWP. The purpose of the soil investigation was to evaluate the nature and extent of historic fill from landfilling operations at the site and the absence/ presence of a source area of Chlorinated VOCs associated with the former onsite dry cleaner, as well as to evaluate potential offsite sources of COCs migrating onto the site.

Brickhouse Environmental investigated soil and fill material quality through the sampling and analysis of twelve soil samples. Nine fill material and three native soil samples were collected and analyzed consistent with the SIWP. The fill material, which consists of incinerated and raw municipal waste, contained detectable concentrations of

VOCs, SVOCs and Metals. Three VOCs, two SVOCs and five metals were detected above the applicable NYSDEC SCOs. The concentrations of most of the detected compounds were not significantly elevated and appear to be distributed throughout the waste material. Native silt and sand present beneath the fill (waste) material, was sampled and found to contain VOCs and SVOCs at trace concentrations, not exceeding their respective SCOs with the exception of acetone. All other concentrations were below their applicable SCOs.

1.3.2 Site-Related Groundwater

Six shallow groundwater samples were collected and analyzed for VOCs by Delta Environmental in March 2005. Five of the samples were also analyzed for SVOCs and three of the samples were analyzed for PCBs and total RCRA Metals. Four of the six samples contained VOCs at concentrations exceeding NYSDEC Class GA groundwater standards or guidance values (NYS GWS). SVOCs were detected in three samples at concentrations exceeding NYS GWS. PCBs were detected in one of the samples at concentrations exceeding NYS GWS and three samples contained total RCRA Metals exceeding NYS GWS concentrations. The report indicated that the groundwater samples were very turbid, which may have contributed to elevated Total Metals concentrations.

Brickhouse Environmental conducted a groundwater investigation beginning in September 2008 as part of the approved SIWP. The monitoring well locations are shown on Figure 6. The groundwater analytical data are summarized on Table 1 and concentrations of the targeted compounds are compared to NYSDEC Class GA GWS. A groundwater flow map is presented as Figure 6 for groundwater elevations collected on April 2, 2009 from the deep monitoring wells. Table 2 provides groundwater elevation data obtained on April 2, 2009.

The following presents the groundwater quality data with respect to groundwater flow (i.e. upgradient and downgradient). As shown on Figure 6, groundwater flow is generally from the southeast to the northwest, toward the Chenango River, based on groundwater elevations in the deep monitoring wells.

1.3.2.1 Upgradient Groundwater Quality

Upgradient groundwater quality is monitored by MW-2D and MW-7D. Groundwater depth at the time of sampling was approximately 20 feet below grade at both well locations. The shallow pairs to both deep wells could not be sampled due to a lack of sufficient water column. Both the Total Metals and Dissolved Metals concentrations are shown on Table 1.

Organic compounds (VOCs and SVOCs) were generally undetectable in both MW-2D and MW-7D. Chloroform was detected in MW-2D and MW-7D at respective concentrations of 2.20 ug/l and 1.99 ug/l, which is below the GWS of 7 ug/l. Tentatively identified VOC compounds were also not detected in either deep well. No specifically targeted SVOC compounds were detected in either deep well; however MW-2D contained 5.1 ug/l of total SVOC tentatively identified compounds.

Total Metals were detected in both MW-2D and MW-7D at concentrations exceeding the applicable GWSs. As mentioned previously, groundwater from MW-2D is very turbid; therefore, a field filtered Dissolved Metals sample was collected in addition to the Total Metals sample for MW-2D only. The sample turbidity at MW-2D was reported at 22,000 NTU. Turbidity values for the other sampled wells did not exceed 170 NTU. Total Metals concentrations were significantly elevated in MW-2D when compared to all other groundwater samples from the site. Elevated Total Metals concentrations were expected at MW-2D given the elevated sample turbidity. Field preservation for Total Metals analysis uses nitric acid. The acid effectively dissolves all Metals into solution that may be present in the sediment within the sample causing elevated Total Metals concentrations. The Dissolved Metals analysis for MW-2D exhibited significantly lower Metals concentrations when compared to the Total Metals analysis. The Dissolved Metals analysis is considered more representative of what would be expected to be mobile in the subsurface; therefore, the following discussion of Metals concentrations in MW-2D considers only the dissolved sample analysis.

Of all the Metals analyzed, Sodium, Manganese and Iron were detected above their respective GWSs in MW-7D (Total Metals). Sodium was the only Metal detected above its GWS in MW-2D (Dissolved Metals). These Metals are typically found in shallow groundwater and are generally considered to be naturally occurring. Based on the location of these wells, immediately adjacent to the upgradient property boundary, these Metals concentrations should be considered background for the site.

The groundwater samples were also analyzed for general chemistry inorganic parameters, PCBs and Total phenolics. PCBs were not detected in either upgradient well. Total phenolics were detected in MW-2D at a trace concentration of 0.0014 J mg/l, which slightly exceeds the GWS of 0.001 mg/l.

In summary, the upgradient groundwater quality does not indicate that groundwater has been impacted by upgradient releases or from the waste materials placed at the site.

1.3.2.2 Downgradient Groundwater Quality

Downgradient groundwater quality is monitored by MW-6D, MW-6S and MW-3D. Groundwater depth at the time of sampling in MW-3D and MW-6D (October 2008), was approximately 24 feet and 23 feet respectively. The depth to water in MW-6S was approximately 10 feet below grade during sampling in April 2009. With the exception of MW-6S, none of the remaining shallow wells could be monitored due to lack of sufficient water column. The shallow wells that could not be sampled include MW-1S, MW-3S, MW-4S and MW-5S.

The depth to groundwater in MW-6S has been shown to be consistently 10 feet shallower when compared to its deep pair MW-6D. MW-6S and the other shallow wells installed at the site were constructed to monitor shallow perched groundwater that appears to periodically accumulate in some portions of the waste mass present on-site. MW-6D and the other deep wells were constructed to monitor the deeper regional groundwater table contained in native silt and sand material below the waste mass.

Organic compounds (VOCs and SVOCs) were generally undetectable or at trace concentrations in all three downgradient wells. Acenaphthene (an SVOC compound) was detected at 21 ug/l in MW-6D and its duplicate MW-8, which slightly exceeds the GWS of 20 ug/l. MW-6D also contained the following compounds at concentrations well below their respective GWSs: Cyclohexane, Chlorobenzene, and Phenanthrene. Total VOC TICs were present in MW-6D at a concentration of 2.13 ug/l. MW-6S (the shallow pair to MW-6D) contained eight VOCs and SVOCs at detectable concentrations, all below their respective GWSs. The most noteworthy result from MW-6S was a total SVOC TIC concentration of 371.9 ug/l. MW-3D did not contain any detectable concentrations of VOCs or SVOCs.

Total Metals were detected in all three downgradient wells at concentrations exceeding the applicable GWSs. Similar to the results obtained from the upgradient deep monitoring wells, most of the Metals detected above their respective GWSs are generally considered to be naturally occurring. MW-3D and MW-6D contained Sodium, Manganese and Iron above their respective GWSs. In addition to these three Metals, MW-6S also contained Arsenic, Lead and Magnesium at concentrations that slightly exceed their respective GWSs of 0.025 mg/l, 0.025 mg/l and 35 mg/l.

The groundwater samples were also analyzed for general chemistry inorganic parameters, PCBs and Total phenolics. PCBs were not detected in any of the downgradient wells. Total phenolics were detected in both deep downgradient wells at trace concentrations similar to those found in the upgradient deep wells. The respective Total phenolics concentrations in MW-3D and MW-6D were 0.0011 J mg/l and 0.0012 J mg/l, which slightly exceed the GWS of 0.001 mg/l. Total phenolics were not monitored in MW-6S due to insufficient water column and yield.

In summary, the downgradient groundwater quality does not indicate that groundwater has been significantly impacted by historic or current site uses including the placement of municipal waste at the site. The presence of trace concentrations of heavy Metals (Arsenic and Lead), VOCs and SVOCs are likely attributable to impacts from the placement of incinerated and raw municipal waste at the site.

1.3.3 Site-Related Soil Vapor Intrusion

The first Soil Vapor Intrusion (SVI) investigation was conducted on February 19, 2007, following the approved February 2006 SIWP (as modified). The following provides a chronology of the investigation and mitigation activities related to SVI.

The June 29, 2007 “Vapor Intrusion Monitoring Report” documented the results of the soil vapor intrusion investigation, conducted on February 19, 2007. The report recommended the installation of sub-slab depressurization (SSD) systems or air monitoring at Buildings 31 and 33 for elevated concentrations of TCE and Methane, respectively. In summary, A total of 25 vapor samples were collected to evaluate the potential for VOC vapors to migrate into existing or future structures at the Site. The sampling locations are shown on Figure 7. The samples included eight indoor air samples, four crawlspace samples, three ambient air samples, eight sub-slab samples and two replicates for QA/QC purposes. The sub-slab vapor monitoring data are summarized in Table 3. The indoor and ambient air monitoring data are summarized in Table 4. The air monitoring data indicated the following environmental conditions:

- All indoor air VOC concentrations remained below the Air Guidance Values derived by the NYSDOH as outlined in Table 3.1 of the Guidance Manual.

- Carbon Tetrachloride was identified in each of the 11 indoor and ambient air samples at concentrations between 0.25 ug/m^3 and 1.0 ug/m^3. Carbon Tetrachloride was not identified above method detection limits in any of the 12 sub-slab samples. Comparison with the Soil Vapor/Indoor Air Matrix 1 decision table provided in the Guidance Manual indicates that “reasonable and practical actions” be taken to identify source(s) and reduce exposures at each of the sample locations where Carbon Tetrachloride was detected. Based on the presence of carbon tetrachloride in each of the ambient air samples and lack of carbon tetrachloride in each of the sub-slab samples, the contaminant is believed to be a regional air contaminant and is not anticipated to be derived from onsite soil gas.

- TCE was identified in three of the 11 indoor and ambient air samples (Indoor 24, 29 and 31) at concentrations between 0.25 ug/m^3 and 5.0 ug/m^3. TCE was identified in two of the 12 sub-slab samples (Sub-31 and Sub-32) at concentrations between 0.25 ug/m^3 and 5.0 ug/m^3. Comparison with the Soil Vapor/Indoor Air Matrix 1 decision table indicates that “reasonable and practical actions to identify source(s) and reduce exposures” be taken at each of these locations. TCE was also identified at 9.1 ug/m^3 in sub-slab sample PL-3. Using the nearest indoor air sample (Indoor-20, non detect), the Soil Vapor/Indoor Air Matrix 1 decision table indicates that “no further action” be taken for this sample location. All other samples remained below method detection limits for TCE.

- Tetrachloroethene (PCE) was identified in four of the 11 indoor and ambient air samples (Indoor 15 and 20, Ambient 1 and 3) at concentrations less than 3.0 ug/m^3. PCE was identified in five (Sub-20, 24, 29, 31 and PL-3) of the 12 sub-slab samples at concentrations less than 12.0 ug/m3. Comparison with the Soil Vapor/Indoor Air Matrix 2 decision table indicates that "no further action" be taken at these locations. PCE concentrations remained below method detection limits in each of the remaining samples, with the exception of Ambient-3 detected at 13.7 ug/m^3.

- 1,1,1-Trichloroethane (1,1,1-TCA) was not identified above method detection limits in any of the analyzed samples.

- Sample PL-3 was collected from the immediate vicinity of the former monitoring well GSB-5, where increased VOC concentrations in excess of NYSDEC Class GA Groundwater Standards were identified in the previous Limited Site Investigation, March 2005. Although elevated TCE and PCE concentrations were identified as compared to the remaining analytical data, comparison with the Soil Vapor/Indoor Air Matrix 2 decision table indicates that "no further action" be taken at this location.

- Methane was detected below 0.06% in each of the 24 analyzed samples with the exception of Sub-33, collected from beneath Building 33, which was identified at 4.7%. It should be noted that methane analysis was not performed on sample Sub-32 due to laboratory induced contamination.

- September 28, 2007 "Remedial Work Plan for Soil Vapor Mitigation": This work plan was prepared to present the plan for soil vapor mitigation based on the June 29, 2007, "Vapor Intrusion Monitoring Report." The NYSDEC provided comments to the work plan in a letter dated November 15, 2007. The NYSDEC comments primarily pertained to precautions related to potential explosion hazards due to the presence of Methane gas in sub-slab vapors. Brickhouse Environmental responded to the NYSDEC comments in a letter dated, May 15, 2008. The NYSDEC responded to the May 15, 2008 in a letter dated June 9, 2008.

- June 24, 2008 "Remedial Work Plan Addendum for Soil Vapor Mitigation": This addendum was prepared to modify the September 28, 2007 work plan based on the comments received from the NYSDEC. The final work plan, as modified by this addendum, was approved by the NYSDEC in a letter dated July 14, 2008.

- January 2009: The approved work plan for soil vapor mitigation was implemented by Brickhouse Environmental and Envirotesting, Inc. The site work included the installation of sub-slab depressurization systems and Methane detectors/alarms in Buildings 31, 32 and 33. The post-installation sub-slab vacuum testing for Building 31 failed, which was suspected to be a result of compromised footer walls along the exterior of the building. Envirotesting Inc. prepared a report, dated February 27, 2009, documenting the completed installations and recommendation for additional work at Building 31.

- October 27, 2009: The foundation of Building 31 was sealed by the maintenance staff of Binghamton Plaza and Envirotesting, Inc. in an attempt to improve sub-slab negative pressures. The sub-slab pressures were retested on the same day. The results indicated a significant improvement with sub-slab pressures at or below atmospheric pressure. The final testing results were reported by Envirotesting, Inc. in a letter dated October 29, 2009.

- January 6-7, 2010: Confirmatory indoor air sampling within buildings 31, 32 and 33 was conducted (detailed below).

Following the installation of the sub-slab depressurization systems and pressure testing, Brickhouse Environmental conducted post-mitigation indoor air sampling within Buildings 31, 32 and 33. The sampling and analytical methods used for this event were consistent with those used for the pre-mitigation sampling in February 2007. Refer to the methods described in the June 29, 2007, “Vapor Intrusion Monitoring Report” for additional detail.

Five air samples (IA-1 through IA-5) were collected on January 6-7, 2010 (3 indoor air and 2 ambient air). The sample locations are shown on Figure 8. The two ambient air samples were located to monitor upwind and downwind locations. The dominant wind direction was from northwest to southeast during the sampling period. The upwind ambient sample was behind Building 24 and the downwind sample was adjacent to Building 33. The sample locations within the building were chosen to be consistent with the sample locations and heights used for the pre-mitigation sampling conducted in February 2007. The samples were collected over a 12 hour period between the evening of January 6, 2010 and the morning of January 7, 2010. A duplicate sample was planned for this sampling event; however, one of the sample canisters did not function properly and Brickhouse Environmental opted to exclude the field duplicate from the sampling program.

All five of the indoor and ambient air samples were analyzed for VOCs by EPA Method TO-15 (standard list) and Methane gas by EPA Method 3C. The results of the sample analysis are summarized on Table 5 along with applicable Indoor Air Guidance Values (IAGV) and the appropriate indoor air decision matrices.

Methane was not detected in any of the samples collected. IAGVs exist for PCE, TCE and Methylene Chloride. These compounds were found at detectable concentrations in most of the samples collected, including the ambient air samples. The concentrations of these three compounds were well below their respective IAGV concentrations in all samples collected. In general, the post-mitigation concentrations were slightly lower than those obtained during the pre-mitigation event. Twenty post-mitigation sample results were slightly lower than pre-mitigation results, while 14 sample results were slightly higher. Also, most of the VOC concentrations found in indoor air were consistent with or below the same compound concentrations found in the outdoor ambient air. Finally, most of the concentrations were at or below the Table 2C concentrations, found in Appendix C of the October 2006, NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York. Table 2C of the guidance document summarizes the results of indoor air sampling and analysis conducted in typical commercial and office buildings by the US Environmental Protection Agency (USEPA). This information was obtained in 2001 to provide information related to typical indoor air contaminants that are not necessarily related to soil vapor intrusion.

The results of the pre- and post-mitigation indoor air sampling indicate that indoor quality is not an issue at the site and that the mitigation systems are functioning properly, except in Building 31, where negative vacuum pressure can not be maintained (this is discussed in more detail below). It is the intent of BPI to continue to maintain the current site use and building configuration at the site. Soil vapor intrusion will be addressed at any new construction planned for the site in the future or if significant modifications are proposed for existing building that involves foundations or concrete slab floors.

The locations of the SSD systems are shown on Figure 9 and the as-built configuration of the SSD systems in Buildings 31, 32 and 33 are shown on Figures 10, 11 and 12, respectively.

The following description summarizes the most recent inspections and indoor air sampling performed at the three SSD systems:

- September 21, 2011: Operations and Maintenance inspection and diagnostic investigations of Building 31 (Daycare Center) were performed.

  The results of the diagnostic investigation indicate that strong positive pressures still exist below the slab on grade structure. The system is not maintaining -0.004 inches of water column. The diagnostic testing showed similar to worse results when compared to the last test data of October 27, 2009. Additionally, a disconnected water heater flue pipe was identified and the pipe had been repaired by the January 2012 inspection. The results are presented in the Keystone Material Testing report dated January 20, 2012. Given the condition of the existing HVAC system, which is in need of a costly repair, and the inability to maintain a negative vacuum pressure, it is recommended that semi-annual indoor air sampling be conducted as per an email correspondence dated December 22, 2011 from the NYSDEC. Therefore, the SSD system in Building 31 was temporarily taken out of operation.

- October 7, 2011: The SSD systems in Buildings 32 and 33 were inspected. Building 32 is presently occupied by a new tenant; no crawl spaces were identified and there was a cover missing on a fan. The pressure readings from the communication test were within the acceptable range. Building 33 did not have any smoke testing performed due to a small occupied space. Also, a communication test was not performed as a test hole could not be drilled due to sub-slab utilities throughout the slab area. The manometer readings at the SSDs were sufficient and a fan cover was missing. In addition, one suction point in Building 31 was not accessible due to a locked door and the area was re-inspected on January 18, 2012.

- January 18, 2012: No changes since the October 7, 2011 inspection.

- April 30, 2012: crawl spaces and exterior ventilations systems in buildings 3, 20, 23 and 24 were evaluated and photographed by a representative from Keystone Material Testing. In addition, methane, oxygen and carbon dioxide (CO_2) levels were measured in buildings 20 and 24, where there were access points available. In buildings 20 and 24, methane and CO_2 levels were reported at 0.00% and oxygen was reported at 21.3%.

- May 14, 2012: The SSDS in Building 31 was shut down due to its inability to maintain a negative vacuum pressure. This decision was made resulting from conversations between Binghamton Plaza Inc. and NYSDOH/NYSDEC. Additional indoor air monitoring was recommended.

- April 12-15, 2013: Indoor air sampling was performed at two locations in Building 31 using EPA Method TO-17 (see Figure 10). The lab analysis was performed by Eurofins Air Toxics Inc. and all of the analytical results were below the IAGV.

- April 16, 2013: The SSD systems in Buildings 32 and 33 were inspected. Building 32 is presently occupied by the daycare “Kurious Kids”; no crawl spaces were identified and there was a cover missing on a fan. The pressure readings from the communication test were within the acceptable range. There was no smoke test performed. Building 33 was only inspected from the outside as no access was provided to the interior of the building; therefore there were no pressure tests performed. Additionally, a communication test hole has not been drilled due to sub-slab utilities throughout the slab area.

- January 30, 2014: The SSD systems in Buildings 32 and 33 were inspected. Building 32 is presently occupied by the daycare “Kurious Kids”; no crawl spaces were identified and the fan was making noises. There was no smoke test performed and the sub-slab vacuum levels were 50% less than last O&M but still excellent. Building 33 had no smoke test performed due to a small occupied space. There were no crawl spaces identified. The fan cover was missing and a communication test hole has not been drilled due to sub-slab utilities throughout the slab area.

- February 17, 2014: Indoor air sampling for VOCs using EPA Method-TO-17 was performed in accordance with the indoor air monitoring program in two locations within Building 31 (see Figure 10). The laboratory analysis was performed by Eurofins Air Toxic Inc. The results of the sample analysis indicate that PCE and TCE were found at detectable concentrations in the samples collected. The concentrations of these compounds were well below their respective IAGV concentrations in the samples collected. Methylene Chloride was not analyzed during this sampling event due to a change in sampling parameters.

- May 15, 2014: The SSDS was restarted in Building No. 31 at the request of the NYSDEC.

- August 13, 2014: Indoor air sampling for VOCs using EPA Method TO-15 was performed in accordance with the indoor air monitoring program in two locations within Building 31 (see Figure 10) and in one location in Building 32 (see Figure 11). The laboratory analysis was performed by Centek Laboratories. All of the results were below the IAGV. The results from Building 31 are consistent with prior indoor air monitoring events. Also, the results from Building 32 are generally consistent with the initial indoor air monitoring that was last performed in February 2007, prior to mitigation.

Table 6 presents the indoor air sampling results for Buildings 31 and 32.

1.3.4 Underground Storage Tanks

There are no Underground Storage Tanks at the Site.

1.4 SUMMARY OF REMEDIAL ACTIONS

The site was remediated in accordance with the NYSDEC-approved Remedial Action Work Plan for soil vapor mitigation activities, dated September 2007, the Remedial Work Plan Addendum for soil vapor mitigation activities, dated June 24, 2008, and the Combined alternatives analysis and Remedial Action Work Plan, dated January 22, 2014.

The following is a summary of the Remedial Actions performed at the site:

1. Construction and maintenance of a cover system consisting of a pavement and clean fill cap to prevent human exposure to remaining contaminated soil/fill remaining at the site;

2. Execution and recording of an Environmental Easement to restrict land use, prevent future exposure to any contamination remaining at the site and to properly maintain the pavement cap and clean fill cover.

3. Installation of three sub-slab depressurization systems at Buildings 31, 32 and 33 and monitoring of methane levels in crawl spaces with exterior ventilation systems in Buildings 3, 20. 23 and 24;

4. Development and implementation of a Site Management Plan for long term management of remaining contamination as required by the Environmental Easement, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance and (4) reporting;

Remedial activities that included the installation of the sub-slab depressurization systems were completed at the site in January 2009. Capping of the remaining pervious areas on the site was completed in October 2014 and is further discussed in Section 2.2.1.1. The maintenance of the pavement and clean fill cap is an on-going remedial measure.

1.4.1 Removal of Contaminated Materials from the Site

There were no contaminated materials removed from the Site.

1.4.2 Site-Related Treatment Systems

The only site-related treatment systems at the Site are the sub-slab depressurization systems at Buildings 31, 32 and 33. The locations of sub-slab depressurization systems are shown on Figure 9.

1.4.3 Remaining Contamination

The Binghamton Plaza site has been characterized with respect to fill material, native soil, groundwater, sediment and surface water quality and the extent and nature of fill materials placed on the site. The soil contamination still remains at the site and is covered by the pavement and soil cover. The Remedial Investigation Report, dated July 2012, details the analyses performed on the site and the locations of the soil samples and exceedances.

The following presents a narrative site conceptual model. To help illustrate the conceptual model, three cross-sections were prepared (Figures 3, 4 and 5) based on the information obtained during site characterization. Figure 2 presents the cross-section locations.

Based on the findings of the site characterization, the waste materials placed on the site primarily consist of incinerator ash with lesser amounts of raw un-incinerated municipal waste. The waste appears highly degraded and non-putrescible. The average thickness of waste throughout the site is 12 feet. Approximately 5 feet of miscellaneous fill material is present above the waste layer. This fill material appears to be soil and rock used to grade the site and cap the waste following the cessation of landfill activities. This fill material in Native soil consisting of grey silt and fine sand to coarse gravel is present beneath the waste layer.

The demarcation layer is an orange safety construction fence that has been placed approximately 12 inches below the soil cover, and will provide a visible barrier between the soil cover above and the contaminated soil below.

2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 INTRODUCTION

2.1.1 General

Since remaining contaminated soil and soil vapor exists beneath the site, Engineering Controls and Institutional Controls (EC/ICs) are required to protect human health and the environment. This Engineering and Institutional Control Plan describes the procedures for the implementation and management of all EC/ICs at the site. The EC/IC Plan is one component of the SMP and is subject to revision by NYSDEC.

2.1.2 Purpose

This plan provides:

- A description of all EC/ICs on the site;
- The basic implementation and intended role of each EC/IC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the features to be evaluated during each required inspection and periodic review;

- A description of plans and procedures to be followed for implementation of EC/ICs, such as the implementation of the Excavation Work Plan for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and

- Any other provisions necessary to identify or establish methods for implementing the EC/ICs required by the site remedy, as determined by the NYSDEC.

2.2 ENGINEERING CONTROLS

2.2.1 Engineering Control Systems

2.2.1.1 Soil Cover/Pavement Cap

Exposure to remaining contamination in soil/fill at the site is prevented by a cap and cover system placed over the site, as shown on Figure 13. This cover system currently is comprised of a minimum of 12 inches of clean soil, asphalt pavement, concrete-covered sidewalks, and concrete building slabs. Currently, the entire portion of the site that is restricted to restricted residential use is paved or covered by concrete sidewalks or building slabs. It is important to note that the cover system for the commercial use areas of the site must be comprised of a minimum of 12 inches of clean soil or impervious surface such as asphalt or concrete, while the cover system required for the restricted residential use area of the site must be comprised of a minimum of 24 inches of clean soil or an impervious surface such as asphalt or concrete.

Much of the site was already capped prior to starting the remedial work, as outlined in the Alternatives Analysis/Remedial Action Work Plan, dated January 22, 2014. Capping of the remaining pervious areas on the Site was completed in October 2014. The areas where each capping method was implemented can be seen in Figure 14. The six-inch asphalt cap consists of a minimum of three inches of compacted screenings overlain with three inches of No. 7 asphalt. Only one area required a clean fill soil cover, Area 9. Zero to six inches of surficial material was stripped off of Area 16, and then was covered with an asphalt cap. The material was removed from Area 16, transported to and placed in Area 9, and was covered with one-foot of offsite certified clean fill. The Excavation Work Plan that appears in Appendix A outlines the procedures required to be implemented in the event the cover system is breached, penetrated or temporarily removed, and any underlying remaining contamination is disturbed. Procedures for the inspection and maintenance of this cover are provided in the Monitoring Plan included in Section 3 of this SMP.

2.2.1.2 Sub-slab Depressurization Systems

There are three active Sub-slab Depressurization Systems on the site: in Buildings 31, 32 33. The SSD system configurations are presented on Figures 10, 11, and 12, respectively. Table 7 shows a summary of the configurations of the SSD systems.

The SSD system in Building 31 was installed in January 2009. There are two suction points with gate valves and u-tubes and they are located in the northwestern and southeaster corners of the building. There are also 6 communication test holes scattered throughout the building and a fan near the northeastern corner of the building. The fan is Model FanAM CAV 100 explosion-proof fan with a 3-inch stack, 18 inches above the roof line. In addition, a PAMA methane alarm is installed.

The post-installation sub-slab vacuum testing for Building 31 failed, which was suspected to be a result of compromised footer walls along the exterior of the building. On October 27, 2009 the foundation of Building 31 was sealed by the maintenance staff of Binghamton Plaza and Envirotesting, Inc. in an attempt to improve sub-slab negative pressures. The sub-slab pressures were retested on the same day. The results indicated a significant improvement with sub-slab pressures at or below atmospheric pressure; however, the SSDS in Building No. 31 was shut down due to its inability to maintain a negative vacuum pressure.

On April 12-15, 2013, indoor air sampling was performed at two locations in Building 31 using EPA Method TO-17 (see Figure 10). The lab analysis was performed by Eurofins Air Toxics Inc. and all of the analytical results were below the IAGV.

Then, on February 17, 2014, indoor air sampling for VOCs using EPA Method-TO-17 was performed in two interior locations within Building No. 31 (see Figure 10). The results of the sample analysis indicate that PCE and TCE were found at detectable concentrations in the samples collected. The concentrations were consistent with pre-mitigation concentrations. On May 15, 2014 the SSDS was restarted in Building No. 31 at the request of the NYSDEC, out of an abundance of caution.

On August 13, 2014, indoor air sampling for VOCs using EPA Method TO-15 was performed in accordance with the indoor air monitoring program in two locations within Building 31 (see Figure 10). The laboratory analysis was performed by Centek Laboratories. All of the results were below the IAGV. The results from Building 31 are consistent with prior indoor air monitoring events.

The SSD system in Building 32 was initially installed in September 2007, and became fully operational in January 2009. There are two suction points with gate valves and u-tubes as part of the SSD systems and they are both located in the northwestern section of the building in the storage and office part of the building. There are also 4 communication test holes in the corners of the building and an exhaust fan on the outside northeastern wall. The fan is Model FanAM CAV 100 explosion-proof fan with a 3-inch stack, and 18 inches above the roof line. In addition, a PAMA methane alarm is installed.

This system consists of a 4-inch diameter PVC exhaust piping installed beneath and sealed to the concrete floor at two suction points. The two suction points extend to the ceiling and area plumbed to a common vacuum fan located on the exterior of the building. The exterior exhaust point is located above the current roof line. Suction points and piping runs were selected to provide efficient and effective operation. All piping interfaces were sealed with caulk to prevent system short-circuiting.

The SSD system in Building 33 was installed in January 2009. There is one suction point with a u-tube which is located in the northwestern part of the building, within the teller area. The exhaust fan is located on the outside northwestern wall, outside of the closet. The fan is Model FanAM CAV 100 explosion-proof fan with a 3-inch stack, 18 inches above the roof line. In addition, a PAMA methane alarm is installed.

This SSD system consists of a 4-inch diameter PVC exhaust piping installed beneath and sealed to the concrete floor at one suction point. The one suction point extends to the ceiling and area plumbed to a common vacuum fan located on the exterior of the building. The exterior exhaust point is located above the current roof line. The suction point and piping runs were selected to provide efficient and effective operation. All piping interfaces were sealed with caulk to prevent system short-circuiting.

Procedures for operating and maintaining the sub-slab depressurization systems are documented in the Operation and Maintenance Plan (Section 4 of this SMP). Procedures for monitoring the system are included in the Monitoring Plan (Section 3 of this SMP). The Monitoring Plan also addresses severe condition inspections in the event that a severe condition, which may affect controls at the site, occurs.

2.2.1.3 Passive Soil Vapor Mitigation

Passive mitigation measures are already in place and operational in the crawl spaces beneath Buildings 1 through 28 at the site, and via a passive roof venting system in Buildings 29 and 30. This measure includes venting the sub-slab air from within the crawl spaces using passive fresh air intakes and roof vents (Figure 15). The sub-slab ventilation system covers approximately 255,000 square feet of building area. The presence of the sub-slab ventilation systems prevents soil vapors from entering structures, thereby protecting public health. Long-term monitoring and maintenance will ensure proper operation of the systems, so that the long-term protection of public health can continue. Additionally, the SMP would include provisions that during any future construction activities there would be an evaluation for any possible soil vapor intrusion and the appropriate passive or active mitigation systems would be installed.

2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when effectiveness monitoring indicates that the remedy has achieved the remedial action objectives identified by the Decision Document. The framework for determining when remedial processes are complete is provided in Sections 6.4 and 6.5 of NYSDEC DER-10.

2.2.2.1 Composite Cover System

The composite cover system is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals in perpetuity. The composite cover system is comprised of clean soil, an asphalt pavement cap, concrete sidewalks and concrete building slabs.

2.2.2.2 Sub-slab Depressurization (SSD) System

The active SSD systems will not be discontinued unless prior written approval is granted by the NYSDEC. In the event that monitoring data indicates that the SSD systems are no longer required, a proposal to discontinue the SSD systems will be submitted by the property owner to the NYSDEC and NYSDOH.

2.3 INSTITUTIONAL CONTROLS

A series of Institutional Controls is required by the Decision Document to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the site to commercial uses only, except for the areas designated as restricted residential use, as shown on Figure 13. Adherence to these Institutional Controls on the site is required by the Environmental Easement and will be implemented under this Site Management Plan. These Institutional Controls are:

- Compliance with the Environmental Easement and this SMP by the Grantor and the Grantor’s successors and assigns;

- All Engineering Controls must be operated and maintained as specified in this SMP;

- All Engineering Controls on the Controlled Property must be inspected at a frequency and in a manner defined in the SMP.

- Groundwater and indoor air and other environmental or public health monitoring must be performed as defined in this SMP;

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

Institutional Controls identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement.

The site has a series of Institutional Controls in the form of site restrictions. Adherence to these Institutional Controls is required by the Environmental Easement. Site restrictions that apply to the Controlled Property are:

- The property may be used for commercial or restricted residential use provided that the long-term Engineering and Institutional Controls included in this SMP are employed. A portion of the site may only be used for restricted-residential use (which also allows for commercial and industrial use) provided that the long-term Engineering and Institutional Controls included in this SMP are employed. The remainder of the site may only be used for commercial use (which also allows for industrial use) provided that the long-term Engineering and Institutional Controls included in this SMP are employed. The area of the site that may be used for restricted residential use is shown on Figure 13.

- The portion of the site which may be used for restricted residential use may not be used for a higher level of use, such as unrestricted or residential use without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC. The remainder of the site which may be used for commercial use may not be used for a higher level of use, such as unrestricted, residential or restricted-residential use without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC;

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

- The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use, and the user must first notify and obtain written approval to do so from the Department;

- The potential for soil vapor intrusion must be evaluated for any buildings developed on-site, and any potential impacts that are identified must be monitored or mitigated;

- Vegetable gardens and farming on the property are prohibited;

- The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled

Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

2.3.1 Excavation Work Plan

A portion of the site has been remediated for restricted residential use. The remainder of the site has been remediated for commercial use. Restricted residential use is isolated to the areas designated as such (see Figure 13).

Any future intrusive work that will penetrate the soil cover or cap, or encounter or disturb the remaining contamination, including any modifications or repairs to the existing cover system will be performed in compliance with the Excavation Work Plan (EWP) that is attached as Appendix A to this SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) prepared for the site. A HASP and CAMP are attached as Appendices D and E, respectively, to this SMP that are in current compliance with DER-10, and 29 CFR 1910, 29 CFR 1926, and all other applicable Federal, State and local regulations. Based on future changes to State and federal health and safety requirements, and specific methods employed by future contractors, the HASP and CAMP will be updated and re-submitted with the notification provided in Section A-1 of the EWP. Any intrusive construction work will be performed in compliance with the EWP, HASP and CAMP, and will be included in the periodic inspection and certification reports submitted under the Site Management Reporting Plan (See Section 5).

The site owner and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all intrusive work, the structural integrity of excavations, proper disposal of excavation de-water, control of runoff from open excavations into remaining contamination, and for structures that may be affected by excavations (such as building foundations and bridge footings). The site owner will ensure that site development activities will not interfere with, or otherwise impair or compromise, the engineering controls described in this SMP.

2.3.2 Soil Vapor Intrusion

Prior to the construction of any enclosed structures on-site, an SVI evaluation will be performed to determine whether any mitigation measures are necessary to eliminate potential exposure to vapors in the proposed structure. Alternatively, an SVI mitigation system may be installed as an element of the building foundation without first conducting an investigation. This mitigation system will include a vapor barrier and passive sub-slab depressurization system that is capable of being converted to an active system.

Prior to conducting an SVI investigation or installing a mitigation system, a work plan will be developed and submitted to the NYSDEC and NYSDOH for approval. This work plan will be developed in accordance with the most recent NYSDOH "Guidance for Evaluating Soil Vapor Intrusion in the State of New York". Measures to be employed to mitigate potential soil vapor intrusion will be evaluated, selected, designed, installed, and maintained based on the SVI evaluation, the NYSDOH guidance, and construction details of the proposed structure.

Preliminary (unvalidated) SVI sampling data will be forwarded to the NYSDEC and NYSDOH for initial review and interpretation. Upon validation, the final data will be transmitted to the agencies, along with a recommendation for follow-up action, such as mitigation. Validated SVI data will be transmitted to the property owner within 30 days of validation. If any indoor air test results exceed NYSDOH guidelines, relevant NYSDOH fact sheets will be provided to all tenants and occupants of the property within 15 days of receipt of validated data.

SVI sampling results, evaluations, and follow-up actions will also be summarized in the next Periodic Review Report.

2.4 INSPECTIONS AND NOTIFICATIONS

2.4.1 Inspections

Inspections of all remedial components installed at the site will be conducted at the frequency specified in the SMP Monitoring Plan schedule. A comprehensive site-wide inspection will be conducted annually, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether Engineering Controls continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria;
- Sampling and analysis of appropriate media during monitoring events;
- If site records are complete and up to date; and

- Changes, or needed changes, to the remedial or monitoring system;

Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan of this SMP (Section 3). The reporting requirements are outlined in the Periodic Review Reporting section of this plan (Section 5).

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the EC/ICs implemented at the site by a qualified environmental professional as determined by NYSDEC.

2.4.2 Notifications

Notifications will be submitted by the property owner to the NYSDEC as needed for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under the terms of the Brownfield Cleanup Agreement (BCA), 6NYCRR Part 375, and/or Environmental Conservation Law.

- 7-day advance notice of any proposed ground-intrusive activities pursuant to the Excavation Work Plan.

- Notice within 48-hours of any damage or defect to the foundations, structures or engineering control that reduces or has the potential to reduce the effectiveness of an Engineering Control and likewise any action to be taken to mitigate the damage or defect.

- Verbal notice by noon of the following day of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of Engineering Controls in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action shall be submitted to the NYSDEC within 45 days and shall describe and document actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser has been provided with a copy of the Brownfield Cleanup Agreement (BCA), and all approved work plans and reports, including this SMP

- Within 15 days after the transfer of all or part of the site, the new owner's name, contact representative, and contact information will be confirmed in writing.

2.5 CONTINGENCY PLAN

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions.

Methane alarm systems are installed in Buildings 31, 32 and 33 and will act as a safeguard if a power failure occurs and the SSD systems stop working. In the case of an alarm being triggered, any people inside these buildings will be moved to an outdoor location.

2.5.1 Emergency Telephone Numbers

In the event of any environmentally related situation or unplanned occurrence requiring assistance, the Owner or Owner's representative(s) should contact the appropriate party from the contact list below. For emergencies, appropriate emergency response personnel should be contacted. Prompt contact should also be made to the project contacts listed in Table 9. These emergency contact lists must be maintained in an easily accessible location at the site.

Table 8: Emergency Contact Numbers

Medical, Fire and Police	911
One Call Center	800-272-4480
	3-day notice required for utility markout
Poison Control Center	800-222-1222
Pollution Toxic Chemical Oil Spills	800-424-8802
NYSDEC Spills Hotline	800-457-7365

Table 9: Other Contact Numbers

Brickhouse Environmental	610-692-5770
Keystone Environmental	607-722-2515
Binghamton Plaza, Inc.	607-722-0542

Note: Contact numbers subject to change and should be updated as necessary

2.5.2 Map and Directions to Nearest Health Facility

Site Location: 33 W State Street, Binghamton, NY 13901

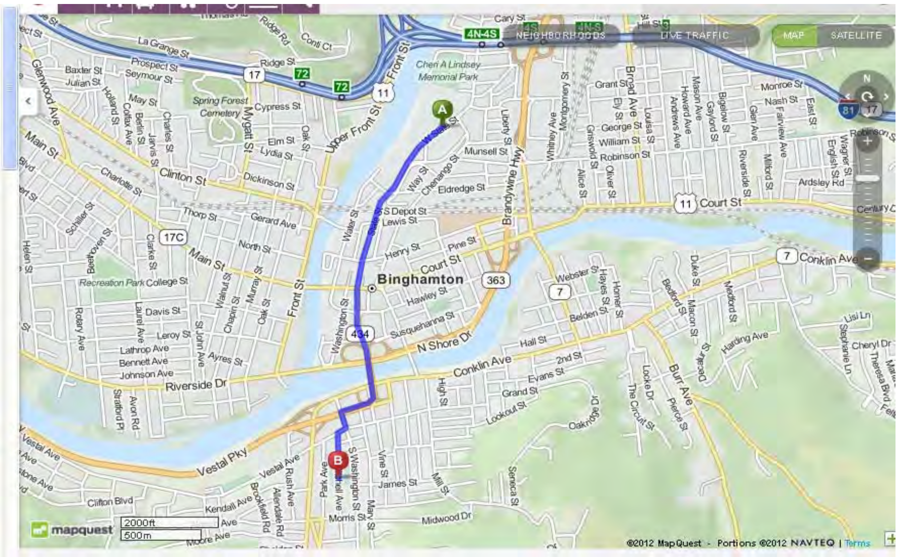
Nearest Hospital Name:	Binghamton General Hospital
Hospital Location:	10-42 Mitchell Ave, Binghamton, NY
Hospital Telephone:	(607) 762-2200

Directions to the Hospital:

1. Head southwest on West State street toward North Way Street
2. Continue onto Vestal Parkway East
3. Turn left onto South Washington Street
4. Take the 1st right onto Vestak Avenue
5. Take the 1st left onto Mitchell Avenue

Total Distance:	1.8 miles
Total Estimated Time:	6 minutes

Figure 16



2.5.3 Response Procedures

As appropriate, the fire department and other emergency response group will be notified immediately by telephone of the emergency. The emergency telephone number list is found at the beginning of this Contingency Plan (Table 8). The list will also be posted prominently at the site and made readily available to all personnel at all times.

3.0 SITE MONITORING PLAN

3.1 INTRODUCTION

3.1.1 General

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the site, the soil cover system, and all affected site media identified below. Monitoring of other Engineering Controls is described in Chapter 4, Operation, Monitoring and Maintenance Plan. This Monitoring Plan may only be revised with the approval of NYSDEC.

3.1.2 Purpose and Schedule

This Monitoring Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (e.g., groundwater and indoor air);
- Assessing compliance with applicable NYSDEC standards, criteria and guidance, particularly ambient groundwater standards and Part 375 SCOs for soil;
- Assessing achievement of the remedial performance criteria.
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment; and
- Preparing the necessary reports for the various monitoring activities.

To adequately address these issues, this Monitoring Plan provides information on:

- Sampling locations, protocol, and frequency;
- Information on all designed monitoring systems (e.g., well logs);
- Analytical sampling program requirements;

- Reporting requirements;
- Quality Assurance/Quality Control (QA/QC) requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

Semi-Annual monitoring and inspection of the performance of the remedy and overall reduction in contamination on-site will be conducted for the first 5 years. The frequency thereafter will be determined by NYSDEC. Trends in contaminant levels in air, soil, and/or groundwater in the affected areas, will be evaluated to determine if the remedy continues to be effective in achieving remedial goals. Monitoring programs are summarized in Table 10 and outlined in detail in Sections 3.2 and 3.3 below.

Table 10: Monitoring/Inspection Schedule

Monitoring Program	Frequency*	Matrix	Analysis
Asphalt Cover	Semi-Annual	Pavement Cap	Visual Inspection
Soil Cover	Semi-Annual	Clean Fill Cover	Visual Inspection
Indoor Air	Semi Annual	Air	TO-17 or TO-15, methane monitoring
Groundwater	First 6 months	Water	USEPA Methods VOCs and SVOCs by SW-8260 & 8270, PCBs 8082, RCRA Metals Methods 6010 and 7470, and NYSDEC Part 360 “Routine Parameters
Groundwater	Every 5 years	Water	USEPA Methods VOCs and SVOCs by SW-8260 &8270, RCRA Metals USEPA Methods 6010 and 7470, Total Phenolics USEPA Method 420

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC and NYSDOH

3.2 SOIL COVER SYSTEM MONITORING

Cover monitoring is covered separately from the other engineering controls because it is a passive component of nearly all site remedies. Monitoring of active engineering controls, which are employed at fewer sites, is included with operation and maintenance of these systems in Chapter 4.

The cover system, as shown on Figure 13, currently is comprised of a minimum of 12 inches of clean soil, asphalt pavement, concrete-covered sidewalks, and concrete building slabs. Currently, the entire portion of the site that is restricted to restricted residential use is paved or covered by concrete sidewalks or building slabs.

This cover system will be inspected twice per year and will be repaired as needed. Appendix G contains forms for the cover system inspection. The inspection will include looking for evidence of settling, cracking, soil disturbance, and any other signs which may indicate that the cover has been breached. Additionally, the integrity of the monitoring wells will also be inspected in conjunction with the cover system inspection, and their condition will be noted on the cover system inspection forms. The cover system will be repaired similar to routine parking lot maintenance which will include sealing cracks, filling larger cracks/holes with asphalt, and if needed, adding additional soil cover. It is important to note that the cover system for the commercial use areas of the site must be comprised of a minimum of 12 inches of clean soil or impervious surface such as asphalt or concrete, while the cover system required for the restricted residential use area of the site must be comprised of a minimum of 24 inches of clean soil or an impervious surface such as asphalt or concrete. Additionally, should an engineered soil cap be considered as an option for repair, as per the site Decision Document, then it will be designed, constructed and maintained in conformance with the substantive requirements of 6 NYCRR Part 360 Solid Waste Regulations. Figure 17 shows cross-section details of the cover system for areas covered by clean fill, asphalt pavement, and the option for an engineered soil cap.

3.3 MEDIA MONITORING PROGRAM

3.3.1 Groundwater Monitoring

Groundwater monitoring will be performed on a periodic basis to assess the performance of the remedy.

The network of monitoring wells has been installed to monitor both up-gradient and down-gradient groundwater conditions at the site. The network of on-site wells has been designed based on the following criteria:

- The monitoring wells were installed to monitor groundwater quality within the waste mass and the underlying native soils, to allow for the preparation of a groundwater flow map and to allow for the collection of groundwater samples to assess upgradient and downgradient groundwater quality. The monitoring wells were also installed for hydrogeologic testing (i.e. slug testing) to allow for the estimation of hydrogeologic properties (i.e. hydraulic conductivity). The well locations are shown on Figure 2.

- The depths to groundwater and the description of the screened units are presented in Section 1.2.3 of this SMP. Cross-sections are presented as Figures 3, 4 and 5. A summary of site groundwater conditions is presented in Section 1.3 and a groundwater flow map is presented as Figure 6. Groundwater generally flows from the east towards the west, toward the Chenango River, as indicated by groundwater elevations in the deep groundwater monitoring wells. The groundwater quality conditions are presented in Section 1.3 of this SMP.

- Baseline groundwater quality is assumed to be the conditions from October 2008 and April 2009, prior to the remedial actions implemented in October 2014 (see Table 1). Groundwater was not actively remediated; therefore, monitoring was not conducted post-remediation. Tables 11 and 12 show the wells that will be sampled and for what analytes in the first sampling round in 2015 and for subsequent years, respectively. Because of historical groundwater level conditions, it is anticipated that not all wells will have enough water to ensure a proper sample. The field conditions at the time of sampling will dictate if a sample can be collected.

Table 11: Groundwater Monitoring in 2015

Analytes	MW-1S	MW-2S	MW-2D	MW-3S	MW-3D	MW-4S	MW-5S	MW-6S	MW-6D	MW-7S	MW-7D
VOCs	x	x	x	x	x	x	x	x	x	x	x
SVOCs	x	x	x	x	x	x	x	x	x	x	x
RCRA Metals	x	x	x	x	x	x	x	x	x	x	x
Hg	x	x	x	x	x	x	x	x	x	x	x
PCBs	x	x	x	x	x	x	x	x	x	x	x
NYSDEC Part 360 “Routine Parameters”	x	x	x	x	x	x	x	x	x	x	x

Table 12: Groundwater Monitoring Every 5 Years

Analytes	MW-1S	MW-2S	MW-2D	MW-3S	MW-3D	MW-4S	MW-5S	MW-6S	MW-6D	MW-7S	MW-7D
VOCs	x	x	x	x	x	x	x	x	x	x	x
SVOCs	x	x	x	x	x	x	x	x	x	x	x
RCRA Metals	x	x	x	x	x	x	x	x	x	x	x
Hg	x	x	x	x	x	x	x	x	x	x	x
Total Phenolics”	x	x	x	x	x	x	x	x	x	x	x

Monitoring well construction logs are included in Appendix F.

The groundwater monitoring wells listed above will be sampled within six months of implementing the SMP for the analytes listed in Table 11. Once those results are reported, and no modifications need to be made, sampling will take place every 5 years. If the results from the initial sampling round are consistent with prior analytical results, then the sampling will commence with the modified analytes as shown on Table 12.

If any modifications need to be made to the list of sampling parameters, a modification to this SMP will be submitted with approval from the NYSDEC.

If the sampling frequency is to change, it may be modified with the approval NYSDEC. The SMP will be modified to reflect changes in sampling plans approved by NYSDEC.

Deliverables for the groundwater monitoring program are specified below.

3.3.1.1 Sampling Protocol

All monitoring well sampling activities will be recorded in a field book and a groundwater-sampling log presented in the Quality Assurance Project Plan (QAPP) prepared for the site. Other observations (e.g., well integrity, etc.) will be noted on the soil cover system inspection forms which will be completed semi-annually (Appendix G). The well sampling log will also note an inspection of the well integrity of the groundwater monitoring well network. All groundwater sampling and laboratory analyses will be performed in accordance with the requirements of the QAPP prepared for the site (Appendix H).

Prior to sampling, the groundwater levels in each well will be measured using an electronic groundwater level meter. The groundwater levels will be taken at the upgradient wells first then progress to the downgradient wells. The water levels will be measured from a surveyed point located in the inner top-of-casing of the PVC. It should be noted, however, that because of historical groundwater level conditions, it is anticipated that not all wells will have enough water to ensure a proper sample. The field conditions at the time of sampling will dictate if a sample can be collected.

Then, prior to sampling, the wells will be purged using a thoroughly decontaminated submersible pump and disposable tubing. Low-flow sampling techniques will be utilized for groundwater purging and sample collection. Groundwater quality will be monitored continuously for stabilization of indicator water quality parameters, including pH, temperature, dissolved oxygen, specific conductance, and turbidity. Once indicator water quality parameters are stabilized, each sample will be obtained using a thoroughly decontaminated submersible pump and disposable tubing. Groundwater samples will be immediately transferred to laboratory-prepared bottleware provided by a laboratory that is certified by the NYSDOH Environmental Laboratory Approval Program (ELAP). The sample bottles will be packed in ice and placed in coolers and transported under chain-of-custody by a courier to the laboratory for analysis.

For the 2015 groundwater monitoring event, one groundwater sample will be collected from each of the monitoring wells (provided there is enough water to ensure a proper analytical sample). Each sample will be analyzed for VOCs (USEPA Method 8260), SVOCs (USEPA Method 8270), Metals (USEPA Method 6010 RCRA Metals plus Calcium, Iron, Magnesium, Manganese, Potassium, and Sodium), Mercury (USEPA Method 7470), PCBs (USEPA Method 8082), and NYSDEC Part 360 “Routine Parameters”. These parameter types were chosen based on what would typically be contaminants of concern at a solid waste facility. Samples will be analyzed by a NYSDOH and an ELAP-certified laboratory.

For future groundwater monitoring events, a reduced monitoring list will be analyzed (see Table 12) if the 2015 water quality is consistent with previous testing results.

Further details regarding the sampling and analytical protocol, including the method detection limits, are presented in Appendix H.

3.3.1.2 Monitoring Well Repairs, Replacement and Decommissioning

If biofouling or silt accumulation occurs in the on-site and/or off-site monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced (as per the Monitoring Plan), if an event renders the wells unusable.

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC will be notified prior to any repair or decommissioning of monitoring wells for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent periodic report. Well decommissioning without replacement will be done only with the prior approval of NYSDEC. Well abandonment will be performed in accordance with NYSDEC's "Groundwater Monitoring Well Decommissioning Procedures." Monitoring wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available location, unless otherwise approved by the NYSDEC.

3.3.2 Indoor Air

All indoor air sampling and analyses will be performed in accordance with the requirements of the QAPP prepared for the site (Appendix H). Indoor air sampling of Buildings 31 and 32, the daycare facilities, will be performed by an environmental contractor using EPA Method TO-17 (or TO-15). The indoor air will be sampled semi-annually for VOCs and the laboratory analysis will be performed by a NYSDOH and an ELAP-certified laboratory. In addition, all three buildings (31, 32 and 33) will be monitored for methane using the installed methane alarm monitoring systems. Indoor air sampling results will be reported to the Department and NYSDOH immediately upon receipt of results, and no later than 30 days from the date of sampling. If indoor air sampling demonstrates that additional actions are needed to address exposure, other engineering controls systems must be evaluated. Further details regarding the sampling and analytical protocol are presented in Appendix H.

3.4 SITE-WIDE INSPECTION

Site-wide inspections will be performed on a regular schedule at a minimum of once a year. Site-wide inspections will also be performed after all severe weather conditions that may affect Engineering Controls or monitoring devices. During these inspections, an inspection form will be completed (as included in Appendix G). The form will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General site conditions at the time of the inspection;
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection;
- Compliance with permits and schedules included in the Operation and Maintenance Plan; and

- Confirm that site records are up to date.

Additionally, the site-wide inspection will include an interior inspection of Buildings 3, 15, 20, 24 (near the central part of the building near the access hatch), and 29 (see Figure 15) with a portable methane detection unit. The methane monitoring will occur semi-annually.

3.5 MONITORING QUALITY ASSURANCE/QUALITY CONTROL

All sampling and analyses will be performed in accordance with the requirements of the Quality Assurance Project Plans (QAPP) prepared for the site, for groundwater and indoor air sampling (Appendix H). Main Components of the QAPPs include:

- QA/QC Objectives for Data Measurement;
- Sampling Program:
    - Sample containers will be properly washed, decontaminated, and appropriate preservative will be added (if applicable) prior to their use by the analytical laboratory. Containers with preservative will be tagged as such.
    - Sample holding times will be in accordance with the NYSDEC ASP requirements.
    - Field QC samples (e.g., trip blanks, coded field duplicates, and matrix spike/matrix spike duplicates) will be collected as necessary.
- Sample Tracking and Custody;
- Calibration Procedures:
    - All field analytical equipment will be calibrated immediately prior to each day's use. Calibration procedures will conform to manufacturer's standard instructions.
    - The laboratory will follow all calibration procedures and schedules as specified in USEPA SW-846 and subsequent updates that apply to the instruments used for the analytical methods.

- Analytical Procedures:

- Preparation of a Data Usability Summary Report (DUSR), which will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain of custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method.

- Internal QC and Checks;

- QA Performance and System Audits;

- Preventative Maintenance Procedures and Schedules;

- Corrective Action Measures.

3.6 MONITORING REPORTING REQUIREMENTS

Forms and any other information generated during regular monitoring events and inspections will be kept on file on-site. All forms, and other relevant reporting formats used during the monitoring/inspection events, will be (1) subject to approval by NYSDEC and (2) submitted at the time of the Periodic Review Report, as specified in the Reporting Plan of this SMP. Indoor air sampling results from Buildings 31 and 32 will be reported to the Department and NYSDOH upon receipt of the results, and no later than 30 days from the date of sampling.

All monitoring results will be reported to NYSDEC on a periodic basis in the Periodic Review Report. The report will include, at a minimum:

- Date of event;

- Personnel conducting sampling;

- Description of the activities performed;

- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air, etc);

- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);

- Sampling results in comparison to appropriate standards/criteria;

- A figure illustrating sample type and sampling locations;

- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format);

- Any observations, conclusions, or recommendations; and

- A determination as to whether groundwater conditions have changed since the last reporting event.

Data will be reported in hard copy or digital format as determined by NYSDEC. A summary of the monitoring program deliverables are summarized in Table 13 below.

Table 13: Schedule of Monitoring/Inspection Reports

Task	**Reporting Frequency***
Indoor Air	Semi-Annual
Groundwater	Annual/ within 6 months of SMP implementation, then every 5 years.

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC

4.0 OPERATION AND MAINTENANCE PLAN

4.1 INTRODUCTION

This Operation and Maintenance Plan describes the measures necessary to operate, monitor and maintain the mechanical components of the remedy selected for the site. This Operation and Maintenance Plan:

- Includes the steps necessary to allow individuals unfamiliar with the site to operate and maintain the SSD systems and crawl space passive ventilation systems;

- Includes an operation and maintenance contingency plan; and,

- Will be updated periodically to reflect changes in site conditions or the manner in which the SSD systems and crawl space passive ventilation systems are operated and maintained.

Information on non-mechanical Engineering Controls (i.e. soil cover system) is provided in Section 3 - Engineering and Institutional Control Plan. A copy of this Operation and Maintenance Plan, along with the complete SMP, will be kept at the site.

This Operation and Maintenance Plan is not to be used as a stand-alone document, but as a component document of the SMP. A detailed Operation and Maintenance Plan, developed by Keystone Environmental, is included as Appendix G.

4.2 ENGINEERING CONTROL SYSTEM OPERATION AND MAINTENANCE

4.2.1 Sub-slab Depressurization Systems

There are three active Sub-slab Depressurization Systems at the site in Buildings 31, 32, and 33. The locations of the buildings at the site are shown on Figure 9. The SSD system configurations are presented on Figures 10, 11, and 12, respectively. Table 7 shows a summary of the configurations of the SSD systems.

The SSD system in Building 31 was installed in January 2009. There are two suction points with gate valves and u-tubes and they are located in the northwestern and southeaster corners of the building. There are also 6 communication test holes scattered throughout the building and a fan near the northeastern corner of the building. The fan is Model FanAM CAV 100 explosion-proof fan with a 3-inch stack, 18 inches above the roof line. In addition, a PAMA methane alarm is installed.

The post-installation sub-slab vacuum testing for Building 31 failed, which was suspected to be a result of compromised footer walls along the exterior of the building. On October 27, 2009, the foundation of Building 31 was sealed by the maintenance staff of Binghamton Plaza and Envirotesting, Inc. in an attempt to improve sub-slab negative pressures. The sub-slab pressures were retested on the same day. The results indicated a significant improvement with sub-slab pressures at or below atmospheric pressure; however, the SSDS in Building No. 31 was shut down due to its inability to maintain a negative vacuum pressure.

On April 12-15, 2013, indoor air sampling was performed at two locations in Building 31 using EPA Method TO-17. The lab analysis was performed by Eurofins Air Toxics Inc. and all of the analytical results were below the IAGV. Then, on February 17, 2014, indoor air sampling for VOCs using EPA Method-TO-17 was performed in two interior locations within Building 31. The results of the sample analysis indicate that PCE and TCE were found at detectable concentrations in the samples collected. The concentrations were consistent with pre-mitigation concentrations. On May 15, 2014 the SSDS was restarted in Building No. 31 at the request of the NYSDEC, out of an abundance of caution. On August 13, 2014, indoor air sampling for VOCs using EPA Method TO-15 was performed in accordance with the indoor air monitoring program in two locations within Building 31. All of the results were below the IAGV. The results from Building 31 are consistent with prior indoor air monitoring events. The indoor air sampling locations for Building 31 are shown on Figure 10.

The SSD system in Building 32 was initially installed in September 2007, with modifications made thereafter at the request of NYSDEC and NYSDOH. It became fully operational in January 2009. There are two suction points with gate valves and u-tubes as part of the SSD systems and they are both located in the northwestern section of the building in the storage and office part of the building. There are also 4 communication test holes in the corners of the building and an exhaust fan on the outside northeastern wall. The fan is Model FanAM CAV 100 explosion-proof fan with a 3-inch stack, 18 inches above the roof line. In addition, a PAMA methane alarm is installed.

This SSD system consists of a 4-inch diameter PVC exhaust piping installed beneath and sealed to the concrete floor at two suction points. The two suction points extend to the ceiling and are plumbed to a common vacuum fan located on the exterior of the building. The exterior exhaust point is located above the current roof line. Suction points and piping runs were selected to provide efficient and effective operation. All piping interfaces were sealed with caulk to prevent system short-circuiting.

The SSD system in Building 33 was installed in January 2009. There is one suction point with a u-tube which is located in the northwestern part of the building, within the teller area. The exhaust fan is located on the outside northwestern wall, outside of the closet. The fan is Model FanAM CAV 100 explosion-proof fan with a 3-inch stack, 18 inches above the roof line. In addition, a PAMA methane alarm is installed.

This SSD system consists of a 4-inch diameter PVC exhaust piping installed beneath and sealed to the concrete floor at one suction point. The one suction point extends to the ceiling and is plumbed to a vacuum fan located on the exterior of the building. The exterior exhaust point is located above the current roof line. The suction point and piping runs were selected to provide efficient and effective operation. All piping interfaces were sealed with caulk to prevent system short-circuiting.

4.2.1.1 Scope

The operation and maintenance requirements for the three SSD systems include inspection of the systems for mechanical integrity and verification that they maintain a negative pressure. The systems are tested to verify that they are operating within NYSDEC and NYSDOH design specifications.

4.2.1.2 System Start-Up and Testing

The SSD systems were operational in January 2009 and as part of the installation completion process, each SSD system was tested to verify that it was operating within the NYSDEC and NYSDOH design specifications. The testing process is referred to as the installation commissioning and operation commissioning (IC/OC). In addition to numerous system checks, the IC/OC process included pressure measurements below the slab at locations along the perimeter of the slab to ensure complete sub-slab depressurization, smoke tests to visually verify the pressure differential, and manometer readings at each suction drop on the system. Also, the fans were inspected for mechanical operation, noise and vibration, all piping and piping connections (both indoors and outdoors) were inspected, the sealing of cracks and walls and floors was inspected. In addition, the installed methane gas meters were inspected. Appendix I contains the specification sheets for the methane gas alarm systems and the explosion-proof CAV100 fans. Appendix J includes the as-built configurations for the SSD systems in Buildings 31, 32 and 33, labeled as Figures J-1, J-2 and J-3, respectively.

The system testing described above will be conducted if, in the course of the SSD system lifetime, significant changes are made to the system, and the system must be restarted.

4.2.1.3 System Operation: Routine Operation Procedures

The Sub-Slab Depressurization systems consist of 3-inch or 4-inch diameter PVC exhaust piping installed beneath and sealed to the concrete floor at one or two suction points. The objective of the SSD system is to create a negative vacuum field under the slab throughout the facility. The suction points extend to the ceiling and are plumbed to a vacuum fan located on the exterior of the building. The exterior exhaust point is located above the current roof line. Suction points and piping runs provide efficient and effective operation. All piping interfaces are sealed with caulk to prevent system short-circuiting. The methane gas alarm system is also operational in every building that has a SSD system. The operation and maintenance plan for the SSD systems is included in Appendix G and Appendix I contains the specification sheets for the methane gas alarm systems and the explosion-proof CAV100 fans.

4.2.1.4 System Operation: Routine Equipment Maintenance

The procedures for the routine equipment maintenance of the SSD systems are included as part of the field sheets in Appendix G.

4.2.1.5 System Operation: Non-Routine Equipment Maintenance

The procedures for the non-routine equipment maintenance are included in Appendix G.

4.2.2 Passive Soil Vapor Mitigation

Passive mitigation measures are already in place and operational in the crawl spaces beneath Buildings 1 through 28, and via vent pipes in the sub-slab in Buildings 29 and 30 at the site. This measure includes venting the sub-slab air from within the crawl spaces using passive fresh air intakes and roof vents (Figure 15). The sub-slab ventilation system covers approximately 255,000 square feet of building area. The presence of the sub-slab ventilation systems mitigates the potential for soil vapors to enter structures, thereby protecting public health. Long-term monitoring and maintenance, such as keeping the intake and roof vents clear of debris and snow, will ensure proper operation of the systems, so that the long-term protection of public health can continue. Appendix G contains the inspection forms for the passive vapor mitigation vents. Additionally, the SMP would include provisions that during any future construction activities there would be an evaluation for any possible soil vapor intrusion and the appropriate passive or active mitigation systems would be installed.

4.3 ENGINEERING CONTROL SYSTEM PERFORMANCE MONITORING

4.3.1 Sub-slab Depressurization and Passive Sub-Slab Ventilation Performance Monitoring

The objective of the SSD system is to create a negative vacuum field under the slab throughout the facility. By conducting negative pressure testing during the routine inspections, the effectiveness of the SSD systems in Buildings 31, 32 and 33 will be evaluated. Additionally, semi-annual indoor air sampling (see Section 3.0 in SMP) in Buildings 31 and 32 will also evaluate the effectiveness of the SSD systems. The methane gas alarm system is also operational in these three buildings and its continued operation will monitor the methane levels in Buildings 31, 32 and 33. The Operation and Monitoring Plan for the SSD systems prepared by Keystone Environmental is included in Appendix G. Appendix I contains the specification sheets for the methane gas alarm systems and the explosion-proof CAV100 fans which are installed in the buildings.

The objective of the passive sub-slab ventilation systems is to prevent soil vapors from entering structures, thereby protecting public health. Long-term monitoring and maintenance, such as keeping the two crawlspace intakes, the two roof vents (along Buildings 1 through 28), and six passive sub-slab vent systems (for Buildings 29 and 30) clear of debris and snow, and checking that the intake vents are not damaged so that air flow is not restricted, will ensure that the system is performing effectively. The effectiveness of these passive systems will be monitored in the Buildings 3, 15, 20, 24 (near the central part of the building near the access hatch), and 29 (see Figure 15) by using a portable methane monitoring device on a semi-annual basis. This is also described in Section 3.0.

4.3.2 Monitoring Schedule

The SSD Systems and the passive sub-slab ventilation systems will be inspected on an annual basis, but methane monitoring of the passive sub-slab ventilation system will occur semi-annually in conjunction with the indoor air sampling in Buildings 31 and 32.

Appendix G contains the inspection forms which will be used. Inspections of the SSD systems were performed in October 2011, January 2012, April 2013, and January 2014. Inspection frequency is subject to change with the approval of the NYSDEC. Unscheduled inspections and/or sampling may take place when a suspected failure of the SSD system has been reported or an emergency occurs that is deemed likely to affect the operation of the system. Monitoring deliverables for the SSD system are specified later in this Plan.

4.3.3 General Equipment Monitoring

A visual inspection of the complete system, both SSD systems and the passive ventilation system, will be conducted during the monitoring event. SSD system components to be monitored include, but are not limited to, the fan, the methane alarm system, and the general system piping. The passive system components include the intake and roof vents.

A complete list of components to be checked is provided in the Inspection Checklist, presented in Appendix G. If any equipment readings are not within their typical range, any equipment is observed to be malfunctioning, or the system is not performing within specifications, maintenance and repair as per the Operation and Maintenance Plan are required immediately, and the SSD system restarted.

4.3.4 System Monitoring Devices and Alarms

The SSD system has a warning device to indicate if the system is not operating properly. In the event that the warning device is activated, applicable maintenance and repairs will be conducted, as specified in the Operation and Maintenance Plan, and the SSD system restarted. Operational problems will be noted in the subsequent Periodic Review Report.

4.3.5 Sampling Event Protocol

The only sampling to be conducted in order to assess the effectiveness of the SSDS at the site is for the indoor air in Buildings 31 and 32 using EPA Method TO-17 (or TO-15). The indoor air will be sampled on a semi-annual basis, at the beginning of the cooling and heating seasons, and analyzed for Volatile Organic Compounds. A qualified environmental contractor will collect the samples and a NYSDOH and an ELAP-certified laboratory will perform this analysis.

4.4 MAINTENANCE AND PERFORMANCE MONITORING REPORTING REQUIREMENTS

Maintenance reports and any other information generated during regular operations at the site will be kept on-file on-site. All reports, forms, and other relevant information generated will be available upon request to the NYSDEC and submitted as part of the Periodic Review Report, as specified in the Section 5 of this SMP.

4.4.1 Routine Maintenance Reports

Checklists or forms (see Appendix G) will be completed during each routine maintenance event. Checklists/forms will include, but not be limited to the following information:

- Date;
- Name, company, and position of person(s) conducting maintenance activities;
- Maintenance activities conducted;
- Any modifications to the system;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet); and,
- Other documentation such as copies of invoices for maintenance work, receipts for replacement equipment, etc., (attached to the checklist/form).

4.4.2 Non-Routine Maintenance Reports

During each non-routine maintenance event, a form will be completed which will include, but not be limited to, the following information:

- Date;
- Name, company, and position of person(s) conducting non-routine maintenance/ repair activities;
- Presence of leaks;
- Date of leak repair;
- Other repairs or adjustments made to the system;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents (included either on the form or on an attached sheet);

and,

- Other documentation such as copies of invoices for repair work, receipts for replacement equipment, etc. (attached to the checklist/form).

