FINAL

Interim Remedial Measures (IRM) Interim Site Management Plan (ISMP)

ITT Corporation
Town of Gates, New York
(Site #8-28-112)

Date: August 2011

Revision: O

O'BRIEN & GERE

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 8
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Joe Martens
Commissioner

August 15, 2011

Ms. Teresa P. Olmsted
ITT Corporation
1054 N. Tustin Avenue
Anaheim, CA 92807

Dear Ms. Olmsted:

Re: Interim Remedial Measures (IRM) Interim Site Management Plan; August 2011
Former ITT Rochester Form Machine Facility
Site # 8-28-112
Town of Gates, Monroe County

The New York State Department of Environmental Conservation (NYSDEC) has completed its review of the above-referenced Interim Remedial Measures (IRM) Interim Site Management Plan (ISMP) dated August 2011 and has determined that the IRM ISMP substantially addresses the requirements of the Superfund Order. This document is hereby approved.

Please distribute bound hard copies of the approved IRM ISMP as follows:

- Frank Sowers (2 copies);
- Katie Fish (1 copy); and
- The document repository at the Gates Public Library (1 copy). Note that the Gates Public Library has recently moved. The new address is 902 Elmgrove Road, Rochester, NY 14624.

Thank you for your cooperation in this matter and please contact me at (585) 226-5357 if you have any questions.

Sincerely,

Frank Sowers

Frank Sowers, P.E.
Environmental Engineer 2

ec:

B. Putzig	J. Kosmala	M. Desmond	K. Fish
S. Tucker	M. Peters	G. Swenson	L. Hall
J. Danzinger	M. Distler		

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1. INTRODUCTION

A Remedial Investigation/Feasibility Study (RI/FS)[1] is being performed at the Former ITT Rochester Form Machine (RFM) Facility (#8-28-112) located at 40 Pixley Industrial Parkway in the Town of Gates, New York. The RI/FS is being performed pursuant to the Order on Consent (B8-0614-02-05) between the New York State Department of Environmental Conservation (NYSDEC) and ITT Corporation (ITT) dated August 19, 2003 (Consent Order), with an effective date of August 29, 2003, and last amended on September 29, 2006.

This Interim Remedial Measures (IRM) Interim Site Management Plant (ISMP) was prepared by O'Brien & Gere Engineers, Inc. (OBG), on behalf of ITT, at the request of NYSDEC[2]. The purpose of this IRM ISMP is to formally document the details of the IRM (*i.e.,* vapor intrusion monitoring) to be implemented at the former Alliance Metal Stamping and Fabricating (AMSF) building located at 12 Pixley Industrial Parkway adjacent to the Former ITT RFM Facility. Specifically, the IRM consists of vapor intrusion monitoring at the Bright Raven (BR) and E-Z Movers tenant spaces located in the northwest portion of the former AMSF building. This ISMP can be updated and modified as needed.

1.1 SITE BACKGROUND

The former ITT RFM facility (Site) consists of a 45,500 square foot one-story building located on approximately three acres of property in the Town of Gates, New York. The property is located approximately ¾ mile north of the Little Black Creek and 2 ¼ miles to the southwest of the Erie Canal. The property is bordered to the north by a movie theater complex; to the south by a vacant lot; to the east by the former AMSF property; and to the west by the Batesville Casket Company property.

The former ITT RFM Facility manufactured aluminum components primarily for the automotive industry. Former operations included drilling and machining, alkali cleaning, tube forming, aluminum brazing and welding[3].

The former AMSF building is comprised of the original building structure, constructed in 1950, as well as three attached additions, constructed in 1972, 1979, and 1988 (Figure 1). The entire floor space of the building is currently approximately 125,000 square feet. The foundations are slabs-on-grade (that is, no basement or crawlspace). The foundation slab on the north end of the building is approximately two to three feet above grade, while the south end slab is approximately at grade (approximately 563 – 565 feet above sea level). Operations formerly conducted at the former AMSF building included stamping, forming, cleaning, grinding, painting and deburring of metals. The exact date AMSF ceased operations is not known to ITT, but the air permits for the site were surrendered in 1995. The building is currently owned by Maguire Family Properties (MFP) and is currently occupied by various commercial tenants with offices and operations including manufacturing, storage, and recreation. Figure 1 illustrates the currently configured tenant spaces. As illustrated in the figure, the BR and E-Z Movers spaces are both located in the northwest corner of the building within the 1979 addition.

1.2 SUMMARY OF REMEDIAL INVESTIGATIONS AND FINDINGS

Phase I of the RI was implemented in 2004 and 2005 at the former ITT RFM Facility. Upon completion of these RI investigation activities, data gaps were identified. An RI Phase II Work Plan Addendum[4] was approved by NYSDEC and implementation began in November 2007. A modification[5] to the RI Phase II Work Plan Addendum was submitted to the NYSDEC on January 7, 2008 and approved by the NYSDEC in a letter dated January 14,

[1] "Remedial Investigation/Feasibility Study Work Plan," May 2004, O'Brien & Gere Engineers, Inc.
[2] This IRM ISMP was requested by Frank Sowers (NYSDEC) in an email dated January 7, 2011.
[3] "Final Report on Ground Water Investigation, ITT Industries, Fluid Handling System," March 2000, Golder Associates
[4] "Remedial Investigation Phase II Work Plan Addendum," August 2007, O'Brien & Gere Engineers, Inc.
[5] "RI Phase II Work Plan Addendum Proposed Modification" January 2008, O'Brien & Gere Engineers, Inc. (approved by NYSDEC in a letter dated January 14, 2008).

2008. A second modification[6] to the RI Phase II Work Plan Addendum was submitted to the NYSDEC on September 4, 2009 and approved by the NYSDEC in a letter dated September 14, 2009. A third modification[7] to the RI Phase II Work Plan Addendum was submitted to the NYSDEC on February 12, 2010 and approved by the NYSDEC in a letter dated February 17, 2010.

As part of the Phase I and II RI, OBG and ITT conducted a vapor intrusion evaluation at the former AMSF building. Vapor intrusion sampling events were conducted in different areas at the former AMSF building by OBG in August 2004, February 2005, March 2008, and April 2009. In addition to the sampling events, a comprehensive building evaluation was performed at the former AMSF facility in January 2008. An evaluation of the vapor intrusion sampling results and building evaluation was submitted to the NYSDEC, New York State Department of Health (NYSDOH), and Monroe County Department of Public Health (MCDOPH) on September 22, 2009[8].

Based on the results of the sub-slab sampling conducted in March 2008, mitigation of the BR and E-Z Movers tenant spaces within the former AMSF building was recommended under the NYSDOH Guidance[9] as discussed with the NYSDEC during a conference call on September 11, 2008. Although indoor air concentrations at these locations were not detected above levels of concern, as determined by NYSDOH, mitigation measures would prevent future potential soil vapor intrusion issues. Subsequently, OBG and ITT conducted sub-slab depressurization (SSD) mitigation system pre-design testing at the BR and E-Z Movers tenant spaces in March 2009. A technical memorandum summarizing the pre-design testing was also submitted to the NYSDEC on September 22, 2009[10].

During the September 11, 2008 conference call, NYSDEC required additional vapor intrusion sampling in the TCS Industries (TCS) and Universal Equipment (Universal) tenant spaces. OBG/ITT proposed to conduct the sampling in accordance with the above referenced NYSDEC-approved Work Plan Addendum (August 2007) and to analyze the samples for the compounds that were evaluated for other vapor intrusion investigations for this site. Subsequently, on April 23, 2009, counsel for MFP sent a letter to counsel for ITT[11]. In that letter, MFP informed ITT that they were denying ITT and it consultants access to the property to conduct the additional vapor intrusion sampling unless the analysis of the sub-slab and indoor air samples were restricted to the following six compounds only: 1,1,1-trichloroethane (TCA), tetrachloroethene (PCE), 1,1-dichloroethane (DCA), 1-1, dichloroethene (1,1-DCE), cis-1,2-dichloroethene (cis-1,2-DCE), and trichloroethene (TCE). OBG/ITT submitted a work plan modification to the NYSDEC dated April 24, 2009[12] describing the limitations imposed on ITT by MFP and requesting approval to analyze for the limited number of compounds. NYSDEC approved the modification in a letter dated April 24, 2009[13]. The sampling was conducted on April 30, 2009 with the oversight of the NYSDOH project manager.

Based on the results of vapor intrusion sampling conducted on April 30, 2009 of the balance of the former AMSF building, mitigation was also recommended for the TCS and Universal tenant spaces. At present, NYSDEC has agreed to limit the scope of the IRM ISMP to the BR and E-Z Movers tenant spaces until the final remedial plan for the site is documented in the Record of Decision.

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[6] "RI Phase II Work Plan Addendum Proposed Modification 2 Revised" September 2009, O'Brien & Gere Engineers, Inc. (approved by NYSDEC in a letter dated September 14, 2009).
[7] "RI Phase II Work Plan Addendum Proposed Modification 3" February 12, 2010, O'Brien & Gere Engineers, Inc. (approved by NYSDEC in a letter dated February 17, 2010).
[8] "Results of Vapor Intrusion Sampling at the Former AMSF Building, 12 Pixley Industrial Parkway (NYSDEC Site # 8-28-112)," September 22, 2009, O'Brien & Gere Engineers, Inc.
[9] "Guidance for Evaluating Soil Vapor Intrusion in the State of New York", NYSDOH, October 2006.
[10] "Results of Sub-Slab Depressurization Mitigation System Pre-Design Testing in the Northwest Corner of the Former AMSF Building, 12 Pixley Industrial Parkway Gates, New York," September 22, 2009, O'Brien & Gere Engineers, Inc.
[11] Letter from Paul Sylvestri, MFP attorney, to Michael Peters, ITT attorney, dated April 23, 2009.
[12] Letter from Mark Distler of OBG to Frank Sowers of NYSDEC, dated April 24, 2009.
[13] Letter from Frank Sowers of NYSDEC to Mark Distler of OBG, dated April 24, 2009.

Subsequently, NYSDEC and NYSDOH convened a meeting with ITT and MFP on January 27, 2010 to discuss building-wide mitigation options. At that meeting, NYSDEC presented the option of monitoring indoor air and building slab conditions in lieu of mitigation.

OBG, on behalf of ITT, conducted a review of vapor intrusion mitigation options for the former AMSF building and recommended monitoring of the BR and E-Z-Movers tenant spaces at the former AMSF building be conducted each heating season to verify vapor intrusion is still not occurring. This recommendation was presented by OBG, on behalf of ITT, to the NYSDEC in a letter dated December 9, 2010[14] and approved by the NYSDEC in an email dated January 7, 2011 [15].. On February 18, 2011, MFP provided a written concurrence for the IRM.[16]

It should be noted that in the above referenced email (January 2011) the NYSDEC requested the annual monitoring begin in the 2010-2011 heating season. NYSDEC gave permission to conduct the 2010-2011 heating season monitoring prior to the submittal of this ISMP. OBG and ITT notified NYSDEC[17] of its intention to conduct the 2010-2011 monitoring, and provided pertinent monitoring details pending submittal and approval of this ISMP. NYSDEC approved the monitoring in a March 16 email from Frank Sowers and the initial monitoring event was conducted March 31 and April1, 2011. A technical memorandum summarizing the results of the 2010-2011 monitoring event was submitted to the NYSDEC on June 15, 2011.

[14] Letter from Mark Dister of OBg to Frank Sowers of NYSDEC, dated December 9, 2010.
[15] Email from Frank Sowers of NYSDEC to Mark Distler of OBG, dated January 7, 2011.
[16] Letter from Paul Sylvestri, MFP attorney, to Michael Peters, ITT attorney, dated February 18, 2011.
[17] Letter from Mark Distler of OBG to Frank Sowers of NYSDEC, dated March 10, 2011.

2. MONITORING PLAN

The objective of the IRM ISMP is to monitor the potential for vapor intrusion at the BR and E-Z Movers tenant spaces in the former AMSF building, to verify vapor intrusion is still not occurring. To accomplish this objective, changes in soil vapor levels and building conditions will be identified and documented. Therefore, monitoring activities will consist of annual vapor intrusion sampling and building inspection, as described below.

2.1 SAMPLE TYPES AND LOCATIONS

Sub-slab and indoor air samples will be collected in the BR and E-Z -Movers tenant spaces to identify changes in soil vapor levels and to verify vapor intrusion is not occurring. Sampling will include collection of sub-slab and indoor air sample pairs. In addition, one ambient air sample per sample day will be collected upwind of the building and one duplicate sub-slab sample will be collected as part of each annual sampling event. Proposed sub-slab and indoor air vapor intrusion monitoring locations are presented in Figure 2 and include AMSF-04, AMSF-05, AMSF-06, AMSF-07, and AMSF-08, assuming AMSF-08 is accessible. In addition, during the next annual monitoring event (2011-2012), a sub-slab sample will be collected at location AMSF-22 which was located approximately 2 feet away from the former AMSF-08-SS sample location because AMSF-08 was not accessible during the 2010-2011 annual monitoring event.

2.2 SAMPLE COLLECTION METHODOLOGY

All sample collection procedures will be conducted in accordance with the NYSDOH October 2006 final vapor intrusion guidance. Example field forms (sample collection field form and a building survey form) are provided in Attachment A. Each annual sampling event will be conducted in December, which will allow for an additional round of sampling within the same heating season, if warranted. The following provides additional details and clarifications to the methods.

2.2.1 Sub-slab sampling procedures

Temporary sub-slab sampling points (holes) will be installed through the concrete floor at the locations shown on Figure 2. Upon completion of sampling, caulk will be used to seal the sampling points. During each successive sampling event, the caulk will be removed from the hole to allow for sub-slab sampling. For circumstances where the previous sampling point is not accessible, a new sampling point will be drilled as close as practical to the previous point.

The following procedures for sub-slab sample collection will be followed:

- A section of ¼-inch food-grade Teflon® or polyethylene tubing will be inserted through a hole drilled through the slab. The tubing inlet will be installed approximately ¼-inch below the underside of the slab. The annular space between the hole and tubing will be sealed using 100% beeswax or permagum grout.
- The tubing will be purged using a polyethylene 60 cubic centimeter (cc) syringe and the purged air will be released to the outdoor air. One to three tubing volumes will be purged prior to sample collection at a rate no greater than 0.2 liters per minute (lpm). The tubing will then be connected to a sample canister.
- A sample of sub-slab soil vapor will be collected over an 8-hour period, utilizing individually-certified clean 6-liter pre-evacuated canisters. The required sampling rate will be maintained by laboratory-supplied constant-differential low-volume flow controllers. Vacuum readings of the canisters will be obtained and documented prior to sample collection and upon completion of sampling. Sample identifications, vacuum readings, flow controller identification numbers, and other relevant information will be recorded on field forms provided in Appendix A.

2.2.2 Indoor air sampling procedures

Indoor air samples will be collected into individually-certified clean 6-liter pre-evacuated canisters with inlets positioned at approximately three to five feet above the slab (breathing zone), and during the same 8-hour period as the sub-slab sample.

The sampling rate will be maintained by laboratory-supplied constant-differential low-volume flow controllers. Vacuum readings of the canisters will be obtained and documented prior to sample collection and upon completion of sampling. Sample identification, vacuum readings, flow controller identification numbers, and other relevant information will be recorded on field forms provided in Appendix A.

2.2.3 Ambient air sampling procedures

The ambient air sample will be collected in the same manner as the indoor air samples. Sample identification, vacuum readings, flow controller identification numbers, and other relevant information will be recorded on field forms provided in Appendix A.

2.4 BUILDING INSPECTION

In addition and prior to the sampling described above, a building inspection (limited to the BR and EZ-Mover tenant spaces), consisting of the completion of a building survey, chemical inventory and slab inspection, will be conducted in each tenant space and documented on the field forms. The slab, where accessible, will be inspected and identified slab cracks and slab penetrations (*e.g.,* utility conduits) will be measured (length, width and depth), noted on a figure, and photographed. Any unsealed penetrations or slab cracks that appear to penetrate the slab will be sealed with polyurethane chalk. If sealing is warranted, the sampling will be postponed and rescheduled for approximately four weeks after the sealing. A baseline slab inspection was conducted in March/April 2011 so that changes in slab conditions can be observed during the first sampling event under this ISMP (2011-2012 heating season). The most recent completed building survey, chemical inventory, and slab inspection forms are provided in Appendix B.

3. SAMPLE ANALYSIS

Samples (canisters) will be delivered under routine Chain-of-Custody protocols to Test America of Burlington, Vermont, which is certified by the Environmental Laboratory Approval Program (ELAP) and certified by NYSDOH for United States Environmental Protection Agency (USEPA) Method TO-15. All samples will be collected in canisters that are individually-certified clean. Samples will be analyzed via Method TO-15 for the following target compounds.

