TECHNICAL MEMORANDUM

To: John Grathwohl, P.E. – NYSDEC
Henrietta Hamel – NYSDOH
From: Mark Distler
Re: Vapor Intrusion Evaluation Results, Former Miller Brewing Facility, Volney, NY (Site # 7-38-029)
File: 1669/38246.200.100
Date: July 24, 2006

cc: MJ Peachey – NYSDEC
J Burke – NYSDEC
J Surfus – MBCO

O'Brien & Gere was retained by Miller Brewing Corporation (MBCO) to conduct a vapor intrusion evaluation at the former Miller Brewing Facility (Site) in Volney, New York. The evaluation was conducted at the request of the New York State Department of Environmental Conservation (NYSDEC) in a letter dated July 7, 2005. The evaluation was performed in accordance with the Work Plan prepared by O'Brien & Gere, dated February 2, 2006, and Addendum 1 to the Work Plan, dated March 28, 2006. The Work Plan Addendum 1 incorporated changes based on comments provided by the NYSDEC in a letter dated March 7, 2006. This technical memorandum presents the results of the evaluation and recommends the next phase of the evaluation. This memorandum is being submitted to NYSDEC and NYSDOH in order to obtain their concurrence with the data evaluation and with the recommended next phase of the evaluation.

1. Site Background

The Site is located in the Town of Volney, Oswego County, New York, approximately 1,200 feet southeast of the municipal boundary for the City of Fulton, New York. The Oswego River is located approximately 1,000 feet west of the Site. There is one on-Site building. There are off-Site commercial buildings 600 feet south of the on-Site building. Off-Site residential buildings are approximately 1,600 feet northwest of the on-Site building. There is a proposed commercial building (NYS Troopers barracks) planned to be constructed on the former Taylor property, which is approximately 800 feet west of the on-Site building. Ground water flows from east to west toward the Oswego River. Depth to ground water ranges from approximately 16 to 24 feet bgs.

Historical manufacturing activities at the Site have resulted in the presence of chlorinated volatile organic compounds (CVOCs) in the Site ground water.

Located on the Site is the former MBC Container Plant building, now owned and operated by Crysteel Manufacturing, Incorporated. Figure 1 shows the current configuration of the Crysteel building, consisting of an office area and a large shop area. The entire building is single-story, slab-on-grade. The office area, located in front (west side) of the building, is heated and air conditioned with roof top air handlers that are thermostatically controlled.

The large shop area is located in the back of the building where all of Crysteel's manufacturing operations take place. Manufacturing process units include sand blasting, painting, and drying of dump truck beds and associated mechanisms. Four former underground storage tanks (USTs) are located near the southwest corner of the shop area in the vicinity of the process units, as shown on Figure 1. These USTs are considered the primary source of subsurface vapors of CVOCs where vapor intrusion potential within the Crysteel building may be the highest. However, other source areas may contribute to subsurface vapors under the building via underground utility trenches.

2. Vapor Intrusion Evaluation

The following describes the sampling that was conducted in March and May 2006. Section 3 discusses the sampling results. The objectives of the sampling were to assess the potential for (1) on-Site vapor intrusion, and (2) off-Site migration of soil vapor. The following describes the sampling conducted to evaluate both objectives.

Both objectives were achieved by collecting air samples using 6-liter pre-evacuated Summa® canisters. Sample collection rates were maintained by laboratory-calibrated constant-differential low volume flow controllers. Vacuum readings of the canisters were obtained and documented prior to sample collection and upon completion of sampling. Sample identifications, vacuum readings, flow controller identification numbers, and other relevant information were recorded on field forms provided in Attachment 1 of this document. Samples were collected in accordance with the Work Plan and the NYSDOH draft vapor intrusion guidance (NYSDOH Guidance Document).[1] Sampling was conducted with the oversight of John Grathwol, project manager with the NYSDEC.

2.1 Sampling for On-Site Vapor Intrusion

On-Site vapor intrusion sampling was initiated on March 21, 2006. Paired sub-slab and indoor air sample sets were collected from within the building at four locations shown in Figure 1. Sample locations were selected to evaluate vapor intrusion in areas with the greatest potential for sub-slab vapors. The samples collected from the office area and the cafeteria were located down and/or cross gradient of the UST and spill containment tank source areas. The two sample sets collected from the southwest corner of the building were located in the immediate vicinity of the UST source area directly under the Crysteel building. During sampling, an indoor air survey was completed to inventory the locations of materials (*e.g.* paint cans, cleaners) in the vicinity of the sampling as well as document building characteristics that may influence indoor air conditions. The completed survey form is provided as Attachment 2.

In addition to and concurrent with indoor air sampling, an ambient air sample was collected immediate to and upwind of the on-Site building to assess the potential of impacts from upwind air sources on indoor air concentrations. The ambient air sample was located west of the building, as shown on Figure 1.

Sub-slab soil vapor samples were collected by drilling small holes in the building's slab, inserting sampling tubing, sealing the tubing to the floor with beeswax to prevent entrainment of indoor air, purging the tubing of ambient air, and slowly pulling (<10 cc/min) sub-slab air into a canister. The ambient and indoor air samples were collected by slowly pulling air into the canisters, which were situated at a height of approximately 3 to 5 feet above the ground or slab. Samples were collected over an 8-hour period, utilizing batch certified-clean canisters for sub-slab samples and canisters that were individually certified-clean for low level analysis for indoor and ambient air samples. After sample collection, the canisters were shipped to a subcontracted laboratory, STL Inc. of Colchester, VT, where they were analyzed by USEPA Method TO-15. STL is certified by NYSDOH for TO-15 analyses.

2.2 Sampling for Off-Site Migration of Soil Vapor

Sampling for off-Site migration of soil vapor was initiated on May 23 and 24, 2006. Shallow soil vapor was sampled at four locations, identified in Figure 2. Two locations, SV-1 and SV-2, were sampled on the former Taylor property where the highest concentrations of VOCs in ground water on that property have recently been measured. Since future construction on this property is expected to include a basement, soil vapor sampling depths were 8 feet below grade.

[1] "Guidance for Evaluating Soil Vapor Intrusion in the State of New York," NYSDOH, Public Comment Draft, February 2005.

The two other samples, SV-3 and SV-4, were located south of the Site, between the Crysteel building and the former MBCO brewing plant (currently owned by Riverview Business Park). The location of these samples was used to determine the potential for soil vapor migration toward the former MBCO brewing plant. Since the former brewing plant is constructed on-grade, a sampling depth of 3 feet below grade was attempted for these two samples. This depth was not achieved for SV-4 for reasons described below.

Coarse glass beads were installed above each sample point, creating a permeable sample zone approximately one foot high. The space above the glass beads to the ground surface was sealed with a bentonite slurry. Ambient air was purged from the sample tubing and the installations were allowed to cure for approximately 24 hours before samples were collected.

Ambient air from the sample tubing of the initial SV-4 installation could not be purged, likely due to the sample point being installed in an impermeable layer of soil. Repeated attempts of installing SV-4 at different depths (up to 6 feet below grade) yielded similar difficulties. SV-4 was eventually installed 22 inches below grade, at the approximate bottom of the gravel underlayment of asphalt pavement. Since the asphalt was measured at 9 inches thick at this location, it was determined the asphalt would provide a cap for the soil vapor sample installation, and prevent ambient air from infiltrating the soil and diluting the sample. Mr. Grathwol was consulted with respect to this issue and approved the shallower sample depth provided that tracer gas techniques did not reveal ambient air entrainment.

Attempts to install SV-3 immediately East of the Crysteel property boundary at a depth of 3 feet were similarly unsuccessful due to an impermeable layer of soil. Attempts were made to install SV-3 in the asphalt pavement near the groundwater treatment system building, however, thick concrete was encountered under the asphalt, preventing the installation of soil vapor points. SV-3 was finally installed between the Crysteel building and the groundwater treatment system building, within the Crysteel property boundary, at a depth of 3 feet below grade. Mr. Grathwol approved this alternate location.

Helium tracer gas was applied to the first soil vapor point sampled (SV-1) to test the integrity of the installation and verify no ambient air would be collected in the sample. Tracer gas was also applied to SV-4, due to the shallow installation. Tracer gas results indicated the installations were sealed properly, therefore no further tracer gas screening of the other two soil vapor point installations was performed, as approved in the field by Mr. Grathwol.

