MACTEC

engineering and constructing a better tomorrow

December 18, 2015

Division of Environmental Remediation
Remedial Bureau E, 12th Floor
New York State Department of
Environmental Conservation
625 Broadway
Albany, New York 12233-7017

Attention: Joshua Haugh, Project Manager

Subject: More Fire and Glass Studio – Sub-Slab Depressurization System Upgrade
Scobell Chemical – NYSDOT Site (828076) Remedial Design WA D007619-32
MACTEC Engineering and Consulting, P.C. Project No. 3617147328

Dear Mr. Haugh:

MACTEC Engineering and Consulting, P.C., (MACTEC), under contract to the New York State Department of Environmental Conservation (NYSDEC) (Work Assignment number D007619-32) is providing this letter report to document the sub-slab depressurization system (SSDS) upgrades that were conducted from August to October 2015 at 80 Rockwood Place, a commercial property adjacent to the Scobell Chemical-New York State Department of Transportation (NYSDOT) site (Site), NYSDEC Site Number 828076.

BACKGROUND

80 Rockwood Place is a commercial property adjacent to the Scobell Chemical-NYSDOT site at 1 Rockwood Place in the Town of Brighton, Monroe County, New York. The Scobell Chemical-NYSDOT site is the location of a former chemical repackaging company that operated at this location from the 1920s until 1986. The Site buildings and contaminated soil were removed from the Site in 1988 during a NYSDOT highway reconstruction project. Investigations conducted to date have

identified volatile organic compounds in soil, bedrock and groundwater below and surrounding the Site, primarily the chlorinated solvent trichloroethene (TCE).

Soil vapor and indoor air samples were collected from commercial and residential properties surrounding the Site in 2012. Based on TCE concentrations detected in sub-slab vapor from beneath 80 Rockwood Place, a potential exposure pathway was identified and two SSDSs were installed by Mitigation Tech, under direction of the NYSDEC to vent vapors from beneath the slab of two adjacent structures to the exterior air; one on the eastern side of the main building, and one at the northern building on the property.

A remedial design pilot study commenced at the Scobell Chemical – NYSDOT site in August 2015. During the implementation of the pilot study, the tenants of the adjacent northern building located at 80 Rockwood Place (More Fire and Glass Studio [MFGS]) observed odors and notified the NYSDEC. As a result, the pilot study was halted and the effectiveness of the SSDS was evaluated and the potential for a complete vapor intrusion pathway was assessed.

SSDS PERFORMANCE EVALUATION& UPGRADES

In consultation with the NYSDEC and the New York State Department of Health (NYSDOH), an evaluation of the SSDS at 80 Rockwood Place was conducted by Mitigation Tech. MACTEC provided oversight during the system evaluations and upgrades; oversight documentation and sketches are included in Attachment 1. Mitigation Tech's Construction Completion Report is included as Attachment 2. Photographs of the MFGS are included in Attachment 3. Air sampling conducted throughout the SSDS evaluation and upgrades were reported under separate cover (MACTEC, 2015a; and MACTEC, 2015b).

Upon initial inspection of the MFGS building on August 27th, 2015, floor cracks were observed in the northeast section of the building. Photoionization readings greater than 1000 parts per million were also observed in the vicinity of these cracks. The cracks appeared to be the result of settling of the foundation, possibly from erosion of the northeast corner of the foundation. The cracks were sealed and vacuum testing conducted. The vacuum testing indicated that the SSDS was not producing a negative pressure differential under the entire slab.

The original SSDS included three separate vacuum extraction points connected to one blower/fan. As a result of the inspection, and to get adequate vacuum under the entire slab, the system was modified from September 9 to 11, 2015, including:

- Sealing of observed floor cracks.
- Sealing the northeast corner of the foundation with 2-inch foam board insulation and urethane sealants.
- Installation of a new, single extraction point in the northeast corner of the MFGS building connected to a Radonaway RP-265 Fan.
- Installation of a new extraction point, connected to the original three extraction points system.
- Upgrade of the original blower/fan to a high pressure radial blower (OBAR 76-UD fan).
- Installation of four permanent vacuum measurement points to serve as sub-slab vapor sampling and sub-slab vacuum measuring points.