- TCA
- PCE
- DCA
- 1,1-DCE
- cis-1,2-DCE
- TCE

Analytical QA/QC requirements of Method TO-15 will be followed by the laboratory. Data will be validated and a data usability summary report (DUSR) will be prepared. Data qualifiers will be identified in the result tables, figures and in subsequent reporting.

3.1 QUALITY ASSURANCE/QUALITY CONTROL

Duplicate samples will be collected as part of each annual sampling event. Analytical QA/QC requirements of Method TO-15 will be followed by the laboratory. As described above, data will be validated and a DUSR will be prepared. A quality control document, including minimum reporting (quantitation) limits, is provided in Appendix C.

4. SCHEDULE

Sampling will be conducted each year until mitigation or monitoring is no longer warranted and/or as directed by the NYSDEC. A typical year schedule is provided in Table 1 below. Additional sample collection, as may be required by NYSDEC or NYSDOH, will be scheduled for completion prior to the end of the heating season.

Table 1. Typical Year Schedule

Activity	Anticipated Time Frame
Slab Inspection and Sealing	November 1 – December 15
Sample Collection	November 1 – December 15 (if sealing is not warranted) December 1 – January 15 (if sealing is warranted)
Submit Preliminary Data and Draft Property Owner Result Letter to NYSDEC	Within 4 weeks of sample collection
Submit Validated Results to NYSDEC	Within 8 weeks of sample collection
Submit Validated Results and Result Letter to the Property Owner	Within 30 days of ITT receiving validated results (DUSR)
Submit EDD to the NYSDEC	No more than 90-days after the laboratory data has been submitted to ITT or its consultant(s)
Conduct Second Round of Sampling	By March 31 (submission time frames for the second round of sampling will be similar to the first round)

5. HEALTH AND SAFETY

A job safety analysis (JSA) form is provided in Appendix D which describes potential physical, environmental and chemical hazards and the minimum hazards control requirements for the activities described in this IRM ISMP. Site personnel performing fieldwork will conduct a project safety orientation which will focus on the JSA prior to initiating site activities. Emergency contacts and a hospital route map are also included in Appendix D.

6. DATA EVALUATION AND REPORTING

Previous sub-slab and indoor air sampling was conducted in the BR and E-Z Movers tenant spaces. Sampling results from previous sampling events indicated that there were elevated levels of TCA and PCE in sub-slab samples collected in the former AMSF building. TCE was also detected at elevated levels in sub-slab and indoor air at the former AMSF building. Monitoring results will be evaluated to assess potential vapor intrusion. The interpretation of the results will be based on various factors including the NYSDOH Soil Vapor/Indoor Air matrices.

A draft letter to the property owner will be prepared and promptly submitted to NYSDEC and NYSDOH for review and comment. Pursuant to Article 27, Title 24 of New York State Environmental Conservation Law, results will be delivered to the property owner within 30 days after receipt of validated data. Therefore, these efforts will be scheduled in order to meet that statutory deadline. The letter will consist of the following:

- Sampling program overview
- Data evaluation (including Tables and Figures)
- Laboratory reports (result pages)and Chain-of-Custody Forms
- Results and discussion
- Conclusions and recommendations

If monitoring indicates vapor intrusion is occurring, further evaluation may be warranted at that time, which would require coordination with the NYSDEC, NYSDOH, and current property owner. Such evaluation may result in confirmation sampling and/or interim or permanent corrective measures.

The draft property owner result letter including analytical results, in the form of summary tables, laboratory reports, figure of sampling locations, and field forms, will be submitted to NYSDEC and NYSDOH approximately four weeks after sample collection. A copy of the DUSR, described in Section 3, will be submitted to NYSDEC and NYSDOH approximately four weeks after sample collection. A copy of the final property owner result letter will be submitted to the NYSDEC and NYSDOH in the monthly progress report. In addition to including the final result letter in the monthly progress report, the data will also be submitted in the NYSDEC-approved Electronic Data Deliverable (EDD) format. The EDD will be submitted to NYSDEC after data validation occurs but in no event more than 90 days after the data has been submitted to ITT or its consultant(s).

Former AMSF Building Tenant Space Layout

FIGURE 1

LEGEND

- 1972 ADDITION
- 1979 ADDITION
- 1988 ADDITION
- ORIGINAL BUILDING

NOTES:
ADDITION BOUNDARIES ARE APPROXIMATE

FORMER AMSF BUILDING TENANT SPACE LAYOUT

12 PIXLEY
INDUSTRIAL PARKWAY
GATES, NEW YORK

0 25 50 100
Feet

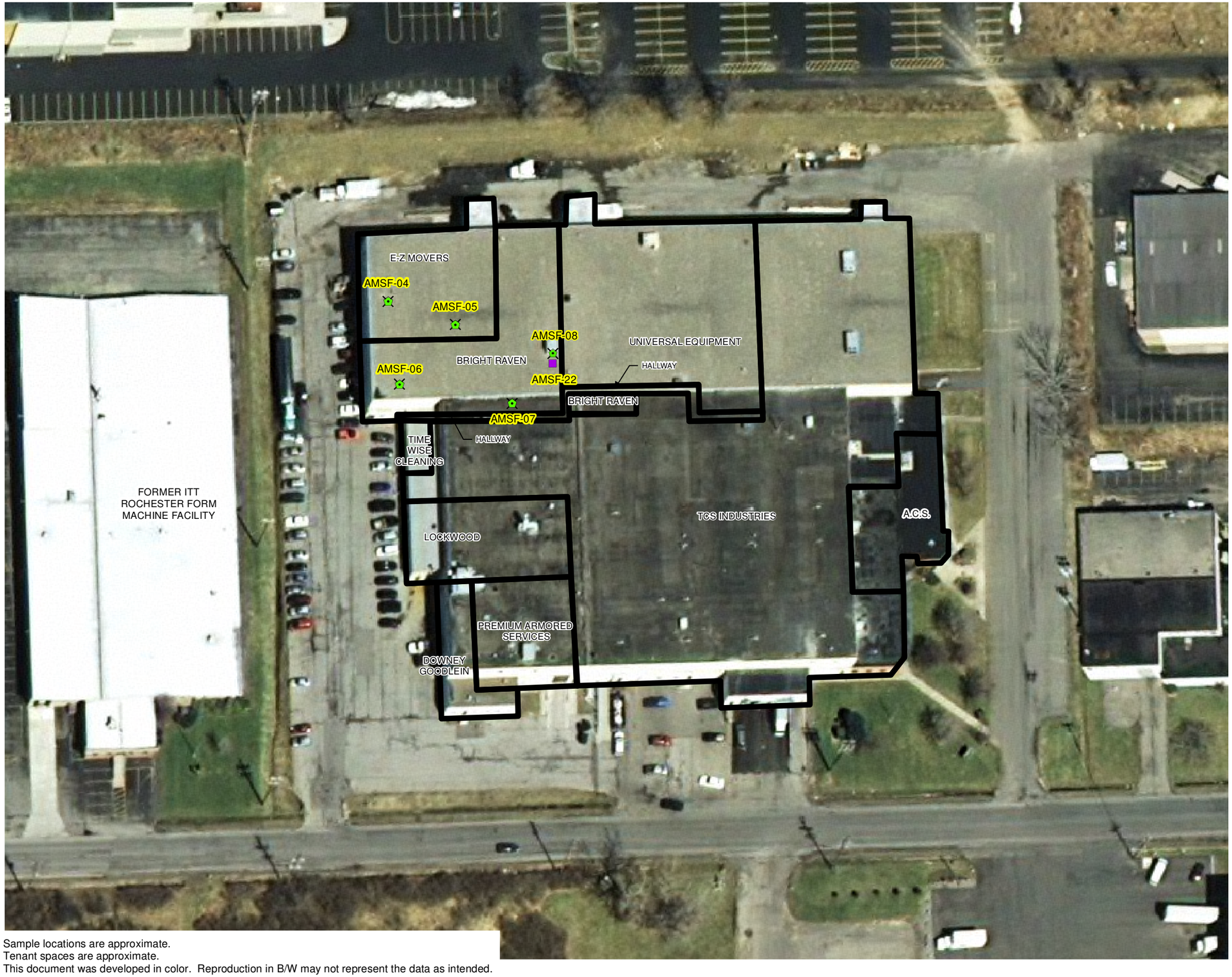
SEPTEMBER 2009
3356/35273

O'BRIEN & GERE

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

PATH: I:\lit.3356\35273.lit-Auto-Fh-19\dwg\MXD\V\AMSF Design Memo\AMSF_Bldg_Layout.mxd
NAME: tuckersm
DATE: 9/20/2009 4:45:36 PM

Former AMSF Building Proposed Vapor Intrusion Monitoring Locations



Sample locations are approximate.
Tenant spaces are approximate.
This document was developed in color. Reproduction in B/W may not represent the data as intended.

FIGURE 2

N

LEGEND

- PROPOSED SUB-SLAB/INDOOR AIR SAMPLE PAIR
- PROPOSED 2011-2012 MONITORING EVENT SUB-SLAB SAMPLE

FORMER ITT ROCHESTER FORM MACHINE FACILITY
TOWN OF GATES, NEW YORK
SITE #8-28-112

FORMER AMSF BUILDING - PROPOSED VAPOR INTRUSION MONITORING LOCATIONS

0 36 72 144
Feet

MAY 2011
3356.35273

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Field Forms

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Indoor Air Quality Building Survey

Date: _____

Collector: _____

Affiliation: _____

Access Contact: _____ Address: _____

Phone: _____

Best time to contact: _____ Tax ID: _____

Owner ☐ Renter ☐ Other ☐ Access Agreement Signed?: _____

Date built _____ Building type:

Yrs. of residence _____ Residential ☐ School ☐ Industrial ☐

No. of occupants _____ Commercial ☐ Church ☐ Other _____

Check all that apply:

Ranch ☐ Raised Ranch ☐ 2-Family ☐ Apartments ☐

Cape ☐ Colonial ☐ Duplex ☐ Condominium ☐

3-Family ☐ Mobile Home ☐ Other (specify) _____

Above grade building construction

Wood frame ☐ Poured concrete ☐ Stone ☐

Brick ☐ Concrete block ☐ Other _____

Foundation construction

Fieldstone ☐ Solid top concrete block ☐ Slab on grade ☐

Poured concrete ☐ Open top concrete block ☐ Other _____

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

_____

_____

Utilities

Sewer:

Public ☐

Private ☐

Other _____

Water:

Public ☐

Private ☐

Other _____

Spring ☐

Well ☐

Hot water heater type:

Gas ☐ Electric ☐

Oil ☐ Other _____

Heating, ventilation, and air conditioning systems

Primary heat type:

Hot air ☐

Hot water ☐

Steam radiator ☐

Electric ☐

Other _____

Fuel type (heat):

Natural gas ☐

Fuel oil ☐

Electric ☐

Wood ☐

Other _____

Secondary heat type:

Kerosene ☐

Wood stove ☐

Electric ☐

Propane ☐

Other _____

Ventilation types:

Attic fan ☐

Kitchen hood ☐

Bathroom fan ☐

Other _____

Whole house fan ☐

Air filtration ☐

Induced fireplace ☐

Other _____

Air conditioning:

Window units ☐

Furnance unit ☐

Electric ☐

Other _____

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	☐	Earth	☐	Finished	☐	Paneling	☐
Bathroom	☐	Concrete	☐	Unfinished	☐	Tile	☐
Basement use	_____	Tile	☐	Painted	☐	Insulated	☐
Storage	_____	Carpet	☐	Sheetrock	☐	Uninsulated	☐
Game/Craft Room	_____	Other	_____	Other	_____		

Check if present:

Fireplace	☐	Elevator	☐	French drain	☐
Sump pump	☐	Ash cleanout	☐	Floor cracks	☐
Floor drains	☐	Water damage	☐	Wall cracks	☐
Interior walls	☐	Jacuzzi/hot tub	☐	Other	_____

Does the basement have a moisture problem? _____
Does the basement ever flood? (specify frequency) _____
Is there water in the sump or drains? _____
Is there evidence of possible mold? _____
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) _____

Chemical usage, exposure and storage

Identify occupant hobbies:

Painting	☐	Electronics	☐	Model making	☐
Stained glass	☐	Woodworking	☐	Auto repair	☐
Jewelry making	☐	Furniture refinishing	☐	Other	_____

Where in the structure are these hobbies conducted? _____
Does the occupants' job require chemical exposure? _____
If so, where are the occupants clothes cleaned? _____

Has the structure been fumigated in the last year? _____
If so, is fumigation regularly performed? (how often) _____
Are pesticides frequently applied to lawn or garden? _____
If so, are they stored on the property? _____

Are dry-cleaned clothes kept in vicinity of sampling? _____
Is there smoking in the building? _____
Have cleaning products been used recently (when & type) _____
If so, are they stored on the property? _____
Has painting/staining been done recently? _____

Change in occupancy?

If yes, identify new tenant:

Change in construction?

If yes, describe:

Change in air handling systems?

If yes, describe:

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?

Sampling Locations (sketch plan views)

Basement	First Floor	Outdoor (indicate wind direction)

Identify chemicals stored in the basement/1st floor living space, or garage if structure is slab on grade (include fuels, solvents, cleaners, etc.) Copy as necessary.

Brand	Product	Amount stored	PID Reading

Slab Inspection Checklist

Structure Address: ______________________________ Date of Visit: ________________

Structure ID #: ______________________________ Team: ________________

Slab Area+ ID: _______________

Length: _______________ Width: _______________ Depth: _______________

Distance from _____________* wall in feet: _______________

Distance from _____________* wall in feet: _______________

Is the slab area new? ☐ Yes ☐ No If not, does it appear to be getting bigger? ☐ Yes ☐ No ☐ NA

Should it be sealed? ☐ Yes ☐ No Was it sealed during this visit? ☐ Yes ☐ No ☐ NA

Was it documented with a photo? ☐ Yes ☐ No Was it identified on the drawing? ☐ Yes ☐ No

---

Slab Area+ ID: _______________

Length: _______________ Width: _______________ Depth: _______________

Distance from _____________* wall in feet: _______________

Distance from _____________* wall in feet: _______________

Is the slab area new? ☐ Yes ☐ No If not, does it appear to be getting bigger? ☐ Yes ☐ No ☐ NA

Should it be sealed? ☐ Yes ☐ No Was it sealed during this visit? ☐ Yes ☐ No ☐ NA

Was it documented with a photo? ☐ Yes ☐ No Was it identified on the drawing? ☐ Yes ☐ No

---

Slab Area+ ID: _______________

Length: _______________ Width: _______________ Depth: _______________

Distance from _____________* wall in feet: _______________

Distance from _____________* wall in feet: _______________

Is the slab area new? ☐ Yes ☐ No If not, does it appear to be getting bigger? ☐ Yes ☐ No ☐ NA

Should it be sealed? ☐ Yes ☐ No Was it sealed during this visit? ☐ Yes ☐ No ☐ NA

Was it documented with a photo? ☐ Yes ☐ No Was it identified on the drawing? ☐ Yes ☐ No

---

+Note that this can be a pentration, breach, trench, hole or other.

*Identify wall using compass direction or other identification (e.g. corresponding letter on drawing) so that the slab area can be found during subsequent visits.