5. 0 INSPECTIONS, REPORTING AND CERTIFICATIONS

5.1 SITE INSPECTIONS

5.1.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in Section 3 Monitoring Plan and Section 4 Operation and Maintenance Plan of this SMP. At a minimum, a site-wide inspection will be conducted annually. Inspections of remedial components will also be conducted when a breakdown of any treatment system component has occurred or whenever a severe condition has taken place, such as an erosion or flooding event that may affect the ECs.

5.1.2 Inspection Forms, Sampling Data, and Maintenance Reports

All inspections and monitoring events will be recorded on the appropriate forms which are contained in Appendices G and H. Additionally, the general site-wide inspection will be completed during the semi-annual cover system inspection (see Appendix G). These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including all media sampling data and system maintenance reports, generated for the site during the reporting period will be provided in electronic format in the Periodic Review Report. Table 14 presents a comprehensive table showing the schedule of all monitoring, sampling and inspection events.

5.1.3 Evaluation of Records and Reporting

The results of the inspection and site monitoring data will be evaluated as part of the EC/IC certification to confirm that the:

- EC/ICs are in place, are performing properly, and remain effective;

- The Monitoring Plan is being implemented;

- Operation and maintenance activities are being conducted properly; and, based on the above items,

- The site remedy continues to be protective of public health and the environment and is performing as designed in the RAWP and FER.

5.2 CERTIFICATION OF ENGINEERING AND INSTITUTIONAL CONTROLS

After the last inspection of the reporting period, a qualified environmental professional will prepare the following certification:

“For each institutional or engineering control identified for the site, I certify that all of the following statements are true:

- The inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;
- The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;
- Nothing has occurred that would impair the ability of the control to protect the public health and environment;
- Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;
- Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;
- If a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document;
- Use of the site is compliant with the environmental easement;
- The engineering control systems are performing as designed and are effective;
- To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program and generally accepted engineering practices;
- No new information has come to my attention, including groundwater monitoring data from wells located at the site boundary, if any, to indicate that the assumptions

made in the qualitative exposure assessment of off-site contamination are no longer valid; and

- The information presented in this report is accurate and complete.

- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class “A” misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [INSERT NAME], of [INSERT COMPANY AND ADDRESS], am certifying as Owner’s Designated Site Representative for the site.”

If the site is subdivided in the future the final bullet must be revised to read:

- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class “A” misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [INSERT NAME], of [INSERT COMPANY AND ADDRESS], am certifying as Owner’s Designated Site Representative and I have been authorized and designated by all site owners to sign this certification for the site.”

The following certification must be added every five years:

- The assumptions made in the qualitative exposure assessment remain valid.

The signed certification will be included in the Periodic Review Report described below.

5.3 PERIODIC REVIEW REPORT

A Periodic Review Report will be submitted to the Department every year, beginning fifteen months after the Certificate of Completion is issued. However, the length of each subsequent review period will be determined by review of each Periodic Review Report. In the event that the site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the site described in Appendix B (Metes and Bounds). The report will be prepared in accordance with NYSDEC DER-10 and submitted within 30 days of the end of each certification period. Media sampling results will also incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site;

- Results of the required annual site inspections and severe condition inspections, if applicable;

- All applicable inspection forms and other records generated for the site during the reporting period in electronic format;

- A summary of any discharge monitoring data and/or information generated during the reporting period with comments and conclusions;

- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends;

- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted electronically in a NYSDEC-approved format;

- A site evaluation, which includes the following:

    - The compliance of the remedy with the requirements of the site-specific Decision Document;

    - The operation and the effectiveness of all treatment units, etc., including identification of any needed repairs or modifications;

    - Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring Plan for the media being monitored;

    - Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan; and

    - The overall performance and effectiveness of the remedy.

The Periodic Review Report will be submitted, in electronic format, to the NYSDEC and the NYSDOH Bureau of Environmental Exposure Investigation.

5.4 CORRECTIVE MEASURES PLAN

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a corrective measures plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the corrective measures plan until it is approved by the NYSDEC.

TABLES

Table 1
Groundwater Analytical Summary
Binghamton Plaza Property
City of Binghamton, New York
BE Project No. 06-2175-3

Sample Location	MW-7D	MW-6D	MW-8 (Duplicate)	MW-3D	MW-2D	MW-2D (Lab Filtered)	MW-6S	MW-8S (Duplicate)	**Cleanup Objectives**
Sampling Date	10/27/2008	10/27/2008	10/27/2008	10/28/2008	10/28/2008	10/28/2008	4/23/2009	4/23/2009	
VOCs by Method SW8260B (ug/l)									
Acetone	<2.50	<2.50	<2.50	<2.50	<2.50	NA	1.87 J	1.72 J	50
Benzene	<0.16	<0.16	<0.16	<0.16	<0.16	NA	0.65	0.65	1
Carbon Disulfide	<0.16	<0.16	<0.16	<0.16	<0.16	NA	0.28 J	0.18 J	NS
Chloroform	1.99	<0.10	<0.10	<0.10	2.20	NA	<0.10	<0.10	7
Cyclohexane	<0.25	0.66	0.69	<0.25	<0.25	NA	1.01	1.05	NS
Chlorobenzene	<0.16	0.56	0.52	<0.16	<0.16	NA	0.17 J	0.17 J	5
1,4-Dichlorobenzene	<0.16	<0.24	<0.24	<0.16	<0.16	NA	<0.16	<0.16	3
cis-1,2-Dichloroethene	<0.16	<0.16	<0.16	<0.16	<0.16	NA	<0.5	<0.10	5
Methyl tert-butyl ether	<0.50	<0.50	<0.50	<0.50	<0.50	NA	0.99 J	1.01	10
VOC TICs	ND	2.13	2.09	ND	ND	NA	ND	ND	NS
SVOCs by Method SW8270C (ug/l)									
Acenaphthene	<0.081	**21**	**21**	<0.081	<0.080	NA	<0.43 J	NA	20
Acetophenone	<0.37	<0.37	<0.37	<0.37	<0.46	NA	1.8 J	NA	NS
bis(2-Ethylhexyl)phthalate	<0.45	<0.45	<0.45	<0.45	<0.56	NA	<11	NA	5
Caprolactam	<1.2	<1.2	<1.2	<1.2	<1.5	NA	3.6 J	NA	NS
Phenanthrene	<0.10	2.0 J	2.1 J	<0.10	<0.10	NA	<0.43 J	NA	50
SVOC TICs	ND	ND	ND	ND	5.1	NA	371.9	NA	NS
Metals (mg/l)									
Arsenic	<0.010	0.012	0.011	<0.00040	**0.45**	<0.010	**0.038**	**0.035**	0.025
Barium	0.17	0.41	0.41	0.17	**3.9**	0.065 J	0.61	0.55	1
Cadmium	<0.010	<0.010	<0.010	<0.010	**0.016 J**	<0.010	<0.0010	<0.0010	0.005
Calcium	60	96	96	89	250	78	330	320	NS
Chromium	0.0044 J	0.0033 J	0.0033 J	0.0030 J	**0.62**	<0.010	0.03	0.017	0.05
Iron	**2.1**	**23**	**23**	**3.7**	**1,100**	<0.050	**73**	**66**	0.3
Lead	<0.010	<0.010	<0.010	<0.010	**0.64**	<0.010	**0.031**	0.015	0.025
Magnesium	12	16	16	15	**220**	15	**58**	**57**	35
Manganese	**0.48**	**1.5**	**1.5**	**1.5**	**25**	<0.050	**14 J**	**14 J**	0.3
Mercury	<0.000026	<0.00020	<0.00020	<0.00020	<0.00020	NA	0.000051 J	<0.00020	0.0007
Potassium	6.2	11	11	3.7 J	28	2.0 J	28	28	NS
Selenium	<0.010	<0.010	<0.010	<0.010	**0.019**	0.0028 J	<0.0050	<0.0050	0.01
Sodium	**100**	**130**	**130**	**65**	**190**	**200**	**97**	**97**	20
General Chemistry (mg/l)									
Hardness CaCO3 (mg/l)	200	310	310	280	1500	NA	NA	NA	NS
COD (mg/l)	8.2 J	22	24	10	100	NA	NA	NA	NS
Ammonia (as N) (mg/l)	1.0	**10**	**10**	0.61	0.046 J	NA	NA	NA	2
Kjeldahl Nitrogen (mg/l)	1.2	9.8	9.8	1.1	2.1	NA	NA	NA	NS
Bromide (mg/l)	0.084 J	0.27	0.27	0.13	0.11 J	NA	NA	NA	2
TDS (mg/l)	470	690	670	460	740	NA	NA	NA	NS
BOD (mg/l)	<2.0	5.1	5.2	5.0 J	<2.0	NA	NA	NA	NS
Chloride (mg/l)	140	210	210	100	**260**	NA	NA	NA	250
Nitrate (as N) (mg/l)	1.1	<0.075	<0.075	<0.040	6.1	NA	NA	NA	10
Sulfate (as SO4) (mg/l)	25	1.8 J	1.8 J	5.9	33	NA	NA	NA	250
TOC (mg/l)	1.8	4.3	4.4	2.5	2.9	NA	27	23	NS
Alkalinity, as CaCO3 (mg/l)	190	360	350	270	240	NA	NA	NA	NS
Phenolics (mg/l)	<0.00086	**0.0012 J**	**0.0013 J**	**0.0011 J**	**0.0014 J**	NA	NA	NA	0.001
PCB's (ug/l)	ND	ND	ND	ND	ND	NA	NA	NA	0.09 ug/l total
Turbidity (NTU)	31	150	170	20	22,000	NA	NA	NA	NS

Notes:

MW-8 is a field duplicate of MW-6D

MW-8S is a field duplicate of MW-6S

J = Estimated value

VOC = Volatile Organic Compound

ug/l = micrograms per liter

mg/l = milligrams per liter

NA = Not Analyzed

NS = No Standard

Shaded and bold data exceed the NYSDEC Class GA Groundwater Standard or Guidance Value.

Only detected compounds are presented. Refer to the anayltical report for a list of all compounds

Created By: DG
Checked By:DBS
Revised By:DBS

Table 2
Monitoring Well Summary
Binghamton Plaza Property
City of Binghamton, New York
BE Project No. 06-2175-3

Monitoring Point	Total Depth (ft)	Elevation (ft MSL)*	Groundwater Depth (ft)**	Groundwater Elevation (ft MSL)
MW-1S	17.0	848.62	16.55	832.07
MW-2S	23.5	849.88	21.80	828.08
MW-2D	40.0	850.14	21.41	828.73
MW-3S	17.0	849.64	DRY	DRY
MW3D	39.0	848.98	22.38	826.60
MW-4S	14.0	850.12	13.17	836.95
MW-5S	22.0	848.49	21.29	827.20
MW-6S	14.0	848.51	9.77	838.74
MW-6D	33.0	848.56	21.53	827.03
MW-7S	20.0	848.24	DRY	DRY
MW-7D	31.0	848.37	20.17	828.20

Created By: DG
Checked By:DBS
Revised By:DBS

Table 3
Sub-Slab Vapor Monitoring Analytical Results- February 19, 2007
Binghamton Plaza Property
City of Binghamton, New York
BE Project No. 06-2175-3

Vapor Sampling Point Identification	**Sub-2**	**Sub-15**	**Sub-20**	**Sub-24**	**Sub-29**	**Sub-31**	**Sub-32**	**Sub-33**	**PL-1**	**PL-2**	**PL-3**	**PL-4**	**Soil Vapor / Indoor Air Decision Matrix**
Volatile Organic Compounds by EPA Method TO-15 (standard list)													
Carbon Tetrachloride	ND<0.96	ND<0.96	ND<0.96	ND<0.96	ND<0.96	ND<0.96	ND<0.96	ND<0.96	ND<0.96	ND<0.96	ND<0.96	ND<0.96	**Matrix 1**
Trichloroethene (TCE)	ND<0.82	ND<0.82	ND<0.82	ND<0.82	ND<0.82	2.4	1.4	ND<0.82	ND<0.82	ND<0.82	9.1	ND<0.82	**Matrix 1**
1,1,1-Trichloroethane (1,1,1-TCA)	ND<0.83	ND<0.83	ND<0.83	ND<0.83	ND<0.83	ND<0.83	ND<0.83	ND<0.83	ND<0.83	ND<0.83	ND<0.83	ND<0.83	**Matrix 2**
Tetrachloroethene (PCE)	ND<1.0	ND<1.0	2.2	1.7	2.9	0.83 J	ND<1.0	ND<1.0	ND<1.0	ND<1.0	11	ND<1.0	**Matrix 2**
Methylene Chloride	5.9	1.4	ND<0.53	ND<0.53	7.1	13	2.4	2.2	5.4	3.6	2.6	3.8	NA
1,1-Dichloroethene	ND<0.60	ND<0.60	ND<0.60	ND<0.60	ND<0.60	ND<0.60	ND<0.60	ND<0.60	ND<0.60	ND<0.60	1.8	ND<0.60	NA
1,2,4-Trimethylbenzene	1.2	1.8	0.8	0.8	8.4	8.2	2.6	10	1.3	1.3	1	1.1	NA
1,2-Dichloroethane	ND<0.62	ND<0.62	ND<0.62	ND<0.62	0.82	1.1	0.49 J	ND<0.62	ND<0.62	ND<0.62	ND<0.62	ND<0.62	NA
1,3,5-Trimethylbenzene	0.50 J	ND<0.75	ND<0.75	ND<0.75	2.7	2.6	0.95	3.2	ND<0.75	0.55 J	ND<0.75	ND<0.75	NA
2,2,4-Trimethylpentane	ND<0.71	ND<0.71	ND<0.71	3.4	ND<0.71	ND<0.71	340	15	1.5	0.90	ND<0.71	0.95	NA
4-ethyltoluene	ND<0.75	ND<0.75	ND<0.75	ND<0.75	2.6	2.6	ND<0.75	1.7	0.55 J	ND<0.75	ND<0.75	ND<0.75	NA
Acetone	7.0 J	8	2.7	5.3 J	120	22	30	140 E	200	380 E	37	46	NA
Benzene	0.65	0.49	0.42 J	0.39 J	3.1	2.9	1.1	5	2.8	5.7	1.3	1.8	NA
Carbon disulfide	ND<0.47	ND<0.47	ND<0.47	ND<0.47	0.51	ND<0.47	0.44 J	0.85	1	28	0.82	0.73	NA
Chloroethane	ND<0.40	ND<0.40	ND<0.40	ND<0.40	ND<0.40	ND<0.40	ND<0.40	ND<0.40	ND<0.40	0.43	ND<0.40	0.46	NA
Chloroform	ND<0.74	ND<0.74	0.69 J	0.74	1.4	ND<0.74	ND<0.74	ND<0.74	ND<0.74	0.74	ND<0.74	ND<0.74	NA
Chloromethane	0.27 J	0.38	0.25 J	0.38	ND<0.31	0.52	ND<0.31	ND<0.31	ND<0.31	1.1	0.84	1.2	NA
cis-1,2-Dichloroethene	ND<0.60	ND<0.60	ND<0.60	ND<0.60	ND<0.60	1	6.5	ND<0.60	ND<0.60	0.73	130	ND<0.60	NA
Cyclohexane	3.5	2.5	3.0	1.1	ND<0.52	2.1	25,000 E	17,000 E	130.0	15 J	14 J	4.5 J	NA
Ethyl acetate	ND<0.92	ND<0.92	ND<0.92	ND<0.92	ND<0.92	ND<0.92	ND<0.92	ND<0.92	ND<0.92	ND<0.92	ND<0.92	ND<0.92	NA
Ethylbenzene	0.44 J	ND<0.66	ND<0.66	ND<0.66	4	4.1	1.7	1.4	0.79	0.71	0.49 J	0.62 J	NA
Freon 11	0.97	0.86	0.86	1	2.2	1.0	ND<0.86	ND<0.86	0.80 J	0.74 J	0.86	0.80 J	NA
Freon 114	ND<1.1	ND<1.1	ND<1.1	ND<1.1	3.2	ND<1.1	65	62	2.3	ND<1.1	ND<1.1	ND<1.1	NA
Freon 12	2.3	1.6	1.6	1.9	3.4	1.7	2,200 E	37	28 J	1.6	1.6	1.5	NA
Heptane	0.71	ND<0.62	ND<0.62	ND<0.62	2.8	1.4	6.8	4.4	4.6	17 J	0.87	2.9	NA
Hexane	1.3	0.79	ND<0.54	ND<0.54	5.3	2.4	15	16	14	53	3.8	7.9	NA
Isopropyl alcohol	ND<0.37	ND<0.37	ND<0.37	ND<0.37	7.2	3.8	ND<0.37	ND<0.37	ND<0.37	ND<0.37	ND<0.37	ND<0.37	NA
m&p Xylene	1.1 J	1.1 J	0.71 J	0.75 J	7.1 J	9.7 J	4.4	6.2	2.3	2	1.3 J	1.6	NA
Methyl Butyl Ketone	0.42 J	ND<1.2	ND<1.2	ND<1.2	ND<1.2	ND<1.2	ND<1.2	ND<1.2	ND<1.2	ND<1.2	ND<1.2	ND<1.2	NA
Methyl Ethyl Ketone	0.81 J	0.69 J	ND<0.90	0.93	ND<0.90	5.4	ND<0.90	ND<0.90	ND<0.90	ND<0.90	1.4	ND<0.90	NA
Methyl Isobutyl Ketone	ND<1.2	ND<1.2	ND<1.2	ND<1.2	0.67 J	ND<1.2	ND<1.2	ND<1.2	ND<1.2	ND<1.2	ND<1.2	ND<1.2	NA
o-Xylene	0.44 J	0.53 J	ND<0.66	ND<0.66	4	3.8	1.5	2.4	0.75	0.62 J	0.53 J	0.57 J	NA
Styrene	ND<0.65	ND<0.65	ND<0.65	ND<0.65	3.7	4.6	1.2	1.7	0.48 J	0.74	0.48 J	0.61 J	NA
Tetrahydrofuran	ND<0.45	ND<0.45	ND<0.45	ND<0.45	0.99	0.72	ND<0.45	ND<0.45	ND<0.45	ND<0.45	ND<0.45	ND<0.45	NA
Toluene	1.2	1.3	0.96	3.2	7.7	7.3	4.2	4.3	3.8	2.3	2.2	1.7	NA
trans-1,2-Dichloroethene	ND<0.60	ND<0.60	ND<0.60	ND<0.60	ND<0.60	ND<0.60	1.1	ND<0.60	ND<0.60	ND<0.60	3.9	ND<0.60	NA
Vinyl chloride	ND<0.39	ND<0.39	ND<0.39	ND<0.39	ND<0.39	ND<0.39	11	44	1.2	ND<0.39	19	ND<0.39	NA
Methane by EPA Method 3C (%)													
Methane	0.012	0.0064	0.011	0.0044	0.0022	0.0018	17	4.7	0.059	0.0085	0.0021	0.0021	NA

Notes

All VOC results are in micrograms per meter cubed (ug/m3). Methane results in %.

See Table 3.3 and Soil Vapor / Indoor Air Matrix Tables of New York's Final Guidance for Evaluating Soil Vapor dated October 2006 for recommended action

NA = Not Applicable, the NYSDOH has not published a standards and/or guidelines for this compound.

See laboratory analytical report for full list of analyzed compounds

J = Analyte detected at or below quantitation limits

Samples analyzed by 1ug/m3 by Method TO-15. Sample results flagged with "E" value were above the quantitation range and were reanalyzed w/ a 5ppb dilution by Method TO-15 allowing increased accuracy for the flagged results.

Sample Sub-32 resampled for methane analysis on August 27, 2007 due to laboratory contamination of the original sample collected on February 19, 2007.

E = sample results from 5 ppb dilution analysis

Created By: DG
Checked By:DBS
Revised By:DBS

Table 4
Indoor and Ambient Air Monitoring Analytical Results- February 19, 2007
Binghamton Plaza Property
City of Binghamton, New York
BE Project No. 06-2175-3

Vapor Sampling Point Identification	Indoor-3	Indoor-15	Indoor-20	Indoor-24	Indoor-29	Indoor-31	Indoor-32	Indoor-33	Indoor-34 (Duplicate of Indoor-29)	Indoor-35 (Duplicate of Indoor-24)	Ambient-1	Ambient-2	Ambient-3	Indoor Air Guidance Value	Soil Vapor / Indoor Air Decision Matrix
Volatile Organic Compounds by EPA Method TO-15 (standard list)															
Carbon Tetrachloride	0.32	0.448	0.448	0.32	0.448	0.448	0.32	0.448	0.448	0.32	0.512	0.512	0.512	NA	**Matrix 1**
Trichloroethene (TCE)	ND<0.218	ND<0.218	ND<0.218	0.273	0.218	1.2	ND<0.218	ND<0.218	ND<0.218	0.218	ND<0.218	ND<0.218	ND<0.218	**5**	**Matrix 1**
1,1,1-Trichloroethane (1,1,1-TCA)	ND<0.832	ND<0.832	ND<0.832	ND<0.832	ND<0.832	ND<0.832	ND<0.832	ND<0.832	ND<0.832	ND<0.832	ND<0.832	ND<0.832	ND<0.832	NA	**Matrix 2**
Tetrachloroethene (PCE)	ND<1.03	0.758 J	0.896 J	ND<1.03	ND<1.03	ND<1.03	ND<1.03	ND<1.03	ND<1.03	ND<1.03	1.24	ND<1.03	13.7	**100**	**Matrix 2**
Methylene Chloride	0.424 J	1.62	0.459 J	1.8	0.706	0.388 J	ND<0.530	0.6	0.671	1.94	0.459 J	0.494 J	0.388 J	**60**	NA
1,1-Dichloroethene	ND<0.605	ND<0.605	ND<0.605	ND<0.605	ND<0.605	ND<0.605	ND<0.605	ND<0.605	ND<0.605	ND<0.605	ND<0.605	ND<0.605	ND<0.605	NA	NA
1,2,4-Trimethylbenzene	9.49	7.84	0.899	4.7	7.19	0.6 J	1.3	1.8	6.3	4.15	0.949	0.65 J	0.949	NA	NA
1,2-Dichloroethane	ND<0.617	0.576 J	0.411 J	0.658	ND<0.617	ND<0.617	ND<0.617	ND<0.617	ND<0.617	0.699	ND<0.617	ND<0.617	ND<0.617	NA	NA
1,3,5-Trimethylbenzene	2.3	1.75	ND<0.750	1.4	2.15	ND<0.750	ND<0.750	0.6 J	2.15	1.3	ND<0.750	ND<0.750	ND<0.750	NA	NA
2,2,4-Trimethylpentane	2.85	3.04	ND<0.712	3.7	ND<0.712	ND<0.712	2.09	0.617 J	1.75	3.47	ND<0.712	ND<0.712	ND<0.712	NA	NA
4-ethyltoluene	3.3	3.25	ND<0.750	1.4	2.25	ND<0.750	0.6 J	0.6 J	1.85	1.3	0.5 J	ND<0.750	ND<0.750	NA	NA
Acetone	22.9	10.9	10.9	56	8.93	45.9	3.53	7.97	8.69	44.9	12.1	25.4	16.4	NA	NA
Benzene	4.32	3.44	0.844	3.12	1.23	0.584	2.11	1.4	1.1	2.89	0.682	0.942	0.617	NA	NA
Carbon disulfide	ND<0.475	ND<0.475	ND<0.475	ND<0.475	ND<0.475	ND<0.475	ND<0.475	ND<0.475	ND<0.475	ND<0.475	ND<0.475	ND<0.475	ND<0.475	NA	NA
Chloroethane	ND<0.402	ND<0.402	ND<0.402	ND<0.402	ND<0.402	ND<0.402	ND<0.402	ND<0.402	ND<0.402	ND<0.402	ND<0.402	ND<0.402	ND<0.402	NA	NA
Chloroform	ND<0.744	ND<0.744	ND<0.744	ND<0.744	ND<0.744	ND<0.744	ND<0.744	ND<0.744	ND<0.744	ND<0.744	ND<0.744	ND<0.744	ND<0.744	NA	NA
Chloromethane	0.483	0.861	0.798	0.546	0.861	0.84	0.588	0.882	0.576	1.05	0.861	0.924	0.84	NA	NA
cis-1,2-Dichloroethene	ND<0.604	ND<0.604	ND<0.604	ND<0.604	ND<0.604	0.564 J	ND<0.604	ND<0.604	ND<0.604	ND<0.604	ND<0.604	ND<0.604	ND<0.604	NA	NA
Cyclohexane	1.29	3.25	1.08	8.4	ND<0.525	ND<0.525	3.74	11.9	ND<0.525	7.7	ND<0.525	ND<0.525	ND<0.525	NA	NA
Ethyl acetate	1.94	ND<0.916	ND<0.916	3.33	ND<0.916	1.5	ND<0.916	ND<0.916	ND<0.916	3.3	ND<0.916	0.989	ND<0.916	NA	NA
Ethylbenzene	3.49	4.5	ND<0.662	2.74	1.72	ND<0.662	1.15	0.662	1.46	2.56	ND<0.662	ND<0.662	ND<0.662	NA	NA
Freon 11	0.914	2.8	1.31	1.2	1.48	1.77	0.914	1.37	1.03	1.2	1.31	1.26	1.31	NA	NA
Freon 114	ND<1.07	ND<1.07	ND<1.07	ND<1.07	ND<1.07	ND<1.07	ND<1.07	ND<1.07	ND<1.07	ND<1.07	ND<1.07	ND<1.07	ND<1.07	NA	NA
Freon 12	2.36	3.67	2.31	2.61	3.37	2.51	2.21	2.76	2.41	2.76	2.36	2.36	2.36	NA	NA
Heptane	2.58	2.79	ND<0.625	4.25	ND<0.625	ND<0.625	0.625	0.5 J	ND<0.625	3.92	ND<0.625	ND<0.625	ND<0.625	NA	NA
Hexane	5.59	4.62	0.645	4.51	0.716	0.466 J	1.47	0.896	0.645	4.12	ND<0.537	0.752	0.466 J	NA	NA
Isopropyl alcohol	ND<0.375	ND<0.375	9.49	43	7	7.75	ND<0.375	ND<0.375	4.6	38.2	ND<0.375	ND<0.375	ND<0.375	NA	NA
m&p Xylene	7.06 J	9.71 J	0.883 J	6.71	6.27	0.662 J	4.15	2.12	4.94	6.4	0.706 J	1.02 J	0.75 J	NA	NA
Methyl Butyl Ketone	ND<1.25	ND<1.25	ND<1.25	ND<1.25	ND<1.25	ND<1.25	ND<1.25	ND<1.25	ND<1.25	ND<1.25	ND<1.25	ND<1.25	ND<1.25	NA	NA
Methyl Ethyl Ketone	ND<0.899	ND<0.899	ND<0.899	ND<0.899	2.01	ND<0.899	ND<0.899	ND<0.899	1.23	ND<0.899	ND<0.899	ND<0.899	ND<0.899	NA	NA
Methyl Isobutyl Ketone	ND<1.25	ND<1.25	ND<1.25	1.17 J	ND<1.25	0.749 J	ND<1.25	ND<1.25	ND<1.25	0.874 J	ND<1.25	ND<1.25	ND<1.25	NA	NA
o-Xylene	4.63	5.3	ND<0.662	2.3	2.6	ND<0.662	1.37	0.883	2.07	2.21	ND<0.662	ND<0.662	ND<0.662	NA	NA
Styrene	ND<0.649	ND<0.649	ND<0.649	1.43	2.03	ND<0.649	ND<0.649	ND<0.649	1.56	1.47	ND<0.649	ND<0.649	ND<0.649	NA	NA
Tetrahydrofuran	ND<0.450	ND<0.450	ND<0.450	ND<0.450	5.1	ND<0.450	ND<0.450	ND<0.450	4.98	ND<0.450	ND<0.450	ND<0.450	ND<0.450	NA	NA
Toluene	11.9	19.2	2.37	147	4.75	1.23	12.3 J	3.45	4.06	99.6	1.03	1.95	1.11	NA	NA
trans-1,2-Dichloroethene	ND<0.604	ND<0.604	ND<0.604	ND<0.604	ND<0.604	ND<0.604	ND<0.604	ND<0.604	ND<0.604	ND<0.604	ND<0.604	ND<0.604	ND<0.604	NA	NA
Vinyl chloride	ND<0.390	ND<0.390	ND<0.390	ND<0.390	ND<0.390	ND<0.390	ND<0.390	ND<0.390	ND<0.390	ND<0.390	ND<0.390	ND<0.390	ND<0.390	NA	NA
Methane by EPA Method 3C (%)															
Methane	0.023	0.0031	0.0038	0.0027	0.0023	0.0019	0.0051	0.015	0.0023	0.0032	0.0025	0.0019	0.0026	NA	NA

Notes

All VOC results are in micrograms per meter cubed (ug/m3). Methane results are in %.

Indoor Air Quality Standard. Table 3.1 Air guideline values derived by the NYSDOH. Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006.

See Table 3.3 and Soil Vapor / Indoor Air Matrix Tables of New York's Final Guidance for Evaluating Soil Vapor dated October 2006 for recommended action

NA = Not Applicable, the NYSDOH has not published a standard for this compoud.

See laboratory analytical report for full list of analyzed compounds

J = analyte detected at or below quantitiation limits

Samples analyzed by 1ug/m3 w/ 0.25 ug/m3 CT & TCE by Method TO-15

Created By: DG
Checked By:DBS
Revised By:DBS

Table 5
Indoor and Ambient Air Monitoring Analytical Results- January 7, 2010
Binghamton Plaza Property
City of Binghamton, New York
BE Project No. 06-2175-3

	Building-33 (M&T)	By M&T (Downwind)	Building-32 (Vacant)	By Kmart (Upwind)	Building-31 (Daycare)		
Vapor Sampling Point Identification	**IA-1**	**IA-2 (Ambient)**	**IA-3**	**IA-4 (Ambient)**	**IA-5**	**Indoor Air Guidance Value**	**Soil Vapor / Indoor Air Decision Matrix**
Volatile Organic Compounds by EPA Method TO-15 (standard list)							
Carbon Tetrachloride	0.45 J	0.38 J	0.38 J	0.38 J	0.38 J	NA	**Matrix 1**
Trichloroethene (TCE)	<0.22	1.0	<0.22	<0.22	0.82	**5**	**Matrix 1**
Tetrachloroethene (PCE)	2.4	31	<1.0	2.3	5.2	**100**	**Matrix 2**
Methylene Chloride	0.67	0.49 J	0.39 J	<0.53	0.71	**60**	NA
1,2,4-Trimethylbenzene	0.90	<1.1	<0.75	<0.75	0.70 J	NA	NA
1,4-Dichlorobenzene	<0.92	<0.92	<0.92	<0.92	0.92	NA	NA
Acetone	8.2	9.4	6.5	8.1	14	NA	NA
Benzene	0.65	0.55	0.49	0.49	0.58	NA	NA
Carbon disulfide	0.41 J	<0.47	<0.47	<0.47	<0.47	NA	NA
Chloromethane	0.67	0.65	0.65	0.67	0.71	NA	NA
Cyclohexane	0.73	0.49 J	0.63	0.49 J	1.4	NA	NA
Ethyl acetate	<0.92	<0.92	<0.92	<0.92	0.51 J	NA	NA
Ethylbenzene	<0.66	<0.66	<0.66	<0.66	0.53 J	NA	NA
Freon 11	1.1	1.0	1.1	1.1	1.3	NA	NA
Freon 12	2.4	2.1	2.1	2.1	2.0	NA	NA
Heptane	0.92	0.50 J	0.54 J	0.75	1.7	NA	NA
Hexane	1.5	0.64	0.68	0.68	1.7	NA	NA
Isopropyl alcohol	3.4	<0.37	<0.37	<0.37	17	NA	NA
m&p Xylene	0.97 J	<1.3	<1.3	<1.3	0.71 J	NA	NA
Methyl Ethyl Ketone	0.90	0.60 J	0.51 J	0.45 J	1.0	NA	NA
Toluene	6.0	2.5	2.6	3.3	5.6	NA	NA
Methane by EPA Method 3C (%)							
Methane	ND	ND	ND	ND	ND	NA	NA

Notes

All VOC results are in micrograms per meter cubed (ug/m3). Methane results are in %.

Indoor Air Quality Standard. Table 3.1 Air guideline values derived by the NYSDOH. Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006.

See Table 3.3 and Soil Vapor / Indoor Air Matrix Tables of New York's Final Guidance for Evaluating Soil Vapor dated October 2006 for recommended action

NA = Not Applicable, the NYSDOH has not published a standard for this compoud.

See laboratory analytical report for full list of analyzed compounds

J = analyte detected at or below quantitiation limits

Samples analyzed by 1ug/m3 w/ 0.25 ug/m3 CT & TCE by Method TO-15

Created By: DG
Checked By:DBS
Revised By:DBS

Table 6
Indoor Air Monitoring Analytical Results (June 2007 - August 2014)
Binghamton Plaza Property
Kurious Kids Childcare (Buildings 31 and 32)
City of Binghamton, New York
BE Project No. 06-2175-3

	Building 31								**Building 32**	**Buildings 31 and 32 (Outdoor Air)**			
	Pre Mitigation No SSDS	**Post Mitigation SSDS Active**	**SSDS Inactive (Turned off in May 2012)**				**SSDS Active (Turned on in May 2014)**		**1st Monitoring Event w/ Daycare**				
	EPA Method TO-15		**EPA Method TO-17**				**EPA Method TO-15**						
Building 31 and 32 - Detected Volatile Organic Compounds in Indoor Air	**Indoor Air (2/2007)**	**Indoor Air (1/2010)**	**Pre-School Room (4/2013)**	**School Age Room (4/2013)**	**Pre-School Room (2/2014)**	**School Age Room (2/2014)**	**Pre-School Room (8/2014)**	**School Age Room (8/2014)**	**Center of Classroom (8/2014)**	**Outdoor Air (upwind) (8/2014)**	**Outdoor Air (downwind) (8/2014)**	**Indoor Air Guidance Value**	**Soil Vapor / Indoor Air Decision Matrix**
Carbon Tetrachloride	0.448	0.38 J	-	-	0.30	0.30	-	-	-	-	-	NA	Matrix 1
Trichloroethene (TCE)	1.2	0.82	-	-	1.1	1.0	0.81	1.1	0.81	-	-	5	Matrix 1
Tetrachloroethene (PCE)	-	5.2	-	-	0.094	0.12	-	-	-	-	-	30 (a)	Matrix 2
cis-1,2-Dichloroethene	0.564 J	-	-	-	0.15	0.12	-	-	-	-	-	NA	Matrix 2
Methylene Chloride	0.388 J	0.71	-	-	na	na	0.38	0.42	0.49	0.45	0.42	60	NA
1,2,4-Trimethylbenzene	0.6 J	0.70 J	na	na	na	na	0.74	0.88	-	0.88	0.88	NA	NA
1,3,5-Trimethylbenzene	-	-	na	na	na	na	-	0.59	-	-	0.64	NA	NA
1,2-Dichloroethane	-	-	-	-	0.045	0.048	-	-	-	-	-	NA	NA
1,4-Dichlorobenzene	-	0.92	na	na	na	na	-	-	-	-	-	NA	NA
1,4-Dioxane	-	-	na	na	na	na	0.43	-	-	-	-	NA	NA
Acetone	45.9	14	4.6	5.2	na	na	22	27	28	16	15	NA	NA
Benzene	0.584	0.58	1.8	1.8	0.83	0.86	-	0.38	0.32	0.38	0.67	NA	NA
Chloroform	-	-	-	-	0.18	0.17	-	-	2.8	-	-	NA	NA
Chloromethane	0.84	0.71	na	na	na	na	0.39	0.60	0.72	0.76	0.99	NA	NA
Cyclohexane	-	1.4	-	-	-	-	-	-	0.76	-	-	NA	NA
Ethyl acetate	1.5	0.51 J	na	na	na	na	-	0.58	0.68	-	-	NA	NA
Ethylbenzene	-	0.53 J	0.86	0.98	0.37	0.40	-	-	-	-	-	NA	NA
Freon 11	1.77	1.3	na	na	na	na	0.73	1.3	1.2	1.3	1.2	NA	NA
Freon 12	2.51	2.0	na	na	na	na	1.6	2.5	2.4	2.5	2.5	NA	NA
Heptane	-	1.7	-	-	-	-	-	-	1.1	-	-	NA	NA
Hexane	0.466 J	1.7	0.53	0.57	0.96	0.93	-	-	-	-	-	NA	NA
Isopropyl alcohol	7.75	17	na	na	na	na	-	-	58	4.3	5.0	NA	NA
m&p Xylene	0.662 J	0.71 J	1.9	2.3	0.78	0.92	0.48	0.78	-	0.48	1.3	NA	NA
Methyl Ethyl Ketone	-	1.0	5.0	4.8	na	na	0.74	1.6	2.1	1.4	1.1	NA	NA
Methyl Isobutyl Ketone	0.749 J	-	na	na	na	na	-	-	-	-	-	NA	NA
o-Xylene	-	-	0.72	0.86	0.32	0.40	-	-	-	-	0.65	NA	NA
Toluene	1.23	5.6	1.9	2.2	2.6	2.6	1.6	3.1	5.6	1.0	0.94	NA	NA

Notes

All VOC results are in ug/m3.

See Table 3.3 and Soil Vapor / Indoor Air Matrix Tables of New York's Final Guidance for Evaluating Soil Vapor dated October 2006 for recommended action(s).

NA = Not Applicable, the NYSDOH has no published standards and/or guidelines for this compound.

na = Not Analyzed as part of TO-17 analysis.

See laboratory analytical report for full list of analyzed compounds

J = Analyte detected at or below quantitation limits

NS = Not Sampled

SSDS = Sub-slab depressurization system.

"-" Compound not detected above laboratory reporting detection limits or method detection limits.

(a) PCE IAGV value changed from 100 to 30 ug/m3 in September 2013

Created By: DG
Checked By:DBS
Revised By:DBS

Table 7
Summary of SSDS Configuration
Binghamton Plaza Property
City of Binghamton, New York
BE Project No. 06-2175-3

Location	Number of Suction Points	Number of Communication Test Holes	Number of Fans	Model of Fan	Piping Configuration	Piping Type	Number of Exhaust Stacks	Height of Exhaust Stack (above roof line)	Notes
Bldg. #31 (Kurious Kids Daycare)	2	6	1	CAV100	See Figure 11 of SMP	PVC	1	3" stack, 18" above roof line	1st Kurious Kids Daycare Building
Bldg. #32 (Kurious Kids Daycare)	2	4	1	CAV100	See Figure 12 of SMP	PVC	1	3" stack, 18" above roof line	Became 2nd Kurious Kids Daycare Building in January 2014
Bldg. #33 (M&T Bank Drive-up)	1	0	1	CAV100	See Figure 13 of SMP	PVC	1	3" stack, 18" above roof line	

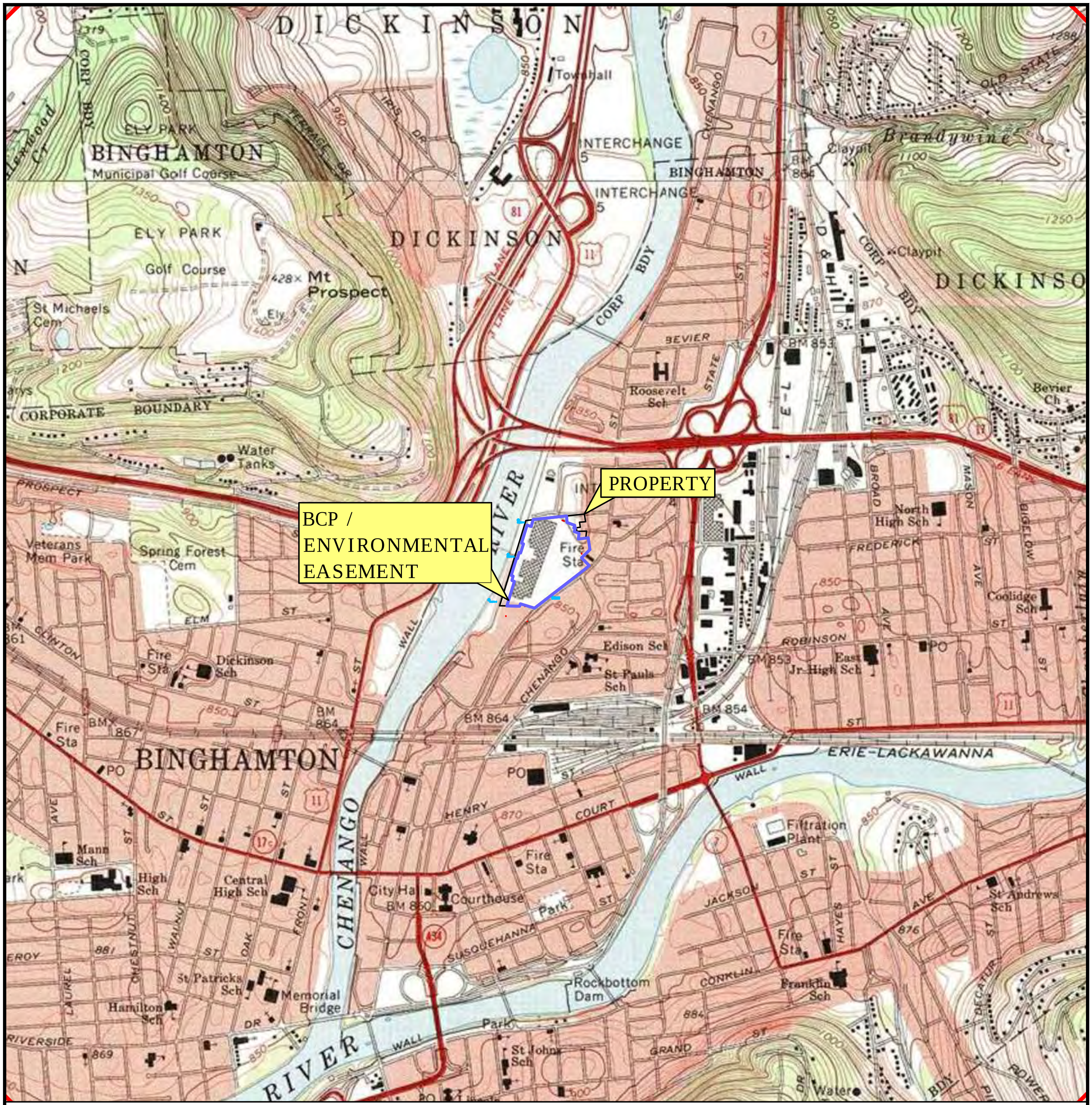
Created By: DG
Checked By:DBS
Revised By:DBS

Table 14

Summary of Monitoring, Sampling and Inspection Schedule
Binghamton Plaza Property
City of Binghamton, New York
BE Project No. 06-2175-3

Type of Event	**Semi-Annual**	**Annual**	**First 6 Months of SMP Implementation (2015)**	**Every 5 Years**	**Notes**	**Forms**
Groundwater Sampling			X	X	Includes MW inspection	Appendix H
Monitoring Well Inspection			X	X		Appendices G&H
Cap Inspection	X				Includes soil cover and MW inspection	Appendix G
Methane Monitoring	X				Bldgs. 3, 15, 20, 24, and 29	Appendix G
Indoor Air Sampling (TO-17 or TO-15)	X					Appendix H
Passive Ventilation Inspection		X				Appendix G
SSD System Inspection		X				Appendix G

FIGURES



PROPERTY

BCP / ENVIRONMENTAL EASEMENT

SCALE: 1" = 2000'

N
W E
S

SOURCE: NATIONAL GEOGRAPHIC TOPOGRAPHIC QUADRANGLE MAPS (BINGHAMTON WEST, NY).

SITE LOCATION MAP

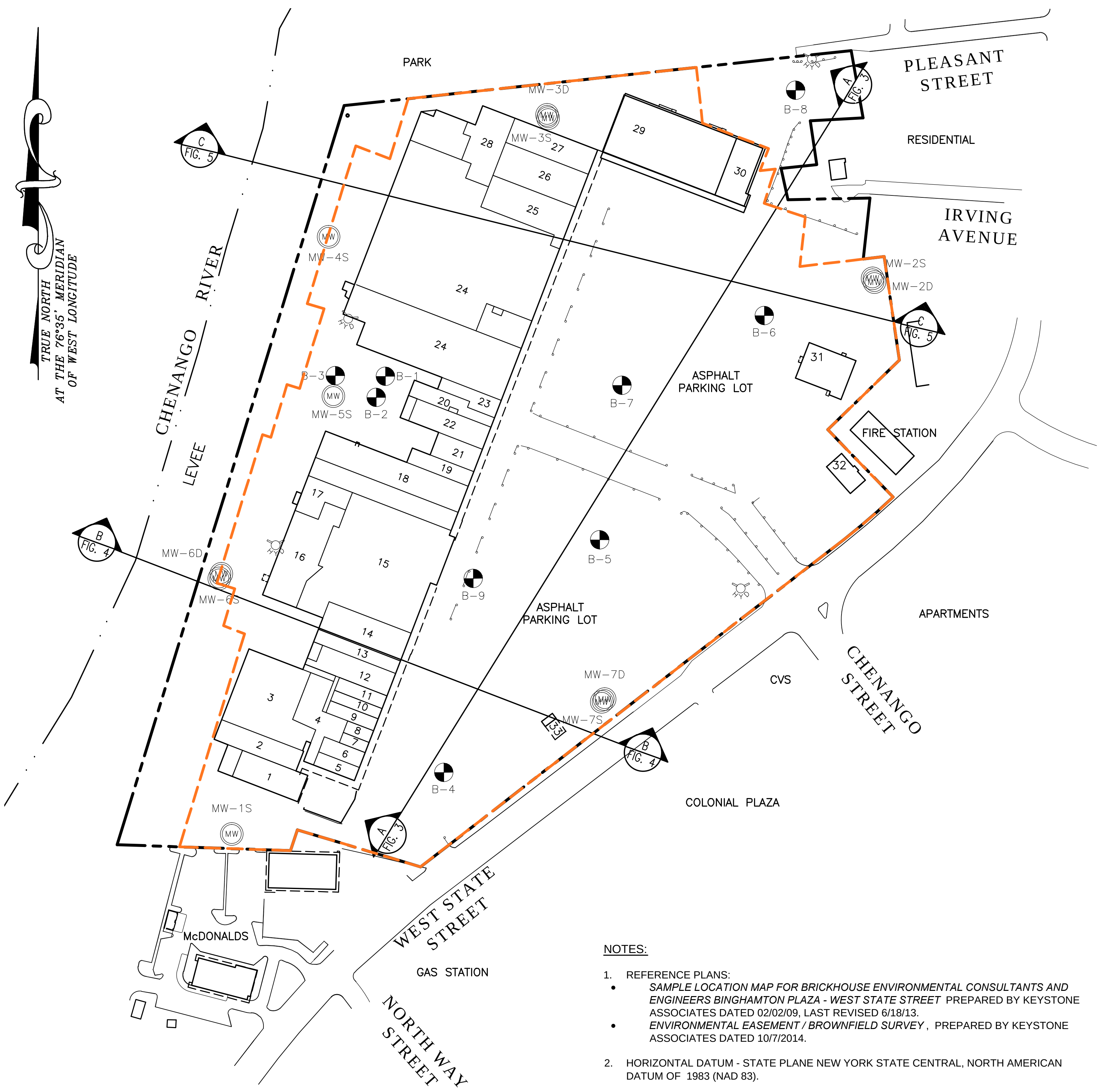
BINGHAMTON PLAZA
BINGHAMTON, NEW YORK

BRICKHOUSE ENVIRONMENTAL
PROFESSIONAL GEOLOGISTS, SCIENTISTS AND ENGINEERS
515 S. FRANKLIN STREET; WEST CHESTER, PA 19382 PHONE: 610.692.5770 FAX: 610.692.8650
WWW.BRICKHOUSE-ENVIRONMENTAL.COM

PROJECT: 06-2175.3
FILE NO.: 062175.3SL
DATE: 11/15/13
SCALE: 1" = 2,000'

FIGURE
1

Plotted: 12-01-14 @1:45pm By: mradcliffe



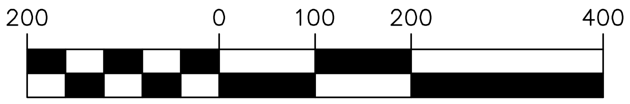
NOTES:

1. REFERENCE PLANS:
   - *SAMPLE LOCATION MAP FOR BRICKHOUSE ENVIRONMENTAL CONSULTANTS AND ENGINEERS BINGHAMTON PLAZA - WEST STATE STREET* PREPARED BY KEYSTONE ASSOCIATES DATED 02/02/09, LAST REVISED 6/18/13.
   - *ENVIRONMENTAL EASEMENT / BROWNFIELD SURVEY* , PREPARED BY KEYSTONE ASSOCIATES DATED 10/7/2014.
2. HORIZONTAL DATUM - STATE PLANE NEW YORK STATE CENTRAL, NORTH AMERICAN DATUM OF 1983 (NAD 83).
3. VERTICAL DATUM - NORTH AMERICAN VERTICAL DATUM OF 1988 (NVD 88).

LEGEND

MW-5S ⓜ	MONITORING WELL
B-7 ◐	SOIL BORING
✱	FIRE HYDRANT
— - — - —	PROPERTY LINE
·—·—·—·	GUIDE RAIL
— — —	BROWNFIELD CLEANUP PROGRAM (BCP) AREA/ ENVIRONMENTAL EASEMENT AREA

GRAPHIC SCALE



(IN FEET)
1 inch = 200 ft.

SITE PLAN

BINGHAMTON PLAZA
CITY OF BINGHAMTON, BROOME CO., NY

PROJECT: 06-2175.3
FILE NO.: 062175.3_BASE
DATE: 11/11/2014
SCALE: 1" = 200'

BRICKHOUSE ENVIRONMENTAL
PROFESSIONAL GEOLOGISTS, SCIENTISTS AND ENGINEERS
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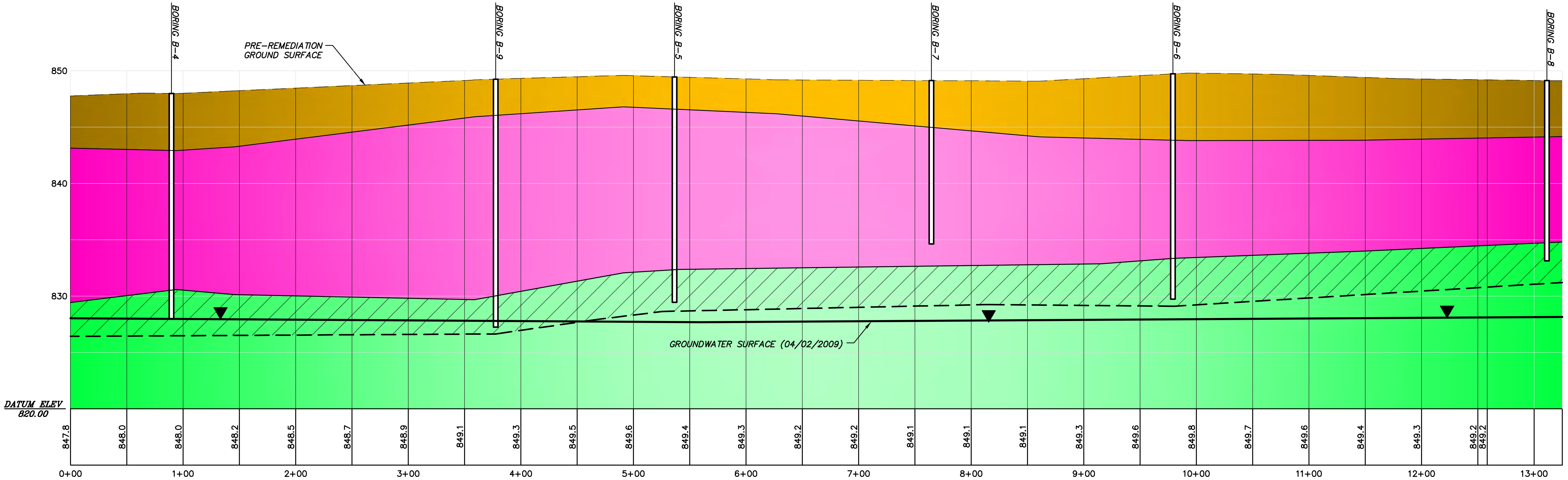
FIGURE
2

J:\062175.3\dwg\062175.3_BASE.dwg[Figure 2 SMP]

Plotted: 12-01-14 @1:45pm By: mradcliffe



SECTION A – A

SCALE: 1" = 100' HORIZ.
1" = 10' VERT.

LEGEND

- 🟧 MIXED SAND & FILL MATERIAL CONSISTENTLY FREE OF WASTE & DEBRIS
- 🟪 LANDFILL MATERIAL MIXED WITH SAND & SILT. ENCOUNTERED WASTE CONSISTED OF INCINERATED WASTE & MUNICIPAL WASTE/DEBRIS
- 🟩 UNCONSOLIDATED NATIVE SOIL CONSISTING PRIMARILY OF GREY SILT, FINE TO COARSE SAND & GRAVEL
- ▨ SILT LAYER (GREATER THAN 3' THICK)

J:\062175.3\dwg\062175-3PR.dwg[SMP Figure 3]

CROSS SECTION A - A

BINGHAMTON PLAZA
CITY OF BINGHAMTON, BROOME CO., NY

PROJECT: 06-2175.3
FILE NO.: 062175.3PR
DATE: 05/05/2009
SCALE: AS NOTED

BRICKHOUSE ENVIRONMENTAL
PROFESSIONAL GEOLOGISTS, SCIENTISTS AND ENGINEERS
515 S. FRANKLIN STREET; WEST CHESTER, PA 19382 PHONE: 610.692.5770 FAX: 610.692.8650
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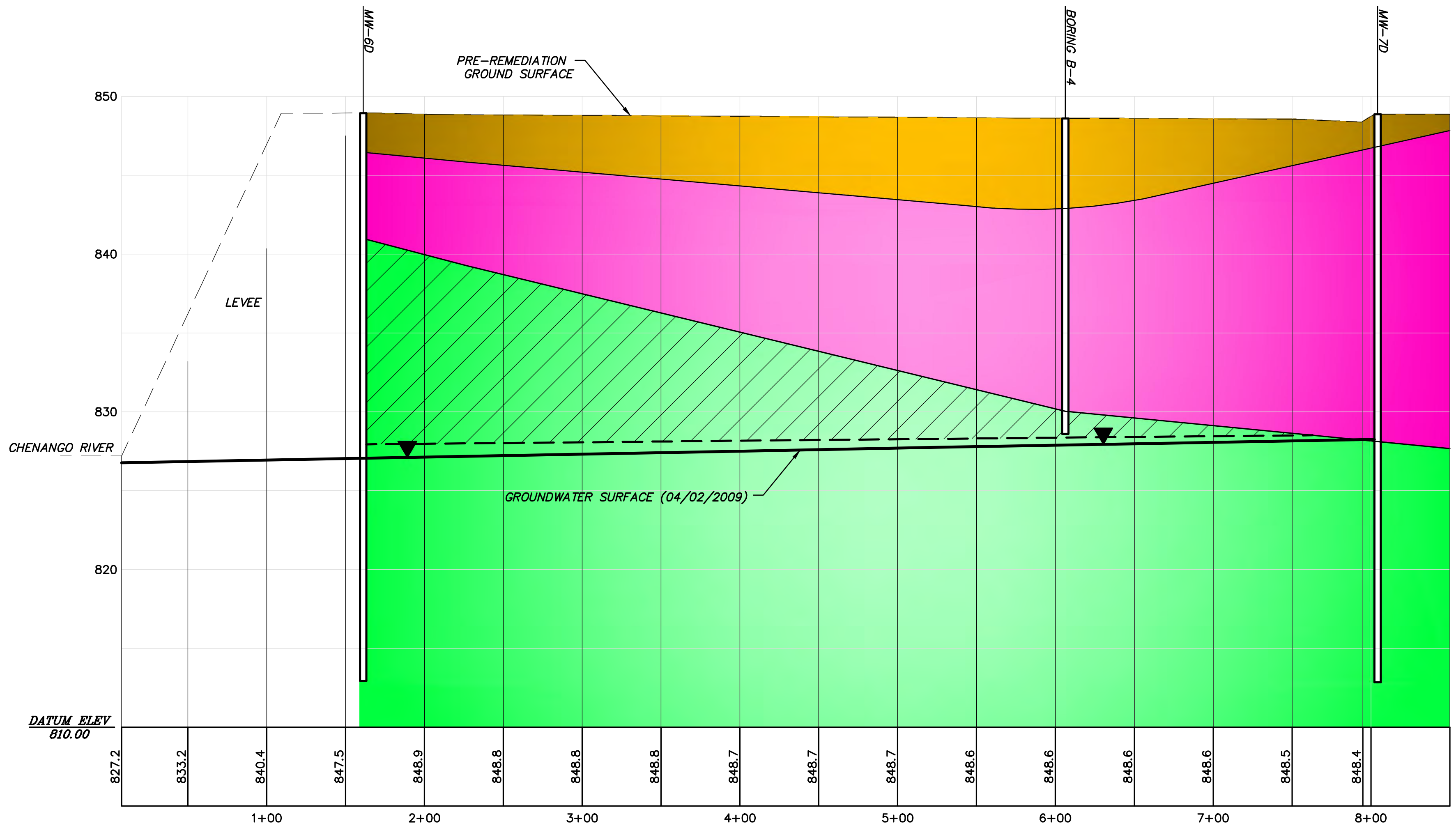
FIGURE
3



SECTION B – B

SCALE: 1" = 100' HORIZ.
1" = 10' VERT.

LEGEND

- 🟧 MIXED SAND & FILL MATERIAL CONSISTENTLY FREE OF WASTE & DEBRIS
- 🟪 LANDFILL MATERIAL MIXED WITH SAND & SILT. ENCOUNTERED WASTE CONSISTED OF INCINERATED WASTE & MUNICIPAL WASTE/DEBRIS
- 🟩 UNCONSOLIDATED NATIVE SOIL CONSISTING PRIMARILY OF GREY SILT, FINE TO COARSE SAND & GRAVEL
- ▨ SILT LAYER (13' THICK)

CROSS SECTION B - B

PROJECT: 06-2175.3
FILE NO.: 062175.3PR
DATE: 05/05/2009
SCALE: AS NOTED

BINGHAMTON PLAZA
CITY OF BINGHAMTON, BROOME CO., NY

BRICKHOUSE ENVIRONMENTAL
PROFESSIONAL GEOLOGISTS, SCIENTISTS AND ENGINEERS
515 S. FRANKLIN STREET; WEST CHESTER, PA 19382 PHONE: 610.692.5770 FAX: 610.692.8650
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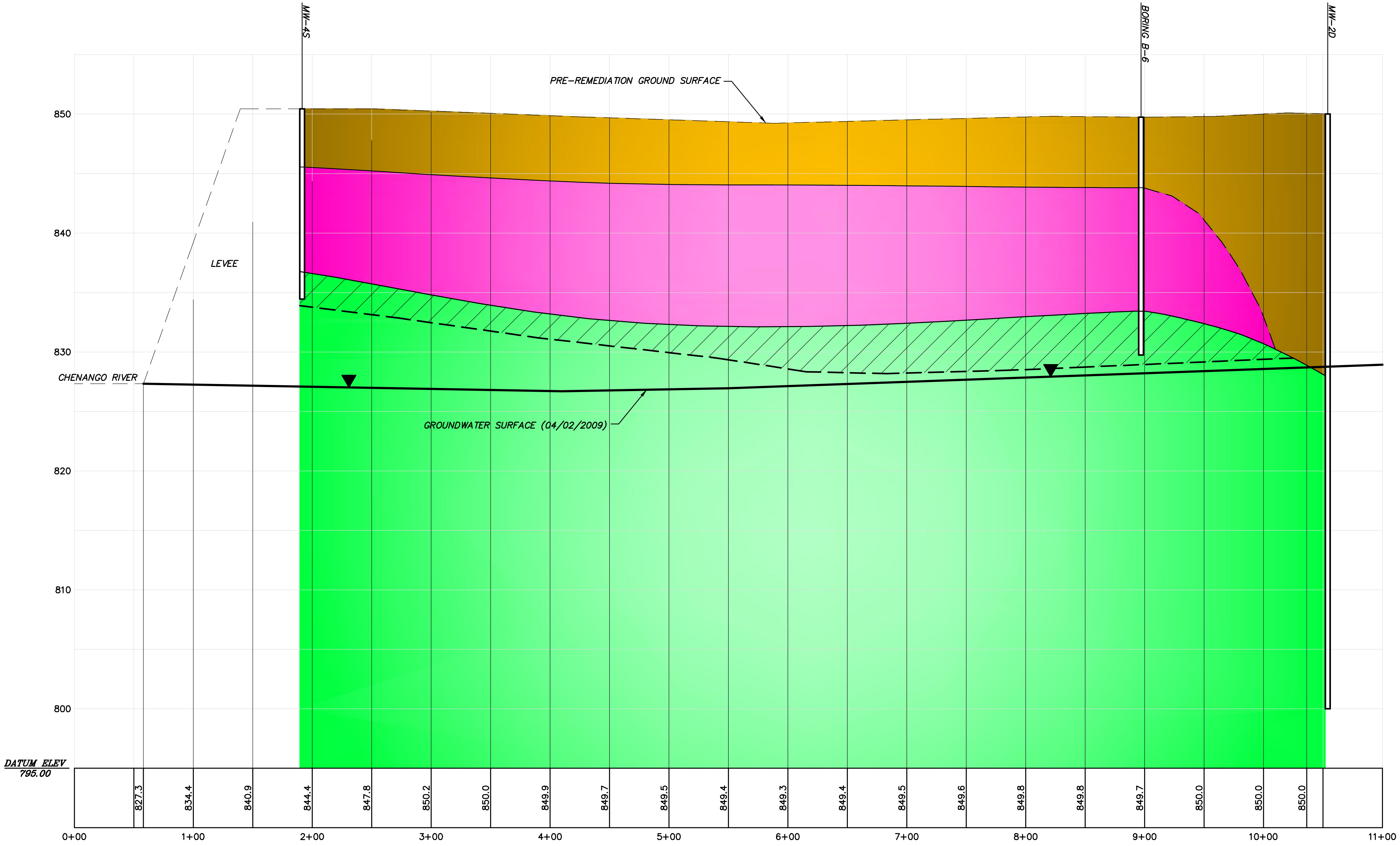
FIGURE
4

Plotted: 12-01-14 @1:45pm By: mradcliffe

J:\062175.3\dwg\062175-3PR.dwg[SMP Figure 4]

J:\062175.3\dwg\062175-3PR.dwg[SMP Figure 5] Plotted: 12-01-14 @1:45pm By: mradcliffe



SECTION C – C

SCALE: 1" = 100' HORIZ.
1" = 10' VERT.

LEGEND

🟧 MIXED SAND & FILL MATERIAL CONSISTENTLY FREE OF WASTE & DEBRIS

🟪 LANDFILL MATERIAL MIXED WITH SAND & SILT. ENCOUNTERED WASTE CONSISTED OF INCINERATED WASTE & MUNICIPAL WASTE/DEBRIS

🟩 UNCONSOLIDATED NATIVE SOIL CONSISTING PRIMARILY OF GREY SILT, FINE TO COARSE SAND & GRAVEL

▨ SILT LAYER (GREATER THAN 2' THICK)

CROSS SECTION C - C

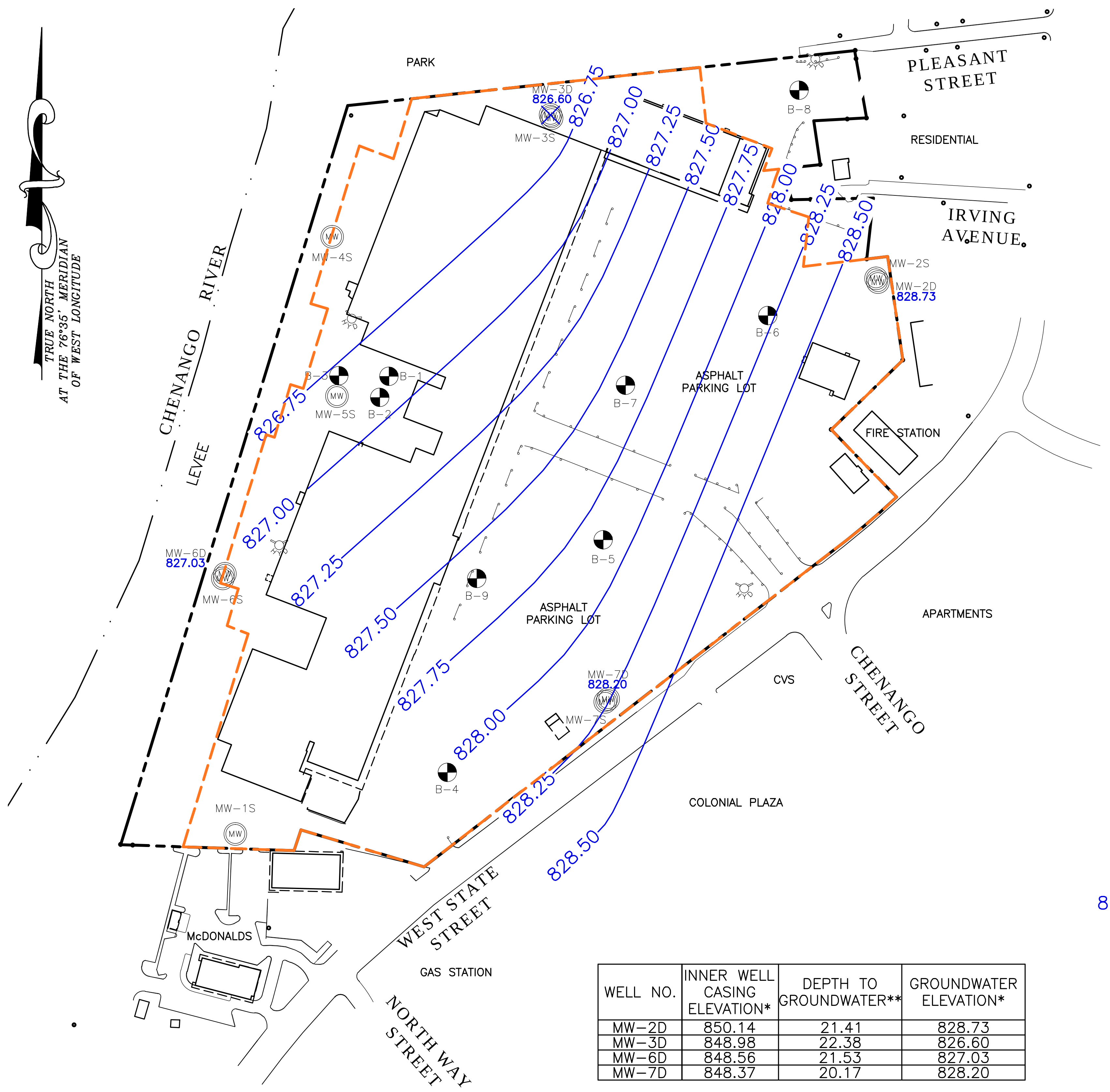
PROJECT: 06-2175.3
FILE NO.: 062175.3PR
DATE: 05/05/2009
SCALE: AS NOTED

BINGHAMTON PLAZA
CITY OF BINGHAMTON, BROOME CO., NY

BRICKHOUSE ENVIRONMENTAL
PROFESSIONAL GEOLOGISTS, SCIENTISTS AND ENGINEERS
515 S. FRANKLIN STREET; WEST CHESTER, PA 19382 PHONE: 610.692.5770 FAX: 610.692.8650
WWW.BRICKHOUSE-ENVIRONMENTAL.COM

FIGURE
5

Plotted: 12-01-14 @1:45pm By: mradcliffe



WELL NO.	INNER WELL CASING ELEVATION*	DEPTH TO GROUNDWATER**	GROUNDWATER ELEVATION*
MW-2D	850.14	21.41	828.73
MW-3D	848.98	22.38	826.60
MW-6D	848.56	21.53	827.03
MW-7D	848.37	20.17	828.20

* FEET ABOVE DATUM (NAVD 1998)
** FEET BEOLW TOP OF CASING
MEASURED APRIL, 2, 2009.