Soil vapor samples were collected over four-hour periods, with batch certified-clean canisters. After sample collection, the canisters were shipped to a subcontracted laboratory, STL Inc. of Colchester, VT, where they were analyzed by USEPA Method TO-15.

2.3 Quality control

In accordance with the Work Plan, one duplicate sub-slab sample and one duplicate indoor air sample were collected as part of this sampling program. Additionally, Data Usability Summary Reports (DUSRs) were prepared for this sampling program to compare sample data with validation criteria prescribed by the United States Environmental Protection Agency's (USEPA) data validation guidance[2]. DUSRs were generated for both the on-Site sampling and off-Site migration of soil vapor sampling. Data are reported with the validation flags recommended in the DUSRs.

[2] United States Environmental Protection Agency (USEPA). 1994. *Region II Validating Canisters of Volatile Organics in Ambient Air*, HW-18, Revision 0. New York, New York.

3. Sampling Results Summary and Evaluation

Results of the sample analyses are presented in Tables 1 and 2. Results are presented in units of micrograms per cubic meter ($\mu g/m^3$). Only compounds that were detected in samples above their respective reporting limits are included in the tables. Compounds that were included in the analysis but not detected are presented in the laboratory data reports, which are provided as Attachment 3. The data have been validated as discussed above; the DUSRs are included in this memorandum as Attachment 4.

3.1. On-Site Building Vapor Intrusion Results

Table 1 presents results of the sub-slab and indoor air sampling of the on-Site building. The sample locations are shown on Figure 1.

The results indicate elevated concentrations of CVOCs in sub-slab vapor. The highest concentrations were of 1,1,1-trichloroethane (TCA) and 1,1-dichloroethane (1,1-DCA), which were found to be 6,000 $\mu g/m^3$ and 5,700 $\mu g/m^3$, respectively, in the vicinity of the former USTs. Trichloroethene (TCE) and cis-1,2-dichloroethene (cDCE) were also found to be highest at this location (SV-3) with concentrations of 120 $\mu g/m^3$ and 1,800 $\mu g/m^3$, respectively. The highest tetrachloroethene (PCE) and 1,1-dichloroethene (1,1-DCE) concentrations were 1,600 $\mu g/m^3$ and 790 $\mu g/m^3$, respectively, and were found at the office area location. Other compounds were detected at much lesser concentrations and include some alkanes and aromatics (BTEX).

The highest indoor air concentrations of TCA, 1,1-DCA, PCE, and cDCE were from the shop area, and were 1.9 $\mu g/m^3$, 0.73 $\mu g/m^3$, 8.1 $\mu g/m^3$ and 0.75 $\mu g/m^3$, respectively. The highest indoor air concentrations of TCE and 1,1-DCE were found in the office area at 0.28 $\mu g/m^3$ and 0.48 $\mu g/m^3$, respectively.

Table 1 also presents attenuation factors calculated for each sample set. The attenuation factor is the ratio of the sub-slab vapor concentration to the indoor air concentration. The attenuation factors are useful in estimating which indoor air concentrations may be attributable solely to vapor intrusion and which are likely attributable to indoor air sources. Based on the review of data for compounds with elevated sub-slab concentrations with none or limited indoor use of the compounds, the attenuation factor in the office/cafeteria area is approximately 10^{-3}, while the attenuation factor in the shop area is approximately 10^{-4}. The lower attenuation factor in the shop area than the office/cafeteria are was anticipated as the shop area does not have an HVAC system as the office and cafeteria that can create negative indoor air pressure sufficient to draw in sub-slab vapors.

We propose that the indoor air concentrations with associated attenuation factors above the values of 10^{-3} and 10^{-4} for the office/cafeteria area and shop area, respectively, are not entirely attributable to vapor intrusion. Based on this proposal, the only compounds attributable to vapor intrusion are TCA, PCE, and 1,1-DCE in the office area and TCA, 1,1-DCE, and cDCE in the shop area.

The NYSDOH Guidance Document has decision matrices for TCE, TCA, and PCE, which uses the sub-slab and indoor concentrations to recommend the corrective action in managing potential vapor intrusion. Table 1 includes a column for each set of samples (sub-slab and indoor air) that presents the recommended corrective action suggested by the decision matrices. For TCA and PCE, the decision matrix suggests mitigation when sub-slab samples exceed 1,000 $\mu g/m^3$ irrespective of indoor air concentration, which is the case for the office area and the shop area. NYSDOH's decision matrix for TCE recommends monitoring for the same two area.

3.2. Soil Vapor Sampling Results

Table 2 shows the results of the soil vapor sampling. TCA was detected in concentrations at or less than 3.1 $\mu g/m^3$ in the soil vapor of the former Taylor property sampling locations (SV-1 and SV-2). Assuming that these levels

represent potential sub-slab concentrations for the proposed Trooper barracks, they are well below the NYSDOH decision matrix levels that would require any corrective actions. Concentrations of TCE and PCE were not detected in either sample collected at the former Taylor property.

Samples collected at SV-3 and SV-4 contained one detected concentration of Site related compounds. PCE was detected at SV-3 at a concentration of 5.1 $\mu g/m^3$, but was not detected at SV-4. This concentration is well below the NYSDOH decision matrix level that would require any corrective action for sub-slab concentrations of PCE. These soil vapor results indicate that Site-related vapors are not migrating off-Site toward the former MBCO brewing plant.

Other compounds detected in the four soil vapor samples include chloroform, alkanes, and BTEX, none of which are Site-related. The concentrations of these compounds generally increase with increasing distance from the Crysteel building, indicating that the source of these compounds is not from the Site.

3.3. Quality control

The duplicate indoor air sample results generally show good overall precision of sampling and analysis techniques. The relative percent difference (RPD) between individual detected CVOCs is less than 17 percent (<30 percent is considered acceptable). RPDs higher than 17 percent were evident in some compounds, however, the concentrations of compounds in these samples was not used in assessing vapor intrusion.

Duplicate sub-slab results indicate RPDs for CVOCs were not acceptable. Therefore, all detected compounds are flagged as being indeterminately biased.

DUSRs for both on-Site vapor intrusion sampling and off-Site migration of soil vapor sampling are included in Attachment 4. The reports state that the entire data set is considered useable for project objectives. The data presented in Tables 1 and 2 include data qualifiers resulting from the reports.

4. Recommendations for Next Phase

4.1. On-Site Building

As discussed above, mitigation of the on-Site building is recommended. Testing of the building to evaluate the feasibility of sub-slab depressurization (SSD), a highly effective mitigation technique, will be necessary. Once NYSDEC and NYSDOH concur with these findings, MBCO will proceed with the testing.

In addition, a fact sheet and transmittal letter that communicates the sub-slab and indoor air sampling results to Crysteel will be prepared. Once we receive your concurrence with this report, its findings, and recommended actions, we will forward these documents to you for review prior to distribution. We also intend to meet with Crysteel to discuss the results and the upcoming mitigation. We request to conduct the meeting in concert with the NYSDEC and/or NYSDOH.

4.2. Off-Site Migration

As discussed above, the soil vapor data indicates that there is no evidence of off-Site migration of Site-related vapor constituents beyond the Site's southern property line. Evidence of migration to the west reveals very low levels of Site-related compounds that do not warrant further action. Fact sheets and transmittal letters communicating the soil vapor results will also be sent to the property owners of the former Taylor property and the former MBCO brewing plant. We will forward these documents to you for review prior to distribution

If you have any questions regarding this report, please feel free to contact me at (315) 437-6100.