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Vapor Intrusion Sampling Form

Project # _____ Date _____

Project Name _____ Collector _____

Structure Location

Property ID: _____

PID/FID meter ID _____

Sample Duration (Intended) _____

Sample Locations

_____

_____

_____

Indoor Air Sample	**Sub-structure Sample**	Circle Sample Type: **Indoor Air** **SS-DUP** **Ambient** **IA-DUP**
Sample ID	Sample ID	Sample ID
Canister ID	Canister ID	Canister ID
Flow Controller ID	Flow Controller ID	Flow Controller ID
Date/Time start	Date/Time start	Date/Time start
Date/Time end	Date/Time end	Date/Time end
Gauge prior to start	Gauge prior to start	Gauge prior to start
Start vacuum	Start vacuum	Start vacuum
End vacuum	End vacuum	End vacuum
Complete all that apply:	Complete all that apply:	Complete all that apply:
Air temperature (^{o}F)	Air temperature (^{o}F)	Air temperature (^{o}F)
PID/FID reading	PID/FID reading	PID/FID reading
in. tubing used	in. tubing used	in. tubing used
Tubing purged?	Tubing purged?	Tubing purged?
For indoor location:	For indoor location:	For outdoor location:
Noticeable odor	Noticeable odor	Noticeable odor
Intake height above floor (in)	Floor slab depth	Distance to road (ft)
Floor surface type	Intake depth below floor (in)	Direction to closest building (degrees)
Room	Floor surface type	Distance to closest building (ft)
Story/level	Room	Intake height above ground level (in)
	Story/level	

Building Survey and Chemical Inventory Form Completed? _____

Photographs Taken? _____

Comments: _____

_____

_____

Analytical method required _____

Laboratory used _____

Current Completed Building Survey and Chemical Inventory

O'BRIEN & GERE

Indoor Air Quality Building Survey

Date: 3/31/11

Collector: Christy Rosenbeck / Chris McKenzie

Affiliation: OBG

Tenant: B & Z Movers

Address: 12 Pixley Industrial Pkwy

Phone:

Best time to contact:

Tax ID:

Owner ☐ Renter ☒ Other ☐

Access Agreement Signed?: Yes

Date built: 1972

Yrs. of residence: Not Applicable

No. of occupants: Varies

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) Commercial - Moving & Storage Apartments ☐ Condominium ☐

Above grade building construction

Wood frame ☐ Brick ☐ Poured concrete ☐ Concrete block ☒ Stone ☐ Other

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)

1979 & 1988

Utilities

Sewer: Public ☒ Private ☐ Other

Water: Public ☒ Private ☐ Other

Spring ☐ Well ☐

Heating, ventilation, and air conditioning systems

Primary heat type: Hot air ☒ office Hot water ☐ Steam radiator ☐ Electric ☐ Other Space Htrs (warehouse)

Fuel type (heat): Natural gas ☒ Fuel oil ☐ Electric ☐ Wood ☐ Other

Secondary heat type: Kerosene ☐ Wood stove ☐ Electric ☐ Propane ☐ Other

Ventilation types: Attic fan ☐ Kitchen hood ☐ Bathroom fan ☐ Other Exhaust Fans

Whole house fan ☐ Air filtration ☐ Induced fireplace ☐ Other

Air conditioning: Window units ☐ Furnance unit ☐ Electric ☐ Other

Basement type

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

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

Basement depth below grade (feet)

Front _____ Rear Not Applicable Side 1 _____ Side 2 _____

Basement characteristics Not Applicable

General:		Floor:		Walls:			
No. of rooms	☐	Earth	☐	Finished	☐	Paneling	☐
Bathroom	☐	Concrete	☐	Unfinished	☐	Tile	☐
Basement use _____		Tile	☐	Painted	☐	Insulated	☐
_____		Carpet	☐	Sheetrock	☐	Uninsulated	☐
_____		Other _____		Other _____			

Check if present:

Fireplace	☐	Elevator	☐	French drain	☐
Sump pump	☐	Ash cleanout	☐	Floor cracks	☐
Floor drains	☐	Water damage	☐	Wall cracks	☐
Interior walls	☐	Jacuzzi/hot tub	☐	Other _____	

Does the basement have a moisture problem? _____

Does the basement ever flood? (specify frequency) _____

Is there water in the sump or drains? _____

Is there evidence of possible mold? _____

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) _____

Chemical usage, exposure and storage Not @ Minor Activities - ~~refo~~ Repair Damages (furniture)

Identify ~~occupant hobbies~~ tenant activities:

Painting	☑	Electronics	☐	Model making	☐
Stained glass	☐	Woodworking	☐	Auto repair	☑
Jewelry making	☐	Furniture refinishing	☑	Other _____	

Where in the structure are these hobbies conducted? Warehouse or Room off of the office Area

Does the occupants' job require chemical exposure? No

If so, where are the occupants clothes cleaned? Not Applicable

Has the structure been fumigated in the last year? Unknown

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

Are pesticides frequently applied to lawn or garden? Unknown

If so, are they stored on the property? _____

Are dry-cleaned clothes kept in vicinity of sampling? No

Is there smoking in the building? No

Have cleaning products been used recently (when & type) No

If so, are they stored on the property? _____

Has painting/staining been done recently? Minor - Touch-up

Change in occupancy? No

If yes, identify new tenant:

Change in construction? No

If yes, describe:

Change in air handling systems? No

If yes, describe:

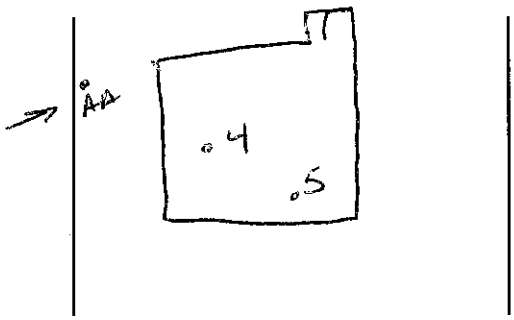
Comments

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?

Sampling Locations (sketch plan views)

Basement — Not Applicable

First Floor



Outdoor (indicate wind direction)

See First Floor

See Attached

Identify chemicals stored in the basement/1st floor living space, or garage if structure is slab on grade (include fuels, solvents, cleaners, etc.) Copy as necessary.

Brand	Product	Amount stored	PID Reading

O'BRIEN & GERE

AMSL

SUBJECT	SHEET	BY	DATE	JOB NO.
EZ Movers Chem Inventory -WH	1 of	CLR	3/3/11	35273

Product	Quantity	106 PPb	117
Gasoline	2 6gal	@ ~~[illegible]~~ 46ppm	@ ~~[illegible]~~ 14ppm
Gear Oil	~10-gal + 8-5gal	844	0
Various Lube Oil	~5 @ 4gal + 1.5gal	844	0
Shelf 1 Grass & Weed Killer (Bonide)	2 1-GAL	2051-5948	75-263
Concentrated Cleaner/Degreaser (Enforcer)	1-GAL	2051-5948	
Non Chlorinated Brake Cleaner (Autozone)	14 oz	2051-5948	
WD40	13.2oz		
Starting Fluid ~~Josh~~ (Johnsen's)	10.7oz		
CRC QD Contact Cleaner	11oz		
Rustoleum Protective Enamel Spray Paint	12oz		
Spray & Go Lacquer High Gloss	12oz (x2)		
E-Zoil Brake Antifreeze & Conditioner	1L		
Marvel Air Tool Oil	~16oz		
Rustoleum Rusty Metal Primer	8 oz		
Camel Universal Cement (contains chlorinated solvent" not identified)	4oz +1Qt	2446	263
HP Lube Grease w/ Teflon	1 oz		
Pb Blaster	11oz		
Power Steering Fluid (PartsMaster)	3 oz		
Mopar Limited Slip Additive	4oz		
Dap Tex Plus (foam sealant)	12 oz		
Permatex Copper Anti-seize Lube	~4oz		
Kilz Sealer/Primer Spray Paint	13oz		
Castle Squeelx Brake silencer	2oz		
CRC De-Squeak	11.25oz		
Castle Muscle Grease	10.5oz		
Permatex Spray a Gasket Sealant (MeCl)	4.7oz		
2 cycle engine Oil	16 oz		
Loctite RTV Silicone	6.5oz		
Permatex Form a Gasket Sealant	4oz x 4		
Permatex Super Weather Strip Adhesive	5oz		
Permatex High Temp RTV Silicone	3oz		
FelPro RTV Silicone	0.5oz		
SilGlyde O-Ring Assembly	4oz		
~~Pck~~			

(Arrows drawn down the 106 and 117 columns from the entries above to the bottom of the list.)

O'BRIEN & GERE

AMSF

SUBJECT	SHEET	BY	DATE	JOB NO.
EZ Mixes Chem Inventory - WH	2	CLR	3/31/11	35273

Product	Quantity	(10.6) PPb (11.7)	
Mineral Spirits	1 GAL (X2)	2051-5948	75-263
Windex (SHELF 2)	32 oz	↓	↓
Raid Wasp & Hornet	14 oz	1770-3029	3-258
Comeat Antkilling Granuals	16 oz		
Hotshot Starting Fluid	7.8 oz		
Valvoline Multipurpose Grease	1 lb		
Quikrete Concrete Sealant	1 GAL		
Red Devil Polyurethane O	32 oz		
Quickrust Instant Enamel	1 GAL		
Rustoleum ~~High Performance~~ Metal Primer	2 GAL		
Rustoleum Protective Enamel	1 GAL (X2)		
Rustoleum Latex Pt.	8 oz ~~1 GAL~~		
Ace Spray Stain (SHELF 3)	13 oz	2264-3495	29-582
Gunk Engine Bright	19.2 oz (X2)		
Castle Lubite Lithium Grease	12 oz (X2)		
Krylon Interior/Exterior Spray Paint	12 oz (X2)		
~~Dap~~			
Pedros Bike Cust Silixone Polish	12 oz		
Gold Eagle All Purpose Cleaner	19 oz		
Rustoleum Undercoating	15 oz		
Espree Wheel Restorer	14 oz		
Prestone Stop Leaks	11 oz		
Chevron ~~Fuel~~ Additive	20 oz		
~~Ace Spray~~ (SHELF 4)			
Ryoil Engine Cleaner/Degreaser	15 oz		
Plastikote Touch up Paint	6 oz ~~(X2)~~ (X3)		
Western Enamel Paint	12 oz		
Permatex Jelly Rust Dissolver	8 oz		
Peak Spray Cleaner	18 oz		
~~SD 20~~ ~~Spartan~~ SD-20 (degreaser)	~~16 oz~~ 34 oz		
Spray Way Super Quick Tack	17 oz		
3M ~~Super~~ Super 77 Spray Adhesive	16.5 oz		
Castle Tire Bead Sealer	19.5 oz		
Scotch Multipurpose Adhesive	4.5 oz		

O'BRIEN & GERE

NMSF

SUBJECT	SHEET	BY	DATE	JOB NO.
EZ Movers Chem Inventory - WH	3	CER	3/31/11	35273

Do

Product		Quantity		(10.6) PPb	(11.7)
Duplicolor Auto Paint	SHELF 4	8 oz		2099-6709	937-4200
Power Service Diesel 911		32 oz			
Napa Polyester Body Filler		3 lbs			
Permatex Body Filler		27 oz			
USC Duraglas (Fiberglass Filler)		.8 Qt			
Institutional Window Cleaner		16 oz			
Parks Concrete Cleaner	SHELF 5	1 GAl			
Krylon Inter/Exter Spray PAINT		12 oz (x4)		1692-2252	0-215
DAP Tuff & Easy		12 oz (x2)			
Color Place Spray PAINT		10 oz (~~x4~~) (x2)			
Dupli Color Engine Enamel		12 oz			
Miracle Spray Enamel		10 oz			
Plastikote Body Shop Paint		11 oz			
Burfords Engine Paint		11 oz (x2)			
Color DeCor Spray Enamel		10 oz			
Acme Acrylic Enamel		11 oz (x2)			
Nybco Epoxy Paint		11 oz (x2)			
Tempo Chrome Spray	SHELF 6	12 oz (x2)			
Liquid Nails Adhesive		10.5 oz		2351-2457	151-255
DAP Painters Putty 53		~~oz 2 lbs~~ 2 lbs			
Nitro Stan Red Putty 9001	SHELF 7	3 lbs			390-
Echo Orange Degreaser		1 GAl		~~937~~-390	937
~~Carpet Tile Bond Sealer~~		~~1 Qt.~~	(CR)	1910-2800	
Terry's Top Coat		16 oz (x2)			
Sherwin Williams Semi-Gloss Latex Paint		1 Qt			
Behr® Premium Plus Latex		1 Qt			
~~Rustoleum~~ (1)					
Painters Touch Multi Purpose Spray Paint		12 oz			
Mirror X		1 GAl (x2)			
Turtle Wax Car Wash		2 Qts.			
Simple Green Degreaser		1 GAl			
Zep Carpet Cleaner		64 oz			
Trailmobile Cleaner		1 GAl			
Howes Lubricator Diesel Conditioner		~1/2 GAl			
BAF Color Brightener		1 GAl			

O'BRIEN & GERE

AMSF

SUBJECT	SHEET	BY	DATE	JOB NO.
EZ Moves Chem Inventory WH	4	CLR	3/31/11	35273

Product	Quantity	(10.6) PPb (11.7)	
Bar Top Dressing	1 GAL		
Westley's Bleach White SHELF B	32 oz (x2)	1417 - 1658	0 - 0
Murphy's Oil Soap	1 GAL		
PLEDGE Furniture Polish	12.5 oz		
Chamberlain Prof. Wax	9 oz		
Hydrogen Peroxide	16 oz		
Orange Glo Hardwood Cleaner	24 oz		
Lime-away Tub & Tile Cleaner	32 oz		
Air Care Stain Remover	~32 oz		
Lysol Cleaning Fluid	1 GAL		
Armorall Spray Protectant	8 oz		
Mop & Glo	64 oz		
CLR	25 oz		
Clorox Clean Up	32 oz		
Bug Tar (Turtle Wax)	16 oz		
Windex	24 oz		
Turtle Wax Wax (Spray)	20 oz		
~~Meg~~ Meguiar's Vinyl Rubber Protectant	24 oz		
Windex Multi Task	32 oz		
Woolite	32 oz		
WestMarine Plastic Polish	32 oz		
RAID Ant & Roach	12 oz		
Soft Scrub Foaming Cleanser	25 oz		
Isopropyl Rubbing Alcohol	1 pt.		
Round up Extended Control	1.3 GAL		
Ortho Home Defense	1 GAL		
Windex Outdoor	32 oz		
Clorox Bleach	3 qt.		
Pearl Windshield Washer	1 GAL		

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AMSC

SUBJECT	SHEET	BY	DATE	JOB NO.
EZ Movers Chem Inventory 03 Office	5	CLR	3/31/11	35273

Product	Quantity	(10.4)	PPO	(11.7)	
Mohawk Tung Finish For Wood	13oz (x12)	1862-1955	2504		91-442
Mohawk Brasin NL	1 Qt	1694			0
Mohawk Super Brush Retarder	13oz	1920			0
Kaylun Polyurethane	11oz (x3)	2249-2407			0
Dow Great Stuff	16oz	2528			0
Kiwi Priked All Rainy Stain Repellant	4 1/4 oz	2003			0
Mohawk Burnt Balm	4oz	2217			0
Premier Rain & Stain Shield	5 1/2 oz	2187			0
Gorilla Super Glue	.53 oz	2111			0
Elmers Wood Filler	3 1/4 oz (x2)	2045			0
Liquid Almond Stick	1 stick ~~(x2)~~ (x3)	2222			0
Scotch Multi Purpose Spray Adhesive	4 1/2 oz (x4 or 5)	1779-2038			0
Duo Contact Cement	3 oz	2315			0
Lawn Cut Gel Mouse Attractant	1 oz	2076			0
Liquid Wool Lube	16oz	1930-2022			0
Turpentine	1 Qt.				0
Star Brite Teak Oil	16oz				0
Sparrier Furniture Polish	17.5oz				0
Bic Wite Out	.7oz				0
Chair Lock	2oz				0
Old English Scratch Cover	8oz				0
Bob Smith Insta set accelerator	2oz				0
Deerfon Spray Adhesive	6 1/4 oz				0
Penz Tick Repellant	4oz				0
Dap Caulking Compd	32oz				0
Henry Carpeta Vinyl Adhesive	1 Qt.				0
Elmers Carpenters Glue	3 1/2 ~~2 1/2~~ Qts (x2)				0
Titebond ~~Heavy~~ Liquid Hide Glue	3 Qts.				0 (x2)
Min Wax Wood Finish	8oz (x16)	1545-1805			0 43
Old Masters Penetrating Stain	8oz (x3)				(x2) 430
Min Wax Polyurethane	16oz				0
Misc Stain (no Brand Label)	~3 pts.				0
Klean Strip Stripper	1Qt.				0

O'BRIEN & GERE

Indoor Air Quality Building Survey

Date: 4/1/2011

Collector: C. Rosenbaker / E. Alongi

Affiliation: OBG

Tenant: Bright Raven — Address: 12 Pixley Industrial Pkwy

Phone: —

Best time to contact: — — Tax ID: —

Owner ☐ Renter ☒ Other ☐ — Access Agreement Signed?: Yes

Date built: 1972, '79 & 88 add'l — Building type:

Yrs. of residence: NA (Not Applicable) — Residential ☐ — School ☐ — Industrial ☐

No. of occupants: Varies — Commercial ☒ — Church ☐ — Other

Check all that apply:

Ranch ☐ — Raised Ranch ☐ — 2-Family ☐ — Apartments ☐

Cape ☐ — Colonial ☐ — Duplex ☐ — Condominium ☐

3-Family ☐ — Mobile Home ☐ — Other (specify) Commercial - Gymnastics Studio

Above grade building construction

Wood frame ☐ — Poured concrete ☐ — Stone ☐

Brick ☐ — Concrete block ☒ — Other

Foundation construction

Fieldstone ☐ — Solid top concrete block ☐ — Slab on grade ☒

Poured concrete ☐ — Open top concrete block ☐ — Other

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

Yes 1979 & 1988

Utilities

Sewer:		Water:			
Public	☒	Public	☒	Spring	☐
Private	☐	Private	☐	Well	☐
Other		Other			

Heating, ventilation, and air conditioning systems

Primary heat type:		Fuel type (heat):		Secondary heat type:	
Hot air	☐	Natural gas	☒	Kerosene	☐
Hot water	☐	Fuel oil	☐	Wood stove	☐
Steam radiator	☐	Electric	☐	Electric	☐
Electric	☐	Wood	☐	Propane	☐
Other Space Htrs		Other		Other —	

Ventilation types:				Air conditioning:	
Attic fan	☐	Whole house fan	☐	Window units	☐
Kitchen hood	☐	Air filtration	☐	Furnance unit	☐
Bathroom fan	☐	Induced fireplace	☐	Electric	☐
Other Exhaust fans		Other		Other Ceiling Mounted	

Basement type

None		Half		Vented crawlspace		Other	
Full		Slab on grade	X	Unvented crawlspace			

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

Basement depth below grade (feet) NA - Not Applicable

Front | Rear | Side 1 | Side 2

Basement characteristics NA - Not Applicable

General:		Floor:		Walls:			
No. of rooms		Earth		Finished		Paneling	
Bathroom		Concrete		Unfinished		Tile	
Basement use		Tile		Painted		Insulated	
		Carpet		Sheetrock		Uninsulated	
		Other		Other			

Check if present:

Fireplace		Elevator		French drain	
Sump pump		Ash cleanout		Floor cracks	
Floor drains		Water damage		Wall cracks	
Interior walls		Jacuzzi/hot tub		Other	

Does the basement have a moisture problem?

