July 24, 2017

Mr. John Yensan
South Buffalo Development LLC
333 Ganson Street
Buffalo, New York 14203

Re: Soil Vapor Intrusion Investigation Report
Former Buffalo Color Corporation Site – Area C
NYSDEC BCP Site No. C915231
140 Lee Street, Buffalo, NY

Dear Mr. Yensan:

In accordance with our April 26, 2017 Work Plan, Benchmark Environmental Engineering & Science, PLLC in association with TurnKey Environmental Restoration, LLC (Benchmark TurnKey) performed a Soil Vapor Intrusion (SVI) Investigation to evaluate potential soil vapor intrusion risks in existing on-site buildings planned for reuse and to complete a qualitative on-site exposure assessment via the vapor pathway at the above referenced Site (Figures 1 and 2). Field activities were conducted May 15-16, 2017. A description of our field-modified approach to the work, sampling activities, analytical results, and conclusions are presented in the sections below. Representative project photographs are presented in Attachment 1.

WORK PLAN MODIFICATIONS

Due to the presence of a debris pile (Building #204) and water/debris-filled basements (Buildings #207/208) at various locations within on-site buildings and to ensure that representative samples were collected, the number of subslab vapor (SSV) samples was reduced from 12 to 10 in the field to avoid these areas. Observable details regarding building conditions at the time of sample collection are presented on Figure 3. No other modifications to our April 2017 Work Plan were required. Analytical data was provided by the laboratory as a Category B deliverable for evaluation by the third party data validator.

SAMPLING ACTIVITIES

Prior to sample collection, Benchmark TurnKey personnel completed a building inventory questionnaire for each structure sampled making note of any chemical usage (see Attachment 2). The SVI sampling program consisted of collecting and analyzing ten (10) SSV, five (5) indoor air (IA), and two (2) outdoor air (OA) samples over a two day period at the locations shown on Figure 3. Field forms completed for each sample location are presented in Attachment 3.

At each SSV sampling location, Benchmark TurnKey personnel used a hand-held hammer drill to advance a ¾-inch diameter hole through the approximate 8-inch thick concrete floor slabs. Following advancement through the concrete, the following procedure was implemented at each SSV location: approximately 10 inches of sub-slab soil/fill was removed from each hole; a ¼-inch hollow plastic tube was immediately inserted into the concrete core hole; modeling clay was used to seal the tubing against the floor and prevent short-circuiting of surface air; SSV seal integrity was field tested using a temporary shroud, helium tracer gas, and helium detector; and, a 1-liter evacuated Summa canister fitted with a 4-hour regulator was attached to the line. Concurrent with SSV sampling, IA samples were collected proximate to the subslab samples. The outdoor upwind sample locations were also collected concurrently based on the wind direction observed each day. In general, Summa canister valves for co-located samples (SSVs and IAs) remained closed until each SSV setup was complete and each canister in their respective positions. The valves were then opened for the required 4-hour collection period.

Following sample collection, Benchmark TurnKey personnel closed and capped each canister valve. Concrete openings were repaired with a cement patch. The air samples were then shipped, under chain-of-custody command, to Centek Laboratories, LLC located in Syracuse, New York for analysis of Target Compound List (TCL) volatile organic compounds (VOCs) (Method TO-15) in accordance with USEPA SW-846 methodology with equivalent NYSDEC Category B deliverables to allow for independent third-party data usability assessment.

ANALYTICAL RESULTS

The analytical data summary report is presented in Attachment 4. SVI laboratory data are tabulated and summarized in Table 1. The data were then screened against decision matrices contained in the NYSDOH *Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006, June 2007, and May 2017)* (Attachment 5), with the resultant recommended action presented on Table 2. To facilitate data review, Table 2 presents the results in micrograms per cubic meter (ug/m^3) in lieu of parts per billion by volume (ppbv) relative to the eight chlorinated-VOCs (cVOCs) currently addressed under NYSDOH Guidance. To evaluate the potential risk posed by VOCs detected in indoor air, each reported concentration was compared to the following criteria in Table 3:

1. NYSDOH guidance criteria - 90th percentile concentrations identified in the *Summary of Indoor and Outdoor Levels of Volatile Organic Compounds from Fuel Oil Heated Homes in NYS, 1997 – 2003*, revised date November 14, 2005.
2. NYSDEC DAR-1, *Guidelines for the Evaluation and Control of ambient Air Contaminants Under Part 212*, August 10, 2016. Specifically the Annual Guideline Concentrations (AGC) for toxic air contaminants from process emission sources in New York State. DAR-1 Guidelines establish an AGC to quantitatively assess a contaminant's potential to impact public health and the environment.

3. American Conference of Governmental Industrial Hygienists (ACGIH), 2017 Threshold Limit Values (TLVs). The TLV of a chemical substance is a level to which it is believed a worker can be exposed day after day for a working lifetime without adverse effects.
4. Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL). The PEL is a legal limit in the United States for exposure of an employee to a chemical substance or physical agent.

The outdoor ambient air sample results (OA-1 and OA-2) are also included in Table 3 to provide background data.