During SSDS upgrades, minimal sub-slab vacuum was observed beneath the portion of the MFGS building that connects the MFGS building to the main building to the south (i.e., office/gallery portion of MFGS). However, the indoor air concentrations in this portion of the MFGS building were lower than the concentrations observed in the main MFGS building (Attachment 1). As a result, the NYSDOH and NYSDEC did not require additional mitigation measures in this portion of the building.

On September 11, upon completion of the upgrade, vacuum field extension communication testing was performed across the sub-slab of the main MFGS building. Evaluation indicated that the system was maintaining sufficient vacuum beneath the slab of the main MFGS building (notes included in Attachment 1). Four permanent vacuum measurement points were installed on October 6, 2015 (installation procedures included in Attachment 1) and showed sub-slab vacuum measurements as follows:

Test Point	**Vacuum in negative water column inches**
TP-1	0.013
TP-2	0.012
TP-3	0.006
TP-4	0.004

Additional details can be found in Mitigations Tech's Construction Completion Report (Attachment 2), which includes a drawing of mitigation suction points and vacuum test points.

If you have questions on the material provided herein, please feel free to contact us at 207-775-5401.

Sincerely,

MACTEC Engineering and Consulting, P.C.

Charles Staples
Technical Lead

Jayme Connolly
Project Manager

Enclosures (3)

Attachment 1: MACTEC Field Notes
Attachment 2: Mitigation Tech Installation Completion Report
Attachment 3: Photographs

REFERENCES

MACTEC, 2015a. Letter report from MACTEC Engineering and Consulting, P.C., to Attention Joshua Haugh, Project Manager, New York State Department of Environmental Conservation, Subject: 80 Rockwood Place – Soil Vapor Intrusion Sampling Results, Dated October 1, 2015.

MACTEC, 2015b. Letter report from MACTEC Engineering and Consulting, P.C., to Attention Joshua Haugh, Project Manager, New York State Department of Environmental Conservation, Subject: 80 Rockwood Place – Soil Vapor Intrusion Sampling Results – October 2015, Dated November 16, 2015.

ATTACHMENT 1

MACTEC FIELD NOTES

Memo

More Fire Glass Studio Sub-Slab System Installation Oversight

Location: 80 Rockwood Place, Rochester, NY
Dates of activity: Sept 9-11, 2015
MACTEC Proj #: 3617147328

Personnel involved:
Property Owner: Margaret
Property Tenant: Elizabeth Lyons (More Glass Studio)
Contractor: Mitigation Tech
Nick Mouganis
Aaron Huryst
Bob Beck
MACTEC Oversight: John Luttinger

Background Information:

The subject property is adjacent to (west) the Former Scobell Chemical Site. A sub-slab depressurization system (SSDS) was installed at the subject property in July 2012 by Mitigation Tech. In August 2015 the property tenant noticed chemical odors in their “Tool Room” the occurrence of which was coincident with initiation of work at the adjacent Scobell Chemical Site. Work at Scobell Chemical was stopped and regulatory authorities (New York State Department of Environmental Protection [NYSDEC]) were notified.

After an assessment of the situation, Mitigation Tech was contracted to provide enhancements to the existing SSD system. This memo provides a summary of those activities.

Initial Assessment

Upon arrival on September 9, 2015, Mitigation Tech (MTG) assessed operation of the existing SSDS. One suction point was located in the tool room and the vacuum on the system was approximately 1.8 water column inches (WCI). Two test points were installed in the tool room and a positive pressure was observed (~+ 0.010 WCI) beneath the slab, indicating that the SSDS was not creating a vacuum under the tool room. This positive pressure varied with the operation (on/off) of the fan venting the tool room as well as position of the doors (open or closed). Vacuum was present at existing test points within the main portion of the building.