Does the basement ever flood? (specify frequency)

Is there water in the sump or drains?

Is there evidence of possible mold?

Does the basement have a radon system installed? ~~No~~ (R)

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

Chemical usage, exposure and storage

Identify occupant hobbies: Not Applicable

Painting		Electronics		Model making	
Stained glass		Woodworking		Auto repair	
Jewelry making		Furniture refinishing		Other	

Where in the structure are these hobbies conducted? Not Applicable

Does the occupants' job require chemical exposure? No - Gymnastics Studio

If so, where are the occupants clothes cleaned? Not Applicable

Has the structure been fumigated in the last year? Unknown

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

Are pesticides frequently applied to lawn or garden? Unknown

If so, are they stored on the property?

Are dry-cleaned clothes kept in vicinity of sampling? No

Is there smoking in the building? No

Have cleaning products been used recently (when & type) Yes - Time wise Cleaning during sampling adjacent tenant space (Timewise)

If so, are they stored on the property?

Has painting/staining been done recently? No

Change in occupancy? No

If yes, identify new tenant:

Change in construction? No

If yes, describe:

Change in air handling systems? No

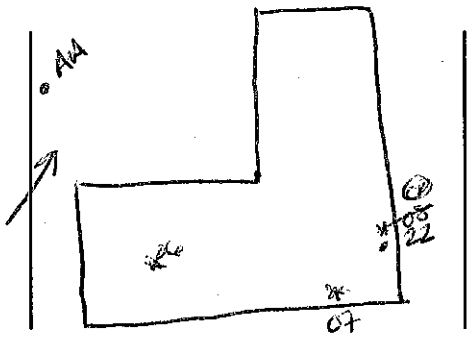
If yes, describe:

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?

Timewise Cleaning was cleaning the hallway outside of BR during sample set up (3/31/11). According to the timewise representative - standard household products were used to clean the floors. When we returned to the site on 4/1/11 to ~~the~~ the collect the samples a sign was posted @ restrooms adjacent to sample location AMSP-7, that the flurs had been waxed.

Sampling Locations (sketch plan views)

~~Basement~~	First Floor	Outdoor (indicate wind direction)
NA		See First Floor

See Attached

Identify chemicals stored in the basement/1st floor living space, or garage if structure is slab on grade (include fuels, solvents, cleaners, etc.) Copy as necessary.

Brand	Product	Amount stored	PID Reading

O'BRIEN & GERE

SUBJECT	SHEET	BY	DATE	JOB NO.
Bright Raven Chemical Inventory	1 of	EMA	4/1/11	35273

Product	Quantity	eV (10.6)	PPb	(11.7)
Home Select Glass Cleaner	2 x 22oz	906		0
Great Value Glass cleaner	3 x 22oz	1057		
Lucky Hand Soap	5 x 13.5oz	613		
Lysol Disinfectant Spray	2x 19oz	964		
Clorox Disinfecting Wipes	75 wipes	1007		
409	32oz	1139		
Pledge Furniture Polish	12.5oz	915		
Goo Gone	2 x 12oz	953		
Spot Shot odor/stain Eliminator	22oz	997		
Krylon clear Polyurethane	11.25oz	1090		
Terro Liquid Ant Baits	6 stations	900		
Misty HD Adhesive Spray	12oz	965		
Scotch Gard Rug Protector	14oz	985		
Liquid Wrench	11oz	780		
HH-66 Vinyl Cement	8oz	650		
Thrust Penetrating Oil	12oz	860		
Hoover Carpet Detergent	16oz	915		
Resolve Stain Remover	3x 22oz	960		
Exterior Flat Paint	1 Gal	850		
WD-40	11oz	650		
Zep Floor Finish	1 GAL	715		
Behr Paint/Primer in 1	1Gal	760		
Behr Semi Gloss Enamel	1 Pt	770		
Injury Snow Retardant	25oz	810		

O'BRIEN & GERE

Slab Inspection Checklist

Structure Address: 12 Pixley Ind. Pkwy Gates NY **Date of Visit:** 3/31/11

Structure ID #: Ez-Movers **Team:** EMA/CLR

Slab Area[+] ID: A

Length: ~8" **Width:** ~2" **Depth:** ~1"

Distance from 10 *** wall in feet:** 18'-8"

Distance from 14 *** wall in feet:** 9'-1"

Is the slab area new? ☑ Yes ☐ No If not, does it appear to be getting bigger? ☐ Yes ☐ No ☑ NA Broken concrete around floor drain

Should it be sealed? ☐ Yes ☐ No Was it sealed during this visit? ☐ Yes ☑ No ☐ NA

Was it documented with a photo? ☑ Yes ☐ No Was it identified on the drawing? ☑ Yes ☐ No

---

Slab Area[+] ID: B

Length: ~3"Ø **Width:** NA **Depth:** ~3/4"

Distance from 1 *** wall in feet:** 18'-4"

Distance from 15 *** wall in feet:** 24'-1"

Is the slab area new? ☑ Yes ☐ No If not, does it appear to be getting bigger? ☐ Yes ☐ No ☑ NA Broken concrete adjacent to expansion joint

Should it be sealed? ☐ Yes ☐ No Was it sealed during this visit? ☐ Yes ☑ No ☐ NA

Was it documented with a photo? ☑ Yes ☐ No Was it identified on the drawing? ☑ Yes ☐ No

---

Slab Area[+] ID: _____

Length: _____ **Width:** _____ **Depth:** _____

Distance from _____ *** wall in feet:** _____

Distance from _____ *** wall in feet:** _____

Is the slab area new? ☐ Yes ☐ No If not, does it appear to be getting bigger? ☐ Yes ☐ No ☐ NA

Should it be sealed? ☐ Yes ☐ No Was it sealed during this visit? ☐ Yes ☐ No ☐ NA

Was it documented with a photo? ☐ Yes ☐ No Was it identified on the drawing? ☐ Yes ☐ No

---

[+]Note that this can be a pentration, breach, trench, hole or other.

*Identify wall using compass direction or other identification (e.g. corresponding letter on drawing) so that the slab area can be found during subsequent visits.

O'BRIEN & GERE

Slab Inspection Checklist

Structure Address: 12 Pixley Ind. Pkwy **Date of Visit:** 4/1/11

Structure ID #: Bright Raven **Team:** Comacco

Slab Area[+] ID: C

Length: ~5½' **Width:** up to ¼" **Depth:** up to ¼"

Distance from 14 *** wall in feet:** ~8'-8"

Distance from 16 *** wall in feet:** 47'-6"

Is the slab area new? ☑ Yes ☐ No If not, does it appear to be getting bigger? ☐ Yes ☐ No ☑ NA

Should it be sealed? ☐ Yes ☐ No Was it sealed during this visit? ☐ Yes ☑ No ☐ NA

Was it documented with a photo? ☑ Yes ☐ No Was it identified on the drawing? ☑ Yes ☐ No

---

Slab Area[+] ID: D

Length: ~150' **Width:** up to 3/8" **Depth:** up to ½"

Distance from 17 *** wall in feet:** 0

Distance from _____ *** wall in feet:** _____

Is the slab area new? ☐ Yes ☐ No If not, does it appear to be getting bigger? ☐ Yes ☐ No ☐ NA Floor/wall interface

Should it be sealed? ☐ Yes ☐ No Was it sealed during this visit? ☐ Yes ☐ No ☐ NA

Was it documented with a photo? ☐ Yes ☐ No Was it identified on the drawing? ☐ Yes ☐ No

---

Slab Area[+] ID: _____

Length: _____ **Width:** _____ **Depth:** _____

Distance from _____ *** wall in feet:** _____

Distance from _____ *** wall in feet:** _____

Is the slab area new? ☐ Yes ☐ No If not, does it appear to be getting bigger? ☐ Yes ☐ No ☐ NA

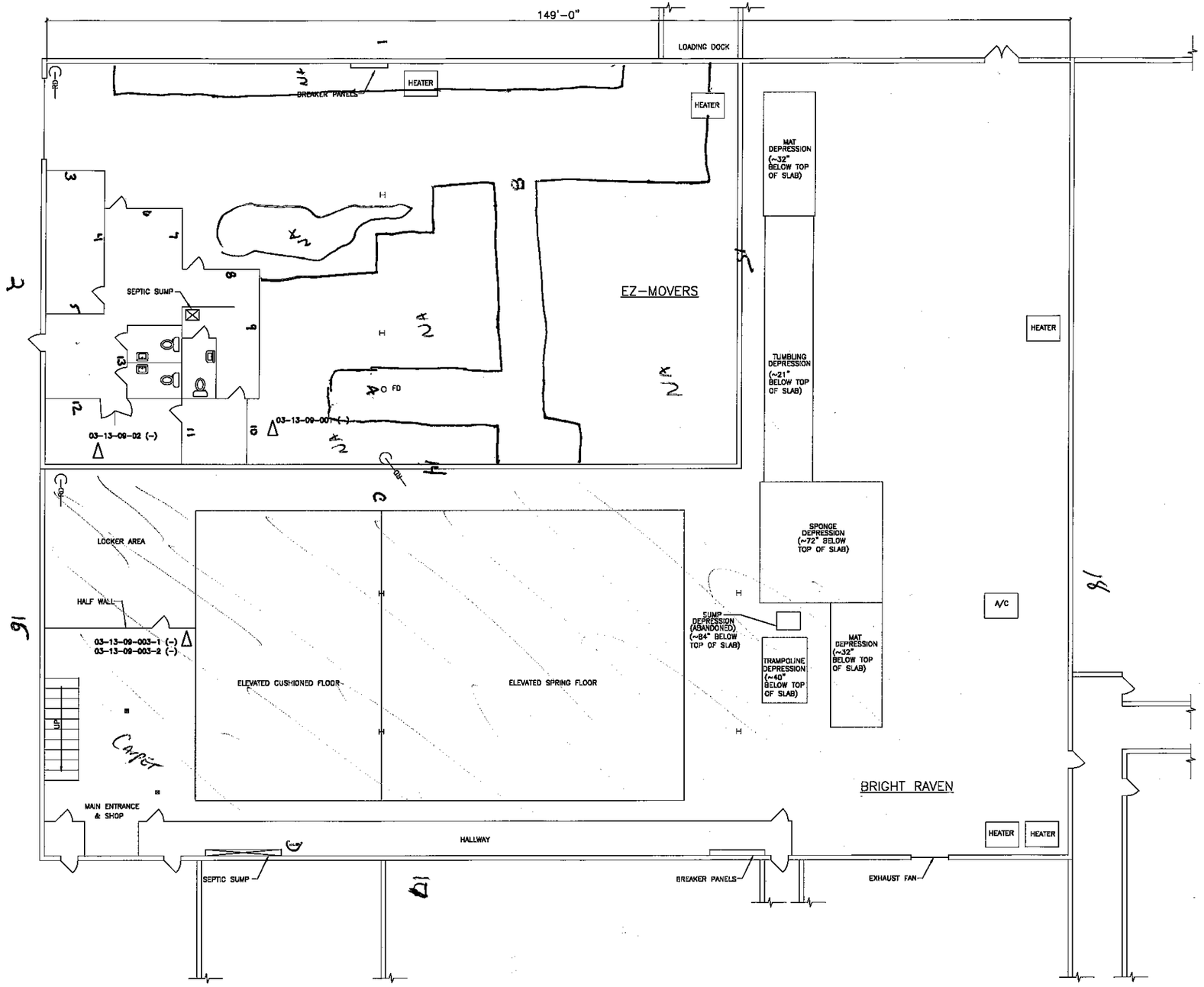
Should it be sealed? ☐ Yes ☐ No Was it sealed during this visit? ☐ Yes ☐ No ☐ NA

Was it documented with a photo? ☐ Yes ☐ No Was it identified on the drawing? ☐ Yes ☐ No

---

[+]Note that this can be a pentration, breach, trench, hole or other.

*Identify wall using compass direction or other identification (e.g. corresponding letter on drawing) so that the slab area can be found during subsequent visits.



LEGEND

- S — SEWER
- G — NATURAL GAS
- W — WATER
- E — ELECTRICAL
- HVAC — HVAC DUCT
- RD — ROOF DRAIN
- PIPE/DUCT DOWN
- PIPE/DUCT UP
- EXISTING WALL
- WINDOW
- DOOR
- STAIRWAY
- HWT — HOT WATER TANK
- H — VERTICAL SUPPORT COLUMN
- HEATER — CEILING MOUNTED HEATER
- A/C — CEILING MOUNTED AIR CONDITIONER
- CIRCUIT BREAKER PANEL
- FD — FLOOR DRAIN (FD)
- Δ — ASBESTOS SAMPLE ID NUMBER (+/- RESULT)

BUILDING FLOOR PLAN

EZ-MOVERS AREA – 5,539 SQ. FT.
BRIGHT RAVEN AREA – 11,131 SQ. FT.

IN CHARGE OF _____
DESIGNED BY _____ CHECKED BY ____
DRAWN BY _____

1/16"=1'-0" (16 8 0 16 32)

NO.	DATE	REVISION	INIT.

O'BRIEN & GERE

FORMER AMSF BUILDING
GATES, NEW YORK
VAPOR INTRUSION PROGRAM

FLOOR PLAN OF NORTHWEST TENANTS
12 PIXLEY INDUSTRIAL PKWY
GATES, NEW YORK

FILE NO. 3356.35273-004
DATE SEPTEMBER 2009

FIGURE 2

Quality Control Document

TABLE OF CONTENTS

LIST OF TABLES

QCD DOCUMENT DISTRIBUTION

1. ITT Representative
2. Guy Swenson, C.P.G. – O'Brien & Gere
3. Mark Distler – O'Brien & Gere
4. Karen Storne – O'Brien & Gere
5. Don Dawicki – TA Burlington

1. INTRODUCTION

This Quality Control Document (QCD) has been developed by O'Brien & Gere for vapor intrusion monitoring at the former Alliance Metal Stamping and Fabricating (AMSF) building located at 12 Pixley Industrial Parkway adjacent to the Former ITT Corporation (ITT) Rochester Form Machine (RFM) Facility in the Town of Gates, New York (the Site). This QCD is provided as a part of the Interim Remedial Measures (IRM) Interim Site Management Plan (ISMP) (O'Brien & Gere 2011).

This QCD presents the objectives and quality assurance/quality control (QA/QC) activities with vapor intrusion sampling and analysis of samples from the Site. The procedures in this QCD will be followed by personnel participating in the field sampling and in the laboratory analyses of samples.

2. PROJECT DESCRIPTION

This section describes the general scope of work and project objectives for the activities to be performed at the Site. Additional information is presented in the IRM ISMP.

2.1 PROJECT SCOPE

The purpose of these sampling activities is to monitor sub-slab and indoor air concentrations at the Bright Raven (BR) and EZ-Movers tenant spaces located in the northwest portion of the former AMSF building to verify that vapor intrusion is not occurring. Previous sub-slab air sampling indicated that soil vapor was not found to be intruding into the indoor air at levels that can be detected or are of concern. As approved by the New York State Department of Environmental Conservation (NYSDEC), monitoring will be performed in lieu of mitigation. Pursuant to New York State Department of Health (NYSDOH) vapor intrusion guidance, monitoring of indoor air is an option for buildings where vapor intrusion is not already occurring.

The results from each monitoring event will be compared to the current NYSDOH Soil Vapor/Indoor Air matrices (NYSDOH 2006).