INVESTIGATION FINDINGS

Based on a review of the analytical results and comparisons to the presented criteria, the following observations are apparent:

- **Table 1:** Of the eight NYSDOH cVOCs, the following were detected:
  - 1,1,1-Trichloroethene (1,1,1-TCE) at SSV-4, -5, -6, and -10;
  - Carbon tetrachloride at SSV-6, IA-1, -2, -3, -4, -5, and OA-1, and -2;
  - Methylene chloride (MC) at SSV-1 thru -10, IA-1 thru -5, OA-1, and OA-2;
  - Tetrachloroethene (PCE) at SSV-4, -5, -6, -7, and -10; and,
  - Trichloroethene (TCE) at OA-1.

- **Table 1:** Additional petroleum-based constituents were detected at low concentrations in subslab, indoor, and/or outdoor air.

- **Table 1:** Freon 11 and Freon 12 were detected a low concentrations in each subslab, indoor air, and outdoor air sample. Based on data validation, the reported concentrations in samples SSV-6, SSV-7, and SSV-10 were qualified as estimated with a possible high bias.

- **Table 2:** Although four of the eight NYSDOH cVOCs were detected, a comparison using the respective NYSDOH Matrices (A, B, or C, as presented in Attachment 5) of each co-located subslab, indoor air, and outdoor air sample indicate these detections are each characterized as requiring ***No Further Action*** **(NFA)**.

- **Table 3:** VOC concentrations for each indoor air sample were below the NYSDOH guidance criteria for all analyzed compounds except chlorobenzene, which was detected in indoor air sample IA-1 at a concentration slightly above the guidance criteria (0.74 vs. <0.25 ug/m^3, respectively). Even though chlorobenzene was also detected in the co-located subslab vapor samples associated with indoor air sample IA-1 (SSV-1, SSV-2, and SSV-3), the detected concentration was well below the DAR-1

AGC, ACGIH TLV, and OSHA PEL values. Chlorobenzene was not detected in any other subslab vapor nor indoor air sample.

DATA USABILITY SUMMARY REPORT

The laboratory analytical data was independently assessed and submitted for independent review. Ms. Judy Harry of Data Validation Services (DVS) located in North Creek, New York performed the data usability summary assessment for the collected SSV, IA, and OA samples. The validation involved a review of the summary form information and sample raw data, and a limited review of associated QC raw data. Specifically, the following items were reviewed:

- Laboratory Narrative Discussion
- Custody Documentation
- Holding Times
- Surrogate and Internal Standard Recoveries
- Matrix Spike Recoveries/Duplicate Recoveries
- Field Duplicate Correlation
- Preparation/Calibration Blanks
- Control Spike/Laboratory Control Samples
- Instrumental Tunes
- Calibration/Low Level Standards
- ICP Serial Dilution
- Instrument Detection Limits
- Sample Result Verification

Data evaluation was performed by DVS using the most current methods and quality control criteria from the USEPA's Contract Laboratory Program (CLP) *National Functional Guidelines for Organic Data Review* and *National Functional Guidelines for Inorganic Data Review*, as well as professional judgment. Attachment 6 includes the Data Usability Summary Report (DUSR) that was prepared in accordance with Appendix 2B of NYSDEC's DER-10 guidance. Those items listed above that demonstrated deficiencies are discussed in detail in the DUSR.

In summary, sample results are acceptable and usable either as reported, or with minor qualification as estimated. In general, data completeness and representativeness are acceptable, and sample accuracy and precision are good. Analytical results that were edited or qualified per the DUSR have been modified appropriately in Table 1. Attachment 4 includes the analytical data package.

CONCLUSIONS/RECOMMENDATIONS

Based on the results of the SVI investigation at the Site, Benchmark TurnKey offers the following conclusions/recommendations:

- The building inventory did not identify any observable chemicals being stored, however one large steam driven pump was identified.

- Numerous VOCs were detected in subslab, indoor air, and outdoor air samples collected for this assessment.

- Several petroleum-based VOCs, typical of urban industrial sites, were detected at low concentrations and may be associated with historic site operations.

- Freon 11 and Freon 12, commonly used refrigerant-based VOCs prior to 1996, were detected at low concentrations in each sample collected; possible remnants of historic refrigeration activities performed in the Icehouse Building (#223).

- A comparison of the SVI data to the NYSDOH Matrices indicate no further action (NFA) is required.

- Chlorobenzene at indoor air location IA-1 was the only compound reported at a concentration slightly above the NYSDOH guidance criteria. Although chlorobenzene was also detected in the subslab samples associated with this indoor air location, it was reported at a concentration well below the DAR-1 ACG, ACGIH TLV, and OSHA PEL values.

It is TurnKey's opinion that based on this assessment, no air quality concerns related to the seven NYSDOH-regulated cVOCs were identified within the Site buildings tested that would require additional action. Petroleum- and refrigerant-based VOCs were detected in subslab vapor, indoor air, and outdoor air samples at concentrations that are considered remnants of the industrial past of the Site. Installation of a vapor barrier and passive subslab depressurization system beneath ground-level flooring is recommended as a precautionary installation prior to redevelopment.

DECLARATION/LIMITATIONS

Benchmark personnel monitored the field activities performed during the SVI Investigation at the 140 Lee Street Site according to generally accepted practices and the scope of work provided to South Buffalo Development, LLC by Benchmark TurnKey.

This report has been prepared for the exclusive use of South Buffalo Development, LLC. The contents of this report are limited to information available at the time of the site investigation activities and to data referenced herein, and assume all referenced information sources to be true and accurate. The reported findings and conclusions may be relied upon only at the discretion of South Buffalo Development, LLC. Use of or reliance upon this report or its findings by any other person or entity is prohibited without written permission of Benchmark Environmental Engineering & Science, PLLC and TurnKey Environmental Restoration, LLC.

