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February 20, 2015

David Szymanski, EPS-1
NYSDEC - Region 9, Buffalo
Division of Environmental Remediation
270 Michigan Avenue
Buffalo, New York, 14203

Re: Soil Vapor Intrusion Work Plan - Revised
Former Dowcraft Site, Falconer, New York

Mr. Szymanski:

On behalf of Jamestown Container Corporation ("JCC"), C&S Engineers ("C&S") is providing this Work Plan to complete a soil vapor intrusion study at the former Dowcraft Site in Falconer, New York.

I. PROJECT UNDERSTANDING

The Dowcraft Site is located at 65 South Dow Street in Falconer, New York and occupies approximately 2.2 acres of land situated immediately east of South Dow Street and approximately 100 feet south of the Chadakoin River. The Jamestown Container Company currently owns the Dowcraft site. The JCC primary manufacturing building is situated on the northern portion of the Site, adjacent to the Chadakoin River and a smaller structure is located on the southern portion of the Site. Figure 1 shows the general site configuration.

As part of the manufacturing operations at the former Dowcraft Site, a vapor degreaser that employed volatile organic compounds (VOCs) was used. These compounds were released into the environment and eventually reached the groundwater table.

The Former Dowcraft site has been the subject of environmental investigations since the early 1990s to characterize the impacts to groundwater from historic operational practices. An Interim Remedial Measure ("IRM") was initiated in 1994 and consisted of groundwater extraction and treatment. In 2000, the NYSDEC approved the use of in-situ chemical oxidation (injection of potassium permanganate) to further remediate groundwater at the Site. Nine injection treatments were completed between May 2000 and July 2006, using 21,500 pounds of potassium permanganate. Previous injection treatments were successful in oxidizing TCE in the outer portion of the contaminant plume; however, contaminant concentrations in the source area remain high. In December 2014, another injection treatment was completed which consisted of 4,000 pounds of potassium permanganate within the groundwater contaminant plume.

II. NATURE AND EXTENT OF GROUNDWATER CONTAMINATION

Based on previous environmental reports, contaminants of concern ("COC") are TCE; 1, 2-dichloroethene and vinyl chloride (VC). Data from the most recent groundwater sampling event is summarized in Table 1. Figure 2 shows the location of the site groundwater monitoring wells and areas of impact.

Analytical results in Table 1 show that the area of the former degreaser pit (area of groundwater monitoring wells PW-3 and PW-3R) is a likely source area for the groundwater contaminant plume. The plume originates at the former degreaser area and has affected groundwater quality in the upper and lower sand/gravel layers. ESI – 12 (immediately adjacent to the larger building) has the next highest contaminant concentrations, followed by ESI – 10 located within the larger building. Based on the groundwater quality in these wells, the plume appears to extend from the degreaser area to the north, under the larger JCC building and up to the area of the Chadakoin River. This is an impacted area of approximately one acre. The rate of groundwater movement has been shown to be approximately 2 to 3 feet per year to the north. Sampling in the river has not shown any impact to date.

III. VOC IMPACTS TO SOIL ABOVE THE WATER TABLE

Based on the groundwater contaminant plume identified on site, the potential exists for these VOCs to be present in the gaseous state above the water table. Since the groundwater contaminant plume extends under the larger Jamestown Container Corporation building, the potential exists for the migration of these VOCs into the building. At the present time, no studies have been completed to evaluate whether or not impacts to indoor air have occurred.

IV. BUILDING CONSTRUCTION AND USAGE

As shown in Figure 2, the floor slab of the larger structure is eight to nine inches thick while the floor slab of the smaller structure is approximately six inches thick. The larger building is used for manufacturing, storage, and office space, while the smaller building is used for manufacturing.

V. SCOPE OF WORK – SOIL VAPOR INRUSION INVESTIGATION

The following scope of work has been designed to determine if VOCs present in the groundwater have impacted the soil vapor and indoor air quality at the former Dowcraft Site.

A soil vapor investigation will be completed to characterize potential impacts to soil gas under the building slab and indoor quality within the building. This work will be completed in accordance with the New York State Department of Health (NYSDOH), "Guidance for Evaluating Soil Vapor Intrusion in New York State, 2006." The air sampling locations recommended for this investigation are shown on Figure 3. However, these locations may be modified based on field observations and NYSDOH input.