NOTES:

1. REFERENCE PLANS:
   - *SAMPLE LOCATION MAP FOR BRICKHOUSE ENVIRONMENTAL CONSULTANTS AND ENGINEERS BINGHAMTON PLAZA - WEST STATE STREET* PREPARED BY KEYSTONE ASSOCIATES DATED 02/02/09, LAST REVISED 6/18/13.
   - *ENVIRONMENTAL EASEMENT / BROWNFIELD SURVEY* , PREPARED BY KEYSTONE ASSOCIATES DATED 10/7/2014.
2. HORIZONTAL DATUM - STATE PLANE NEW YORK STATE CENTRAL, NORTH AMERICAN DATUM OF 1983 (NAD 83).
3. VERTICAL DATUM - NORTH AMERICAN VERTICAL DATUM OF 1988 (NVD 88).

LEGEND

MW-3D 826.60 ◎	MONITORING WELL WITH GROUNDWATER ELEVATION
B-7 ◐	SOIL BORING
☼	FIRE HYDRANT
— - — -	PROPERTY LINE
·—·—·—·	GUIDE RAIL
828.00 ——	GROUNDWATER CONTOUR
- - - -	BROWNFIELD CLEANUP PROGRAM (BCP) AREA/ ENVIRONMENTAL EASEMENT AREA

GRAPHIC SCALE

200 0 100 200 400

(IN FEET)
1 inch = 200 ft.

GROUNDWATER CONTOUR MAP (2009)

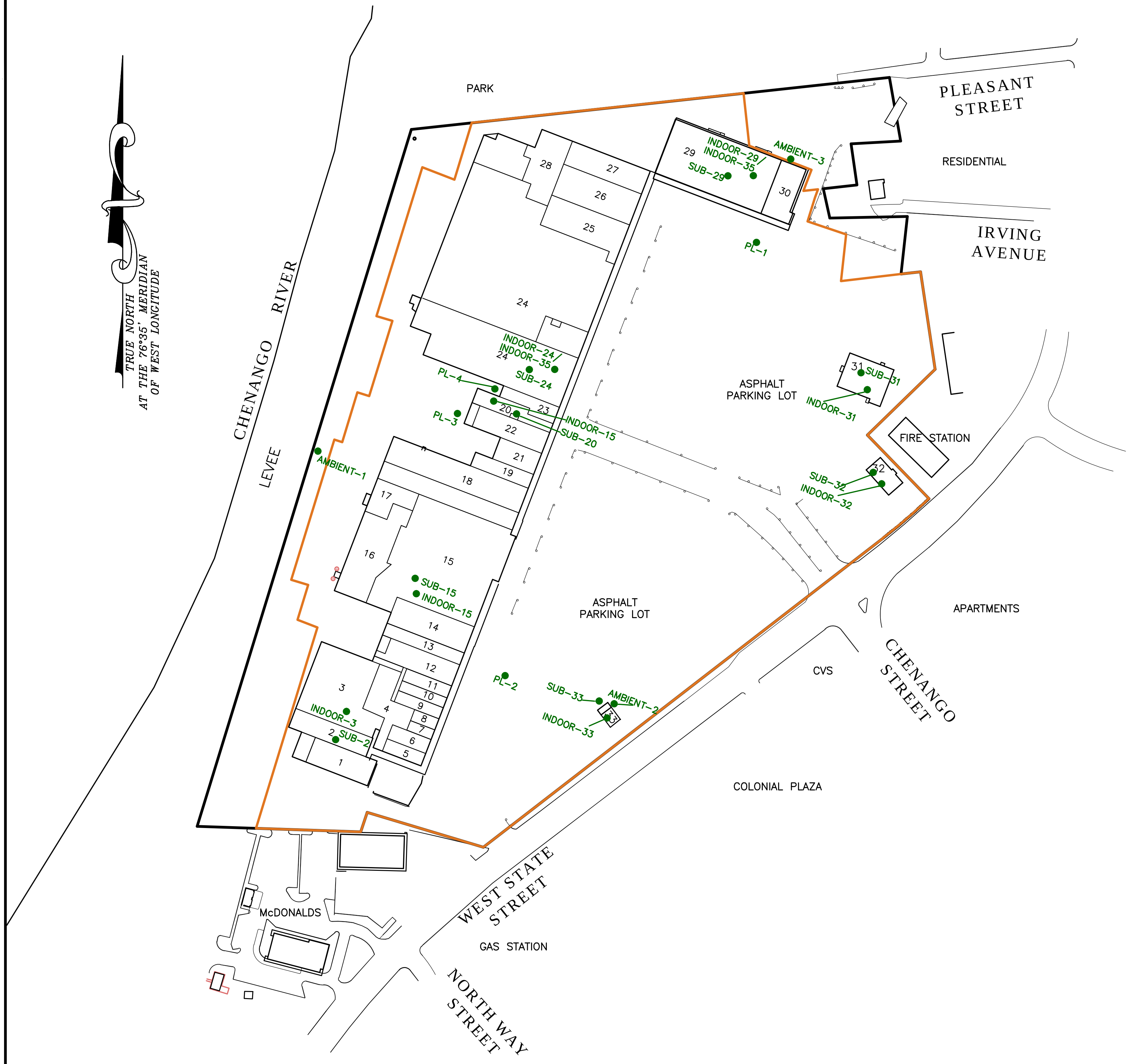
BINGHAMTON PLAZA
CITY OF BINGHAMTON, BROOME CO., NY

PROJECT: 06-2175.3
FILE NO.: 062175.3_BASE
DATE: 11/11/2014
SCALE: 1" = 200'

BRICKHOUSE ENVIRONMENTAL
PROFESSIONAL GEOLOGISTS, SCIENTISTS AND ENGINEERS
515 S. FRANKLIN STREET; WEST CHESTER, PA 19382 PHONE: 610.692.5770 FAX: 610.692.8650
WWW.BRICKHOUSE-ENVIRONMENTAL.COM

FIGURE
6

J:\062175.3\dwg\062175.3_BASE.dwg[Figure 6 SMP]



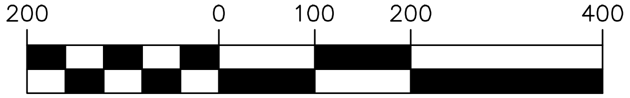
NOTES:

1. REFERENCE PLANS:
   - *SAMPLE LOCATION MAP FOR BRICKHOUSE ENVIRONMENTAL CONSULTANTS AND ENGINEERS BINGHAMTON PLAZA - WEST STATE STREET* PREPARED BY KEYSTONE ASSOCIATES DATED 02/02/09, LAST REVISED 6/18/13.
   - *ENVIRONMENTAL EASEMENT / BROWNFIELD SURVEY*, PREPARED BY KEYSTONE ASSOCIATES DATED 10/7/2014.
2. HORIZONTAL DATUM - STATE PLANE NEW YORK STATE CENTRAL, NORTH AMERICAN DATUM OF 1983 (NAD 83).
3. VERTICAL DATUM - NORTH AMERICAN VERTICAL DATUM OF 1988 (NVD 88).

LEGEND

SUB-33 AMBIENT-2 ● INDOOR-15 PL-1	INDOOR AIR AND SUB-SLAB VAPOR SAMPLE LOCATION
⊗	FIRE HYDRANT
— - —	PROPERTY LINE
—o—o—	GUIDE RAIL
– – –	BROWNFIELD CLEANUP PROGRAM (BCP) AREA/ PROPOSED ENVIRONMENTAL EASEMENT AREA

GRAPHIC SCALE



(IN FEET)
1 inch = 200 ft.

INDOOR AIR AND SUB-SLAB VAPOR SAMPLE LOCATIONS (2007)

BINGHAMTON PLAZA
CITY OF BINGHAMTON, BROOME CO., NY

PROJECT: 06-2175.3
FILE NO.: 062175.3IA.BASE.DWG
DATE: 11/11/14
SCALE: 1" = 200'

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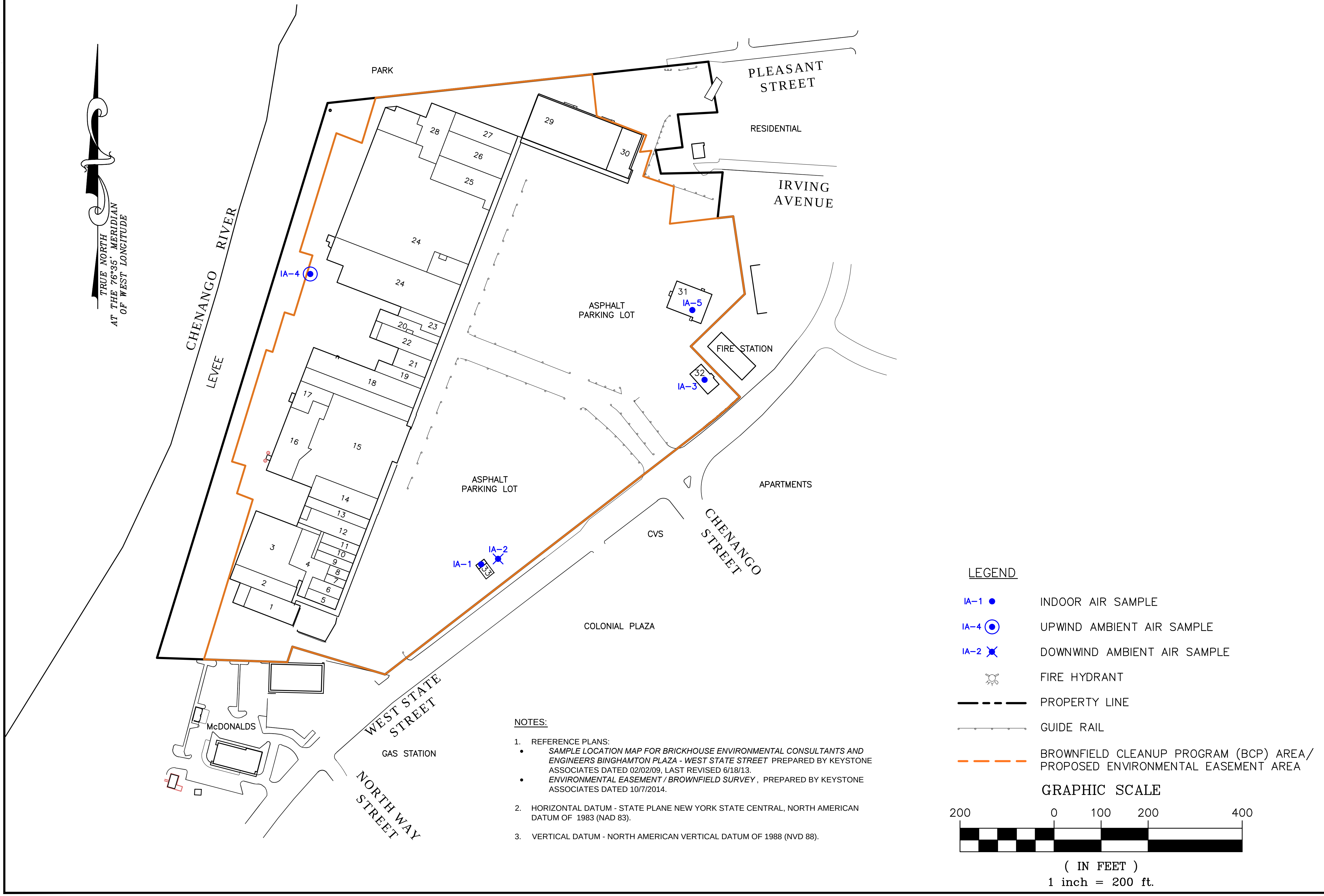
FIGURE
7



NOTES:

1. REFERENCE PLANS:
   - *SAMPLE LOCATION MAP FOR BRICKHOUSE ENVIRONMENTAL CONSULTANTS AND ENGINEERS BINGHAMTON PLAZA - WEST STATE STREET* PREPARED BY KEYSTONE ASSOCIATES DATED 02/02/09, LAST REVISED 6/18/13.
   - *ENVIRONMENTAL EASEMENT / BROWNFIELD SURVEY* , PREPARED BY KEYSTONE ASSOCIATES DATED 10/7/2014.

2. HORIZONTAL DATUM - STATE PLANE NEW YORK STATE CENTRAL, NORTH AMERICAN DATUM OF 1983 (NAD 83).

3. VERTICAL DATUM - NORTH AMERICAN VERTICAL DATUM OF 1988 (NVD 88).

LEGEND

IA–1 ● INDOOR AIR SAMPLE
IA–4 ◉ UPWIND AMBIENT AIR SAMPLE
IA–2 ✕ DOWNWIND AMBIENT AIR SAMPLE
FIRE HYDRANT
PROPERTY LINE
GUIDE RAIL
BROWNFIELD CLEANUP PROGRAM (BCP) AREA/ PROPOSED ENVIRONMENTAL EASEMENT AREA

GRAPHIC SCALE

INDOOR AIR SAMPLE LOCATIONS (2010)

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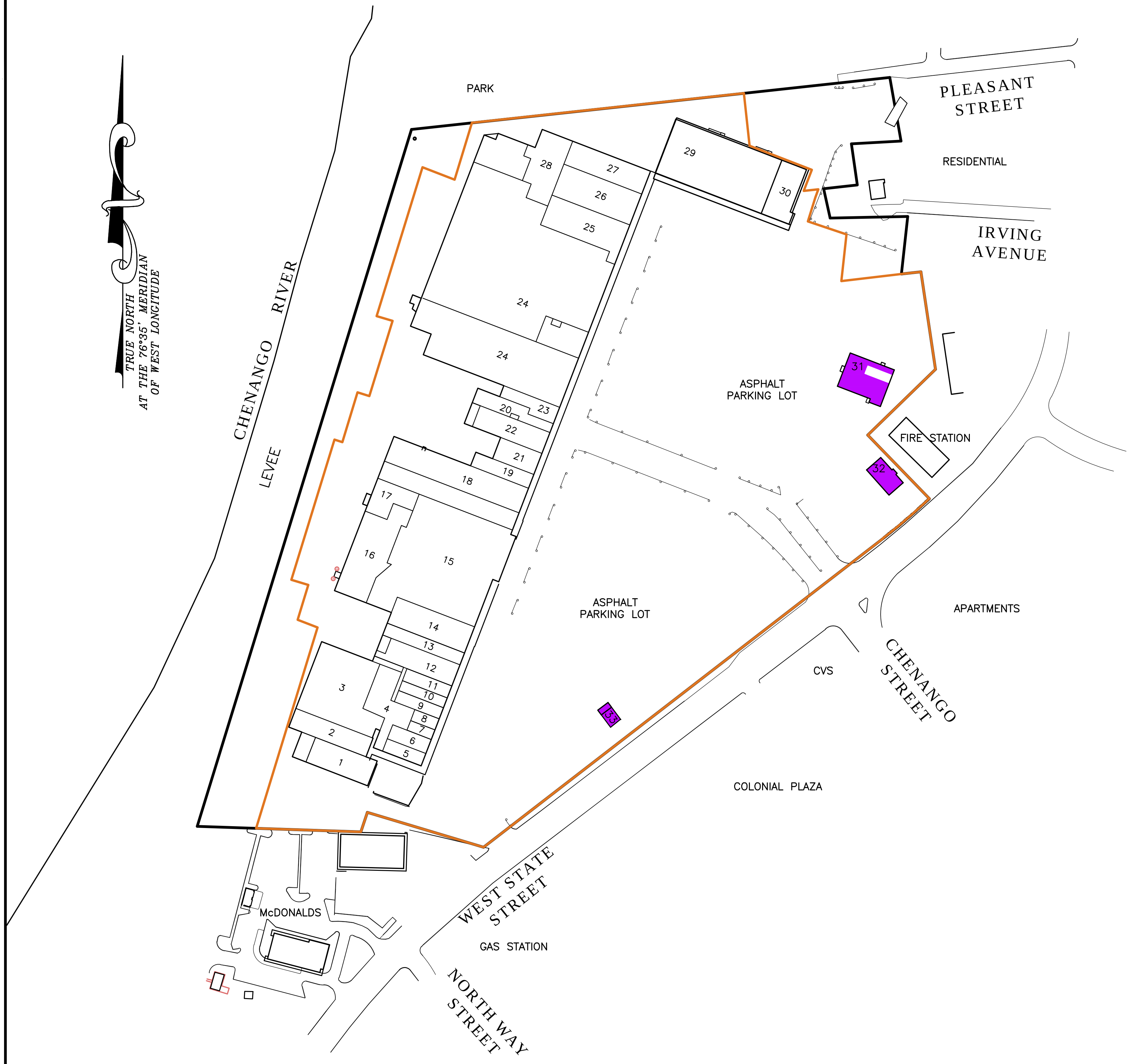
BINGHAMTON PLAZA
CITY OF BINGHAMTON, BROOME CO., NY

PROJECT: 06-2175.3
FILE NO.: 062175.3IA.BASE
DATE: 11/11/2014
SCALE: 1" = 200'

FIGURE
8



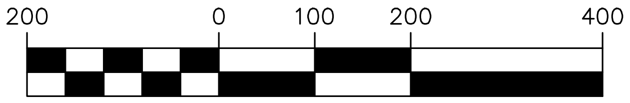
NOTES:

1. REFERENCE PLANS:
   - *SAMPLE LOCATION MAP FOR BRICKHOUSE ENVIRONMENTAL CONSULTANTS AND ENGINEERS BINGHAMTON PLAZA - WEST STATE STREET* PREPARED BY KEYSTONE ASSOCIATES DATED 02/02/09, LAST REVISED 6/18/13.
   - *ENVIRONMENTAL EASEMENT / BROWNFIELD SURVEY*, PREPARED BY KEYSTONE ASSOCIATES DATED 10/7/2014.
2. HORIZONTAL DATUM - STATE PLANE NEW YORK STATE CENTRAL, NORTH AMERICAN DATUM OF 1983 (NAD 83).
3. VERTICAL DATUM - NORTH AMERICAN VERTICAL DATUM OF 1988 (NVD 88).

LEGEND

🟪	BUILDING WITH SUB–SLAB DEPRESSURIZATION SYSTEM
✠	FIRE HYDRANT
— - - —	PROPERTY LINE
·—·—·	GUIDE RAIL
– – –	BROWNFIELD CLEANUP PROGRAM (BCP) AREA/ PROPOSED ENVIRONMENTAL EASEMENT AREA

GRAPHIC SCALE



(IN FEET)
1 inch = 200 ft.

LOCATIONS OF SUB-SLAB DEPRESSURIZATION SYSTEMS

BINGHAMTON PLAZA
CITY OF BINGHAMTON, BROOME CO., NY

PROJECT: 06-2175.3
FILE NO.: 062175.3IA.BASE
DATE: 11/11/2014
SCALE: 1" = 200'

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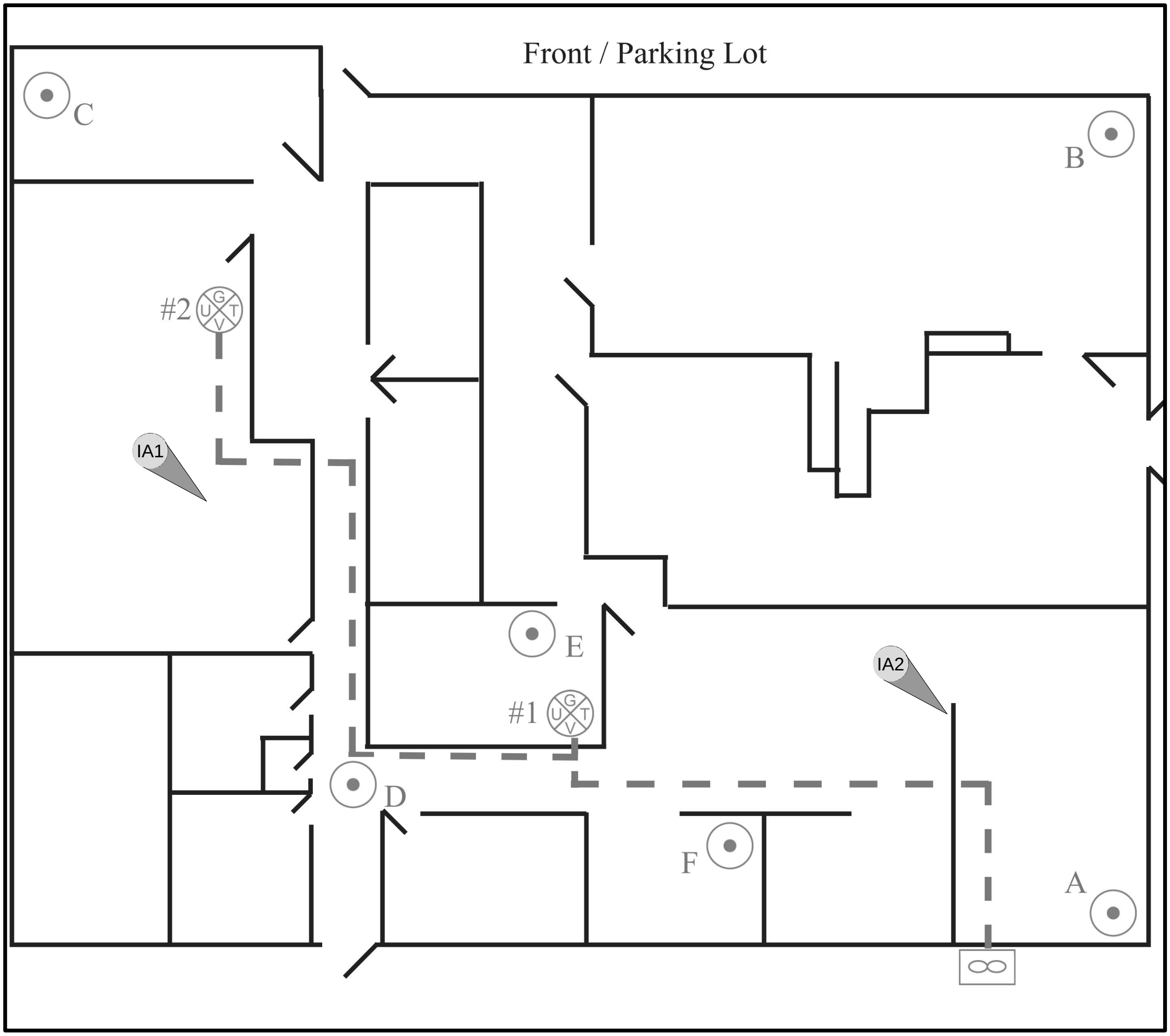
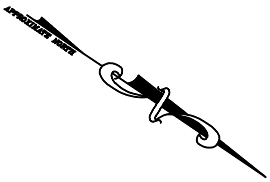
FIGURE
9



SYMBOLS

- ⊗ SUCTION POINT WITH U TUBE
- ⊗ SUCTION POINT WITH GATE VALVE AND U TUBE
- ◉ COMMUNICATION TEST HOLE
- ▬ ▬ ▬ PIPE ROUTE
- ∞ EXHAUST FAN
- ⧵⧵⧵⧵ WALL PARGING
- ▨ EPDM CRAWLSPACE
- ☐ POURED CONCRETE
- ∼ PATCHED FLOOR
- DJR DRAINJER COVERED FLOOR DRAIN

IA1 INDOOR AIR SAMPLE LOCATION
(APR. 2013, FEB. 2014, AUG. 2014)



ORIGINAL SCHEMATIC AND FEATURE LOCATIONS COURTESY OF
KEYSTONE ENVIRONMENTAL OF BINGHAMTON , NY

BUILDING 31 SSD SYSTEM CONFIGURATION

BINGHAMTON PLAZA, CITY OF BINGHAMTON, BROOME COUNTY, NY

BRICKHOUSE ENVIRONMENTAL
PROFESSIONAL GEOLOGISTS, SCIENTISTS AND ENGINEERS
515 S. FRANKLIN STREET; WEST CHESTER, PA 19382 PHONE: 610.692.5770 FAX: 610.692.8650
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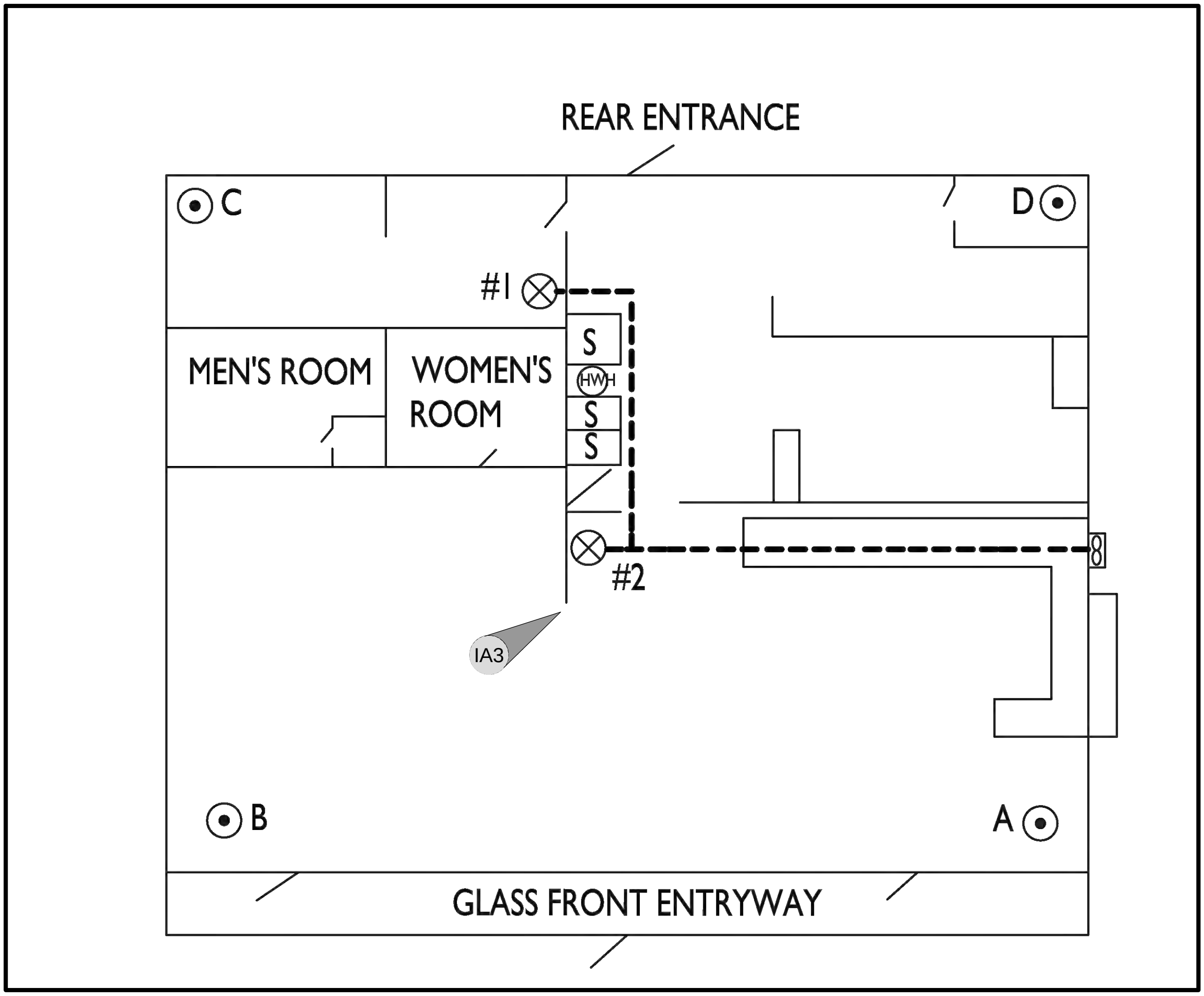
PROJECT:	062175.3
FILE NO.:	062175.3IA.BASE
DATE:	11/11/2014
SCALE:	NO SCALE

FIGURE
10



SYMBOLS:
- ⊗ SUCTION POINT WITH U-TUBE
- ⊙ COMMUNICATION TEST HOLE
- (FD) DRAINJER FLOOR DRAIN
- NEW CONCRETE SLAB
- ▨ EPDM CRAWLSPACE
- ∞ EXHAUST FAN
- ‒ ‒ ‒ PIPE ROUTE

IA3 INDOOR AIR SAMPLE LOCATION
(AUG. 2014)

ORIGINAL SCHEMATIC AND FEATURE LOCATIONS COURTESY OF
KEYSTONE ENVIRONMENTAL OF BINGHAMTON , NY.

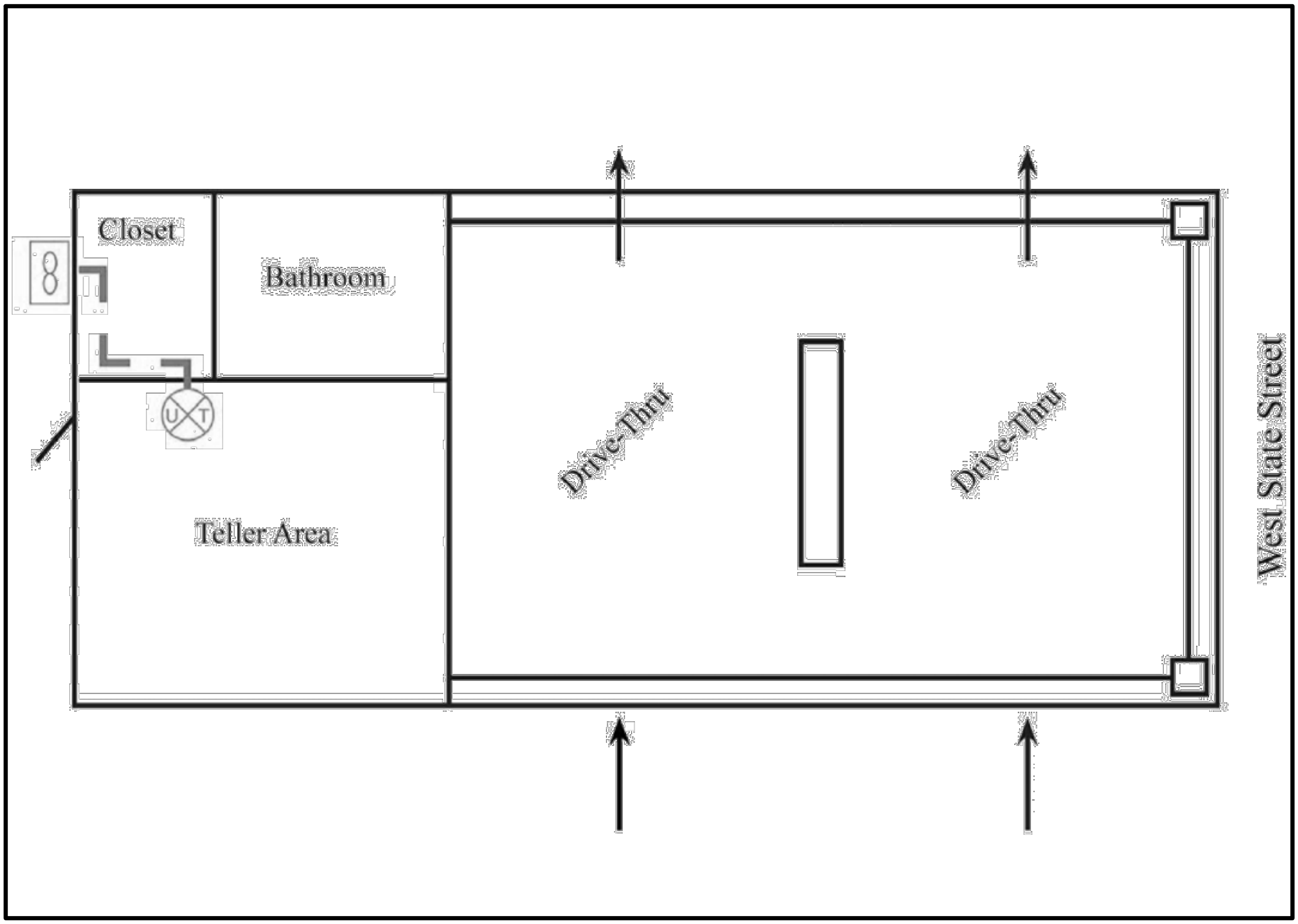
BUILDING 32 SSD SYSTEM CONFIGURATION

BINGHAMTON PLAZA, CITY OF BINGHAMTON, BROOME COUNTY, NY

BRICKHOUSE ENVIRONMENTAL
PROFESSIONAL GEOLOGISTS, SCIENTISTS AND ENGINEERS
515 S. FRANKLIN STREET; WEST CHESTER, PA 19382 PHONE: 610.692.5770 FAX: 610.692.8650
WWW.BRICKHOUSE-ENVIRONMENTAL.COM

PROJECT: 062175.3
FILE NO.: 062175.3IA.BASE
DATE: 11/11/2014
SCALE: NO SCALE

FIGURE
11



SYMBOLS: ⊗ SUCTION POINT WITH U-TUBE ⊙ COMMUNICATION TEST HOLE (FD) DRAINJER FLOOR DRAIN ▨ NEW CONCRETE SLAB ▨ EPDM CRAWLSPACE ⊡ EXHAUST FAN ▬ ▬ PIPE ROUTE

ORIGINAL SCHEMATIC AND FEATURE LOCATIONS COURTESY OF
KEYSTONE ENVIRONMENTAL OF BINGHAMTON , NY

BUILDING 33 SSD SYSTEM CONFIGURATION

BINGHAMTON PLAZA, CITY OF BINGHAMTON, BROOME COUNTY, NY

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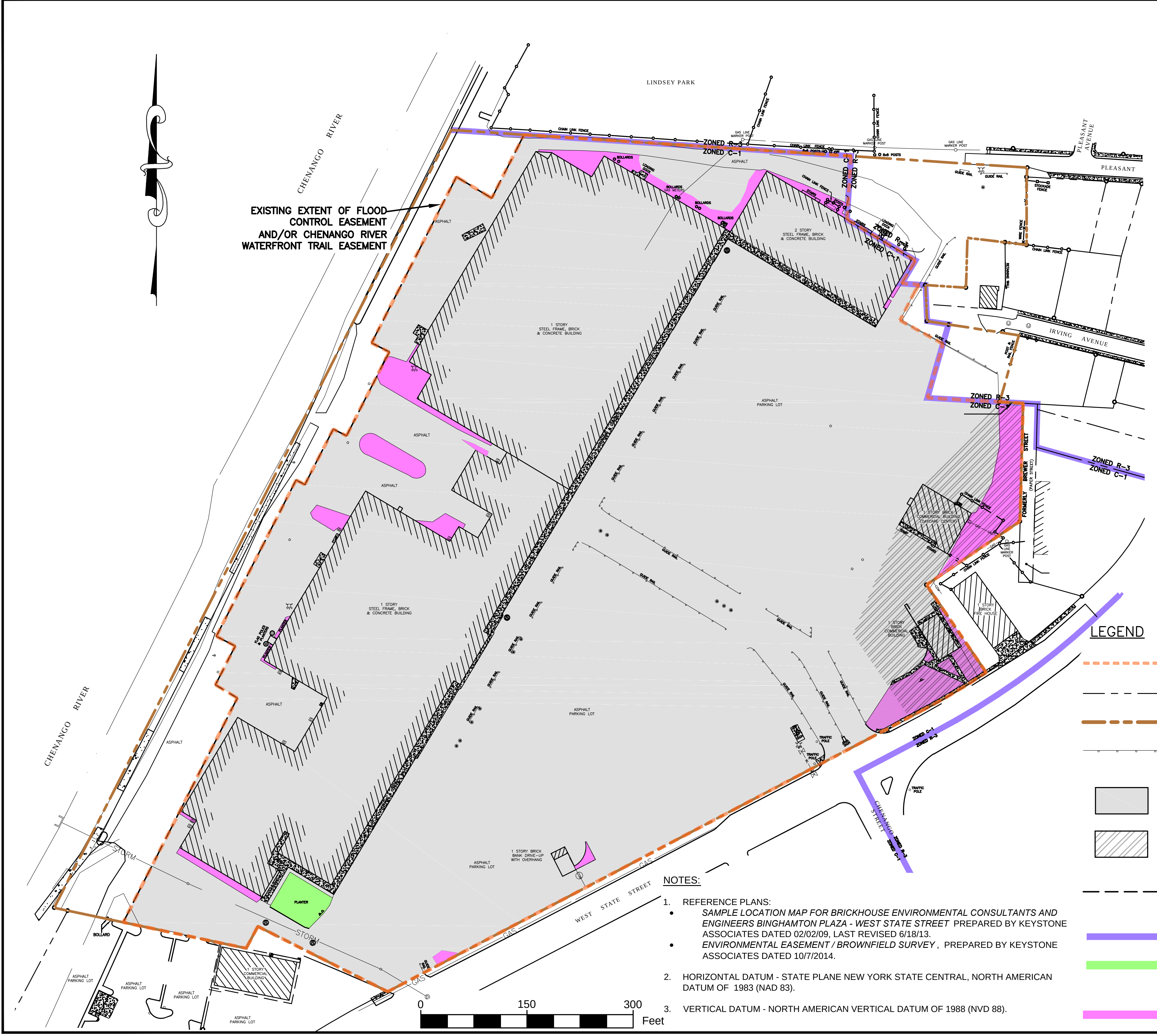
PROJECT: 062175.3
FILE NO.: 062175.3IA.BASE
DATE: 11/11/2014
SCALE: NO SCALE

FIGURE
12

PLOTTED: Radcliffe, Mark at 12/1/2014 1:45 PM



NOTES:

1. REFERENCE PLANS:
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   - *ENVIRONMENTAL EASEMENT / BROWNFIELD SURVEY* , PREPARED BY KEYSTONE ASSOCIATES DATED 10/7/2014.
2. HORIZONTAL DATUM - STATE PLANE NEW YORK STATE CENTRAL, NORTH AMERICAN DATUM OF 1983 (NAD 83).
3. VERTICAL DATUM - NORTH AMERICAN VERTICAL DATUM OF 1988 (NVD 88).

LEGEND

- - - -	BCP SITE BOUNDARY
— — —	OFF–SITE PROPERTY LINE
— - —	SITE PROPERTY LINE
—○—	GUIDE RAIL
⬜	AREA WITHIN THE BCP AREA WITH PRE–REMEDIATION IMPERVIOUS CAP
▨	RESTRICTED RESIDENTIAL USE AREA WITHIN THE BCP AREA
— —	EXISTING EXTENT OF FLOOD CONTROL EASEMENT AND/OR CHENANGO RIVER WATERFRONT TRAIL EASEMENT
🟪	EXISTING MUNICIPAL ZONING LINE
🟩	12–INCH THICK CLEAN SOIL COVER (OCTOBER 2014 REMEDIAL ACTION)
🟪	6–INCH THICK ASPHALT CAP (OCTOBER 2014 REMEDIAL ACTION)

EXTENT OF CAP AND COVER SYSTEM

BRICKHOUSE ENVIRONMENTAL
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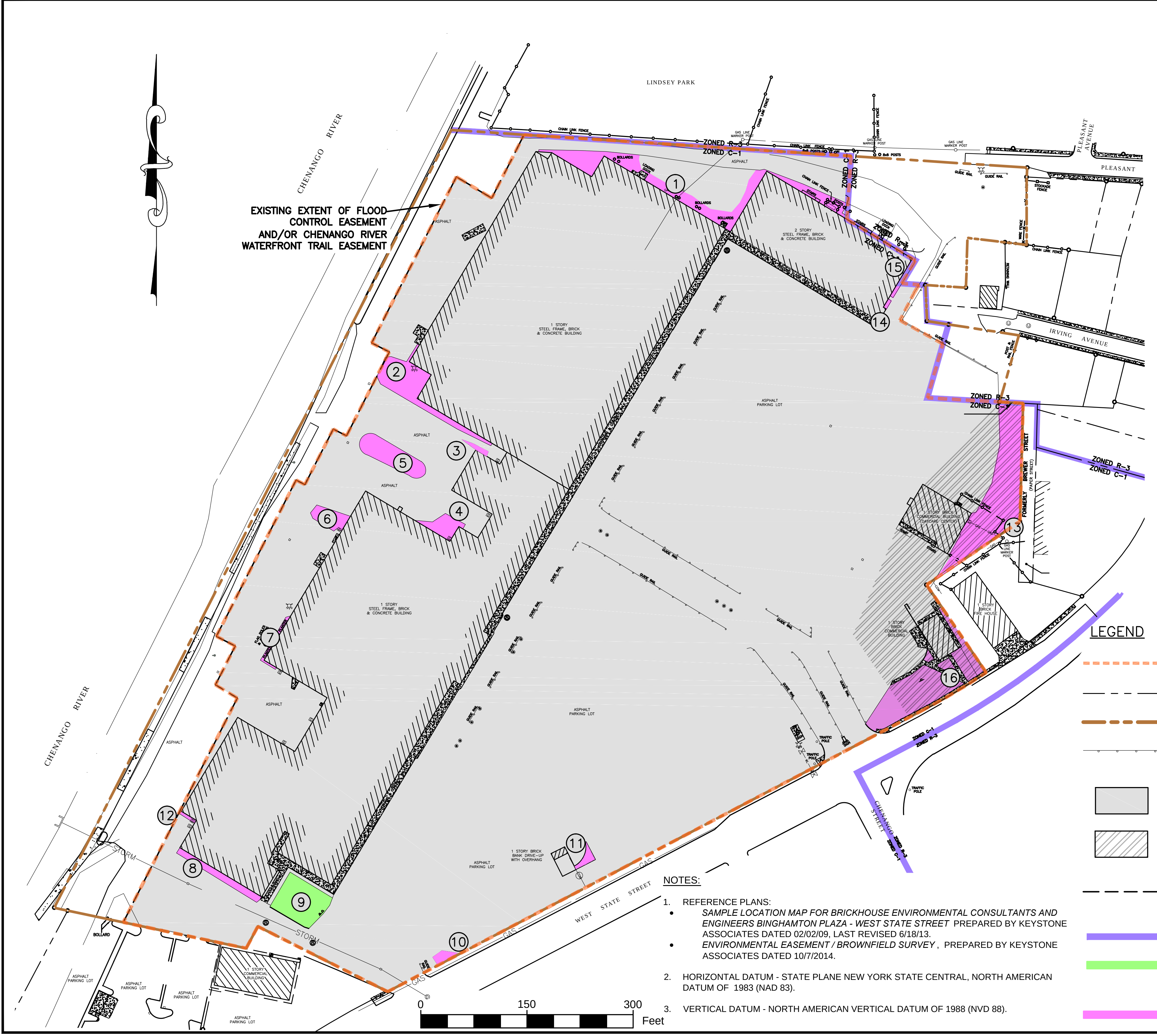
BINGHAMTON PLAZA
CITY OF BINGHAMTON, BROOME CO., NY

PROJECT: 06-2175.3
FILE NO.: 062175.3PS
DATE: 11/11/14
SCALE: 1" = 150'

FIGURE
13

J:\062175.3\DWG\062175.3PS.DWG -SMP FIGURE 13

PLOTTED: Radcliffe, Mark at 12/1/2014 1:45 PM



AREAS CAPPED/COVERED DURING OCTOBER 2014 REMEDIAL ACTION

ID	AREA (FT^2^)	CAPPING METHOD
1	6,989	ASPHALT PAVING
2	3,982	ASPHALT PAVING
3	195	ASPHALT PAVING
4	1,167	ASPHALT PAVING
5	2,721	ASPHALT PAVING
6	1,165	ASPHALT PAVING
7	256	ASPHALT PAVING
8	1,311	ASPHALT PAVING
9	3,846	CLEAN SOIL COVER
10	328	ASPHALT PAVING
11	310	ASPHALT PAVING
12	115	ASPHALT PAVING
13*	9,862	ASPHALT PAVING
14	70	ASPHALT PAVING
15	194	ASPHALT PAVING
16*	7,905	ASPHALT PAVING
	40,418	TOTAL NEW CAP AREA

* LOCATED WITHIN THE RESTRICTED RESIDENTIAL USE AREA

LEGEND

- - - -	BCP SITE BOUNDARY
— - - —	OFF–SITE PROPERTY LINE
— - — -	SITE PROPERTY LINE
—○—○—	GUIDE RAIL
▭	AREA WITHIN THE BCP AREA WITH PRE–REMEDIATION IMPERVIOUS CAP
▨	RESTRICTED RESIDENTIAL USE AREA WITHIN THE BCP AREA
— — —	EXISTING EXTENT OF FLOOD CONTROL EASEMENT AND/OR CHENANGO RIVER WATERFRONT TRAIL EASEMENT
🟪	EXISTING MUNICIPAL ZONING LINE
🟩	12–INCH THICK CLEAN SOIL COVER (OCTOBER 2014 REMEDIAL ACTION)
🟪	6–INCH THICK ASPHALT CAP (OCTOBER 2014 REMEDIAL ACTION)

NOTES:

1. REFERENCE PLANS:
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3. VERTICAL DATUM - NORTH AMERICAN VERTICAL DATUM OF 1988 (NVD 88).

J:\06\2175.3\DWG\062175.3PS.DWG -SMP FIGURE 14

AREAS CAPPED/COVERED DURING REMEDIAL ACTION (OCTOBER 2014)

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BINGHAMTON PLAZA
CITY OF BINGHAMTON, BROOME CO., NY

PROJECT: 06-2175.3
FILE NO.: 062175.3PS
DATE: 11/11/14
SCALE: 1" = 150'

FIGURE
14

NOTES:

1. REFERENCE PLANS:
   - *SAMPLE LOCATION MAP FOR BRICKHOUSE ENVIRONMENTAL CONSULTANTS AND ENGINEERS BINGHAMTON PLAZA - WEST STATE STREET* PREPARED BY KEYSTONE ASSOCIATES DATED 02/02/09, LAST REVISED 6/18/13.
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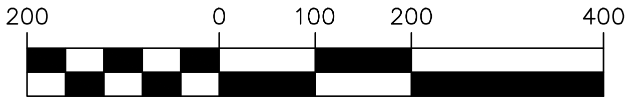
2. HORIZONTAL DATUM - STATE PLANE NEW YORK STATE CENTRAL, NORTH AMERICAN DATUM OF 1983 (NAD 83).
3. VERTICAL DATUM - NORTH AMERICAN VERTICAL DATUM OF 1988 (NVD 88).

LEGEND

Ⓘ	PASSIVE AIR SYSTEM INTAKE
Ⓥ	PASSIVE AIR SYSTEM VENT
✕	FIRE HYDRANT
— - —	PROPERTY LINE
—·—·—	GUIDE RAIL
– – –	BROWNFIELD CLEANUP PROGRAM (BCP) AREA/ PROPOSED ENVIRONMENTAL EASEMENT AREA

GRAPHIC SCALE



(IN FEET)
1 inch = 200 ft.

AREAS OF PASSIVE SUB-SLABVENTILATION SYSTEMS

BINGHAMTON PLAZA
CITY OF BINGHAMTON, BROOME CO., NY

PROJECT: 06-2175.3
FILE NO.: 062175.3IA.BASE
DATE: 11/11/2014
SCALE: 1" = 200'

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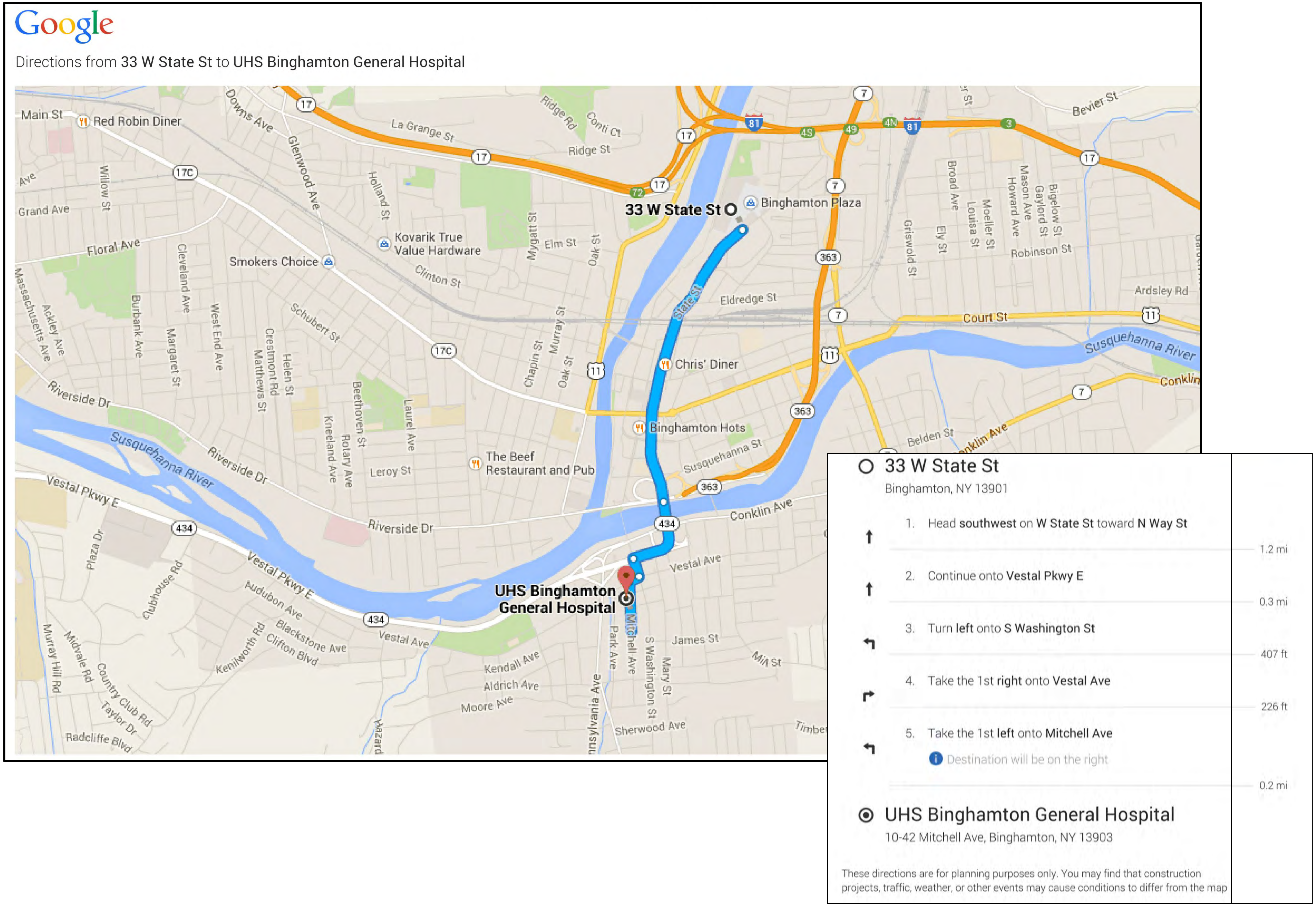
FIGURE
15

Google

Directions from **33 W State St** to **UHS Binghamton General Hospital**



33 W State St
Binghamton, NY 13901

1. Head **southwest** on **W State St** toward **N Way St**

1.2 mi

2. Continue onto **Vestal Pkwy E**

0.3 mi

3. Turn **left** onto **S Washington St**

407 ft

4. Take the 1st **right** onto **Vestal Ave**

226 ft

5. Take the 1st **left** onto **Mitchell Ave**

Destination will be on the right

0.2 mi

UHS Binghamton General Hospital
10-42 Mitchell Ave, Binghamton, NY 13903

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map

MAP OF ROUTE FROM SITE TO HOSPITAL

PROJECT: 06-2175.3
FILE NO.: 062175.3_HOSP_DIR
DATE: 11/12/2014
SCALE: NO SCALE

BINGHAMTON PLAZA
CITY OF BINGHAMTON, BROOME CO., NY

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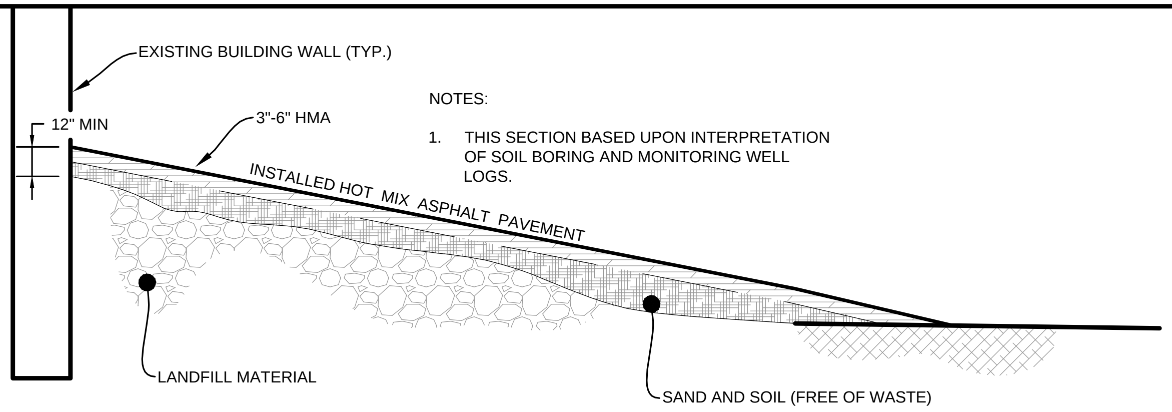
FIGURE
16

PLOTTED: Radcliffe, Mark at 12/1/2014 1:46 PM

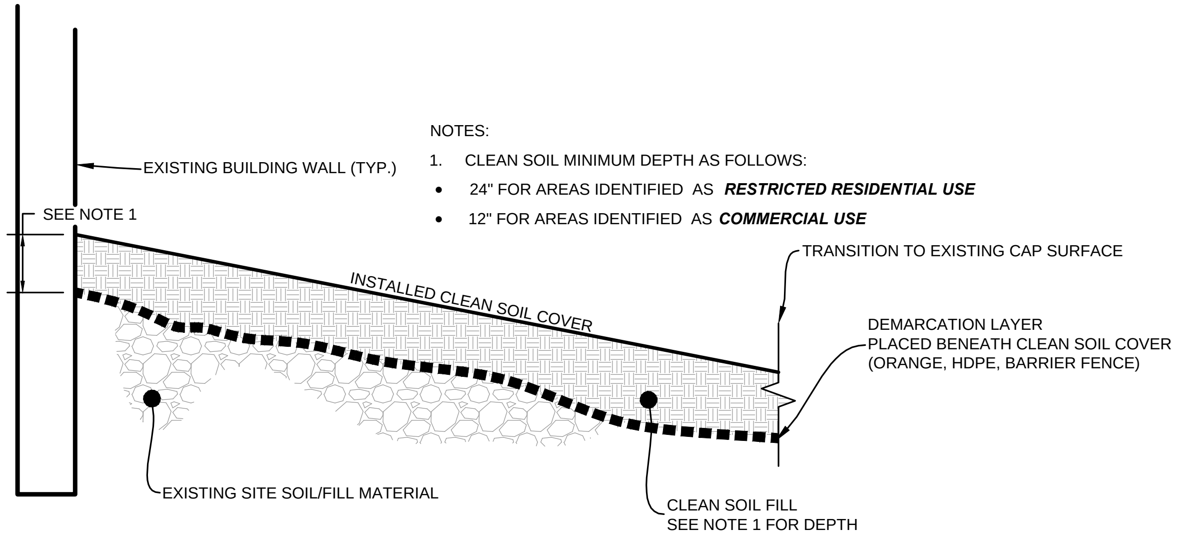


NOTES:

1. THIS SECTION BASED UPON INTERPRETATION OF SOIL BORING AND MONITORING WELL LOGS.

1 PRE-REMEDIATION SITE CAP

NO SCALE

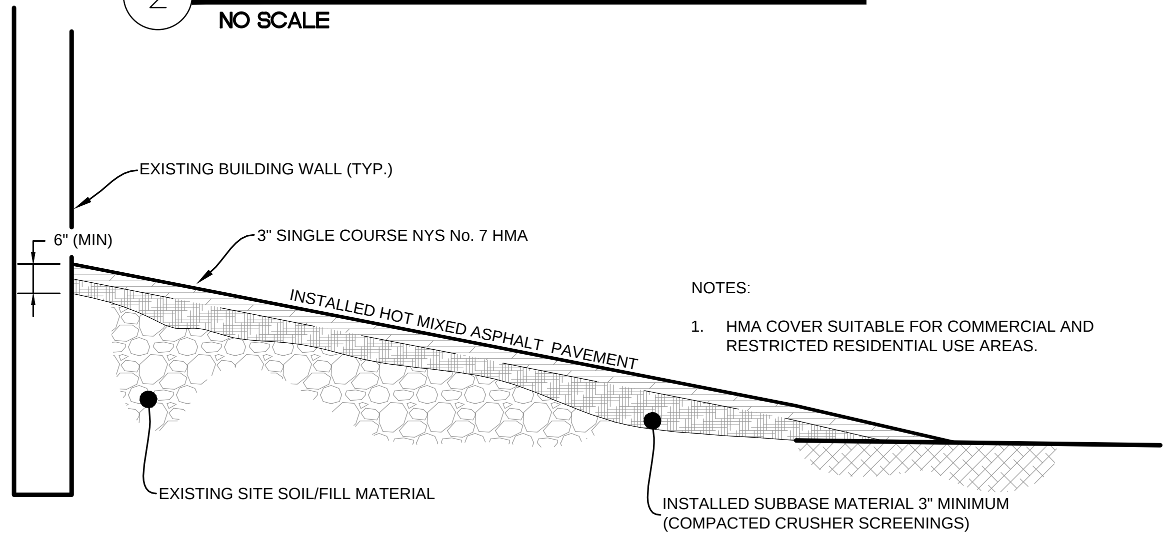


NOTES:

1. CLEAN SOIL MINIMUM DEPTH AS FOLLOWS:
   - 24" FOR AREAS IDENTIFIED AS ***RESTRICTED RESIDENTIAL USE***
   - 12" FOR AREAS IDENTIFIED AS ***COMMERCIAL USE***

2 POST-REMEDIATION CLEAN SOIL COVER

NO SCALE

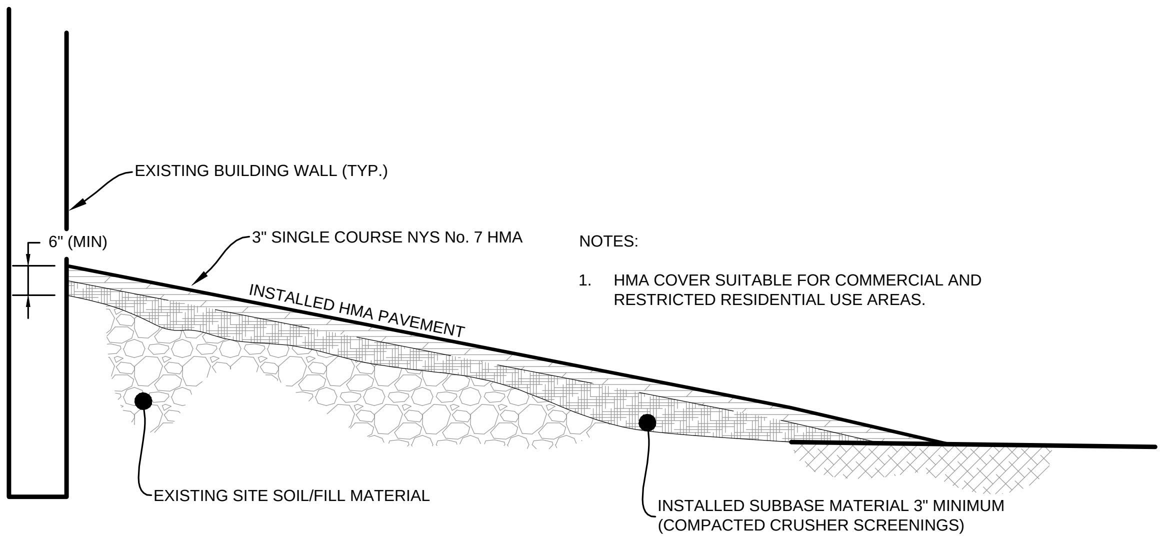


NOTES:

1. HMA COVER SUITABLE FOR COMMERCIAL AND RESTRICTED RESIDENTIAL USE AREAS.

3 POST-REMEDIATION HOT MIXED ASPHALT (HMA) COVER

NO SCALE



NOTES:

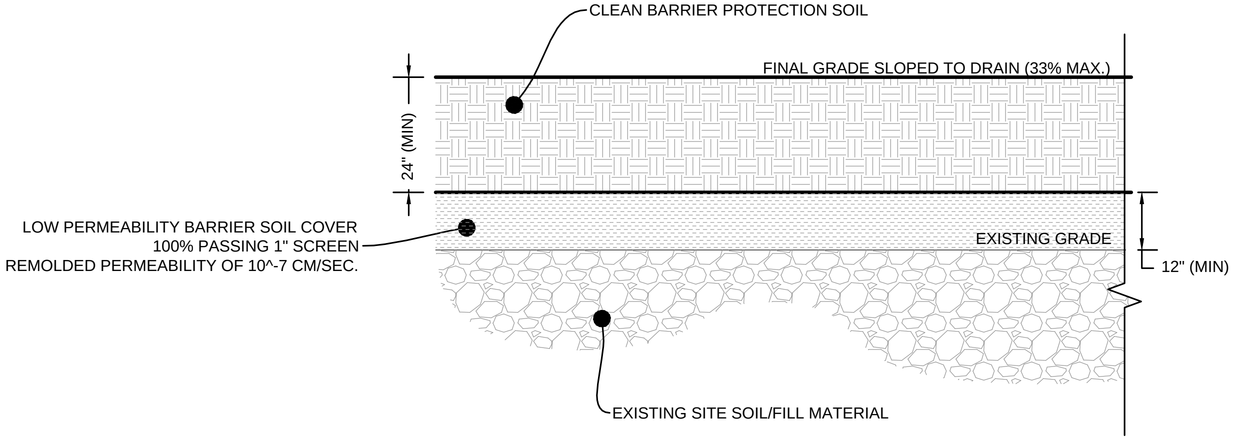
1. HMA COVER SUITABLE FOR COMMERCIAL AND RESTRICTED RESIDENTIAL USE AREAS.

4 OPTIONAL HOT MIXED ASPHALT (HMA) CAP FOR REPAIRS TO PRE-REMEDIATION CAPPED AREAS

NO SCALE

NOTES:

1. THIS OPTION MUST BE CONSTRUCTED IN ACCORDANCE WITH 6 NYCRR PART 360-2.13



5 OPTIONAL ENGINEERED SOIL CAP FOR REPAIRS TO PRE-REMEDIATION CAPPED AREAS

NO SCALE

J:\062175.3\DWG\062175XS.DWG

CROSS-SECTIONS OF COVER SYSTEM AND OPTIONAL CAP REPARE DETAILS

PROJECT: 062175.3
FILE NO.: 062175XS
DATE: 11/11/14
SCALE: NO SCALE

BINGHAMTON PLAZA
CITY OF BINGHAMTON, BROOME CO. NY

BRICKHOUSE ENVIRONMENTAL
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FIGURE
17

APPENDIX A

EXCAVATION WORK PLAN

APPENDIX A

EXCAVATION WORK PLAN

BINGHAMTON PLAZA INC.
33 WEST STATE STREET
BINGHAMTON, NEW YORK
NYSDEC SITE NUMBER: C704049

DECEMBER 2014

BE PROJECT NO. 06-2175-3

PREPARED FOR:

BINGHAMTON PLAZA, INC.
30 GALESI DRIVE, SUITE 301
WAYNE, NEW JERSEY 07470

PREPARED BY:

BRICKHOUSE ENVIRONMENTAL
515 SOUTH FRANKLIN STREET
WEST CHESTER, PENNSYLVANIA 19382
610.692.5770

TABLE OF CONTENTS

LIST OF FIGURES AND TABLE 1

A-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination, the site owner or their representative will notify the Department. Currently, this notification will be made to:

Hazardous Waste Remediation Engineer (Region 7)
Regional Hazardous Waste Remediation Engineer
615 Erie Boulevard West
Syracuse, NY 13204

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent, plans for site re-grading, intrusive elements or utilities to be installed below the soil cover or pavement cap, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control,
- A summary of environmental conditions anticipated in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work,
- A summary of the applicable components of this EWP,
- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120,
- A copy of the contractor's health and safety plan, in electronic format, if it differs from the HASP provided in Appendix D of this document,
- Identification of disposal facilities for potential waste streams,
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

A-2 SOIL SCREENING METHODS

The landfill waste/fill buried at the site extends to approximately 20 feet below grade. The landfill waste/fill is capped with approximately 5 feet of soil-like fill material followed by asphalt paving, concrete and building foundations. The soil-like fill material was not extensively sampled during site investigation activities due to a lack of waste material within the soil and a lack of obvious indications of contamination. The landfill waste/fill should be readily discernible during excavation.

Visual, olfactory and instrument-based soil screening will be performed by a qualified environmental professional during all remedial and development excavations into known or potentially contaminated material (remaining contamination) or landfill waste/fill. Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Air monitoring for VOCs and methane gas will be performed during excavation activities, as determined necessary by a Qualified Environmental Professional (QEP) or Site Safety Officer (SSO). Direct reading instrumentation, such as a photoionization (PID) or flame ionization detector (FID) will be utilized for monitoring VOCs. A four-gas meter equipped with a methane detector should be used for the direct measurement of percent LEL. A common four-gas meter specification sheet is provided as Attachment 1 of Appendix D to the SMP. Based on the exposure levels in the breathing zone of site workers, the QEP or SSO will determine if an upgrade in respiratory protection is warranted. These upgrade levels are presented in Table 2 of Appendix D to the SMP along with response actions. The physical hazards associated with methane gas (explosion or asphyxiation) cannot be addressed through the use of PPE. Temporary work stoppage or excavation venting may be necessary to mitigate these hazards.

It is important to note that methane gas has been detected at elevated concentrations in soil gas during site investigation activities. The methane gas appears to be trapped beneath concrete slabs and asphalt cap overlying the landfill waste/fill. Although, elevated methane concentrations can also be present beneath the cover soil overlying the landfill. While methane gas is not an environmental contaminant, its presence poses a health risk to site workers. These risks are further evaluated and discussed in the HASP (Appendix D of the SMP).

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal, material that requires testing, material that can be returned to the subsurface, and material that can be used as cover soil.

A-3 STOCKPILE METHODS

Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points (see Figure A-1). Stockpile location areas shown on Figure A-2.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum of once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC.

A-4 MATERIALS EXCAVATION AND LOAD OUT

A QEP or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and its contractors are solely responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the site will be investigated by the QEP. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the site.

Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).

A truck wash will be operated on-site (Figure A-3). The QEP will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the site until the activities performed under this section are complete.

Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-site soil tracking.

The QEP will be responsible for ensuring that all egress points for truck and equipment transport from the site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

A-5 MATERIALS TRANSPORT OFF-SITE

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

All trucks will be washed prior to leaving the site. Truck wash waters will be collected and disposed of off-site in an appropriate manner.

Truck transport routes are as follows (and as shown on Figure A-4): Head northeast on Chenango Street for approximately 0.6 miles (crossing under Interstate 81), turn right onto Bevier Street, continue for about 0.5 miles until Route 7 and merge onto the highway in direction of off-site destination. All trucks loaded with site materials will exit the vicinity of the site using only these approved truck routes. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; (f) overall safety in transport; and (g) community input.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project site.

Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.

Queuing of trucks will be performed on-site in order to minimize off-site disturbance. Off-site queuing will be prohibited.

A-6 MATERIALS DISPOSAL OFF-SITE

All soil/fill/solid waste excavated and removed from the site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-site management of materials from this site will not occur without formal NYSDEC approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C/D recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Track 1 unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

A-7 MATERIALS REUSE ON-SITE

Chemical criteria for on-site reuse of material have been approved by NYSDEC and are listed in Table A-1, which are the same as the Allowable Constituent Levels for Imported Fill (Appendix 5 of DER-10). The QEP will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for re-use on-site will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines. The soils which will be selected for reuse at the site will be stockpiled within the areas shown on Figure A-2.