Foundation Issue

Cracks were observed in the foundation wall in the area of the affected tool room. These cracks likely allowed air to enter from beneath the slab and reduced the effectiveness of the SSDS. MTG utilized two-inch rolled foam material to seal the accessible cracks (the property owner did not want expanding spray foam utilized). Sealing these cracks reduced the positive pressure beneath the slab of the tool room though it was still unacceptable.

Added Vent Points

It was clear that in order to achieve a vacuum beneath the slab of the tool room at least one additional suction point would be required. The property owner expressed reservations about compromising the integrity of the slab with numerous vent points and requested to be informed of all such penetrations.

MTG sequentially tested three vent points utilizing various fans in order to ascertain what vent location and size of fan would be necessary to achieve a vacuum beneath the tool room slab. After evaluating conditions they recommended:

- Adding two additional suction points in the affected Tool Room (SP4 and SP5)
- Utilize a new high volume fan dedicated to SP5 (near the foundation crack)
- Tie SP4 into the existing SSDS and replace that existing fan with a high pressure fan allowing more vacuum.

This recommendation was relayed to NYSDEC and a decision was made to proceed.

Performance of Modified System

MTG implemented the modifications to the existing SSDS as well as the addition of a new SSDS as recommended. The fans installed were as follows:

- High Volume Fan: Radonaway RP-265
- High Pressure Fan: Obar 7600

The high vacuum fan increased system vacuum from the originally observed 1.8 WCI to 5.6 WCI. The new high volume fan provided a system vacuum of 1.4 WCI.

Photoionization detector (PID) measurement were obtained on the roof of the building near the exhaust of the two new fans. The PID readings were as follows:

- High Vacuum Fan 1180 parts per billion (ppb) (ventilation from 4 vent points)
- High Volume Fan 5600 ppb (ventilation from 1 vent point in Tool Room)

Vacuum at the fourteen test points (T1 to T14 on attached sketch) within the More Glass Studio were measured under normal and “worse case” scenarios on September 11, 2015. The “worst case” scenario was tested when the fan in the Tool Room was operating (the tenant reports this is a rare occurrence, only several hours per year). Vacuum was achieved at all points with considerable increases in the Tool Room (T8, T11 and T12, see accompanying sketch). In addition to the vacuum measurements, PID readings in parts per billion volume were measured on September 11, 2015 after the system had been operating overnight (also shown on attached sketch compared to readings on August 28, 2015).

October 6, 2015 Update

The performance was evaluated on October 6, 2015. The system appeared to be operating as planned.

Additional PID readings were collected at the facility with a ppb Rae 3000 (after replacing PID due to moisture issues resulted in calibration failure), with results as follows:

- Interior = <1 ppb

- Exterior – ground level near building = <1 ppb
- On roof at exhaust of high volume fan vent = 360 ppb
- On roof at exhaust of high vacuum vent = <1 ppb
- On roof, in center of roof = 160 ppb