Sub-slab Sampling

Seven sub-slab air samples will be collected within the larger building and two samples within the smaller building. Figure 2 generally shows the proposed sample locations, although these locations may be modified based on field conditions and NYSDOS input. The following approach will be used to collect the sub-slab samples:

- A hammer drill will be used to puncture ½ inch hole through the concrete slab floor at the six locations shown on Figure 2.
- Polyethylene tubing will be inserted one to two inches into each hole and the floor penetration around the tubing will be sealed at each location using soft, pliable, VOC-free clay.
- An enclosure will be constructed around the sub-slab sampling point (e.g., plastic bag, plastic bucket, etc.) and sealed to the sample point tubing in order to perform a tracer gas evaluation.
- The enclosure will be enriched with helium as a tracer gas.

- The sub-slab sampling point will be purged 1 to 3 tubing volumes at a rate not to exceed 0.2 L/m to ensure that a representative sample of soil vapor will be obtained.
- During purging, the purged soil gas will be tested for the tracer gas by an appropriate meter (i.e., a meter capable of measuring the concentration of the tracer gas in at least percentage increments).
- In the event that the tracer gas is detected at a concentration of 10% or greater, the sample point will be resealed and retested prior to sampling.
- Subsequent to purging and tracer gas testing, a certified clean summa canister equipped with a laboratory calibrated regulator will be connected to the tubing to collect the sample over a 24-hour period.
- At the end of sampling, at least one inch of vacuum will be left in the summa canister to meet data quality objectives.
- After removing the tubing from holes in the floor, the floor will be repaired with a quick drying cement mixture.

Indoor Air Sampling

Nine indoor air samples will be collected to evaluate indoor air quality in the Jamestown Container buildings. The indoor air samples will be co-located with the sub-slab vapor samples. The sampling devices will be placed approximately three to five feet off the ground for sample collection purposes and samples will be collected using a Summa canister equipped with a laboratory calibrated regulator over a 24-hour period.

Outdoor Air Sampling

One outdoor air sample will be collected to characterize background air quality in the vicinity of the Jamestown Container Building as a means to evaluate the sub-slab and indoor air results. The sampling device will be located near the west end of the building upwind of the groundwater contaminant plume and will be placed approximately three to five feet off the ground for sample collection purposes. The outdoor air sample will be collected using a Summa canister equipped with a laboratory calibrated regulator over a 24-hour period.

Laboratory Analysis of Air Samples

The collected samples will be sent to Centek laboratories in Syracuse, New York and analyzed for VOCs by United States Environmental Protection Agency (USEPA) Method TO-15. Centek is an NYSDOH ELAP certified laboratory. Proposed detection limits are 0.25 mcg/m^3 for Matrix 1 analytes and 1 mcg/m^3 for all other analytes.

VI. REPORTING

The analytical results for the samples will be compared to the guidance values outlined in the 2006 guidance document and associated matrices.

A summary of the findings will be submitted to the NYSDEC that will include the results of the investigation and recommendations for mitigative measures, if appropriate.

As part of the soil vapor and indoor air assessment, C&S will meet with the client and NYSDEC to discuss the implications of the sample results and potential plans for moving forward.

VII. SCHEDULE

C & S Engineers is prepared to initiate this project as soon as approval of the scope of work is received from the NYSDEC. We expect the work to be completed within six weeks of initiation.

Should you have any questions regarding this work plan, please feel free to contact me at (716) 847-1630.

Sincerely,

C&S ENGINEERS, INC.

Mark Colmerauer

Regional Environmental Service Manager

F:\Project\N30 - Jamestown Container\N30001001 - Environmental - Technical Info - SVI - DEC Work Plan