Any demolition material proposed for reuse on-site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on-site.

Soil sampling will be conducted at each proposed area of potential re-use to verify that the materials comply with 6 NYCRR 375-6.7(d) for the intended use (commercial or restricted residential). The materials used for reuse will also be verified to be free of extraneous debris at each location and consistent with the Remedial Action Objectives (RAOs) for the site.

The sampling protocols presented were developed based on the procedures specified in the NYSDEC DER-10 (Section 5.4[e]). All sampling and analysis activities of imported fill must comply with this section of DER-10. All materials proposed for reuse will be analyzed by an environmental laboratory that is certified by the New York Department of Health’s Environmental Laboratory Approval Program (ELAP) to analyze environmental samples in the state of New York for the types of analysis anticipated for the material reuse sampling program. All samples will be analyzed for those parameters provided in Appendix 5 of DER-10 is included in this Excavation Work Plan as Table A-1. In the event it is modified by the NYSDEC, refer to the most current version of Appendix 5 of DER-10 at the time of sample collection. Appendix 5 specifies the specific parameters to be analyzed at a minimum with their respective allowable constituent levels based on the site use (restricted residential or commercial/industrial for the Binghamton Plaza site). The laboratory reporting limits are required to meet these allowable constituent levels provided in Appendix 5. All laboratory analytical data packages must be consistent with NYSDEC Category B requirements and include the appropriate level of field and laboratory QA/QC (Section 2 of DER-10).

The quantity and types of analysis required for reuse material will be the same as for imported fill material sampling as specified in DER-10. While the specific constituents for analysis will not change, the quantity of samples will vary based on the volume of material required. The following table (Table 1) is consistent with Table 5.4(e) 10 of DER-10 and should be used to dictate the quantities and types of analysis.

TABLE 1
RECOMMENDED NUMBER OF SOIL SAMPLES FOR REUSED SOIL

Contaminant	**VOCs**	**SVOCs, Inorganics & PCBs/Pesticides**	
Soil Quantity (cubic yards)	**Discrete Samples**	**Composite**	**Discrete Samples/Composite**
0-50	1	1	3 to 5 discrete samples from different locations in the fill being provided will comprise a composite sample for analysis
50-100	2	1	
100-200	3	1	
200-300	4	1	
300-400	4	2	
400-500	5	2	
500-800	6	2	
800-1000	7	2	
1000	Add an additional 2 VOC and 1 composite for each additional 1000 Cubic yards or consult with NYSDEC		

Notes: VOCs (Volatile Organic Compounds/SVOCs (Semi-volatile Organic Compounds / PCBs (Polychlorinated Biphenyls)

Soils intended for reuse should be sampled at their place of origin in accordance with their designated reuse area (commercial/restricted residential) for the proposed location of placement of the soils. Therefore, the material that will be used will be compared with criteria for the use of the area where the soils will be placed.

All sample methods will be consistent with Table 1 (discrete and composite) and be analyzed for those compounds provided in Appendix 5 to DER-10, and included as Table A-1. The discrete samples being collected for VOCs will be collected using field extraction (EPA Method 5035) and biased toward areas that would most likely contain VOCs using standard field screening techniques. The discrete samples collected for compositing should be chosen to make the final composite representative of the material as a whole. Sampling equipment (if not disposable) must be field decontaminated between sample locations using standard industry practices for the types of constituents being analyzed.

Several QA/QC samples are required for each reuse material sampling event. Most of these requirements are dictated by the level of QA/QC required under Category B laboratory data packages. One equipment blank and one Matrix Spike/Matrix Spike Duplicate (MS/MSD) sample must be collected per 20 samples of reuse material. Additional sample volume will likely be necessary to accommodate the MS/MSD analysis at the analytical laboratory. The equipment blank will consist of laboratory supplied deionized water that has been passed over the decontaminated sampling equipment prior to collection. A trip blank for VOCs must accompany each sample shipment.

A-8 FLUIDS MANAGEMENT

All liquids to be removed from the site, including excavation dewatering and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the site, but will be managed off-site.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

A-9 COVER SYSTEM RESTORATION

After the completion of soil removal and any other invasive activities the cover system will be restored in a manner that complies with the Decision Document. The cover system will be repaired similar to routine parking lot maintenance which will include sealing cracks, filling larger cracks/holes with asphalt, and if needed, adding additional soil cover. It is important to note that the cover system for the commercial use areas of the site must be comprised of a minimum of 12 inches of clean soil or impervious surface such as asphalt or concrete, while the cover system required for the restricted residential use area of the site must be comprised of a minimum of 24 inches of clean soil or an impervious surface such as asphalt or concrete. Additionally, should an engineered soil cap be considered as an option for repair, as per the site Decision Document, then it will be designed, constructed and maintained in conformance with the substantive requirements of 6 NYCRR Part 360 Solid Waste Regulations. Figure A-5 presents a plan view of the site-wide cover system within the BCP area showing the different types of cover used for the appropriate site uses (restricted residential vs. commercial). Figure A-6 presents the cross-section details of the cover system for areas covered by original cover, clean fill, asphalt pavement, and the option for an engineered soil and/or asphalt cap, in order to restore the cover system to its condition immediately following the remedial activities.

The demarcation layer, consisting of orange snow fencing material or equivalent material will be replaced to provide a visual reference to the top of the ‘Remaining Contamination Zone’, the zone that requires adherence to special conditions for disturbance of remaining contaminated soils defined in this Site Management Plan. If the type of cover system changes from that which exists prior to the excavation (i.e., a soil cover is replaced by asphalt), this will constitute a modification of the cover element of the remedy and the upper surface of the ‘Remaining Contamination Zone’. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in any updates to the Site Management Plan.

A-10 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the site will be approved by the QEP and will be in compliance with provisions in this SMP prior to receipt at the site.

Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the site.

All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards are listed in Table A-1. Soils that meet ‘exempt’ fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

The sampling will be conducted at each proposed source of capping/cover/backfill material to verify that the materials comply with 6 NYCRR 375-6.7(d) for the intended use (commercial or restricted residential). Because it is anticipated that there will be no ecological resources impacted at the site, the criteria for imported backfill are part of the soil cleanup objectives. The materials used for final capping/cover and backfill will also be verified to be free of extraneous debris at each chosen source and consistent with the Remedial Action Objectives (RAOs) for the site.

The sampling protocols presented were developed based on the procedures specified in the NYSDEC DER-10 (Section 5.4[e]). All sampling and analysis activities of imported fill must comply with this section of DER-10. All chosen sources of imported fill materials will be analyzed by an environmental testing laboratory that is certified by the New York Department of Health’s Environmental Laboratory Approval Program (ELAP) to analyze environmental samples in the state of New York for the types of analysis anticipated for the fill material sampling program. All samples will be analyzed for those parameters provided in Appendix 5 of DER-10. Appendix 5 specifies the specific parameters to be analyzed at a minimum with their respective allowable constituent levels based on the site use (restricted residential or commercial/industrial for the Binghamton Plaza). The laboratory reporting limits are required to meet these allowable constituent levels provided in Appendix 5. A modified version of Appendix 5 to DER-10 is included in this Excavation Work Plan as Table A-1, created to be site-specific. In the event it is modified by the NYSDEC, refer to the most current version of Appendix 5 of DER-10 at the time of sample collection. All laboratory analytical data packages must be consistent with NYSDEC Category B requirements and include the appropriate level of field and laboratory QA/QC (Section 2 of DER-10).

The quantity and types of analysis required for imported fill material sampling are specified in DER-10. While the specific constituents for analysis will not change, the quantity of samples will vary based on the volume of material required. The following table (Table 2) is consistent with Table 5.4(e) 10 of DER-10 and should be used to dictate the quantities and types of analysis required with the following exceptions. These exceptions apply to fill material (other than soil) proposed for importing to the Binghamton Plaza for capping/cover:

- The following material may be imported, without chemical testing, to be used as backfill beneath pavement, buildings or as part of the final site cover, provided that it contains less than 10% by weight material which would pass through a size 80 sieve and consists of:
    - Gravel, rock or stone, consisting of virgin material from a permitted mine or quarry;
    - Recycled concrete or brick from a DEC registered construction and demolition debris processing facility if the material conforms to the requirements of Section 304 of the New York State Department of Transportation Standard Specifications Construction and Materials Volume 1 (2002).

TABLE 2
RECOMMENDED NUMBER OF SOIL SAMPLES FOR IMPORTED SOIL
BINGHAMTON PLAZA

Contaminant	VOCs	SVOCs, Inorganics & PCBs/Pesticides	
Soil Quantity (cubic yards)	**Discrete Samples**	**Composite**	**Discrete Samples/Composite**
0-50	1	1	3 to 5 discrete samples from different locations in the fill being provided will comprise a composite sample for analysis
50-100	2	1	
100-200	3	1	
200-300	4	1	
300-400	4	2	
400-500	5	2	
500-800	6	2	
800-1000	7	2	
1000	Add an additional 2 VOC and 1 composite for each additional 1000 Cubic yards or consult with NYSDEC		

Notes: VOCs (Volatile Organic Compounds/SVOCs (Semi-volatile Organic Compounds / PCBs (Polychlorinated Biphenyls)

The fill material sources to be used as part of the capping/cover system and backfill will be selected by the QEP. The sources should be sampled at their place of origin (i.e.

quarry, soil mine, etc.). The samples collected must be representative of the materials proposed for import to the Binghamton Plaza. The QEP will coordinate with the owner/operator of each material source to coordinate the sample collection and to verify that the materials sampled will be representative.

All sample methods will be consistent with Table 2 (discrete and composite) and be analyzed for those compounds provided in Appendix 5 to DER-10, included as Table A-1. The discrete samples being collected for VOCs will be collected using field extraction (EPA Method 5035) and biased toward areas that would most likely contain VOCs using standard field screening techniques. The discrete samples collected for compositing should be chosen to make the final composite representative of the material as a whole. Sampling equipment (if not disposable) must be field decontaminated between sample locations using standard industry practices for the types of constituents being analyzed.

Several QA/QC samples are required for each imported material sampling event. Most of these requirements are dictated by the level of QA/QC required under Category B laboratory data packages. One equipment blank and one Matrix Spike/Matrix Spike Duplicate (MS/MSD) sample must be collected per 20 samples of reuse material. Additional sample volume will likely be necessary to accommodate the MS/MSD analysis at the analytical laboratory. The equipment blank will consist of laboratory supplied deionized water that has been passed over the decontaminated sampling equipment prior to collection. A trip blank for VOCs must accompany each sample shipment.

If imported fill material is stockpiled at the site prior to use, it will be stockpiled within the areas shown on (Figure A-2). Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC.

A-11 STORMWATER POLLUTION PREVENTION

Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC. All necessary repairs shall be made immediately.

Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.

All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.

Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters

Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

A-12 CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for full a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC’s Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the periodic reports prepared pursuant to Section 5 of the SMP.

Air monitoring for methane gas will be performed during excavation activities. A four-gas meter with methane detector will be used for the direct measurement of percent LEL. The physical hazard of an explosion is present if methane concentrations reach an unsafe level. Temporary work stoppage or venting is necessary if methane concentrations reach 10% of its LEL.

A-13 COMMUNITY AIR MONITORING PLAN

The Community Air Monitoring Plan is included as Appendix E to the Site Management Plan.

An upwind and downwind monitor will be utilized and moved based on observed wind direction. Additionally, because there is a day care facility on the site, and an adjacent residential parcel, there will be fixed air sampling locations in close proximity to those locations.

Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

A-14 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-site and on-site, since there are tenants on the property. Specific odor control methods to be used on a routine basis will include: 1) limiting the area of open excavations and size of soil stockpiles and 2) shrouding open excavations and a soil stockpiles with tarps and other covers. If nuisance odors are identified at the site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the property owner’s Remediation Engineer, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent on- and off-site nuisances. At a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-site disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

A-15 DUST CONTROL PLAN

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.

- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.

- Gravel will be used on roadways to provide a clean and dust-free road surface.

- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

A-16 OTHER NUISANCES

A plan for rodent control will be developed and utilized by the contractor prior to and during site clearing and site grubbing, and during all remedial work.

A plan will be developed and utilized by the contractor for all remedial work to ensure compliance with local noise control ordinances.

APPENDIX A

FIGURES AND TABLE 1

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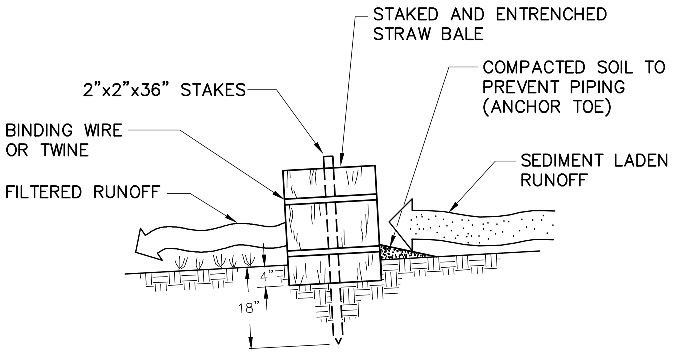


CROSS SECTION

CONSTRUCTION SPECIFICATIONS

INSTALLATION

1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF FOUR (4) INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE EITHER BY TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. THE ANCHORING TRENCH WILL BE BACKFILLED AND COMPACTED TO A DENSITY EQUAL TO UNDISTURBED SITE SOILS (GREATER IF FENCE IS BEING INSTALLED ON UNCOMPACTED FILL MATERIALS).

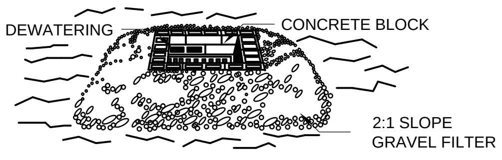
MAINTENANCE

1. THE BARRIER WILL BE INSPECTED AFTER EVERY RUNOFF EVENT. DISLODGED BALES SHOULD BE RESET, STAKED AND BACKFILLED TO THE REQUIREMENTS LISTED UNDER "INSTALLATION". ALL CLOGGED OR INOPERATIVE BALES WILL BE REPLACED.
2. ACCUMULATED SEDIMENTS WILL BE REMOVED AS REQUIRED AND IN ALL CASES WHERE UNIFORM ACCUMULATIONS REACH 1/3 THE ABOVE GROUND HEIGHT OF THE BARRIER.
3. ALL UNDERCUTTING OR EROSION OF THE ANCHOR TOE WILL BE REPAIRED IMMEDIATELY WITH COMPACTED BACKFILL MATERIALS.
4. STRAW BALE BARRIERS WILL BE REPLACED EVERY THREE MONTHS OR MORE OFTEN IF THE BALES DETERIORATE AND BECOME INEFFECTIVE.

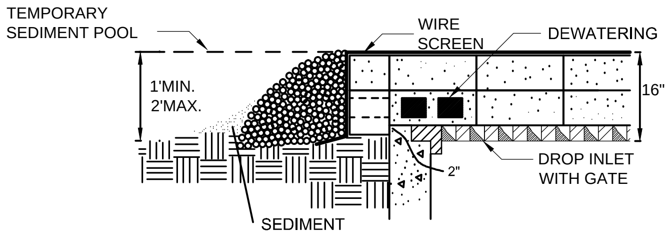
STRAW BALE BARRIER

NOT TO SCALE

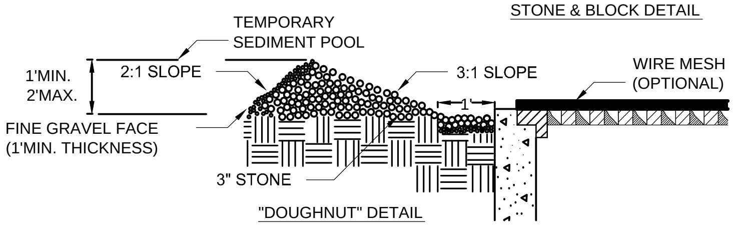
STONE & BLOCK DROP INLET PROTECTION



STONE & BLOCK PLAN VIEW



STONE & BLOCK DETAIL



"DOUGHNUT" DETAIL

CONSTRUCTION SPECIFICATIONS

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL 1/2-3/4 INCH IN DIAMETER PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
4. FOR STONE STRUCTURES ONLY, A 1 FOOT THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3 INCH STONE AS SHOWN ON THE DRAWINGS.

MAXIMUM DRAINAGE AREA 1 ACRE

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

EROSION AND SEDIMENTATION CONTROL NOTES

EROSION AND SEDIMENTATION CONTROLS WILL CONSIST OF THE PLACEMENT OF STRAW BALES, TEMPORARY COVER AND PERMANENT SEEDING. SEE ATTACHED PLAN SHEETS FOR DETAILS ON THESE MEASURES.

1. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE IMPLEMENTATION AND MAINTENANCE OF SEDIMENT AND EROSION CONTROL MEASURES ON THE SITE, PRIOR TO, AND DURING CONSTRUCTION. ALL EROSION CONTROLS SHALL BE MAINTAINED IN PROPER FUNCTIONING ORDER AND ARE TO BE REPLACED AS NECESSARY.
2. WITHIN 10 DAYS OF FINAL GRADING AREA 9 SHALL RECEIVE MULCH DURING NON-GERMINATING PERIODS, AND PERMANENT VEGETATION IN COMBINATION WITH SUITABLE MULCH DURING GERMINATING PERIODS. SEEDING AND MULCHING TO BE PERFORMED AS PER THE NY STANDARDS AND SPECIFICATION FOR EROSION AND SEDIMENT CONTROL, LATEST EDITION.
3. DURING CONSTRUCTION, THE AMOUNT OF DISTURBED SOILS SHALL BE KEPT TO A MINIMUM.
4. ALL EARTHMOVING ACTIVITIES SHALL BE CARRIED OUT IN SUCH A MANNER AS TO MINIMIZE THE AMOUNT OF DISTURBED AREA.
5. RESPONSIBILITY FOR IMPLEMENTING EROSION AND SEDIMENTATION CONTROL SHALL BE DESIGNATED TO A MINIMUM OF ONE INDIVIDUAL WHO WILL BE PRESENT AT THE PROJECT SITE DAILY.
6. STRAW BALES SHALL BE PLACED, AS SHOWN ON THE PLAN, IN ORDER TO PREVENT SEDIMENT FROM ENTERING INTO ADJACENT PROPERTIES, ROADWAY AND WATERWAYS.
7. STRAW BALES SHALL BE PLACED END TO END, SECURELY STAKED IN PLACE, AND MAINTAINED UNTIL AREA IS STABILIZED.
8. WHERE DUST OR WIND EROSION IS A PROBLEM, THE UNSTABLE SURFACE(S) SHALL BE SPRINKLED WITH WATER OR OTHER SUITABLE DUST SUPPRESSOR.
9. STORMWATER FROM DISTURBED AREAS MUST BE PASSED THROUGH STRAW BARRIERS OR INLET PROTECTION BEFORE DISCHARGE BEYOND DISTURBED AREAS OR DISCHARGED INTO DRAINAGE SYSTEMS.
10. ANY TEMPORARY EROSION CONTROL MEASURES APPLIED TO EXPOSED SOIL SURFACES SHALL REMAIN FUNCTIONAL UNTIL VEGETATED COVER IS SUFFICIENTLY ESTABLISHED.
11. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE SUBJECT TO THE NY STANDARDS AND SPECIFICATION FOR EROSION AND SEDIMENT CONTROL, LATEST EDITION.
12. ALL AREAS DISTURBED BY CONSTRUCTION, OTHER THAN THOSE RECEIVING PAVING, SHALL BE STABILIZED BY APPLYING A SEED/MULCH MIXTURE TO ESTABLISH AN EROSION RESISTANT STAND OF VEGETATION.
13. PERMANENT SEEDING SHALL ADHERE TO THE SPECIFICATIONS PROVIDED IN THE DRAWINGS.
14. ALL EROSION AND SEDIMENTATION CONTROLS WILL BE INSPECTED WEEKLY AND AFTER ALL RUNOFF EVENTS.

STAGING OF CONSTRUCTION ACTIVITIES

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED AND IMMEDIATELY STABILIZED BEFORE ANY FOLLOWING STAGE IS INITIATED.

IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.

BEFORE IMPLEMENTING ANY REVISIONS TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN, OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED EROSION AND CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISION.

1. AT LEAST SEVEN DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OWNER AND/ OR OPERATOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS AND THE EROSION AND SEDIMENTATION CONTROL PLAN PREPARER TO AN ON-SITE PRE-CONSTRUCTION MEETING.

AT LEAST TWO DAYS, BUT NOT MORE THAN 10 DAYS, PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE NEW YORK STATE DIG SAFELY NUMBER INCORPORATED AT 1-800-962-7962 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.

2. STRAW BALES, AND INLET PROTECTION SHALL BE PLACED AS SHOWN ON THE PLAN AND MAINTAINED UNTIL AREA 9 IS STABILIZED.
3. AREAS REQUIRING PAVING WILL BE STRIPPED OF VEGETATION, GRADED AND THEN PAVED PROMPTLY.
4. UPON COMPLETION OF GRADING, AREA 9 WILL BE SEEDED AND MULCHED PER THE EROSION AND SEDIMENTATION CONTROL NOTES.
5. AFTER VEGETATIVE STABILIZATION OF ALL DISTURBED AREAS, THE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AND THE AREAS RESTORED.

Dig Safely. New York Call 811 before you dig

UNDERGROUND UTILITIES NOTE

THE USER OF THIS MAP IS CAUTIONED THAT THE UNDERGROUND UTILITY LOCATIONS ARE NOT GUARANTEED, NOR IS THERE ANY GUARANTEE THAT ALL EXISTING UTILITIES WHETHER FUNCTIONAL OR ABANDONED WITHIN THE PROJECT AREA ARE SHOWN ON THIS DRAWING.

THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES BEFORE STARTING WORK & SHALL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM HIS WORK. CONTRACTOR SHALL NOTIFY DIG SAFELY NY (FORMERLY UFPO) 1-800-962-7962 IN ACCORDANCE WITH 16 NYCRR PART 753.

J:\062175.3\DWG\062175XS.DWG

EROSION CONTROL DETAILS

PROJECT: 062175.3
FILE NO.: 062175XS
DATE: 11/11/2014
SCALE: NO SCALE

BINGHAMTON PLAZA
CITY OF BINGHAMTON, BROOME CO. NY

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PROFESSIONAL GEOLOGISTS, SCIENTISTS AND ENGINEERS
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FIGURE
A-1

PLOTTED: Radcliffe, Mark at 11/14/2014 12:15 PM

LEGEND

- BCP SITE BOUNDARY
- OFF-SITE PROPERTY LINE
- SITE PROPERTY LINE
- GUIDE RAIL
- ▭ THE BCP AREA
- ▨ RESTRICTED RESIDENTIAL USE AREA WITHIN THE BCP AREA
- EXISTING EXTENT OF FLOOD CONTROL EASEMENT AND/OR CHENANGO RIVER WATERFRONT TRAIL EASEMENT
- EXISTING MUNICIPAL ZONING LINE
- 🟩 POTENTIAL STOCKPILE AREAS

NOTES:

1. REFERENCE PLANS:
   - *SAMPLE LOCATION MAP FOR BRICKHOUSE ENVIRONMENTAL CONSULTANTS AND ENGINEERS BINGHAMTON PLAZA - WEST STATE STREET* PREPARED BY KEYSTONE ASSOCIATES DATED 02/02/09, LAST REVISED 6/18/13.
   - *ENVIRONMENTAL EASEMENT / BROWNFIELD SURVEY* , PREPARED BY KEYSTONE ASSOCIATES DATED 10/7/2014.
2. HORIZONTAL DATUM - STATE PLANE NEW YORK STATE CENTRAL, NORTH AMERICAN DATUM OF 1983 (NAD 83).
3. VERTICAL DATUM - NORTH AMERICAN VERTICAL DATUM OF 1988 (NVD 88).

POTENTIAL STOCKPILE LOCATION MAP

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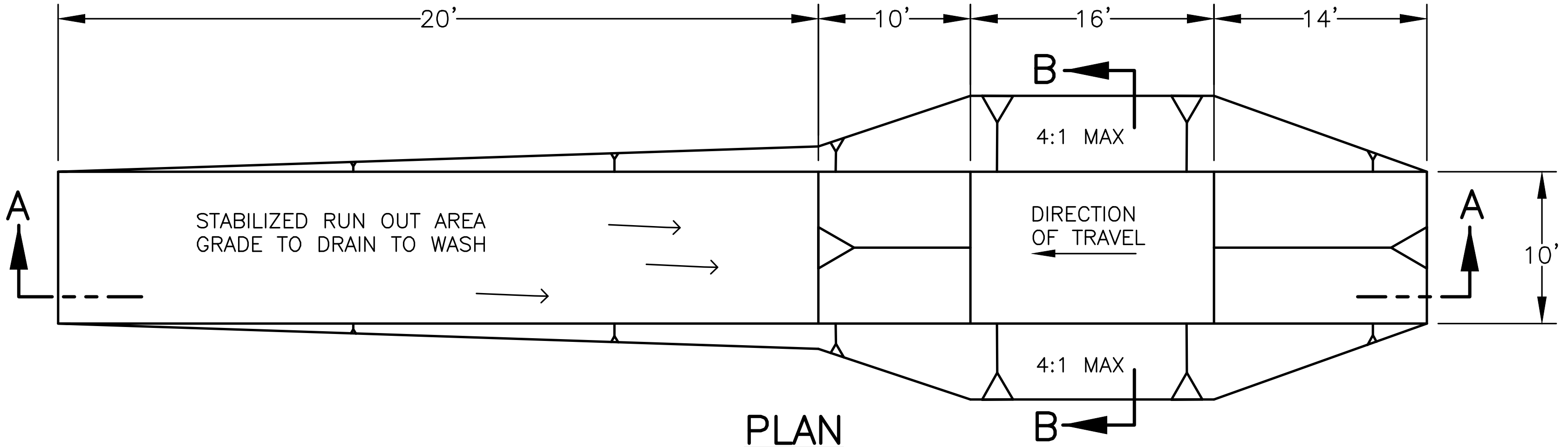
BINGHAMTON PLAZA
CITY OF BINGHAMTON, BROOME CO., NY

PROJECT: 06-2175.3
FILE NO.: 062175.3PS
DATE: 11/11/14
SCALE: 1" = 150'

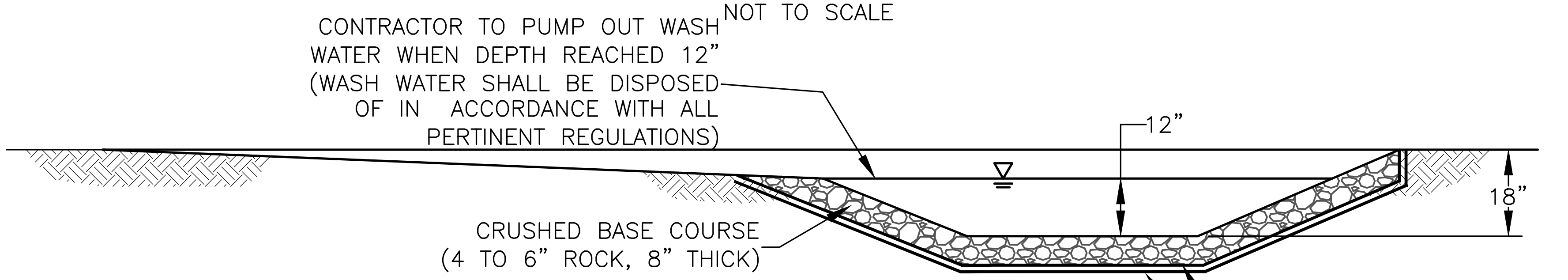
FIGURE
A-2

J:\062175.3\DWG\062175.3PS.DWG -EWP FIGURE A-2



PLAN

NOT TO SCALE



SECTION A–A

NOT TO SCALE
(EXAGGERATED VERTICALLY)

SECTION B–B

NOT TO SCALE
(EXAGGERATED VERTICALLY)

TRUCK WASH SCHEMATIC

PROJECT: 062175.3
FILE NO.: 062175XS
DATE: 11/11/14
SCALE: NO SCALE

BINGHAMTON PLAZA
CITY OF BINGHAMTON, BROOME CO. NY

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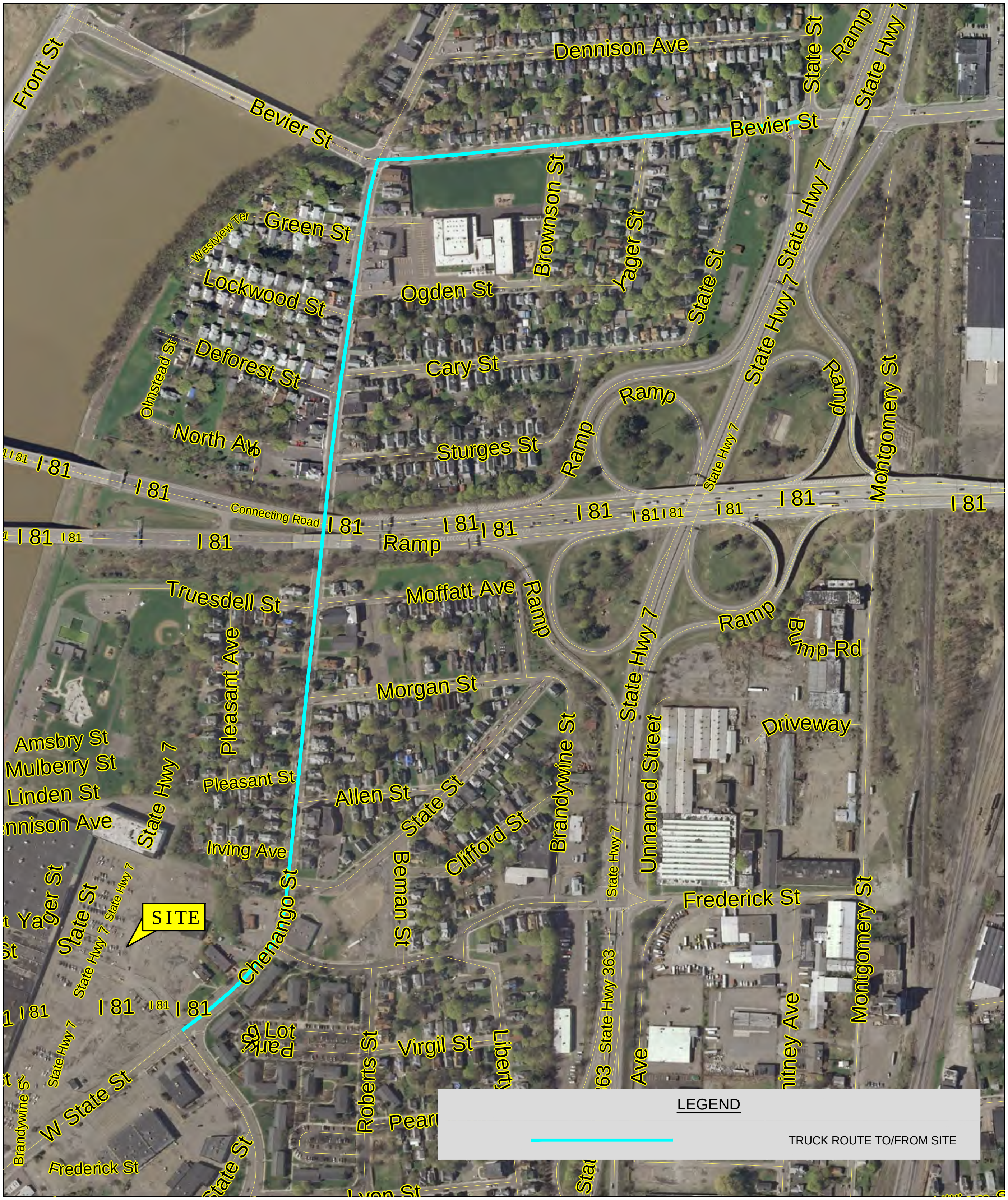
FIGURE
A-3

J:\062175.3\DWG\062175.3RT.DWG

PLOTTED: Radcliffe, Mark at 11/14/2014 12:16 PM



TRUCK ROUTE MAP FOR TRANSPORTING MATERIALS OFF-SITE

BINGHAMTON PLAZA

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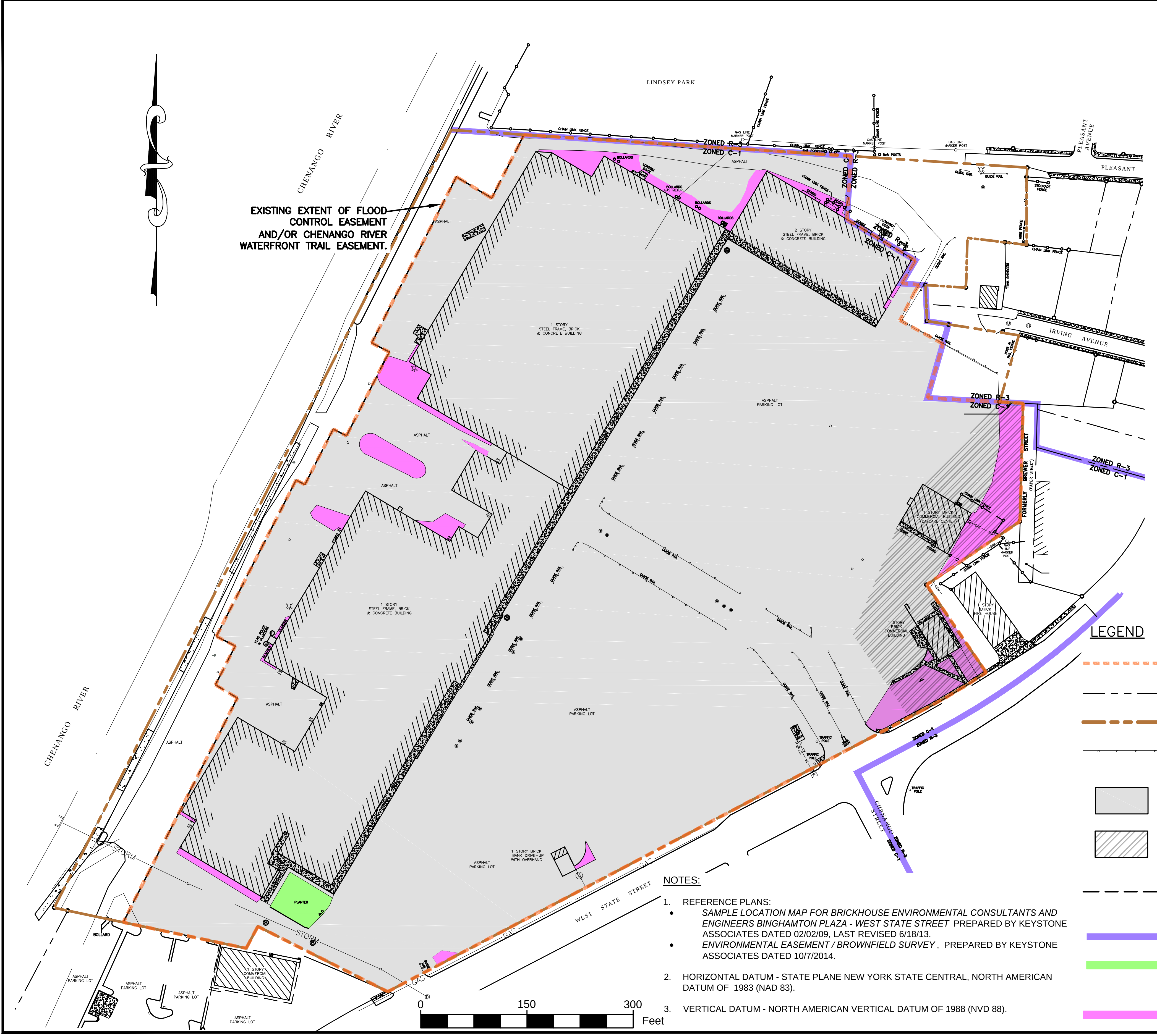
PROJECT: 062175.3
FILE NO.: 062175.3RT
DATE: 11/11/2014
SCALE: 1" = 500'

FIGURE
A-4

PLOTTED: Radcliffe, Mark at 11/14/2014 12:16 PM



NOTES:

1. REFERENCE PLANS:
   - *SAMPLE LOCATION MAP FOR BRICKHOUSE ENVIRONMENTAL CONSULTANTS AND ENGINEERS BINGHAMTON PLAZA - WEST STATE STREET* PREPARED BY KEYSTONE ASSOCIATES DATED 02/02/09, LAST REVISED 6/18/13.
   - *ENVIRONMENTAL EASEMENT / BROWNFIELD SURVEY*, PREPARED BY KEYSTONE ASSOCIATES DATED 10/7/2014.
2. HORIZONTAL DATUM - STATE PLANE NEW YORK STATE CENTRAL, NORTH AMERICAN DATUM OF 1983 (NAD 83).
3. VERTICAL DATUM - NORTH AMERICAN VERTICAL DATUM OF 1988 (NVD 88).

LEGEND

- - - -	BCP SITE BOUNDARY
— – – —	OFF–SITE PROPERTY LINE
— - - —	SITE PROPERTY LINE
—o—o—	GUIDE RAIL
▢	AREA WITHIN THE BCP AREA WITH PRE–REMEDIATION IMPERVIOUS CAP
▨	RESTRICTED RESIDENTIAL USE AREA WITHIN THE BCP AREA
— — —	EXISTING EXTENT OF FLOOD CONTROL EASEMENT AND/OR CHENANGO RIVER WATERFRONT TRAIL EASEMENT
━━	EXISTING MUNICIPAL ZONING LINE
🟩	12–INCH THICK CLEAN SOIL COVER (OCTOBER 2014 REMEDIAL ACTION)
━━	6–INCH THICK ASPHALT CAP (OCTOBER 2014 REMEDIAL ACTION)

EXTENT OF CAP AND COVER SYSTEM

BINGHAMTON PLAZA
CITY OF BINGHAMTON, BROOME CO., NY

PROJECT: 06-2175.3
FILE NO.: 062175.3PS
DATE: 11/11/14
SCALE: 1" = 150'

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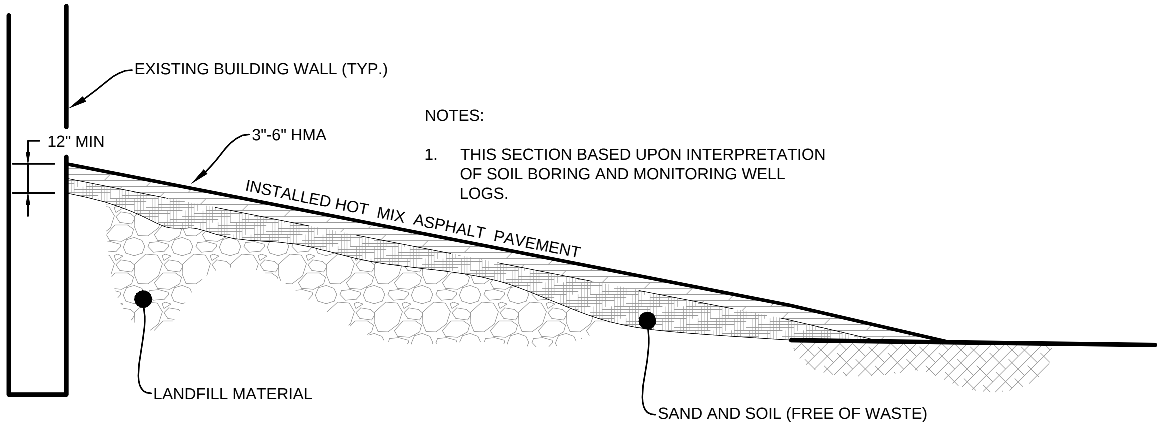
FIGURE
A-5

PLOTTED: Radcliffe, Mark at 11/14/2014 12:16 PM

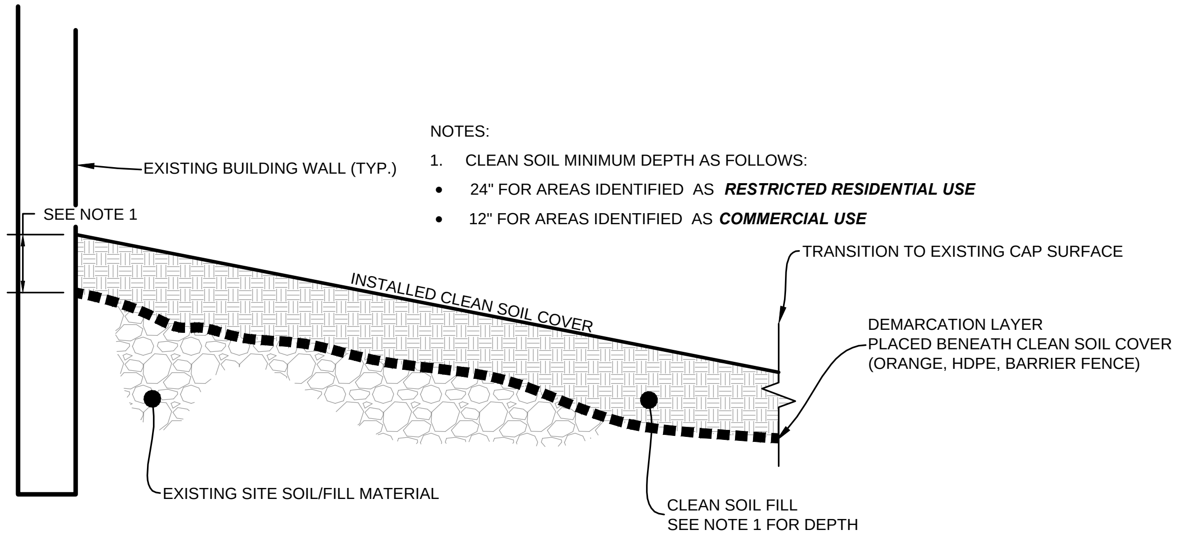


NOTES:

1. THIS SECTION BASED UPON INTERPRETATION OF SOIL BORING AND MONITORING WELL LOGS.

① PRE-REMEDIATION SITE CAP

NO SCALE

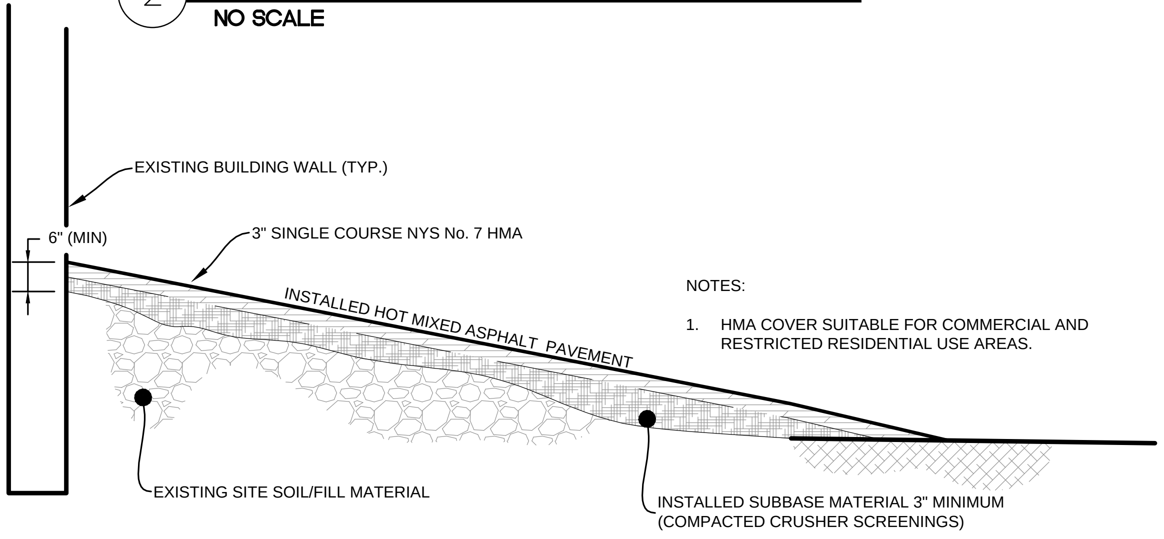


NOTES:

1. CLEAN SOIL MINIMUM DEPTH AS FOLLOWS:
   - 24" FOR AREAS IDENTIFIED AS ***RESTRICTED RESIDENTIAL USE***
   - 12" FOR AREAS IDENTIFIED AS ***COMMERCIAL USE***

② POST-REMEDIATION CLEAN SOIL COVER

NO SCALE

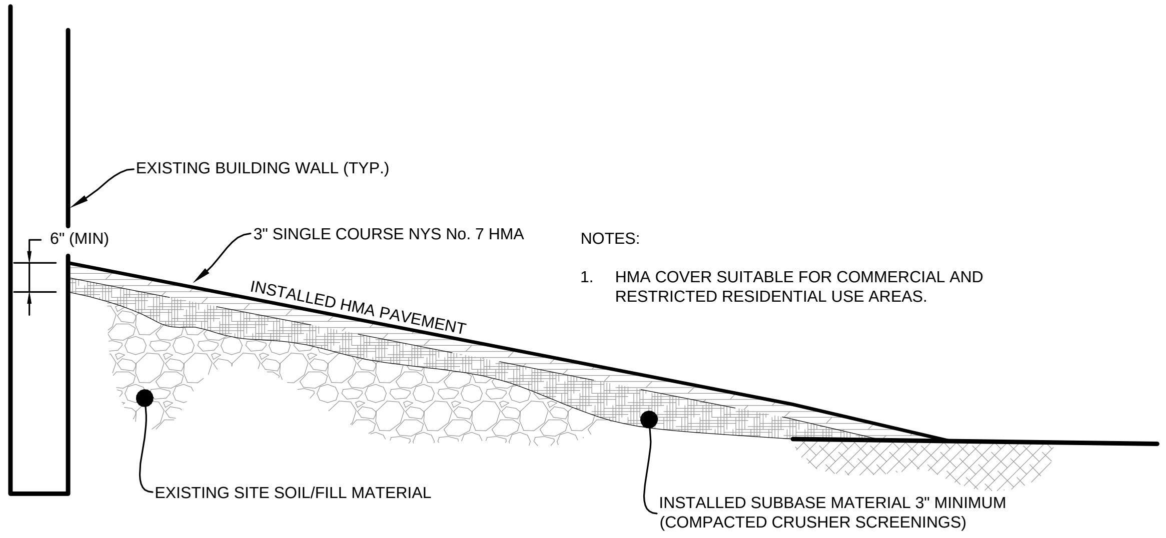


NOTES:

1. HMA COVER SUITABLE FOR COMMERCIAL AND RESTRICTED RESIDENTIAL USE AREAS.

③ POST-REMEDIATION HOT MIXED ASPHALT (HMA) COVER

NO SCALE



NOTES:

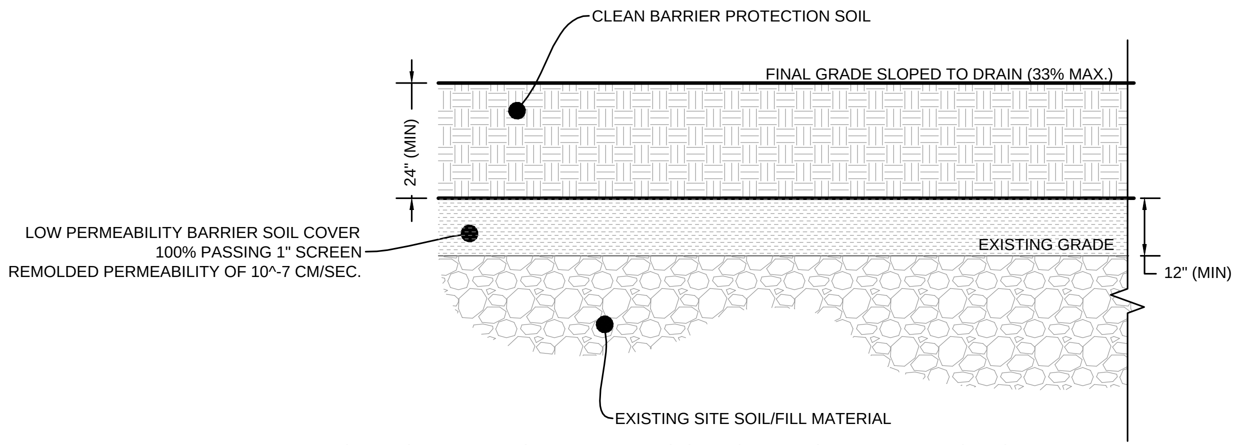
1. HMA COVER SUITABLE FOR COMMERCIAL AND RESTRICTED RESIDENTIAL USE AREAS.

④ OPTIONAL HOT MIXED ASPHALT (HMA) CAP FOR REPAIRS TO PRE-REMEDIATION CAPPED AREAS

NO SCALE

NOTES:

1. THIS OPTION MUST BE CONSTRUCTED IN ACCORDANCE WITH 6 NYCRR PART 360-2.13



⑤ OPTIONAL ENGINEERED SOIL CAP FOR REPAIRS TO PRE-REMEDIATION CAPPED AREAS

NO SCALE

J:\062175.3\DWG\062175XS.DWG

CROSS-SECTION DETAILS FOR COVER RESTORATION

BINGHAMTON PLAZA
CITY OF BINGHAMTON, BROOME CO. NY

PROJECT: 062175.3
FILE NO.: 062175XS
DATE: 11/11/14
SCALE: NO SCALE

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FIGURE
A-6

Table A-1
Allowable Constituent Levels for Imported Fill or Soil
Binghamton Plaza C704049

Source: This table is derived from soil cleanup objective (SCO) tables in 6 NYCRR 375. Table 375-6.8(b) is the source for restricted use.

Note: For constituents not included in this table, refer to the contaminant for supplemental soil cleanup objectives (SSCOs) in the Commissioner Policy on *Soil Cleanup Guidance*. If an SSCO is not provided for a constituent, contact the DER PM to determine a site-specific level.

Constituent	Restricted Residential Use	Commercial or Industrial Use
Arsenic	16	16
Barium	400	400
Beryllium	47	47
Cadmium	4.3	7.5
Chromium, Hexavalent[1]	19	19
Chromium, Trivalent[1]	180	1500
Copper	270	270
Cyanide	27	27
Lead	400	450
Manganese	2000	2000
Mercury (total)	0.73	0.73
Nickel	130	130
Selenium	4	4
Silver	8.3	8.3
Zinc	2480	2480
2,4,5-TP Acid (Silvex)	3.8	3.8
4,4'-DDE	8.9	17
4,4'-DDT	7.9	47
4,4'-DDD	13	14
Aldrin	0.097	0.19
Alpha-BHC	0.02	0.02
Beta-BHC	0.09	0.09
Chlordane (alpha)	2.9	2.9
Delta-BHC	0.25	0.25
Dibenzofuran	59	210
Dieldrin	0.1	0.1
Endosulfan I	24	102
Endosulfan II	24	102
Endosulfan sulfate	24	200
Endrin	0.06	0.06
Heptachlor	0.38	0.38
Lindane	0.1	0.1
Polychlorinated biphenyls	1	1

Constituent	Restricted Residential Use	Commercial or Industrial Use
Acenaphthene	98	98
Acenaphthylene	100	107
Anthracene	100	500
Benzo(a)anthracene	1	1
Benzo(a)pyrene	1	1
Benzo(b)fluoranthene	1	1.7
Benzo(g,h,i)perylene	100	500
Benzo(k)fluoranthene	1.7	1.7
Chrysene	1	1
Dibenz(a,h)anthracene	0.33 [3]	0.56
Fluoranthene	100	500
Fluorene	100	386
Indeno(1,2,3-cd)pyrene	0.5	5.6
m-Cresol(s)	0.33 [3]	0.33 [3]
Naphthalene	12	12
o-Cresol(s)	0.33 [3]	0.33 [3]
p-Cresol(s)	0.33	0.33
Pentachlorophenol	0.8 [3]	0.8 [3]
Phenanthrene	100	500
Phenol	0.33 [3]	0.33 [3]
Pyrene	100	500
1,1,1-Trichloroethane	0.68	0.68
1,1-Dichloroethane	0.27	0.27
1,1-Dichloroethene	0.33	0.33
1,2-Dichlorobenzene	1.1	1.1
1,2-Dichloroethane	0.02	0.02
1,2-Dichloroethene(cis)	0.25	0.25
1,2-Dichloroethene(trans)	0.19	0.19
1,3-Dichlorobenzene	2.4	2.4
1,4-Dichlorobenzene	1.8	1.8
1,4-Dioxane	0.1 [3]	0.1 [3]
Acetone	0.05	0.05
Benzene	0.06	0.06
Butylbenzene	12	12
Carbon tetrachloride	0.76	0.76
Chlorobenzene	1.1	1.1
Chloroform	0.37	0.37
Ethylbenzene	1	1
Hexachlorobenzene	1.2	3.2
Methyl ethyl ketone	0.12	0.12
Methyl tert-butyl ether	0.93	0.93
Methylene chloride	0.05	0.05

Constituent	**Restricted Residential Use**	**Commercial or Industrial Use**
Propylbenzene-n	3.9	3.9
Sec-Butylbenzene	11	11
Tert-Butylbenzene	5.9	5.9
Tetrachloroethene	1.3	1.3
Toluene	0.7	0.7
Trichloroethene	0.47	0.47
Trimethylbenzene-1,2,4	3.6	3.6
Trimethylbenzene-1,3,5	8.4	8.4
Vinyl chloride	0.02	0.02
Xylene (mixed)	1.6	1.6

All concentrations are in parts per million (ppm)
NS = Not Specified

Footnotes:

[1] The SCO for Hexavalent or Trivalent Chromium is considered to be met if the analysis for the total species of this contaminant is below the specific SCO for Hexavalent Chromium.

[2] The SCO is the sum of endosulfan I, endosulfan II and endosulfan sulfate.

[3] For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the Track 1 SCO value.

[4] This SCO is derived from data on mixed isomers of BHC.

APPENDIX B

METES AND BOUNDS

SCHEDULE "A" PROPERTY DESCRIPTION

SURVEYOR'S DESCRIPTION
ENVIRONMENTAL EASEMENT AREA AND
BROWNFIELD CLEANUP AREA
BINGHAMTON PLAZA
BCP SITE NO. C704049
WEST STATE STREET
IRVING AVENUE & PLEASANT STREET
CITY OF BINGHAMTON
BROOME COUNTY, NEW YORK STATE

ALL THAT TRACT OR PARCEL OF LAND situate in the City of Binghamton, County of Broome, State of New York, being all of the property now or formerly of Binghamton Plaza, Inc. as recorded in the Broome County Clerk's Office and described in the following: 1) Liber 1047 Page 1069 on January 12, 1962; 2) Liber 1079 Page 526 on June 4, 1964; 3) Liber 1087 Page 83 on January 7, 1965; (TM# 144.66-1-17, TM# 144.74-1-1, TM# 144.74-1-2, TM# 144.74-1-7, TM# 144.74-1-8, TM# 144.74-1-19 (hereinafter collectively referred to as "Binghamton Plaza, Inc.") bounded and described as follows:

BEGINNING at a point on the northwesterly boundary of West State Street at its intersection with the division line between the property now or formerly of Opportunities for Broome, Inc. per L. 2290 P. 485 (TM# 144.74-1-9) on the southwest and said Binghamton Plaza, Inc. on the northeast;

RUNNING THENCE along the division lines between said Opportunities for Broome, Inc. and said Binghamton Plaza, Inc. the following three (3) courses and distances:
1) N63°19'32"W, a distance of 205.46 feet to a point;
2) S27°58'03"W, a distance of 34.97 feet to a point;
3) N78°04'57"W continuing along said division line, along the division line between the property now or formerly of Robert J. Skrabalak per L. 1775 P. 800 (TM# 144.82-1-1) on the south and said Binghamton Plaza, Inc. on the north, and along the division line between another property now or formerly of Robert J. Skrabalak per L. 1918 P. 1050 (TM# 144.81-2-1) on the south and said Binghamton Plaza, Inc. on the north, a distance of 177.60 feet to a point; thence through said Binghamton Plaza, Inc. the following thirteen (13) courses and distances:
1) N26°57'39"E, a distance of 355.64 feet to a point;
2) N59°01'17"W, a distance of 36.16 feet to a point;
3) N27°01'36"E, a distance of 61.68 feet to a point;
4) N62°58'24"W, a distance of 30.00 feet to a point;
5) N27°01'36"E, a distance of 248.00 feet to a point;
6) S62°58'24"E, a distance of 14.00 feet to a point;
7) N27°01'36"E, a distance of 88.00 feet to a point;
8) S62°58'24"E, a distance of 21.00 feet to a point;
9) N27°01'36"E, a distance of 133.00 feet to a point;
10) N62°58'24"W, a distance of 28.00 feet to a point;
11) N27°01'36"E, a distance of 263.62 feet to a point;
12) S58°58'47"E, a distance of 58.30 feet to a point;
13) N26°57'39"E, a distance of 100.53 feet to a point at its intersection with the division line between the property now or formerly of City of Binghamton (AKA Lindsey Park) per L. 548 P.

390 (TM# 144.66-1-16) on the north and said Binghamton Plaza, Inc. on the south; thence S86°15'31"E along the last mentioned division line, a distance of 462.93 feet to a point; thence through said Binghamton Plaza, Inc. the following nine (9) courses and distances:

1) S03°44'29"W, a distance of 89.57 feet to a point;
2) S59°00'45"E, a distance of 112.99 feet to a point;
3) S31°00'28"W, a distance of 38.00 feet to a point;
4) S86°19'44"E, a distance of 24.72 feet to a point;
5) S30°27'26"W, a distance of 14.83 feet to a point;
6) S27°12'51"W, a distance of 42.48 feet to a point;
7) S61°23'15"E, a distance of 69.11 feet to a point;
8) S16°07'20"W, a distance of 79.45 feet to a point;
9) S86°46'54"E, a distance of 102.18 feet to a 5/8 inch rebar at its intersection with the division line between the property now or formerly of Athan Gyftopoulos & Andrea E. Frohne per L. 1927 P. 308 (TM# 144.66-1-32) on the north and said Binghamton Plaza, Inc. on the south; thence continuing S86°46'54"E along the last mentioned division line, a distance of 33.42 feet to a point at its intersection with the westerly boundary of Brewer Street (paper street); thence S01°32'37"W along said westerly boundary, a distance of 166.95 feet to a 5/8 inch rebar at its intersection with the division line between another property now or formerly of the City of Binghamton (Fire Department) per L. 548 P. 390 (TM# 144.74-1-6) on the southeast and said Binghamton Plaza, Inc. on the northwest; thence along the division lines between said City of Binghamton (Fire Department) and said Binghamton Plaza, Inc. the following two (2) courses and distances:

1) S55°47'34"W, a distance of 159.62 feet to a 3/4 inch rebar;
2) S34°12'26"E, a distance of 150.00 feet to a point at its intersection with the northwesterly boundary of Chenango Street; thence along said Chenango Street on a curve to the right having a radius of 1007.00 feet, an arc length of 103.49 feet to a point, said curve being subtended by a chord having a bearing of S59°17'39"W and a length of 103.45 feet; thence S62°14'18"W continuing along said Chenango Street and along the northwesterly boundary of said West State Street, a distance of 854.84 feet to the POINT OF BEGINNING.

The above described parcel contains 936,936 square feet or 21.509 acres, more or less.

The above described parcel is subject to the following by Deed Recorded in the Broome County Clerk's Office:

1) An Easement Granted to the State of New York including a "Private Roadway", "Drainage Structures and Ditches", "Walls and Levees" and "the Right at all Times of Ingress, Egress and Regress by the State of New York, its Assigns and/or their Agents in the Improvement for Purposes Connected with the Flood Control Projects" on February 25, 1941, modified by a Partial Release of the Easement in L. 1175 P. 47 on September 25, 1971.
2) 20' Storm Water Sewer Easement Granted to the City of Binghamton in L. 1047 P. 1069 on January 12, 1962.
3) 50' Wide Ingress, Egress & Regress Easement and R.O.W. Granted in L. 1059 P. 281 on October 19, 1962.
4) Ingress, Egress and Regress Easement and R.O.W. Granted to the City of Binghamton in L. 1068 P. 212 on July 18, 1963.
5) Electric & Communication R.O.W.'s and Building Height Restriction Granted to NYSEG in L. 1068 P. 263 on July 18, 1963.
6) 50' Wide Electric & Communication R.O.W. Granted to NYSEG in L. 1069 P. 570 on

August 22, 1963.
7) Pipe Line Easement Granted to Columbia Gas of New York, Inc. in L. 1085 P. 524 on November 16, 1964.
8) 30' Wide Pole Line Easement & R.O.W. Granted to NYSEG in L. 1097 P. 1086 on October 27, 1965.
9) Pipe Line Easement Granted to Columbia Gas of New York, Inc. in L. 1127 P. 509 on October 30, 1967.
10) 10' Wide Electric & Communication Pole Line Easement & R.O.W. Granted to NYSEG in L. 1210 P. 1050 on February 1, 1974.
11) Chenango River Waterfront Trail Easement Granted to City of Binghamton in L. 2159 P. 399 on August 15, 2006.

The above described parcel is subject to any and all easements of record and/or as found in the field.

Bearings are referred to Magnetic North as the needle pointed in December of 2004.

The above described parcel is shown on the map entitled "Environmental Easement Survey, Binghamton Plaza, BCP Site No. C704049, West State Street, Irving Avenue & Pleasant Street, City of Binghamton, Broome County, New York State" prepared by Keystone Associates Architects, Engineers and Surveyors, LLC as project number 1001.26512, Sheet 1 of 2 and Sheet 2 of 2 dated May 17, 2013 (Note: The map will be re-dated after it is ready to be final).

SCHEDULE "B" PROPERTY DESCRIPTION

SURVEYOR'S DESCRIPTION
RESTRICTED RESIDENTIAL USE PARCEL
BINGHAMTON PLAZA
BCP SITE NO. C704049
WEST STATE STREET
CITY OF BINGHAMTON
BROOME COUNTY, NEW YORK STATE

ALL THAT TRACT OR PARCEL OF LAND situate in the City of Binghamton, County of Broome, State of New York, being portions of the properties now or formerly of Binghamton Plaza, Inc. as recorded in the Broome County Clerk's Office and described in Liber 1087 Page 83 on January 7, 1965 (TM# 144.74-1-2 and TM# 144.74-1-7) and L. 1047 P. 1069 on January 12, 1962 (TM# 144.74-1-1), collectively referred to as Binghamton Plaza, Inc., bounded and described as follows:

BEGINNING at a 5/8 inch rebar on the westerly boundary of former Brewer Street (paper street) at its intersection with the division line between the property now or formerly of the City of Binghamton (Fire Department) per L. 548 P. 390 (TM# 144.74-16) on the southeast and the property now or formerly of Binghamton Plaza, Inc. per L1087 P. 83 (TM# 144.74-1-2) on the northwest;

RUNNING THENCE along the division lines between said City of Binghamton and said Binghamton Plaza the following two (2) courses and distances:

1) S55°47'34"W, a distance of 159.62 feet to a point;

2) S34°12'26"E, a distance of 150.00 feet to a point at its intersection with the northwesterly boundary of West State Street; thence along said West State Street the following two (2) courses and distances:

1) On a curve to the right having a radius of 1007.00 feet, an arc length of 103.49 feet to a point, said curve being subtended by a chord having a bearing of S59° 17'39"W and a length of 103.45 feet;

2) S62° 14' 18"W, a distance of 21.89 feet to a point; thence through said Binghamton Plaza the following five (5) courses and distances:

1) N34° 12'26"W, a distance of 141.23 feet to a point;

2) N22°00'55"E, a distance of 161.23 feet to a point;

3) N30°55' 16"E, a distance of 6.82 feet to a point;

4) N30°58'33"E, a distance of 66.46 feet to a point;

5) N42°56'11 "E, a distance of 159.08 feet to a 5/8 inch rebar at its intersection with the division line between the property now or formerly of Athan Gyftopoulos & Andrea E. Frohne per L 1927 P. 308 (TM# 144.66-1-32) on the north and said Binghamton Plaza, Inc. on the south; thence S86°46'54"E along the last mentioned division line, a distance of 33.42 feet to a point at its intersection with said westerly boundary of former Brewer Street (paper street); thence S01°32'37'W along said westerly boundary, a distance of 166.95 feet to the POINT OF BEGINNING.

The above described parcel contains 50,020 square feet or 1.148 acres, more or less.

The above described parcel is subject to any and all easements of record and/or as found in the field.

Bearings are referred to Magnetic North as the needle pointed in December of 2004.

The above described parcel is shown on the map entitled "Environmental Easement Survey, Binghamton Plaza, BCP Site No. C704049, West State Street, Irving Avenue & Pleasant Street, City of Binghamton, Broome County, New York State" prepared by Keystone Associates Architects, Engineers and Surveyors, LLC as project number 1001.26512, Sheet 1 and 2 of 2 dated December 6, 2013 and revised October 7, 2014.

APPENDIX C

ENVIRONMENTAL EASEMENT

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

THIS INDENTURE made this 19th day of November, 2014, between Owner(s) Binghamton Plaza, Inc., having an office at 30 Galesi Drive, County of Passaic, State of New Jersey (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

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

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

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

WHEREAS, Grantor, is the owner of real property located at the address of 33 West State Street in the City of Binghamton, County of Broome and State of New York, known and designated on the tax map of the County Clerk of Broome as tax map parcel numbers: 144.74-1-1; 144.74-1-2; 144.74-1-7; 144.74-1-8; 144.66-1-17; and 144.74-1-19, being the same as that property conveyed to Grantor by deed dated January 12, 1962; June 4, 1964; January 7, 1965 and recorded in the Broome County Clerk's Office in Liber and Page L.1047, P. 1069; L. 1079, P. 526; and L. 1087, P. 83. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 21.509 +/- acres, and is hereinafter more fully described in the Land Title Survey dated December 6, 2013 (revised October 7, 2014 entitled Environmental Easement And Brownfield Cleanup Area prepared by Keystone Associates Architects, Engineers and Surveyors, LLC, which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

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

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Brownfield Cleanup Agreement IndexNumber: B7-0702-05-08 as Amended by Amendments 1 and 2, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement")

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

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

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

Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv) except that portion of the Controlled Property described in Schedule B as the "Restricted Residential Use Parcel", which may be used for Restricted Residential as described in 6 NYCRR Part 375-1.8(g)(2)(ii), Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv

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

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

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Broome County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

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

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

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

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

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

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

B. The Controlled Property shall not be used for Residential or Restricted Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i) and (ii), except that portion of the controlled property identified in Schedule B herein, and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

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

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

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

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

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

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

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

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

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

(i) are in-place;

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

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

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

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

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

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

(7) the information presented is accurate and complete.