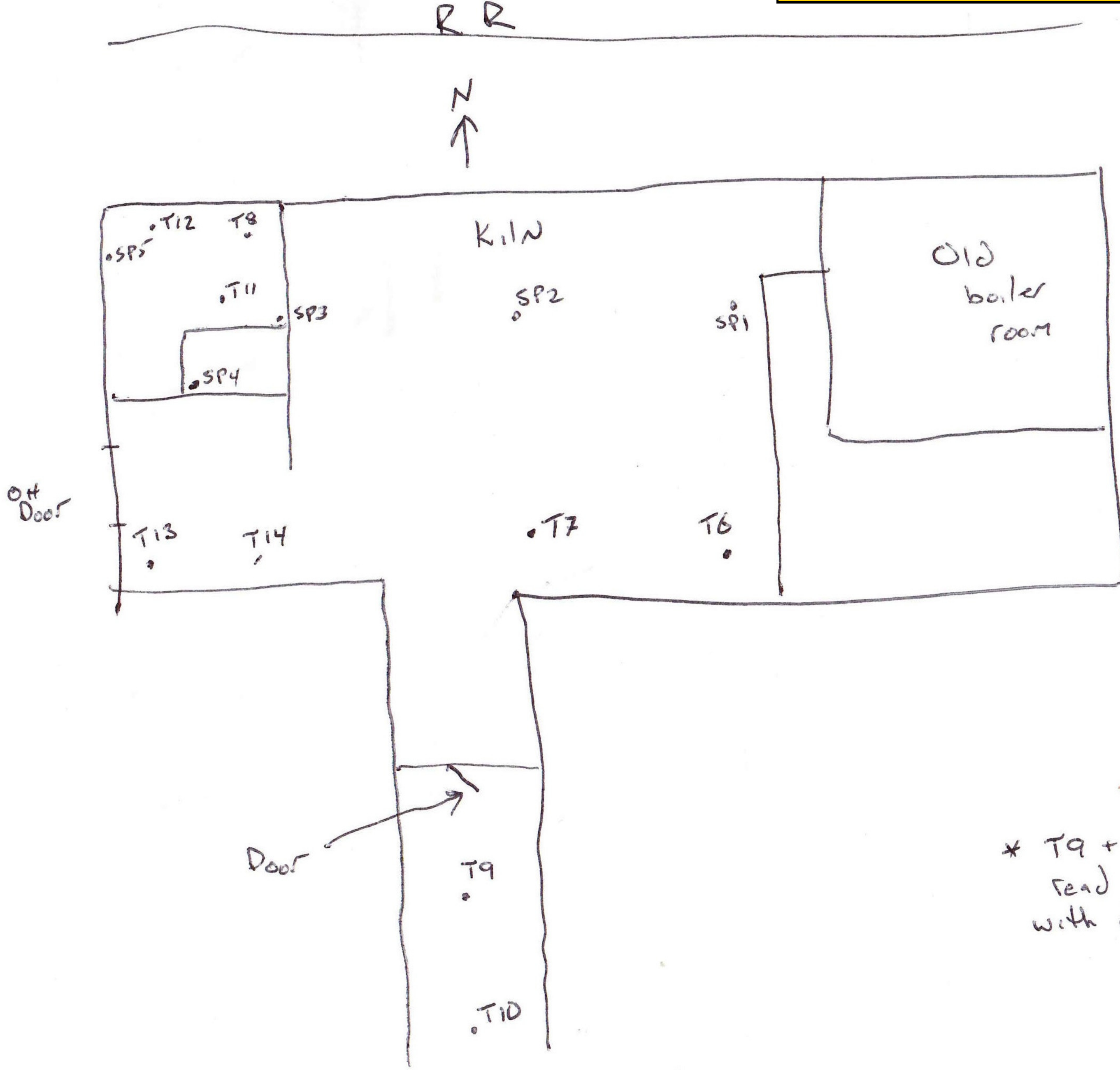
Four permanent vacuum test points (VaporPins®) were installed at previous vacuum locations:
TP-1 installed at the T7 location
TP-2 installed at the T8 location
TP-3 installed at the T13 Location
TP-4 installed at a new location, northeast of Suction Point 1 (SP1).

The VaporPins® installation directions are attached.

9/11/15
4:50 PM
More Glass

SKETCH OF MORE FIRE GLASS STUDIO
80 ROCKWOOD PLACE
T = vacuum measurement point
SP = SSDS suction point

SP1 to SP-4 attached to pressure Obar 7600 fan
SP-5 attached to high volume RadonAway RP265 Fan.