2.1.1 Laboratory Analysis

The sub-slab vapor, indoor air and ambient air samples will be submitted to TestAmerica Burlington (TA Burlington) of Burlington, Vermont for volatile organic compound (VOC) analysis.

Table 1 presents the analytical methods, sample canisters, volumes and holding times.

One field duplicate will be collected as part of the monitoring event. A field blank will not be collected.

The target analytes are listed in Table 2.

The QC requirements and corrective actions listed in Table 3, which supplements the method requirements, are to be followed by the laboratory.

For the sub-slab vapor, indoor air and ambient air samples, the laboratory will report the results to the QL levels, which are listed in Table 2. The most recent QLs will be reported by the laboratory. Table 2 also presents the current NYSDOH guidance values, which will be used to evaluate the analytical data.

The laboratory will provide individually certified-clean canisters for the investigation, prepared in accordance with method and NYSDOH requirements.

Communications with O'Brien & Gere will be documented by the laboratory in the data packages.

Sub-slab vapor, indoor air and ambient air data will be reported to O'Brien & Gere in accordance with QCD deliverable requirements.

The laboratory will provide two copies of the data packages and the electronic deliverables within 21 days from the receipt of the last sample at the laboratory.

2.1.2 Data Validation

Data validation will be performed on the sub-slab vapor, indoor air and ambient air data collected for the monitoring event. O'Brien & Gere data validators will provide data validation services.

Data will be evaluated during validation using the QA/QC criteria established in the method, the quality control requirements and corrective actions listed in Table 3, and laboratory established criteria, where applicable.

Sample data will be qualified based on excursions from QA/QC criteria specified in the method and Table 3 of this QCD. Data affected by excursions will be qualified using the following data validation guidance document or the most current document and professional judgment:

- USEPA. 2006 [Reviewed 2009]. *Validating Volatile Organic Analysis of Ambient Air in canister by Method TO-15. SOP HW-31, Revision 4.* Albany, New York

The application of these validation guidelines will be modified to reflect method and QCD requirements.

Upon request of the data validator, the laboratory will provide additional or supplemental information within three working days of the request during the validation process.

The specific data quality requirements including precision, accuracy, representativeness, completeness, comparability, and sensitivity will be assessed during data validation. Data usability with respect to the data quality objectives (DQOs) and data uses will be compared to the project requirements. In the event that the completeness objective of 95 percent is not achieved, samples will be re-collected at the discretion of the O'Brien & Gere Project Manager.

The Data Usability Summary Report (DUSR) will summarize the data quality for the monitoring event.

2.1.2 Documentation

Data will be managed in a relational data base management system (DBMS). Laboratory analytical data will be provided in electronic disk deliverable (EDD) format for direct upload into the DBMS. Upon completion of data validation and no later than 90 days following receipt of the data from the laboratory, an EDD will be submitted to the NYSDEC in the prescribed format.

The findings of the monitoring event will be documented and submitted to the NYSDEC and NYSDOH.

The field logs, data packages, validation information and sampling records will be included in the project files, which will be archived by O'Brien & Gere for a period of ten years.

3. DATA QUALITY OBJECTIVES AND CRITERIA

This section describes the general scope of work and project objectives for the activities to be performed at the Site. Additional information is presented in the ISMP

The process consists of the following seven iterative steps for the DQO process:

Step 1 - State the Problem – The purpose of these sampling activities is to monitor sub-slab vapor and indoor air concentrations to verify that vapor intrusion is not occurring. Previous sub-slab air sampling determined that vapor intrusion was not occurring but that the potential for vapor intrusion exists. Monitoring will be performed in lieu of mitigation. Constituents of Concern (COCs) for the Site are 1,1,1-trichloroethane (TCA), tetrachloroethene (PCE), 1,1-dichloroethane (DCA), 1-1, dichloroethene (1,1-DCE), cis-1,2-dichloroethene (cis-1,2-DCE), and trichloroethene (TCE).

Step 2 - Identify the Goal of the Study – The activities defined in this QCD will be utilized to monitor sub-slab and indoor air concentrations to verify that vapor intrusion is not occurring at the Site. The results from the monitoring event will be compared to the NYSDOH guideline values presented in Table 2 and actions taken will be based on various factors including the decision matrices presented in the NYSDOH Vapor Intrusion guidance.

Step 3 - Identify Information Inputs (the data types that will be required before project decisions can be made) - The primary required data types will be analytical results from the BR and EZ Mover tenant spaces; sub-slab vapor samples will be collected near the center of the floor, away from cracks or openings in the floor, and away from sub-slab utilities, indoor air samples will be collected at approximately three to five feet above the slab and one ambient air sample will be collected outside of the building.

Step 4 -Define the Boundaries of the Study (the spatial and temporal features pertinent for decision making) - Sample collection will be performed at the former AMSF building located at 12 Pixley Industrial Parkway adjacent to the Former ITT RFM Facility in the Town of Gates, New York. The former ITT RFM facility consists of a 45,500 square foot one-story building located on approximately three acres of property. The property is located approximately ¾-mile north of the Little Black Creek and 2 ¼-miles to the southwest of the Erie Canal. The property is bordered to the north by a movie theater complex; to the south by a vacant lot; to the east by the former AMSF property; and to the west by the Batesville Casket Company property. Sampling will be conducted each year until monitoring is no longer warranted and/or as directed by the NYSDEC. Additional sample collection, as may be required by NYSDEC or NYSDOH, will be scheduled for completion prior to the end of the heating season. Refer to Section 4 of the IRM ISMP for a typical year schedule.

Step 5 - Develop the Analytic Approach (how will the study results be analyzed and conclusions made from the data) – The results from the monitoring event will be compared to the NYSDOH guideline values presented in Table 2 and actions taken will be based on various factors including the decision matrices presented in the NYSDOH Vapor Intrusion guidance. Actions may include continuing the monitoring process, discontinuing the monitoring process, mitigation, or another appropriate action that will be determined at a future date.

Step 6 - Specify Performance or Acceptance Criteria (performance or acceptance criteria that the collected data will need to achieve) - Data must be of known quality to withstand scientific and legal challenges relative to its intended purpose. Completeness is the measure of the amount of valid data obtained from a measurement system compared to the amount expected to be obtained under normal conditions. If the completeness objective of 95 percent is not met, additional sampling may be justified.

Step 7 - Develop the Plan for Obtaining Data- The sub-slab vapor, indoor air and ambient air samples will be collected and analyzed as described in the ISMP and this QCD.

To meet the DQOs for this investigation, the sub-slab vapor, indoor air and ambient air results will be compared to the NYSDOH guideline values referenced in Table 2 of this QCD.

4. PROJECT ORGANIZATION AND RESPONSIBILITY

O'Brien & Gere will be responsible for project management and sample collection.

4.1 O'BRIEN & GERE KEY PERSONNEL

4.1.1 O'Brien & Gere Project Officer

Steve Roland is the O'Brien & Gere Project Officer and has overall responsibility for meeting the stated project objectives. In addition, he is responsible for providing the O'Brien & Gere Project Manager and Task Manager with access to O'Brien & Gere corporate resources.

4.1.2 O'Brien & Gere Project Manager

Guy Swenson, C.P.G. is the O'Brien & Gere Project Manager and is responsible for implementing the project and has the authority to commit the resources necessary to meet project objectives and requirements.

4.1.3 O'Brien & Gere Task Manager

Mark Distler is the O'Brien & Gere Task Manager and will be responsible for meeting the technical objectives and for directing and coordinating the day-to-day activities while field activities are underway.

4.1.4 O'Brien & Gere QA Officer

Karen Storne is the O'Brien & Gere QA Officer (QAO) for this project. She will manage and be responsible for QA/QC review of data generated during the investigation. Data processing and validation will be overseen and reviewed by the O'Brien & Gere QAO. If QA problems or deficiencies requiring special action are identified, the O'Brien & Gere QAO, Project Manager, and Task Manager will determine the appropriate corrective action. The QAO will then be responsible for follow-up and oversight of corrective action implementation, to the satisfaction of the client and the NYSDOH and NYSDEC representatives.

The QAO may perform data validation activities or may designate additional data validators to work under her direction.

4.1.5 Field Sampling Personnel

O'Brien & Gere field sampling personnel will be responsible for collection, packaging, preservation, and shipping of environmental samples in accordance with the QCD and applicable NYS requirements.

4.2. LABORATORY MANAGEMENT

The air samples will be submitted to TA Burlington of Burlington, Vermont.

4.2.1 Laboratory Project Manager

Don Dawicki is the Laboratory Project Manager for the investigation and will be responsible for:

- Coordinating laboratory analysis
- Supervising in-house chain-of-custody
- Scheduling sample analysis
- Overseeing data review
- Overseeing preparation of analytical reports.

It will be the responsibility of the Laboratory Project Manager to approve final analytical reports prior to submission to O'Brien & Gere.

5. SAMPLING HANDLING AND CUSTODY- CHECK TO ADD WATER

5.1 SAMPLE CUSTODY AND PROCEDURES

Chain-of-custody procedures will be instituted and followed throughout the investigation. These procedures include field custody, laboratory custody, and evidence files. Samples are physical evidence and will be handled according to strict chain-of-custody protocols. The O'Brien & Gere Project Manager must be prepared to produce documentation that traces the samples from the field to the laboratory and through analysis. USEPA has defined custody of evidence as follows:

- In actual possession
- In view after being in physical possession
- In a locked laboratory
- In a secure, restricted area.

5.2 SAMPLE PREPARATION

Individually certified-clean sample SUMMA™ canisters will be provided by TA Burlington for sub-slab vapor, indoor air and ambient air collection. The laboratory that certifies the canisters as clean must also conduct the analysis of the samples. The laboratory will provide the chain-of-custody document, which will follow the canister to the field and back to the laboratory.

Immediately after collection, canisters will be labeled.

Table 1 lists the proper sample canister to be used, sample collection information and holding times. If field storage is required, the samples will be stored in a secured storage facility.

5.3 FIELD CUSTODY PROCEDURES

The field sampler is personally responsible for the care and custody of the sample until transferred.

A sample field form and building survey/chemical inventory form will be used to note information regarding collection of samples and any observations. Corrections will be made by drawing a single line through the incorrect data and initialing and dating the correction that was made to the side of the error.

The following information will be recorded in the field forms by the field sampling team:

- Project name, date, location;
- Weather conditions;
- Project number, client name, and Site name;
- Name and title of field crew members;
- Sample media;
- Sample collection method, including equipment utilized;
- Number and volume of samples collected;
- Sample locations;
- Date and start and end time of sample collection;
- Sample and QA/QC identification numbers;
- Canister and flow controller serial numbers;
- Field observations, as applicable;
- Field measurements made and equipment used;

- Initial and final field vacuum readings;
- Dates and method of sample shipments.

A completed sample identification label or tag that will be uniquely numbered, will be attached to each investigative sample and the sample placed in a shipping container. The identification on the label/tag must be sufficient to enable cross-reference with the sample field form. The sample label/tag will be recorded using waterproof, non-erasable ink and will be attached to the sample container.

The sample labels/tags will contain the following information:

- Sample number identification;
- Project number;
- Date and time of sample collection;
- Type of sample matrix;
- Initials of the sampler;
- Space for laboratory sample number (only on the sample tag); and
- Types of analysis to be performed.

5.4 CHAIN-OF-CUSTODY PROCEDURES

Chain-of-custody records will be completed during sample collection. The chain-of-custody record will contain the following information:

- Laboratory name and address;
- Project identification and number;
- Sample description;
- Time/date sampling start and stop;
- Required parameters and analysis;
- Sample matrix;
- Sampler signature, date, and time.

The investigator must record the appropriate information on the chain-of-custody document for each sampling location.

The field sampling team will transport or ship the sample container or box via an overnight delivery service or hand deliver to TA Burlington as described in this QCD. Sample shipments will not be left at an unsecured or questionable drop-off location.

Samples will remain in the custody of the sampler until transfer of custody is completed. Transfer consists of:

- Delivery of samples to the Laboratory Sample Custodian or transfer to container or box via an overnight delivery service; and/or
- Signature of the Laboratory Sample Custodian on the chain-of-custody form as receiving the samples and signature of sampler as relinquishing the samples.

The chain-of-custody document will be completed by the field sampler and provided for each sample container or box. When transferring the possession of samples, individuals relinquishing and receiving will sign, date, and note the time on the chain-of-custody. Custody of samples must be continuous between parties and time gaps must not be present. Each shipment of samples to the laboratory must have its own chain-of-custody record with the contents of the shipment, method of shipment, name of courier, and other pertinent information written on the record. The original record accompanies the shipment and the copies are kept with the field

forms and distributed to the O'Brien & Gere Project Manager. Freight bills, postal service receipts, and bills of lading will be retained as permanent documentation.

If a carrier is used to take samples between the sampler and the laboratory, the air bill number must be written on the chain-of-custody.

Samples will be shipped or transported within 24 hours of being collected and will arrive at the laboratory no later than 72 hours after sample collection. The maximum time canisters can be held on-site prior to sample collection is 15 days after shipment of the canister by the laboratory.

5.5 LABORATORY CHAIN-OF-CUSTODY PROCEDURES

Laboratory custody procedures continue when the samples are received by the laboratory. When the samples arrive at the laboratory, the Laboratory Sample Custodian will sign the courier's air bill or bill of lading (unless hand-delivered). If the samples were shipped, the courier's air bill number will be attached to the sample container or box and the air bill number will be written on the chain-of-custody form. If the container or box arrives at the laboratory after hours, an external chain-of-custody will be properly filled out and will accompany the container or box until the laboratory receives the container or box.

The Laboratory Sample Custodian's duties and responsibilities upon sample receipt will be to:

- Document receipt of samples by signing the record with the date and time of sample receipt.
- Inspect sample shipping containers for the presence or absence of custody seals (only if shipped via overnight courier) and for container integrity.
- Sign the appropriate forms or documents, verify, and record the agreement or disagreement of information on sample documents and, if there are discrepancies, record the problem and notify the O'Brien & Gere Project Manager.
- Assign a number for each sample upon receipt. That sample number will be placed on the sample label which will remain attached to the sample canister.
- Log sample information into the laboratory sample tracking system.
- Label sample with a unique, sequential laboratory sample number.
- Place samples in the sample storage area that is a secure, limited-access storage.

The laboratory will immediately contact the O'Brien & Gere Project Manager if issues pertaining to sample condition or documentation are detected (e.g., broken security seal; compromised sample containers; chain-of-custody information in disagreement with sample labels).

5.6 FINAL EVIDENCE FILES

The final evidence file will be the central repository for documents that constitute evidence relevant to sampling and analysis activities as described in this QCD. O'Brien & Gere is the custodian of the evidence file and maintains the contents of evidence files for the Site, including relevant records, field forms, logs, field notebooks, pictures, subcontractor reports, and data reviews.

Copies of the laboratory data packages will be stored by the laboratory for incorporation into the sample file. The Laboratory Project Manager will be responsible for laboratory data packages.

Upon completion of the analyses, the O'Brien & Gere Project Manager will begin assimilating the field and laboratory data. In this way, the file for the samples will be generated. The final file for the samples will be stored at O'Brien & Gere and will consist of the following, as applicable:

- Laboratory data packages, including summary and raw data from the analysis of environmental and QC samples, chromatograms, mass spectra, calibration data, work sheets, and sample preparation log
- Chain-of-custody records

- Data validation reports
- Field forms and data
- Pictures and drawings
- Progress and QA reports
- Contractor and subcontractor reports
- Correspondence.

The evidence file must be maintained in a secured, limited access area until submittals for the project have been reviewed and approved, and for a minimum of ten years past the submittal date of the final report.

6. LABORATORY QA/QC PROCEDURES

A brief description of laboratory QA/QC analyses is presented in the following sections.

6.1 GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC-MS) TUNING

Tuning and performance criteria are established to verify mass resolution, identification, and to some degree, instrument sensitivity. These criteria are not sample specific; conformance is determined using standard materials. Therefore, these criteria should be met in all circumstances.

6.2 CALIBRATION

Compliance requirements for satisfactory instrument calibration are established to verify that the instrument is capable of producing acceptable quantitative data. Initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of analysis, and continuing calibration and performance checks document satisfactory maintenance and adjustment of the instrument on a day-to-day basis.

6.3 BLANKS

Corrective action procedures are implemented for blank analyses if target compounds are detected at concentrations greater than the requirements presented in corrective action Table 3 and the method. The criteria for evaluation of blanks apply to any blank associated with a group of samples. If problems with a blank exist, data associated with the project must be carefully evaluated to determine whether or not there is an inherent variability in the data for the project, or if the problem is an isolated occurrence not affecting other data.