TABLE 1: GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC CONMPOUNDS
FORMER DOWCRAFT FACILITY

Sample Location	NYSDEC Standards & Guidance Values	ESI - 1	ESI - 2	ESI - 3	ESI - 6	ESI - 7	ESI - 10	ESI - 11	ESI - 12	ESI - 13R	PW - 1	PW - 3R
Sample Date		2-Jul-13	2-Jul-13	2-Jul-13	2-Jul-13	2-Jul-13	2-Jul-13	2-Jul-13	2-Jul-13	2-Jul-13	2-Jul-13	2-Jul-13
Matrix		Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/l	ug/l	ug/l	ug/l
Contaminant												
Volatile Organic Compounds												
Acetone	50	<10.0	<10.0	<10.0		<10.0	<10.0	<10.0				13
Benzene	1	<0.70	<0.70	<0.70		<0.70	<0.70	<0.70				0.88 J
Carbon disulfide	N/S	<2.0	1.3	<2.0		<2.0	<2.0	<2.0				5.0
1,1-Dichloroethane	5	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0				5.5
1,2-Dichloroethane	0.6	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0				1.2
1,1-Dichloroethene	5	<2.0	2.8	<2.0	1.6	<2.0	0.34 J	<2.0				48
cis-1,2-Dichloroethene	5	1.1	1,900	<2.0	230	1.9	160	39	48	2.7	2.7	27,000 DL
trans-1,2-Dichloroethene	5	<2.0	13	<2.0	1.2	<2.0	1.6	<2.0				500 E
1,2-Dichloropropane	1	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0				2.2
Ethylbenzene	5	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0				0.77 J
Methylene Chloride	5	<5.0	<5.0	<5.0		<5.0	<5.0	<5.0				1.3
4-Methyl-2-pentanone	N/S	<5.0	<5.0	<5.0		<5.0	<5.0	<5.0				2.6 J
Tetrachloroethene	5	<2.0	0.55 J	<2.0	0.88 J	<2.0	<2.0	<2.0				18
1,1,2-Trichloroethane	1	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0				2.8
Trichloroethene	5	8.2	98	6.3	230	21	18	4.2	92	8.9	11	97000 DL
Toluene	5	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0				18
Vinyl chloride	2	<2.0	800	<2.0	73	<2.0	11	75				6300 DL
Xylene (total)	5	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0				4.8
Total VOCs		**9.3**	**2815.65**	**6.3**	**536.68**	**22.9**	**190.94**	**118.2**	**140**	**11.6**	**13.7**	**130924**