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

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

including:

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

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

5. Enforcement

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

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

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

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

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

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

Parties shall address correspondence to:

Site Number: C704049
Office of General Counsel
NYSDEC
625 Broadway

Albany New York 12233-5500

With a copy to:

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

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

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

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

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

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

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

Enter Grantor's Name: X

By: ______________________

Print Name: M M Galesi

Title: PRES. Date: 10/21/14

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF)

On the 21st day of October, in the year 20 14, before me, the undersigned, personally appeared M. Michael Galesi, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Notary ~~Public - State of New York~~

JOSEPH C. PETRIELLO
Attorney at Law of New Jersey

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

By: ____________________
Robert W. Schick, Director
Division of Environmental Remediation

Grantee's Acknowledgment

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

On the 19th day of November, in the year 2014 before me, the undersigned, personally appeared Robert W. Schick, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

____
Notary Public - State of New York

David J. Chiusano
Notary Public, State of New York
No. 01CH5032146
Qualified in Schenectady County
Commission Expires August 22, 2018

SCHEDULE "A" PROPERTY DESCRIPTION

SURVEYOR'S DESCRIPTION
ENVIRONMENTAL EASEMENT AREA AND
BROWNFIELD CLEANUP AREA
BINGHAMTON PLAZA
BCP SITE NO. C704049
WEST STATE STREET
IRVING AVENUE & PLEASANT STREET
CITY OF BINGHAMTON
BROOME COUNTY, NEW YORK STATE

ALL THAT TRACT OR PARCEL OF LAND situate in the City of Binghamton, County of Broome, State of New York, being all of the property now or formerly of Binghamton Plaza, Inc. as recorded in the Broome County Clerk's Office and described in the following: 1) Liber 1047 Page 1069 on January 12, 1962; 2) Liber 1079 Page 526 on June 4, 1964; 3) Liber 1087 Page 83 on January 7, 1965; (TM# 144.66-1-17, TM# 144.74-1-1, TM# 144.74-1-2, TM# 144.74-1-7, TM# 144.74-1-8, TM# 144.74-1-19 (hereinafter collectively referred to as "Binghamton Plaza, Inc.") bounded and described as follows:

BEGINNING at a point on the northwesterly boundary of West State Street at its intersection with the division line between the property now or formerly of Opportunities for Broome, Inc. per L. 2290 P. 485 (TM# 144.74-1-9) on the southwest and said Binghamton Plaza, Inc. on the northeast;

RUNNING THENCE along the division lines between said Opportunities for Broome, Inc. and said Binghamton Plaza, Inc. the following three (3) courses and distances:
1) N63°19'32"W, a distance of 205.46 feet to a point;
2) S27°58'03"W, a distance of 34.97 feet to a point;
3) N78°04'57"W continuing along said division line, along the division line between the property now or formerly of Robert J. Skrabalak per L. 1775 P. 800 (TM# 144.82-1-1) on the south and said Binghamton Plaza, Inc. on the north, and along the division line between another property now or formerly of Robert J. Skrabalak per L. 1918 P. 1050 (TM# 144.81-2-1) on the south and said Binghamton Plaza, Inc. on the north, a distance of 177.60 feet to a point; thence through said Binghamton Plaza, Inc. the following thirteen (13) courses and distances:
1) N26°57'39"E, a distance of 355.64 feet to a point;
2) N59°01'17"W, a distance of 36.16 feet to a point;
3) N27°01'36"E, a distance of 61.68 feet to a point;
4) N62°58'24"W, a distance of 30.00 feet to a point;
5) N27°01'36"E, a distance of 248.00 feet to a point;
6) S62°58'24"E, a distance of 14.00 feet to a point;
7) N27°01'36"E, a distance of 88.00 feet to a point;
8) S62°58'24"E, a distance of 21.00 feet to a point;
9) N27°01'36"E, a distance of 133.00 feet to a point;
10) N62°58'24"W, a distance of 28.00 feet to a point;
11) N27°01'36"E, a distance of 263.62 feet to a point;
12) S58°58'47"E, a distance of 58.30 feet to a point;
13) N26°57'39"E, a distance of 100.53 feet to a point at its intersection with the division line between the property now or formerly of City of Binghamton (AKA Lindsey Park) per L. 548 P.

390 (TM# 144.66-1-16) on the north and said Binghamton Plaza, Inc. on the south; thence S86°15'31"E along the last mentioned division line, a distance of 462.93 feet to a point; thence through said Binghamton Plaza, Inc. the following nine (9) courses and distances:

1) S03°44'29"W, a distance of 89.57 feet to a point;
2) S59°00'45"E, a distance of 112.99 feet to a point;
3) S31°00'28"W, a distance of 38.00 feet to a point;
4) S86°19'44"E, a distance of 24.72 feet to a point;
5) S30°27'26"W, a distance of 14.83 feet to a point;
6) S27°12'51"W, a distance of 42.48 feet to a point;
7) S61°23'15"E, a distance of 69.11 feet to a point;
8) S16°07'20"W, a distance of 79.45 feet to a point;
9) S86°46'54"E, a distance of 102.18 feet to a 5/8 inch rebar at its intersection with the division line between the property now or formerly of Athan Gyftopoulos & Andrea E. Frohne per L. 1927 P. 308 (TM# 144.66-1-32) on the north and said Binghamton Plaza, Inc. on the south; thence continuing S86°46'54"E along the last mentioned division line, a distance of 33.42 feet to a point at its intersection with the westerly boundary of Brewer Street (paper street); thence S01°32'37"W along said westerly boundary, a distance of 166.95 feet to a 5/8 inch rebar at its intersection with the division line between another property now or formerly of the City of Binghamton (Fire Department) per L. 548 P. 390 (TM# 144.74-1-6) on the southeast and said Binghamton Plaza, Inc. on the northwest; thence along the division lines between said City of Binghamton (Fire Department) and said Binghamton Plaza, Inc. the following two (2) courses and distances:

1) S55°47'34"W, a distance of 159.62 feet to a 3/4 inch rebar;
2) S34°12'26"E, a distance of 150.00 feet to a point at its intersection with the northwesterly boundary of Chenango Street; thence along said Chenango Street on a curve to the right having a radius of 1007.00 feet, an arc length of 103.49 feet to a point, said curve being subtended by a chord having a bearing of S59°17'39"W and a length of 103.45 feet; thence S62°14'18"W continuing along said Chenango Street and along the northwesterly boundary of said West State Street, a distance of 854.84 feet to the POINT OF BEGINNING.

The above described parcel contains 936,936 square feet or 21.509 acres, more or less.

The above described parcel is subject to the following by Deed Recorded in the Broome County Clerk's Office:

1) An Easement Granted to the State of New York including a "Private Roadway", "Drainage Structures and Ditches", "Walls and Levees" and "the Right at all Times of Ingress, Egress and Regress by the State of New York, its Assigns and/or their Agents in the Improvement for Purposes Connected with the Flood Control Projects" on February 25, 1941, modified by a Partial Release of the Easement in L. 1175 P. 47 on September 25, 1971.
2) 20' Storm Water Sewer Easement Granted to the City of Binghamton in L. 1047 P. 1069 on January 12, 1962.
3) 50' Wide Ingress, Egress & Regress Easement and R.O.W. Granted in L. 1059 P. 281 on October 19, 1962.
4) Ingress, Egress and Regress Easement and R.O.W. Granted to the City of Binghamton in L. 1068 P. 212 on July 18, 1963.
5) Electric & Communication R.O.W.'s and Building Height Restriction Granted to NYSEG in L. 1068 P. 263 on July 18, 1963.
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August 22, 1963.

7) Pipe Line Easement Granted to Columbia Gas of New York, Inc. in L. 1085 P. 524 on November 16, 1964.

8) 30' Wide Pole Line Easement & R.O.W. Granted to NYSEG in L. 1097 P. 1086 on October 27, 1965.

9) Pipe Line Easement Granted to Columbia Gas of New York, Inc. in L. 1127 P. 509 on October 30, 1967.

10) 10' Wide Electric & Communication Pole Line Easement & R.O.W. Granted to NYSEG in L. 1210 P. 1050 on February 1, 1974.

11) Chenango River Waterfront Trail Easement Granted to City of Binghamton in L. 2159 P. 399 on August 15, 2006.

The above described parcel is subject to any and all easements of record and/or as found in the field.

Bearings are referred to Magnetic North as the needle pointed in December of 2004.

The above described parcel is shown on the map entitled "Environmental Easement Survey, Binghamton Plaza, BCP Site No. C704049, West State Street, Irving Avenue & Pleasant Street, City of Binghamton, Broome County, New York State" prepared by Keystone Associates Architects, Engineers and Surveyors, LLC as project number 1001.26512, Sheet 1 of 2 and Sheet 2 of 2 dated May 17, 2013 (Note: The map will be re-dated after it is ready to be final).

SCHEDULE "B" PROPERTY DESCRIPTION

SURVEYOR'S DESCRIPTION
RESTRICTED RESIDENTIAL USE PARCEL
BINGHAMTON PLAZA
BCP SITE NO. C704049
WEST STATE STREET
CITY OF BINGHAMTON
BROOME COUNTY, NEW YORK STATE

ALL THAT TRACT OR PARCEL OF LAND situate in the City of Binghamton, County of Broome, State of New York, being portions of the properties now or formerly of Binghamton Plaza, Inc. as recorded in the Broome County Clerk's Office and described in Liber 1087 Page 83 on January 7, 1965 (TM# 144.74-1-2 and TM# 144.74-1-7) and L. 1047 P. 1069 on January 12, 1962 (TM# 144.74-1-1), collectively referred to as Binghamton Plaza, Inc., bounded and described as follows:

BEGINNING at a 5/8 inch rebar on the westerly boundary of former Brewer Street (paper street) at its intersection with the division line between the property now or formerly of the City of Binghamton (Fire Department) per L. 548 P. 390 (TM# 144.74-16) on the southeast and the property now or formerly of Binghamton Plaza, Inc. per L1087 P. 83 (TM# 144.74-1-2) on the northwest;

RUNNING THENCE along the division lines between said City of Binghamton and said Binghamton Plaza the following two (2) courses and distances:

1) S55°47'34"W, a distance of 159.62 feet to a point;

2) S34°12'26"E, a distance of 150.00 feet to a point at its intersection with the northwesterly boundary of West State Street; thence along said West State Street the following two (2) courses and distances:

1) On a curve to the right having a radius of 1007.00 feet, an arc length of 103.49 feet to a point, said curve being subtended by a chord having a bearing of S59° 17'39"W and a length of 103.45 feet;

2) S62° 14' 18"W, a distance of 21.89 feet to a point; thence through said Binghamton Plaza the following five (5) courses and distances:

1) N34° 12'26"W, a distance of 141.23 feet to a point;

2) N22°00'55"E, a distance of 161.23 feet to a point;

3) N30°55' 16"E, a distance of 6.82 feet to a point;

4) N30°58'33"E, a distance of 66.46 feet to a point;

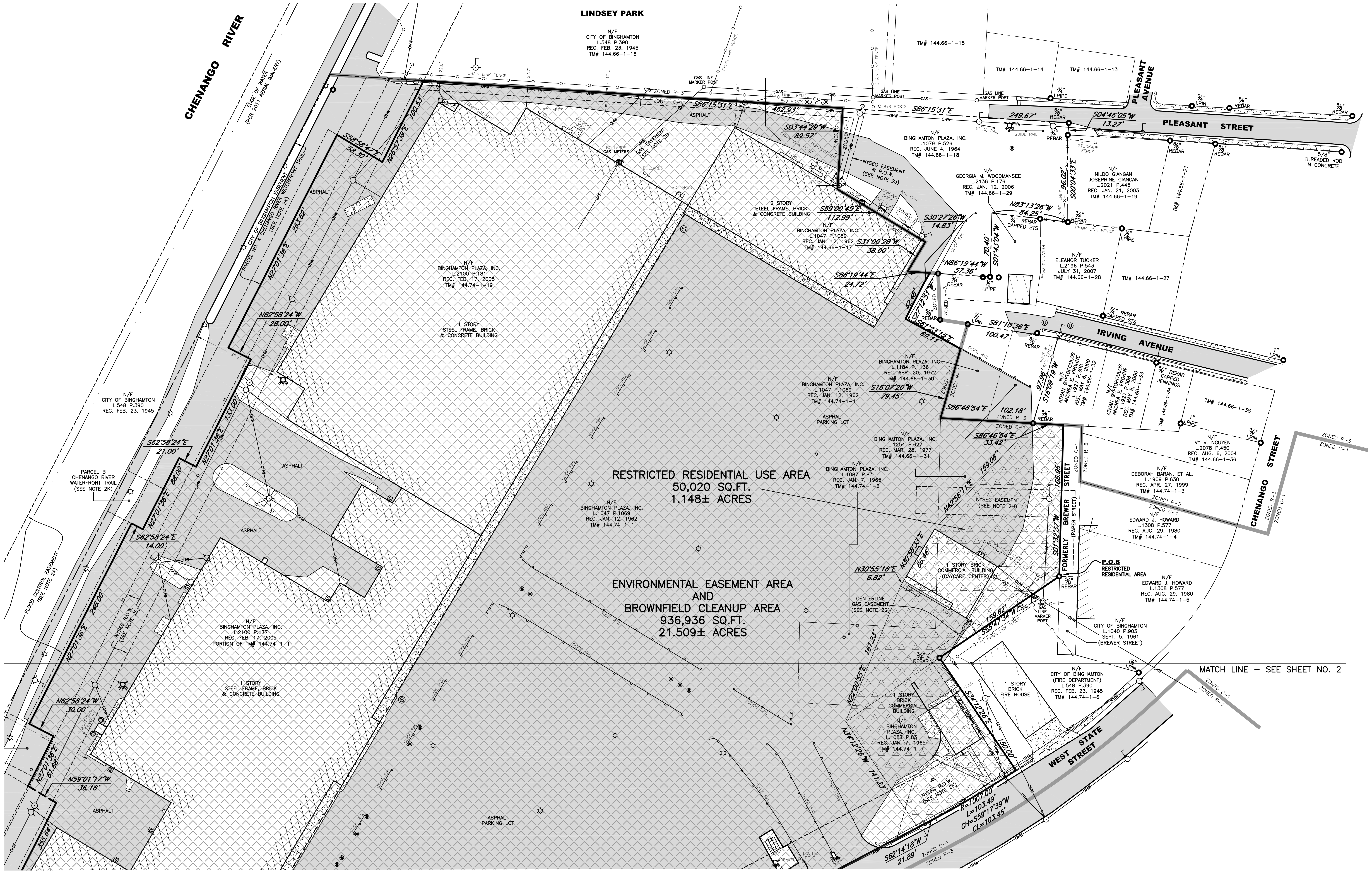
5) N42°56'11 "E, a distance of 159.08 feet to a 5/8 inch rebar at its intersection with the division line between the property now or formerly of Athan Gyftopoulos & Andrea E. Frohne per L 1927 P. 308 (TM# 144.66-1-32) on the north and said Binghamton Plaza, Inc. on the south; thence S86°46'54"E along the last mentioned division line, a distance of 33.42 feet to a point at its intersection with said westerly boundary of former Brewer Street (paper street); thence S01°32'37'W along said westerly boundary, a distance of 166.95 feet to the POINT OF BEGINNING.

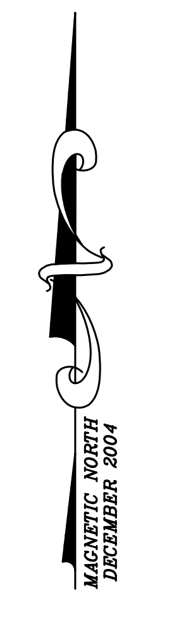
The above described parcel contains 50,020 square feet or 1.148 acres, more or less.

The above described parcel is subject to any and all easements of record and/or as found in the field.

Bearings are referred to Magnetic North as the needle pointed in December of 2004.

The above described parcel is shown on the map entitled "Environmental Easement Survey, Binghamton Plaza, BCP Site No. C704049, West State Street, Irving Avenue & Pleasant Street, City of Binghamton, Broome County, New York State" prepared by Keystone Associates Architects, Engineers and Surveyors, LLC as project number 1001.26512, Sheet 1 and 2 of 2 dated December 6, 2013 and revised October 7, 2014.





NOTES

1) PREMISES SOURCES OF TITLE BEING THE FOLLOWING DOCUMENTS RECORDED IN THE BROOME COUNTY CLERK'S OFFICE:
   - A) L.1047 P.1069 JANUARY 12, 1962
   - B) L.1079 P.526 JUNE 4, 1964
   - C) L.1087 P.83 JANUARY 7, 1965
   - D) L.1184 P.1136 APRIL 20, 1972
   - E) L.1254 P.627 MARCH 28, 1977

2) SUBJECT TO THE FOLLOWING EASEMENTS OF RECORD AS RECORDED IN THE BROOME COUNTY CLERK'S OFFICE:
   - A) AN EASEMENT GRANTED TO THE STATE OF NEW YORK INCLUDING A "PRIVATE ROADWAY", "DRAINAGE STRUCTURES AND DITCHES", "WALLS AND LEVEES" AND "THE RIGHT AT ALL TIMES OF INGRESS, EGRESS AND REGRESS BY THE STATE OF NEW YORK, ITS ASSIGNS AND/OR THEIR AGENTS IN THE IMPROVEMENT FOR PURPOSES CONNECTED WITH THE FLOOD CONTROL PROJECTS" ON FEBRUARY 25, 1941, MODIFIED BY A PARTIAL RELEASE OF THE EASEMENT IN L.1175 P.47 ON SEPTEMBER 25, 1971. (SEE REFERENCE DATA 4)
   - B) 20' STORM WATER SEWER EASEMENT GRANTED TO THE CITY OF BINGHAMTON IN L.1047 P.1069 ON JANUARY 12, 1962.
   - C) 50' WIDE INGRESS, EGRESS & REGRESS EASEMENT AND R.O.W. GRANTED IN L.1059 P.281 ON OCTOBER 19, 1962.
   - D) INGRESS, EGRESS AND REGRESS EASEMENT AND R.O.W. GRANTED TO THE CITY OF BINGHAMTON IN L.1068 P.212 ON JULY 18, 1963.
   - E) ELECTRIC & COMMUNICATION R.O.W.'S AND BUILDING HEIGHT RESTRICTION GRANTED TO NYSEG IN L.1068 P.263 ON JULY 18, 1963.
   - F) 50' WIDE ELECTRIC & COMMUNICATION R.O.W. GRANTED TO NYSEG IN L.1069 P.570 ON AUGUST 22, 1963.
   - G) PIPE LINE EASEMENT GRANTED TO COLUMBIA GAS OF NEW YORK, INC. IN L.1085 P.524 ON NOVEMBER 16, 1964.
   - H) 30' WIDE POLE LINE EASEMENT & R.O.W. GRANTED TO NYSEG IN L.1097 P.1086 ON OCTOBER 27, 1965.
   - I) PIPE LINE EASEMENT GRANTED TO COLUMBIA GAS OF NEW YORK, INC. IN L.1127 P.509 ON OCTOBER 30, 1967.
   - J) 10' WIDE ELECTRIC & COMMUNICATION POLE LINE EASEMENT & R.O.W. GRANTED TO NYSEG IN L.1210 P.1050 ON FEBRUARY 1, 1974.
   - K) CHENANGO RIVER WATERFRONT TRAIL EASEMENT GRANTED TO CITY OF BINGHAMTON IN L. 2159 P. 399 ON AUGUST 15, 2006.

3) SUBJECT TO ANY AND ALL OTHER EASEMENTS OF RECORD AND/OR AS FOUND IN THE FIELD.

4) ORIGINAL FIELD WORK PERFORMED ON DECEMBER 21, 2004 AND UPDATED ON OCTOBER 16, 2012.

5) ENVIRONMENTAL EASEMENT FOLLOWS SOURCE DEEDS; EXCEPT ALONG FLOOD CONTROL EASEMENT AND/OR CHENANGO RIVER WATERFRONT TRAIL EASEMENT AND IN THE NORTHEAST CORNER OF THE PROPERTY.

6) THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE TO THE PROPERTY.

REFERENCE DATA

1) "MAP OF BAYLESS PURCHASE IN THE CITY OF BINGHAMTON, BROOME COUNTY, N.Y." PREPARED BY W. WENTZ ENG. & SURVEYOR, DATED AUGUST 27, 1870, RECORDED IN THE BROOME COUNTY CLERK'S OFFICE DECEMBER 21, 1870 IN BOOK OF DEEDS L.84 P.261.

2) MAP ENTITLED "TOPOGRAPHY, CITY OF BINGHAMTON, NEW YORK" SHOWING STOW PARK IN APPROXIMATELY 1914, RECORDED WITH THE CITY OF BINGHAMTON ENGINEERING DEPARTMENT.

3) MAP ENTITLED "RESUBDIVISION OF DEWITT C. BREWER PROPERTY, COR OF STATE & CHENANGO STS, BINGHAMTON, N.Y." PREPARED BY HOADLEY & GILES CIVIL ENGINEERS, DATED DECEMBER 8, 1921, RECORDED IN THE BROOME COUNTY CLERK'S OFFICE DECEMBER 15, 1921 IN MAP BOOK 2, PAGE 325 AS MAP NO. 215 AND RELOCATED IN PLAT CABINET 2, SLEEVE 171.

4) MAP ENTITLED "STATE OF NEW YORK DEPARTMENT OF PUBLIC WORKS, FLOOD CONTROL PROJECTS, FLOOD CONTROL PROJECT NO. BINGHAMTON FLOOD PROTECTION, MAP NO. 141-R, PARCEL NO. 198" DATED SEPTEMBER 20, 1940 AND FILED IN THE BROOME COUNTY CLERK'S OFFICE JANUARY 30, 1942.

5) MAP ENTITLED "PROPERTY MAP, STOW-CHENANGO REDEVELOPMENT PROJECT, BINGHAMTON, BROOME COUNTY, NEW YORK" DATED OCTOBER 28, 1960, PREPARED BY THE CITY OF BINGHAMTON ENGINEERING DEPARTMENT, RECORDED IN THE BROOME COUNTY CLERK'S OFFICE NOVEMBER 17, 1960 IN MAP BOOK 19, PAGE 446 AS MAP NO. 1552.

6) MAP ENTITLED "PARCEL TO BE CONVEYED BY THE CITY OF BINGHAMTON, NEW YORK, (STOW FLATS CONVEYANCE TO GALESI)" PREPARED BY C.W. COLEMAN, DATED OCTOBER 4, 1962, FILED JUNE 15, 1964 WITH THE CITY CLERK, RECORDED WITH THE CITY OF BINGHAMTON ENGINEERING DEPARTMENT.

7) MAP ENTITLED "SURVEY FOR BINGHAMTON PLAZA, INC., CITY OF BINGHAMTON, COUNTY: BROOME, STATE: NEW YORK" PREPARED BY JOHN F. PURDY, DATED DECEMBER 12, 1969.

8) MAP ENTITLED "BINGHAMTON PLAZA, CITY OF BINGHAMTON – BROOME CO., N.Y." PREPARED BY D.W. HANNIG & ASSOCIATES, DATED AUGUST 12, 1987, REVISED SEPTEMBER 3, 1987.

9) MAP ENTITLED "SURVEY FOR ROBERT J. SKRABALAK, 3 WEST STATE STREET, CITY OF BINGHAMTON, BROOME COUNTY, NEW YORK STATE" PREPARED BY KEYSTONE ASSOCIATES ARCHITECTS, ENGINEERS & SURVEYORS, LLC, PROJECT NUMBER 53.24003, DATED NOVEMBER 25, 2003.

ZONING NOTES

ZONING DISTRICT:
C-1 (SERVICE COMMERCIAL)
R-3 (RESIDENTIAL MULTI-UNIT DWELLING)

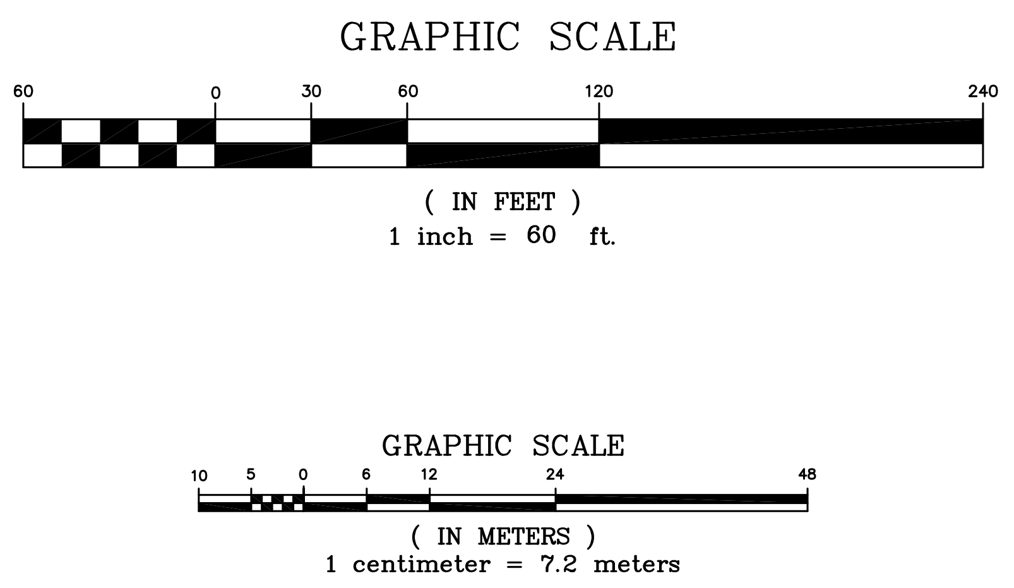
UNDERGROUND UTILITIES NOTE

THE USER OF THIS MAP IS CAUTIONED THAT THE UNDERGROUND UTILITY LOCATIONS ARE NOT GUARANTEED, NOR IS THERE ANY GUARANTEE THAT ALL EXISTING UTILITIES WHETHER FUNCTIONAL OR ABANDONED WITHIN THE PROJECT AREA ARE SHOWN ON THIS DRAWING.

THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES BEFORE STARTING WORK & SHALL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM HIS WORK. CONTRACTOR SHALL NOTIFY DIG SAFELY NY (FORMERLY UFPO) 1-800-962-7962 IN ACCORDANCE WITH 16 NYCRR PART 753.

LEGEND

○	IRON FOUND AND NOTED	⚲	FIRE HYDRANT
— —	PROPERTY LINE	⋈	WATER VALVE
━	ENVIRONMENTAL EASEMENT LINE	◎	UNKNOWN TYPE MANHOLE
- -	TAX MAP LINE	Ⓢ	SEWER MANHOLE
- - -	EASEMENT LINE	▫	CATCH BASIN
▬	ZONING LIMIT LINE	◉	4.5' CONCRETE PLANTER
TM#	TAX MAP NUMBER	⊠	GAS METER
N/F	NOW OR FORMERLY	⊸	SINGLE POST SIGN
NYSEG	NEW YORK STATE ELECTRIC & GAS	⊸⊸	DOUBLE POST SIGN
R.O.W.	RIGHT OF WAY	—OHW—	OVERHEAD UTILITIES
∅	UTILITY POLE	—COM—	UNDERGROUND COMMUNICATIONS LINE
⌀	UTILITY POLE WITH LIGHT	—GAS—	GAS LINE
☼	LIGHT POLE	—STORM—	STORM SEWER LINE
→	GUY WIRE		



TAX MAP REFERENCE TABLE	
CURRENT COUNTY TAX MAP NO.	OLD CITY TAX MAP NO.
144.66-1-13	1101008
144.66-1-14	1101047
144.66-1-15	1101050
144.66-1-16	1101046
144.66-1-17	1101048
144.66-1-18	1101028
144.66-1-19	1101029
144.66-1-21	1101030
144.66-1-27	1101037
144.66-1-28	1101038
144.66-1-29	1101039
144.66-1-30	1101040
144.66-1-31	1101041
144.66-1-32	1101042
144.66-1-33	1101043
144.66-1-34	1101044
144.66-1-35	1101045
144.66-1-36	1110001
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144.74-1-4	1110037
144.74-1-5	1110004
144.74-1-6	1110036
144.74-1-7	1110050
144.74-1-8	1110102
144.74-1-9	1115008
144.74-1-19	1110103
144.81-2-1	1115025
144.82-1-1	1115020

ENGINEERING / INSTITUTIONAL CONTROLS

Commercial Use Areas - Soil Cover consisting of 12" of clean fill (or clean fill plus a paving system or concrete totaling 12") to cover entire environmental easement area or, for non-vegetated areas (buildings, roadways, parking lots, etc.), a cover by either asphalt or concrete at least 6 inches thick, or a building.

Restricted Residential Use Areas - Soil Cover consisting of 24" of clean fill (or clean fill plus a paving system or concrete totaling 24") to cover entire environmental easement area or, for non-vegetated areas (buildings, roadways, parking lots, etc.), a cover by either asphalt or concrete at least 6 inches thick, or a building.

- Ground water use restriction covers entire Environmental Easement area.
- Evaluation for potential vapor intrusion of any buildings is required.

▨	ENVIRONMENTAL EASEMENT HATCH – (ENVIRONMENTAL EASEMENT AREA SUBJECT TO SITE MANAGEMENT PLAN)
△ △ △	RESTRICTED RESIDENTIAL USE HATCH
▒	ASPHALT HATCH
⁘	CONCRETE HATCH

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

THE ENGINEERING AND INSTITUTIONAL CONTROLS for these Easements are set forth in more detail in the Site Management Plan ("SMP"). A copy of the SMP must be obtained by any party with an interest in the property. The SMP may be obtained from New York State Department of Environmental Conservation, Division of Environmental Remediation, Site Control Section, 625 Broadway, Albany, NY 12233 or at derweb@gw.dec.state.ny.us.

KEYSTONE ASSOCIATES
ARCHITECTS, ENGINEERS AND SURVEYORS, LLC

58 Exchange Street
Binghamton, New York 13901
Phone: 607.722.1100
Fax: 607.722.2515
Email: info@keyscomp.com
www.keyscomp.com

RODNEY LEE CAREY No. 049642
RODNEY L. CAREY, PLS LIC. NO. 049642

WARNING:
It is a violation of Section 7209, Subdivision 2, of the New York State Education Law for any person unless acting under the direction of a Licensed Professional Architect, Engineer or Surveyor to alter in any way; any plans, specifications, plats or reports to which the seal of a Professional Architect, Engineer or Surveyor has been applied.
Only boundary survey maps with the surveyor's embossed seal are genuine true and correct copies of the surveyor's original work and opinion.

NO.	REVISIONS AND DESCRIPTIONS	DATE:
1	NYSDEC COMMENTS.	10/07/14

ENVIRONMENTAL EASEMENT/BROWNFIELD CLEANUP SURVEY

BINGHAMTON PLAZA
BCP SITE NO. C704049

WEST STATE STREET,
IRVING AVENUE & PLEASANT STREET
CITY OF BINGHAMTON BROOME COUNTY NEW YORK STATE

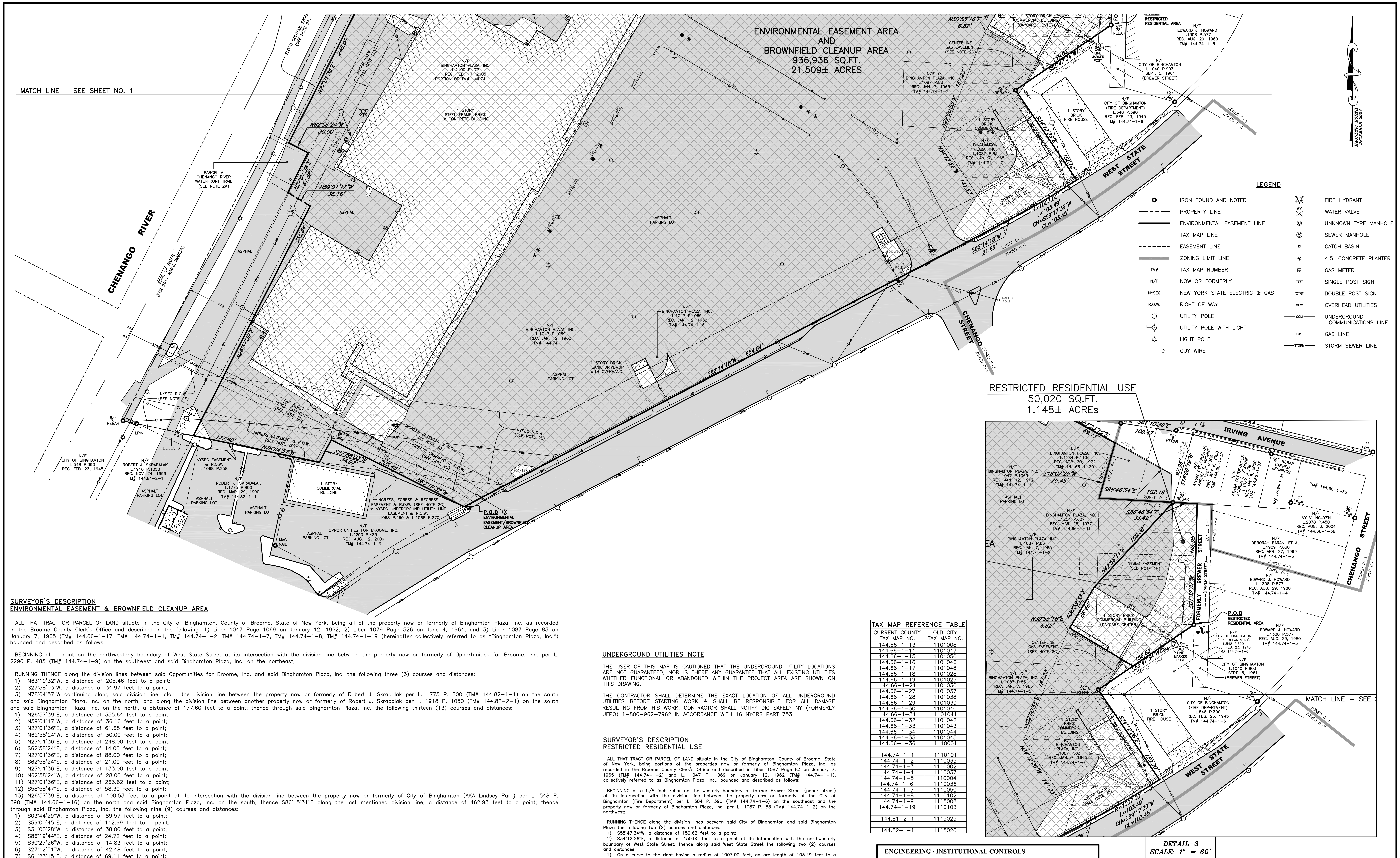
SHEET NO.
1 of 2

PROJECT NO.
1001.26512

DATE OF FIELD WORK:
SEE NOTE NO. 4 (SHEET 1 OF 2)

DATE OF MAP:
12/6/13

CAD FILE NO.:
100126512B-1.dwg



SURVEYOR'S DESCRIPTION
ENVIRONMENTAL EASEMENT & BROWNFIELD CLEANUP AREA

ALL THAT TRACT OR PARCEL OF LAND situate in the City of Binghamton, County of Broome, State of New York, being all of the property now or formerly of Binghamton Plaza, Inc. as recorded in the Broome County Clerk's Office and described in the following: 1) Liber 1047 Page 1069 on January 12, 1962; 2) Liber 1079 Page 526 on June 4, 1964; and 3) Liber 1087 Page 83 on January 7, 1965 (TM# 144.66–1–17, TM# 144.74–1–1, TM# 144.74–1–2, TM# 144.74–1–7, TM# 144.74–1–8, TM# 144.74–1–19 (hereinafter collectively referred to as "Binghamton Plaza, Inc.") bounded and described as follows:

BEGINNING at a point on the northwesterly boundary of West State Street at its intersection with the division line between the property now or formerly of Opportunities for Broome, Inc. per L. 2290 P. 485 (TM# 144.74–1–9) on the southwest and said Binghamton Plaza, Inc. on the northeast;

RUNNING THENCE along the division lines between said Opportunities for Broome, Inc. and said Binghamton Plaza, Inc. the following three (3) courses and distances:
1) N63°19'32"W, a distance of 205.46 feet to a point;
2) S27°58'03"W, a distance of 34.97 feet to a point;
3) N78°04'57"W continuing along said division line, along the division line between the property now or formerly of Robert J. Skrabalak per L. 1775 P. 800 (TM# 144.82–1–1) on the south and said Binghamton Plaza, Inc. on the north, and along the division line between another property now or formerly of Robert J. Skrabalak per L. 1918 P. 1050 (TM# 144.82–2–1) on the south and said Binghamton Plaza, Inc. on the north, a distance of 177.60 feet to a point; thence through said Binghamton Plaza, Inc. the following thirteen (13) courses and distances:
1) N26°57'39"E, a distance of 355.64 feet to a point;
2) N59°01'17"W, a distance of 36.16 feet to a point;
3) N27°01'36"E, a distance of 61.68 feet to a point;
4) N62°58'24"W, a distance of 30.00 feet to a point;
5) N27°01'36"E, a distance of 248.00 feet to a point;
6) S62°58'24"E, a distance of 14.00 feet to a point;
7) N27°01'36"E, a distance of 88.00 feet to a point;
8) S62°58'24"E, a distance of 21.00 feet to a point;
9) N27°01'36"E, a distance of 133.00 feet to a point;
10) N62°58'24"W, a distance of 28.00 feet to a point;
11) N27°01'36"E, a distance of 263.62 feet to a point;
12) S58°58'47"E, a distance of 58.30 feet to a point;
13) N26°57'39"E, a distance of 100.53 feet to a point at its intersection with the division line between the property now or formerly of City of Binghamton (AKA Lindsey Park) per L. 548 P. 390 (TM# 144.66–1–16) on the north and said Binghamton Plaza, Inc. on the south; thence S86°15'31"E along the last mentioned division line, a distance of 462.93 feet to a point; thence through said Binghamton Plaza, Inc. the following nine (9) courses and distances:
1) S03°44'29"W, a distance of 89.57 feet to a point;
2) S59°00'45"E, a distance of 112.99 feet to a point;
3) S31°00'28"W, a distance of 38.00 feet to a point;
4) S86°19'44"E, a distance of 24.72 feet to a point;
5) S30°27'26"W, a distance of 14.83 feet to a point;
6) S27°12'51"W, a distance of 42.48 feet to a point;
7) S61°23'15"E, a distance of 69.11 feet to a point;
8) S16°07'20"W, a distance of 79.45 feet to a point;
9) S86°46'54"E, a distance of 102.18 feet to a 5/8 inch rebar at its intersection with the division line between the property now or formerly of Athan Gyftopoulos & Andrea E. Frohne per L. 1927 P. 308 (TM# 144.66–1–32) on the north and said Binghamton Plaza, Inc. on the south; thence continuing S86°46'54"E along the last mentioned division line, a distance of 33.42 feet to a point at its intersection with the westerly boundary of Brewer Street (paper street); thence S01°32'37"W along said westerly boundary, a distance of 166.95 feet to a 5/8 inch rebar at its intersection with the division line between another property now or formerly of the City of Binghamton (Fire Department) per L. 548 P. 390 (TM# 144.74–1–6) on the southeast and said Binghamton Plaza, Inc. on the northwest; thence along the division lines between said City of Binghamton (Fire Department) and said Binghamton Plaza, Inc. the following two (2) courses and distances:
1) S55°47'34"W, a distance of 159.62 feet to a 3/4 inch rebar;
2) S34°12'26"E, a distance of 150.00 feet to a point at its intersection with the northwesterly boundary of Chenango Street; thence along said Chenango Street on a curve to the right having a radius of 1007.00 feet, an arc length of 103.49 feet to a point, said curve being subtended by a chord having a bearing of S59°17'39"W and a length of 103.45 feet; thence S62°14'18"W continuing along said Chenango Street and along the northwesterly boundary of said West State Street, a distance of 854.84 feet to the POINT OF BEGINNING.

The above described parcel contains 936,936 square feet or 21.509 acres, more or less.

UNDERGROUND UTILITIES NOTE

THE USER OF THIS MAP IS CAUTIONED THAT THE UNDERGROUND UTILITY LOCATIONS ARE NOT GUARANTEED, NOR IS THERE ANY GUARANTEE THAT ALL EXISTING UTILITIES WHETHER FUNCTIONAL OR ABANDONED WITHIN THE PROJECT AREA ARE SHOWN ON THIS DRAWING.

THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES BEFORE STARTING WORK & SHALL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM HIS WORK. CONTRACTOR SHALL NOTIFY DIG SAFELY NY (FORMERLY UFPO) 1–800–962–7962 IN ACCORDANCE WITH 16 NYCRR PART 753.

SURVEYOR'S DESCRIPTION
RESTRICTED RESIDENTIAL USE

ALL THAT TRACT OR PARCEL OF LAND situate in the City of Binghamton, County of Broome, State of New York, being portions of the properties now or formerly of Binghamton Plaza, Inc. as recorded in the Broome County Clerk's Office and described in Liber 1087 Page 83 on January 7, 1965 (TM# 144.74–1–2) and L. 1047 P. 1069 on January 12, 1962 (TM# 144.74–1–1), collectively referred to as Binghamton Plaza, Inc., bounded and described as follows:

BEGINNING at a 5/8 inch rebar on the westerly boundary of former Brewer Street (paper street) at its intersection with the division line between the property now or formerly of the City of Binghamton (Fire Department) per L. 584 P. 390 (TM# 144.74–1–6) on the southeast and the property now or formerly of Binghamton Plaza, Inc. per L. 1087 P. 83 (TM# 144.74–1–2) on the northwest;

RUNNING THENCE along the division lines between said City of Binghamton and said Binghamton Plaza the following two (2) courses and distances:
1) S55°47'34"W, a distance of 159.62 feet to a point;
2) S34°12'26"E, a distance of 150.00 feet to a point at its intersection with the northwesterly boundary of West State Street; thence along said West State Street the following two (2) courses and distances:
1) On a curve to the right having a radius of 1007.00 feet, an arc length of 103.49 feet to a point, said curve being subtended by a chord having a bearing of S59°17'39"W and a length of 103.45 feet;
2) S62°14'18"W, a distance of 21.89 feet to a point; thence through said Binghamton Plaza the following five (5) courses and distances:
1) N34°12'26"W, a distance of 141.23 feet to a point;
2) N22°00'55"E, a distance of 161.23 feet to a point;
3) N30°55'16"E, a distance of 6.82 feet to a point;
4) N30°58'33"E, a distance of 66.46 feet to a point;
5) N42°56'11"E, a distance of 159.08 feet to a 5/8 inch rebar at its intersection with the division line between the property now or formerly of Athan Gyftopoulos & Andrea E. Frohne per L. 1927 P. 308 (TM# 144.66–1–32) on the north and said Binghamton Plaza, Inc. on the south; thence S86°46'54"E along the last mentioned division line, a distance of 33.42 feet to a point at its intersection with said westerly boundary of former Brewer Street (paper street); thence S01°32'37"W along said westerly boundary, a distance of 166.95 feet to the POINT OF BEGINNING.

The above described parcel contains 50,020 square feet or 1.148 acres, more or less.

TAX MAP REFERENCE TABLE

CURRENT COUNTY TAX MAP NO.	OLD CITY TAX MAP NO.
144.66–1–13	1101008
144.66–1–14	1101047
144.66–1–15	1101050
144.66–1–16	1101046
144.66–1–17	1101048
144.66–1–18	1101028
144.66–1–19	1101029
144.66–1–21	1101030
144.66–1–27	1101037
144.66–1–28	1101038
144.66–1–29	1101039
144.66–1–30	1101040
144.66–1–31	1101041
144.66–1–32	1101042
144.66–1–33	1101043
144.66–1–34	1101044
144.66–1–35	1101045
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144.74–1–3	1110002
144.74–1–4	1110037
144.74–1–5	1110004
144.74–1–6	1110036
144.74–1–7	1110050
144.74–1–8	1110102
144.74–1–9	1115008
144.74–1–19	1110103
144.81–2–1	1115025
144.82–1–1	1115020

ENGINEERING / INSTITUTIONAL CONTROLS

Commercial Use Areas - Soil Cover consisting of 12" of clean fill (or clean fill plus a paving system or concrete totaling 12") to cover entire environmental easement area or, for non-vegetated areas (buildings, roadways, parking lots, etc.), a cover by either asphalt or concrete at least 6 inches thick, or a building.

Restricted Residential Use Areas - Soil Cover consisting of 24" of clean fill (or clean fill plus a paving system or concrete totaling 24") to cover entire environmental easement area or, for non-vegetated areas (buildings, roadways, parking lots, etc.), a cover by either asphalt or concrete at least 6 inches thick, or a building.

- Ground water use restriction covers entire Environmental Easement area.
- Evaluation for potential vapor intrusion of any buildings is required.

▨	ENVIRONMENTAL EASEMENT HATCH – (ENVIRONMENTAL EASEMENT AREA SUBJECT TO SITE MANAGEMENT PLAN)
△ △ △	RESTRICTED RESIDENTIAL USE HATCH
▒	ASPHALT HATCH
░	CONCRETE HATCH

GRAPHIC SCALE
10 5 0 6 12 24 48
(IN METERS)
1 centimeter = 7.2 meters

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

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

THE ENGINEERING AND INSTITUTIONAL CONTROLS for these Easements are set forth in more detail in the Site Management Plan ("SMP"). A copy of the SMP must be obtained by any party with an interest in the property. The SMP may be obtained from New York State Department of Environmental Conservation, Division of Environmental Remediation, Site Control Section, 625 Broadway, Albany, NY 12233 or at derweb@gw.dec.state.ny.us.

ENVIRONMENTAL EASEMENT/BROWNFIELD CLEANUP SURVEY
BINGHAMTON PLAZA
BCP SITE NO. C704049
WEST STATE STREET,
IRVING AVENUE & PLEASANT STREET
CITY OF BINGHAMTON BROOME COUNTY NEW YORK STATE

SHEET NO.
2 of 2
PROJECT NO.
1001.26512
DATE OF FIELD WORK:
SEE NOTE NO. 4 (SHEET 1 OF 2)
DATE OF MAP:
12/6/13
CAD FILE NO.:
100126512B-1.dwg

NO.	REVISIONS AND DESCRIPTIONS	DATE:
1	NYSDEC COMMENTS.	10/07/14

WARNING:
It is a violation of Section 7209, Subdivision 2, of the New York State Education Law for any person unless acting under the direction of a Licensed Professional Architect, Engineer or Surveyor to alter in any way, any plans, specifications, plats or reports to which the seal of a Professional Architect, Engineer or Surveyor has been applied.

Only boundary survey maps with the surveyor's embossed seal are genuine true and correct copies of the surveyor's original work and opinion.

RODNEY LEE CAREY No. 049642
RODNEY L. CAREY, PLS LIC. NO. 049642

KEYSTONE ASSOCIATES
ARCHITECTS, ENGINEERS AND SURVEYORS, LLC
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Binghamton, New York 13901
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Email: info@keyscomp.com
www.keyscomp.com

Brickhouse Environmental

APPENDIX D

HEALTH AND SAFETY PLAN

APPENDIX D

HEALTH AND SAFETY PLAN FOR SITE MANAGEMENT PLAN

BINGHAMTON PLAZA INC.
33 WEST STATE STREET
BINGHAMTON, NEW YORK
NYSDEC SITE NUMBER: C704049

DECEMBER 2014

BE PROJECT NO. 06-2175-3

PREPARED FOR:

BINGHAMTON PLAZA, INC.
30 GALESI DRIVE, SUITE 301
WAYNE, NEW JERSEY 07470

PREPARED BY:

BRICKHOUSE ENVIRONMENTAL
515 SOUTH FRANKLIN STREET
WEST CHESTER, PENNSYLVANIA 19382
610.692.5770

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1.0 INTRODUCTION

This document represents the Health and Safety Plan (HASP) prepared for the Site Management Plan at the Binghamton Plaza property located at 33 State Street in Binghamton, New York. This HASP is Appendix D to the Site Management Plan (SMP) and was adapted from the HASP prepared by Delta Environmental Consultants, Inc. as part of the Binghamton Plaza Site Investigation Work Plan (SIWP) dated February 15, 2006.

This document is intended to be used in conjunction with the SMP, Community Air Monitoring Plan and Fugitive Dust and Particulate Monitoring Plan to ensure the protection of human health and the environment within and proximal to the site during site management. This is necessary given the prior use of the property as a disposal site for municipal solid waste and incinerator ash prior to being developed as a commercial strip mall. A significant quantity of landfill waste/fill remains at the site beneath a layer of soil fill material, asphalt paving and building foundations. The possible site management activity includes the maintenance of engineering controls (asphalt cap and/or clean soil cover) over specific areas of the site, which may entail shallow excavation. Institutional controls will be used to ensure the ongoing maintenance of engineering controls (i.e. cap/cover system and sub-slab depressurization systems) and to restrict the use of groundwater at the site.

This HASP was prepared to address potential physical and chemical hazards that may be encountered during the site management activities at the site. Shallow excavation work may be required during maintenance of the capping/ cover system. The HASP describes the procedures to be followed during any excavation work conducted throughout the site and summarizes the chemical and physical hazards of concern. All excavation work conducted at the Binghamton Plaza site should be directly overseen by a qualified environmental professional (QEP) or a designated site safety office (SSO).

All excavation work, regardless of location, can be physically hazardous to workers. This HASP is focused toward the chemical and physical hazards specific to the Binghamton Plaza site. Excavation contractors should address all general physical hazards typically associated with any proposed excavation at the site. Also, it is the responsibility of each excavation contractor to ensure that their staff receives appropriate training if they have the potential to come into contact with hazardous substances at the site. This may also include training in the use of personal protective equipment (PPE) and PPE fit testing. All personnel who are potentially exposed to site contaminants must participate in a medical surveillance program and possess current safety and health training as defined by OSHA at 29 CFR 1910.120.

2.0 CHEMICAL AND PHYSICAL HAZARDS OF CONCERN

Prior environmental site investigation work has not identified significant or gross contamination anywhere within the property boundaries in soil, groundwater, storm water or sediment. In general, the buried landfill waste/fill has not been found to contain significantly elevated concentrations of regulated substances. Trace to moderate concentrations of regulated substances have been found in groundwater and soil samples collected from the site. It is important to note that given the varied composition of the buried landfill waste/fill, unexpected waste materials may be encountered during excavation activities. Table 1 (below) lists the specific regulated substances that have been detected in soil and groundwater. The types of regulated substances detected at the site include volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), PCBs and metals.

It is unlikely that groundwater would be encountered during excavation activities given the significant depth to the regional water table (approximately 20-feet below grade). However, shallow (localized) perched groundwater has been found within the landfill waste/fill material. These areas appear to be limited in extent and are only seasonally present. The depth to water in these areas has been found to be as shallow as approximately 10-feet below grade.

Methane (CH_4) gas is also of concern especially during intrusive activities such as excavation. Methane has been found at potentially combustible concentrations in soil gas beneath the site. While the landfill waste/fill is highly decomposed it is possible that some portions of the buried waste are still generating methane. Also, any methane generated may become trapped beneath the surface in pockets beneath the capping system (paving, soil fill and building foundations).

Table 1
Regulated Compounds Detected in Soil and Groundwater

	Detected in Soil and/or Fill Material	Detected in Groundwater
Volatile Organic Compounds		
1,2-Dichlorobenzene	x	
1,3-Dichlorobenzene		x
1,2-Dichloroethane	x	
1,4-Dichlorobenzene	x	x
2-Butanone	x	x
2-Hexanone		x
Acetone	x	x
Benzene	x	x
Carbon Disulfide	x	x
Chlorobenzene	x	x
Chloroform	x	x
cis-1,2-Dichloroethene	x	x
Cyclohexane	x	x
Ethylbenzene	x	x
Isopropylbenzene	x	x
Methylcyclohexane	x	x
Methylene Chloride	x	x
Methyl tert-butyl ether (MTBE)		x
Tetrachloroethene	x	x
Toluene	x	
Trichloroethene	x	x
Vinyl Chloride	x	x
Xylenes (total)	x	x

	Detected in Soil and/or Fill Material	**Detected in Groundwater**
Semi-Volatile Organic Compounds		
1,1-Biphenyl	x	
2-Methylnaphthalene	x	x
4-Methylphenol	x	
Acenaphthene	x	x
Acenaphthylene	x	
Acetophenone	x	
Anthracene	x	
Benzo(a)anthracene	x	x
Benzo(a)pyrene	x	
Benzo(b)fluoranthene	x	x
Benzo(g,h,i)perylene	x	
Benzo(k)fluoranthene	x	
bis(2-Ethylhexyl)phthalate	x	x
Carbazole	x	
Chrysene	x	x
Dibenzo(a,h)anthracene	x	
Dibenzofuran	x	
Diethyl phthalate	x	
Dimethyl phthalate	x	x
Fluoranthene	x	x
Fluorene	x	x
Indeno(1,2,3-cd)pyrene	x	
Naphthalene	x	x
Phenanthrene	x	x
Phenol	x	
Pyrene	x	x
Polychlorinated Biphenyls (PCBs)		
Aroclor 1242	x	
Aroclor 1254	x	x
Aroclor 1248	x	
Aroclor 1260	x	

	Detected in Soil and/or Fill Material	Detected in Groundwater
Metals (RCRA 8)		
Arsenic	x	x
Barium	x	x
Cadmium	x	x
Chromium	x	x
Lead	x	x
Mercury	x	x
Selenium	x	x
Silver	x	x

3.0 EXCAVATION AREA MONITORING AND ACTION LEVELS

VOCs are the main compounds of concern that may be present at the site. Since excavation activities would involve subsurface disturbance, inhalation (VOCs and dust particles), dermal contact and ingestion are considered the potential exposure pathways of concern. Methane gas is a physical hazard due to the risk of asphyxiation and combustion. The risk of asphyxiation from methane is limited due to its specific gravity of 0.55. Any methane that might enter an excavation would not be expected to accumulate.

Since the anticipated levels of potential exposure are considered low, general exposure assumptions are being made to address compliance with OSHA permissible exposure limits (PELs). For VOCs, the exposure limit being used is 5 parts per million (ppm). The action level for methane gas is 10% of the lower explosive limit (LEL). Site monitoring methods, monitoring equipment and personal protective equipment (PPE) are discussed in detail later in this section.

In addition to the 5 ppm exposure limit established for site workers, a Community Air Monitoring Plan (CAMP) (included as Appendix E in the SMP) and a Fugitive Dust and Particulate Monitoring Plan (Section 5.0 in CAMP) have also been prepared to monitor the generation and migration of VOCs and airborne particulates within and beyond the immediate work zone(s). The CAMP and Fugitive Dust and Particulate Monitoring Plan are based on NYSDEC/NYSDOH guidance and have been adapted for site specific expectations pursuant to previous investigative activities and observations as well as the anticipated excavation activities. The CAMP is included as Appendix E of the SMP and should be used in conjunction with this HASP.

3.1 Site Monitoring and Response Actions

The primary compounds of concern in excavation work areas are VOCs and methane gas. Air monitoring (where applicable) and good work practices will be used during excavation activities to ensure that appropriate personal protection is used and to minimize potential exposures. Appropriate monitoring equipment to be used during site activities is described below. All field monitoring will be conducted by or under the supervision of a QEP or SSO. The QEP or SSO will properly maintain and calibrate all monitoring instruments throughout the field activities to ensure their accuracy and reliability.

Some VOCs have been identified in landfill waste/fill during previous investigations at the site. Given the size and depth of a particular excavation it is possible that site workers could be exposed to VOC vapors through inhalation. To ensure protection of site workers, monitoring will be conducted during all excavation activities.

Air monitoring for VOCs and methane gas will be performed during excavation activities, as determined necessary by the QEP or SSO. Direct reading instrumentation, such as a photoionization (PID) or flame ionization detector (FID) will be utilized for monitoring VOCs. A four-gas meter equipped with a methane detector should be used for the direct measurement of percent LEL. A common four-gas meter specification sheet is provided as Attachment 1. Based on the exposure levels in the breathing zone of site workers, the QEP or SSO will determine if an upgrade in respiratory protection is warranted. The physical hazards associated with methane gas cannot be addressed through the use of PPE. Temporary work stoppage or excavation venting may be necessary to mitigate these hazards. These upgrade levels are presented in the following table (Table 2) along with response actions.

TABLE 2
ACTION LEVELS AND RESPONSE ACTIONS

Total VOC Concentration (ppm) or Methane Gas Concentration (%LEL)	Required Action and/or Personal Protection
VOCs – Detection Limit to 5 ppm	Level D personal protection
VOCs – 5.0 ppm to 500 ppm	Upgrade to Level C personal protection with full-face air purifying respirators with Organic Vapor cartridges. Change cartridges after each days use, (Due to potential vinyl chloride contamination).
VOCs – Over 500 ppm	Notify the Site Safety Officer or Qualified Environmental Professional for Level B provisions or implement means to control exposure levels.
Methane Gas (CH_4) – Detection Limit to 10% of Lower Explosive Limit	Level D personal protection
Methane Gas (CH_4) – Greater than or equal to 10% of Lower Explosive Limit	Discontinue excavation and clear work area. Allow methane gas to vent. If unassisted venting does not lower concentrations than active venting should be used to maintain an acceptable methane concentration.

4.0 PERSONAL PROTECTIVE EQUIPMENT GUIDELINES

A critical aspect of field crew safety is appropriate personal protective equipment (PPE). PPE refers to the types of footwear, headwear, eyewear, ear wear, coveralls, gloves and respiratory protection each individual will wear while performing a specific task(s) and exposed to a particular chemical(s) at a given concentration(s). The levels of PPE are referred to as Level D, Level C and Level B; with Level D requiring the least amount of PPE and Level B the most. This information is provided for general guidance only. Precautions should be taken at all times when moving or handling potentially contaminated soil or waste material to prevent direct contact. It is the responsibility of the excavation contractor and/or the assigned EWP or SSO to ensure site workers are supplied with the appropriate PPE and are properly trained its use.

The SSO or EWP will decide when it is necessary to upgrade; downgrade or modify the existing level of protection based on field monitoring and action levels described in Section 3.1. All investigation field activities will be performed in Level D protection at a minimum. Each level's PPE requirements may be modified by the SSO as needed. The different levels of PPE and equipment required at each level are described in the following sections for reference and are based on 29 CFR 1910.120.

4.1 Level D Protection

Level D PPE will consist of the following:
- Coveralls or a work uniform affording protection for nuisance contamination;
- Steel-toe, steel-shank work boots;
- Safety glasses; and
- Hard hat (if working around equipment or machinery).

Note: Hand washing is imperative following any contact with soil or landfill waste/fill.

Optional Equipment or as required by the SSO or QEP:
- Disposal or rubber outer boots.
- Chemical resistant gloves (recommend nitrile, neoprene, or latex).
- Hearing protection.
- Disposable outer chemical coveralls.

4.2 Level C Protection

Level C PPE will consist of:
- Full-face air purifying respirator (APR) equipped with appropriate Pl00 (HEPA equivalent) and/or organic vapor cartridges. Note: All personnel requiring respiratory protection must be medically approved and "fit-tested" with the respirator to be used;
- Chemical-resistant clothing such as Tyvek®, poly-coated Tyvek® or Saranex®;
- Outer chemical-resistant (recommend nitrile or neoprene) gloves and inner latex surgical gloves (outer gloves should be taped to the clothing sleeve);
- Steel-toe, steel-shank work boots with Tyvek® or rubber boot coverings (over boots should be taped to clothing leg); and
- Hard hat (if working around equipment or machinery).

Optional Equipment as Required by the SSO or QEP:
- Escape SCBA.
- Hearing protection.

4.3 Level B Protection

Level B PPE will consist of:
- Self-contained breathing apparatus (SCBA) in a pressure demand mode, or supplied air with escape SCBA in the pressure demand mode;
- Chemical-resistant clothing such as Trvek®, poly-coated Tyvek® or Sai-anex®;
- Outer chemical-resistant (recommend nitrile or neoprene) gloves and inner latex surgical gloves (outer gloves should be taped to the clothing sleeve);

- Steel-toe, steel- hank work boots with rubber over boots (over boots should be taped to clothing leg); and
- Hard hat (if working around equipment or machinery).

5.0 SITE OPERATION AREAS AND DECONTAMINATION

Site operation areas should be established in excavation areas if site conditions warrant, as determined by the SSO or QEP. The operation areas are designed to ensure contaminants do not leave the work areas and that all workers and PPE are properly decontaminated prior to exiting the work areas. The following sections describe the operation areas typically established in contaminated work areas following decontamination procedures.

5.1 Site Operation Areas

- Exclusion Zone (EZ): Primary exclusion zones will be established around each excavation area and, at a minimum, this zone will radiate to a distance of 25 feet from the point of operations. Appropriate personal protective equipment must be worn in this zone. This zone will be separated from the contaminant reduction zone by cones or barrier tape to prevent personnel from entering the exclusion zone boundary without appropriate protective equipment or leaving without proper decontamination.

- Contaminant Reduction Zone (CRZ): The CRZ is the transition area between the EX and the Support Zone (clean area). All personnel and equipment must be decontaminated in the CRZ upon exiting the EZ and before entering the Support Zone. The CRZ will be set up along the perimeter of the EZ at a point upwind of excavation activities.

- Support Zone (SZ): The support zone .is considered to be uncontaminated; as such, protective clothing and equipment are not required but should be available for use in emergencies. All equipment and materials are stored and maintained within this zone.

- Protective clothing is donned in the support zone before entering the contaminant reduction zone.

5.2 Decontamination Guidelines

In situations where work areas are controlled using the three-zone concept described above, all personnel must exit the EZ through an established CRZ. At a minimum, CRZ provisions will include a potable water supply, wash buckets or sprayers, cleaning tools, hand soap and clean towels. The applicable CRZ sequence of events should include:

- Wash outer boots, coveralls and outer gloves;
- Remove any outer boot or glove tape;
- Remove outer boots and either store or properly dispose of the boots;
- Re-clean and remove outer gloves. If gloves will be reused, inspect and stage the gloves; otherwise properly dispose of the gloves;
- Remove chemical resistant coveralls with care so that hands or inner clothing do not come in contact with any contaminated surfaces. Properly dispose of coveralls;
- Remove respirator and stage in CRZ area. Respirators shall be cleaned and disaffected with a sanitizing agent between uses;
- Remove and dispose of inner gloves; and
- Thoroughly wash-hands and face.

All contaminated equipment (such as the excavator/back-hoe and tools, etc.) will be thoroughly decontaminated prior to leaving the EZ. The extent of the decontamination (such as a separate decontamination pad) will be determined by the SSO or QEP. The SSO or QEP will be responsible for inspecting the decontamination of all equipment prior to leaving the EZ and the site. Any contaminated discarded PPE and wash waters should be containerized and labeled for future proper disposal.

6.0 EMERGENCY RESPONSE AND CONTACT INFORMATION

In the event of an emergency, the SSO or QEP will coordinate response activities. Appropriate authorities will be notified immediately of the nature and extent of the emergency. Table 3 provides emergency telephone numbers that will be posted in work areas or any other visible location. Directions to the nearest hospital are also included as Attachment 2.

TABLE 3
EMERGENCY CONTACT INFORMATION

Entity or Service	Contact Information
New York State Police City of Binghamton Police Department City of Binghamton Fire Department Ambulance Service	911
For general environmental information for the Binghamton Plaza property: Brickhouse Environmental	515 South Franklin Street West Chester, PA 19382 610-692-5770
Binghamton General Hospital	10-42 Mitchell Avenue Binghamton, NY 13903 607-762-2200
Spill Hotline – New York State Department of Environmental Conservation (NYSDEC)	1-800-457-7362

Brickhouse Environmental

APPENDIX D

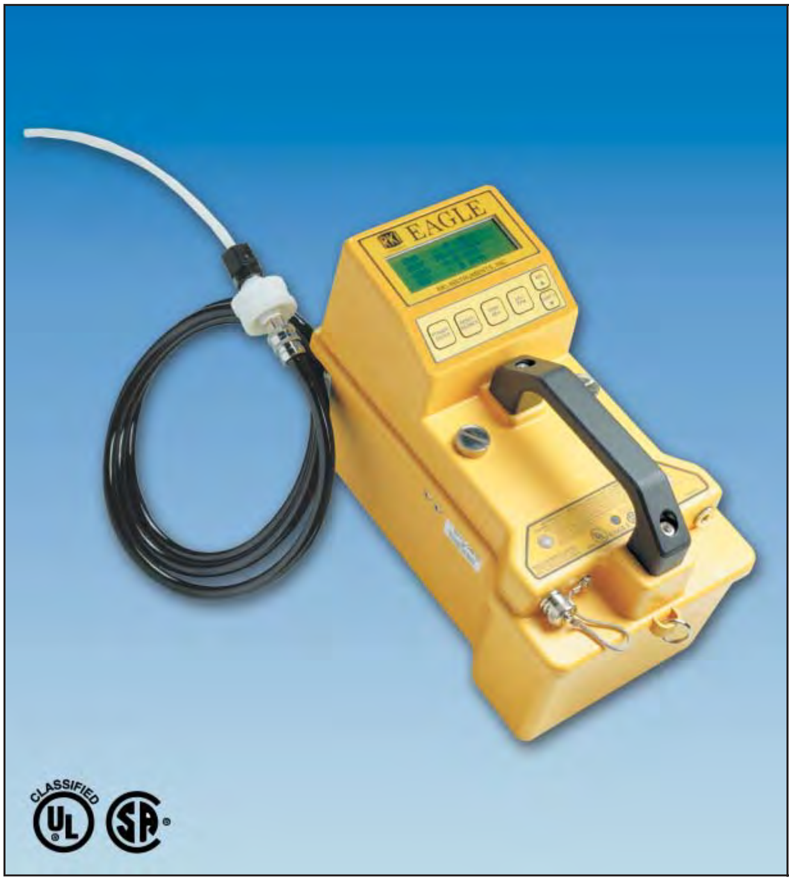
ATTACHMENT 1

FOUR GAS METER SPECIFICATION SHEET

RKI INSTRUMENTS

ONE TO SIX GAS PORTABLE MONITOR

Gas Detection For Life **EAGLE™ Model**



Features

- Simultaneous detection of up to 6 different gases
- Over 250 gas monitoring configurations
- Wide range of toxic gases
- PPM / LEL hydrocarbon detection
- Powerful long-life pump up to 125’ range with filters
- Low flow pump shut off and alarm
- Methane elimination switch for environmental use
- Security “Adjustment Lockout Switch”
- Up to 30 hours of continuous operation
- Alkaline or Ni-Cad capability
- IR Sensors available for 50% CO_2, 100% LEL CH_4, and 100% volume CH_4
- Transformer testing version available
- Datalogging option
- Autocalibration
- Dual hydrophobic filters (most versions)
- Ergonomic RFI / EMI / chemical / weather resistant enclosure
- Intrinsically safe design, CSA (C / US) & UL Classified (most versions)

RKI is proud to offer the most versatile portable gas detector on the market. Equipped with features that are not available on most competitive units, the EAGLE is a powerful instrument that does more than offer standard confined space protection. Detection combinations never before offered in a portable gas monitor are now available featuring the industry’s widest selection of high quality, long life and field proven sensors.

The EAGLE features include PPM or LEL hydrocarbon detection at the push of a button, infrared sensors for CO2 and combustible monitoring including 100%volume methane, a methane elimination switch for environmental applications, a long list of super toxic gases and measurable ranges, and dual hydrophobic filters to increase its water resistant performance. For quick response and recovery from distant sampling locations, the EAGLE has a strong internal pump with a low flow auto shut off and alarm, which can draw samples up to 125 feet even with the dual hydrophobic filters in place. The EAGLE will continuously operate for over 30 hours on alkaline batteries or 18 hours on Ni-Cads. A variety of accessories are also available to help satisfy almost any application such as long sample hoses, special float probes for tank testing, datalogging, continuous operation adapters, remote alarms and strobes, and dilution fittings just to name a few.

With its ergonomic design and large glove friendly buttons, the EAGLE offers easy access to controls such as autocalibration, alarm silence, demand zero, peak hold and a wide variety of other features. Each channel has two alarm levels plus TWA and STEL alarms for toxic channels. The two alarm levels are user adjustable and can be latching or self resetting. Rugged, reliable, easy to operate and maintain, the EAGLE is the solution for just about any portable gas monitoring situation.