Attachments:
Table 1 – Summary of On-Site Building Vapor Intrusion Sampling Results
Table 2 – Summary of Soil Vapor Sampling Results
Figure 1 – On-Site Building Vapor Intrusion Sampling Locations
Figure 2 – Soil Vapor Sampling Locations
Attachment 1 – Field Data Forms
Attachment 2 – Building Survey Form
Attachment 3 – Sample Analysis Data
Attachment 4 – Data Usability Summary Reports

O'BRIEN & GERE

T
Summary of On-Site Building
Former Miller Brewing
Volney

	Sample Location:		*Office Area*				*Cafeteria*		
	Sample Type:	Ambient Upwind	Sub-Slab	Indoor Air	NYSDOH	AF	Sub-Slab	Indoor Air	NYSD
	Sample I.D.:	032106-AMB	SS-1	IA-1	Decision	(α)	SS-2	IA-2	Decis
Compound	Sample Date:		3/21/06	3/21/06	Matrix[A]		3/21/06	3/21/06	Matri
Trichloroethene		<0.21 U	**18**	0.28	Monitor	0.02	<2.1 U	<0.21 U	NF/
1,1,1-Trichloroethane		<0.22 U	**870**	0.93	Monitor	0.001	7.1	1.0	NF/
Tetrachloroethene		<0.27 U	**1800**	3.1	Mitigate	0.002	26	4.0	TP/
Carbon Tetrachloride		0.75	<5.0 U	0.75	NA	>0.2	<2.5 U	0.75	NA
Chloroethane		<0.21 U,J	<2.1 U	<0.21 U,J	NA		<1.1 U	<0.21 U,J	NA
Chloroform		<0.20 U	<3.9 U	<0.20 U	NA		<2.0 U	0.22	NA
Dichlorodifluoromethane		2.8	23	4.2	NA	0.2	<4.9 U	3.8	NA
1,1-Dichloroethane		<0.16 U	20	<0.16 U	NA	<0.01	<1.6 U	<0.16 U	NA
1,1-Dichloroethene		<0.16 U	1000	0.48	NA	0.0005	<1.6 U	0.38	NA
cis-1,2-Dichloroethene		<0.16 U	<3.2 U	<0.16 U	NA		<1.6 U	<0.16 U	NA
1,2-Dichloroethene (total)		<0.16 U	<3.2 U	<0.16 U	NA		<1.6 U	<0.16 U	NA
Trichlorofluoromethane		1.8	<4.5 U	2.2	NA	>0.5	3.3	2.1	NA
1,3-Butadiene		<0.18 U,J	<4.4 U	<0.18 U,J	NA		<2.2 U	<0.18 U,J	NA
n-Heptane		<0.16 U,J	<3.3 U	41 J	NA	>12	1.9	5.7 J	NA
n-Hexane		<0.28 U,J	<7.0 U	3.1 J	NA	>0.4	<3.5 U	0.67 J	NA
Cyclohexane		<0.14 U	<2.8 U	7.2	NA	>3	<1.4 U	1.1	NA
1,3,5-Trimethylbenzene		<0.20 U	<3.9 U	0.59	NA	>0.2	2.2	0.54	NA
Benzene		0.58	<2.6 U	0.58	NA	>0.2	1.5	0.64	NA
Ethylbenzene		0.19 J	<3.5 U	0.24 J	NA	>0.1	4.3	0.69 J	NA
Toluene		0.49	15	17 J	NA	1	21	3.6	NA
4-Ethlytoluene		<0.20 U	4.0	0.74 J	NA	0.2	6.9	0.84 J	NA
o-Xylene		<0.17 U	3.9	0.52	NA	0.1	5.6	0.87	NA
m&p-Xylenes		0.48 J	12	1.2 J	NA	0.1	18	2.6 J	NA
Xylene (total)		0.52	16	1.8	NA	0.1	24	3.6	NA

Notes:

Results are reported in units of micrograms per cubic meter (ug/m^3).

[A] *Guidancefor Evaluating Soil Vapor Intrusion in the State of New York ,Public Comment Draft, February 2005.*

Bolded Values - Detected concentrations above NYSDEC Matrix (working drafts) values that require monitoring or mitigation (available for PCE, 1,1,1-TCA

AF - attenuation factor (indoor conc. / sub-slab conc.). Not calculated when both sample results are below the reporting limit.

<##; U - Compound not detected above the reporting limit (##).

NFA - not further action as recommended by NYSDOH draft guidance.

TPA - Take reasonable and practical actions to identify source(s) and reduce exposures recommended by NYSDOH draft guidance.

NA - Not available

J - results reported as approximate values from the laboratory or data validator because (1) the reported result exceeded the upper analytical calibration limit or

ıble 1
Vapor Intrusion Sampling Results
Company Site, Site #7-38-029
New York

		Shop Area 1					*Shop Area 2*				
OH on [A]	AF (α)	Sub-Slab SS-3 3/21/06	Indoor Air IA-3 3/21/06	Indoor Air IA-Dup 3/21/06	NYSDOH Decision Matrix[A]	AF (α)	Sub-Slab SS-4 3/21/06	Sub-Slab SS-Dup 3/21/06	Indoor Air IA-4 3/21/06	NYSDOH Decision Matrix[A]	AF (α)
		120	<0.21 U	<0.21 U	Monitor	<0.002	<0.86 U,J	6.4	<0.21 U	NFA	<0.03
	0.1	**6000**	1.9	2.0	Mitigate	0.0003	5.5 J	**110** J	1.5	Monitor	0.01
	0.2	**430**	**7.5**	**6.6** J	Monitor	0.02	8.1 J	**81** J	**8.1**	TPA	0.1
	>0.3	<58 U	0.75	0.75	NA	>0.01	1.0 J	<5.0 U	0.88	NA	>0.2
		<24 U	<0.21 U,J	<0.21 U,J	NA		0.45 J	<2.1 U	<0.21 U	NA	<0.1
	>0.1	<45 U	0.30	0.29	NA	>0.01	<0.78 U,J	<3.9 U	0.44	NA	>0.1
	>0.8	<110 U	3.3	2.8	NA	>0.03	3.1 J	<9.9 U	3.6	NA	>0.4
		5700	0.73	0.77	NA	0.0001	1.5 J	28 J	0.40	NA	0.0
	>0.2	<36 U	<0.16 U	<0.16 U	NA		<0.63 U,J	<3.2 U	<0.16 U	NA	
		1800	0.75	0.71	NA	0.0004	<0.63 U,J	<3.2 U	0.39	NA	>0.1
		1800	0.63	0.59	NA	0.0004	0.6 J	<3.2 U	0.33	NA	>0.1
	0.6	670	2.0	2.0	NA	0.003	2.1 J	13 J	1.9	NA	0.1
		<51 U	0.77 J	0.80 J	NA	>0.02	<0.88 J	<4.4 U	1.0	NA	>0.2
	3.0	<38 U	1.7 J	2.0 J	NA	>0.04	1.9 J	4.1	1.9	NA	0.5
	>0.2	<81 U	3.0 J	3.3 J	NA	>0.04	2.8 J	<7.0 U	2.5	NA	>0.4
	>0.8	<32 U	1.1	1.2	NA	>0.03	1.9 J	3.8	1.5	NA	0.4
	0.2	<45 U	110 J	49 J	NA	>2	9.3 J	7.9	14 J	NA	1.5
	0.4	<29 U	1.6	1.5	NA	>0.1	2.7 J	4.2	1.9	NA	0.5
	0.2	<40 U	210 J	180 J	NA	>5	29 J	17 J	32 J	NA	1.9
	0.2	53	19 J	21 J	NA	0.4	35 J	57 J	12	NA	0.2
	0.1	<45 U	300 J	200 J	NA	>7	29 J	29	32 J	NA	1.1
	0.2	<40 U	260 J	200 J	NA	>7	34 J	23 J	38 J	NA	1.7
	0.1	<100 U	1300 J	960 J	NA	>13	110 J	65 J	130 J	NA	2.0
	0.2	<40 U	1600 J	1200 J	NA	>40	150 J	87 J	180 J	NA	2.1

and TCE only).

2) there was an excursion from lab QA/QC criteria.

O'BRIEN & GERE

Table 2
Summary of Soil Vapor Sampling Results
Former Miller Brewing Company Site, Site #7-38-029
Volney, New York

	Sample I.D.:	SV-1	SV-2	SV-3	SV-4
Compound	Sample Date:	5/23/06	5/23/06	5/24/06	5/24/06
Trichloroethene		<0.86 U	<0.86 U	<1.1 U	<1.1 U
1,1,1-Trichloroethane		3.1	1.7	<1.1 U	<1.1 U
Tetrachloroethene		<1.1 U	<1.1 U	5.1	<1.4 U
Chloroform		<0.78 U	<0.78 U	<0.98 U	59
Bromodichloromethane		<1.1	<1.1 U	<1.3 U	6.6
Dichlorodifluoromethane		3.3	3.7	3.3	3.1
Trichlorofluoromethane		1.7	1.8	1.5	1.9
1,3-Butadiene		<0.88 U	<0.88 U	1.5	<1.1 U
n-Heptane		<0.66 U	<0.66 U	2.3	3.3
n-Hexane		<1.4 U	<1.4 U	4.2	4.2
Cyclohexane		<0.55 U	<0.55 U	1.4	0.83
1,3,5-Trimethylbenzene		<0.79 U	0.84	1.9	7.9
Benzene		0.83	0.58	4.8	4.5
Ethylbenzene		<0.69 U	0.74	4.8	10
Toluene		<0.60 U	1.9	41	87
4-Ethlytoluene		<0.79 U	2.3	4.9	22
o-Xylene		<0.69 U	1.4	5.6	19
m&p-Xylenes		<1.7 U	2.3	17	52
Xylene (total)		<0.69 U	3.7	22	69

Note: Results are reported in units of micrograms per cubic meter (ug/m^3).