6.4 INTERNAL STANDARDS PERFORMANCE

Internal standards, which are compounds not found in environmental samples, will be spiked into samples, blanks, and laboratory control samples (LCSs) at the time of sample preparation for applicable methods. Internal standards should meet the criteria specified in the corrective action tables.

6.5 LABORATORY CONTROL/LABORATORY CONTROL DUPLICATE SAMPLES

Laboratory control samples (LCSs) and laboratory control duplicate samples (LCSDs) are standard solutions that consist of known concentrations of the complete list of target analytes spiked into laboratory analyte-free matrix. They are prepared or purchased from a certified manufacturer from a source independent from the calibration standards to provide an independent verification of the calibration procedure. These QC samples are then prepared and analyzed following the same procedures employed for environmental sample analysis to assess method accuracy independently of sample matrix effects. Percentage recoveries are evaluated to assess the efficiency of the preparation and analysis method independent of environmental sample matrix effects. If performed by the laboratory, the LCSD is evaluated for laboratory precision.

6.6 ANALYTE IDENTIFICATION AND QUANTITATION

The objective of the qualitative criteria is to minimize the number of erroneous identifications of compounds. An erroneous identification can either be a false positive (reporting a compound present when it is not) or a false negative (not reporting a compound that is present). The identification criteria can be applied much more easily in detecting false positives than false negatives. Negatives, or non-detected compounds, on the other hand represent an absence of data and are, therefore, much more difficult to assess. The objective for quantitative requirements is to maximize the accuracy of data and sensitivity of the instrument. Unless sample screening indicates the presence of high concentration target analytes, samples are analyzed undiluted to maximize sensitivity. Samples are reanalyzed at the appropriate dilution when concentrations exceed the linear calibration range to maximize accuracy.

6.7 CORRECTIVE ACTION

Generally, the following corrective actions are taken by the laboratory. When calibration, instrument performance, and blank criteria are not met, the cause of the problem is located and corrected. The analytical

system is then recalibrated. Sample analysis does not begin until calibration, instrument performance, and blank criteria are met. When reference standard analyses are out of control, the analyses of these samples are investigated. Depending on the results of the overall QC program for the sample set, the data may be accepted, accepted with qualification, or determined to be unusable.

6.8 PREVENTIVE MAINTENANCE

Preventative maintenance procedures are carried out on laboratory equipment in accordance with the laboratory procedures. Maintenance activities involving laboratory equipment are recorded in laboratory documents.

7. FIELD QA/QC PROCEDURES

A brief description of field QA/QC samples is presented in the following sections.

7.1FIELD DUPLICATE SAMPLES

Collection of field duplicate samples provides for the evaluation of the laboratory's precision performance by comparing analytical results of two samples from the same location. They are also collected to evaluate field sample collection precision procedures. Samples are collected from one location and sent to the laboratory blind (with two different sample identifications).

7.2 FIELD BLANKS

Field blanks will not be collected for this project.

8. DATA VALIDATION AND USABILITY

Data validation will be performed on the data from the samples collected during each monitoring event. Data validators from O'Brien & Gere will provide data validation services.

Upon request by the data validator, the laboratory will provide additional or supplemental information within 3 working days of the request.

8.1 VALIDATION PROCEDURES

Full validation will be performed on the analytical data generated for this project for each analytical method.

Data will be evaluated during validation using the QA/QC criteria (including holding times and calibration) established in the analytical methods, the quality control requirements and corrective actions listed in Table 3 and laboratory or method established control limits, where applicable.

Full data validation consists of a review of data summary forms and raw analytical data that are provided in the data packages. During the full validation, data validators will recalculate selected laboratory sample calculations using raw data when verifying sample results. In addition, data validators will review selected raw data to verify that compound identification was performed correctly and transcription errors are not present.

The following QA/QC information will be included in the validation:

- QCD compliance
- Chain-of-custody record
- Sample collection
- Holding times
- Calibrations
- Blank analysis
- LCS/LCSD analysis
- Field duplicate analysis
- Internal standards performance
- GC/MS instrument performance check
- Target analyte quantitation, identification, and quantitation limits (QLs)
- Documentation completeness

8.2 ASSIGNMENT OF QUALIFIERS

Data affected by excursions from the previously described QA/QC criteria will be qualified using the following data validation guidance document, or the most current document, and professional judgment:

- USEPA. 2006 [Reviewed 2009]. Validating Volatile Organic Analysis of Ambient Air in canister by Method TO-15. SOP HW-31, Revision 4. Albany, New York

The application of these validation guidelines will be modified to reflect method and QCD requirements.

The validation approach to be taken by O'Brien & Gere will be a conservative one; qualifiers will be applied to sample data to indicate minor excursions detected in comparison to method and validation criteria. In this way, data associated with any type of excursion will be identified to the data user. Major excursions will result in data being rejected, indicating that the data are considered unusable for either quantitative or qualitative purposes. Minor excursions will result in sample data being qualified as approximate.

Utilizing USEPA guidance and professional judgment, the following qualifiers will be used in this data validation:

- "U" – Indicates that the analyte was analyzed for, but was not detected.
- "J" – Indicates that the result should be considered to be an estimated value. This qualifier is used when the data validation process identifies a deficiency in the data generation process.
- "UJ" – Indicates that the sample-specific reporting limit for the analyte in this sample should be considered approximate. This qualifier is used when the data validation process identifies a deficiency in the data generation process.
- "R" – Indicates that the reporting limit or sample result has been determined to be unusable due to a major deficiency in the data generation process. The data should not be used for any qualitative or quantitative purposes.

8.3 DATA USABILITY EVALUATION

The specific data quality requirements including precision, accuracy, representativeness, comparability, sensitivity, and completeness will be assessed during data validation. Data usability with respect to the DQOs and data uses will be compared to the project requirements. In the event that the completeness objective of 95 percent is not achieved, samples may be re-collected at the discretion of the O'Brien & Gere Project Manager.

Based on the QA/QC information review and the qualifiers assigned to the analytical data, an overall evaluation of the data's usability will be performed. Data usability is defined as the percentage of data that remains unqualified or is qualified as approximate or non-detected due to blank contamination, divided by the data reported by the laboratory times 100. The percent usability excludes the data qualified as rejected due to major QA/QC excursions. The non-usable data is defined as the percentage of the data qualified as rejected divided by the data reported by the laboratory times 100. The data usability will be provided for each type of analysis performed.

The data usability evaluation considers the data parameters of precision, sensitivity, accuracy, representativeness, comparability, and completeness which are described as follows:

- Precision is evaluated through the review of LCS/LCSD samples.
- Sensitivity is evaluated through the review of QLs.
- Accuracy is evaluated through the review of internal standards, LCS/LCSD recoveries, calibration, and instrument performance checks.
- Representativeness is evaluated through the review of holding times, sample preparation, blank analysis, and target compound identification and quantification.
- Comparability is evaluated through the review of the analytical methods and reporting procedures for consistency.
- Completeness is defined as the overall percentage of sample results that are determined to be usable.

8.4 DATA VALIDATION REPORT

The DUSR will contain separate QA sections in which data quality information collected during each monitoring event is summarized. The DUSR will include the following:

- Guidelines used to evaluate the data;
- Data qualifiers applied to sample results;
- Summary of samples collected and analyses performed;
- Narrative that identifies major and minor analysis excursions detected for each parameter evaluated for each analysis;

- Additional issues and information that may be beneficial to the data user;
- Data summary forms.

The DUSR will be prepared under the direction of the QAO and will include the report on the usability of the data.

9. REFERENCES

NYSDOH 2006. *Guidance for Evaluating Soil Vapor Intrusion in the State of New York*, NYSDOH, October 2006.

USEPA. 1999. *Compendium Method TO-15: Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS).* Cincinnati, Ohio.

USEPA. 2006a. *Validating Volatile Organic Analysis of Ambient Air in canister by Method TO-15. SOP HW-31, Revision 4.* Albany, New York.

USEPA. 2006b. *Guidance for the Data Quality Objectives Process* (EPA QA/G-4), Washington, D.C.

Table 1. Field Sampling Summary

Parameter (Method)	Matrix	Sample Containers and Volumes	Preservation	Holding Times	Number of Investigative Samples (per year)	QC Sample Frequency	
						Field Duplicate	Field Blank
VOCs (USEPA Method TO15)[1]	Indoor Air Samples	6.0 Liter SUMMA® vacuum canisters Sampling for 8 hours Individually certified-clean Canisters	None	Analysis within 30 days from collection to analysis. Used and un-used canisters must be returned to the laboratory within 15 days of shipment of the canisters to the sampling location.	5	None	None
VOCs (USEPA Method TO15)[1]	Ambient Air Samples	6.0 Liter SUMMA® vacuum canisters Sampling for 8 hours Individually certified-clean Canisters	None	Analysis within 30 days from collection to analysis. Used and un-used canisters must be returned to the laboratory within 15 days of shipment of the canisters to the sampling location.	1	None	None
VOCs (USEPA Method TO15)[1]	Sub-Slab Vapor Samples	6.0 Liter SUMMA® vacuum canisters Sampling for 8 hours Individually certified-clean Canisters	None	Analysis within 30 days from collection to analysis. Used and un-used canisters must be returned to the laboratory within 15 days of shipment of the canisters to the sampling location.	5	1	None

NOTES:
*** Indicates that field blanks are not required for this project.**
VOCs indicates volatile organic compounds.

1. **USEPA. 1999.** ***Compendium Method TO-15: Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS).*** **Cincinnati, Ohio.**

Source: O'Brien & Gere

Table 2. Laboratory QLs and Regulatory Guidance for VOCs by USEPA Method TO-15 in Vapor Intrusion Samples

Target Compounds	CAS Number	Sub-slab Vapor Sample		Indoor Air and Ambient Air Samples	
		Laboratory QL (ug/m^3)	Laboratory QL (ppbv)	Laboratory QL (ug/m^3)	Laboratory QL (ppbv)
1,1-Dichloroethane (1,1-DCA)	75-34-3	0.81	0.2	0.16	0.04
1,1-Dichloroethene (1,1-DCE)	75-35-4	0.79	0.2	0.16	0.04
cis- 1,2-Dichloroethene (cis-1,2-DCE)	156-59-2	0.79	0.2	0.16	0.04
Tetrachloroethene (PCE)	127-18-4	1.4	0.2	0.27	0.04
1,1,1-Trichloroethane (TCA)	71-55-6	1.1	0.2	0.22	0.04
Trichloroethene (TCE)	79-01-6	1.1	0.2	0.21	0.04

Notes:
QLs indicates practical quantitation limits.
ppbv indicates parts per billion by volume.
$\mu g/m^3$ indicates micrograms per cubic meter.
QLs obtained from TA Burlington and are current as of May 2011 for use on NYS Sites.
The laboratory will report the results to the QL concentration.
Target compound list resource - project target list.
NA indicates not available
Method reference:
1. USEPA. 1999. ***Compendium Method TO-15: Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS).*** **Cincinnati, Ohio.**

Table 3. VOCs Using USEPA Method TO-15 Quality Control Requirements and Corrective Actions

Audit	Frequency	Control Limits	Corrective Action
Holding Times	Samples must be analyzed within holding time. Used and un-used canisters must be returned to the laboratory within 15 days of shipment of the canisters to the sampling location.	Analyze within 30 days of sample collection. Preservation of sample containers is not required.	If holding times are exceeded for initial or re-analyses required, notify QAO since re-sampling may be required. Document corrective action in the case narrative
Canister Preparation	1. Canisters are equipped with a laboratory preset regulator, pressure gauge, critical orifice, stainless steel frit dust filter over the orifice, and specially prepared interior surfaces. 2. The flow controller (regulator) is preset at the laboratory for sample collection periods and the collection period is identified for each canister. 3. Canisters are shipped to the site at sub-atmospheric pressure approximating negative (-) 30 inches of mercury. 4. The laboratory evacuates the canister to approximately – 30 inches of Hg prior to shipping.		
Sample Collection Using Canisters	1. Samples will be collected for sample duration of 8 hours. 2. The backpressure is primarily a factor of the length of the tubing from the sampling point to the canister, the interior diameter of the tubing, the construction of the sampling probe, and the soil type. 3. If the backpressure constraint is greater than the vacuum in the canister, sample collection will not occur. 4. When possible, the system backpressure should be evaluated prior to sampling. 5. The method by which the ambient pressure and temperature will be obtained must be either weather station or portable instrument for exterior samples.		
Canister Leak Test Evaluation Prior to Collection	All canisters are leak tested prior to each sampling.	The difference between the initial canister pressure and the final canister pressure, read at least 24 hours apart must not be greater than 0.5 in Hg.	If canister leak check criterion is exceeded and the canister was used for sample collection, notify QAO since re-sampling may be required. Document communications and corrective action in the case narrative.
Canister Pressure Evaluation Prior to Collection	Canister pressure must be recorded by lab prior to shipment to the client (approximately -30 inches of mercury), and by field after sample collection. The pressure must be recorded by lab upon receipt.	The difference between the initial canister pressure recorded at the laboratory and the subsequent pressure reading prior to sample collection at the field location must not be greater than 10 in Hg.	1. If canister pressure is exceeded notify QAO since re-sampling may be required. 2. Document communications and corrective action in the case narrative.

TABLE 3. VOCS USING USEPA METHOD TO-15 QUALITY CONTROL REQUIREMENTS AND CORRECTIVE ACTIONS

Audit	Frequency	Control Limits	Corrective Action
Canister Leak Test Evaluation After Collection	Canister pressure should be recorded by the field after sample collection, and by the lab upon receipt at the lab.	The difference between the pressure recorded in the field after sample collection and the pressure recorded by the lab upon sample receipt must not be greater than 10 in Hg. If pressure difference is exceeded, documentation instructing the lab to analyze the sample must be provided.	1. If canister pressure is exceeded notify QAO since re-sampling may be required. 2. Document communications and corrective action in the case narrative.
Canister Filling	The canisters should be filled to a minimum of -15 in Hg, but ideally filled to between -5 in Hg and -2 in Hg when collection of sample is completed.	Canisters used for sample collection should be filled properly.	1. If canister filling requirement is exceeded notify QAO since re-sampling may be required. 2. Document communications and corrective action in the case narrative.
Canister Cleaning	1. Canisters must be clean and free of any contaminants before sample collection. 2. Canisters will be individually certified. It is recommended that canisters are individually certified for low level, indoor air samples (<0.5 ug/m3). 3. The same laboratory that certifies the canisters as clean must analyze the sample canisters. 4. Certification should be provided in the data package. The laboratory must document which canisters are associated with each batch certification.	1. Canisters are cleaned using either humid zero nitrogen cleaning procedures as described in USEPA Method TO-15 or the canisters are heated in an isothermal oven or by use of heating bands. 2. Batch certified: 1 of the canisters per batch of 12 (8.3%) are analyzed by TO-15. 3. Clean canisters do not contain analytes above or equal to the quantitation limit (QL). 4. Any canister that has not tested clean will not be used.	1. If canister cleaning requirement is exceeded notify QAO since re-sampling may be required. 2. Document communications and corrective action in the case narrative.

TABLE 3. VOCS USING USEPA METHOD TO-15 QUALITY CONTROL REQUIREMENTS AND CORRECTIVE ACTIONS

Audit	Frequency	Control Limits	Corrective Action
GC/MS tuning	Once every 24 hours prior to initial calibration and calibration verification.	1. Tune key ions and abundance criteria listed in USEPA Method TO-15 must be met for all ions and analyses must be performed within 24 hours of injection of the tune. 2. Part of the tune peak will not be background subtracted to meet tune criteria. 3. Documentation of all tune analyses and evaluations must be included in the data packages.	1. Tune the mass spectrometer. 2. Document corrective action in the case narrative - samples must not be analyzed until control limit criteria have been met.
Analytical Sequence	Analytical sequence is defined as analyses performed within a 24-hour period.	Not applicable	Not applicable
Initial Calibration (IC)	Prior to sample analysis and when calibration verification criteria are not met. Initial calibration will contain all target analytes in each standard.	1. Minimally five concentrations of standards bracketing the expected concentration range for all compounds of interest. One standard must be at or below the QL. 2. The %RSD must be less than or equal to 30 for all target analytes or calibration coefficient of greater than 0.990 for calibration curves. The following exception is allowed: Up to two analytes can exceed 30% RSD but must be less than or equal to 40%. 3. Minimum relative response factor (RRF) of ≥ 0.05. 4. If used, tracer gas should be included in calibration. 5. Quantitation of analyses will utilize the initial calibration results.	1. Identify and correct problem. 2. Recalibrate instrument. Samples must not be analyzed until initial calibration criteria are met.
Calibration Verification (CCV)	Every 24 hours, following tune. Calibration verification will contain all target analytes in each standard at a concentration that is representative of the midpoint of the initial calibration.	1. The percent difference must be less than or equal to 30 for all target analytes 2. Minimum RRF of ≥ 0.05.	1. Reanalyze. 2. If criteria are still not met, identify and correct problem and recalibrate. Samples must not be analyzed until continuing calibration criteria are met.