EAGLE™ Model

Enclosure	Weather resistant, chemical resistant, RFI / EMI coated high impact polycarbonate-polyester blend. Can operate in rain or set into 2.5" of water without damage. Ergonomically balanced with rugged top mounted handle.
Dimensions	10.5" L x 5.9" W x 7" H
Weight	5 lbs
Detection Principle	Catalytic combustion, electrochemical cell, galvanic cell, and infrared.
Sensor Life	2 years under normal conditions.
Sampling Method	Powerful, long-life pump (over 6,000 hours) can draw samples over 125 feet. Flow rate approximately 2.0 SCFH.
Display	4 x 20 LCD readout. Viewed through window in case top. Displays readings & status of all channels simultaneously. Backlight, automatic for alarms and by demand with adjustable time.
Alarms	2 alarms per channel plus TWA and STEL alarms for toxics. The two alarms are fully adjustable for levels, latching or self reset and silenceable.
Alarm Method	Buzzer 85 dB at 30 cm, dual high intensity LEDs, and flashing display.
Controls	6 external glove friendly push buttons for operation, demand zero, and autocalibration. Buttons also access LEL / ppm, alarm silence, peak hold, TWA / STEL values, battery status and many other features.
Continuous Operation	30 hours minimum using alkaline batteries, or 18 hours using Ni-Cads.
Power Source	4 alkaline or Ni-Cad, size D batteries. Charger has alkaline recognition to prevent battery damage if charging is attempted with alkalines.
Operating Temp. & Humidity	-10°C to 40°C (14°F to 104°F), 0 to 95% RH, non-condensing.
Indication Accuracy	Maximum variance +/- 5% of full scale.
Response Time	30 seconds to 90% (for most gases) using standard 5 ft hose.
Safety Rating	Intrinsically Safe, Class I, Division 1, Groups A, B, C and D. CSA (C / US) & UL Classified (most versions).
Standard Accessories	Shoulder strap, alkaline batteries, hydrophobic probe and 5 foot hose, Internal hydrophobic filter (most versions) (certain toxic versions equipped with special probe, inlet fitting and 3' teflon hose. For HF and O3 versions, 3' teflon hose used without probe).
Optional Accessories	• Datalogging of up to 4 gases (No datalogging possible on 5 or 6 gas versions or versions with more than 2 toxic sensors) • Remote alarms • Dilution fitting (50/50) • Ni-Cad batteries • Battery charger, 115 VAC, 220 VAC, or 12 VDC • Continous operation adapter, 115 VAC or 12 VDC • Extra loud buzzer • Extension probes • Large internal hydrophobic filter
Warranty	One year material and workmanship

Specifications subject to change without notice.

Gases & Detectable Ranges

Standard Confined Space Gases

Hydrocarbons (CH_4, std)	0 - 100% LEL 0 - 50,000 ppm
Oxygen (O_2)	0 - 40% Vol.
Carbon Monoxide (CO)	0 - 500 ppm
Hydrogen Sulfide (H_2S)	0 - 100 ppm

Super Toxics and Other Gases

Ammonia (NH_3)	0 - 75 ppm
Arsine (AsH_3)	0 - 1 ppm 0 - 200 ppb
Carbon Dioxide (CO_2) (I R Sensor)	0 - 5,000 ppm 0 - 10,000 ppm 0 - 5% Vol. 0 - 20% Vol. 0 - 60% Vol.
Chlorine (Cl_2)	0 - 3 ppm
Chlorine Dioxide (ClO_2)	0 - 1 ppm
Fluorine (F_2)	0 - 5 ppm
Hydrogen Fluoride (HF)	0 - 9 ppm
Hydrogen Chloride (HCl)	0 - 15 ppm
Hydrogen Cyanide (HCN)	0 - 30 ppm
Hydrogen Sulfide (H_2S)	0 - 1 ppm 0 - 30 ppm
Methane (CH_4) (IR Sensor)	0 - 100% LEL 0 - 100% Vol.
Isobutane (C_4H_{10}) (IR Sensor)	0 - 100% LEL 0 - 30% Vol.
Nitrogen Dioxide (NO_2)	0 - 15 ppm
Nitric Oxide (NO)	0 - 100 ppm
Ozone (O_3)	0 - 1 ppm
Phosphine (PH_3)	0 - 1 ppm
Silane (SiH_4)	0 - 15 ppm
Sulfur Dioxide (SO_2)	0 - 10 ppm 0 - 15 ppm

The EAGLE can be configured with up to 6 gas sensors including a maximum of 2 super toxics from the above list.

Special Features

- Low flow alarm shuts pump off to avoid damage to instrument.
- Hydrophobic filter disc in probe.
- Internal hydrophobic filter (most versions).
- Single gas calibration capability.
- Methane elimination switch for environmental applications.
- Security "Adjustment Lockout Switch".
- Confirmation beep (silenceable).
- Meets EPA Method 21 protocol for fugitive emissions testing (most applications).

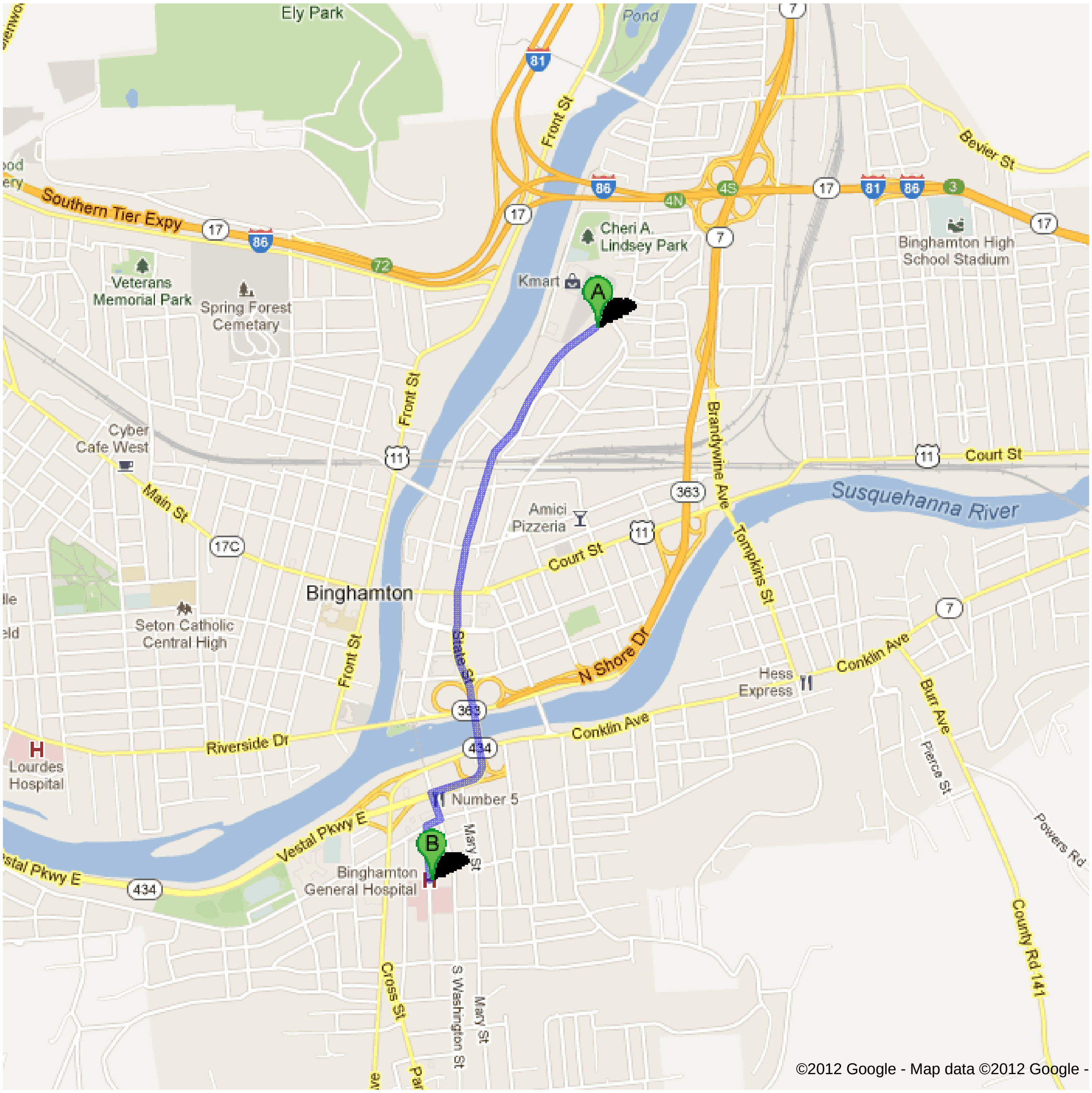
Brickhouse Environmental

APPENDIX D

ATTACHMENT 2

DIRECTIONS TO NEAREST HOSPITAL

Directions to Binghamton General Hospital
Binghamton, NY
1.8 mi – about **7 mins**



A 33 W State St, Binghamton, NY 13901

	1. Head **southwest** on **W State St** toward **N Way St** About 4 mins	go 1.2 mi total 1.2 mi
	2. Continue onto **Vestal Pkwy E**	go 0.3 mi total 1.6 mi
↰	3. Turn left onto **S Washington St** About 1 min	go 404 ft total 1.6 mi
↱	4. Take the 1st right onto **Vestal Ave**	go 223 ft total 1.7 mi
↰	5. Take the 1st left onto **Mitchell Ave**	go 0.2 mi total 1.8 mi

B **Binghamton General Hospital**
Binghamton, NY

Brickhouse Environmental

APPENDIX E

COMMUNITY AIR MONITORING PLAN

APPENDIX E

COMMUNITY AIR MONITORING PLAN FOR SITE MANAGEMENT PLAN

BINGHAMTON PLAZA INC.
33 WEST STATE STREET
BINGHAMTON, NEW YORK
NYSDEC SITE NUMBER: C704049

DECEMBER 2014

BE PROJECT NO. 06-2175-3

PREPARED FOR:

BINGHAMTON PLAZA, INC.
30 GALESI DRIVE, SUITE 301
WAYNE, NEW JERSEY 07470

PREPARED BY:

BRICKHOUSE ENVIRONMENTAL
515 SOUTH FRANKLIN STREET
WEST CHESTER, PENNSYLVANIA 19382
610.692.5770

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DBS/lt

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1.0 INTRODUCTION

This document represents the Community Air Monitoring Plan (CAMP) prepared for the Site Management Plan at the Binghamton Plaza property located at 33 State Street in Binghamton, New York. This CAMP is Appendix E to the Site Management Plan (SMP) and was adapted from the CAMP prepared by Delta Environmental Consultants, Inc. as part of the Binghamton Plaza Site Investigation Work Plan (SIWP) dated February 15, 2006. This CAMP also incorporates all pertinent aspects of the Generic CAMP provided as Appendix 1A to the New York State Department of Environmental Conservation (NYSDEC) DER-10/Technical Guidance for Site Investigation and Remediation. Fugitive dust and particulate monitoring is also addressed in this CAMP consistent with the guidelines provided in Appendix 1B of DER-10.

This document is intended to be used in conjunction with the SMP and the site specific Health and Safety Plan to ensure the protection of human health and the environment within and proximal to the site during site management activities. This is necessary given the prior use of the property as a disposal site for municipal solid waste and incinerator ash prior to being developed as a commercial strip mall. A significant quantity of landfill waste/fill remains at the site beneath a layer of soil fill cover material, asphalt paving and building foundations. The possible site management activities include the maintenance of engineering controls (asphalt cap and/or clean soil cover) and possible excavation activities for construction. Institutional controls will be used to ensure the ongoing maintenance of engineering controls (i.e. cap/cover system and sub-slab depressurization systems) and to restrict the use of groundwater at the site.

This CAMP was initially prepared to provide a process for monitoring and/or reducing/eliminating impacts to air quality within and downwind of work areas during the installation of engineering controls at the site, and will also provide a process for monitoring during the management of the site. Shallow excavation work might be required during the maintenance of the capping/cover system. Based on the results of prior remedial investigations at the site and the minimally intrusive nature of the site management activities, this work is not expected to generate significant impacts to air quality within or beyond the maintenance areas. This CAMP describes the procedures to be followed during any maintenance activities conducted throughout the site and any other intrusive activities and summarizes the monitoring procedures and corrective actions to be taken if action levels are exceeded. Air monitoring for Volatile Organic Compounds (VOCs), methane gas, and particulates is proposed in this CAMP given the known site conditions, chemicals of concern and proposed work activities. All potential excavation work conducted at the Binghamton Plaza site should be directly overseen by a qualified environmental professional (QEP) or a designated site safety office (SSO).

2.0 MONITORING FREQUENCY

The generic CAMP provided in DER-10 includes procedures for both continuous and periodic monitoring. Continuous monitoring is required during ground intrusive activities including cover system maintenance, while periodic monitoring is required during non-intrusive activities. The specifics for both monitoring frequencies are summarized below in the event both types are required.

2.1 Continuous Monitoring

Continuous monitoring will be performed during all ground-intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground-intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells. Given the nature of the contamination at the Binghamton Plaza, monitoring for VOCs, methane gas and particulates is required.

2.2 Periodic Monitoring

Periodic monitoring for VOCs and methane will be performed during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. Periodic monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/ purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

3.0 VOC MONITORING, RESPONSE LEVELS, AND ACTIONS

VOCs will be monitored at the downwind perimeter of the immediate excavation work area on a continuous basis or as otherwise specified. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work will be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. A photo-ionization detector (PID) or flame-ionization detector (FID) with data logging capabilities will be used to monitor VOC concentrations. The equipment will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment will be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the work area or half the distance to the nearest potential receptor or residential/ commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shut down.

All 15-minute readings will be recorded and be available for State (NYSDEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.

4.0 METHANE GAS MONITORING

Air monitoring for methane gas will be performed during intrusive activities at the same locations as VOC monitoring. Direct reading instrumentation, such as four-gas meter equipped with a methane detector, will be used for the direct measurement of percent LEL. A common four-gas meter specification sheet is provided as Attachment 1. The selected equipment will be calibrated at least daily, consistent with the manufacturer’s instructions and be capable of measuring methane gas as percent LEL.

The action level for %LEL in the excavation work plan (Appendix A to the SMP) is 10%, which applies to the immediate area surrounding the excavation area, not the downwind perimeter. If the methane gas levels are greater than or equal to 5% of the LEL at the downwind perimeter then the workers must discontinue excavation activities, attempt to determine the source of the methane gas and continue monitoring within and at the downwind perimeter. If the source can be determined and mitigated through partial excavation covering or other means, then work may continue so long as action levels do not continue to be exceeded. If methane levels cannot be reduced then the excavation must be completely covered and monitoring continued until concentrations reduce below action levels. Before work can resume, an alternative approach to the excavation work must be developed to reduce or eliminate the methane emissions.

5.0 FUGITIVE DUST AND PARTICULATE MONITORING

Similar to monitoring for VOCs during intrusive activities, particulate monitoring will also be conducted during the excavation of waste material, contaminated soil or other materials of unknown composition to prevent the spread of contaminated fugitive dust downwind of the work areas. Particulate monitoring is not typically necessary during the excavation, grading or placement of fill materials that have been demonstrated to be clean if all areas of contaminated soils/waste or potentially contaminated soils are already covered with clean soil or impervious surfaces. In addition to the use of particulate monitoring instruments, a common sense approach should be taken to fugitive dust monitoring and suppression. Considerations for weather conditions (high winds), direct observations of dust migration and prompt use of dust suppression techniques will prevent most fugitive dust migration issues. The following outlines the particulate monitoring procedures, monitoring equipment specifications, action levels, and record keeping requirements.

5.1 Particulate Monitoring Equipment Specifications

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the excavation areas at temporary particulate monitoring stations. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. The following list provides the minimum specifications for the monitoring equipment:

a. Objects to be measured: Dust, mists or aerosols;
b. Measurement Ranges: 0.001 to 400 mg/m^3 (1 to 400,000 :ug/m^3);
c. Precision (2-sigma) at constant temperature: +/- 10 :g/m^3 for 1-second averaging; and +/- 1.5 g/m^3 for 60-second averaging;
d. Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
e. Resolution: 0.1% of reading or 1g/m^3, whichever is larger;
f. Particle Size Range of Maximum Response: 0.1-10;
g. Total Number of Data Points in Memory: 10,000;
h. Logged Data: Each data point with average concentration, time/date and data point number;
i. Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
j. Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;

k. Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
l. Operating Temperature: -10 to 50° C (14 to 122° F);

A specification sheet is attached as Attachment 2 for a particulate meter that meets these specifications. The individual(s) responsible for the particulate monitoring program and use of the particulate meters will be properly trained in the meter's use, calibration and maintenance. Regardless of the instrument used, it will be calibrated daily per the manufacturer's instructions or more frequently should conditions warrant. The instrument will also undergo performance (span) checks on a daily basis. All calibration and performance checks will be recorded in the field and the monitoring data stored in the instrument will be offloaded daily and retained.

5.2 Particulate Monitoring Action Levels

Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes. In addition, fugitive dust migration should be visually assessed during all work activities. The action level will be established at 150 ug/m^3 (15 minutes average). While conservative, this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m^3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see Section 5.3). If dust is observed leaving the working site, additional dust suppression techniques must be employed. If the action level of 150 ug/m^3 continues to be exceeded, work must stop and the NYSDEC must be notified. The notification shall include a description of the control measures implemented to prevent further exceedances. All readings will be recorded and be available for State (NYSDEC and NYSDOH) and County Health personnel to review.

5.3 Dust Suppression Techniques

The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

a. Applying water on haul roads;
b. Wetting equipment and excavation faces;
c. Spraying water on buckets during excavation and dumping;
d. Hauling materials in properly tarped or watertight containers;
e. Restricting vehicle speeds to 10 mph;

f. Covering excavated areas and material after excavation activity ceases; and
g. Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150 ug/m^3 action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

The evaluation of weather conditions is also necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above.

APPENDIX E

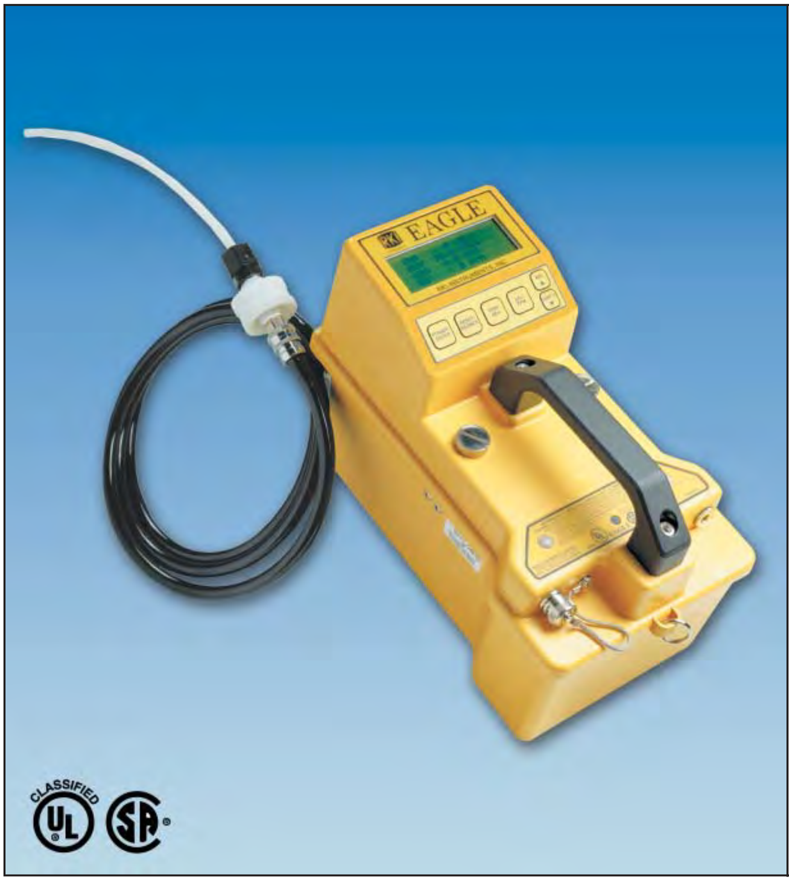
ATTACHMENT 1

METHANE GAS METER SPECIFICATION SHEET

ONE TO SIX GAS PORTABLE MONITOR

Gas Detection For Life

EAGLE™ Model



Features

- Simultaneous detection of up to 6 different gases
- Over 250 gas monitoring configurations
- Wide range of toxic gases
- PPM / LEL hydrocarbon detection
- Powerful long-life pump up to 125’ range with filters
- Low flow pump shut off and alarm
- Methane elimination switch for environmental use
- Security “Adjustment Lockout Switch”
- Up to 30 hours of continuous operation
- Alkaline or Ni-Cad capability
- IR Sensors available for 50% CO_2, 100% LEL CH_4, and 100% volume CH_4
- Transformer testing version available
- Datalogging option
- Autocalibration
- Dual hydrophobic filters (most versions)
- Ergonomic RFI / EMI / chemical / weather resistant enclosure
- Intrinsically safe design, CSA (C / US) & UL Classified (most versions)

RKI is proud to offer the most versatile portable gas detector on the market. Equipped with features that are not available on most competitive units, the EAGLE is a powerful instrument that does more than offer standard confined space protection. Detection combinations never before offered in a portable gas monitor are now available featuring the industry’s widest selection of high quality, long life and field proven sensors.

The EAGLE features include PPM or LEL hydrocarbon detection at the push of a button, infrared sensors for CO2 and combustible monitoring including 100%volume methane, a methane elimination switch for environmental applications, a long list of super toxic gases and measurable ranges, and dual hydrophobic filters to increase its water resistant performance. For quick response and recovery from distant sampling locations, the EAGLE has a strong internal pump with a low flow auto shut off and alarm, which can draw samples up to 125 feet even with the dual hydrophobic filters in place. The EAGLE will continuously operate for over 30 hours on alkaline batteries or 18 hours on Ni-Cads. A variety of accessories are also available to help satisfy almost any application such as long sample hoses, special float probes for tank testing, datalogging, continuous operation adapters, remote alarms and strobes, and dilution fittings just to name a few.

With its ergonomic design and large glove friendly buttons, the EAGLE offers easy access to controls such as autocalibration, alarm silence, demand zero, peak hold and a wide variety of other features. Each channel has two alarm levels plus TWA and STEL alarms for toxic channels. The two alarm levels are user adjustable and can be latching or self resetting. Rugged, reliable, easy to operate and maintain, the EAGLE is the solution for just about any portable gas monitoring situation.

EAGLE™ Model

Enclosure	Weather resistant, chemical resistant, RFI / EMI coated high impact polycarbonate-polyester blend. Can operate in rain or set into 2.5" of water without damage. Ergonomically balanced with rugged top mounted handle.
Dimensions	10.5" L x 5.9" W x 7" H
Weight	5 lbs
Detection Principle	Catalytic combustion, electrochemical cell, galvanic cell, and infrared.
Sensor Life	2 years under normal conditions.
Sampling Method	Powerful, long-life pump (over 6,000 hours) can draw samples over 125 feet. Flow rate approximately 2.0 SCFH.
Display	4 x 20 LCD readout. Viewed through window in case top. Displays readings & status of all channels simultaneously. Backlight, automatic for alarms and by demand with adjustable time.
Alarms	2 alarms per channel plus TWA and STEL alarms for toxics. The two alarms are fully adjustable for levels, latching or self reset and silenceable.
Alarm Method	Buzzer 85 dB at 30 cm, dual high intensity LEDs, and flashing display.
Controls	6 external glove friendly push buttons for operation, demand zero, and autocalibration. Buttons also access LEL / ppm, alarm silence, peak hold, TWA / STEL values, battery status and many other features.
Continuous Operation	30 hours minimum using alkaline batteries, or 18 hours using Ni-Cads.
Power Source	4 alkaline or Ni-Cad, size D batteries. Charger has alkaline recognition to prevent battery damage if charging is attempted with alkalines.
Operating Temp. & Humidity	-10°C to 40°C (14°F to 104°F), 0 to 95% RH, non-condensing.
Indication Accuracy	Maximum variance +/- 5% of full scale.
Response Time	30 seconds to 90% (for most gases) using standard 5 ft hose.
Safety Rating	Intrinsically Safe, Class I, Division 1, Groups A, B, C and D. CSA (C / US) & UL Classified (most versions).
Standard Accessories	Shoulder strap, alkaline batteries, hydrophobic probe and 5 foot hose, Internal hydrophobic filter (most versions) (certain toxic versions equipped with special probe, inlet fitting and 3' teflon hose. For HF and O3 versions, 3' teflon hose used without probe).
Optional Accessories	• Datalogging of up to 4 gases (No datalogging possible on 5 or 6 gas versions or versions with more than 2 toxic sensors) • Remote alarms • Dilution fitting (50/50) • Ni-Cad batteries • Battery charger, 115 VAC, 220 VAC, or 12 VDC • Continous operation adapter, 115 VAC or 12 VDC • Extra loud buzzer • Extension probes • Large internal hydrophobic filter
Warranty	One year material and workmanship

Specifications subject to change without notice.

Gases & Detectable Ranges

Standard Confined Space Gases	
Hydrocarbons (CH_4, std)	0 - 100% LEL 0 - 50,000 ppm
Oxygen (O_2)	0 - 40% Vol.
Carbon Monoxide (CO)	0 - 500 ppm
Hydrogen Sulfide (H_2S)	0 - 100 ppm
Super Toxics and Other Gases	
Ammonia (NH_3)	0 - 75 ppm
Arsine (AsH_3)	0 - 1 ppm 0 - 200 ppb
Carbon Dioxide (CO_2) (I R Sensor)	0 - 5,000 ppm 0 - 10,000 ppm 0 - 5% Vol. 0 - 20% Vol. 0 - 60% Vol.
Chlorine (Cl_2)	0 - 3 ppm
Chlorine Dioxide (ClO_2)	0 - 1 ppm
Fluorine (F_2)	0 - 5 ppm
Hydrogen Fluoride (HF)	0 - 9 ppm
Hydrogen Chloride (HCl)	0 - 15 ppm
Hydrogen Cyanide (HCN)	0 - 30 ppm
Hydrogen Sulfide (H_2S)	0 - 1 ppm 0 - 30 ppm
Methane (CH_4) (IR Sensor)	0 - 100% LEL 0 - 100% Vol.
Isobutane (C_4H_{10}) (IR Sensor)	0 - 100% LEL 0 - 30% Vol.
Nitrogen Dioxide (NO_2)	0 - 15 ppm
Nitric Oxide (NO)	0 - 100 ppm
Ozone (O_3)	0 - 1 ppm
Phosphine (PH_3)	0 - 1 ppm
Silane (SiH_4)	0 - 15 ppm
Sulfur Dioxide (SO_2)	0 - 10 ppm 0 - 15 ppm

The EAGLE can be configured with up to 6 gas sensors including a maximum of 2 super toxics from the above list.

Special Features

- Low flow alarm shuts pump off to avoid damage to instrument.
- Hydrophobic filter disc in probe.
- Internal hydrophobic filter (most versions).
- Single gas calibration capability.
- Methane elimination switch for environmental applications.
- Security "Adjustment Lockout Switch".
- Confirmation beep (silenceable).
- Meets EPA Method 21 protocol for fugitive emissions testing (most applications).

APPENDIX E

ATTACHMENT 2

PARTICULATE MONITOR SPECIFICATION SHEET

DataRAM 4™ - Model DR-4000

Portable particle sizing aerosol monitor/data logger
Dual Wavelength Nephelometer

Expandable to a complete characterization system

- Aerodynamic particle size separators measure specific size groups such as the thoracic, respirable, PM10, PM2.5, and PM1.0 fractions.
- An omnidirectional sampling inlet and an in-line mist and fog elimination heater are available for ambient air monitoring.
- An isokinetic sampling probe/nozzle kit enables duct / stack monitoring.

Real-time airborne particulate concentration and size measurements

The DataRAM 4™ (Model DR-4000) continuously monitors the real-time concentration and median particle size of airborne dust, smoke, mist, and fumes. In addition, air temperature and humidity are displayed. With appropriate particle discriminators, it provides measurements correlated with PM10, PM2.5, PM1.0, and respirable fractions. It's patented two-wavelength particle detection system provides the volume median particle diameter of the sampled aerosol, over a concentration range up to 400 mg/m^3. Unlike typical particle counting devices, the DR-4000 is totally immune to particle coincidence errors, even at the highest concentrations. Volume median particle sizes down to 0.05 µm can be measured by this unique spectral nephelometric technique.

Monitors mass concentrations of fine particulate (PM 2.5)

The DR-4000 monitors the concentrations of fine particulates in ambient air by a combination of aerodynamic size preselection, two-wavelength nephelometry, and concurrent sensing/ correction for relative humidity. This patented technique provides a continuous measurement of PM2.5, independent of particle size and moisture - *without heating, diffusion drying, or denuding the sample stream*.

Measure scattering, angstrom coefficients, and visual range

DR-4000 measures the scattering coefficient at two wavelengths (in units of inverse megameters) and computes the coefficient at the reference wavelength of 550 nanometers, as well as the angstrom exponent (a measure of atmospheric fine particle size). Based on the 550 nm scattering coefficient, the instrument then calculates the visual range in kilometers.

Self-calibrating, internal filter is designed for use in the field

Designed for fast, easy field calibration, a 37 mm membrane filter (provided) can be used in place of the zeroing HEPA filter cartridge for gravimetric calibration and/or chemical analysis of collected particulates. The calibration process takes only seconds to perform, and unlike similar instruments, field calibration does not require additional equipment. Only single point gravimetric calibration is needed.

Complete digital communications

The DR-4000 has both RS232 and RS485 data ports for two-way digital communications. Special Windows™ compatible software (provided with the instrument) facilitates data transfer either in real-time or from the logged memory. All operational and programming functions can be controlled from a remote location through the RS485 communications port. Sampling start and stop as well as data transfer can be controlled via modem or other digital transmission paths.

DataRAM 4™ - Model DR-4000

Portable particle sizing aerosol monitor/data logger
Dual Wavelength Nephelometer

Specifications

Concentration measurement range (auto-ranging):

Referred to gravimetric reference calibration (NIST traceable)
with SAE Fine test dust (mmd = 2 to 3 µm, σ_g = 2.5, as aerosolized)

0.0001 to 400 mg/m^3

Precision/repeatability (2-sigma):

At 25˚C
For single-wavelength concentration sensing

± 1% of reading or ± 0.001 mg/m^3, whichever is greater (1-second averaging)
± 0.3% of reading or ± 0.0003 mg/m^3, whichever is greater (10-second averaging)

Accuracy:

Referred to gravimetric reference calibration (NIST traceable)
with SAE Fine test dust (mmd = 2 to 3 µm, σ_g = 2.5, as aerosolized)

± 2% of reading ± precision

Resolution:

0.1% of reading or 0.0001 mg/m^3, whichever is greater

Scattering coefficient range:

10^{-7} to 0.4 m^{-1} (resolution: 3 significant digits, maximum)

Visual range (@λ= 550 nm):

0.001 to 337 km (resolution: 3 significant digits, maximum)

Ångström coefficient measurement range:

0.0 to 4.0

Particle sizing range (log-normal, σ_g = 2.0, m = 1.50):

0.05 to 4 µm

Particle size range of maximum response (concentration measurements):

0.08 to 10 µm

Temperature measurement range:

5˚F to 140˚F (-15˚C to 60˚C); accuracy: 0.05˚C

Relative humidity measurement range (@ 25˚F):

0 to 100% (accuracy: 2%, noncondensing)

Sampling flow rate range (user selectable):

1.0 to 3.0 liters/min.
(accuracy: 0.05 liters/min., adjustability: 0.1 liters/min.)

Measurement/display integration time range *(user selectable)*:

1 to 60 sec. (selectable in 1-sec. steps)

Measurement/display update frequency:

1 per sec.

HEPA filter cartridge replacement frequency (typical):

Less than 1 per 5 yrs (@ ‹ 1 mg/m^3)

Alarm level range *(user selectable)*:

Selectable over entire measurement range

Data logging averaging periods *(user selectable)*:

1 sec. to 24 hrs (selectable in 1-sec. increments)

Data logging memory capacity:

50,000 data points in up to 99 tags (data sets)

Programmable zeroing periods *(user selectable)*:

1 to 168 hrs (selectable in 1-hr increments; if enabled, logging period must be more than 10 min.)

Elapsed time readout range:

1 sec. to 100,000 hrs (over 11 yrs), in sec., min., and hrs

Digital communications:

RS232/RS485: full duplex, 9600 baud, software-controlled, device-filtered

Computer requirements:

IBM-compatible PC, Windows™ 95 or higher; 8 MB memory or more

Analog outputs *(user selectable)*:

0 to 5 V and 4 to 20 mA, with selectable full scale ranges between 0.1 and 400 mg/m^3

Power:

- Internal battery: rechargeable, sealed lead-acid, 6.5 Ahr, 6 V, 20-hr run time between charges (typical)
- AC line: universal voltage charger/power supply (included), 100-250 V, 50-60 Hz (CE marked)
- Optional solar power system (Model DR-SOL)

Alarm outputs:

- Alarm switch: 30 V (off, open), 2.5 A (on, closed)
- Alarm signal: 0 V (off), 5 V (on) (1 mA maximum load current)
- Audio alarm (back panel): More than 65 dB @ 1 m

Operating environment:

14˚F to 122˚F (-10˚C to 50˚C); 10 to 95% RH, noncondensing

Storage environment:

- 4˚F to 158˚F (-20˚C to 70˚C)

Dimensions:

5.28 in. (134 mm) H x 7.25 in. (184 mm) W x 13.63 in. (346 mm) D

Weight:

11.7 lbs (5.3 kg)

Safety approvals and certifications:

The DataRAM 4 complies with US FCC rules (Part 15) and has received CE certification.

Standard accessories included:

- Universal voltage battery charger/power supply
- Standard HEPA filter cartridge
- Analytical filter holder
- PC communications software disk
- Digital output cable
- Carrying case and instruction manual

500 Technology Court   Smyrna, GA 30082
800-241-6898 (toll free in USA) ■ 770-319-9999 (outside USA) ■ 770-319-0336 (fax)
www.thermoandersen.com ■ sales@thermoandersen.com

A Thermo Electron business

Thermo Andersen

Brickhouse Environmental

APPENDIX F

MONITORING WELL CONSTRUCTION LOGS

Brickhouse Environmental

Binghamton Plaza
33 West State Street
Binghamton, New York
Site Investigation

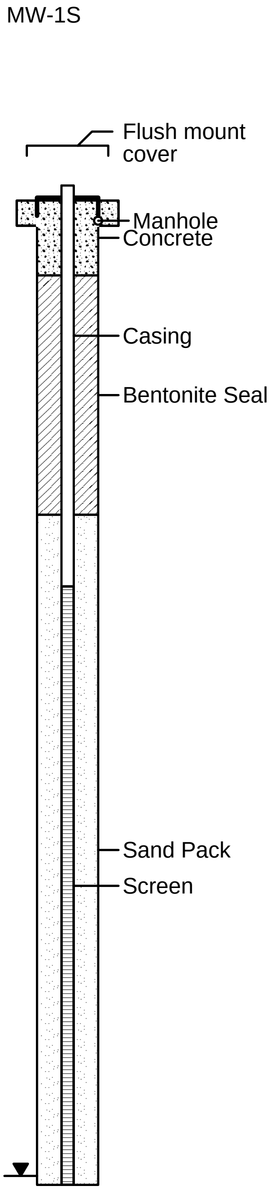
BE Project No. 06-2175-3

Date Started : 9/19/08
Date Completed : 9/19/08
Hole Diameter : 2-inch
Drilling Method : Hollow Stem Auger
Drilled By : Nature's Way
Logged By : Stephen Cap
Entered By : David Galajda
Checked By : Douglas Schott
Revised By : Douglas Schott

Log of MW-1S

(Page 1 of 1)

Depth in Feet	DESCRIPTION	PID Respons (ppm)	Sample ID
0			
	Asphalt		
	GP-GC, >15% sand, dry to moist, olive and light grey, loose, no odor/staining		
1		0.0	
2		0.0	
3		0.0	
	SM, <15% gravel, black staining, loose, mixed with glass and wood debris, no odors		
4		0.0	
	GP-GC, >15% sand, dry		
5		0.0	
	SM, <15% gravel, black staining, mixed with wood/glass debris, no odors		
6		0.0	
	GP		
7		0.0	
	ML, <15% gravel, petro odor, moist		
8	SP-SC, >15% gravel, black stained, petro odor, moist to wet, loose, mixed with fabric/wood/glass debris		
9		0.0	
10		0.0	
11		0.0	
12			
13		5.4	
14		0.4	
15			
16			
			MW-1S-16'-17'
17	ML, olive, wet, cohesive, non-plastic, no odors/staining (native material)	5.7	
18		0.0	
19		0.0	
20			



Well Construction Information

WELL CONSTRUCTION
Date Compl. : 9/22/08
Hole Diameter : 4.25 in.
Drill. Method : Hollow Stem Auger
Company Rep. : Nate and Mike

INNER CASING
Material : PVC
Diameter : 2 in.
Joints : threaded

WELL SCREEN
Material : PVC
Diameter : 2 in.
Joints : threaded
Opening : .010 slot

SAND PACK : #1 Sand Pack

ANNULUS SEAL : bentonite chips
: and slurry

OUTER CASING
Material : steel
Diameter : 8 in.
Cap : locking

PID measurements taken with Field Environmental Instruments Rental PID equipment , calibrated to 100 (ppm) of isobutylene.
Depth to water measured on 4/2/09.

Log of MW-1S

(Page 1 of 1)

Brickhouse Environmental

Binghamton Plaza
33 West State Street
Binghamton, New York
Site Investigation

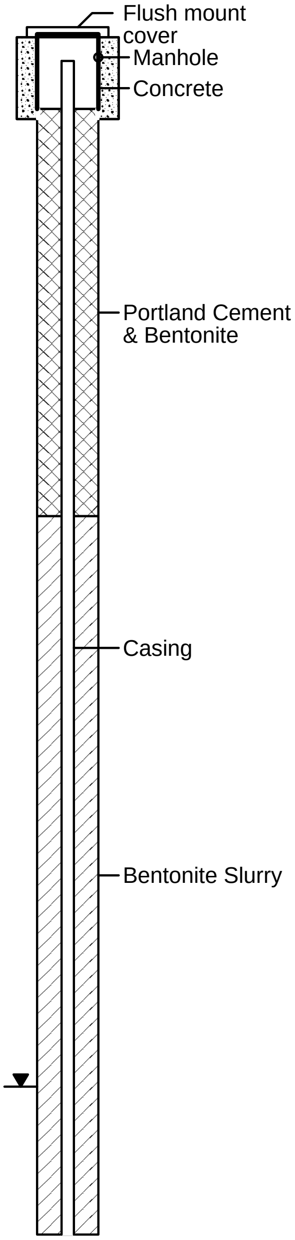
BE Project No. 06-2175-3

Date Started : 9/17/08
Date Completed : 9/17/08
Hole Diameter : 2-inch
Drilling Method : Hollow Stem Auger
Drilled By : Nature's Way
Logged By : Stephen Cap
Entered By : David Galajda
Checked By : Douglas Schott
Revised By : Douglas Schott

Log of MW-2D

(Page 1 of 2)

Depth in Feet	DESCRIPTION	PID Response (ppm)	Sample ID
0	Grass underlain with by GP-GM, <15% sand, dark brown, loose, dry, no odors/stains		
1		0.0	
2	SP-SC, <15% gravel, light grey, loose, dry, no odors/stains	0.0	
3	SW, <15% gravel, light grey, loose, dry, no odors/stains	0.0	
4	ML, brown, non-cohesive, non-plastic, dry, no odors/stains		
5		0.0	
6	SM, brown, non-cohesive, non-plastic, no odors/stains	0.0	
7	SP-SM, brown, non-cohesive, non-plastic, no odors/stains	0.0	
8	GP-GM, non-cohesive, non-plastic, no odors/stains	0.0	
9	SP, grey, >15% gravel, non-cohesive, non-plastic, no odors/stains	0.0	
10		0.0	
11	GP-GM, >15% gravel, tan, non-cohesive, non-plastic, no odors/stains	0.0	
12	Ash layer, <15% gravel, non-cohesive, non-plastic, no odors/stains	0.0	
13		0.0	
14	SW-SM, tan, non-cohesive, non-plastic, no odors/stains	0.0	
15	SW-SM, brown, non-cohesive, non-plastic, no odors/stains	0.0	
16	GW-GM, grey, non-cohesive, non-plastic, no odors/stains	0.0	
17		0.0	
18	GP-GM, >15% sand, dark grey-brown, loose, dry, no odors/stains	0.0	
19		0.0	
20		0.0	
21		0.0	
22	ML, dark grey to olive, wet, cohesive, non plastic, no odors/staining	0.0	
23		0.1	
24		0.3	
25		0.2	



Well Construction Information

WELL CONSTRUCTION
Date Compl. : 9/29/08
Hole Diameter : 4.25 in.
Drill. Method : Hollow Stem Auger
Company Rep. : Mike and Kyle

INNER CASING
Material : PVC
Diameter : 2 in.
Joints : threaded

WELL SCREEN
Material : PVC
Diameter : 2 in.
Joints : threaded
Opening : .010 slot

SAND PACK : #1 Sand Pack

ANNULUS SEAL : bentonite chips
: and slurry

OUTER CASING
Material : steel
Diameter : 8 in.
Cap : locking

PID measurements taken with Field Environmental Instruments Rental PID equipment , calibrated to 100 (ppm) of isobutylene.
Soil sample not collected.
Depth to water measured on 4/2/09.

Log of MW-2D

(Page 1 of 2)

Brickhouse Environmental

Binghamton Plaza
33 West State Street
Binghamton, New York
Site Investigation

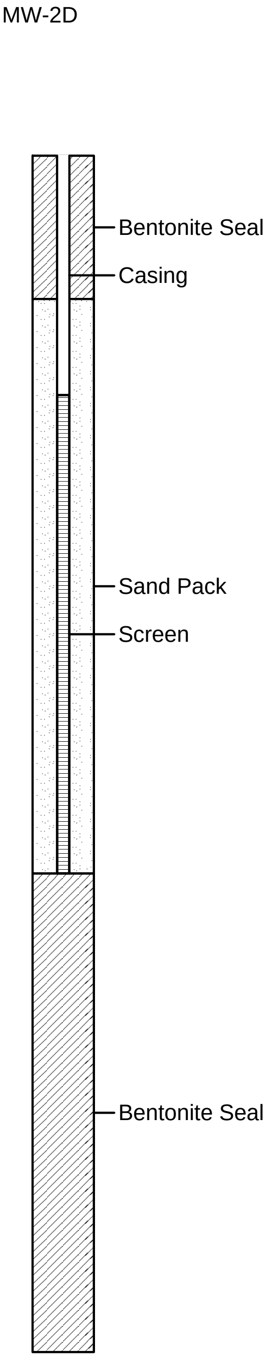
BE Project No. 06-2175-3

Date Started	: 9/17/08
Date Completed	: 9/17/08
Hole Diameter	: 2-inch
Drilling Method	: Hollow Stem Auger
Drilled By	: Nature's Way
Logged By	: Stephen Cap
Entered By	: David Galajda
Checked By	: Douglas Schott
Revised By	: Douglas Schott

Log of MW-2D

(Page 2 of 2)

Depth in Feet	GRAPHIC	DESCRIPTION	PID Response (ppm)	Sample ID
25		Same as above.		
26			0.1	
27			0.1	
28			0.7	
29			0.2	
30			0.5	
31			0.0	
32			0.4	
33			0.0	
34			0.5	
35			0.0	
36			0.7	
37			0.0	
38			0.8	
39			0.8	
40			0.0	
41			0.0	
42			0.0	
43			0.0	
44				
45			0.0	
46			0.1	
47			0.3	
48			0.0	
49			0.9	
50			0.0	



Well Construction Information

WELL CONSTRUCTION

Date Compl.	: 9/29/08
Hole Diameter	: 4.25 in.
Drill. Method	: Hollow Stem Auger
Company Rep.	: Mike and Kyle

INNER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

WELL SCREEN

Material	: PVC
Diameter	: 2 in.
Joints	: threaded
Opening	: .010 slot

SAND PACK : #1 Sand Pack

ANNULUS SEAL : bentonite chips
: and slurry

OUTER CASING

Material	: steel
Diameter	: 8 in.
Cap	: locking

PID measurements taken with Field Environmental Instruments Rental PID equipment , calibrated to 100 (ppm) of isobutylene.
Soil sample not collected.
Depth to water measured on 4/2/09.

Brickhouse Environmental

Binghamton Plaza
33 West State Street
Binghamton, New York
Site Investigation

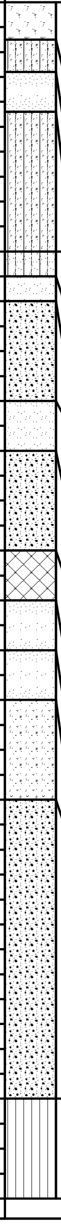
BE Project No. 06-2175-3

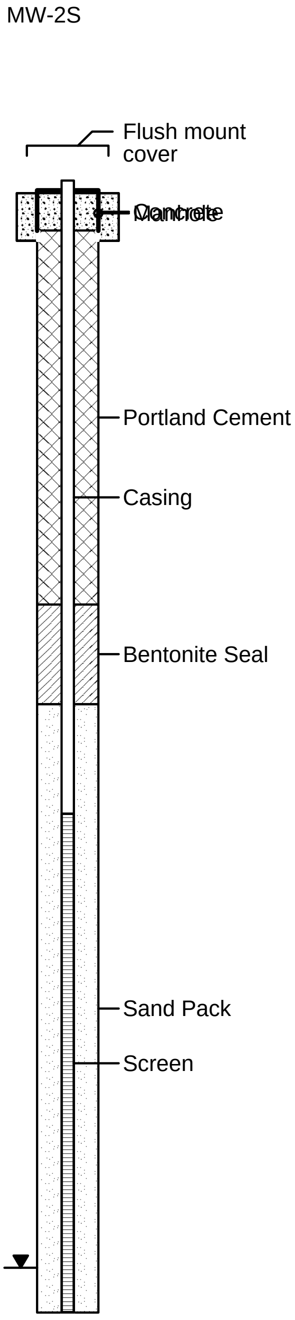
Log of MW-2S

(Page 1 of 1)

Date Started : 9/17/08
Date Completed : 9/17/08
Hole Diameter : 2-inch
Drilling Method : Hollow Stem Auger
Drilled By : Nature's Way
Logged By : Stephen Cap
Entered By : David Galajda
Checked By : Douglas Schott
Revised By : Douglas Schott

Depth in Feet	DESCRIPTION	PID Response (ppm)	Sample ID
0	Grass underlain with by GP-GM, <15% sand, dark brown, loose, dry, no odors/stains		
1		0.0	
2	SP-SC, <15% gravel, light grey, loose, dry, no odors/stains	0.0	
3	SW, <15% gravel, light grey, loose, dry, no odors/stains	0.0	
4	ML, brown, non-cohesive, non-plastic, dry, no odors/stains		
5	SM, brown, non-cohesive, non-plastic, no odors/stains	0.0	
6	SP-SM, brown, non-cohesive, non-plastic, no odors/stains	0.0	
7	GP-GM, non-cohesive, non-plastic, no odors/stains	0.0	
8		0.0	
9	SP, grey, >15% gravel, non-cohesive, non-plastic, no odors/stains	0.0	
10	GP-GM, >15% gravel, tan, non-cohesive, non-plastic, no odors/stains	0.0	
11		0.0	
12	Ash layer, <15% gravel, non-cohesive, non-plastic, no odors/stains	0.0	
13	SW-SM, tan, non-cohesive, non-plastic, no odors/stains	0.0	
14		0.0	
15	SW-SM, brown, non-cohesive, non-plastic, no odors/stains	0.0	
16	GW-GM, grey, non-cohesive, non-plastic, no odors/stains	0.0	
17	GP-GM, >15% sand, dark grey-brown, loose, dry, no odors/stains	0.0	
18		0.0	
19		0.0	
20		0.0	
21		0.0	
22	ML, dark brown, wet, cohesive, non-plastic, no odors/stains (native material)	0.0	
23		0.0	
24		0.0	





Well Construction Information

WELL CONSTRUCTION
Date Compl. : 9/23/08
Hole Diameter : 4.25 in.
Drill. Method : Hollow Stem Auger
Company Rep. : Nate and Mike

INNER CASING
Material : PVC
Diameter : 2 in.
Joints : threaded

WELL SCREEN
Material : PVC
Diameter : 2 in.
Joints : threaded
Opening : .010 slot

SAND PACK : #1 Sand

ANNULUS SEAL : bentonite chips
: and slurry

OUTER CASING
Material : steel
Diameter : 8 in.
Cap : locking

PID measurements taken with Field Environmental Instruments Rental PID equipment , calibrated to 100 (ppm) of isobutylene.
Soil sample not collected.
Depth to water measured on 4/2/09.

Log of MW-2S

(Page 1 of 1)

Brickhouse Environmental

Binghamton Plaza
33 West State Street
Binghamton, New York
Site Investigation

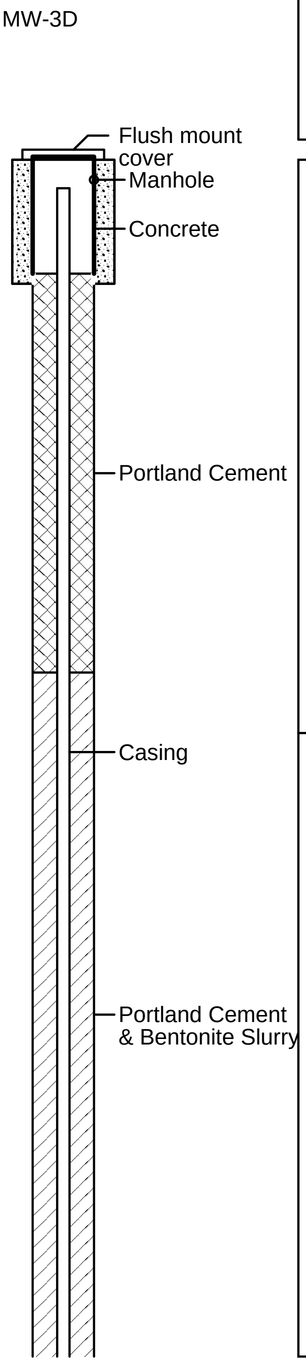
BE Project No. 06-2175-3

Date Started	: 9/18/08
Date Completed	: 9/18/08
Hole Diameter	: 2-inch
Drilling Method	: Direct Push
Drilled By	: Nature's Way
Logged By	: Stephen Cap
Entered By	: David Galajda
Checked By	: Douglas Schott
Revised By	: Douglas Schott

Log of MW-3D

(Page 1 of 2)

Depth in Feet	GRAPHIC	DESCRIPTION	PID Response (ppm)	Sample ID
0		SP-SC, >15% gravel, dry, loose, olive-light grey, no odors/staining		
1			0.0	
2			0.0	
3			0.0	
4			0.0	
5			0.0	
6		SP-SC, >15% gravel, moist to wet, no odors, loose, mixed with glass/wood/rubber/leather	0.0	
7				
8		Same fill material as previous, moist to wet, no odors		MW-3D-8'-9'
9			0.0	
10				
11				
12				
13			0.0	
14				
15				
16				
17			0.0	
18		SM, <15% gravel, petro odor, dry, black staining	0.0	
19			0.0	
20		ML, grey, moist, non plastic, cohesive, slight petro odor, no staining		
21			0.0	



Well Construction Information

WELL CONSTRUCTION

Date Compl.	: 9/30/08
Hole Diameter	: 4.25 in.
Drill. Method	: Hollow Stem Auger
Company Rep.	: Mike and Kyle

INNER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

WELL SCREEN

Material	: PVC
Diameter	: 2 in.
Joints	: threaded
Opening	: .010 slot
SAND PACK	: #1 Sand Pack
ANNULUS SEAL	: bentonite chips : and slurry

OUTER CASING

Material	: steel
Diameter	: 8 in.
Cap	: locking

PID measurements taken with Field Environmental Instruments Rental PID equipment , calibrated to 100 (ppm) of isobutylene.
Depth to groundwater measured on April 2, 2009

Log of MW-3D

(Page 1 of 2)

Brickhouse Environmental

Binghamton Plaza
33 West State Street
Binghamton, New York
Site Investigation

BE Project No. 06-2175-3

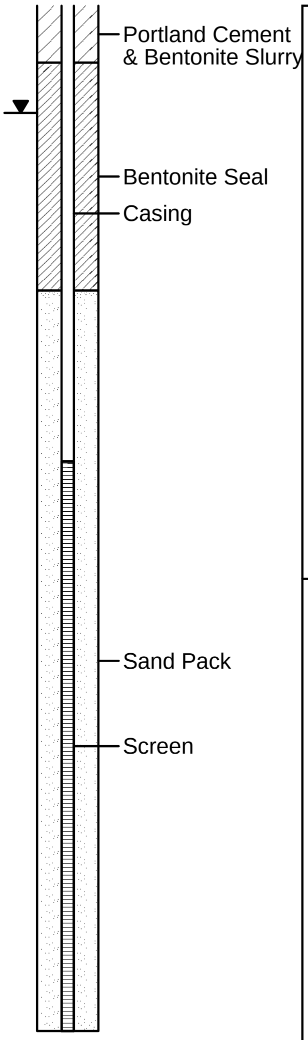
Date Started	: 9/18/08
Date Completed	: 9/18/08
Hole Diameter	: 2-inch
Drilling Method	: Direct Push
Drilled By	: Nature's Way
Logged By	: Stephen Cap
Entered By	: David Galajda
Checked By	: Douglas Schott
Revised By	: Douglas Schott

Log of MW-3D

(Page 2 of 2)

Depth in Feet	GRAPHIC	DESCRIPTION	PID Response (ppm)	Sample ID
21				
22		ML, grey, wet, non plastic, cohesive, no odors/staining	0.0	
23			0.0	
24			0.0	
25			0.0	
26		SW, >15% gravel, dark grey, loose, wet, no odors/staining	0.0	
27			0.4	
28				
29			0.0	
30				
31			0.0	
32				
33				
34		SW, <15% gravel, dark grey, wet, loose, non cohesive, non plastic, no odors/staining		
35			0.0	
36				
37			0.0	
38				
39			0.0	
40		ML, grey, moist, non plastic, cohesive, no odors/staining		
41				
42				

MW-3D



Well Construction Information

WELL CONSTRUCTION

Date Compl.	: 9/30/08
Hole Diameter	: 4.25 in.
Drill. Method	: Hollow Stem Auger
Company Rep.	: Mike and Kyle

INNER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

WELL SCREEN

Material	: PVC
Diameter	: 2 in.
Joints	: threaded
Opening	: .010 slot

SAND PACK	: #1 Sand Pack
ANNULUS SEAL	: bentonite chips : and slurry

OUTER CASING

Material	: steel
Diameter	: 8 in.
Cap	: locking

PID measurements taken with Field Environmental Instruments Rental PID equipment , calibrated to 100 (ppm) of isobutylene.
Depth to groundwater measured on April 2, 2009

Log of MW-3D

(Page 2 of 2)

Brickhouse Environmental

Binghamton Plaza
33 West State Street
Binghamton, New York
Site Investigation

BE Project No. 06-2175-3

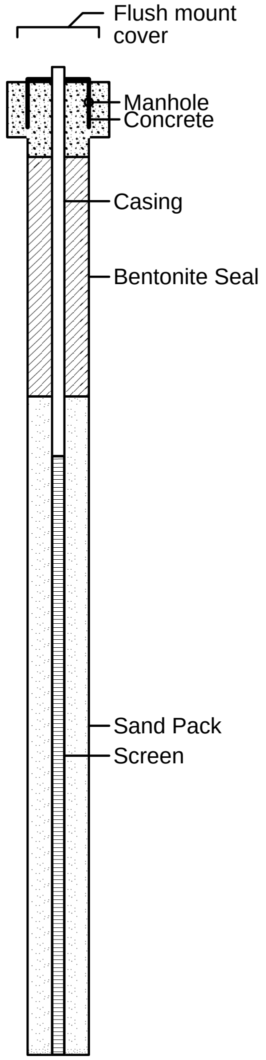
Date Started : 9/18/08
Date Completed : 9/18/08
Hole Diameter : 2-inch
Drilling Method : Hollow Stem Auger
Drilled By : Nature's Way
Logged By : Stephen Cap
Entered By : David Galajda
Checked By : Douglas Schott
Revised By : Douglas Schott

Log of MW-3S

(Page 1 of 1)

Depth in Feet	DESCRIPTION	PID Response (ppm)	Sample ID
0	SP-SC, >15% gravel, dry, loose, olive-light grey, no odors/staining		
1		0.0	
2		0.0	
3		0.0	
4			
5		0.0	
6	SP-SC, >15% gravel, moist to wet, no odors, loose, mixed with glass/wood/rubber/leather	0.0	
7		3.2	
8	Same fill material as previous, moist to wet, no odors	0.9	MW-3D-8'-9'
9		0.8	
10		16.4	
11			
12			
13		15.8	
14		1,098	
15			
16			
17	ML, dark grey-olive, cohesive, non-plastic, wet, no odors/stains (native material)	34.2	
18		11.1	
19		2.7	
20		3.2	

MW-3S



Well Construction Information

WELL CONSTRUCTION
Date Compl. : 9/23/08
Hole Diameter : 4.25 in.
Drill. Method : Hollow Stem Auger
Company Rep. : Nate and Mike

INNER CASING
Material : PVC
Diameter : 2 in.
Joints : threaded

WELL SCREEN
Material : PVC
Diameter : 2 in.
Joints : threaded
Opening : .010 slot

SAND PACK : #1 Sand

ANNULUS SEAL : bentonite chips
: and slurry

OUTER CASING
Material : steel
Diameter : 8 in.
Cap : locking

PID measurements taken with Field Environmental Instruments Rental PID equipment , calibrated to 100 (ppm) of isobutylene.
Groundwater was not encountered.

Log of MW-3S

(Page 1 of 1)

Brickhouse Environmental

Binghamton Plaza
33 West State Street
Binghamton, New York
Site Investigation

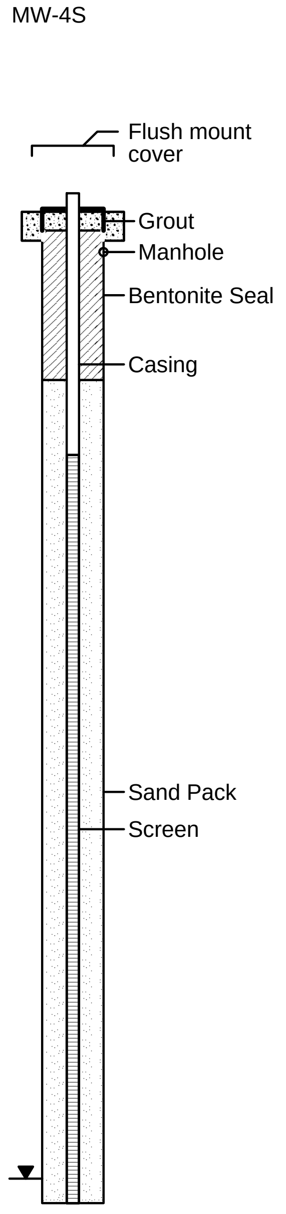
BE Project No. 06-2175-3

Date Started	: 9/18/08
Date Completed	: 9/18/08
Hole Diameter	: 2-inch
Drilling Method	: Direct Push
Drilled By	: Nature's Way
Logged By	: Stephen Cap
Entered By	: David Galajda
Checked By	: Douglas Schott
Revised By	: Douglas Schott

Log of MW-4S

(Page 1 of 1)

Depth in Feet	GRAPHIC	DESCRIPTION	PID Response (ppm)	Sample ID
0		GP-GC, >15% sand, olive-light grey, dry, loose, no odors/stains		
1			0.0	
2		ML, olive-dark grey, dry to moist, no odors/stains	0.0	
3			0.0	
4				
5		SP-SM, >15% sand, black stained, moist, loose, no odor, mixed with wood and slag debris	0.0	
6				
7				
8		Same as previous fill material, wet, ash layer at 9.1'-9.4', wood debris at 12'		
9			0.0	MW-4S-9'-10'
10			0.4	
11				
12		Same as previous fill material, wet, no odors/stains		
13		ML, olive, mixed with clay and gravel, dry to moist, no odors/staining	0.0	
14		ML, olive and light grey mottled, dry to moist, cohesive, non-plastic (native material)	0.0	
15			0.0	
16				



Well Construction Information

WELL CONSTRUCTION

Date Compl.	: 9/23/08
Hole Diameter	: 4.25 in.
Drill. Method	: Hollow Stem Auger
Company Rep.	: Nate and Mike

INNER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

WELL SCREEN

Material	: PVC
Diameter	: 2 in.
Joints	: threaded
Opening	: .010 slot

SAND PACK	: #1 Sand
ANNULUS SEAL	: bentonite chips : and slurry

OUTER CASING

Material	: steel
Diameter	: 8 in.
Cap	: locking

PID measurements taken with Field Environmental Instruments Rental PID equipment , calibrated to 100 (ppm) of isobutylene.
Depth to groundwater measured on April 2, 2009

Log of MW-4S

(Page 1 of 1)

Brickhouse Environmental

Binghamton Plaza
33 West State Street
Binghamton, New York
Site Investigation

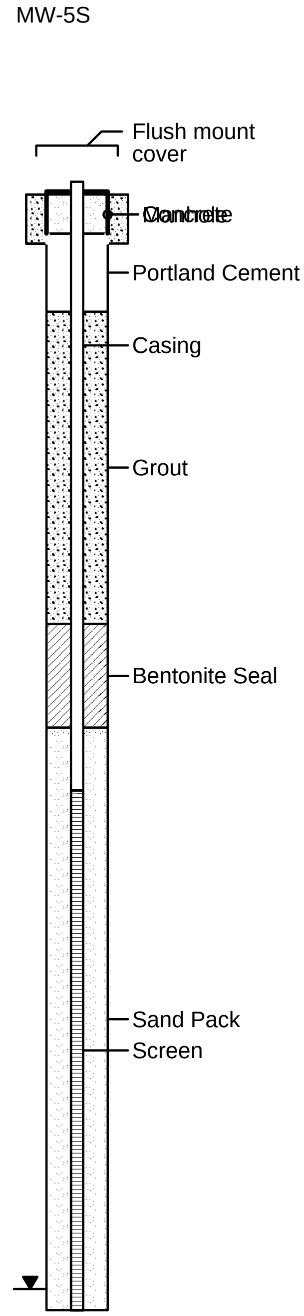
BE Project No. 06-2175-3

Log of MW-5S

(Page 1 of 1)

Date Started : 9/23/08
Date Completed : 9/23/08
Hole Diameter : 4.25-inch
Drilling Method : Direct Push
Drilled By : Nature's Way
Logged By : Stephen Cap
Entered By : David Galajda
Checked By : Douglas Schott
Revised By : Douglas Schott

Depth in Feet	GRAPHIC	DESCRIPTION	PID Response (ppm)	Sample ID
0		Gravel FILL and asphalt		
1		GP-GC, >15% sand, olive-light grey, dry to moist, loose, no odors/stains	0.2	
2		SP-SC, >15% gravel, moist, olive-dark grey, loose, no odor/staining	1.1	
3			0.2	
4		SP-SC, >15% gravel, black staining, moist, loose, ash debris	0.1	
5		SP-SC, >15% gravel, mixed with glass/ash/wood debris, moist, black stained, and organic odor	1.6	
6			1.4	
7			0.5	
8		Same as previous fill material, wet at 8.1', black stained at 8.1'-9.8', ash/glass/slag/porcelain debris throughout		
9				
10				
11				
12		Same as previous fill material, wood/ash/glass debris, moist, petro odor and black staining		
13			3.3	
14			2.6	
15			0.0	
16				B-3-16'-17'
17		GP, >15% sand, black staining, moist, petro odor	15.1	
18		SM, >15% gravel, olive, moist, mixed with glass and ash debris, no odors/staining	2.3	
19				
20				
21				
22		ML, olive to light grey, cohesive, non-plastic, moist to wet, no odors/staining		
23				



Well Construction Information

WELL CONSTRUCTION
Date Compl. : 9/23/08
Hole Diameter : 4.25 in.
Drill. Method : Hollow Stem Auger
Company Rep. : Nate and Mike

INNER CASING
Material : PVC
Diameter : 2 in.
Joints : threaded

WELL SCREEN
Material : PVC
Diameter : 2 in.
Joints : threaded
Opening : .010 slot

SAND PACK : #1 Sand

ANNULUS SEAL : bentonite chips
: and slurry

OUTER CASING
Material : steel
Diameter : 8 in.
Cap : locking

PID measurements taken with Field Environmental Instruments Rental PID equipment , calibrated to 100 (ppm) of isobutylene.
Depth to groundwater measured on April 2, 2009

Log of MW-5S

(Page 1 of 1)

Brickhouse Environmental

Binghamton Plaza
33 West State Street
Binghamton, New York
Site Investigation

BE Project No. 06-2175-3

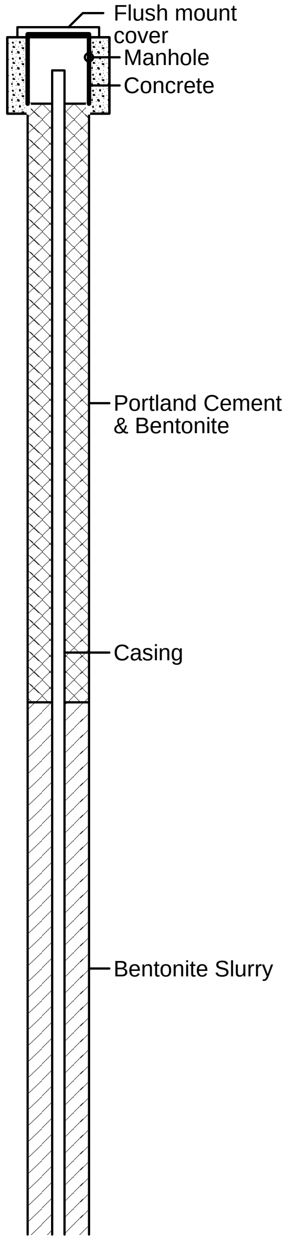
Date Started	: 9/19/08
Date Completed	: 9/19/08
Hole Diameter	: 2-inch
Drilling Method	: Direct Push
Drilled By	: Nature's Way
Logged By	: Stephen Cap
Entered By	: David Galajda
Checked By	: Douglas Schott
Revised By	: Douglas Schott

Log of MW-6D

(Page 1 of 2)

Depth in Feet	DESCRIPTION	PID Response (ppm)	Sample ID
0	Asphalt and sub-base material GW-GM, >15% sand, grey		
1	GW-GM, >15% sand, light grey	0.0	
2	SP-SC, <15% gravel Same as previous FILL material, moist, black staining, mixed with ash/brick/glass/wood debris	0.0	
3		0.0	
4	Same as previous fill material, moist, black staining, no odor	0.2	MW-6D-4'-5'
5		2.0	
6		0.0	
7			
8	SM, <15% gravel, moist, no odor, mixed with ash/glass/asphalt		
9	ML, <15% sand, moist, no odor	0.0	
10		0.0	
11			
12	Same as previous material, wet		
13	ML, brown to olive, cohesive, non-plastic, wet, no odors/staining (native material)	0.0	
14	ML, olive to dark grey, dry, cohesive, non plastic, no odors/staining	0.0	
15	ML, olive to dark grey, dry, loose, no odors/staining	0.0	MW-6D-15'-16'
16	ML, light brown to olive, dry, no odors/staining, cohesive, non plastic	0.0	
17		0.0	
18		0.0	

MW-6D



Well Construction Information

WELL CONSTRUCTION

Date Compl.	: 9/25/08
Hole Diameter	: 4.25 in.
Drill. Method	: Hollow Stem Auger
Company Rep.	: Mike and Kyle

INNER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

WELL SCREEN

Material	: PVC
Diameter	: 2 in.
Joints	: threaded
Opening	: .010 slot
SAND PACK	: #1 Sand Pack
ANNULUS SEAL	: bentonite chips : and slurry

OUTER CASING

Material	: steel
Diameter	: 8 in.
Cap	: locking

PID measurements taken with Field Environmental Instruments Rental PID equipment , calibrated to 100 (ppm) of isobutylene.
Depth to groundwater measured on April 2, 2009

Brickhouse Environmental

Binghamton Plaza
33 West State Street
Binghamton, New York
Site Investigation

BE Project No. 06-2175-3

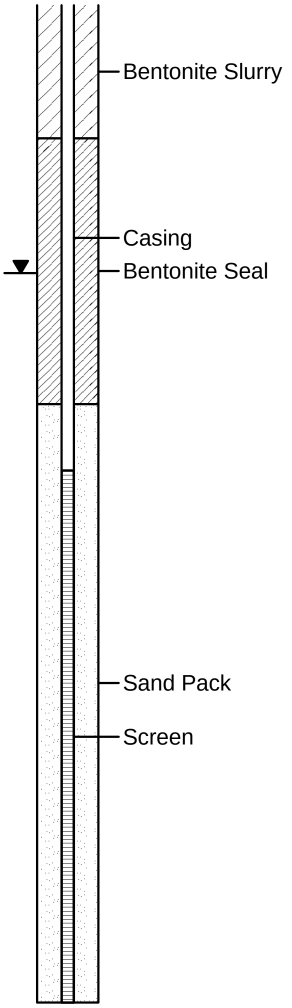
Log of MW-6D

(Page 2 of 2)