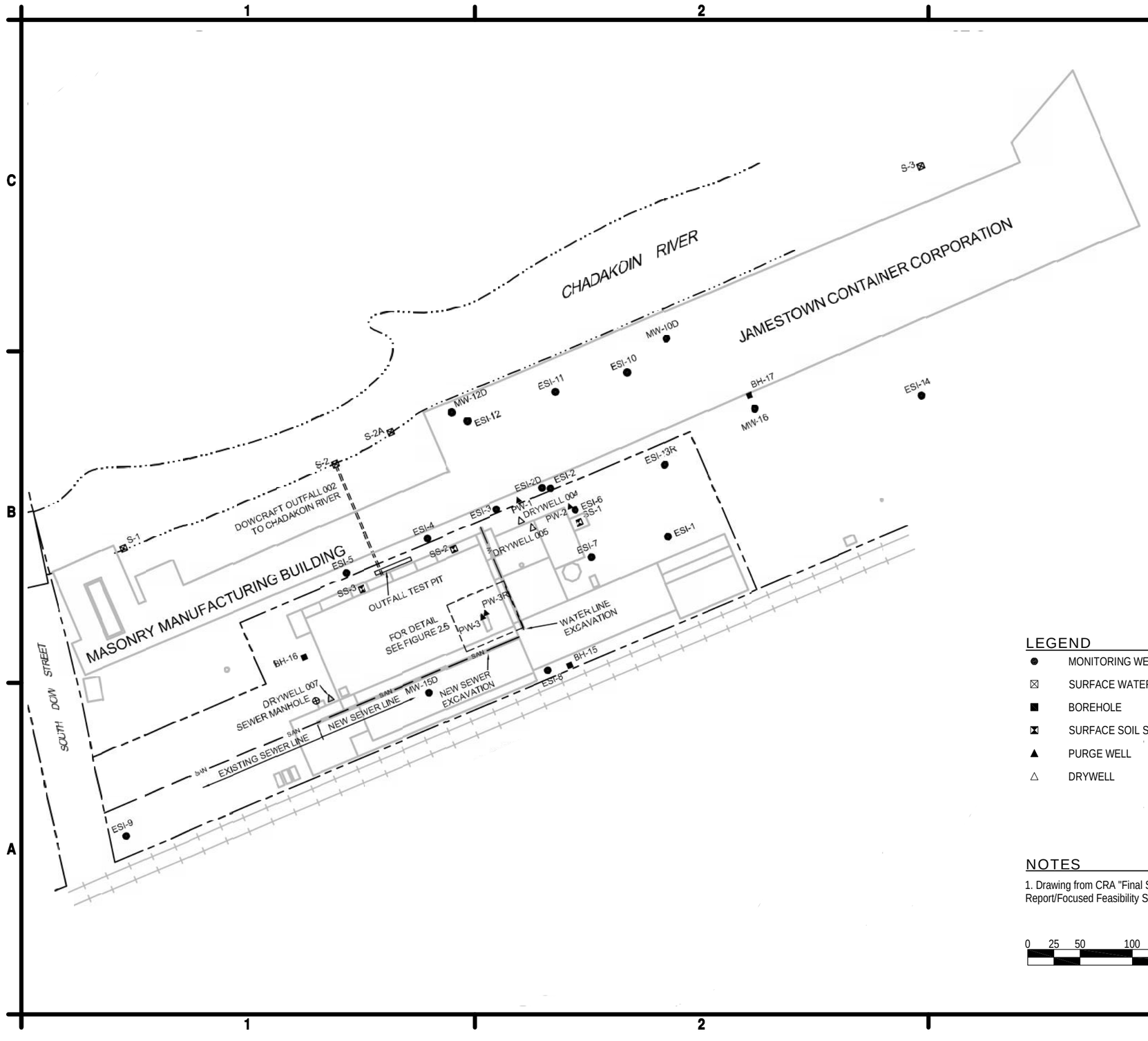
Notes

1) Shaded areas indicate concentration exceeds NYSDEC T.O.G.S 1.1.1 Ambient Water Quality Standards

2) < = not detected - below Method Detection Limit.

3) J = The analyte was positively identified but, the number indicates an estimated value. Detected concentration is less than the contract required quanititation limit but is greater than zero.

4) N/S = No Standard



LEGEND

- ● MONITORING WELL
- ⊠ SURFACE WATER SAMPLE LOCATION
- ■ BOREHOLE
- ⊠ SURFACE SOIL SAMPLE LOCATION
- ▲ PURGE WELL
- △ DRYWELL

NOTES

1. Drawing from CRA "Final Supplemental Remedial Investigation Report/Focused Feasibility Study," Figure 5.1: Sample Locations, 2001.