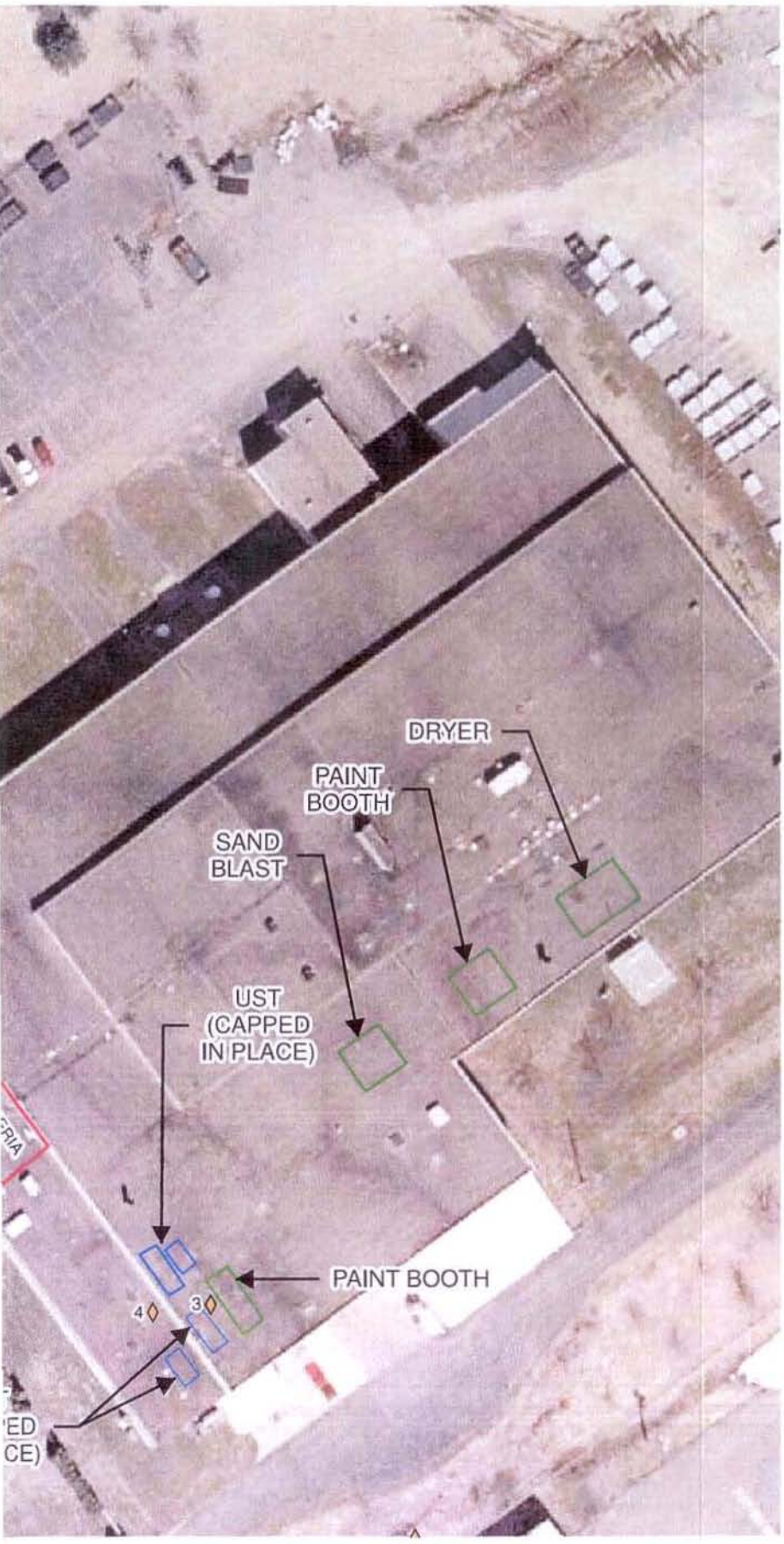
<##; U - Compound not detected above the reporting limit (##).

This document was developed in color. Reproduction in B/W may not represent the data as intended.

PLOT DATE: 07/06/06 DIV. 732 JPS

I:\Div01\Projects\1669\38246\8_dwg\GIS\MXD\V1.MXD

FIGURE 1



NOTE: ALL LOCATIONS ARE APPROXIMATE AND NOT SURVEYED.