Date Started : 9/19/08
Date Completed : 9/19/08
Hole Diameter : 2-inch
Drilling Method : Direct Push
Drilled By : Nature's Way
Logged By : Stephen Cap
Entered By : David Galajda
Checked By : Douglas Schott
Revised By : Douglas Schott

Depth in Feet	DESCRIPTION	PID Response (ppm)	Sample ID
18	ML, dark grey, dry, cohesive, non plastic, no odors/staining		
19		0.0	
20		0.0	
21	ML, dark grey, slightly moist, cohesive, non plastic, no odors/staining	0.0	
22		0.0	
23		0.0	
24		0.0	
25		0.0	
26	SM, <15% gravel, dark grey, wet, loose, cohesive, no odors/staining	0.0	
27			
28	GP-GM, >15% sand, dark grey, wet, loose, no odors/staining	0.0	
29			
30	SP-SM, >15% gravel, dark grey, wet, loose, no odors/staining	0.0	
31			
32	SW, >15% gravel, dark grey, wet, loose, no odors/staining	0.1	
33	ML, olive to dark grey, cohesive, non plastic, wet, no odors/staining	0.1	
34		0.2	
35			
36		0.1	

MW-6D



Well Construction Information

WELL CONSTRUCTION
Date Compl. : 9/25/08
Hole Diameter : 4.25 in.
Drill. Method : Hollow Stem Auger
Company Rep. : Mike and Kyle

INNER CASING
Material : PVC
Diameter : 2 in.
Joints : threaded

WELL SCREEN
Material : PVC
Diameter : 2 in.
Joints : threaded
Opening : .010 slot

SAND PACK : #1 Sand Pack

ANNULUS SEAL : bentonite chips
: and slurry

OUTER CASING
Material : steel
Diameter : 8 in.
Cap : locking

PID measurements taken with Field Environmental Instruments Rental PID equipment , calibrated to 100 (ppm) of isobutylene.
Depth to groundwater measured on April 2, 2009

Log of MW-6D

(Page 2 of 2)

11-11-2014 J:\062175.3\Field\Boring Logs\B-MW-6D.bor

Brickhouse Environmental

Binghamton Plaza
33 West State Street
Binghamton, New York
Site Investigation

BE Project No. 06-2175-3

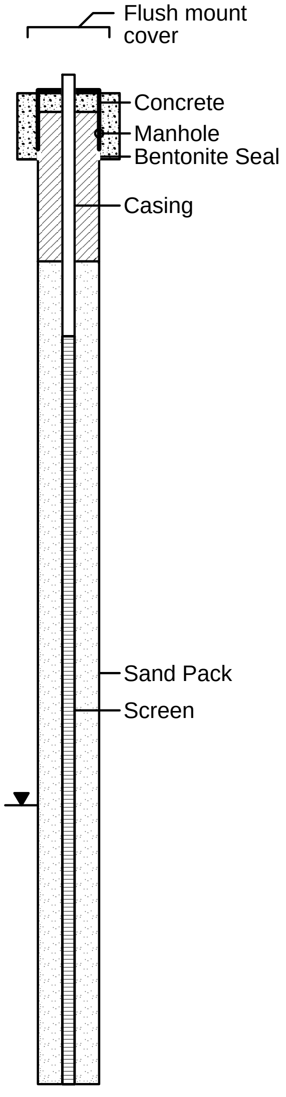
Date Started : 9/19/08
Date Completed : 9/19/08
Hole Diameter : 2-inch
Drilling Method : Direct Push
Drilled By : Nature's Way
Logged By : Stephen Cap
Entered By : David Galajda
Checked By : Douglas Schott
Revised By : Douglas Schott

Log of MW-6S

(Page 1 of 1)

Depth in Feet	DESCRIPTION	PID Response (ppm)	Sample ID
0	Asphalt and sub-base material		
	GW-GM, >15% sand, grey		
1	GW-GM, >15% sand, light grey	0.0	
2	SP-SC, <15% gravel	0.0	
	Same as previous FILL material, moist, black staining, mixed with ash/brick/glass/wood debris		
3		0.0	
4	Same as previous fill material, moist, black staining, no odor	0.2	
			MW-6D-4'-5'
5		2.0	
6		0.0	
7			
8	SM, <15% gravel, moist, no odor, mixed with ash/glass/asphalt		
9	ML, <15% sand, moist, no odor	0.0	
10		0.0	
11			
12	Same as previous material, wet		
13	ML, brown to olive, cohesive, non-plastic, wet, no odors/staining (native material)	0.0	
14		0.0	
15		0.0	
			MW-6D-15'-16'
16		0.0	

MW-6S



Well Construction Information

WELL CONSTRUCTION
Date Compl. : 9/22/08
Hole Diameter : 4.25 in.
Drill. Method : Hollow Stem Auger
Company Rep. : Nate and Mike

INNER CASING
Material : PVC
Diameter : 2 in.
Joints : threaded

WELL SCREEN
Material : PVC
Diameter : 2 in.
Joints : threaded
Opening : .010 slot

SAND PACK : #1 Sand

ANNULUS SEAL : bentonite pellets
: and slurry

OUTER CASING
Material : steel
Diameter : 8 in.
Cap : locking

PID measurements taken with Field Environmental Instruments Rental PID equipment , calibrated to 100 (ppm) of isobutylene.
Depth to groundwater measured on April 2, 2009

Log of MW-6S

(Page 1 of 1)

Brickhouse Environmental

Binghamton Plaza
33 West State Street
Binghamton, New York
Site Investigation

BE Project No. 06-2175-3

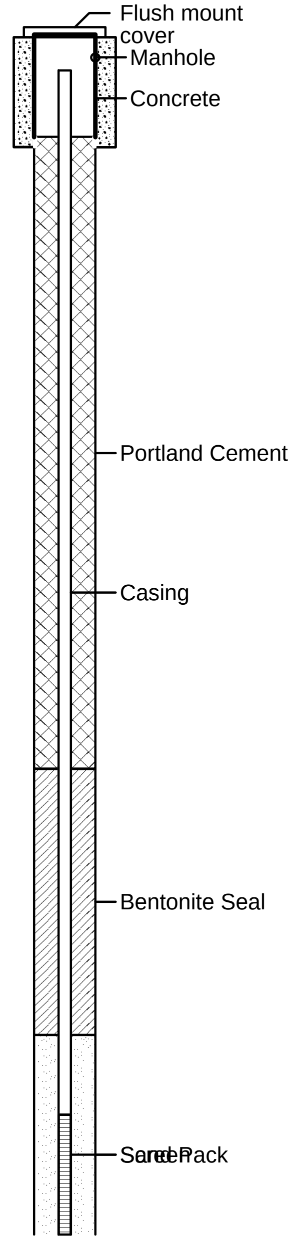
Date Started : 9/18/08
Date Completed : 9/18/08
Hole Diameter : 2-inch
Drilling Method : Direct Push
Drilled By : Nature's Way
Logged By : Stephen Cap
Entered By : David Galajda
Checked By : Douglas Schott
Revised By : Douglas Schott

Log of MW-7D

(Page 1 of 2)

Depth in Feet	GRAPHIC	DESCRIPTION	PID Response (ppm)	Sample ID
0	▨	Asphalt and GRAVEL sub-base		
1		GP-GM, >15% sand, olive to light grey, dry to moist, loose, no odors/stains	0.0	
2		SP-SC, black stains, mixed with glass	0.0	
4		Same fill material as prevous, moist below 4'		
5			0.0	
8		Same fill material as previous, mixed with pieces of metal		MW-7D-8'-9'
9			2.5	
13			0.0	
17			1.7	
18				

MW-7D



Well Construction Information

WELL CONSTRUCTION
Date Compl. : 9/25/08
Hole Diameter : 4.25 in.
Drill. Method : Hollow Stem Auger
Company Rep. : Mike and Kyle

INNER CASING
Material : PVC
Diameter : 2 in.
Joints : threaded

WELL SCREEN
Material : PVC
Diameter : 2 in.
Joints : threaded
Opening : .010 slot

SAND PACK : #1 Sand Pack

ANNULUS SEAL : bentonite chips
: and slurry

OUTER CASING
Material : steel
Diameter : 8 in.
Cap : locking

PID measurements taken with Field Environmental Instruments Rental PID equipment , calibrated to 100 (ppm) of isobutylene.
Depth to groundwater measured on April 2, 2009

Brickhouse Environmental

Binghamton Plaza
33 West State Street
Binghamton, New York
Site Investigation

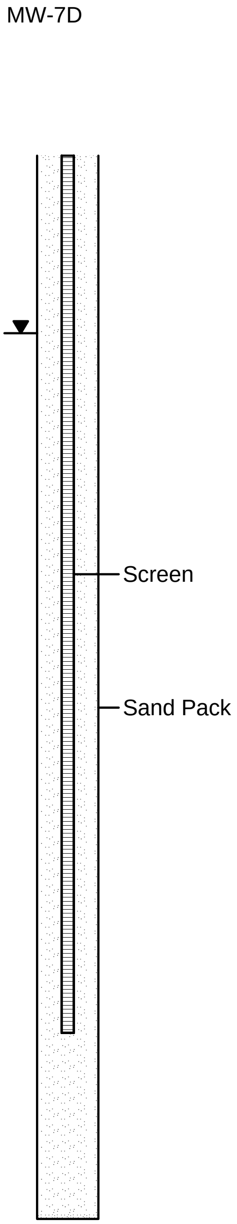
BE Project No. 06-2175-3

Date Started : 9/18/08
Date Completed : 9/18/08
Hole Diameter : 2-inch
Drilling Method : Direct Push
Drilled By : Nature's Way
Logged By : Stephen Cap
Entered By : David Galajda
Checked By : Douglas Schott
Revised By : Douglas Schott

Log of MW-7D

(Page 2 of 2)

Depth in Feet	GRAPHIC	DESCRIPTION	PID Response (ppm)	Sample ID
18				
19				
20				
21		GW-GM, >15% sand, wet, grey-olive (native riverbed material)	0.0	
22			0.0	
23				
24		GP-GM, >15% sand, dark grey to olive, wet, loose, no odors/staining, large cobbles (>1") mixed in		
25				
26		SM, <15% gravel, light grey to olive, wet, loose, no odors/staining	0.5	
27		GP, >15% sand, cobbles 1" diameter mixed in, wet, loose, no odors/staining		
28		SW-SM, >15% gravel, dark grey, wet, loose, no odors/staning	0.1	
29		GP-GM, >15% sand, light brown, wet, loose, no odors/staining		
30		SW-SM, >15% gravel, olive to dark grey, wet, loose, no odors/staining	0.3	
31		ML, light brown to olive, wet, cohesive, non plastic, no odors/staining	0.4	
32			0.1	
33			0.1	
34			0.3	
35			0.1	
36			0.0	



Well Construction Information

WELL CONSTRUCTION
Date Compl. : 9/25/08
Hole Diameter : 4.25 in.
Drill. Method : Hollow Stem Auger
Company Rep. : Mike and Kyle

INNER CASING
Material : PVC
Diameter : 2 in.
Joints : threaded

WELL SCREEN
Material : PVC
Diameter : 2 in.
Joints : threaded
Opening : .010 slot

SAND PACK : #1 Sand Pack

ANNULUS SEAL : bentonite chips
: and slurry

OUTER CASING
Material : steel
Diameter : 8 in.
Cap : locking

PID measurements taken with Field Environmental Instruments Rental PID equipment , calibrated to 100 (ppm) of isobutylene.
Depth to groundwater measured on April 2, 2009

Log of MW-7D

(Page 2 of 2)

Brickhouse Environmental

Binghamton Plaza
33 West State Street
Binghamton, New York
Site Investigation

BE Project No. 06-2175-3

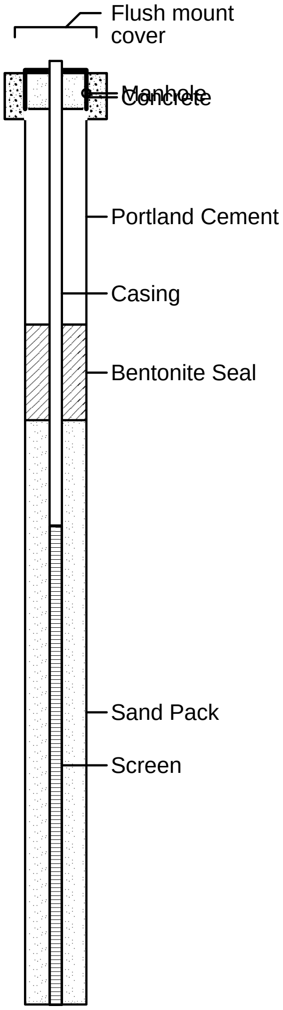
Date Started	: 9/18/08
Date Completed	: 9/18/08
Hole Diameter	: 2-inch
Drilling Method	: Direct Push
Drilled By	: Nature's Way
Logged By	: Stephen Cap
Entered By	: David Galajda
Checked By	: Douglas Schott
Revised By	: Douglas Schott

Log of MW-7S

(Page 1 of 1)

Depth in Feet	DESCRIPTION	PID Response (ppm)	Sample ID
0	Asphalt and GRAVEL sub-base		
0.5	GP-GM, >15% sand, olive to light grey, dry to moist, loose, no odors/stains	0.0 (1) 0.0 (2)	
2	SP-SC, black stains, mixed with glass		
4	Same fill material as prevous, moist below 4'	0.0 (5)	
8	Same fill material as previous, mixed with pieces of metal	2.5 (9) 0.0 (13) 1.7 (17)	MW-7D-8'-9'
18	SP-SC, >15% gravel, olive to grey, loose, moist, no staining, slight petro odor		
20	SP-SC, >15% gravel with large cobbles >1" in diameter, moist, no odors/staining	0.0 (21) 0.0 (22)	
23	GP-GM, >15% sand, wet, no odors/staining, loose, cobbles up to 1" in diameter		
25			

MW-7S



Well Construction Information

WELL CONSTRUCTION

Date Compl.	: 9/24/08
Hole Diameter	: 4.25 in.
Drill. Method	: Hollow Stem Auger
Company Rep.	: Nate and Mike

INNER CASING

Material	: PVC
Diameter	: 2 in.
Joints	: threaded

WELL SCREEN

Material	: PVC
Diameter	: 2 in.
Joints	: threaded
Opening	: .010 slot

SAND PACK	: #1 Sand
ANNULUS SEAL	: bentonite chips : and slurry

OUTER CASING

Material	: steel
Diameter	: 8 in.
Cap	: locking

PID measurements taken with Field Environmental Instruments Rental PID equipment , calibrated to 100 (ppm) of isobutylene.
Groundwater was not encountered.

Log of MW-7S

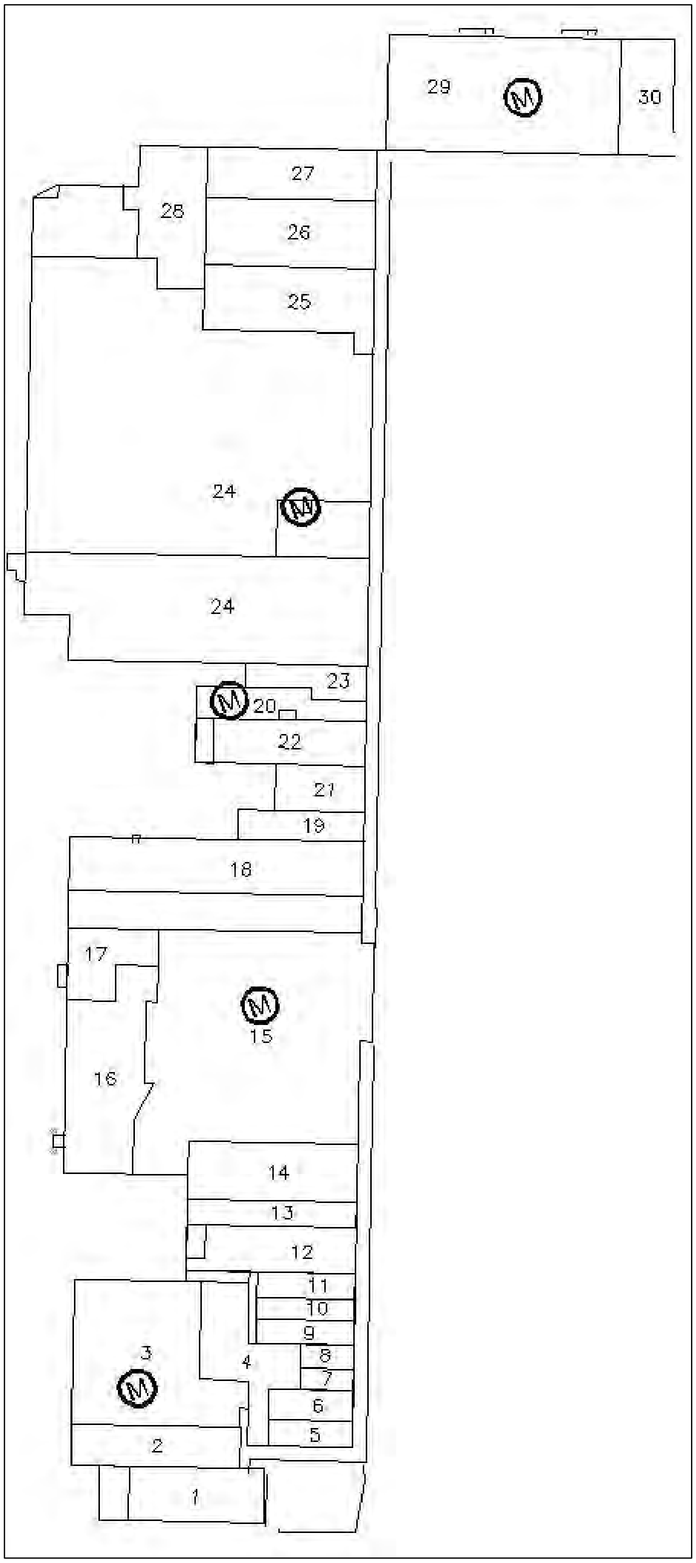
(Page 1 of 1)

Brickhouse Environmental

APPENDIX G

OPERATION, MAINTENANCE AND MONITORING PLAN

Binghamton Plaza - Field Inspection Form
Indoor Air Monitoring for Methane (Buildings 1 - 30)
Building Schematic



Methane Meter Calibration Log

Meter Make and Model:____

Field Calibration:____

Factory Calibration:____

Field Inspection Form
Indoor Air Monitoring for Methane (Buildings 1 - 30)
Binghamton Plaza - Site Management Plan (Appendix G)
Inspection Frequency: Semi-Annual

Indoor Air Monitoring for Methane General Notes

1.) The Binghamton Plaza site is underlain by approximately 30 feet of municipal waste and incinerator ash. Methane gas (generated by the decomposing waste) has been found to exist in soil gas at elevated concentrations throughout the site.

2. The purpose of this inspection is to verify that methane gas is not present at concentrations that pose a risk to building occupants in Buildings 1 through 30. Active methane monitoring systems/alarms exist in Buildings 31, 32 and 33 and are monitored as part of ongoing Site O&M.

Inspection Results

Building Location	Odors (Y/N)	Methane Concentration (% LEL)	Specific Notes
3			
15			
20			
24			
29			

General Notes

3	
15	
20	
24	
29	

Monitoring Protocol

1.) A properly calibrated portable handheld methane meter should be used to monitor indoor air in the buildings shown on the embedded plan. The monitoring of Buildings 20 and 24 should be conducted above the floor hatches that are used to access the crawl space as shown on the plan. The hatches should remain closed.

2.) The meter should be capable of measuring methane concentrations in percent of the Lower Explosive Limit (LEL).

3.) Methane concentrations should be recorded on this form with any other pertinent information.

4.) Any detections of methane should be immediately reported to the party responsible for implementing the SMP, to determine the proper course of action.

Inspected By:________________________________Date:__________________

Weather Conditions:____

Binghamton Plaza - Field Inspection Form
Site-wide Cap and Cover Systems
Site Schematic

Site use Note: The entire site has been remediated to commercial use with the exception of the hatched area shown in the above plan. This hatched area has been remediated to restricted-residential use.

Descriptions of Cap and Cover Systems

1.) Pre-Remediation Cap Areas (gray): This area includes all areas that were covered with pavement, concrete or building footprints prior to remediation in Oct. 2014.

2.) Post-Remediation Soil Cover (green): This area was covered during the Oct. 2014 remediation with at least 12" of clean soil over an orange construction fence demarcation layer.

3.) Post-Remediation Asphalt Cover (pink): These areas were not paved prior to the October 2014 remedial action. The remedial action included the installation of a 6-inch thick asphalt cover system.

Inspection Criteria: Inspect all cap and cover systems for evidence of erosion, significant cracking, sinking or heaving. If the potential for exposure to underlying soil and or waste material exists, note the locations on the embedded map, photograph the area and describe the degradation on this form.

Inspection Results

Cap/Cover Type	Intact? (Y/N)	Repairs Needed? (Y/N)	General Notes
Pre-Remediation Cap Areas (gray)			
Post-Remediation Soil Cover (green)			
Post-Remediation Asphalt Cover (green)			

General Site Condition and Use Inspection Questionnaire

1.) Is the site use consistent with the land use restrictions (i.e. restricted residential and commercial)? YES_____ / NO_____.
If no, describe.

2.) Are all monitoring well flush mount manholes intact and in good condition? YES_____/ NO_____. If not, specify which monitoring well, photograph the degradation and describe.

3.) Have any new buildings been constructed? YES_____ / NO_____.
If so, describe.

4.) Have any buildings been removed? YES_____ / NO_____.
If so, describe.

General Notes

1.) The Binghamton Plaza site is underlain by approximately 30 feet of municipal waste and incinerator ash. The existing paved areas, concrete slabs, landscaped areas and building footprints function as a continuous cap and cover system for these waste materials.

2.) The purpose of this inspection is to verify that they are intact and preventing exposures to the underlying soil and waste materials buried at the Site.

3.) If the cap and/or cover systems are compromised to an extent that they can no longer prevent exposures to the underlying soil and/or waste materials, repairs must be completed consistent with the Site Management Plan.

4.) This inspection form also includes general site use items to verify that site use restrictions are being followed.

Field Inspection Form
Site-wide Cap and Cover Systems
Binghamton Plaza - Site Management Plan (Appendix G)
Inspection Frequency: Semi-annual

Inspected By:________________________________Date:__________________

Weather Conditions:____

Operation, Maintenance and Monitoring Work Plan For Sub-Slab Depressurization and Passive Ventilation Systems

At

NYSDEC Site # C704049
Binghamton Plaza
33 W. State Street
Binghamton, New York
KES File #: 426.01214.1

Keystone Environmental Services
58 Exchange Street
Binghamton, NY 13901

November 13, 2014

Contents

1.0 Introduction

This Operation, Maintenance and Monitoring Plan (OM&M) describes the activities associated with the ongoing operation and maintenance of the active Sub-Slab Depressurization Systems (SSDS) that have been installed by Keystone Environmental Services (formerly KMT/ENVIRO TESTING) and Passive Ventilation Systems that were installed by others in the 1970's for the Binghamton Plaza, 33 West State Street, Binghamton, New York.

This plan replaces the O&M Work Plan prepared by Keystone Material Testing, LLC, dated July 15, 2011.

1.1 Background

Keystone Environmental Services was retained to implement the design and construction of soil vapor sub-slab depressurization systems in accordance with the criteria established by the New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH).

Sub-slab depressurization systems are a simple, reliable, proven and the preferred method for preventing soil vapor intrusion into structures. These systems have been successfully used to prevent the intrusion of radon for several decades. The particular exhaust fans utilized on this project are explosion proof and have a 1-year manufacturer's warranty and a 10-year life expectancy.

Keystone Environmental Services began sub-slab depressurization system design and construction work on three (3) separate structures at the above noted project site in January of 2009. The structures mitigated with SSDS were Building #31 (Kurious Kids Child Care), Building #32 (Kurious Kids Childcare – School Age) and Building #33 (M&T Bank Drive Up).

As part of the SSDS system installation completion process, every installed SSDS is tested to verify the system is operating within NYSDEC and NYSDOH design specifications. The testing process is referred to as the installation commissioning and operation commissioning (IC/OC). Among numerous physical system checks, the IC/OC process includes taking pressure readings below the slab at locations along the perimeter of the slab to ensure complete sub-slab depressurization, smoke tests to visually verify this pressure differential and recording of the manometer readings at each suction drop on the system. This project also involved the use of methane gas alarms which will also be inspected.

In addition to active SSDS, passive ventilation systems were installed by unknown Contractors during the 1970's throughout the Main Plaza Building (Buildings 1-28) and also in the Executive Building (Buildings 29 and 30). See Attachment A for a detailed map of the project site identifying the locations of the passive ventilation systems. The passive ventilation systems will be inspected as follows:

- Annually inspect the two (2) crawlspace intakes and two (2) roof top vents along Buildings 1 through 28 for blockages or damage that would restrict air flow.
- Annually inspect the six (6) roof top vents for Buildings 29 and 30 for blockage or damage that would restrict air flow.

To date, Keystone Environmental Services has been responding to sub-slab depressurization system maintenance requests from occupants received through direct inquiry and telephone inquiry. This document represents the plan for routine (scheduled) maintenance, non-routine maintenance and for responding to occupant/tenant requested maintenance.

1.2 Scope

This OM&M work plan describes the following activities associated with routine maintenance and requests for maintenance from occupants/tenants:

- Communicating and scheduling of structure visits with property owners and tenants.
- Response to system operational problems and property owner and tenants inquiries.
- Re-commissioning systems, if necessary, after repairs are made.
- As needed review of structures and systems to screen for significant changes in the structure and/or to assess on-going system operation and performance.
- Preventative maintenance requirements.
- Documentation and recordkeeping of the operations and maintenance activities.

The routine maintenance program is intended to provide regular inspections of the active SSDS and passive ventilation systems to verify their continued performance.

Routine maintenance will be provided for the three (3) sub-slab depressurization systems that have been installed. The property owner will provide access to perform that maintenance. These maintenance visits will be scheduled and implemented in an efficient and cost effective manner while accommodating the personal schedules of the tenants to the extent possible.

Each SSDS system and passive ventilation system will be inspected in accordance with the schedule outlined in Section 4.3 of the Site Management Plan. These inspections will include a visual inspection of the complete systems both indoors and outdoors. Items inspected will include but will not be limited to:

- Recording suction point vacuums,
- Inspecting the fan for mechanical operation, noise and vibration,
- Inspecting all piping and piping connections (indoors and outdoors),
- Checking the sealing of cracks in walls and floors,
- Ensuring all piping supports are properly anchored.
- Inspecting all methane alarm systems.
- Inspecting passive ventilation systems intake and exhaust points for blockage and/or damage.

Refer to Attachments B and C (System Inspection Field Forms) for a complete listing of items checked and documented during system inspections. Any actionable items found during inspections will be addressed immediately, if possible, or scheduled for a follow-up visit.

The vacuum readings at each suction point on the SSDS systems are important data points when assessing system performance. This information will be compared to the original data recorded during the system's original IC/OC or the latest system inspection, and a determination will be made whether the system is performing within its acceptable range of operation. If it is determined that the system is not performing within its acceptable range of operation, a complete re-commissioning of the system may be implemented until acceptable performance is attained.

Operational checks can also be conducted by property owners or occupants/tenants. These checks are not part of the scope of this work plan, but are vital to the initiation of tenant requested maintenance. The property owner will be instructed via a sub-slab depressurization system operational fact sheet, to contact the owner or the project engineering/environmental consultant if:

- Major renovations to the structure are planned.
- There is a problem with system operation, or
- The system becomes damaged.

A program has been developed to manage requests for maintenance from tenants, essentially investigation and repair of systems when occupant/tenants contact the owner or the project engineering/environmental consultant about a suspected problem with the system. (See Attachment D, Maintenance Request Forms).

1.3 Objectives

The objective of these OM&M activities are to:

- Ensure ongoing SSDS systems and passive ventilation systems operations through scheduled system checks and maintenance,
- Provide responsive repairs to SSDS systems and passive ventilation systems when problems arise,
- Provide timely response to occupant/tenant concerns and complaints related to SSDS system operations (e.g., noisy operation),

1.4 Investigations/Documentation

During any on-site visit, any reported problems will be investigated, the causes identified and repair implemented (if possible) during the investigation visit. If significant repairs are needed and cannot be executed at that time, a construction/modification visit will be scheduled for a later date.

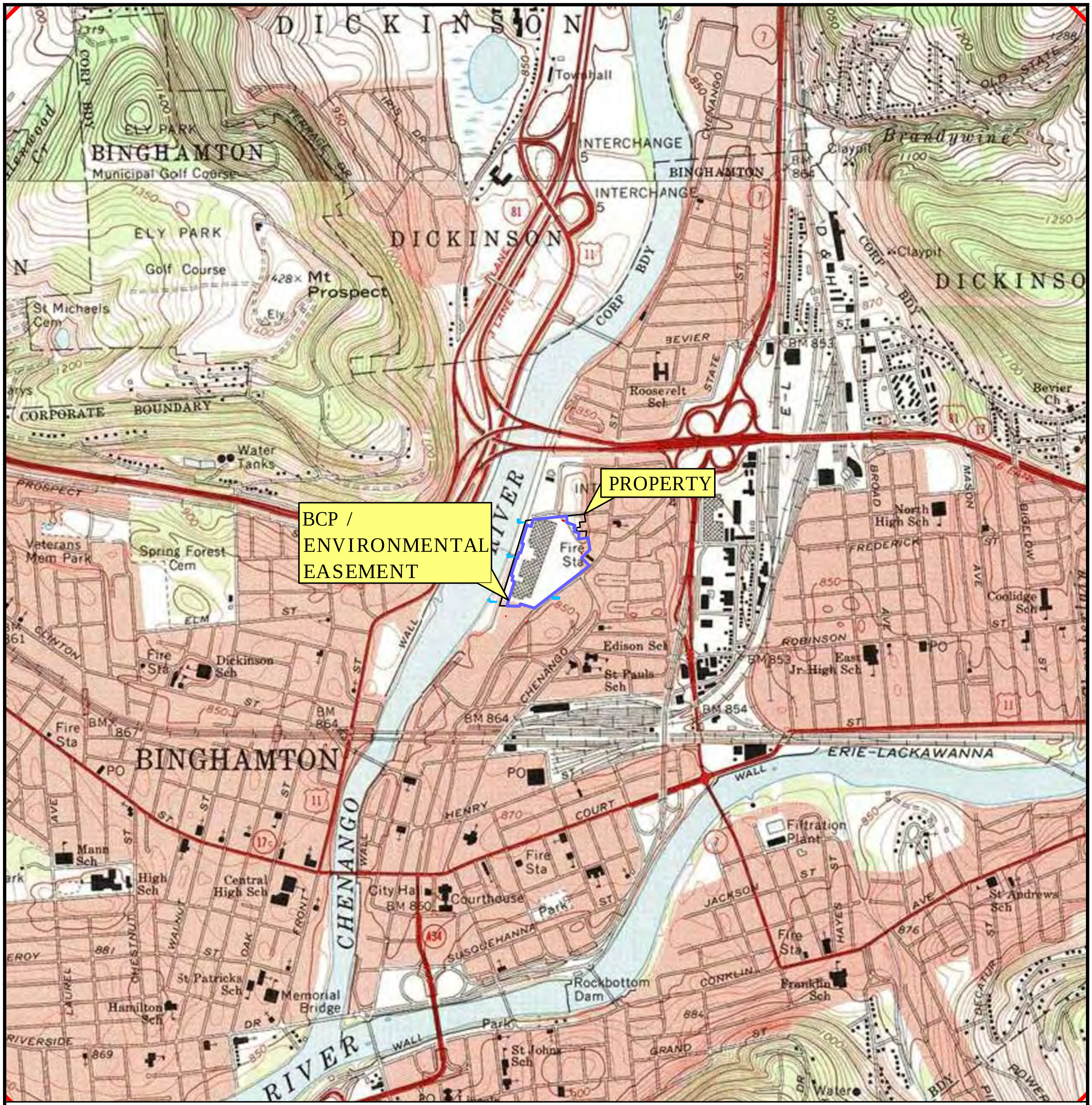
Following completion of any routine and non-routine maintenance activities, all applicable field forms will be completed. Any modifications or repairs performed will be noted on field sketches and contractor daily reports. Any major SSDS or structure repairs (fans size upgrade, additional SSDS suction points, building additions, sump pit installations, etc.) will require a re-commissioning inspection to confirm that the SSDS system or passive ventilation system is operating properly. This may include communication testing (in accordance with ASTM E 2121 "Standard Practice for Installing Radon Mitigation Systems in Existing Low-Rise Residential Buildings") and air sampling (in accordance with NYSDOH "Guidance for Evaluating Soil Vapor Intrusion in the State of New York", October 2006).

Each structure will have a hardcopy folder containing the latest and past maintenance files. Each file will be labeled with the structure's address and building identification number.

Appendix G

Attachment A

Project Site Location Map



SCALE: 1" = 2000'

SOURCE: NATIONAL GEOGRAPHIC TOPOGRAPHIC QUADRANGLE MAPS (BINGHAMTON WEST, NY).

N
W E
S

SITE LOCATION MAP

BINGHAMTON PLAZA
BINGHAMTON, NEW YORK

BRICKHOUSE ENVIRONMENTAL
PROFESSIONAL GEOLOGISTS, SCIENTISTS AND ENGINEERS
515 S. FRANKLIN STREET; WEST CHESTER, PA 19382 PHONE: 610.692.5770 FAX: 610.692.8650
WWW.BRICKHOUSE-ENVIRONMENTAL.COM

PROJECT: 06-2175.3
FILE NO.: 062175.3SL
DATE: 11/15/13
SCALE: 1" = 2,000'

FIGURE
1

Appendix G

Attachment B

Periodic Operations Visit Form

Periodic Operations Visit Form

☐ Check box if new sys info

System ID:

Date of Visit:

Owner Name:

Date Installed:

System Address:

Telephone:

City:

Zip:

Alt. Telephone:

Performed By:

Site No:

Company:

Site Name:

EXTERIOR

Fan Operation Confirmation

	Fan #1	Fan #2	Fan #3
Fan Model No(s).			
Is Fan Operating (arrival)?	○ Yes ○ No	○ Yes ○ No	○ Yes ○ No
Confirmation Method			
Is Fan Operating (departure)?	○ Yes ○ No	○ Yes ○ No	○ Yes ○ No

Requested to inspect interior system components? ○ Yes ○ No

If yes, when and by whom?

Date:

INTERIOR

Structural Review

Notes

Change in building footprint since last inspection? ○ Yes ○ No

Basement occupied (>4 hrs per day)? ○ Yes ○ No

Heating/ventilation system modifications? ○ Yes ○ No

Crawlspace inspected? ○ Yes ○ No

Large cracks in floor or near sumps? ○ Yes ○ No

Wall penetrations or cracks noted? ○ Yes ○ No

Piping, Slab & Wall

Are system suction points sealed? ○ Yes ○ No

Is piping system in need of repair? ○ Yes ○ No

Miscellaneous

Are manometer levels equal? ○ Yes ○ No

Are system labels accurate and applied correctly? ○ Yes ○ No

Maintenance completed (check all that apply): ☐ Replace fan ☐ Seal pipe ☐ Electrical ☐ Other

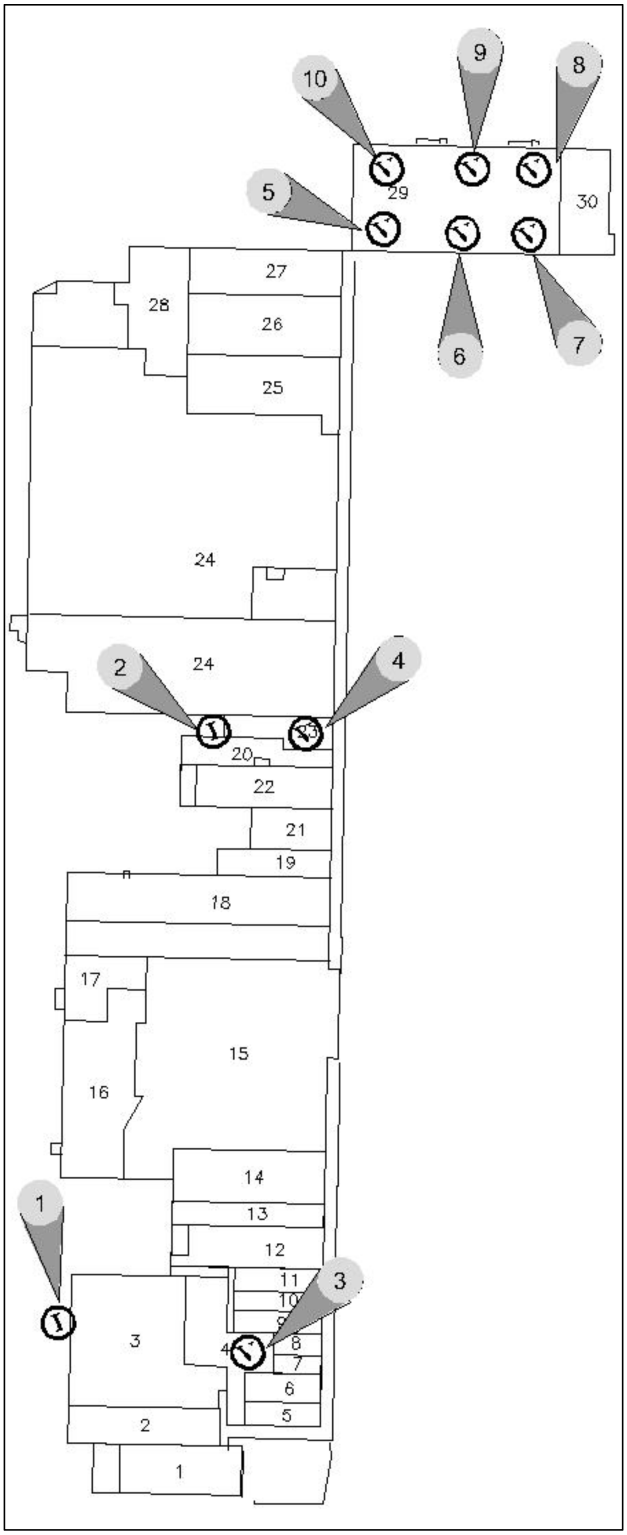
Describe repairs made and any proposed actions requiring a subsequent visit (if necessary):

Appendix G

Attachment C

Passive Ventilation System
and
Passive Field Extension Testing Form

Binghamton Plaza
Passive Ventilation Systems
Building Schematic



Descriptions of Passive Ventilation Systems

1.) Locations 1 and 2 are fresh air intakes for the crawl space beneath Buildings 1 through 28. They are steel "goose-neck" air intakes that extend several feet above grade. Can be inspected from the ground.

2.) Locations 3 and 4: Rooftop exhaust vents that exhaust air from the crawl space beneath Buildings 1 through 28. Must access roof with a ladder to inspect these.

3.) Locations 5 through 10 are rooftop vents that exhaust air from the subslab of Buildings 29 and 30. Can be inspected from the ground.

Inspection Criteria: Passive air intakes and vents must be in place without significant blockages or damage that could restrict airflow.

Inspection Results

Inspection Location	Intact? (Y/N)	Blockages? (Y/N)	Repairs Needed? (Y/N)	General Notes
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

General Notes

1.) The Binghamton Plaza site is underlain by approximately 30 feet of municipal waste and incinerator ash. The passive crawlspace and sub-slab ventilation systems were designed prevent methane and/or contaminated soil vapors from entering the onsite buildings.

2.) The purpose of this inspection is to verify that these ventilation systems are intact and functioning.

3.) If the passive ventilation systems are compromised to an extent that they can no longer function properly, repairs must be completed to restore their full functionality.

Field Inspection Form
Passive (Crawlspace and Sub-Slab) Ventilation Systems
Binghamton Plaza - Site Management Plan (Appendix G)
Inspection Frequency: Annual

Inspected By:________________________________Date:___________________

Weather Conditions:____

Pressure Field Extension Testing

Site Number & Name: ______________________ **Structure ID:** ____________

Sampler Initials & Org: ______________________ **Homeowner Phone Number:** ____________

Homeowner Name & Address: ______________________

Owner Occupied: ☐ **Yes** ☐ **No** **If no, Resident Name and Phone Number:** ____________

Weather & Outdoor Temperature: ______________________

Slab Condition: (Circle one)	**Poor** **(major cracks)**	**Average** **(some cracks)**	**Good** **(minor cracks)**	**Excellent** **(cracks sealed)**	
Floor Penetrations: (Circle all present)	**Sump Pit**	**Floor Drain**	**Perimeter Drain**	**Other (Describe):**	____________
Passive Mitigation Elements:	**Drainger**	**Drainger**	**Penetrations Sealed**	**Other (Describe):**	____________
Standing Water: (Circle one)	**Basement is Dry**	**Floor Penetrations are Damp**	**Standing Water in Floor Penetrations**	**Standing Water on Basement Floor**	

Layout Sketch Completed: ☐ **Yes** ☐ **No** **Number of Suction Points:** ____________ **Number of Fans:** ____________

Date of SSDS Install: ____________ **Fan Model(s):** ____________ **Fan Serial Number(s):** ____________

Test Point ID:					
Location Description:					
Test Hole Diameter:					
Manometer Type:					
Slab Thickness:					
Sub-Slab Material:					
Sub-Slab Moisture: (Dry, Damp, Saturated)					
Seal Type:					
Test Hole Distance to Nearest Suction Point:					
U-Tube Reading at Nearest Suction Point:					
Test Dates	**ΔP**	**ΔP**	**ΔP**	**ΔP**	**ΔP**
Initial: ____________					
Follow Up: ____________					
Follow Up: ____________					
Final: ____________					
Drill Holes Sealed:	☐	☐	☐	☐	☐

Appendix G

Attachment D

Maintenance Request Form

Maintenance Request Form

☐ Check box if new sys info

System Information

System ID: ________ Tracking ID: ________

Owner Name: ________ Site No: ________

System Address: ________ Site Name: ________

City: ________ Zip: ________

Telephone: ________ Date Installed: ________

Alt. Telephone: ________ Last Inspection: ________

Maintenance Request

Requester: ________ ○ Owner ○ Tenant ○ Other

Telephone: ________ Date of Request: ________

Problem type (check all that apply): ☐ Fan noise ☐ Vibration ☐ Condensate ☐ Manometer ☐ Other

Stated Problem:

Investigation

Performed By: ________ Company: ________

Date: ________

Findings:

Proposed Actions:

Are proposed actions estimated to cost more than $500 (est.)? ○ Yes ○ No

Repairs

Performed By:______________________________ Company:________________________

Date:________________

Actions Taken:

Materials:

Was all work performed in accordance with current protocols? ○ Yes ○ No

Deviations/Comments:

Was redline drawing made or as-built updated?	○ Yes	○ No
Was the action reviewed with the owner or tenant?	○ Yes	○ No
Was the area left in the manner it was found?	○ Yes	○ No
Was the system performance altered?	○ Yes	○ No
Re-commissioning activities completed?	○ Yes	○ No

Supervisor Review

Supervisor:________________________________ Date:________________

Forms completed fully? Drawings	○ Yes	○ No	○ N/A
updated as needed?	○ Yes	○ No	○ N/A
Documentation printed and filed?	○ Yes	○ No	○ N/A
Completed letter sent?	○ Yes	○ No	○ N/A
All required activities completed and request closed?	○ Yes	○ No	○ N/A

Actual costs ($):____________________________ Actual hours:________________

Brickhouse Environmental

APPENDIX H

QUALITY ASSURANCE PROJECT PLAN/ FIELD SAMPLING PLAN FOR AIR SAMPLING

INDOOR AND AMBIENT AIR MONITORING
QUALITY ASSURANCE PROJECT PLAN/FIELD SAMPLING PLAN

Project Name:	Binghamton Plaza
Site ID No.:	C704049
Project Locations:	State Street, City of Binghamton, Broome County
Sampling Campaign:	Indoor Air Monitoring at Buildings 31 and 32 (Daycare Buildings)
Date Prepared/Modified:	November 5, 2014
Sampling Dates:	Semi-Annual: Fall and Spring
Analytical Protocol:	NYSDEC-Analytical Services Protocol

Attachment 1: TO-17 Method Detection Limits

Attachment 2: Building 31 Indoor Air Sampling Locations

Attachment 3: Building 32 Indoor Air Sampling Location

Attachment 4: Structure Sampling Field Log

Attachment 5: Structure Sampling Building Questionnaire

Attachment 6: ULTRA III Passive Sampler Specification and Use Sheet (for TO-17)

I. PROJECT SCOPE

This Quality Assurance Project Plan (QAPP) for indoor air monitoring has been designed to function as an appendix to the Site Management Plan (SMP) for the Binghamton Plaza Brownfield Cleanup Site. The Binghamton Plaza site was formerly used as a municipal waste landfill for the disposal of raw and incinerated municipal waste. This waste remains beneath a cover and cap system and has the potential to impact the indoor air of buildings located within the Binghamton Plaza via soil vapor intrusion of volatile organic compounds (VOCs) and/or methane gas. Both passive and active sub-slab depressurization systems (SSDSs) are present and operating in all buildings at the Binghamton Plaza to mitigate this potential exposure pathway.

Prior to the implementation of the SMP, indoor air quality and sub-slab vapor quality was monitored on a consistent and periodic basis depending on the specific building. Details of these prior monitoring events are provided in the SMP text and attachments. Ongoing indoor air sampling and analysis is required at the Kurious Kids Day Care Center (Buildings 31 and 32), as part of the SMP, given the sensitive populations typically present in these buildings and positive sub-slab vapor pressures present beneath Building 31. Prior indoor air sampling and analysis has not identified unacceptable risk to building occupants through exposure to indoor air contaminants. However, should future indoor air analysis indicate an unacceptable risk, the current engineering controls must be modified or amended to reduce this risk to acceptable levels. In addition to indoor air sampling, the passive and active SSDSs are subject to annual operation and maintenance inspections as described in the SMP.

The following sections detail the sampling and analysis protocols that must be followed unless formally altered or eliminated through modifications to the SMP.

II. DATA QUALITY OBJECTIVES

All indoor air samples collected during the semi-annual air sampling events will be analyzed by an environmental laboratory that is certified by the New York State Department of Health's Environmental Laboratory Approval Program (ELAP). The chosen laboratory must be ELAP certified for the analytical methods being used. The indoor air samples should be analyzed for VOCs by EPA Method TO-17 or TO-15, with reporting limits in accordance with NYSDOH standards (i.e., 1 ug/m^3). With respect to trichloroethylene (TCE) and vinyl chloride, the reporting limit will be 0.25 ug/m^3. TO-17 uses an absorbent media and is the preferred method for this monitoring program. Difficulties with sample media contamination have been encountered in the past; therefore TO-15 (utilizing an evacuated SUMMA canister) is an acceptable alternative method. Method detection limits must be at or lower than these criteria. There will be no analysis for methane, as there is a methane alarm system installed in the buildings. A list of the analytes and their method detection limits are attached to this QAPP (Attachment 1).

III. LABORATORY CERTIFICATION

As stated above, the chosen environmental testing laboratory must be ELAP certified in New York for the method being used to analyze the indoor air samples. Eurofins Air Toxics, Inc. in Folsom, California, has been used for TO-17 analysis during prior indoor air sampling events. Also, Centek Laboratories, LLC in Syracuse, New York, has been used for TO-15 analysis during prior indoor air sampling events.

IV. ANALYTICAL METHODS/QUALITY ASSURANCE SUMMARY

The following tables summarize the indoor air sample collection, analysis and quality assurance requirements for both Buildings 31 and 32 using either EPA Method TO-17 (preferred) or TO-15 (optional). Building configuration schematics are provided as Attachments 2 and 3. These building configurations were current as of the implementation of the SMP in 2014. The sampling locations within each building are also shown on the attached schematics and are consistent with prior indoor air monitoring that has been conducted at the site.

ANALYTICAL METHODS/QUALITY ASSURANCE SUMMARY
TO-17 (PREFERRED)

Location	Matrix Type	No. of Samples	No. of Blanks	Analytical Parameters	Analytical Methods	Preservative	Volume	Hold Time
Indoor Air (Building 31)	Air	2 per event	1	VOCs	TO-17 (1ug/m3 with 0.25 ug/m3 TCE)	None	24-hour sorbent sampler	21 days
Indoor Air (Building 32)	Air	1 per event	0	VOCs	TO-17 (1ug/m3 with 0.25 ug/m3 TCE)	None	24-hour sorbent sampler	21 days
Ambient (Outdoor) Air	Air	2 per event (upwind and downwind)	0	VOCs	TO-17 (1ug/m3 with 0.25 ug/m3 TCE)	None	24-hour sorbent sampler	21 days

TO-15 (OPTIONAL)

Location	Matrix Type	No. of Samples	No. of Blanks	Analytical Parameters	Analytical Methods	Preservative	Volume	Hold Time
Indoor Air (Building 31)	Air	2 per event	0	VOCs	TO-15 (1ug/m3 with 0.25 ug/m3 TCE)	None	8-hour (1-liter or greater) SUMMA Canister	30 days
Indoor Air (Building 32)	Air	1 per event	0	VOCs	TO-15 (1ug/m3 with 0.25 ug/m3 TCE)	None	8-hour (1-liter or greater) SUMMA Canister	30 days
Ambient (Outdoor) Air	Air	2 per event (upwind and downwind)	0	VOCs	TO-15 (1ug/m3 with 0.25 ug/m3 TCE)	None	8-hour (1-liter or greater) SUMMA Canister	30 days

Approach

The potential for VOCs to migrate from the subsurface into Buildings 31 and 32 will be evaluated by measuring target VOC concentrations in indoor air. The sampling events will occur twice per year; once during the early part of the heating season (Fall) and once toward the end of the heating season (Spring). Additionally, the sampling should be conducted during the weekend hours, when the buildings will be kept shut and there will be minimal disturbances. During sample collection, the heating, ventilation and air conditioning systems will be operated as they are typically operated while the buildings are in use (weekdays). A Structure Sampling Field Log (Attachment 4) and a Structure Sampling Building Questionnaire (Attachment 5) should be completed for each building at the time of sampling. Any indoor conditions (e.g. chemical storage, etc.) that are identified during the completion of the Structure Sampling Building Questionnaire should be photographed and the locations identified on the building schematics (Attachments 2 and 3).

As described above and shown on the building schematics, three sample locations have been established: two sample locations in Building 31 and one sample location in Building 32. Two outdoor (ambient) air samples (upwind and downwind) should also be collected during each monitoring event. The outdoor air sample locations will be chosen based on the wind direction noted during the time of sampling. These locations should also be described on the Structure Sampling Field Log. One correction blank is needed for TO-17 analysis and should be placed in Building 31. Correction blanks or other blanks are not necessary for TO-15 analysis.

All TO-17 samples will be collected over a 24-hour period, using a SKC patented ULTRA III Passive Sampler with Carbograph 5 sorbent or equivalent. The passive sampler is described in more detail on the attached specification sheet (Attachment 6). All TO-15 samples will be collected over an 8-hour period using standard evacuated SUMMA canisters with a minimum volume of 1-liter.

V. SAMPLING METHODS

Soil vapor intrusion sampling procedures will be those required by New York's Guidance for Evaluating Soil Vapor Intrusion document dated October 2006 or newer version if applicable. See Section 2.7.3 for indoor air sampling protocols.

As stated above, one correction blank sample will be submitted for VOC analysis during the sampling event if TO-17 is used. The blank sample will be embedded in one of the passive samplers and will be assigned a fictitious sample number which will be recorded in the field notebook or sample log. The built-in correction blank does not get exposed to the indoor air and remains covered at all times. Analysis of blank samples will determine the precision of the analytical techniques.

VI. INSTRUMENT CALIBRATION

Laboratory equipment calibration will be documented in the laboratory data package. The use of field instrumentation is not anticipated. A photo-ionization detector (PID) may be used to screen areas of chemical storage during the completion of the Structure Sampling Building Questionnaire for the presence of total VOCs. If so, the PID should be zeroed and calibrated consistent with the manufactures instructions.

VII. SPLIT SAMPLES

Split samples with other parties are not anticipated.

VIII. CHAIN OF CUSTODY AND SAMPLE EQUIPMENT PREPARATION

Chain of custody documentation should be initiated during the passive sampler or SUMMA canister preparation at the laboratory. The custody documentation will accompany the samplers and canisters as they are delivered to the party responsible for sample collection. The chain of custody record will be maintained during storage and sample collection. Custody will be transferred back to the chosen analytical laboratory at the time of sample receipt.

IX. DATA DELIVERABLE FORMAT

All analyses will be supported by Category B deliverables and an electronic data deliverable, as per the requirements of the NYSDEC.

APPENDIX H – INDOOR AIR

ATTACHMENT 1

TO-17 METHOD DETECTION LIMITS

	Ultra III Indoor Air µg/m3		
Calibrated VOCs	1 day	3 day	7 day
Vinyl Chloride*	0.052	0.017	0.0074
Acetone*	2.9	0.96	0.41
1,1-Dichloroethene*	0.14	0.048	0.02
methylene chloride*	2.4	0.79	0.34
trans-1,2-Dichloroethene*	0.14	0.045	0.019
1,1-Dichloroethane*	0.11	0.038	0.016
MTBE*	1.3	0.42	0.18
cis-1,2-Dichloroethene	0.12	0.042	0.018
Chloroform	0.16	0.055	0.023
Hexane	0.13	0.043	0.019
MEK	1.6	0.54	0.23
1,2-Dichloroethane	0.12	0.039	0.017
1,1,1-Trichloroethane	0.20	0.066	0.028
Benzene	3.2	1.1	0.46
Carbon Tetrachloride	0.21	0.069	0.030
Trichloroethene	0.16	0.054	0.023
Toluene	0.31	0.10	0.044
Tetrachloroethene	0.24	0.078	0.034
Ethylbenzene	0.17	0.056	0.024
m,p-xylene	0.19	0.063	0.027
o-Xylene	0.19	0.063	0.027
Styrene	0.16	0.054	0.023
1,2,4-Trimethylbenzene	0.18	0.058	0.025
1,4-Dichlorobenzene	0.19	0.065	0.028
Formaldehyde	2.9	0.97	0.41
Acetaldehyde	3.1	1.0	0.44
Naphthalene	0.36	0.12	0.052

*Maximum sample duration has not been verified, possibility for back diffusion exist past (3) days.

Brickhouse Environmental

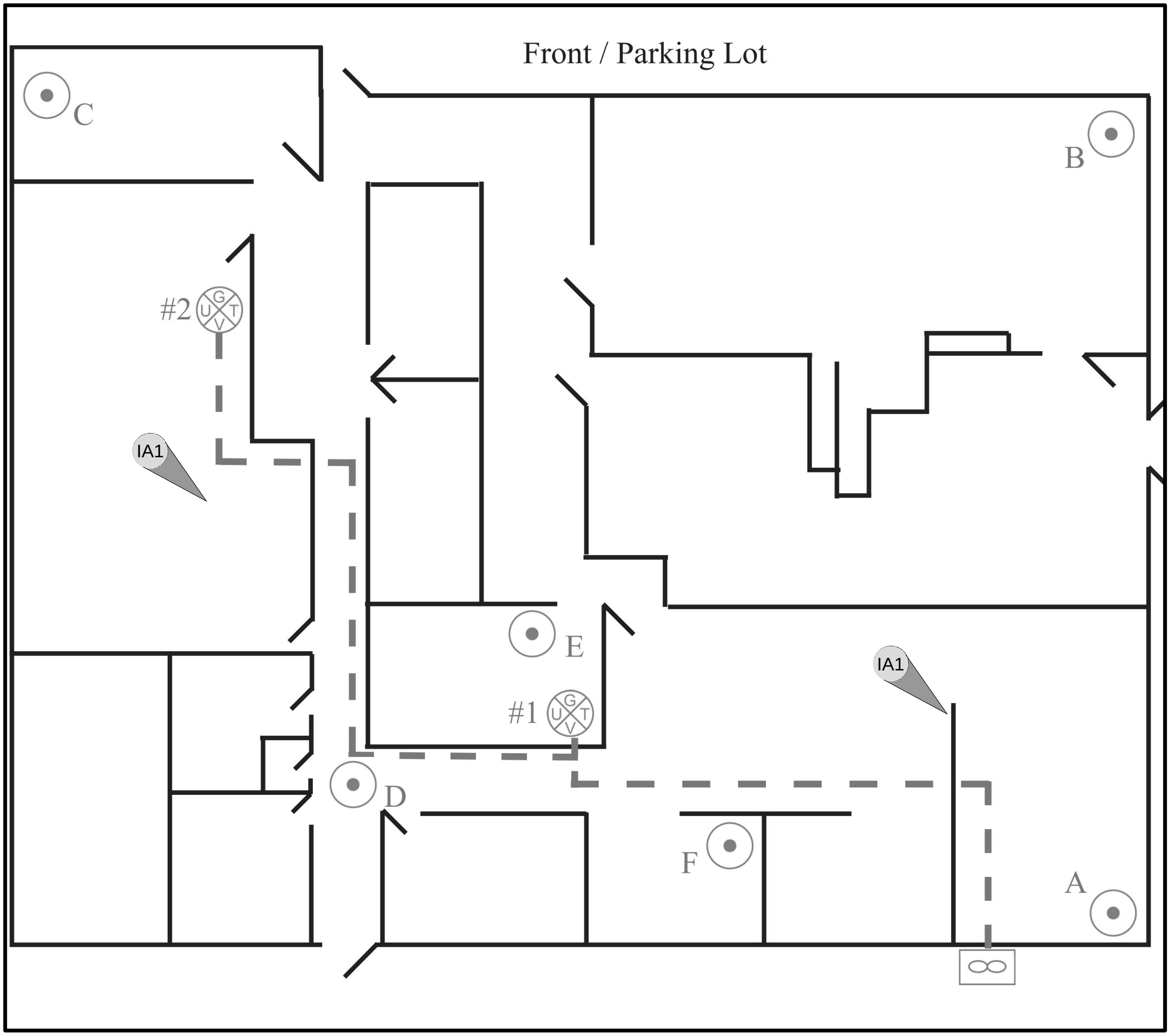
APPENDIX H – INDOOR AIR

ATTACHMENT 2

BUILDING 31 INDOOR AIR SAMPLING LOCATIONS

J:\062175.3\DWG\062175.3IA.BASE.DWG

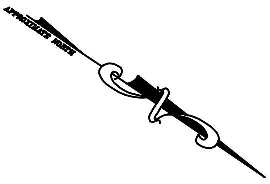
PLOTTED: Radcliffe, Mark at 11/14/2014 12:16 PM



SYMBOLS

U T	SUCTION POINT WITH U TUBE	\\\\\\	WALL PARGING
G U T V	SUCTION POINT WITH GATE VALVE AND U TUBE	▨	EPDM CRAWLSPACE
●	COMMUNICATION TEST HOLE	□	POURED CONCRETE
▬ ▬ ▬	PIPE ROUTE	~	PATCHED FLOOR
∞	EXHAUST FAN	DJR	DRAINJER COVERED FLOOR DRAIN

IA1 INDOOR AIR SAMPLE LOCATION (APR. 2013, FEB. 2014, AUG. 2014)



ORIGINAL SCHEMATIC AND FEATURE LOCATIONS COURTESY OF KEYSTONE ENVIRONMENTAL OF BINGHAMTON , NY

BUILDING 31 SSD SYSTEM CONFIGURATION

BINGHAMTON PLAZA, CITY OF BINGHAMTON, BROOME COUNTY, NY

BRICKHOUSE ENVIRONMENTAL
PROFESSIONAL GEOLOGISTS, SCIENTISTS AND ENGINEERS
515 S. FRANKLIN STREET; WEST CHESTER, PA 19382 PHONE: 610.692.5770 FAX: 610.692.8650
WWW.BRICKHOUSE-ENVIRONMENTAL.COM

PROJECT: 062175.3
FILE NO.: 062175.3IA.BASE
DATE: 11/11/2014
SCALE: NO SCALE

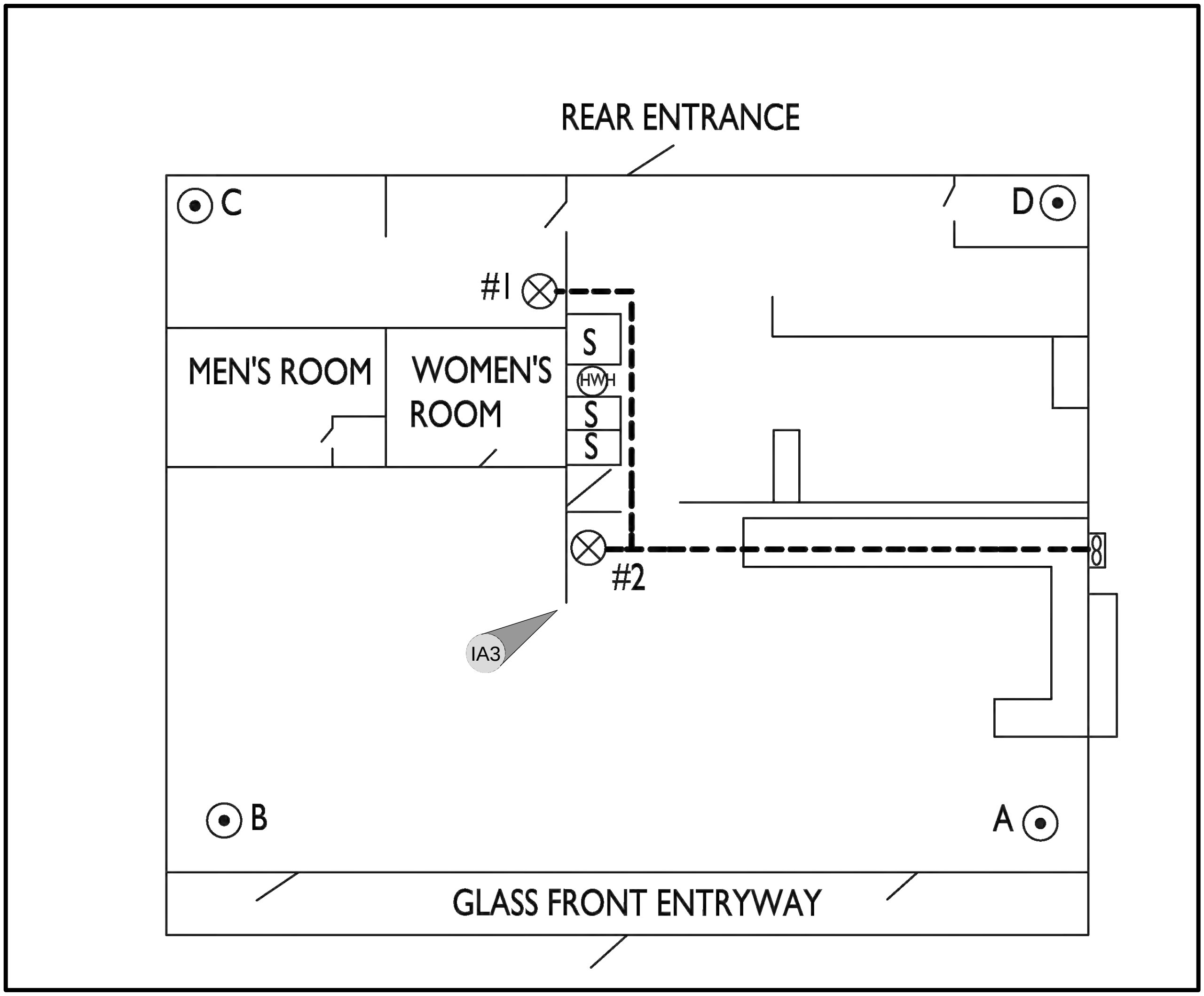
ATTACHMENT
2

Brickhouse Environmental

APPENDIX H – INDOOR AIR

ATTACHMENT 3

BUILDING 32 INDOOR AIR SAMPLING LOCATION



SYMBOLS: ⊗ SUCTION POINT WITH U-TUBE ⊙ COMMUNICATION TEST HOLE (FD) DRAINJER FLOOR DRAIN ▨ NEW CONCRETE SLAB ▨ EPDM CRAWLSPACE ∞ EXHAUST FAN ━ ━ PIPE ROUTE

IA3 INDOOR AIR SAMPLE LOCATION (AUG. 2014)

ORIGINAL SCHEMATIC AND FEATURE LOCATIONS COURTESY OF
KEYSTONE ENVIRONMENTAL OF BINGHAMTON , NY.