0 25 50 100 200 FEET

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JAMESTOWN CONTAINER CORP

FALCONER, NEW YORK

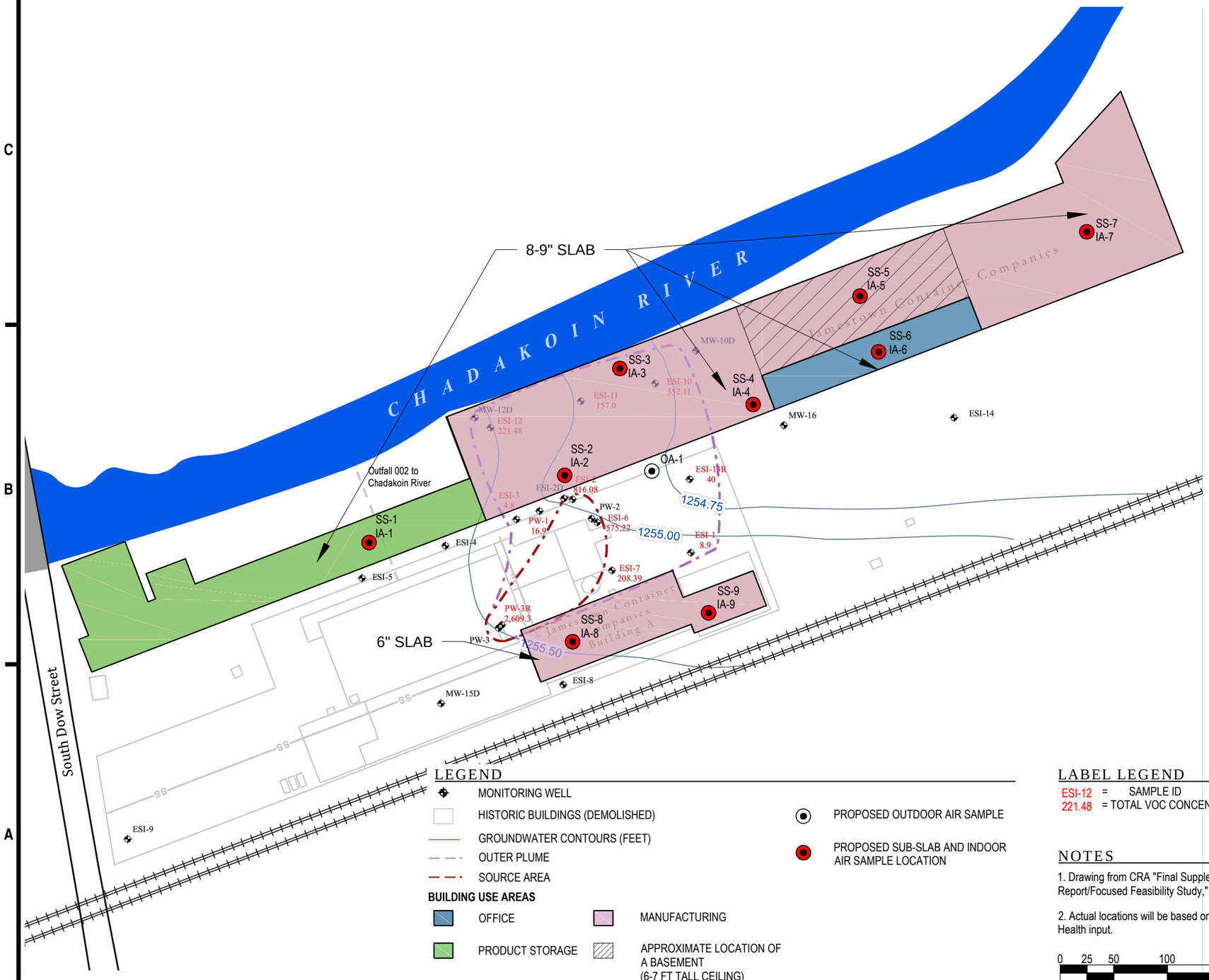
MARK	DATE	DESCRIPTION
REVISIONS		

PROJECT NO:	N30.001.001
DATE:	APRIL 28, 2014
DRAWN BY:	C. MARTIN
DESIGNED BY:	C. MARTIN
CHECKED BY:	M. COLMERAUER

EXISTING & HISTORIC SITE FEATURES

FIGURE 1

F:\Project\N30 - Jamestown Container\N30001001 - Jamestown Container\Environmental\CADD-GIS\Sheet Files\FIGURE-1-EXISTING-HISTORIC-SITE-FEATURES.dwg



LEGEND

- MONITORING WELL
- HISTORIC BUILDINGS (DEMOLISHED)
- GROUNDWATER CONTOURS (FEET)
- OUTER PLUME
- SOURCE AREA

BUILDING USE AREAS

- OFFICE
- MANUFACTURING
- PRODUCT STORAGE
- APPROXIMATE LOCATION OF A BASEMENT (6-7 FT TALL CEILING)

- PROPOSED OUTDOOR AIR SAMPLE
- PROPOSED SUB-SLAB AND INDOOR AIR SAMPLE LOCATION

LABEL LEGEND

ESI-12 = SAMPLE ID
221.48 = TOTAL VOC CONCENTRATION (UG/L)

NOTES

1. Drawing from CRA "Final Supplemental Remedial Investigation Report/Focused Feasibility Study," Figure 5.1: Sample Locations, 2001.

2. Actual locations will be based on field conditions and Department of Health input.

0 25 50 100 200 FEET

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N

FORMER DOWCRAFT FACILITY
GROUNDWATER REMEDIATION

FALCONER, NEW YORK

MARK	DATE	DESCRIPTION

REVISIONS

PROJECT NO:	N30.001.001
DATE:	FEBRUARY 16, 2015
DRAWN BY:	C. MARTIN
DESIGNED BY:	C. MARTIN
CHECKED BY:	M. COLMERAUER

PROPOSED SOIL VAPOR SAMPLING LOCATIONS

FIGURE 2