Vacuum (WCI)

T	Fan On	Fan Off
6	-.024	-.026
7	-.017	-.018
8	-.003	-.006
9*	-.002	-.002
10*	-.006	-.004
11	-.022	-.026
12	-.120	-.126
13	-.003	-.002
14	-.002	-.002

* T9 + T10 read 0.0 with door open

JOB NO. 3617147328 SHEET 1 OF 1
PHASE TASK .03
JOB NAME Scobell
BY JKR DATE 8/28/2015
CHECKED BY C. Staples DATE 10/22/15

Note: Used prior survey map of 8/28 to record data collected on 9/11/15
L 9/11/15 readings in yellow

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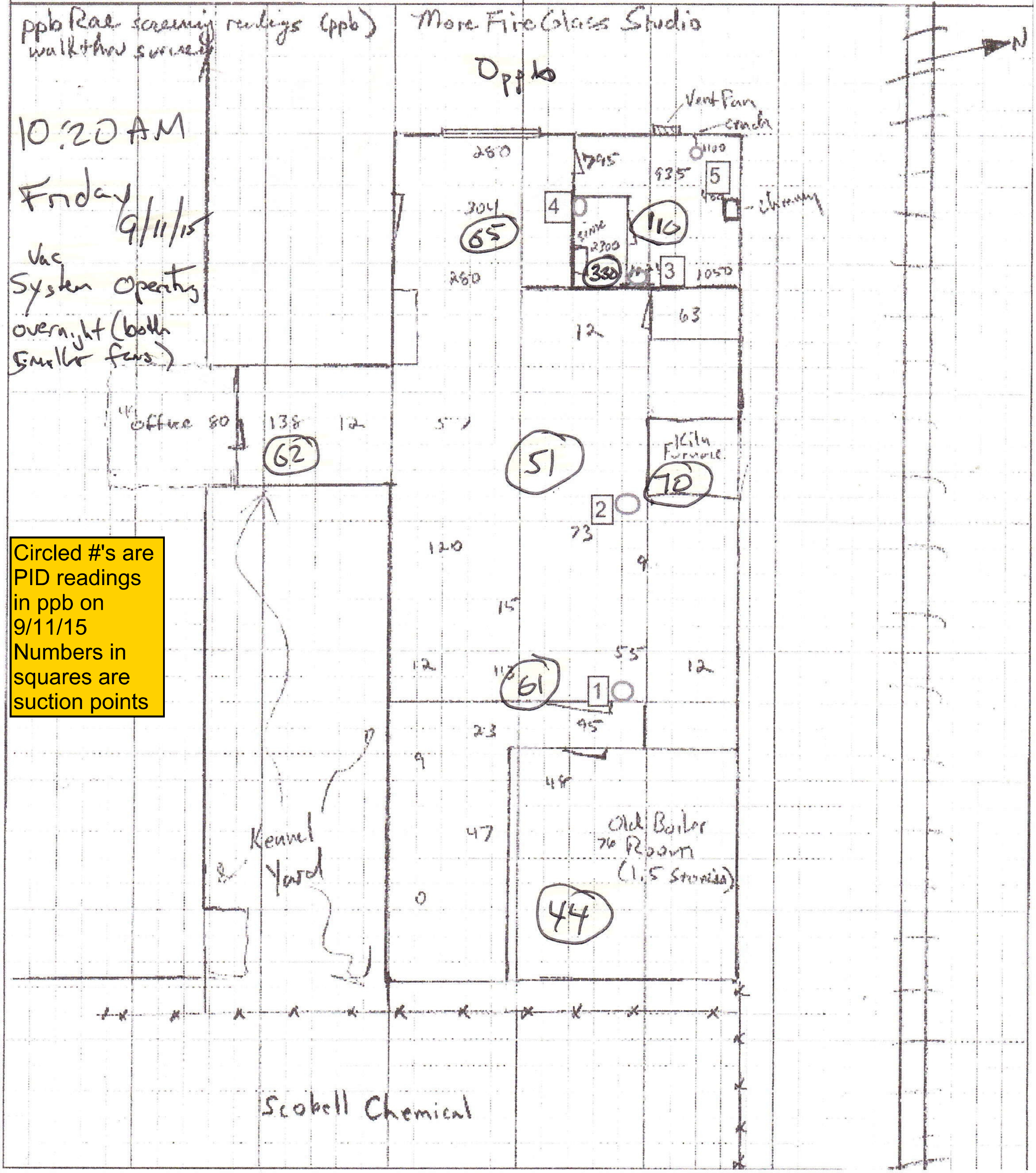

480-86675 Orlelle Johnson 484 685 0864

Standard Operating Procedure Installation and Extraction of the Vapor Pin™

Updated April 3, 2015

Scope:

This standard operating procedure describes the installation and extraction of the Vapor Pin™ for use in sub-slab soil-gas sampling.