BUILDING 32 SSD SYSTEM CONFIGURATION

BINGHAMTON PLAZA, CITY OF BINGHAMTON, BROOME COUNTY, NY

BRICKHOUSE ENVIRONMENTAL
PROFESSIONAL GEOLOGISTS, SCIENTISTS AND ENGINEERS
515 S. FRANKLIN STREET; WEST CHESTER, PA 19382 PHONE: 610.692.5770 FAX: 610.692.8650
WWW.BRICKHOUSE-ENVIRONMENTAL.COM

PROJECT: 062175.3
FILE NO.: 062175.3IA.BASE
DATE: 11/11/2014
SCALE: NO SCALE

ATTACHMENT
3

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APPENDIX H – INDOOR AIR

ATTACHMENT 4

STRUCTURE SAMPLING FIELD LOG

Structure Sampling Field Log

Site Number & Name: ____________________ **Structure ID:** __________

Samplers & Company: ____________________ **Sample Date:** __________

Structure Address: ____________________ **Phone Number:** __________

Owner Name and Address (if different)**:** ____________________

Weather & Outdoor Temperature: ____________________

Slab Condition : ☐ **Dirt Floor** ☐ **Poor (major cracks)** ☐ **Average (some cracks)** ☐ **Good (minor cracks)**

Floor Penetrations: (select all present) ☐ **Sump Pit** ☐ **Floor Drain** ☐ **Perimeter Drain** ☐ **Other**
Describe: ____________________

Standing Water: (select all present)

Basement is Dry	Floor Penetrations are Damp	Standing Water in Floor Penetrations	Standing Water on Basement Floor
☐	☐	☐	☐

Building Questionnaire Completed: ☐ **Yes** ☐ **No** **Product Inventory Completed:** ☐ **Yes** ☐ **No** **Layout Sketch Completed:** ☐ **Yes** ☐ **No**

Sample ID:					
Location Description:					
Canister ID:					
Regulator ID:					
Slab Thickness:					
Sub-Slab Material:					
Sub-Slab Moisture: (Dry, Damp, Saturated)					
Seal Type:					
	Pre-Sample Leak Detection				
% Helium in Chamber:					
Purge Volume:					
% Helium in Tedlar:					
Purge Air PID Reading :					
	Sample Times and Vacuum Readings				
Canister Vol:	☐ 6L Other:	☐ 6L Other:	☐ 6L Other:	☐ 6L Other:	☐ 6L Other:
Sample Start Time:					
Vacuum Gauge Start:					
Sample End Time:					
Vacuum Gauge End:					
	Post-Sample Leak Detection				
% Helium in Chamber:					
% Helium in Tedlar:					
Purge Air PID Reading :					

Drill Holes Sealed: ☐ ☐ ☐ ☐ ☐

Structure Sampling Field Log

SUB SLAB SOIL GAS PARAMETERS

Sample ID:					
CH_4 - ppm					
O_2 %					
CO_2 ppm					
H_2S ppm					

ADDITIONAL SAMPLES

Sample ID:					
Location Description:					
Canister ID:					
Regulator ID:					
Slab Thickness:					
Sub-Slab Material:					
Sub-Slab Moisture: (Dry, Damp, Saturated)					
Seal Type:					
	Pre-Sample Leak Detection				
% Helium in Chamber:					
Purge Volume:					
% Helium in Tedlar:					
Purge Air PID Reading :					
	Sample Times and Vacuum Readings				
Caniter Volume:	☐ 6L Other:	☐ 6L Other:	☐ 6L Other:	☐ 6L Other:	☐ 6L Other:
Sample Start Time:					
Vacuum Gauge Start:					
Sample End Time:					
Vacuum Gauge End:					
	Post-Sample Leak Detection				
% Helium in Chamber:					
% Helium in Tedlar:					
Purge Air PID Reading :					
Drill Holes Sealed:	☐	☐	☐	☐	☐

General Comments:

Brickhouse Environmental

APPENDIX H – INDOOR AIR

ATTACHMENT 5

STRUCTURE SAMPLING BUILDING QUESTIONNAIRE

Soil Vapor Intrusion - Sructure Sampling Building Questionnaire

Structure ID : _______________

Site No. : ______________________ **Site Name** : _________________________________

Date: ______________________ **Time:** _________________________________

Structure Address : ____

Preparer's Name & Affiliation: ____

Residential ? ☐ **Yes** ☐ **No** **Owner Occupied ?** ☐ **Yes** ☐ **No** **Owner Interviewed ?** ☐ **Yes** ☐ **No**

Commercial ? ☐ **Yes** ☐ **No** **Industrial ?** ☐ **Yes** ☐ **No** **Mixed Uses ?** ☐ **Yes** ☐ **No**

Identify all non-residential use(s): ____

Owner Name : ____ **Owner Phone** : ( ) __________ - __________

Secondary Owner Phone : ( ) __________ - __________

Owner Address (if different) : ____

Occupant Name : ______________________________________ **Occupant Phone** : ( ) __________ - __________

Secondary Occupant Phone : ( ) __________ - __________

Number & Age of All Persons Residing at This Location: ____

Additional Owner/Occupant Information: ____

Describe Structure (style, number floors, size) : ____

____

Approximate **Year Built** : ______________________ Is the building **Insulated**? ☐ Yes ☐ No

Lowest level : ☐ Slab-on-grade ☐ Basement ☐ Crawlspace

Describe Lowest Level (finishing, use, time spent in space) : ____

____

Floor Type: ☐ Concrete Slab ☐ Dirt ☐ Mixed : ____

Floor Condition : ☐ Good (few or no cracks) ☐ Average (some cracks) ☐ Poor (broken concrete or dirt)

Sumps/Drains? ☐ Yes ☐ No Describe : ______________________________

Identify other floor penetrations & details: ____

____

Wall Construction : ☐ Concrete Block ☐ Poured Concrete ☐ Laid-Up Stone

Identify any wall penetrations : ____

____

Identify water, moisture, or seepage: location & severity (sump, cracks, stains, etc) : ______________________________

____

Heating Fuel : ☐ Oil ☐ Gas ☐ Wood ☐ Electric ☐ Other : ______________________

Heating System : ☐ Forced Air ☐ Hot Water ☐ Other : ______________________________

Hot Water System : ☐ Combustion ☐ Electric

Clothes Dryer : ☐ Electric ☐ Gas Where is dryer **vented** to? ______________________________

If combustion occurs, describe where air is drawn from (cold air return, basement, external air, etc.) : ________________

____

Air Conditioning : ☐ Central Air ☐ Window Units ☐ Fans ☐ None

Fans & Vents (identify where fans/vents pull air from and where they vent/exhaust to) : ________________________________

Describe factors that may affect indoor air quality (chemical use/storage, unvented heaters, smoking, workshop):

Attached Garage ? ☐ Yes ☐ No Air fresheners ? ☐ Yes ☐ No

New carpet or furniture ? ☐ Yes ☐ No What/Where ? ________________________________

Recent **painting** or **staining** ? ☐ Yes ☐ No Where ? : ________________________

Any **solvent** or **chemical-like** odors ? ☐ Yes ☐ No Describe : ________________________

Last time **Dry Cleaned** fabrics brought in ? ____________________ What / Where ? ________________________

Do any building occupants use solvents at work ? ☐ Yes ☐ No Describe : ________________

Any testing for Radon ? ☐ Yes ☐ No Results : ________________________________

Radon System present ? ☐ Yes ☐ No Describe : ________________________________

Lowest Building Level Layout Sketch

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sketc
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

B or **F**	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	**xxxxxxx**	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	######	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

APPENDIX H – INDOOR AIR

ATTACHMENT 6

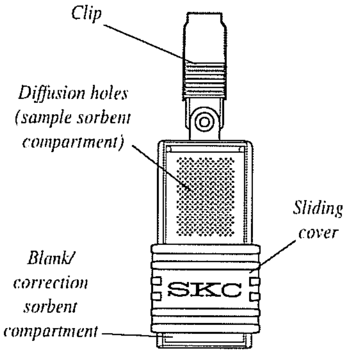
ULTRA III PASSIVE SAMPLER SPECIFICATIONS AND USE SHEET (FOR TO-17)

Operating Instructions

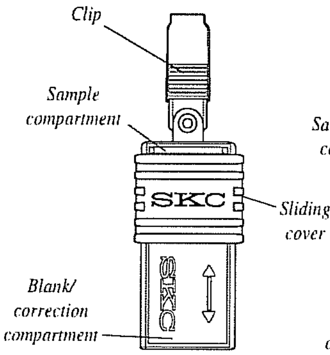
863 Valley View Road, Eighty Four, PA 15330 USA
Tel: 724-941-9701 Fax: 724-941-1369 e-mail: skctech@skcinc.com

ULTRA III Passive Samplers

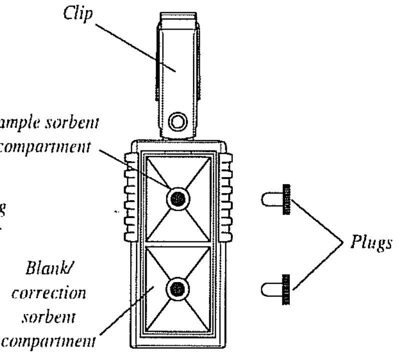
Cat. Nos. 690-101, -102, -103, and -104



Sliding cover in open (sampling) position



Sliding cover in closed position



Back view

Applications

SKC patented* ULTRA III Passive Samplers provide for low ppb to ppt detection of organic vapors in ambient and indoor air. The ULTRA III Passive Sampler with Carbograph 5 sorbent (Cat. No. 690-102) is an economical alternative to SUMMA canisters for EPA TO-15 sampling.

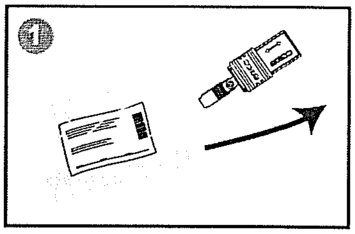
Performance Profile

Sampling Rates:	Go to the SKC Passive (Diffusive) Sampling Guide at http://www.skcinc.com/PassiveGuide/default.asp.
Analysis:	Thermal desorption; gas chromatography *See Analysis Instructions at www.skcinc.com/instructions/40125.pdf.*
Shelf-life:	60 days from date of manufacture. Store at ≤ 39.2 F (4 C).

* *U.S. Patent No. 6,607,581*

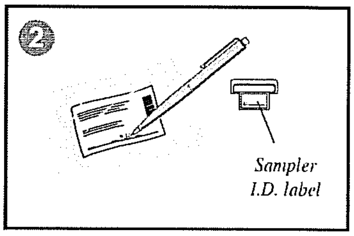
Sampling

1. Open pouch. Remove sampler.
   a. Do not discard pouch.
   b. Store pouch in a clean, organic solvent-free environment.



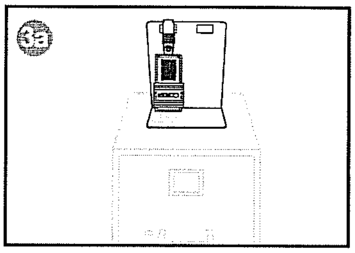
2. Record the following:
   a. **Sample ID** on pouch and sampler I.D. label
   b. **Sampling location** on pouch
   c. **Date sample taken** on pouch

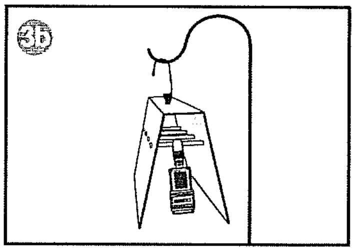
(!) ***Do <u>not</u> use Sharpie® markers or equivalent to mark label or pouch as these can off-gas VOCs.***



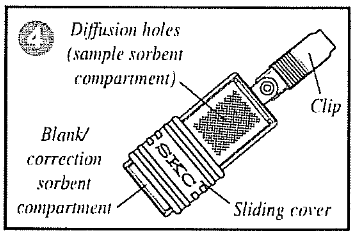
3. Clip sampler(s) in appropriate location.
   a. **Indoors:** Clip sampler(s) to stand accessory (Cat. No. 690-302) and locate at appropriate height.
   b. **Outdoors:** Clip sampler(s) inside shelter (open on two ends and bottom to allow air to flow freely). Hang shelter securely at the appropriate height.

(!) ***Ensure diffusion holes in sampler are not obstructed in any way.***

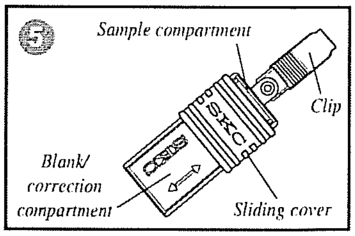




4. Start sampling: Slide sampler cover to open position (diffusion holes visible).
   a. Write sample start time on pouch label.

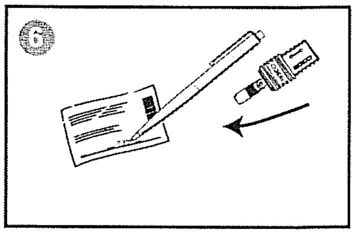


5. Stop sampling: Slide sampler cover to closed position (arrow and SKC visible).
   a. Write sample stop time on pouch label.



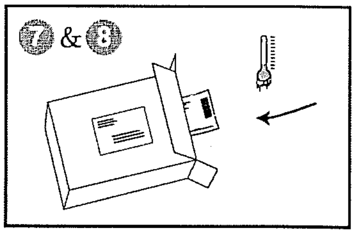
6. Place sampler in its resealable pouch **immediately** after sampling.

(!) ***Ensure sample ID on sampler matches sample ID on pouch.***



7. Seal pouch(es). Place pouch(es) in container with cool pack.

8. Use expedited shipping to ship sample(s) and Chain of Custody form(s) to a laboratory for analysis.



Storage

Before Sampling: Up to 60 days at $\leq$ 39.2 F (4 C) in a clean, organic solvent-free environment

After Sampling: 21 days at $\leq$ 39.2 F (4 C) in a clean, organic solvent-free environment

Ordering

ULTRA III Passive Samplers (pk/5) prefilled with:	Cat. No.
Anasorb GCB1[#‡], 370 mg in each compartment	**690-101**
Carbograph 5[#], 450 mg in each compartment	**690-102**
Chromosorb 106[#¥], 285 mg in each compartment	**690-103**
Tenax TA[#], 265 mg in each compartment	**690-104**

[#] Limited shelf-life; see Storage above

[‡] Comparable to Carbopack B

[¥] Go to www.osha.gov and search on ULTRA for additional information on sampling rates for Chromosorb 106.

Sampling Accessories	
Stand for Indoor Sampling, ea	**690-302**
Secondary Diffusion Barrier, 12 holes, lowers sampling rate	**690-300**

Analysis Accessory	
Thermal Desorption Tube, Perkin Elmer, 0.25-inch OD x 3.5-inch length, includes screens and end caps, ea	**P226530**

SKC Limited Warranty and Return Policy

SKC products are subject to the SKC Limited Warranty and Return Policy, which provides SKC's sole liability and the buyer's exclusive remedy. To view the complete SKC Limited Warranty and Return Policy, go to http://www.skcinc.com/warranty.asp.

APPENDIX H

QUALITY ASSURANCE PROJECT PLAN/
FIELD SAMPLING PLAN FOR GROUNDWATER SAMPLING

GROUNDWATER MONITORING
QUALITY ASSURANCE PROJECT PLAN/FIELD SAMPLING PLAN

Project Name:	Binghamton Plaza
Site ID No.:	C704049
Project Locations:	State Street, City of Binghamton, Broome County
Sampling Campaign:	Post-Remediation Effectiveness Monitoring of Groundwater
Date Prepared/Modified:	November 5, 2014
Sampling Dates:	Within 6 Months of SMP Implementation and Every 5 Years After Implementation
Analytical Protocol:	NYSDEC-Analytical Services Protocol

Attachment 1: Monitoring Well Location Map

Attachment 2: Groundwater Field Sampling Log

I. PROJECT SCOPE

This Quality Assurance Project Plan (QAPP) for groundwater monitoring has been designed to function as an appendix to the Site Management Plan (SMP) for the Binghamton Plaza Brownfield Cleanup Site. The Binghamton Plaza site was formerly used as a municipal waste landfill for the disposal of raw and incinerated municipal waste. This waste remains beneath a cover and cap system and has the potential to impact groundwater. However, significant groundwater impacts were not identified during the remedial investigation (RI) performed at the site in 2008. The only remediation conducted at the site involved the installation of a site-wide soil and asphalt cover system to supplement the previously existing landfill capping materials (asphalt paving, buildings and sidewalks). The purpose of this groundwater monitoring program is to verify that groundwater conditions are not appreciably changing following the implementation of the remedy (i.e. installation of a site-wide cover system).

The following sections detail the sampling and analysis protocols that must be followed unless formally altered or eliminated through modifications to the SMP.

II. DATA QUALITY OBJECTIVES

The groundwater sampling and analysis described in this QAPP and the SMP include the proper collection of groundwater samples from the existing groundwater monitoring network that was installed at the site during the 2008 RI. This QAPP should be used in conjunction with the SMP. Additional site-specific information, not contained in this QAPP, is included in the SMP. The groundwater sampling and analytical procedures were developed to be consistent with those employed during the 2008 RI and those described in the New York State Department of Environmental Conservation’s (NYSDEC) Technical Guidance for Site Investigation and Remediation (DER-10). The pertinent technical guidance provided in DER-10 should be adhered to when implementing this groundwater monitoring program. All groundwater sample analytical results will be compared to the most current version of the NYSDEC Groundwater Quality Standards for Class GA groundwaters. The analytical methods selected should provide limits of quantitation that are less than or equal to these Groundwater Quality Standards and be included in the current NYSDEC Analytical Services Protocol (ASP).

III. LABORATORY CERTIFICATION

The chosen environmental testing laboratory must be ELAP certified in New York for the methods being used to analyze the groundwater samples.

IV. ANALYTICAL METHODS/QUALITY ASSURANCE SUMMARY

The following tables summarize the groundwater sample analysis and quality assurance requirements. The monitoring well network was last sampled in 2009 and includes 11 shallow and deep wells. A monitoring well location map is provided as Attachment 1. The groundwater monitoring summarized in the tables below applies to the initial and subsequent sampling events. The first sampling event will be conducted within 6 months of SMP implementation. The subsequent monitoring events will be conducted every 5 years. The initial (6 month) sampling event includes all the same analysis that was conducted during the RI. The subsequent (5 year) sampling event includes only those analytes or groups of analytes that were detected above Groundwater Quality Standards during the RI. If the initial (6 month) sampling event is inconsistent with the RI results, the subsequent monitoring events and this QAPP/SMP should be modified to tailor future sampling events to the current groundwater conditions.

ANALYTICAL METHODS/QUALITY ASSURANCE SUMMARY
INITIAL (6 MONTH) REQUIREMENTS

Sample Type	Matrix Type	VOCs (EPA 8260)	SVOCs (EPA 8270)	PCBs (EPA 8082)	Metals (RCRA 8+Ca, Fe, Mg, Mn, K &Na) (Various Methods)	Routine Landfill Parameters
		Sample Quantity/Frequency				
Monitoring Wells	Groundwater	11	11	11	11	11
Field Duplicates	Groundwater	1/Sample Group	1/Sample Group	1/Sample Group	1/Sample Group	1/Sample Group
MS/MSD	Groundwater	1 set	1 set	1 set	1 set	Not Applicable
Field Blank	Deionized Water	1/Sample Group	1/Sample Group	1/Sample Group	1/Sample Group	1/Sample Group
Trip Blank	Deionized Water	1/Sample Group	Not Applicable	Not Applicable	Not Applicable	Not Applicable

SUBSEQUENT (5 YEAR) REQUIREMENTS

Sample Type	Matrix Type	VOCs (EPA 8260)	SVOCs (EPA 8270)	PCBs (EPA 8082)	Metals (RCRA 8) (Various Methods)	Total Phenolics (EPA 420)
		Sample Quantity/Frequency				
Monitoring Wells	Groundwater	11	11	0	11	1
Field Duplicates	Groundwater	1	1/Sample Group	0	1/Sample Group	1/Sample Group
MS/MSD	Groundwater	1	1 set	0	1 set	Not Applicable
Field Blank	Deionized Water	1	1/Sample Group	0	1/Sample Group	1/Sample Group
Trip Blank	Deionized Water	1/Sample Group	Not Applicable	Not Applicable	Not Applicable	Not Applicable

V. SAMPLING METHODOLOGY

All monitoring well sampling activities will be recorded in a field book and a groundwater-sampling log included as Attachment 2. The well sampling log will also note an inspection of the well integrity and serve as the inspection form for the groundwater monitoring well network during groundwater monitoring events. The integrity of the well heads will also be assessed on a semi-annual basis during inspections of the cap and cover system, as described in the SMP.

Prior to sampling, the groundwater levels in each well will be measured using an electronic groundwater level meter. The groundwater levels will be taken at the upgradient wells first then progress to the downgradient wells. The water levels will be measured from a surveyed point located in the inner top-of-casing of the PVC. It should be noted, however, that because of historical groundwater level conditions, it is anticipated that not all wells will contain a sufficient quantity of water to collect a representative sample. Most of the shallow monitoring wells are screened in waste material. Subsequently, these monitoring wells are often dry and cannot be sampled. The field conditions at the time of sampling will dictate if a sample can be collected.

Prior to sampling, the wells will be purged using a thoroughly decontaminated submersible pump and disposable tubing from within the screened interval. Refer to the well construction logs provided in Appendix F of the SMP. Low-flow (low-stress) sampling techniques will be utilized for monitoring well purging and sampling. Low-flow groundwater sampling techniques are well defined by the United States Environmental Protection Agency (USEPA) and provide a consistent method for purging and sampling a monitoring well (using a submersible pump) at a low flow rate (typically <1 liter/minute) that does not cause significant drawdown (<0.3 feet). These techniques were developed to ensure the collection of representative groundwater samples and to minimize the entrainment of monitoring well sediments and aquifer materials into the sampled groundwater. If needed, refer to the most current version of USEPA procedures for low flow groundwater sampling from monitoring wells.

Purged water will be containerized, characterized as necessary, and disposed of properly. Groundwater quality will be monitored continuously for stabilization of indicator water quality parameters including pH, temperature, dissolved oxygen (DO), oxidation/reduction potential (ORP), specific conductance, and turbidity using a flow-through-cell. Readings will be obtained every five minutes or after one flow-through-cell volume has been purged since the previous measurement, whichever is greater. Once indicator water quality parameters are stabilized, groundwater samples should be obtained directly from the purge water discharge. Stabilization is considered to be achieved when 3 successive readings are within the following limits:

- Turbidity - 10% for turbidity if measurements are >5 NTU. If 3 consecutive turbidity measurements are < 5 NTU, then consider stabilized.

- DO - 10% for values greater than 0.5 mg/L. If 3 consecutive DO measurements are < 0.5 mg/L, then consider stabilized.

- Specific conductance - 3%.

- Temperature - 3%.

- pH - +/- 0.1 standard unit.

- ORP - +/- 10 mV

For instances when field parameter stabilization does not occur within 2-hours one of the following actions should be taken:

- Continue purging until stabilization is achieved.

- Discontinue purging, do not collect any samples, and record that stabilization could not be achieved on the groundwater-sampling log. The log should document what actions were taken in an attempt to achieve stabilization.

- Discontinue purging, collect samples and provide an explanation of what actions were taken in an attempt to achieve stabilization. Proceeding in this fashion may result in the data quality objectives not being met for the monitoring event and may cause a sampling bias in the analytical data.

The shallow monitoring wells do not often contain a sufficient water column to allow for purging and sampling. The water contained in these wells is typically stagnant water that has become trapped in the bottom of the well within the solid PVC endcap. If water columns of 6-inches or less are observed in the shallow wells, purging and sampling should not be conducted. Make a note of this condition on the groundwater-sampling log.

Groundwater samples will be immediately transferred to laboratory-prepared bottleware provided by the environmental testing laboratory that will be performing the analysis. The sample bottles will be packed in ice and placed in coolers and transported under chain-of-custody by a courier to the laboratory for analysis.

VI. INSTRUMENT CALIBRATION

Laboratory equipment calibration will be documented in the laboratory data package. A multi-parameter flow through cell is typically used to monitoring field parameters during low-flow (low-stress) groundwater purging and sampling. Field calibration and field calibration checks should be performed consistent with the manufacturer’s instructions for the meter being used.

VII. SPLIT SAMPLES

Split samples with other parties are not anticipated.

VIII. CHAIN OF CUSTODY AND SAMPLE EQUIPMENT PREPARATION

Chain of custody documentation should be initiated during the preparation of the sample containers at the laboratory. The custody documentation will accompany the samplers and canisters as they are delivered to the party responsible for sample collection. The chain of custody record will be maintained during storage and sample collection. Custody will be transferred back to chosen analytical laboratory at the time of sample receipt.

IX. DATA DELIVERABLE FORMAT

All analyses will be supported by Category B deliverables and an electronic data deliverable, as per the requirements of the NYSDEC.

J:\062175.3\Reports\Site Management Plan\Appendices with DEC comments from 10.14\Appendix H QAPPs for IA and GW\Appendix H QAPP for GW.doc

Brickhouse Environmental

APPENDIX H - GROUNDWATER

ATTACHMENT 1

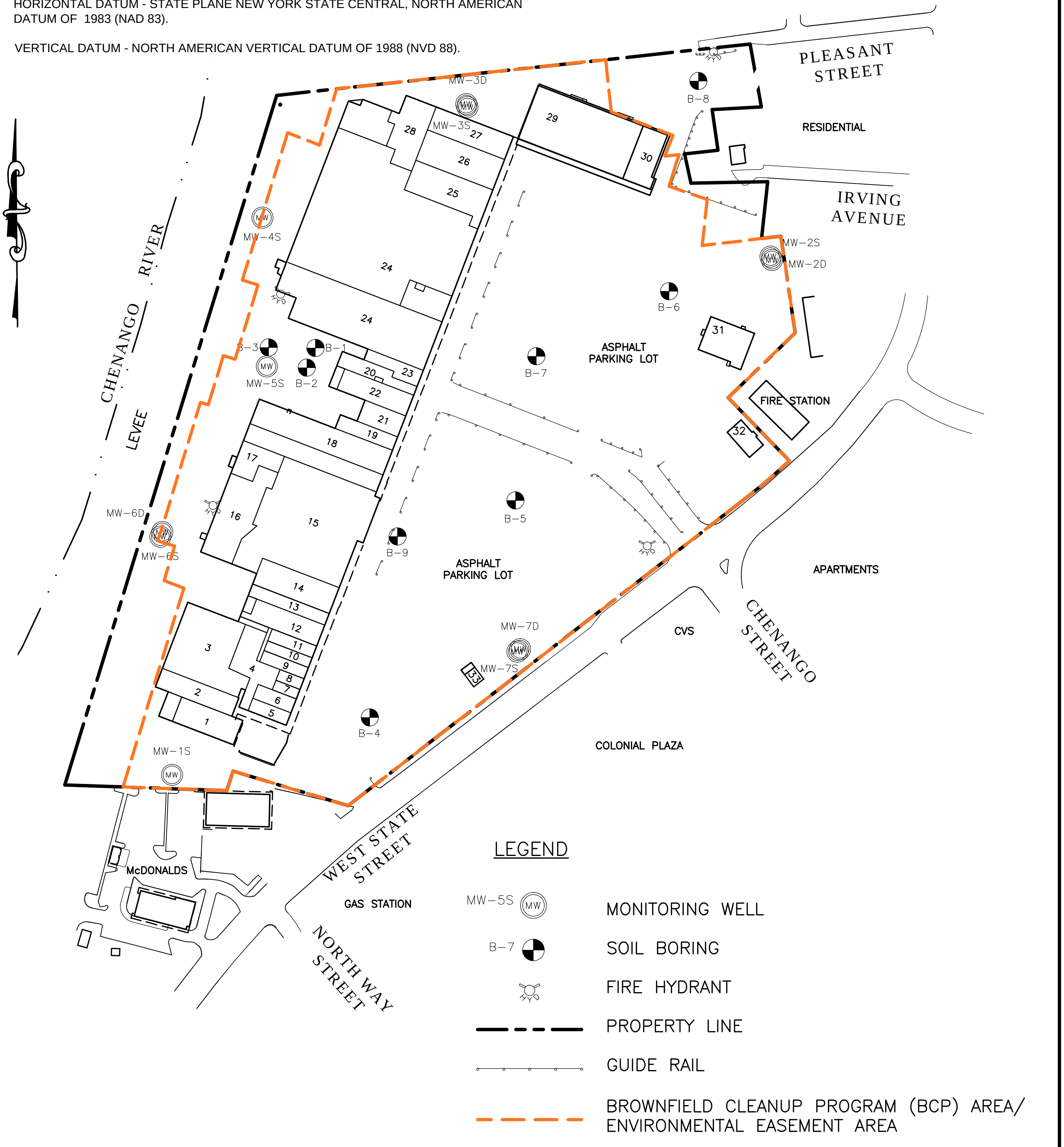
MONITORING WELL LOCATION MAP

J:\062175.3\DWG\062175.3_BASE.DWG

PLOTTED: Radcliffe, Mark at 11/14/2014 12:16 PM

NOTES:

1. REFERENCE PLANS:
   - *SAMPLE LOCATION MAP FOR BRICKHOUSE ENVIRONMENTAL CONSULTANTS AND ENGINEERS BINGHAMTON PLAZA - WEST STATE STREET* PREPARED BY KEYSTONE ASSOCIATES DATED 02/02/09, LAST REVISED 6/18/13.
   - *ENVIRONMENTAL EASEMENT / BROWNFIELD SURVEY* , PREPARED BY KEYSTONE ASSOCIATES DATED 10/7/2014.
2. HORIZONTAL DATUM - STATE PLANE NEW YORK STATE CENTRAL, NORTH AMERICAN DATUM OF 1983 (NAD 83).
3. VERTICAL DATUM - NORTH AMERICAN VERTICAL DATUM OF 1988 (NVD 88).



MONITOR WELL LOCATION MAP

BINGHAMTON PLAZA, CITY OF BINGHAMTON, BROOME COUNTY, NY

BRICKHOUSE ENVIRONMENTAL

PROFESSIONAL GEOLOGISTS, SCIENTISTS AND ENGINEERS
515 S. FRANKLIN STREET; WEST CHESTER, PA 19382 PHONE: 610.692.5770 FAX: 610.692.8650
WWW.BRICKHOUSE-ENVIRONMENTAL.COM

PROJECT:	06-2671.3
FILE NO.:	062175.3_BASE
DATE:	10/7/2014
SCALE:	1" = 250'

ATTACHMENT

1

Brickhouse Environmental

APPENDIX H - GROUNDWATER

ATTACHMENT 2

GROUNDWATER FIELD SAMPLING LOG

Groundwater Monitoring Well
Purge and Sample Report

Date: _____________ Purge Time (start/end): _______/________ Sample Time (start/end):_______/_________

Sample Location: ____________________________ Laboratory: _______________ P.O.# : ________

Project Number: _____________________________ Project Name: _____________________
Project Manager: ________________________

Sampling Team: _____________________________

Program: ___________________________

Weather:___________________________________ Permit # : _______________

Purge Method: ___________________________
Sample Method: _________________________
Sample Type: ____________________________

Pump Depth: _____ ft. Purging Order: _____ of ______
Sample Depth: _____ ft. Sample Order: _____ of _____

Well Depth: _____ ft

Initial Static Product Level:_________________ft.
Initial Static Water Level:__________________ft.
Static Water Level (after purge):____________ft.
Static Water Level (before sampling):_________ft.
Water Column:_________________________ft.

Casing Diameter: ____ Casing Material: PVC
Depth to Screen:____ Reference Point:________

Well Head PID Reading:____________ ppm

Gals./ Vol:_____________________________
No. Vols Purged:________________________

Blanks: Field Trip Wash
Duplicate of:_____________________________
Split Sample: Y N

Sample Kit #_____________________________
Calibration
No. of Times:_______________

Well Dewatered:_______________

Time	DTW (feet)	Pumping Rate	Volume Purged	ORP (mv)	Turbidity (NTUs)	pH (units)	Spec. Cond. (uS)	Temp (°C)	Diss. Oxy.
Stabilization Requirements				**± 10 mv**	**< 20 NTUs**	**± 0.1**	**± 3%**	**N/A**	**± 10%**

COC#	Parameters	Bottleware	Preservative	Hold Time	Filtered

Reference = U.S. EPA Region I Low Stress Purging and Sampling Procedure - Current Version at Time of Monitoring

Notes:
Recovery:
Sample Appearance:
Monitoring Well Condition:

Signature:____ Date:_____________

Brickhouse Environmental

APPENDIX I

SSD SYSTEM COMPONENT SPECIFICATIONS

Honeywell

VISTA-20P

VISTA® CONTROL PANEL

The high capacity, feature-rich VISTA-20P lets you deliver more value to your customers on each and every sale with up to 48 zones of protection, Internet uploading/downloading, graphic keypad support and dual partitions. VISTA-20P gives you the ability to send alarm signals and upload/download via an Internet Protocol (IP), improving the speed at which information can be delivered to and from the control panel.

In addition, the VISTA-20P, used with an AlarmNet® Internet or 4G communicator can be installed in premises without TELCO lines. The panel's installation advantages, innovative end-user benefits and robust system capacity make the value-priced VISTA-20P an ideal choice for higher end installations.

FEATURES

- IP alarm reporting and uploading/downloading capability for Internet and Intranet use via iGSMV4G, 7845i-ENT, GSMV4G or GSMX4G
- Supports four graphic touchscreen keypads
- Wireless keys can be programmed without using zones
- Eight on-board hardwired zones standard (15 when Zone Doubling feature is used)
  - – 40 hardwire expansion zones
  - – 40 wireless expansion zones
- Two low current on-board trigger outputs
- 100 Event Log viewable at system keypads with time/date stamp
- 48 system user codes assignable to either partition
- Expandable to 48 total zones when used with hardwired and/or wireless expansion modules
- Two independent partitions plus a common partition
  - – Global Arming from any system keypad
  - – Go to function to view or operate one partition from the other
  - – Separate partition account numbers
- 16 output devices
  - – Relays (Model 4204 Relay Modules, or 4229 Expansion Module)
- Four installer-configurable zone types allows the installer to create custom zone types by assigning all zone attributes
- Supports four-wire and up to 16 two-wire smokes
  - – Works with Sentrol CleanMe™ maintenance signal
- Multiple actions on output devices depending on system state
  - – Turns lights off when system arms
  - – Turns the same light on when system disarms
  - – Flashes same lights when system is in alarm
- Built-in phone line cut monitor with programmable delay and annunciation options
  - – Display on system keypads
  - – Trigger local sounders
  - – Trigger system bell

Security Dealer Features

- Automatic System Load Shed
  - – During extended AC power fail, the system battery will be disconnected to prevent irreversible battery failure. Reduces service calls to replace batteries.
- Dynamic Signaling
  - – Reduces redundant reporting to the central station when multiple reporting methods are used; i.e. digital dialer and AlarmNet radio

Valuable End-user Features

- Viewable on system keypads:
  - – Exit countdown
  - – Time and date display*
  - – Event log*
- Auto keypad backlighting on entry
- Keyswitch arming
- Programmable macro buttons and single-button arming
- Supports a variety of wireless remote controls for single-button operation
- User Scheduling
  - – Latchkey reports to pagers
  - – Auto arm/disarm
  - – "User access" time windows
- VIP Module allows system control from any touchtone phone
- Chime by zone
- Fully compatible with Honeywell Total Connect™ Remote Services

*Requires custom alpha keypad

VISTA-20P

VISTA® CONTROL PANEL

SPECIFICATIONS

Electrical

- Aux. power 12VDC, 600mA maximum
- Seven hour standby at 400mA aux. load with four amp hour battery
- 16.5VAC/25VA transformer
- Alarm output 12VDC, 2.0 amps max.
  - For UL installations, combined aux. and alarm output cannot exceed 700mA

Output Control

- Supports up to four relay boards (up to 16 relays)
- Optional X-10 transformer/interface (part no. 4300) may be used to control up to 16 X-10 receiving devices

Zones

- Eight hardwired zones (15 with zone doubling)
- Selectable response 10msec, 350msec, 750msec
- Assignable to any partition
- 20 selectable zone types plus four configurable zone types
- Programmable swinger suppression

Expansion Devices

- 4219 – Eight hardwired zones – 16mA
- 4204 – Up to four relays – 15mA standby (each active relay draws an additional 40mA)
- 4229 – Eight hardwired zones and two relays – 36mA (each active relay draws an additional 40mA)

Accessories

- iGSMV4G Internet and Digital Cellular Communicator with Remote Service Capability
- 7845i-ENT Enterprise Internet Communicator
- GSMV4G Digital Cellular Communicator with Remote Service Capability
- GSMX4G Digital Cellular Communicator for VISTA Control Panels
- 5881ENL RF Receiver supports up to eight zones – 60mA
- 5881ENM supports up to 16 zones – 60mA
- 5881ENH supports up to 48 zones – 60mA
- 5883 Transceiver supports up to 40 zones – 80mA

Keypads

- 6162 Custom Alpha Security Keypad – 40mA/120mA
- 6162V Voice Custom Alpha Security Keypad – 60mA/190mA
- 6162RF Custom Alpha Receiver/Security Keypad – 120mA/210mA
- 6152 Fixed-English Security Keypad – 40mA/70mA
- 6152V Voice Fixed-English Security Keypad – 60mA/190mA
- 6152RF/6152RFFR Fixed-English/French Receiver/Security Keypad – 80mA/105mA
- 6152ZN/6152ZNFR Fixed-English/French Security Keypad with Hardwired Zone – 35mA/80mA
- 6148 Fixed English LCD – 30mA/55mA
- 6280 Color Graphic Touchscreen Keypad with Voice
- Tuxedo Touch™ (TUXW) Color Graphic Voice Touchscreen Security Keypad and Home/Business Controller (White)
- Tuxedo Touch with Integrated Wi-Fi® (TUXWIFIW) Color Graphic Voice Touchscreen Security Keypad and Home/Business Controller with Integrated Wi-Fi (White)

Agency Listings

ETL listing

- Residential Fire and Burglary:
  - – Household Fire Warning System Units – ANSI/UL 985, 2000/05/26 (5th edition) with revisions up to 2004/04/29

Smoke Detectors

- Supports up to 16 two-wire smoke detectors
- Supports four-wire smoke detectors

Communications

- iGSMV4G Internet and Digital Cellular Communicator with Remote Service Capability
- 7845i-ENT Enterprise Internet Communicator
- GSMV4G Digital Cellular Communicator with Remote Service Capability
- GSMX4G Digital Cellular Communicator for VISTA Control Panels
- Touchtone or pulse
- Formats supported
  - – ADEMCO® Contact ID
  - – ADEMCO 4 + 2 Express
  - – ADEMCO low speed
  - – Sescoa/Radionics
- 3 + 1, 4 + 1 and 4 + 2 reporting
- Reporting capabilities
  - – Split
  - – Dual
  - – Split/Dual – True dial tone detection
- Low battery reports 11.2 – 11.6VDC
- AC loss and restoral reporting supported

ORDERING

VISTA-20P	Control Panel
VISTA-20PSIA	Control Panel for CP-01 SIA Certifications

For more information:
www.honeywell.com/security

Automation and Control Solutions
Honeywell Security Products Americas
2 Corporate Center Dr. Suite 100
P.O. Box 9040
Melville, NY 11747
1.800.467.5875
www.honeywell.com

L/VISTA20PD/D
December 2013

Honeywell

Specifications

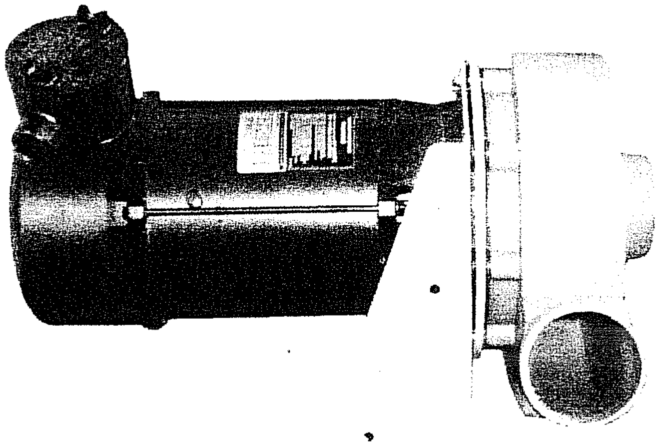
		GHD 2010N CO DETECTOR			GHD 2000 GAS DETECTOR		
Operating voltage		**12VDC**	**24VAC**	**24VDC**	**12VDC**	**24VAC/DC**	**110VAC**
Current (mA):	***Stand-by***	15	20	24	220	160	48
	Alarm	32	37	45	250	190	55
Power consumption (Wat)		0.18	0.9	1.0	3	4.2	6
Sensor		Solid state semiconductor, maintenance free			Solid state semiconductor, maintenance free		
Area monitored (sq. ft.)		1050 (100m²)			1050 (100m²)		
Mounting height		6' wall mount			6' methane, 1' butane , propane, wall mount		
Air sampling period		continuously			continuously		
Audible alarm signal		Piezzo buzzer - 85 db at 10'			Piezzo buzzer - 85 db at 10'		
	Alarm	4 short beeps every 5 seconds			2 beeps per second		
	Trouble	1 beep every 5 seconds			1 beep every 5 seconds		
Visual alarm mode		Red LED					
Trouble mode		Yellow LED					
Stand-by mode		Green LED			Green LED		
Alarm level		70 ppm/60-240 minutes			Less than 15% of L.E.L.		
UL standard		UL2075			UL 1484		
Relay specifications		NO/NC dry contact, 42VDC, max 1 Amp			N.O. dry contact: 42VDC, max 240 mA		
Dimensions (inch)		5.5x3x2.2 (140x80x55mm)			5.5x3x2.2 (140x80x55mm)		
Net detector weight (lb)		0.5 (230 g)			0.5 (230 g)		
Adaptor 110/12VDC (lb)		0.3 lb (140 gr.)			0.5 (230 g)		

Models

GHD2010/12N	12VDC WITH RELAY	**GHD2000/12**	12VDC WITH RELAY
GHD2010/24N	24VAC/DC WITH RELAY	**GHD2000/24**	24AC/DC WITH RELAY
GHD2010/110N	110VAC WITH RELAY	**GHD2000/110**	110VAC WITH RELAY
GHD2010/220N	220VAC WITH RELAY	**GHD2000/220**	220VAC WITH RELAY

CAV Series

Installation, Operation & Maintenance



FanAm, Inc

Laboratories
Schools
Methane Exhaust
Petrochemical Exhaust
Wastewater Treatment
Chlorine Rooms
Battery Storage Rooms

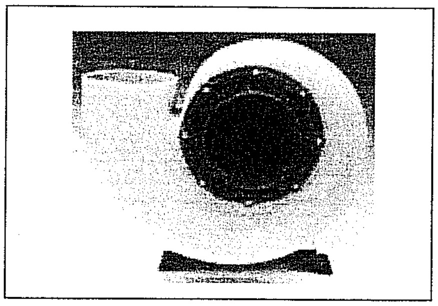
Corrosive Air Ventilators

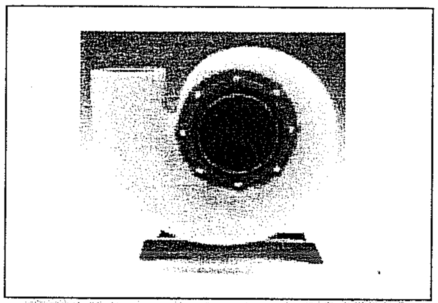
CAV Series

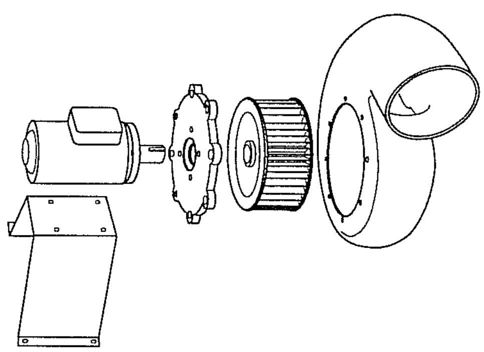
Installation

The CAV utility blowers are shipped completely assembled and ready for installation.

1. Blower unit should be secured to a solid base to prevent vibration and noise. The motor mount stand provides four (4) holes to securely fasten the fan in place. Use screws, bolts, or nails as needed, to secure the blower.
2. Use appropriate connectors and ducting for the applications to connect the fan inlet and outlet.
3. Wiring instructions are included with each utility blower and are also permanently attached to the motor. Observe and follow wiring instructions and all codes that apply. Never attempt to install or remove a blower unit with the power source turned on. Verify that power source meets motor plate electrical requirements.
4. Ensure proper impeller rotation. Rotation should be Clock Wise (CW) when looking into inlet of blower. To reverse rotation, change wiring according to diagram.
5. Always use finger guard on inlet/outlet when the unit is running if no duct work is connected. Do not place hands, fingers, or other objects into the inlet or outlet. Serious injury may occur!
6. If the CAV Series utility is installed outside or in an aggressive environment, it is recommended that the motor be protected by a weather cover.
7. Housing may be rotated to any of 8 positions by removing back plate screws from the housing. Rotate housing to desired position and reconnect motor plate screws.







Operation

The CAV Series utility blower is designed for continuous duty and may be started and stopped by various on/off switch devices.

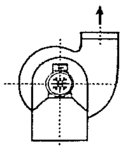
Caution

Most CAV motors have auto thermal overload protection (TOP). Should the blower overheat the motor will stop operation and will start again automatically, once the motor cools down. Always turn power off before attempting to work on the unit!

Installation should prevent introduction of foreign materials into the air stream. If foreign materials are present, damage to the blower may result. Appropriate filters and guards should be in place during blower operation

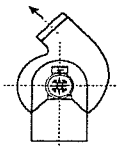
Rotation and Discharge for Centrifugal Fans

STANDARD

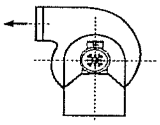


Up Blast
CCW 360°

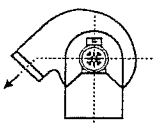
OPTIONAL FIELD ADJUSTABLE POSITIONS



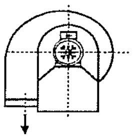
Top Angular
UP Blast
CCW 45°



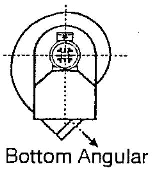
Top
Horizontal
CCW 90°



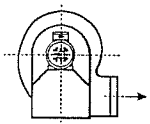
Top Angular
Down Blast
CCW 135°



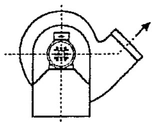
Down Blast
CCW 180°



Bottom Angular
Down Blast
CCW 225°



Bottom
Horizontal
CCW 270°



Bottom Angular
Up Blast
CCW 315°

CAV Series

Maintenance

The CAV motors have sealed ball bearings and are permanently lubricated, requiring no maintenance. The impeller (fan wheel) and housing should be cleaned periodically to remove any dirt or other build up that may occur.

Caution

Always turn off the power before attempting any work or maintenance on the unit.

If the utility blower housing and impeller require rinsing to clean, a drain plug may need to be installed to drain collected water from the housing.

Motors are not washdown duty. If housing is drilled to install drain plug, be careful not to damage the impeller.

FanAm, Inc

2235 6th Street
Sarasota, Florida 34237

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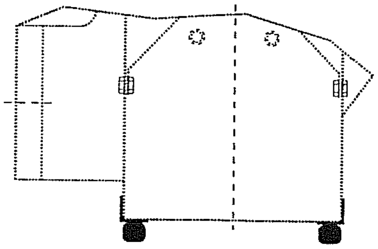
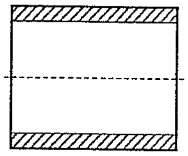
Toll Free (800) 838-4074
info@fanam.com
www.fanam.com

Accessories

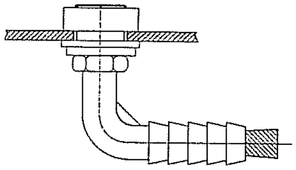
Anti-Vibration
Dampers;
Set of four (4)



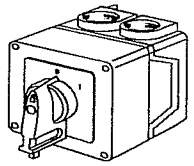
Elastic Collar
Stainless Steel Bands



Condensate Drain
(polypropylene)



Disconnect Switch



NOTE: More accessories available, please call factory for specific needs.

Limitations of Warranty and Liability

This warranty does not apply to any FanAm product or part which has failed as a result of faulty installation or abuse, incorrect electrical connections or alterations made by others, or use under abnormal operating conditions or misapplication of the products or parts. We will not approve for payment any repairs not made by us or our authorized agent without prior written consent. The foregoing shall constitute our sole and exclusive warranty and our sole and exclusive liability, and is in lieu of all other warranties, whether written, oral, implied or statutory. There are no warranties which extend beyond the description on the page hereof. We do not warranty that said goods and articles are of merchantable quality nor that they are fit for a particular purpose. Our liability on any claim of any kind, including negligence, for any loss or damage arising from or connected with, or resulting from, the sale and purchase of the products and parts covered by this proposal, acknowledgement, order or from the performance or breach of any contract pertaining to such sale of purchase, or from the design, manufacture, sale, delivery, resale, installation, technical direction in installation, inspection, repair, operation or use of any product or part covered by the proposal, acknowledgement, order or furnished by FanAm shall, in no case, exceed the price allocable to the products or parts thereof which give rise to the claim and shall terminate at the end of the applicable warranty period of said product or part. In no event whether as a result of breach of contract, or warranty or alleged negligence, defect, incorrect advice or other causes, shall FanAm be liable for special or consequential damages, including but not limited to loss of profits or revenue, loss of use of equipment or any associated equipment, cost of capital, cost of substitute equipment, facilities or services, downtime cost, or claims of customers of purchases for such damages. FanAm neither assumes nor authorizes any person to assume for it any other liability in connection with the sale of its products or parts. Some jurisdiction do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

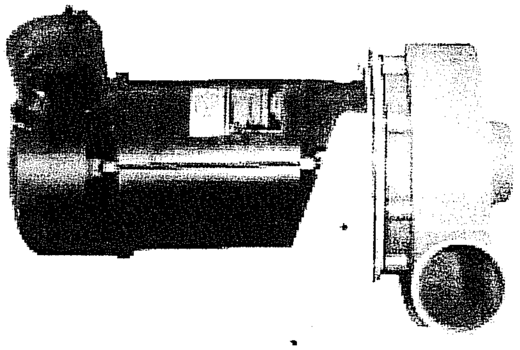
LIMITED WARRANTY

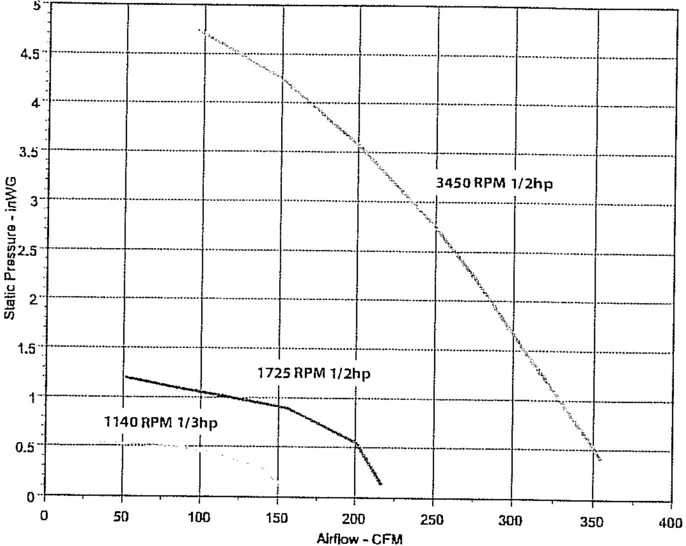
FanAm warrants its products and parts to be free from defects in workmanship and service for period of one (1) year from the date of purchase. Products and parts not specifically designed for use in a corrosive or explosive environment shall have no warranty and the user assumes full liability for use in such environments. Our obligation under this warranty is limited to the repair or replacement as our option, without cost at our facility, of any part or parts thereof which shall, within the warranty period, be returned to us with transportation charges prepaid, and which our examination discloses as being defective. All requests for repair or replacement must be directed to FanAm for authorization prior to the return of any product or part. This warranty gives you specific legal rights and you may also have other rights in the jurisdiction in which you reside. (It is incumbent upon the claiment to provide substantiation of purchase of installation dates if such question should arise.)

DISCLAIMER

FanAm Inc. has made a diligent effort to illustrate and describe the products in this literature accurately however, such illustrations and descriptions are for the sole purpose of identification, and do not express or imply a warranty that the products are merchantable, or fit for a particular purpose, or that the products will necessarily conform to the illustrations.

SPECIFICATION SHEET
CAV 100

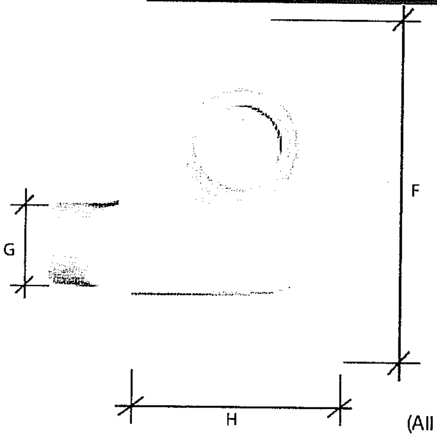


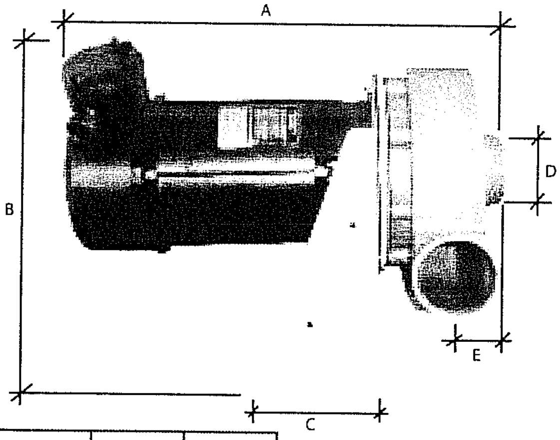


Performance Data

CAV 100		1140 rpm	1140 rpm	1725 rpm	1725 rpm	3450 rpm	3450 rpm
Voltage	V	115/208-230	208-230/460	115/208-230	208-230/460	115/208-230	208-230/460
Frequency	Hz	60	60	60	60	60	60
Phase	~	1	3	1	3	1	3
Power	HP	0.33	0.33	0.50	0.50	0.5	0.5
Fl. a.	Amp	5.6/2.8	1.4/0.7	9.0/4.5	2.2/1.1	6.8/3.4	1.9/0.95
Max. air flow	CFM	152	152	240	240	360	360
R.p.m	min-1	1140	1140	1725	1725	3450	3450
Sound level	dB(A)	55	55	65	65	85	85
Enclosure		TEFC	TEFC	TEFC	TEFC	TEFC	TEFC
Service Factor		1.15	1.15	1.15	1.15	1.15	1.15

Dimensional Data





(All Dimensions in inches)

A	B	C	D	E	F	G	H
20	17	5.5	3.5	3.25	15	3.25	9.25

*Slight variations in dimensions might occur depending upon motor selection

PROJECT			ARCHITECT
CONTRACTOR	DATE	SUBMITTED BY	ENGINEER

SPECIFICATION

FAN POS.	MODEL NO.	CFM	IN.WG.	RPM	WATTS/HP	AMPS	dB(A)	SONES	QTY.	OPTIONAL EQUIPMENT

FanAm, Inc.

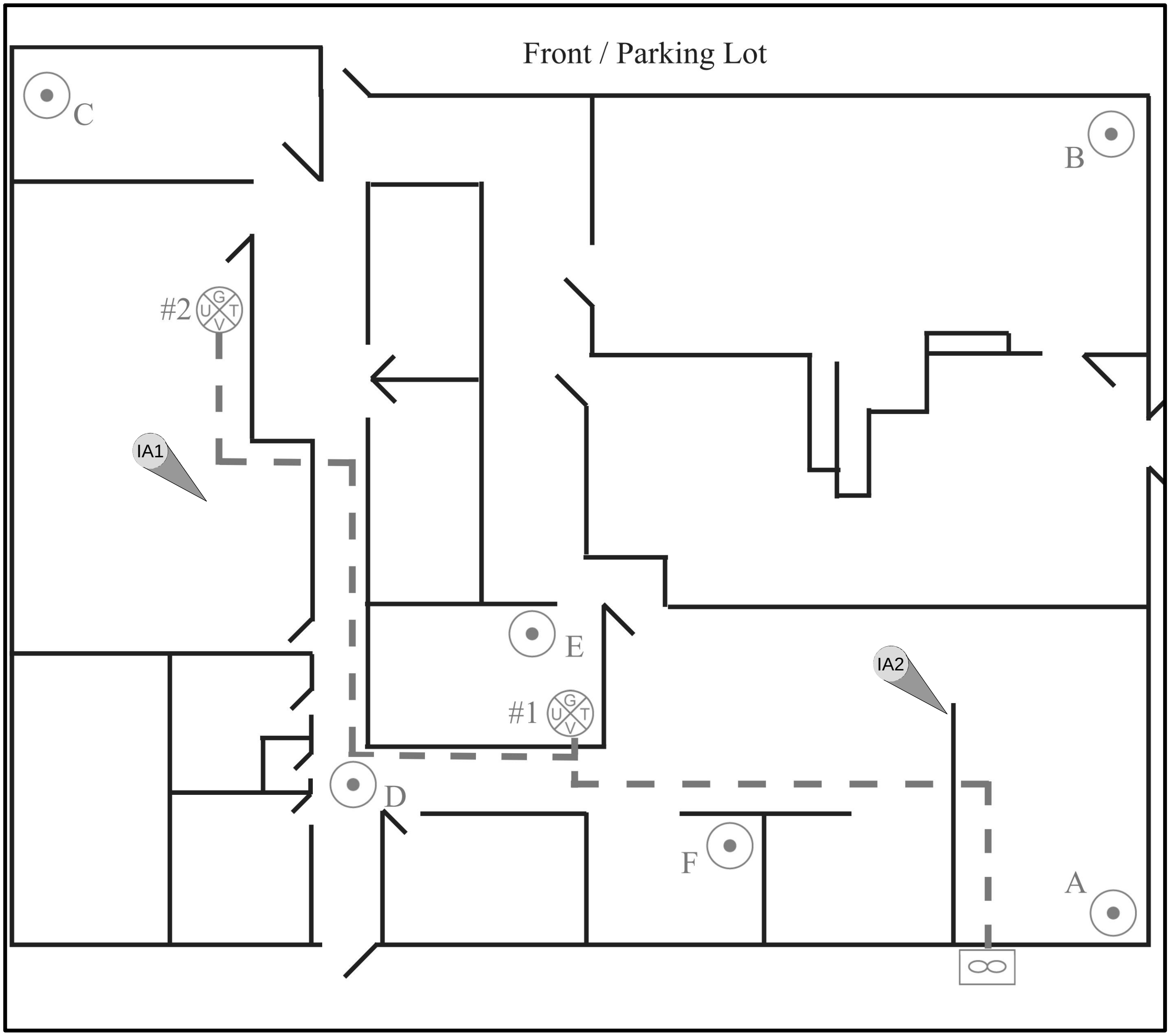
2235 6th Street, Sarasota, FL 34237
Telephone: (941) 955-9788, Toll Free: (800) 838-4074
Fax: (941) 955-9733, Email: info@fanam.com, Web: www.fanam.com

APPENDIX J

SSD SYSTEM CONFIGURATIONS IN BUILDINGS 31, 32 AND 33

J:\062175.3\DWG\062175.3IA.BASE.DWG

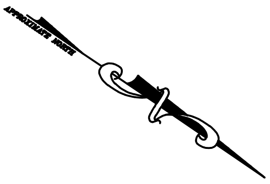
PLOTTED: Radcliffe, Mark at 11/14/2014 12:15 PM



SYMBOLS

U T	SUCTION POINT WITH U TUBE
G U T V	SUCTION POINT WITH GATE VALVE AND U TUBE
⊙	COMMUNICATION TEST HOLE
▬ ▬ ▬	PIPE ROUTE
∞	EXHAUST FAN
⧹⧹⧹⧹⧹	WALL PARGING
▨	EPDM CRAWLSPACE
▢	POURED CONCRETE
~	PATCHED FLOOR
DJR	DRAINJER COVERED FLOOR DRAIN

IA1	INDOOR AIR SAMPLE LOCATION (APR. 2013, FEB. 2014, AUG. 2014)



ORIGINAL SCHEMATIC AND FEATURE LOCATIONS COURTESY OF
KEYSTONE ENVIRONMENTAL OF BINGHAMTON , NY

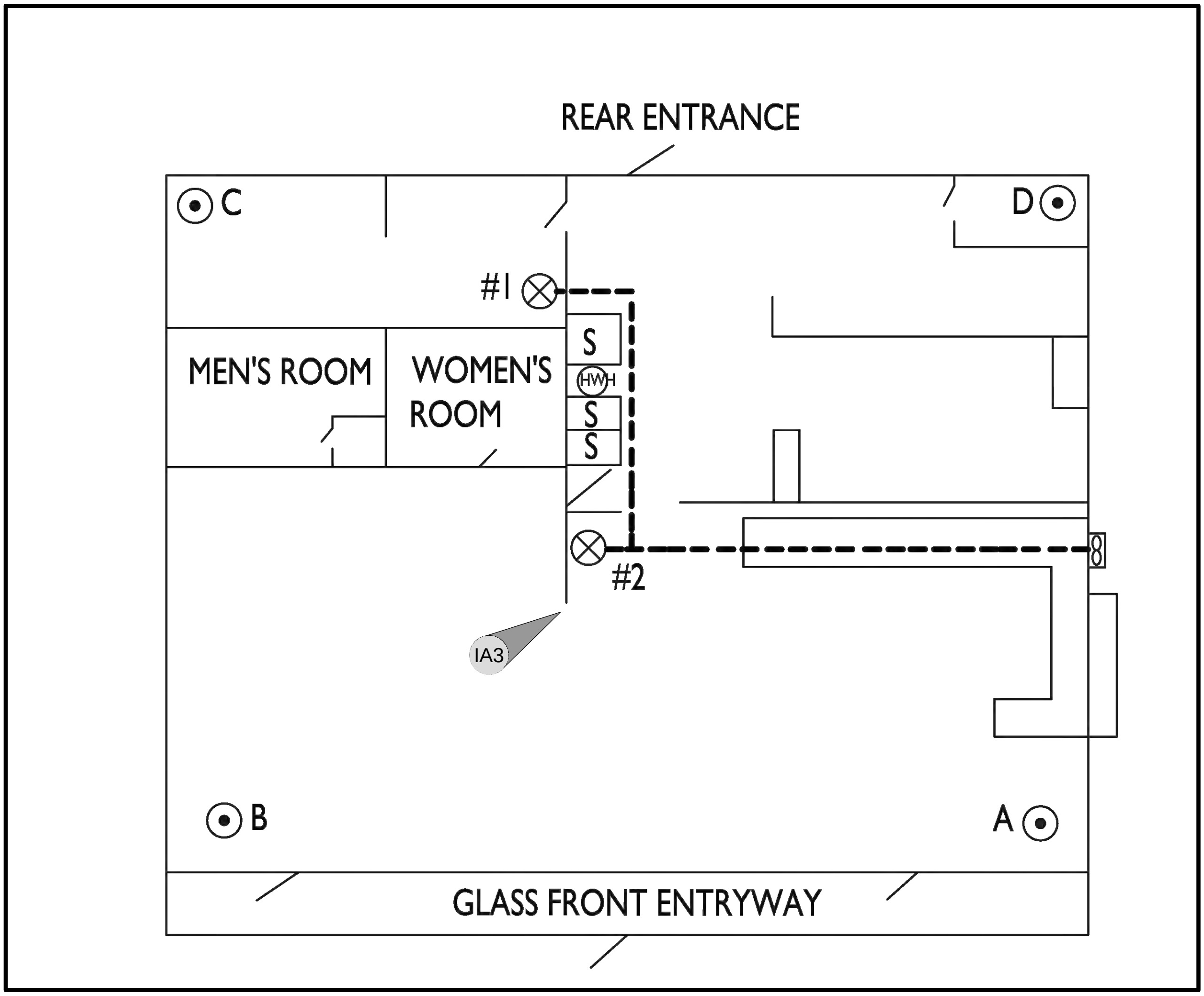
BUILDING 31 SSD SYSTEM CONFIGURATION

BINGHAMTON PLAZA, CITY OF BINGHAMTON, BROOME COUNTY, NY

BRICKHOUSE ENVIRONMENTAL
PROFESSIONAL GEOLOGISTS, SCIENTISTS AND ENGINEERS
515 S. FRANKLIN STREET; WEST CHESTER, PA 19382 PHONE: 610.692.5770 FAX: 610.692.8650
WWW.BRICKHOUSE-ENVIRONMENTAL.COM

PROJECT: 062175.3
FILE NO.: 062175.3IA.BASE
DATE: 11/11/2014
SCALE: NO SCALE

FIGURE
J-1



SYMBOLS:
- ⊗ SUCTION POINT WITH U-TUBE
- ⊙ COMMUNICATION TEST HOLE
- FD DRAINJER FLOOR DRAIN
- NEW CONCRETE SLAB
- ▨ EPDM CRAWLSPACE
- ∞ EXHAUST FAN
- ━ ━ ━ PIPE ROUTE

IA3 INDOOR AIR SAMPLE LOCATION
(AUG. 2014)

ORIGINAL SCHEMATIC AND FEATURE LOCATIONS COURTESY OF
KEYSTONE ENVIRONMENTAL OF BINGHAMTON , NY.

BUILDING 32 SSD SYSTEM CONFIGURATION

BINGHAMTON PLAZA, CITY OF BINGHAMTON, BROOME COUNTY, NY

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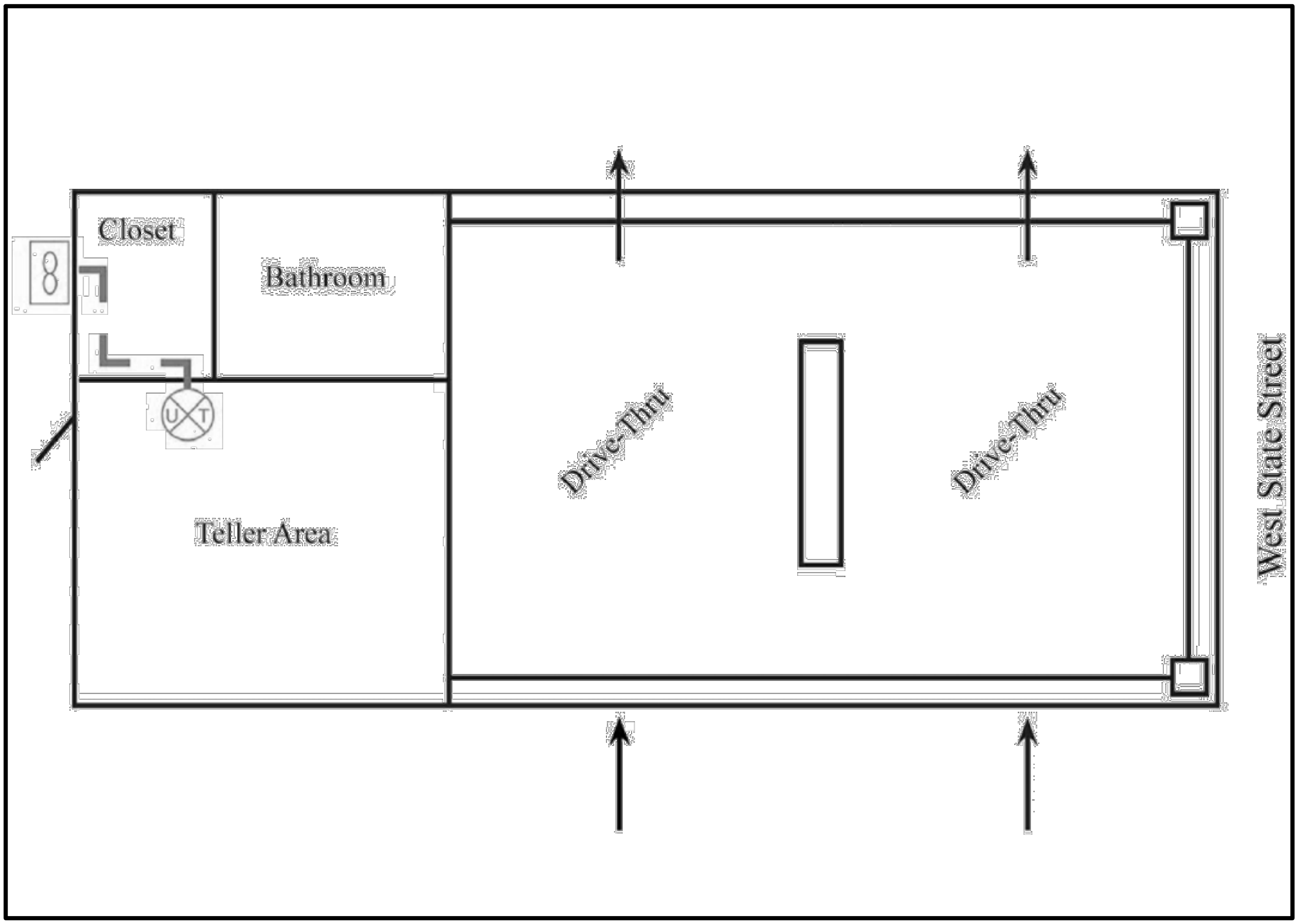
PROFESSIONAL GEOLOGISTS, SCIENTISTS AND ENGINEERS
515 S. FRANKLIN STREET; WEST CHESTER, PA 19382 PHONE: 610.692.5770 FAX: 610.692.8650
WWW.BRICKHOUSE-ENVIRONMENTAL.COM

PROJECT: 062175.3
FILE NO.: 062175.3IA.BASE
DATE: 11/11/2014
SCALE: NO SCALE

FIGURE
J-2



SYMBOLS:
- SUCTION POINT WITH U-TUBE
- ● COMMUNICATION TEST HOLE
- FD DRAINJER FLOOR DRAIN
- NEW CONCRETE SLAB
- ▨ EPDM CRAWLSPACE
- EXHAUST FAN
- ▬ ▬ PIPE ROUTE

ORIGINAL SCHEMATIC AND FEATURE LOCATIONS COURTESY OF
KEYSTONE ENVIRONMENTAL OF BINGHAMTON , NY

BUILDING 33 SSD SYSTEM CONFIGURATION

BINGHAMTON PLAZA, CITY OF BINGHAMTON, BROOME COUNTY, NY

BRICKHOUSE ENVIRONMENTAL
PROFESSIONAL GEOLOGISTS, SCIENTISTS AND ENGINEERS
515 S. FRANKLIN STREET; WEST CHESTER, PA 19382 PHONE: 610.692.5770 FAX: 610.692.8650
WWW.BRICKHOUSE-ENVIRONMENTAL.COM

PROJECT: 062175.3
FILE NO.: 062175.3IA.BASE
DATE: 11/11/2014
SCALE: NO SCALE

FIGURE
J-3