TABLE 3. VOCS USING USEPA METHOD TO-15 QUALITY CONTROL REQUIREMENTS AND CORRECTIVE ACTIONS

Audit	Frequency	Control Limits	Corrective Action
Method Blank Analysis	Prepared with each analytical sequence of 24-hour period. The method blank is an unused, certified canister that has not left the laboratory. The blank canister is pressurized with humidified, ultra-pure zero air and carried through the same analytical procedure as a field sample. The injected aliquot of the blank must contain the same amount of internal standards that are added to each sample.	1. The laboratory method blank should be analyzed after the calibration standard and before any samples are analyzed. 2. The blank can not contain any target analyte at a concentration greater than the QL or analytes with elution characteristics and mass spectral features that would interfere with identification and measurement of a method analyte.	3. Reanalyze blank. 4. If limits are still exceeded, investigate and correct problem. Otherwise, flag data indicating blank contamination was detected. 5. Document corrective action in the case narrative.
Field/ Equipment Blank Analysis (when requested)	Laboratory-supplied clean canister for each batch of canisters. Collected one per sampling day and/or one after every 20 samples, if required. Canister blank may not be required for a project.	The blank can not contain any target analyte at a concentration greater than the QL or analytes with elution characteristics and mass spectral features that would interfere with identification and measurement of a method analyte.	1. Investigate problem. 2. Document in the case narrative.
Internal Standards	Samples, blanks, LCSs must be spiked with method specified internal standards. Add sufficient internal standard equivalent to 10 ppbv in the sample.	1. The area response for each internal standard must be within ±40 percent of the mean area response of the internal standard in the most recent valid calibration verification. 2. The retention time for each of the internal standards in the blanks must be within ±0.33 minutes between the analysis and the most recent valid calibration verification.	1. Reanalyze. 2. If recovery is still outside criteria, report both analyses. 3. Document corrective action in the case narrative.

TABLE 3. VOCS USING USEPA METHOD TO-15 QUALITY CONTROL REQUIREMENTS AND CORRECTIVE ACTIONS

Audit	Frequency	Control Limits	Corrective Action
Laboratory Control Sample (LCS)	Every 20 samples, one per analysis sequence. LCS will contain all target analytes in each calibration standard, using a second source, at a concentration that is near a midpoint calibration standard.	Recovery within laboratory control limits. For compounds without established laboratory control limits, 70-130% recovery will be used. The lowest acceptable control limits for recovery will be 10%.	If recovery failures are above control limits and these compounds are not detected in the associated samples above the MDL or QL, corrective action is not required. If recovery failures are below control limits, reanalyze LCS and examine results of other QC analyses. If other QC criteria have not been met, stop analysis, locate and correct problem, recalibrate instrument and reanalyze samples since last satisfactory LCS. Document corrective action in the case narrative.
Field Duplicate Analysis	One per 20 samples, or as collected during the project.	Within 25 relative percent difference (RPD) for air samples. For sample results that are less than or equal to five times the QL, the criterion of plus or minus two times the QL will be applied to evaluate field duplicates.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis.
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages.	Not applicable	Not applicable
Sample Analysis	All Canister samples should be at temperature equilibrium in the laboratory.	Not applicable	Not applicable
Sample Dilution	Automatic dilution of samples is permitted to obtain an aliquot of sample from the canister. Samples must be diluted and re-analyzed when concentrations exceed the highest calibration standard.	Makeup air should only be humidified ultra pure air. Air source must be same as that used for method blank preparation. Dilution will keep the concentration in the upper half of the initial calibration range.	Not applicable

TABLE 3. VOCS USING USEPA METHOD TO-15 QUALITY CONTROL REQUIREMENTS AND CORRECTIVE ACTIONS

Audit	Frequency	Control Limits	Corrective Action
Laboratory Control Limits	1. Generated with results for an analyte from a minimum of 20 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable
Deliverables	1. Data deliverables must be provided to document each audit item for easy reference and inspection. 2. An example calculation will be provided for each type of analysis, for each type of matrix in the data package using samples from the project. 3. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. 4. Final spiking concentrations will be presented in summary form. 5. Run logs will be provided in the data packages. 6. Canister pressures prior to shipment and upon receipt, canister certification documentation and leak check evaluation documentation must be included in the data package.	Not applicable	Provide missing or additional deliverables for validation purposes.

Audit	Frequency	Control Limits	Corrective Action
Method Requirements	The laboratory will perform the method as presented in this table and will adhere to the requirements presented herein. Otherwise the laboratory will specifically note any procedures that differ from the method or the table in the data package case narrative.	Not applicable	Not applicable

Notes:
Data validation will be performed in accordance with QA/QC criteria established in the QCD and this table and the analytical methods that are currently used by the laboratory. Excursions from QA/QC criteria will be qualified based on guidance provided in the QCD and this table.
Communications with O'Brien & Gere will be documented and referenced in the data packages.
Source: O'Brien & Gere

Job Safety Analysis

PRE-WORK JSA for Environmental Investigations

This JSA template is most suitable for site surveys, sampling, test trenching, drilling/boring, water studies, wildlife studies, etc.

JSA Title:	Vapor Intrusion Sampling	**Client Name:**	ITT Corporation
Project Name:	Former ITT Rochester Form Machine	**Client Project Manager:**	Lisa Hall
Project Number:	35273	**OBG Project Manager**	Guy Swenson
Project Location:	12 Pixley Industrial Parkway Rochester, NY 14624		
Project Phone No.:	NA	**Prepared By:**	Scott Tucker
Project Fax No.:	NA	**Revision Date:**	
Scope of Work covered by this JSA (identify subcontractors covered by this JSA)	O'Brien & Gere employees will install sampling ports through a building concrete slab using a drill hammer. Ports will be sampled with summa canisters. Upon completion of sampling, sample ports will be sealed.		
Key Hazards (Focus on Highly Hazardous Tasks)	Operation of hammer drill		
Minimum Safety Equipment	*(additional safety equipment may be required for specific hazards identified in the following sections)* ☐ Hard Hat ☒ Safety Glasses ☒ Safety Shoes ☐ Cut-Resistant Gloves ☒ Ear Protection ☐ Other (specify): •		

Pre-Work Documentation & Certifications	**Documentation and Certifications**	**To Be Submitted or Provided By…….**
	☐ Drug Testing (☐ alcohol testing is also required)	
	☒ Project Safety Plan or Job Safety Analysis (JSA)	
	☐ Client/Facility Contractor Safety Orientation	
	☐ Project/O'Brien & Gere Safety Orientation	
	☒ Other (describe below): • Verification of Hazwoper Medical Surveillance • OSHA 40-hr Hazwoper with current 8-hr Refresher •	

Individuals Must Sign The Last Page After Reviewing This JSA.

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)
ELEVATED WORK		
☒ NA	FALLS > **6'** or within **15'** of a ROOF OR MEZZANINE EDGE where the fall is >6'	☐ Existing Guardrails ☐ Hole Covers Marked "HOLE" ☐ Fall Restraint ☐ Temporary Guardrails ☐ Manlifts used for elevated work ☐ _____ ☐ Warning Line 15' from Edge ☐ Fall Arrest w/ harness/lanyard (identify tie-off points) **Fall Protection Comments (describe equipment used):**
☒ NA	LADDERS / STAIRS ☐ Extension Ladders ☐ Step Ladders ☐ Fixed Ladders ☐ Stairs	☐ Employees training in safe ladder use at toolbox safety meeting ☐ Extension ladders are properly footed, secured at top, and setup at proper angle ☐ Stepladders are set on level ground or properly shimmed with spreaders locked. ☐ Stairs have proper rise over run and stairs >4 steps or 4' have guardrails. **LADDERS/STAIRS COMMENTS:**
EXCAVATIONS / TRENCHING (includes test trenches)		
☒ NA	☐ Max Depth ≥ 20' ☐ Max Depth ≥ 5' ☐ Max Depth <5' with potential cave-in hazard ☐ Potential permit-required confined space at depth ≥	☐ Excavation Competent Person Name:_____ Company _____ ☐ Sloping & shoring for excavations ≥20' are approved by a professional engineer ☐ Sloping & shoring for excavations ≥5' when persons are exposed to cave-in. (specify below) ☐ Sloping & shoring for shallow (<5') excavations with cave-in hazard (specify below) ☐ O'Brien & Gere *Daily Excavation Checklist* to be completed by the Competent Person.

	HAZARD	HAZARD CONTROLS (check all that apply and comment as required)
	4' ☐ Underground utilities ☐ Structures/foundations ☐ Falls into excavations ☐ Other:	☐ Excavations ≥ 4' are classified as a non-permit confined space ☐ Excavations ≥ 4' are classified as Alternate Entry or Permit-Required (see confined space) ☐ Underground utilities have been identified and marked. ☐ Local "dig safe" organization has been notified for utility locations in public areas or rights of way. Number: _____ Date: _____ ☐ Hand digging within 3' of utility locations. ☐ Soft-dig/vacuum dig within ____' of utility locations. ☐ Excavations are protected by perimeter fencing (not barricade tape): (☐ rigid fence - chain link or wood ☐ safety fence 6' from edge.) **EXCAVATION COMMENTS:**
CONFINED SPACES		
☒ NA	☐ No Serious Hazards ☐ Toxic Atmosphere ☐ carbon monoxide ☐ hydrogen sulfide ☐ ☐ Flammable Atmosphere ☐ Low Oxygen ☐ Combustible dust ☐ Drowning - high water level or potential for sudden changes in flow or level ☐ Other Serious Hazard:	☐ Confined space is altered so that it is no longer a confined space. (describe below) ☐ Confined space is downgraded to a non-permit confined space. (identify which spaces below) ☐ Alternate Entry is used. (Identify which space qualify for confined space entry below) ☐ Full permit-required confined space entry is used due to presence of serious hazards. ☐ Rescue team has been notified (☐ Paid FD ☐ Volunteer FD ☐ Plant Rescue) Rescue Team:_____ Phone Number: _____ ☐ All entrants and attendants for Alternate Entry and Permit-Required Entry have confined space entry training. **CONFINED SPACE COMMENTS:**
OVERHEAD POWERLINES		
☒ NA	OVERHEAD POWER LINES _____ KV _____ ft above ground _____ KV _____ ft above ground	☐ Request to de-energize lines will be submitted for work within 20' of power lines. Request sent to: _____ Date: _____ ☐ No one will be permitted to work <10' to power lines without lines being de-energized. ☐ Project persons are informed of 20' safety zone around energized power lines. ☐ Project persons are informed of additional restrictions required when working ≤20' but >10': ☐ Dedicated spotter for all elevated work or operation of equipment that can contact lines ☐ Barricades setup at 20' from base of power lines to establish a "restricted work area." ☐ "Power Line Safety Permit' required to work within 20' of power lines. ☐ Power lines are shielded and/or marked with high visibility material **POWER LINE COMMENTS:**
DRILLING / BORING - All self-propelled rigs including trailer-mounted drilling/boring equipment.		
☒ NA	Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Hot Work (open flame) Fluid Leaks ☐ Drilling/Boring Rig: specify type(s) below: _____ _____ _____	☐ **Qualified persons** operate all drilling/boring equipment. Qualifications were determined by: ☐ Work Experience Summary on company letterhead or email with company email address. ☐ Other (describe): _____ ☐ Equipment will be **inspected** upon mobilization by: _____. NOTE - Inspections will include (but not be limited to) the following: leaks, defective safety equipment, and loose/unsecured parts that could fall during operation) ☐ Operators will be reminded of **seatbelt** use by: _____ ☐ **High visibility vests** are required for: _____ ☐ **Cut-resistant gloves** are required when handling cable, rods, and other sharp or "splintery" materials ☐ **Chemical-resistant gloves and clothing** are required while handling grout, cement, chemicals, or contaminated materials including soil or groundwater. (Refer to "Environmental Hazards" section for more information.) ☐ Operators and helpers will maintain a **safe distance** to moving parts. All those working near moving or rotating parts will secure loose hair, clothing, and equipment. All those working near the rods/casings are instructed to not put themselves in a position where they could get hurt if the rods/casings should turn or drop. ☐ Drill rods, casings, and other equipment will be **stored neatly** when not in use and secured to prevent them from falling on, or rolling into, site personnel. ☐ The area will be cleared of **rope, cords, weed-block fabric**, or similar material that could

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)
		become wrapped around the auger, entangle someone and then pull them into the auger. ☐ **Fall protection** will be worn whenever (if) the drilling/boring mast must be climbed above 6'. (Tie-off Points are specified: ☐ in "Comments" below ☐ in the "Fall Protection" section) ☐ Masts located within 20' of an **overhead power line** will only be lowered or raised with a dedicated spotter. (Refer to the "Overhead Powerlines" section of this JSA for additional safety precautions) ☐ Drill rigs will only be **moved with masts lowered**. ☐ Masts will be erected with **outriggers fully extended** when equipped with outriggers. ☐ Outriggers will be placed on a **firm, stable surface** or will be cribbed to prevent sinking of outriggers and collapse of the drilling/boring rig. ☐ Drilling on **sloped surfaces** will be conducted such that the drilling/boring equipment remains stable and otherwise in accordance with requirements outlined below in Drilling/Boring comments. ☐ Damage to **underground utilities** will be prevented by cribbing outriggers to spread the load or relocated outriggers so they are not placed on utilities. ☐ Procedures for responding to **natural gas emissions** (explosive vapors) are: ☐ Outlined in "Comments" below. ☐ Outlined in an attached procedure. ☐ Procedures for drilling/boring from a **barge** or otherwise working over water are: ☐ Outlined in "Comments" below. ☐ in the "Working Over Water" section. ☐ Drilling/boring equipment will be **de-energized and locked-out** prior to maintenance. ☐ Site personnel working in the area surrounding the drilling/boring rig have will be informed where the **emergency shutoff** in the event of an emergency. Specify the location of the shutoff in the "Comments" section below. ☐ **Spill equipment** is available for fuel and hydraulic fluid leaks. Location; _____ **DRILLING/BORING COMMENTS:**
HEAVY EQUIPMENT (other than drilling/boring rigs)		
☒ NA	Struck By, Run-Over, Caught In Between (pinch points), Roll Over, Fluid Leaks ☐ Excavator ☐ Dump Truck ☐ mini Skid Steer (bobcat) ☐ mini Excavator ☐ Gator/Off-Road Vehicle ☐ Other:_____ ☐ Other:_____ ☐ Manlift - specify type(s):	☐ **Qualified persons** operate all heavy equipment. Qualifications were determined by: ☐ Work Experience Summary on company letterhead or email w/ company email address. ☐ Other (describe): _____ ☐ **Equipment will be inspected** upon mobilization by: _____. (NOTE - All leaks or defective safety equipment must be repaired before use.) ☐ Operators are required to wear **seatbelts** for all equipment provided with seatbelts. ☐ **High visibility vests** are required for: _____ ☐ Operators will review manufacturer's safety guidelines for all **equipment operated on slopes** including Gators© and similar ATVs/4x4's. (In the "Comments" section below, specify the maximum slope for each piece of equipment that will be operated on slopes. This may be completed upon mobilization.) ☐ Dump trucks, 4x4's, or other haul vehicles will not be loaded beyond manufacturer **capacities or weight limits** established by state and local authorities for transportation. ☐ **Counterweight swing radius** will be barricaded. ☐ Operators and helpers will maintain a **safe distance to moving parts**. All those working near moving or rotating parts will secure loose hair, clothing, and equipment. ☐ Fall protection will be worn by all those in **manlifts** (scissor lifts are excepted: ☐ Yes ☐ NO) ☐ **Spill equipment** is available for fuel and hydraulic fluid leaks. Location; _____ **HEAVY EQUIPMENT COMMENTS:**
POWER TOOLS, HAND TOOLS & AUGERS, EXTENSION CORDS, & ELECTROFISHING (FISH SHOCKING) EQUIPMENT		
☐ NA	eye injury, hand/arm cuts, electrical shock, strains, foot injuries, dust ☐ Misc Handtools (shovels, hammers, trowels, etc.) ☐ Chainsaws (Clearing & Grubbing) ☐ Sharp hand-tools (knives, cutters, scissors) ☐ Electrofishing (Fish Shocking) Equipment ☐ Hand Augers - Iwan or	☒ All tools and electrical cords in-use will be **inspected daily** by: **X** Users ☐ Site Supervisor/Safety Coordinator ☐ Other: _____ ☒ Only the right tools will be used in a manner for which they were designed. ☒ **GFCIs** will be used on all extension cords and 120v power tools. ☒ All **extension cords** are in good condition with no cuts through outer insulation, ground plugs are present, and no "vinyl tape" repairs. (Only 12 gauge extension cords may be repaired.) ☐ **Face shield** and safety glasses used (required for chain saws and chemical handling) ☐ **Kevlar chaps and jacket** (required for all chainsaw work) ☐ **Cut-resistant gloves** are worn whenever cutting tools are used. ☐ **Safety cutters or scissors** are required for all cutting activities (no fixed-blade knives). ☒ **Hearing protection** required for which tools or areas: _____