Please contact us if you have any questions or require additional information.

Sincerely,

Benchmark Environmental Engineering & Science, PLLC
TurnKey Environmental Restoration, LLC

Bryan C. Hann
Senior Project Manager

ec: J. Black (SBD)
T. Forbes (Benchmark)
M. Lesakowski (TurnKey)

File: 0378-017-004

TABLES

TABLE 1

SUMMARY OF SOIL VAPOR ANALYTICAL RESULTS

Soil Vapor Investigation Report
140 Lee Street Site (C915231)
Buffalo, New York

Parameter	Sample Location & Sample Date																
	SSV-1 05/15/2017	SSV-2 05/15/2017	SSV-3 05/15/2017	SSV-4 05/15/2017	SSV-5 05/15/2017	SSV-6 05/15/2017	SSV-7 05/16/2017	SSV-8 05/16/2017	SSV-9 05/16/2017	SSV-10 05/16/2017	IA-1 (INDOOR) 05/15/2017	IA-2 (INDOOR) 05/15/2017	IA-3 (INDOOR) 05/16/2017	IA-4 (INDOOR) 05/16/2017	IA-5 (INDOOR) 05/16/2017	OA-1 (OUTDOOR) 05/15/2017	OA-2 (OUTDOOR) 05/16/2017
TO-15 Volatile Organic Compounds (VOCs) - ug/m ^{3}																	
1,1,1-Trichloroethane	ND	ND	ND	1.8	4.5	31	ND	ND	ND	2.9 J+	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	1.8	1.1	1.2	ND	1.3	1.2 J+	ND	ND	ND	ND	2.2	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorotetrafluoroethane (Freon 114)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	0.54 J	ND	ND	0.59 J	0.64	0.49 J+	0.64 J+	0.88	ND	ND	0.59	ND	ND	ND	ND	ND	ND
1,3-butadiene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,2,4-trimethylpentane	1	0.61 J	0.65 J	ND	ND	ND	ND	ND	ND	ND	1.2	ND	ND	ND	ND	ND	ND
4-ethyltoluene	ND	ND	ND	ND	ND	ND	0.98 J+	ND	ND	ND	0.54	ND	ND	ND	ND	ND	ND
Acetone	20	19	18	55	57	80	92	220	38	370	22	23	25	26	35	27	43
Allyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	3.9	1.9	2	11	8.9	2.1 J+	14	38	1.3	190	3.6	ND	ND	ND	ND	ND	ND
Benzyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	13	30	28	2.6 J+	1.2	1.4	21	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	2.4 J+	ND	ND	ND	ND	0.57	0.57	0.63	0.57	0.63	0.57	0.5
Chlorobenzene	17	3.4	1.2	ND	ND	ND	ND	ND	ND	ND	0.74	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	1.1	15	1.4 J+	ND	0.59 J	2 J+	ND	ND	ND	ND	ND	ND	ND
Chloromethane	1.4	1.5	1.6	ND	ND	ND	0.58 J+	1.1	ND	ND	1.8	2.3	1.5	1.5	2.7	2	1.4
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane	0.89	0.76	0.86	29	27	85	150	59	3.8	450	0.69	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane (Freon 12)	2.8	2.8	2.8	2.9	2.7	2.6 J+	2.6 J+	2.7	2.7	2.6 J+	2.7	2.8	2.9	3.1	2.9	2.7	2.8
Ethyl acetate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.86	ND	ND	ND	ND	ND	ND
Ethylbenzene	1.3	0.87	0.82	2.2	2.1	2.5 J+	4.7 J+	12	2.3	13	1.3	ND	ND	ND	ND	ND	ND
Heptane	1.5	1.1	0.82	53	24	23	220	420	7.1	490	0.9	ND	ND	ND	ND	ND	ND
Hexachloro-1,3-butadiene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexane	2.1	1	1.2	71	50	42	93	81	4.4	960	1.8	ND	ND	ND	ND	ND	ND
Isopropyl alcohol	2.5	1.2	2.2	4.8	3.2	2.1 J+	ND	4.3	4.3	ND	1.9	3.4	1.6	2.5	2.2	3.2	2.3
m&p-Xylene	5.2	3.3	3.2	7.5	6.6	8.3 J+	15 J+	36	7.5	36	5.6	ND	ND	ND	0.52 J	ND	ND
Methyl Butyl Ketone	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J
Methyl Ethyl Ketone	1.1	0.88	1	5	9.1	4 J+	11	18	5.6	36	0.83	0.56 J	0.65 J	0.71 J	0.65 J	0.74	0.86 J
Methyl Isobutyl Ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	1.1	1.1	1.3	2	1.9	2.7 J+	1.8 J+	2.3	1.5	1.4 J+	0.45	0.63	0.56	0.45 J	0.8	0.52	0.56
o-Xylene	2	1.5	1.3	4	3.6	4.6 J+	7.9 J+	15	3.7	16	2	ND	ND	ND	ND	ND	ND
Propylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.47	ND	ND	ND	ND	ND	ND
Tetrachloroethene (PCE)	ND	ND	ND	3.5	2	1.6 J+	2.6 J+	ND	ND	1.6 J+	ND	ND	ND	ND	ND	ND	ND
Tetrahydrofuran	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	7.5	4.6	4.7	18	13	11	78	2000	13	220	14	0.57	0.57	0.98	0.83	0.64	0.68
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