LEGEND

- ◊ SUB-SLAB AND INDOOR AIR SAMPLING LOCATION
- (A) AMBIENT AIR SAMPLING LOCATION
- 1-4 SAMPLE IDENTIFICATION

FORMER MILLER BREWING FACILITY (CONTAINER PLANT) FULTON, NEW YORK SITE # 7-38-029

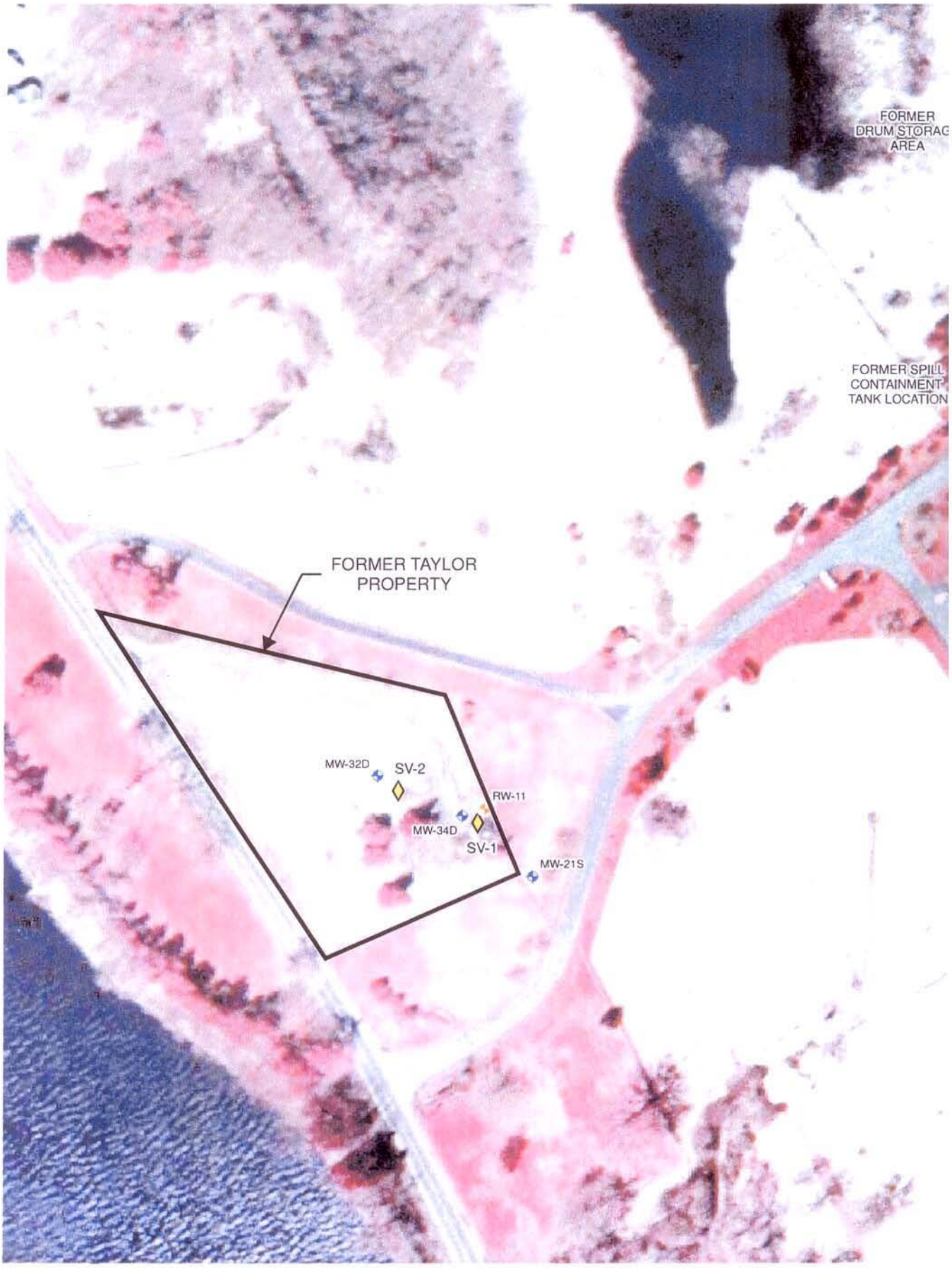
ON-SITE BUILDING VAPOR INTRUSION SAMPLING LOCATIONS

0 37.5 75 150

Feet

JULY 2006
1669.38246

O'BRIEN & GERE

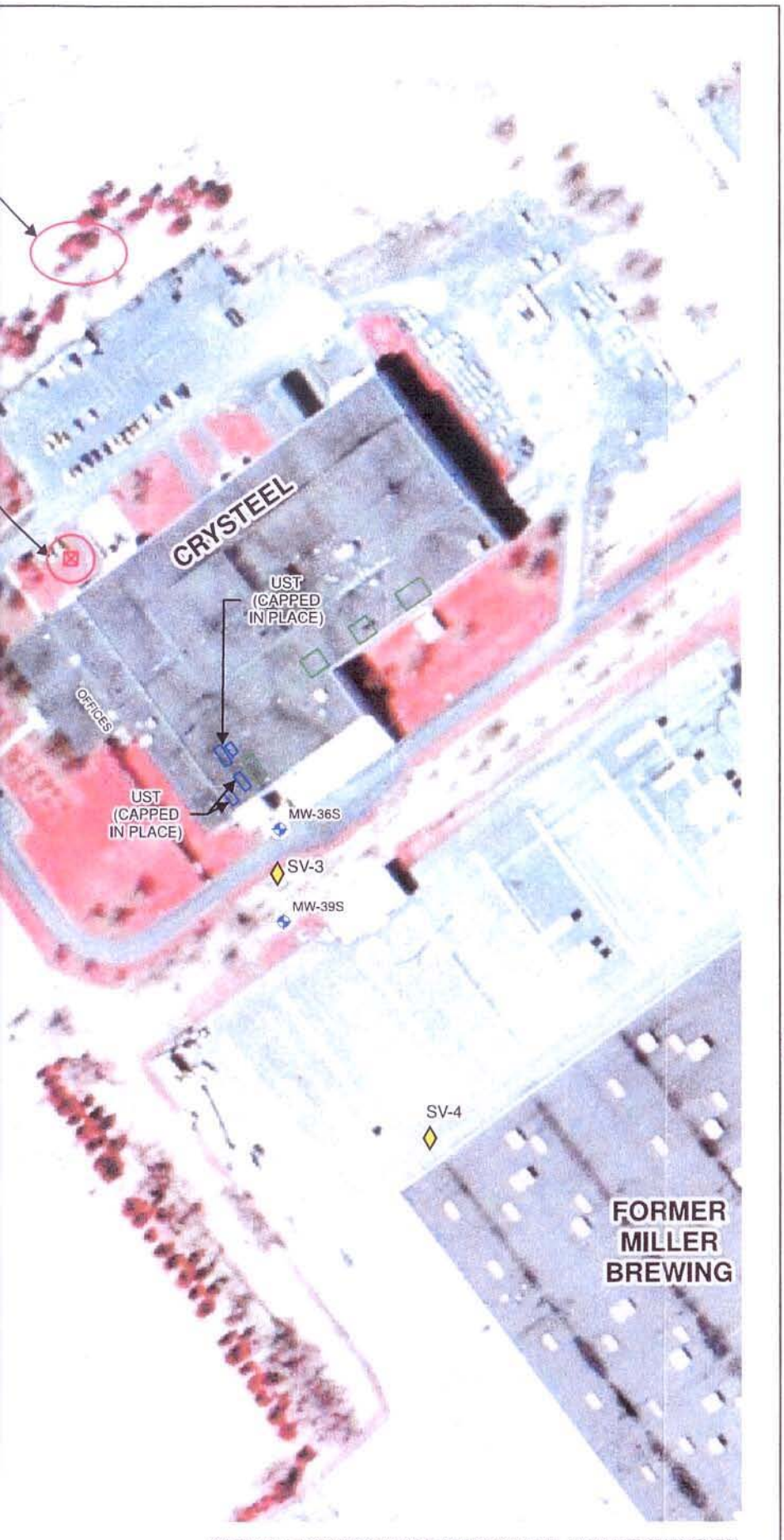


I:\Div01\Projects\1669\382468_dwg\GIS\MXD\SV_LOCS.MXD

PLOT DATE: 07/06/06 DIV. 732 JPS

This document was developed in color. Reproduction in B/W may not represent the data as intended.

FIGURE 2



NOTE: ALL LOCATIONS ARE APPROXIMATE AND NOT SURVEYED.

LEGEND

SAMPLE TYPE

- MONITORING WELL*
- RECOVERY WELL*
- SOIL VAPOR SAMPLE
- SV-1 SAMPLE IDENTIFICATION

*SELECTED WELLS PROVIDED FOR LANDMARK PURPOSES ONLY

FORMER MILLER
BREWING FACILITY
(CONTAINER PLANT)
FULTON, NEW YORK
SITE # 7-38-029

SOIL VAPOR SAMPLING LOCATIONS

0 100 200 400
Feet

JULY 2006
1669.38246

O'BRIEN & GERE

On-Site Vapor Intrusion Sampling

O'BRIEN & GERE

Vapor Intrusion Sampling Form

Project # 38246 Date 3/21/06

Project Name Miller Brewing Collector C Fisher

Type of sample: (Circle one) Indoor air | Substructure soil gas | (Ambient air) | Soil gas

Sample Location

West of Chrysteel - in Tree Approx. 30 ft west of vacant Room of Chrysteel

Canister Record

Canister ID 6480 S/N 2823

Flow controller ID ~~6480~~ 2823 724982

Sample duration 8 Hr

Sampling rate ~0.01 LPM

Sample ID 032106 - Amb

Date/Time start 3/21/06 0932

Date/Time end 3/21/06 1745

Gauge prior to start 0

Start pressure -28

End pressure -3

Complete all that apply:

Air temperature (°F)	~29°F	PID meter ID	PINE 4564	% O_2	–
Barometric pressure	29.55	FID meter ID	–	% CO_2	–
PID reading (~~ppmv~~ ppb)	0	Gas analyzer ID	–	% CH_4	–
FID reading (ppmv)	–	Ft. tubing used	–	Purge Volume	–

For indoor location:

Noticeable odor	
Floor slab depth	
Intake height above floor (ft)	
Intake depth below floor (ft)	
Floor surface type	
Room	
Story/level	

For outdoor location:

Noticeable odor	No
Distance to road (ft)	~50 ft
Direction to closest building (degrees)	West of Corner
Distance to closest building (ft)	~30 ft
Intake height above ground level (ft)	~5 ft
Intake depth below ground level (ft)	–
Soil type	–

Comments: Winds are expected to be from the NW, shifting to West throughout the day.