Purpose:

The purpose of this procedure is to assure good quality control in field operations and uniformity between field personnel in the use of the Vapor Pin™ for the collection of sub-slab soil-gas samples or pressure readings.

Equipment Needed:

- Assembled Vapor Pin™ [Vapor Pin™ and silicone sleeve(Figure 1)]; Because of sharp edges, gloves are recommended for sleeve installation;
- Hammer drill;
- 5/8-inch (16mm) diameter hammer bit (hole **must** be 5/8-inch (16mm) diameter to ensure seal. It is recommended that you use the drill guide). (Hilti™ TE-YX 5/8" x 22" (400 mm) #00206514 or equivalent);
- 1½-inch (38mm) diameter hammer bit (Hilti™ TE-YX 1½" x 23" #00293032 or equivalent) for flush mount applications;
- ¾-inch (19mm) diameter bottle brush;
- Wet/Dry vacuum with HEPA filter (optional);
- Vapor Pin™ installation/extraction tool;
- Dead blow hammer;
- Vapor Pin™ flush mount cover, if desired;
- Vapor Pin™ drilling guide, if desired;
- Vapor Pin™ protective cap; and
- VOC-free hole patching material (hydraulic cement) and putty knife or trowel for repairing the hole following the extraction of the Vapor Pin™.

Figure 1. Assembled Vapor Pin™

Installation Procedure:

1) Check for buried obstacles (pipes, electrical lines, etc.) prior to proceeding.

2) Set up wet/dry vacuum to collect drill cuttings.

3) If a flush mount installation is required, drill a 1½-inch (38mm) diameter hole at least 1¾-inches (45mm) into the slab. Use of a Vapor Pin™ drilling guide is recommended.

4) Drill a 5/8-inch (16mm) diameter hole through the slab and approximately 1-inch (25mm) into the underlying soil to form a void. Hole **must** be 5/8-inch (16mm) in diameter to ensure seal. It is recommended that you use the drill guide.

Vapor Pin™ protected under US Patent # 8,220,347 B2

5) Remove the drill bit, brush the hole with the bottle brush, and remove the loose cuttings with the vacuum.

6) Place the lower end of Vapor Pin™ assembly into the drilled hole. Place the small hole located in the handle of the installation/extraction tool over the Vapor Pin™ to protect the barb fitting, and tap the Vapor Pin™ into place using a dead blow hammer (Figure 2). Make sure the installation/extraction tool is aligned parallel to the Vapor Pin™ to avoid damaging the barb fitting.

Figure 2. Installing the Vapor Pin™.

During installation, the silicone sleeve will form a slight bulge between the slab and the Vapor Pin™ shoulder. Place the protective cap on Vapor Pin™ to prevent vapor loss prior to sampling (Figure 3).

Figure 3. Installed Vapor Pin™

7) For flush mount installations, cover the Vapor Pin™ with a flush mount cover, using either the plastic cover or the optional stainless-steel Secure Cover (Figure 4).

Figure 4. Secure Cover Installed

8) Allow 20 minutes or more (consult applicable guidance for your situation) for the sub-slab soil-gas conditions to re-equilibrate prior to sampling.

9) Remove protective cap and connect sample tubing to the barb fitting of the Vapor Pin™. This connection can be made using a short piece of Tygon™ tubing to join the Vapor Pin™ with the Nylaflow

tubing (Figure 5). Put the Nylaflow tubing as close to the Vapor Pin as possible to minimize contact between soil gas and Tygon™ tubing.