TABLE 1

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140 Lee Street Site (C915231)
Buffalo, New York

Parameter	Sample Location & Sample Date																
	SSV-1 05/15/2017	SSV-2 05/15/2017	SSV-3 05/15/2017	SSV-4 05/15/2017	SSV-5 05/15/2017	SSV-6 05/15/2017	SSV-7 05/16/2017	SSV-8 05/16/2017	SSV-9 05/16/2017	SSV-10 05/16/2017	IA-1 (INDOOR) 05/15/2017	IA-2 (INDOOR) 05/15/2017	IA-3 (INDOOR) 05/16/2017	IA-4 (INDOOR) 05/16/2017	IA-5 (INDOOR) 05/16/2017	OA-1 (OUTDOOR) 05/15/2017	OA-2 (OUTDOOR) 05/16/2017
TO-15 Volatile Organic Compounds (VOCs) - ug/m ^{3}																	
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (TCE)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.59	ND
Trichlorofluoromethane (Freon 11)	1.7	1.7	1.7	1.9	1.8	1.7 J+	2 J+	2.1	1.9	7.6	1.7	1.7	1.9	1.9	1.9	1.7	1.9
Vinyl acetate	ND	ND	ND	ND	38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Bromide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (VC)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
1. ND = compound concentration below reporting limit.
2. J = The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
3. Data presented has been validated by a third party data validator; data and qualifiers modified by the validator are in RED.

Qualifiers
J = The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
J+ = The analyte was positively identified; due to elevated surrogate recoveries, the results for detected compounds derived from the initial analysis of samples SSV-6, SSV-7, and SSV-10 are qualified as estimated, with a possible high bias.
ND = The detections of chloromethane in samples SSV-4 and SSV-5 were edited to non-detction (ND) due to poor mass spectral quality.
ND J = The analyte was analyzed for, but was not detected. However, due to outlying recoveries and/or correlations in the associated Laboratory Conrol Samples (LCSs), the results for bromoform and methyl butyl ketone have been qualified as estimated.

Color Code:
= one of eight compounds regulated by the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006 / June 2007 / May 2017).

TABLE 2

COMPARISON OF AIR SAMPLNG RESULTS TO NYSDOH SVI GUIDANCE MATRICES

Soil Vapor Investigation Report
140 Lee Street Site (C915231)
Buffalo, New York

Sample Location	Carbon Tetrachloride		Trichloroethene (TCE)		cis-1,2-Dichloroethene		1,1-Dichloroethene		Tetrachloroethene (PCE)		1,1,1 -Trichloroethane		Methylene Chloride		Vinyl Chloride	
	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 1	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 1	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 1
FORMER ICEHOUSE FREEZING TANK (#223) & FORMER COOLING AREAS																
SSV-1	ND	NFA	ND	NFA	ND	NFA	ND	NFA	ND	NFA	ND	NFA	1.1	NFA	ND	NFA
SSV-2	ND	NFA	ND	NFA	ND	NFA	ND	NFA	ND	NFA	ND	NFA	1.1	NFA	ND	NFA
SSV-3	ND	NFA	ND	NFA	ND	NFA	ND	NFA	ND	NFA	ND	NFA	1.3	NFA	ND	NFA
SSV-4	ND	NFA	ND	NFA	ND	NFA	ND	NFA	3.5	NFA	1.8	NFA	2	NFA	ND	NFA
IA-1	0.57		ND		ND		ND		ND		ND		0.45		ND	
OA-1	0.57	Background	0.59	Background	ND	Background	ND	Background	ND	Background	ND	Background	0.52	Background	ND	Background

Sample Location	Carbon Tetrachloride		Trichloroethene (TCE)		cis-1,2-Dichloroethene		1,1-Dichloroethene		Tetrachloroethene (PCE)		1,1,1 -Trichloroethane		Methylene Chloride		Vinyl Chloride	
	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 1	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 1	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 1
FORMER OUTDOOR DELIVERIES (#222) & FORMER ICEHOUSE SOUTHEAST STORAGE (#221) AREAS																
SSV-5	ND	NFA	ND	NFA	ND	NFA	ND	NFA	2.0	NFA	4.5	NFA	1.9	NFA	ND	NFA
SSV-6	2.4 J+	NFA	ND	NFA	ND	NFA	ND	NFA	1.6 J+	NFA	31	NFA	2.7 J+	NFA	ND	NFA
IA-2	0.57		ND		ND		ND		ND		ND		0.63		ND	
OA-1	0.57	Background	0.59	Background	ND	Background	ND	Background	ND	Background	ND	Background	0.52	Background	ND	Background

Sample Location	Carbon Tetrachloride		Trichloroethene (TCE)		cis-1,2-Dichloroethene		1,1-Dichloroethene		Tetrachloroethene (PCE)		1,1,1 -Trichloroethane		Methylene Chloride		Vinyl Chloride	
	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 1	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 1	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 1
FORMER POWERHOUSE BOILER BAY (#207)																
SSV-7	ND	NFA	ND	NFA	ND	NFA	ND	NFA	2.6 J+	NFA	ND	NFA	1.8 J+	NFA	ND	NFA
IA-3	0.63		ND		ND		ND		ND		ND		0.56		ND	
OA-2	0.5	Background	ND	Background	ND	Background	ND	Background	ND	Background	ND	Background	0.56	Background	ND	Background