Analytical method required TO-15

Laboratory used STL

O'BRIEN & GERE

Vapor Intrusion Sampling Form

Project #	38246	Date	3/21/06
Project Name	Miller Brewing	Collector	CFinLe

Type of sample: (Circle one) Indoor air (Substructure soil gas) Ambient air Soil gas

Sample Location

Offices
~30 ft from West wall
~50 ft from South wall

Canister Record

Canister ID	6428
Flow controller ID	7279806
Sample duration	8 hrs
Sampling rate	~0.04 LPM

Sample ID	SS-1	Gauge prior to start	-1"
Date/Time start	3/21/06 0923	Start pressure	-29"
Date/Time end	3/21/06 1140	End pressure	-0.5"

Complete all that apply:

Air temperature (°F)	~69°	PID meter ID	PINE 6569	% O_2	—
Barometric pressure	29.55	FID meter ID	—	% CO_2	—
PID reading (~~ppmv~~ ppb)	2937	Gas analyzer ID	—	% CH_4	—
FID reading (ppmv)	—	Ft. tubing used	3 ft	Purge Volume	15 cc

For indoor location:

Noticeable odor	No
Floor slab depth	4"
Intake height above floor (ft)	~
Intake depth below floor (ft)	1/4"
Floor surface type	Carpet over concrete
Room	Office Area
Story/level	1st On Grade

For outdoor location:

Noticeable odor	
Distance to road (ft)	
Direction to closest building (degrees)	
Distance to closest building (ft)	
Intake height above ground level (ft)	
Intake depth below ground level (ft)	
Soil type	

Comments: Cut ~5" "L" in carpet under filing cabinet to install SS sample. End pressure measured w/ OBG vacuum gauge. STL gauge indicated 0" vacuum. Sample was collected after approx 2.5 hrs

Analytical method required: TO 15

Laboratory used: ~~STL~~ SL

O'BRIEN & GERE

Vapor Intrusion Sampling Form

Project #	38246	Date	3/21/06
Project Name	Miller Brewing	Collector	C. Finke

Type of sample: (Circle one) — Indoor air / Substructure soil gas / Ambient air / Soil gas

Sample Location

Offices
~ 30ft from West wall
~ 50ft from South wall

Canister Record

Canister ID	6430
Flow controller ID	7277165
Sample duration	8 Hrs
Sampling rate	— ~0.01 LPM

Sample ID	IA-1	Gauge prior to start	0"
Date/Time start	3/21/06 0923	Start pressure	<-30"
Date/Time end	3/21/06 ~~0923~~ 1723	End pressure	-5"

Complete all that apply:

Air temperature (°F)	~69°	PID meter ID	PINE 6569	% O_2	—
Barometric pressure	29.55	FID meter ID	—	% CO_2	—
PID reading (ppbv)	0	Gas analyzer ID	—	% CH_4	—
FID reading (ppmv)	—	Ft. tubing used	3ft	Purge Volume	15cc

For indoor location:

Noticeable odor	No
Floor slab depth	—
Intake height above floor (ft)	~3ft
Intake depth below floor (ft)	—
Floor surface type	carpet over concrete
Room	Office area
Story/level	1st On Grade

For outdoor location:

Noticeable odor	
Distance to road (ft)	
Direction to closest building (degrees)	
Distance to closest building (ft)	
Intake height above ground level (ft)	
Intake depth below ground level (ft)	
Soil type	

Comments:

Analytical method required	TO 15
Laboratory used	STL

O'BRIEN & GERE

Vapor Intrusion Sampling Form

Project # 38246 Date 3/21/06

Project Name Miller Brewing Collector C Fisher

Type of sample: (Circle one) Indoor air (Substructure soil gas) Ambient air Soil gas

Sample Location

Cafeteria - / bathroom (womens bathroom on south side of ~~of~~ cafeteria)

Canister Record

Canister ID 5797

Flow controller ID 7228536

Sample duration 8hr

Sampling rate ~~~~ ~ 0.05 LPM

Sample ID ~~SS-2~~ SS-2

Date/Time start 3/21/06 0925

Date/Time end 3/21/06 1:15 pm

Gauge prior to start -1"

Start pressure -30"

End pressure ~~-1~~ → -0.5"

Complete all that apply:

Air temperature (°F)	~68°	PID meter ID	PID 6569	% O_2	—
Barometric pressure	29.55	FID meter ID	—	% CO_2	—
PID reading (~~ppm~~v)	1740	Gas analyzer ID	—	% CH_4	—
FID reading (ppmv)	—	Ft. tubing used	35+	Purge Volume	15 cc

For indoor location:

Noticeable odor: NO

Floor slab depth: 5"

Intake height above floor (ft): —

Intake depth below floor (ft): 1/4"

Floor surface type: concrete under linoleum

Room: bathroom

Story/level: 1st

For outdoor location:

Noticeable odor

Distance to road (ft)

Direction to closest building (degrees)

Distance to closest building (ft)

Intake height above ground level (ft)

Intake depth below ground level (ft)

Soil type

Comments: end pressure was measured w/ OBG gauge. STL gauge read -1"

Analytical method required: TO-15

Laboratory used: STL

O'BRIEN & GERE

Vapor Intrusion Sampling Form

Project # 38746,
Project Name Miller Brewing

Date 3/21/06
Collector C. Finke

Type of sample: (Circle one) Indoor air | Substructure soil gas | Ambient air | Soil gas

Sample Location
Cafeteria / bathroom (womens bathroom on south side of cafeteria)

Canister Record
Canister ID 6442
Flow controller ID 7212682
Sample duration 8hr.
Sampling rate ~0.01 LPM

Sample ID IA-2
Date/Time start 3/21/06 0925
Date/Time end 3/21/06 1725

Gauge prior to start -2"
Start pressure <-30"
End pressure -7.5"

Complete all that apply:

Air temperature (°F)	~68°	PID meter ID	Pine 6569	% O_2	—
Barometric pressure	29.55	FID meter ID	—	% CO_2	—
PID reading ~~(ppmv)~~ ppb	0	Gas analyzer ID	—	% CH_4	—
FID reading (ppmv)	—	Ft. tubing used	~~1111~~ —	Purge Volume	—

For indoor location:

Noticeable odor	No
Floor slab depth	—
Intake height above floor (ft)	36"
Intake depth below floor (ft)	—
Floor surface type	concrete under linoleum
Room	bathroom
Story/level	1st

For outdoor location:

Noticeable odor	
Distance to road (ft)	
Direction to closest building (degrees)	
Distance to closest building (ft)	
Intake height above ground level (ft)	
Intake depth below ground level (ft)	
Soil type	

Comments:

Analytical method required TO-15
Laboratory used STL

O'BRIEN & GERE

Vapor Intrusion Sampling Form

Project # 38246 Date 3/21/06

Project Name _____ Collector C File

Type of sample: (Circle one) Indoor air (Substructure soil gas) Ambient air Soil gas

Sample Location

In-between USTs - NE of UST of paint booth - south of interior wall.

Canister Record

Canister ID 7169

Flow controller ID 7303481

Sample duration 8 Hr

Sampling rate ~~0~~ ~0.2 L/Min

Sample ID SS-3

Date/Time start 3/21/06 0926

Date/Time end 3/21/06 1743

Gauge prior to start 0

Start pressure -30"

End pressure -8.5"

Complete all that apply:

Air temperature (°F)	~60°	PID meter ID	PINE 6569	% O_2	~
Barometric pressure	29.55	FID meter ID	~	% CO_2	~
PID reading (ppbv)	@490 ~940	Gas analyzer ID	~	% CH_4	~
FID reading (ppmv)	~	Ft. tubing used	35+	Purge Volume	15cc

For indoor location:

Noticeable odor: Slight paint smell

Floor slab depth: 6 1/2"

Intake height above floor (ft): ~

Intake depth below floor (ft): 1/4"

Floor surface type: concrete

Room: Paint Room

Story/level: 1st

For outdoor location:

Noticeable odor

Distance to road (ft)

Direction to closest building (degrees)

Distance to closest building (ft)

Intake height above ground level (ft)

Intake depth below ground level (ft)

Soil type

Comments:

Analytical method required: TO 15

Laboratory used: STL

O'BRIEN & GERE

Vapor Intrusion Sampling Form

Project # 38246 | Date 3/21/06

Project Name | Collector CF, hw

Type of sample: (Circle one) (Indoor air) Substructure soil gas Ambient air Soil gas

Sample Location: In between Ust 4 - West of paint - South of Interior wall.

Canister Record	IA-3	DUP
Canister ID	5614	6785
Flow controller ID	7242797	7226623
Sample duration	8hr	8hr
Sampling rate		

	IA-3	IA-DUP			
Sample ID	IA-3	IA-DUP	Gauge prior to start	0	-1
Date/Time start	3/21/06 0926	3/21/06 0926	Start pressure	-30"	-30"
Date/Time end	3/21/06 1647	3/21/06 1647	End pressure	-7"	-1.5"

Complete all that apply:

Air temperature (°F)	~60°	PID meter ID	PINE 6569	% O_2	-
Barometric pressure	29.55	FID meter ID	-	% CO_2	-
PID reading (ppb/ppmv)	~~~490~~ ~490	Gas analyzer ID	-	% CH_4	-
FID reading (ppmv)	-	Ft. tubing used	~~3ft~~	Purge Volume	

For indoor location:

Noticeable odor	Slight paint smell
Floor slab depth	-
Intake height above floor (ft)	~3ft
Intake depth below floor (ft)	-
Floor surface type	Concrete
Room	Near Paint Booth
Story/level	1st - on grade

For outdoor location:

Noticeable odor	
Distance to road (ft)	
Direction to closest building (degrees)	
Distance to closest building (ft)	
Intake height above ground level (ft)	
Intake depth below ground level (ft)	
Soil type	

Comments: Field duplicate performed on indoor air. ~~#3~~ #5

Strong Paint Smell @ Times - mainly after 4 pm, when painting operations took place nearby. Collected IA-3 and Dup early due to little vacuum left on the Dup sample.