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)
	Spiral type ☐ Hand Sampler - Split Spoon or Thin Wall ☐ Hand Probe (GeoProbe) with ____ lb weight ☐ Manual Cathead Hoist with _____ lb weight ☐ Motorized Cathead Hoist with ____ lb weight ☐ Light-weight Motorized Auger drills (not truck-mounted) ☐ Manhole Lifting Devices **(specify in Comments)** ☒ Other (specify): Hammer Drill	_____ ☐ All **hand augers and sampling probes** will be inspected and verified to be in good conditions with ALL parts required by the manufacturer. Inspections will be completed by: ☐ Users ☐ Site Supervisor/Safety Coordinator ☐ Other: _____ ☐ Persons using sampling probes equipped with **manual slide hammers** are physically capable of handling the weight without difficulty and keep hands clear of pinch-points. ☐ Persons using **manual and motorized cathead hoists** have been trained on how to operate them in accordance with manufacturer guidelines. **(Identify qualified persons by name in the "Comments" Section below.)** ☐ Electrofishing equipment will be **inspected** and verified to be in good conditions with ALL parts required by the manufacturer and exterior cords have no cuts through outer insulation and no "vinyl tape" repairs. Inspections will be completed by: ☐ Users ☐ Site Supervisor/Safety Coordinator ☐ Other: _____ ☐ Persons using **Electrofishing Equipment** have been **trained** on how to operate it in accordance with manufacturer guidelines. **(Identify qualified persons by name in the "Comments" Section below.)** ☐ Electrofishing will be discontinued if the **public** approaches within **100'** ☐ Electrofishing boats will be marked with "**Danger Electricity**" signs (or equivalent) that can be read at a distance of **150'**. ☐ All electrofishing team members wear **electrically-rated rubber gloves** that are inspected daily by users and replaced every 6 months. Use leather or other cut-resistant gloves to protect the rubber gloves. (Similar to NFPA 70E requirements.) ☐ All electrofishing team members wear **chest or hip waders** to insulate the wearer from electrical shock. ☐ **Net handles** for nets used during electrofishing will be nonconductive and long enough to keep hands out of the water. ☐ The positive electrode (anode) on portable electroshockers is equipped with a **manual switch** that stops the current when released and is **not "bypassed'** with a hold-down mechanism (i.e., tape) ☐ At least **two (2) persons** on each Electrofishing boat or location are trained in **CPR**. ☐ All personnel involved in electrofishing know the location of the **emergency shutoff switch**. ☐ **Backpack electrofishing equipment** is equipped with a **tilt switch** that stops the current if the operator falls. **POWER TOOLS, HAND TOOLS & AUGERS, EXTENSION CORDS, & ELECTROFISHING COMMENTS:**
WORKING OVER/NEAR WATER OR ON ICE		
☒ NA	drowning, hypothermia (winter months), spills to surface waterways, fall through ice ☐ Barge-mounted drilling/boring rigs ☐ Sampling from a boat ☐ Boat required for site access ☐ Work on an ice covered body of water ☐ Other:	☐ 100% Fall Protection while working over water or when otherwise exposed to a drowning hazard. **(Describe how fall protection will be implemented, Tie-off points, and the equipment that will be used.** ☐ in "Comments" below ☐ in the "Fall Protection" section) ☐ A "**safety observer**" will remain on shore with the ability to contact emergency response personnel and communicate with those on boats/barges. ☐ USG-approved **flotation vests** will be used. ☐ **Ring-buoy** with 90' of rope and placed within 100' of site personnel. ☐ **Rescue skiff** will be staged such that one person can immediately launch the skiff. ☐ At least **one person will be available to launch** and operate the rescue skiff. NOTE - "Safety Observer" may launch rescue skiff after making emergency response notification(s). ☐ Ice Safety - **Core samples** will be taken every 100' on lakes or 50' on rivers to evaluate the thickness and quality of ice (i.e., *clear/blue ice* = best quality, *white/opaque ice* = moderate quality/use caution, *gray/slushy ice* = poor quality/unsafe). ☐ Ice Safety - Conservative **load estimates** are established for static and/or moving loads as appropriate for the type of work being conducted. Load estimates are explained: ☐ in "Comments" below ☐ in an attached document ☐ Spill Control - **Floating booms** will be used around barges, shore-based heavy equipment, or other locations where hydraulic fluid may leak from equipment into surface water. ☐ Spill Control - **Silt curtains** will be suspended below floating booms. ☐ Boats and Barges will not be operated above their **weight capacity**. ☐ Boats and barges operated (or potentially operated) in **bad weather** will be operated below their weight capacity by _____% (suggest at least 25%). ☐ Boat and barge emergency calls - **Weather resistant radios** that broadcast on Coast Guard frequencies (Channel 16 VHF/FM or 2182 MHZ) will be available for emergency calls. ☐ Boat or barge-based operations will be discontinued when NOAA issues a **small craft**

HAZARD		HAZARD CONTROLS (check all that apply and comment as required)
		advisory or when sustained **wind speeds of 20 mph** are observed and create dangerous wave or boat/barge handling conditions. ☐ **NOAA Weather Radio Receiver** will be used to monitor weather conditions that may affect boat or barge-based activities. **WORKING OVER WATER COMMENTS:**
MANUAL MATERIAL HANDLING / MATERIAL STORAGE / HOUSEKEEPING		
☒ NA	back or shoulder strain, struck by falling objects, trips and falls, incompatible materials (fire or explosion) ☐ hvy manual lifting (>50 lbs) ☐ chemical storage ☐ compressed gas storage ☐ Tall storage greater than 2 pallets stacked. ☐ Material & equipment laydown areas ☐ Trash & debris removal ☐ Temporary cords & hoses placed across walkways ☐ ☐ ☐	☐ Mechanical lifting equipment used to reduce manual material handling: (☐ Forklift/Lull ☐ Heavy Equipment ☐ Dolly ☐_____) ☐ Manual lifting more than 75 lbs by a single person will be avoided. ☐ Good manual lifting techniques will be reviewed with the following trades/persons prior to site work: _____ ☐ "Hay Hook" style manhole removal tools will NOT be used to remove manhole covers. ☐ "Hay Hook" style manhole removal tools will be used AND the justification why an alternate, lower-stress removal tool is not available is in the "Comments" section below. ☐ Incompatible chemicals will be separated by 20' or a concrete block wall. ☐ Secondary containment will be provided for the following chemicals: _____ _____ ☐ Safety equipment will be located near chemical storage. ☐ Spill Kit ☐ Emergency Shower ☐ Eyewash ☐ Drench Hose ☐ Splash PPE ☐ Flammable gases and oxygen will be separated by 20'. ☐ All compressed gas cylinders will be transported vertically and secured upright. ☐ Equipment and materials will be stacked in laydown areas with aisles as necessary for safe access. All un-used equipment & materials will be returned to laydown areas daily. Designated laydown areas:_____ ☐ Materials will not be stacked greater than 2 pallets high without being secured. ☐ Trash and debris will be removed daily and placed in designated containers. Specify debris segregation and location of disposal containers below. ☐ Hoses & Cords will be run out of walkways (e.g., within 6" of walls or 7.5' overhead) whenever possible or will be clearly marked by cones or barricades. ☐ All chemical containers will be labeled per Hazard Communication requirements. **MATERIAL HANDLING & HOUSEKEEPING COMMENTS:**
ROADWAY, RAILROAD, & SIDEWALK OBSTRUCTION		
☒ NA	☐ Vehicle accidents ☐ Pedestrians struck by vehicles or heavy equipment ☐ Pedestrians falls ☐ Pedestrian struck-by falling objects ☐ Railroad accidents	☐ DOT signal devices will be used to re-route vehicles around excavations or busy site entrances/exits that affect road traffic. ☐ Roadway Flaggers will be used and have DOT Flagger Training ☐ Pedestrian traffic will be safely routed around or over excavations. ☐ Pedestrian traffic will be safely routed around or under overhead work. ☐ Railroad owner notified for permission to work on the railroad right-of-way. ☐ Railroad flagger is required for work in the right-of-way. ☐ Equipment, materials, and personnel may not be closer than 15' to the nearest railroad rail if the railroad flagger or the flagger's signal is not visible. ☐ Derailer(s)/bumper(s) will be installed on railroad tracks to isolate the work area. **ROADWAY, RAILROAD, & SIDEWALK COMMENTS:**
BIOLOGICAL HAZARDS		
☒ NA	Infection, Lyme Disease, West Nile Virus, Eastern Equine Encephalitis (EEE), Severe Rash, Allergic Reaction, Venom effects ☐ Ticks ☐ Mosquitoes (EEE, WNV, etc) ☐ Venomous Snakes ☐ Venomous Spiders ☐ Poison Ivy, Oak, or Sumac	☐ Use **DEET** (25%-98%) repellent on skin for protection against mosquitoes, ticks, and similar insects. Use higher concentrations for heavily infested areas. ☐ Use **Permethrin** repellent on clothing in areas heavily infested with ticks, chiggers, etc. ☐ All site personnel will be instructed on how to **identify poison ivy, sumac, and oak**. (O'Brien & Gere Field Identification Guide or equiv. has been posted? ☐ YES ☐ NO) ☐ Poison ivy **barrier creams** (e.g., Ivy Block) will be used on exposed skin prior to the workday. ☐ Poison ivy **neutralizing wipes or rubbing alcohol** will be used on hands and exposed skin following work activities or incidents where contact with poison ivy/oak/sumac is suspected. ☐ **Protective coveralls** (such as Tyvek) will be used to prevent contact with ticks or poison ivy. ☐ All site personnel will be instructed on how to **identify venomous snakes** indigenous to the area. List venomous snakes of concern in the "Comments" section below. (O'Brien & Gere Field Identification Guide or equiv. has been posted? ☐ YES ☐ NO)

HAZARD	HAZARD CONTROLS (check all that apply and comment as required)
☐ Bees & Wasps ☐ Fire Ants ☐ Other (identify below):	☐ All field personnel with a potential to **encounter venomous snakes** will wear: ☐ Snake Chaps AND/OR ☐ High Leather Safety Boots (NOT ankle-high boots/shoes) ☐ All site personnel will be instructed on how to identify **venomous spiders** indigenous to the area. List venomous spiders of concern in the "Comments" section below. (O'Brien & Gere Field Identification Guide or equiv. has been posted? ☐ YES ☐ NO) ☐ Site personnel with known **allergies** to bee/wasp stings, fire ant bites, or other insect bites carry an "EpiPen" or equivalent medication prescribed for treating allergic reaction. **BIOLOGICAL HAZARDS COMMENTS:**

ENVIRONMENTAL & CHEMICAL HAZARDS / HAZARDOUS WASTE SITE WORK

☐ NA

Exposure to hazardous vapors or dust, contact with contaminated materials, fire, explosion.

Contaminants of Concern and hazardous chemicals include:

☒ volatile organic compounds (describe: Chlorinated volatile organic compounds)
☐ semivolatile organic cmpds (describe:_____ _____)
☐ metal dusts (describe:_____ _____)
☐ PCBs
☐ Caustic (NaOH)
☐ Acid (H2SO4, HCL)
☐
☐

(many other hazardous waste and chemical hazards are covered elsewhere in this JSA)

☐ Site workers with a potential for contact with contaminated materials and work in Level C PPE will have OSHA 40-hour training, current 8-hour refresher, and medical exam.
☐ Site workers with minimal contact with contaminated materials and no work in Level C PPE will have OSHA 40-hour OR 24-hour training, current 8-hour refresher, and medical exam.
☐ Foremen or Supervisors overseeing field crews will have 8-hour OSHA Supervisor training.
☐ No intrusive work activities or areas are anticipated with current scope of work.
☒ Intrusive work activities include: Penetrating building slab with hammer drill
☐ The perimeter of intrusive work areas are identified by:_____
☒ Decontamination of personnel or equipment is not anticipated with the current scope of work.
☐ Decontamination of personnel and small tools will be conducted as follows: _____ _____
☐ Decontamination of heavy equipment will be conducted as follows: _____ _____ _____
☐ Heavy equipment leaving the site will be inspected by: _____
☒ Work area monitoring is not anticipated with the current scope of work.
☐ Work area air monitoring will be conducted per attached air monitoring plan & action levels.
☐ **Work Area Air Monitoring** as follows for: ☐ Dust, ☐ VOCs, ☐ Other:_____
(**NOTE** - Insert additional or revise existing response actions as appropriate)

Action Levels	Description & Response Actions
	1. Level C PPE - Tyvek, boot covers, nitrile gloves, half or full face w/ respirator with _____ cartridges changed (☐ daily, ☐ _____) OR 2. Reduce contaminant concentrations below action level(s).
	1. Level B PPE - Same as above except with a supplied air respirator OR 2. Reduce contaminant(s) below Level B action level(s).
	1. STOP work

☒ Community Air Monitoring is not anticipated with the current scope of work.
☐ Community Air Monitoring is required per the attached air monitoring plan & action levels.
☐ **Community Area Air Monitoring** as follows for: ☐ Dust, ☐ VOCs, ☐ Other:_____
(**NOTE** - Insert additional or revise existing response actions as appropriate)

Action Levels	Description & Response Actions
	1. If dust or odors are observed leaving the site perimeter, then dust/odor controls must be implemented. 2. If dust/odor controls fail to prevent dust/odor emissions from leaving the site, then **STOP** work and notify the client contact.
	1. Use dust/odor suppression techniques outlined in the "Comments" section. 2. Evaluate additional techniques or controls if necessary. 3. Notify the client contact.
	1. STOP work

ENVIRONMENTAL & CHEMICAL HAZARD COMMENTS:
Exposure to VOCs will be very limited, as once sub-slab hole is open, it will be sealed within minutes with a sample probe and peragum.

Post Emergency Response Information On-Site or Retain Near Work Area

EMERGENCY RESPONSE			
(911 Service is Available ☒ Yes ☐ No **Cell Phone Required** ☐ Yes ☒ No) **Alternate Emergency Number (if not "911"):**			
Site Address:	12 Pixley Industrial Parkway, Rochester, New York 14624		
Muster Point in case of site evacuation:	Former ITT Rochester Form Machine Facility, 30 Pixley Industrial Parkway		
Emergency Medical Treatment - Hospital Name: Hospital Address:	Strong Memorial Hospital 601 Elmwood Ave, Rochester, NY	**Number:**	585-275-2100 (911)
Non-Emergency Med. Treatment - Clinic Name: Occupational Clinic Address:	XpressCare Medical at Westside 1637 Howard Road, Rochester, NY	**Number:**	585-429-9777 (911)
Fire Department Name	Gates Fire Department	**Number:**	585-426-2720 (911)
Spill Response:	NYSDEC	**Number:**	800-457-7362
Client Representative Name::	Lisa Hall	**Office Number:** **Cell Number:**	714-630-3175 ext.15 714-337-6278
O'Brien & Gere **Project Manager** Name:	Guy Swenson	**Office Number:** **Cell Number:**	315-956-6342 315-506-3063
O'Brien & Gere **Corporate H&S** Name:	Jeff Parsons	**Office Number:** **Cell Number:**	315-956-6871 315-391-0638
Contact Name:		**Office Number:** **Cell Number:**	
Contact Name:		**Office Number:** **Cell Number:**	

EMERGENCY RESPONSE COMMENTS:

1. Upon occurrence of any injury, fire, explosion, major spill (beyond incidental), property damage >$1,000, or near-miss that could have resulted in a fatality or disabling injury, **IMMEDIATELY NOTIFY** the O'Brien & Gere Project Manager, O'Brien & Gere Manager of Corporate H&S, and the Client Representative.
2. Complete an *Incident Report* within **24 hours** and submit to the O'Brien & Gere Manager of Corporate H&S for review.
3. First Aid and CPR supplies are located in the First Aid kit in the vehicle. Spill Supplies are not needed for this task.
4. Emergency numbers and Hospital Route Map are posted below.

Individuals who are performing work covered by this JSA have received a **project-specific safety orientation** that includes a review of the safety requirements outlined in this JSA. The undersigned individuals acknowledge that they have read this JSA and/or reviewed this JSA with the Project Supervisor, Superintendent, or Foreman and agree to comply with safety requirements outlined herein. The undersigned individuals understand that these safety requirements are not "all-inclusive" and that they will be expected to follow any additional safe work practices applicable or customary to their specific scope of work or trade.

Print Name	Signature	Company	Date

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