TABLE 2

COMPARISON OF AIR SAMPLNG RESULTS TO NYSDOH SVI GUIDANCE MATRICES

Soil Vapor Investigation Report
140 Lee Street Site (C915231)
Buffalo, New York

Sample Location	Carbon Tetrachloride		Trichloroethene (TCE)		cis-1,2-Dichloroethene		1,1-Dichloroethene		Tetrachloroethene (PCE)		1,1,1 -Trichloroethane		Methylene Chloride		Vinyl Chloride	
	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 1	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 1	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 1
FORMER POWERHOUSE CRANE BAY (#208) & FORMER BOILER DOCK AREA																
SSV-8	ND	NFA	ND	NFA	ND	NFA	ND	NFA	ND	NFA	ND	NFA	2.3	NFA	ND	NFA
IA-5	0.63		ND		ND		ND		ND		ND		0.8		ND	
OA-2	0.5	Background	ND	Background	ND	Background	ND	Background	ND	Background	ND	Background	0.56	Background	ND	Background

Sample Location	Carbon Tetrachloride		Trichloroethene (TCE)		cis-1,2-Dichloroethene		1,1-Dichloroethene		Tetrachloroethene (PCE)		1,1,1 -Trichloroethane		Methylene Chloride		Vinyl Chloride	
	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 1	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 1	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 1
FORMER TRANSFER AREA (#205)																
SSV-9	ND	NFA	ND	NFA	ND	NFA	ND	NFA	ND	NFA	ND	NFA	1.5	NFA	ND	NFA
SSV-10	ND	NFA	ND	NFA	ND	NFA	ND	NFA	1.6 J+	NFA	2.9 J+	NFA	1.4 J+	NFA	ND	NFA
IA-4	0.57		ND		ND		ND		ND		ND		0.45 J		ND	
OA-2	0.5	Background	ND	Background	ND	Background	ND	Background	ND	Background	ND	Background	0.56	Background	ND	Background

Notes:
1. Data presented has been validated by a third party data validator; data and qualifiers modified by the validator are in RED.

Qualifiers:
J+ = The analyte was positively identified; the results for detected compounds derived from the initial analysis of SSV-6, SSV-7, and SSV-10 are qualified as estimated, with a possible high bias.
ND = compound concentration below reporting limit.
NFA = No Further Action

Color Code:
= NYSDOH Matrix A Compounds
= NYSDOH Matrix B Compounds
= NYSDOH Matrix C Compounds

TABLE 3

SUMMARY OF INDOOR AIR SAMPLING RESULTS VS NYSDOH INDOOR & OUTDOOR AIR CRITERIA

Soil Vapor Investigation Report
140 Lee Street Site (C915231)
Buffalo, New York

Parameter [1]	NYSDOH Indoor 90th Percentile Comparison [2]	DAR-1 AGC [3]	ACGIH 2017 TLV [4]	OSHA PEL [5]	Sample Location & Sample Date						
					IA-1 (INDOOR) 05/15/2017	IA-2 (INDOOR) 05/15/2017	IA-3 (INDOOR) 05/16/2017	IA-4 (INDOOR) 05/16/2017	IA-5 (INDOOR) 05/16/2017	OA-1 (OUTDOOR) [6] 05/15/2017	OA-2 (OUTDOOR) [6] 05/16/2017
TO-15 Volatile Organic Compounds (VOCs) - ug/m [3]											
1,2,4-Trimethylbenzene	9.5	6	NV	NV	2.2	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	3.6	6	NV	NV	0.59	ND	ND	ND	ND	ND	ND
2,2,4-trimethylpentane (Isooctane)	NV	3,300	NV	NV	1.2	ND	ND	ND	ND	ND	ND
4-ethyltoluene	NV	NV	NV	NV	0.54	ND	ND	ND	ND	ND	ND
Acetone	110	30,000	593,865	2,400,000	22	23	25	26	35	27	43
Benzene	15	0.13	1,597	31,947	3.6	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	0.81	0.17	31,460	62,920	0.57	0.57	0.63	0.57	0.63	0.57	0.5
Chlorobenzene	<0.25	60	10,000	350,000	**0.74**	ND	ND	ND	ND	ND	ND
Chloromethane	3.3	90	103,252	206,503	1.8	2.3	1.5	1.5	2.7	2	1.4
Cyclohexane	8.1	6,000	344,213	1,050,000	0.69	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane (Freon 12)	15	12,000	1,000,000	4,950,000	2.7	2.8	2.9	3.1	2.9	2.7	2.8
Ethyl Acetate	NV	3,400	400,000	1,400,000	0.86	ND	ND	ND	ND	ND	ND
Ethylbenzene	7.4	1,000	86,838	435,000	1.3	ND	ND	ND	ND	ND	ND
Heptane	19	3,900	1,639,264	2,000,000	0.9	ND	ND	ND	ND	ND	ND
Hexane	18	700	176,217	1,800,000	1.8	ND	ND	ND	ND	ND	ND
Isopropyl alcohol	NV	7,000	491,000	980,000	1.9	3.4	1.6	2.5	2.2	3.2	2.3
m&p-Xylene	12	100	434,233	435,000	5.6	ND	ND	ND	0.52 J	ND	ND
Methyl Ethyl Ketone	16	5,000	589,775	590,000	0.83	0.56 J	0.65 J	0.71 J	0.65 J	0.74	0.86 J
Methylene chloride	22	60	173,701	86,851	0.45	0.63	0.56	0.45 J	0.8	0.52	0.56
o-Xylene	7.6	100	434,233	435,000	2	ND	ND	ND	ND	ND	ND
Styrene	1.3	1,000	85,186	425,930	0.47	ND	ND	ND	ND	ND	ND
Toluene	58	5,000	75,362	753,620	14	0.57	0.57	0.98	0.83	0.64	0.68
Trichloroethene	0.48	0.2	10,000	25,000	ND	ND	ND	ND	ND	0.59	ND
Trichlorofluoromethane (Freon 11)	17	5,000	5,618,814	5,600,000	1.7	1.7	1.9	1.9	1.9	1.7	1.9