Analytical method required: TO 15

Laboratory used: STL

O'BRIEN & GERE

Vapor Intrusion Sampling Form

Project # 38246 | Date 3/21/06

Project Name Miller Brewing | Collector C Fiske

Type of sample: (Circle one) Indoor air | Substructure soil gas | Ambient air | Soil gas

Sample Location: Shop - Maintenance Area (Moist Room)

Canister Record	SS-4	SS-DUP
Canister ID	6728	6810
Flow controller ID	7305970	7246160
Sample duration	8 hr	8 hr
Sampling rate	~0.04 LPM	~0.01 LPM

	SS-4	SS-DUP		SS-4	SS-DUP
Sample ID	SS-4	SS-DUP	Gauge prior to start	0	-1"
Date/Time start	3/21/06 0927	3/21/06 0927	Start pressure	-29	<-30
Date/Time end	3/21/06 1142	3/21/06 1737	End pressure	-0.5"	-5"

Complete all that apply:

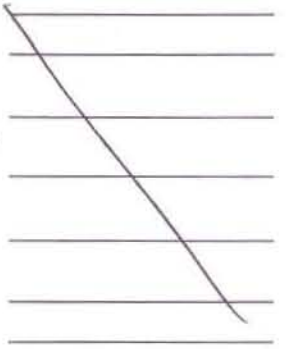
Air temperature (°F)	~64°	PID meter ID	PINE 6569	% O_2	-
Barometric pressure	29.55	FID meter ID	-	% CO_2	-
PID reading (ppmv)	~462	Gas analyzer ID	-	% CH_4	-
FID reading (ppmv)	-	Ft. tubing used	3ft + 14in after Tee	Purge Volume	10 ~~5~~ from 1 side, 5 from other

For indoor location:

Noticeable odor	Odor from welding operations
Floor slab depth	8 1/4"
Intake height above floor (ft)	-
Intake depth below floor (ft)	1/4"
Floor surface type	Concrete
Room	shop (s.w.)
Story/level	1st - On Grade

For outdoor location:

Noticeable odor	
Distance to road (ft)	
Direction to closest building (degrees)	
Distance to closest building (ft)	
Intake height above ground level (ft)	
Intake depth below ground level (ft)	
Soil type	



Comments: Field duplicate performed on side slab. SS sample collected within ~25 Hours. Checked controller fittings and found them to be tight. End pressure was measured with OBG vacuum gauge

Analytical method required: TO 15

Laboratory used: STL

O'BRIEN & GERE

Vapor Intrusion Sampling Form

Project # 38246
Project Name Miller Brewing
Date 3/21/06
Collector C. Fiske

Type of sample: (Circle one) (Indoor air) Substructure soil gas Ambient air Soil gas

Sample Location
Shop - Maintenance Area
SW corner of building
~35' from west wall (Moist Room)
~50' from South wall

Canister Record
Canister ID 6977
Flow controller ID 7236775
Sample duration 8 hr.
Sampling rate ~0.01 LPM

Sample ID IA-4
Date/Time start 3/21/06 0927
Date/Time end 3/21/06 ~~1729~~ 1737

Gauge prior to start -1.5
Start pressure < -30"
End pressure -8"

Complete all that apply:

Air temperature (°F)	~70 ~64°	PID meter ID	PINE 6569	% O_2	—
Barometric pressure	29.55	FID meter ID	—	% CO_2	—
PID reading (ppbv)	552	Gas analyzer ID	—	% CH_4	—
FID reading (ppmv)	—	Ft. tubing used	—	Purge Volume	—

For indoor location:

Noticeable odor: Odor from welding operations
Floor slab depth: ~~~6"~~ 0
Intake height above floor (ft): ~3'
Intake depth below floor (ft): —
Floor surface type: concrete
Room: SW Shop
Story/level: 1st - On grade

For outdoor location:

Noticeable odor
Distance to road (ft)
Direction to closest building (degrees)
Distance to closest building (ft)
Intake height above ground level (ft)
Intake depth below ground level (ft)
Soil type

Comments:

Analytical method required: TO 15
Laboratory used: STL

Off-Site Soil Vapor Migration Sampling

O'BRIEN & GERE

Vapor Intrusion Sampling Form

Project #	38246	Date	5/23/06
Project Name	Miller	Collector	CF, CM

Type of sample: (Circle one) Indoor air | Substructure soil gas | Ambient air | (Soil gas)

Sample Location

Farmer Taylor property, next to MW-34D. North of old foundation

Canister Record

Canister ID	2728
Flow controller ID	2728
Sample duration	4 Hrs
Sampling rate	

Sample ID	SV-1	Gauge prior to start	0
Date/Time start	5/23/06 1007	Start pressure	-30 " Hg
Date/Time end	5/23/06 1403	End pressure	-1.5 " Hg

Complete all that apply:

Air temperature (°F)	~55°	PID meter ID	-	% O_2	-
Barometric pressure	29.72	FID meter ID	-	% CO_2	-
PID reading (ppmv)	-	Gas analyzer ID	-	% CH_4	-
FID reading (ppmv)	-	Ft. tubing used	11 ft	Purge Volume	120 cc

For indoor location:

Noticeable odor	
Floor slab depth	
Intake height above floor (ft)	
Intake depth below floor (ft)	
Floor surface type	
Room	
Story/level	

For outdoor location:

Noticeable odor	No
Distance to road (ft)	~150 ft
Direction to closest building (degrees)	NA
Distance to closest building (ft)	NA
Intake height above ground level (ft)	NA
Intake depth below ground level (ft)	8 ft
Soil type	Sand

Comments: Tracer gas applied to soil vapor point @ ~93% (Helium). Took 1 L bag sample from point @ rate of < .1 LPM. No helium was detected. Collected sample. Re-performed tracer gas test and did not detect helium

Analytical method required: TO 15

Laboratory used: STL

O'BRIEN & GERE

Vapor Intrusion Sampling Form

Project #	38246	Date	5/23/06
Project Name	Miller	Collector	CF, CM

Type of sample: (Circle one) Indoor air | Substructure soil gas | Ambient air | (Soil gas)

Sample Location

Former Taylor property - next to MW-32D

Canister Record

Canister ID	3328
Flow controller ID	3325
Sample duration	4 Hr
Sampling rate	

Sample ID	SV-2	Gauge prior to start	0 "Hg
Date/Time start	5/23/06 1013	Start pressure	~ -30 "Hg
Date/Time end	5/23/06 1404	End pressure	-4 "Hg

Complete all that apply:

Air temperature (°F)	~55°	PID meter ID	-	% O_2	-
Barometric pressure	29.72	FID meter ID	-	% CO_2	-
PID reading (ppmv)	-	Gas analyzer ID	-	% CH_4	-
FID reading (ppmv)	-	Ft. tubing used	11 Ft	Purge Volume	120 cc

For indoor location:

Noticeable odor	
Floor slab depth	
Intake height above floor (ft)	
Intake depth below floor (ft)	
Floor surface type	
Room	
Story/level	

For outdoor location:

Noticeable odor	No
Distance to road (ft)	~100 Ft
Direction to closest building (degrees)	NA
Distance to closest building (ft)	NA
Intake height above ground level (ft)	-
Intake depth below ground level (ft)	8 Ft
Soil type	Sand

Comments:

Analytical method required	TO 15
Laboratory used	STL

O'BRIEN & GERE

Vapor Intrusion Sampling Form

Project #	35246	Date	5/24/06
Project Name	Miller	Collector	C Fink

Type of sample: (Circle one) Indoor air | Substructure soil gas | Ambient air | (Soil gas)

Sample Location

3 ft from eastern Chrysteel Access Rd. - ~~East~~ Access road from ventilation fan on side of Chrysteel building

Canister Record

Canister ID	3404
Flow controller ID	3404
Sample duration	4 Hr
Sampling rate	

Sample ID	SV-3	Gauge prior to start	0"
Date/Time start	5/24/06 1202	Start pressure	-30"
Date/Time end	5/24/06 - 1617	End pressure	-5"

Complete all that apply:

Air temperature (°F)	68°	PID meter ID	-	% O_2	-
Barometric pressure	29.85	FID meter ID	-	% CO_2	-
PID reading (ppmv)	-	Gas analyzer ID	-	% CH_4	-
FID reading (ppmv)	-	Ft. tubing used	7 ft	Purge Volume	500 cc

For indoor location:

Noticeable odor	
Floor slab depth	
Intake height above floor (ft)	
Intake depth below floor (ft)	
Floor surface type	
Room	
Story/level	

For outdoor location:

Noticeable odor	NO
Distance to road (ft)	3 ft
Direction to closest building (degrees)	southeast of southeast corner of Chrysteel building
Distance to closest building (ft)	~ 45'
Intake height above ground level (ft)	NA
Intake depth below ground level (ft)	3 ft
Soil type	sand / clay

Comments: Tried to install point several times east of fence, near GWT trailer. Could not purge sample line. Tried to install point in concrete next to trailer - encountered concrete > 3ft thick.