Notes:

1. Only those parameters detected above the method detection limit, at a minimum of one location, are presented in this table.
2. NYSDOH Guidance Criteria - Indoor Air 90th percentile concentrations presented in "Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes" published by the NYSDOH and revised November 14, 2005.
3. NYSDEC Division of Air Resources (DAR) Annual Guideline Concentrations (AGC) for toxic air contaminants emitted from process emission sources in NYS.
4. American Conference of Governmental Industrial Hygienists, 2017 Threshold Limit Values.
5. Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL).
6. Outdoor Ambient sample results included on this table to provide background data.

Definitions:

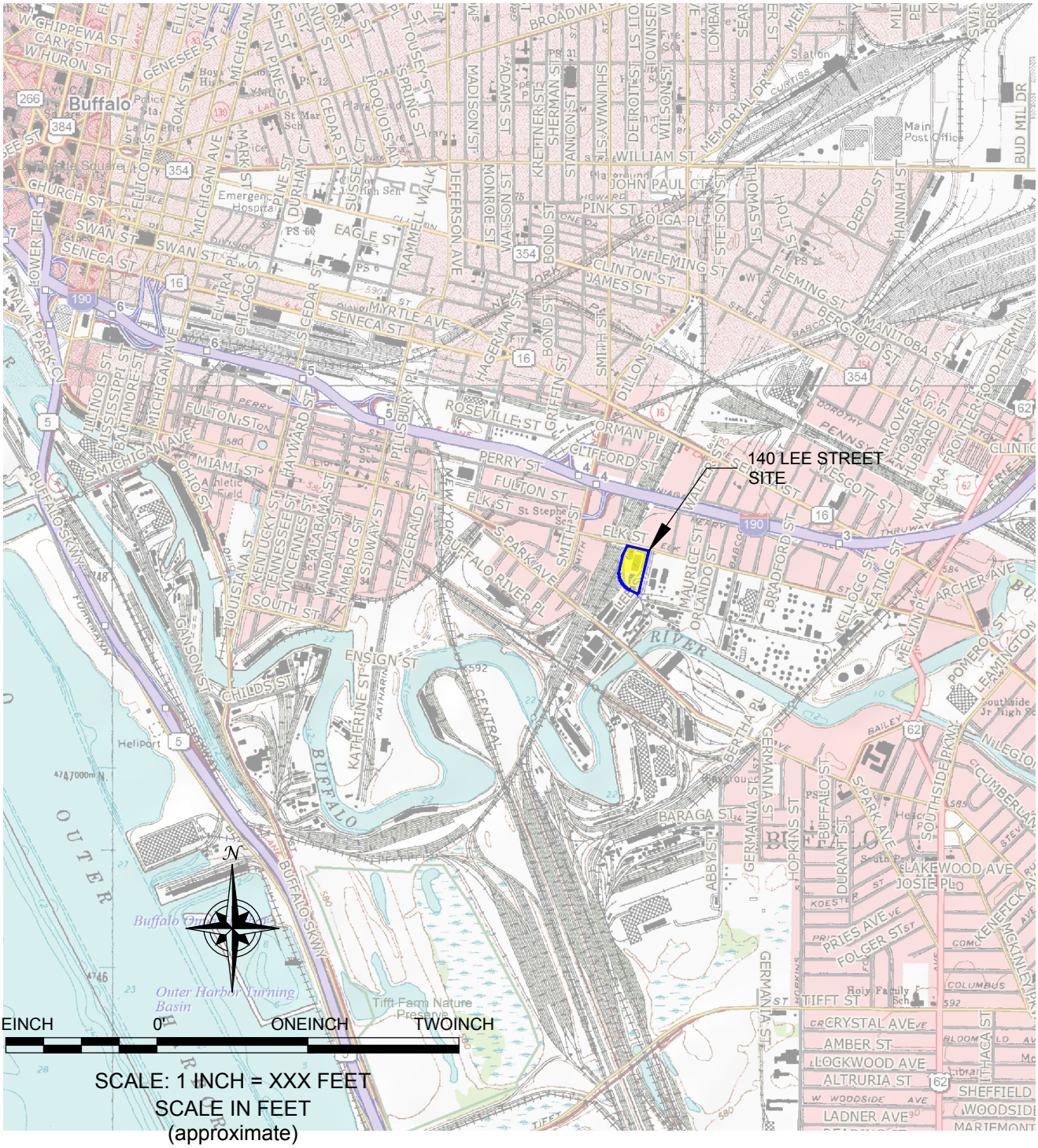
J = The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
NA = not applicable, therefore not provided.
ND = compound concentration below reporting limit.
NV = no value

Color Code:

= concentration exceeds the NYSDOH Summary of Indoor Levels of VOC for Fuel Oil Heated Homes - 90th percentile (2005).

FIGURES

FIGURE 1



BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC
TURNKEY ENVIRONMENTAL RESTORATION, LLC
2558 HAMBURG TURNPIKE, SUITE 300, BUFFALO, NY 14218, (716) 856-0599

PROJECT NO.: 0368-017-007

DATE: MAY 2017

DRAFTED BY: BCH

SITE LOCATION & VICINITY MAP

SOIL VAPOR INTRUSION INVESTIGATION REPORT

140 LEET STREET SITE
BUFFALO, NEW YORK

PREPARED FOR

SOUTH BUFFALO DEVELOPMENT, LLC

DATE: MAY 2017
DRAFTED BY: BCH

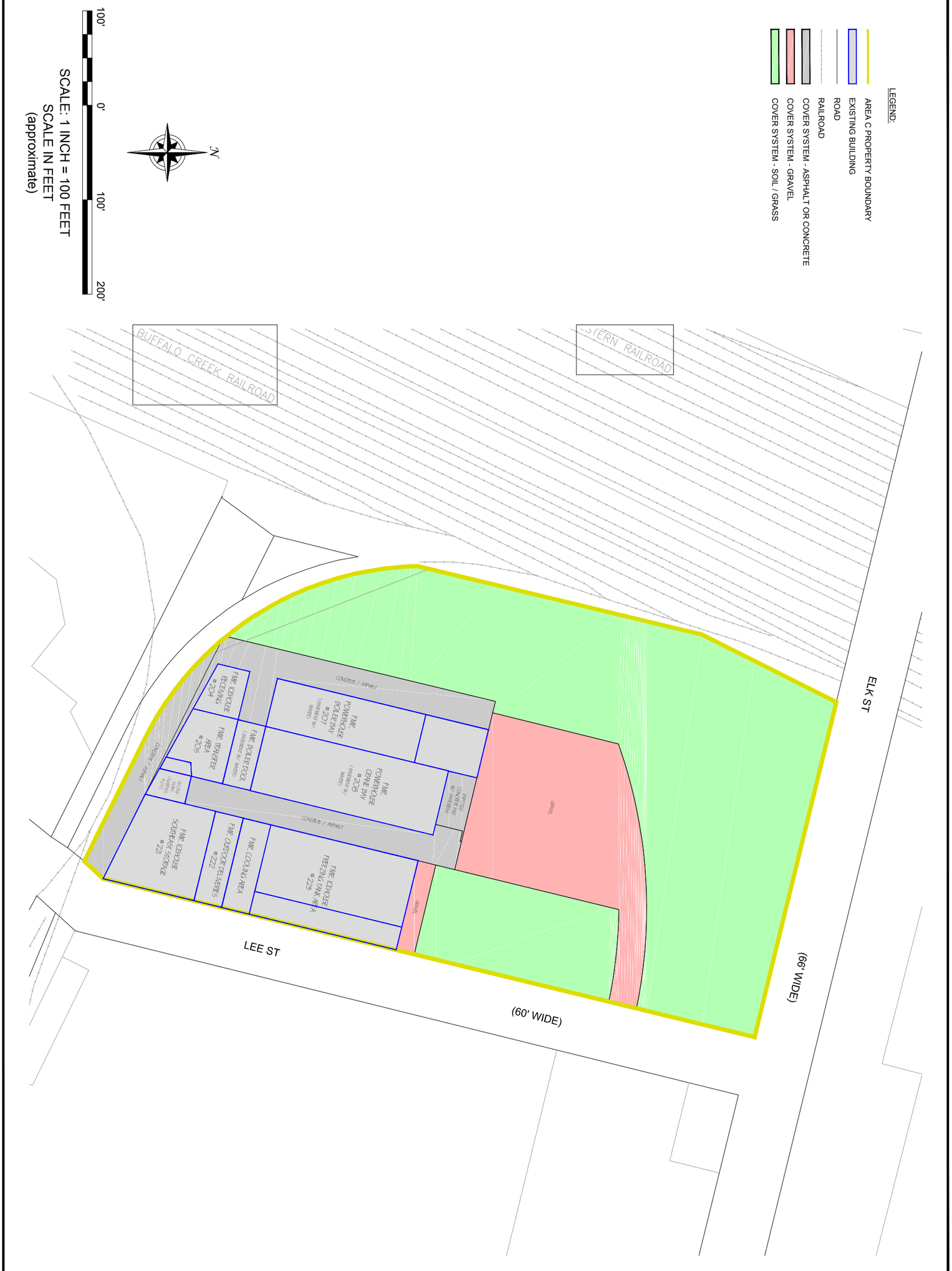


FIGURE 2

SITE PLAN

SOIL VAPOR INTRUSION INVESTIGATION REPORT

140 LEE STREET SITE
BUFFALO, NEW YORK

PREPARED FOR

SOUTH BUFFALO DEVELOPMENT LLC

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TURNKEY ENVIRONMENTAL RESTORATION, LLC