Analytical method required: TO 15

Laboratory used: STL

O'BRIEN & GERE

Vapor Intrusion Sampling Form

Project #	35246	Date	5/24/06
Project Name	Miller	Collector	CF, CM

Type of sample: (Circle one) Indoor air | Substructure soil gas | Ambient air | (Soil gas)

Sample Location

West of southwest corner of the former MBC Plant. North of Stairwell.

Canister Record

Canister ID	3795
Flow controller ID	3798
Sample duration	4hr
Sampling rate	

Sample ID	SV-4	Gauge prior to start	0 " H_g
Date/Time start	5/24/06 1215	Start pressure	-30 " H_g
Date/Time end	5/24/06 1605	End pressure	-5 " H_g

Complete all that apply:

Air temperature (°F)	65°	PID meter ID	-	% O_2	-
Barometric pressure	29.35	FID meter ID	-	% CO_2	-
PID reading (ppmv)	-	Gas analyzer ID	-	% CH_4	-
FID reading (ppmv)	-	Ft. tubing used	7'	Purge Volume	500cc

For indoor location:

Noticeable odor	
Floor slab depth	
Intake height above floor (ft)	
Intake depth below floor (ft)	
Floor surface type	
Room	
Story/level	

For outdoor location:

Noticeable odor	NO
Distance to road (ft)	NA
Direction to closest building (degrees)	west of former MBC plant
Distance to closest building (ft)	~10 ft
Intake height above ground level (ft)	NA
Intake depth below ground level (ft)	22"
Soil type	Sand / Clay

Comments: Point was installed multiple times at different depths and had difficulty purging sample line. Installed point below asphalt (at bottom of gravel under asphalt) - 22" below grade. Asphalt was measured to be 9" thick. Performed Tracer gas similar to SV-1. No leak was detected.

Analytical method required	TO 15
Laboratory used	STL

O'BRIEN & GERE

Indoor Air Quality Building Survey

Date 3/21/06
Collector C. Finke
Affiliation OBG

Access Contact Scott Currier
Phone 598-0719
Best time to contact —

Address 1902 Rt 57
Fulton, NY

Owner ☐ Renter ☐ Other ☑ - Maint. Coord.
Access Agreement Signed

Date built Unknown
Yrs. of residence My since 98
No. of occupants ~43

Building type:
Residential ☐ Commercial ☑
School ☐ Church ☐
Industrial ☐ Other

Check all that apply:

Ranch ☐ Cape ☐ 3-Family ☐
Raised Ranch ☐ Colonial ☐ Mobile Home ☐
2-Family ☐ Duplex ☐ Other (specify) Manufacturing Plant
Apartments ☐ Condominium ☐

Above grade building construction

Wood frame ☐ Brick ☐
Poured concrete ☐ Concrete block ☑
Stone ☐ Other steel

Foundation construction

Fieldstone ☐ Poured concrete ☑
Solid top concrete block ☐ Open top concrete block ☐
Slab on grade ☑ Other

Is the owner aware of any additions made to the original design of the structure? (please specify)
Unknown

Utilities

Sewer: Public ☑ Private ☐ Other
Water: Public ☑ Private ☐ Other
Spring ☐ Well ☐
Hot water heater type: Gas ☐ Oil ☐ Electric ☐ Other

Heating, ventilation, and air conditioning systems

Primary heat type: Hot air ☑ - Office; Hot water ☐; Steam radiator ☐; Electric ☐; Solar ☐; Other
Fuel type (heat): Natural gas ☑ - Office; Fuel oil ☐; Electric ☐; Wood ☐; Other
Secondary heat type: Kerosene ☐; Wood stove ☐; Electric ☐; Propane ☐; Other Radiant in Shop Area

Ventilation types: Attic fan ☐; Kitchen hood ☐; Bathroom fan ☑; Other Roof Fans
Ceiling fan ☐; Air filtration ☐; Induced fireplace ☐; Other
Air conditioning: Window units ☐; Furnance unit ☐; Electric ☐; Other

Paint Booths - Exhaust to Outside
Hoist Room - Wall Fan exhaust to outside

Basement type

None ☐ Half ☐ Vented crawlspace ☐ Other _____
Full ☐ Slab on grade ☑ Unvented crawlspace ☐ _____

If slab on grade, is there a garage with occupied space above? _____

Basement depth below grade (feet)

Front — Rear — Side 1 — Side 2 —

Basement characteristics

General:		Floor:		Walls:			
No. of rooms	NA	Earth	☐	Finished	☑	Paneling	☐
Bathroom	NA	Concrete	☑	Unfinished	☑	Tile	☐
Basement use	- Slab on grade truck bed manufacture	Tile	☑	Painted	☑	Insulated	☑
		Carpet	☑	Sheetrock	☑	Uninsulated	☐
		Other		Other			

Check if present:

Fireplace	☐	Elevator	☐	French drain	☐
Sump pump	☐	Ash cleanout	☐	Floor cracks	☑ minor
Floor drains	☑ - Wash Bay	Water damage	☐	Wall cracks	☑ small
Interior walls	☑	Jacuzzi/hot tub	☐	Other	Roof Drains

Near USTs - All drains to sewer

Does the basement have a moisture problem? No

Does the basement ever flood? (specify frequency) - Roof drains when Heavy rain

Does the basement have a radon system installed? No

Has there been recent purchases of furnishings (carpets, rugs, linoleum, tile, or funiture) or remodeling (new construction,roofing, or floor stripping? (please specify)

1 office room had a fire - New rugs - 1 yr ago.

Chemical usage, exposure and storage

Identify occupant hobbies:

Painting	☐	Electronics	☐	Model making	☐
Stained glass	☐	Woodworking	☐	Auto repair	☐
Jewelry making	☐	Furniture refinishing	☐	Other	cutting, welding, sandblasting, Painting

Where in the structure are these hobbies conducted? Shop area

Does the occupants' job require chemical exposure? ~~See~~ NA

If so, where are the occupants clothes cleaned? NA

Has the structure been fumigated in the last year? No

If so, is fumigation regularly performed? (how often) -

Are pesticides frequently applied to lawn or garden? NA

If so, are they stored on the property? NA

Identify chemicals stored in the basement/1st floor living space, or garage if structure is slab on grade (include fuels, solvents, cleaners, etc.) Use separate inventory sheet for each area surveyed

Brand	Product	contains	Amount stored
Martin Senour	Acrylic lacquer thinner	MeCl	—
Monroe Chem. Company	Cool-Tool	!!! TCA	33%
Freeman Industries Inc.	223 Coil cleaner	10% HCl	≠ Non chlorinated Hydrocarbon
LPS No Flash electro contact cleaner		Unknown amount - 1,1-Dichloro-1-fluoro-ethane	
Safety kleen	metal parts cleaner	PCE	0.2%
White Lithium Grease	Dichloromethane		30-40% (MeCl)

Comments

Is there any other information about the structural features of this building, the habits of its occupants or potential sources for chemical contaminents to the indoor air that may be of importance in facilitating the evaluation of the indoor air quality of the building?

Use of most of the above listed chemicals takes place in areas of the shop not in the vicinity of the indoor air samples. Cool-Tool and Safety kleen are used ~~in the~~ frequently in the North corner and west corner, respectively. White lithium grease is used as needed, infrequently, throughout the building.