2558 HAMBURG TURNPIKE, SUITE 300, BUFFALO, NY 14218, (716) 856-0599

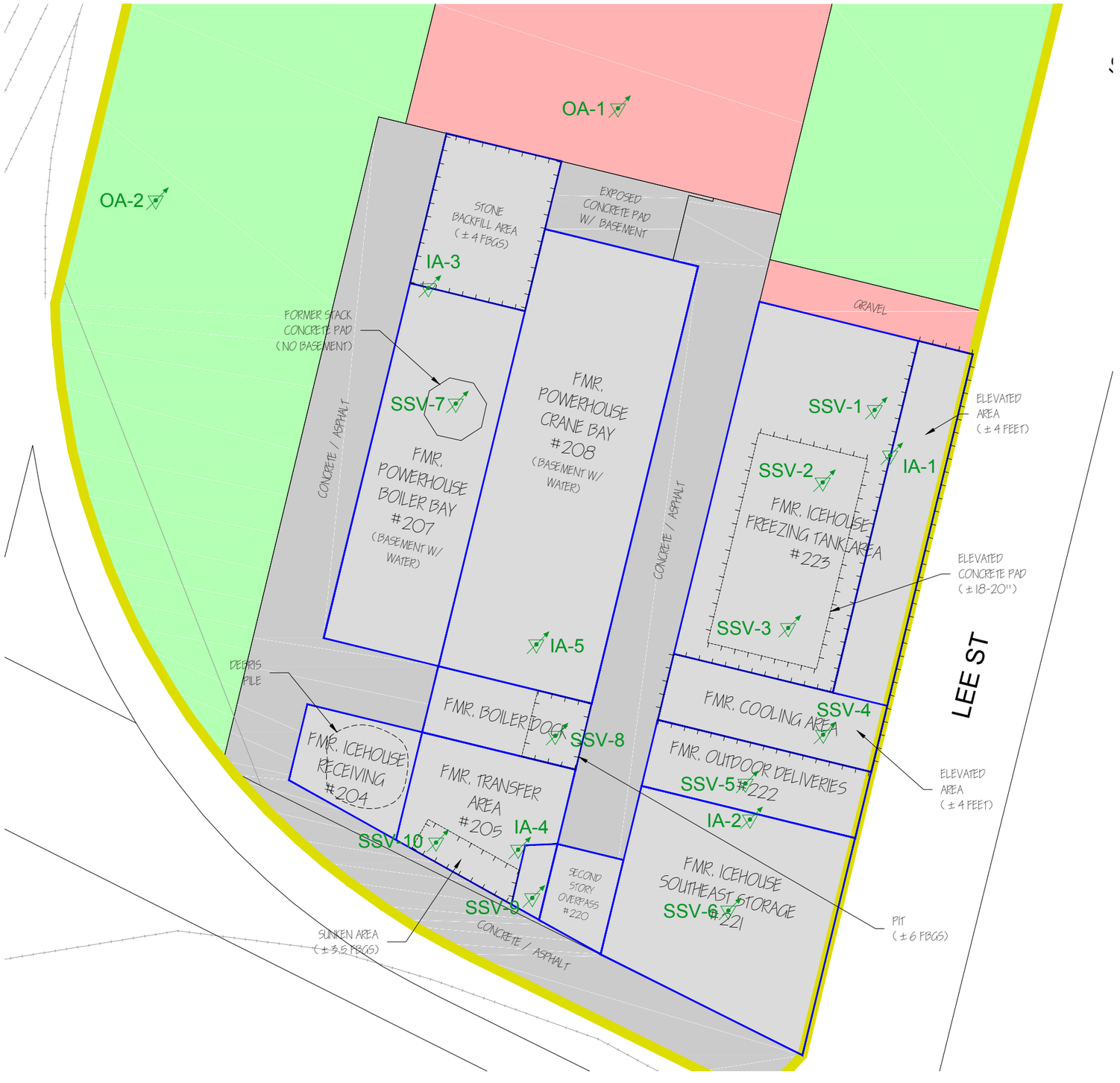
JOB NO.: 0378-017-007

LEGEND:

- AREA C PROPERTY BOUNDARY
- EXISTING BUILDING
- ROAD
- RAILROAD
- COVER SYSTEM - ASPHALT OR CONCRETE
- COVER SYSTEM - GRAVEL
- COVER SYSTEM - SOIL / GRASS
- SSV-1 SUBSLAB VAPOR LOCATION (10)
- IA-1 INDOOR AIR LOCATION (5)
- OA OUTDOOR AIR LOCATION (2, ONE PER DAY)

WIND DIRECTION:

- 05/15/2017, NORTHWESTERLY
- 05/16/2017, WESTERLY



N

50' 0' 50' 100'

SCALE: 1 INCH = 50 FEET
SCALE IN FEET
(approximate)

DATE: MAY 2017
DRAFTED BY: BCH

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC
TURNKEY ENVIRONMENTAL RESTORATION, LLC
2558 HAMBURG TURNPIKE, SUITE 300, BUFFALO, NY 14218, (716) 856-0599

JOB NO.: 0378-017-007

SOIL VAPOR SAMPLE LOCATIONS

SOIL VAPOR INTRUSION INVESTIGATION REPORT

140 LEE STREET SITE
BUFFALO, NEW YORK

PREPARED FOR

SOUTH BUFFALO DEVELOPMENT LLC

FIGURE 3