Figure 5. Vapor Pin™ sample connection.

10) Conduct leak tests in accordance with applicable guidance. If the method of leak testing is not specified, an alternative can be the use of a water dam and vacuum pump, as described in SOP Leak Testing the Vapor Pin™ via Mechanical Means (Figure 6). For flush-mount installations, distilled water can be poured directly into the 1 1/2 inch (38mm) hole.

Figure 6. Water dam used for leak detection

11) Collect sub-slab soil gas sample or pressure reading. When finished, replace the protective cap and flush mount cover until the next event. If the sampling is complete, extract the Vapor Pin™.

<u>Extraction Procedure:</u>

1) Remove the protective cap, and thread the installation/extraction tool onto the barrel of the Vapor Pin™ (Figure 7). Continue turning the tool clockwise to pull the Vapor Pin™ from the hole into the installation/extraction tool.

2) Fill the void with hydraulic cement and smooth with a trowel or putty knife.

Figure 7. Removing the Vapor Pin™.

3) Prior to reuse, remove the silicone sleeve and protective cap and discard. Decontaminate the Vapor Pin™ in a hot water and Alconox® wash, then heat in an oven to a temperature of 265° F (130° C) for 15 to 30 minutes.

The Vapor Pin™ to designed be used repeatedly, however, replacement parts and supplies will be required periodically. These parts are available on-line at VaporPin.CoxColvin.com.

ATTACHMENT 2

MITIGATION TECH INSTALLATION COMPLETION REPORT

mitigation tech *vapor intrusion specialists*

October 31, 2015

Mr. Charles Staples, CG
Senior Scientist
Amec Foster Wheeler
511 Congress Street, Ste. 200
Portland, Maine 04101
Via email: Staples, Charles R. <charles.staples@amecfw.com>

Re: 80 Rockwood Place, Rochester, NY 14610 (Former Scobell Chemical)
More Fire and Glass
Modifications to sub-slab depressurization system

CONSTRUCTION COMPLETION REPORT

1. OVERVIEW

This document presents a construction report, performance evaluation and O&M advice for the sub-slab depressurization (SSD) system with modifications completed October 6, 2015. The subject area is the rear building occupied by "More Fire and Glass". Work began August 27, 2015 on an emergency basis in response to a report of very high VOC's in the ambient air, apparently precipitated by remedial operations at the adjacent site. The original SSD system at 80 Rockwood Place, Rochester, NY was installed by *Mitigation Tech*, commissioned July 19, 2012.

2. BUILDING ASSESSMENT AND ADDED MEASURES

Mitigation Tech conducted an emergency site visit on August 27, 2015 for the purpose of building assessment and to implement short term measures to address very high VOC levels in the NW corner of the building. Fresh cracks were discovered in the NW corner, including structural decay at the base of the abandoned chimney. Cracks were sealed with urethane sealant. Subsequent investigation revealed significant structural deterioration at NW corner of the building causing settling, leaching of sub-slab material and opening of new air pathways in the foundation. The ground slope is channeling water toward this corner, exacerbating the condition. There is evidence of patching having been performed previously on several occasions. The patching that was observed during the site visit was clearly ineffective. *Mitigation Tech* determined that a large volume of air was entering the sub-slab at this point and degrading the existing depressurization system performance.

Mitigation Tech recommended that the NW corner of the building be excavated and structural repairs to the masonry be undertaken. In lieu of this, temporary patching of the accessible opening was added using 2" foam board and urethane sealants. *Mitigation Tech* was directed by the landlord not to use expandable foam as part of the repair so that future permanent repairs would not be made more difficult. The repair was somewhat effective; however large volumes of soil vapor were clearly entering the vicinity of the NW corner and the existing system configuration was determined to be ineffective in mitigation vapor intrusion.

Subsequently, *Mitigation Tech* added a high air flow SSD system to the NW corner, with a single Suction point (labeled SP-5), 4" riser and roof mount fan. This system is currently exhausting about 170 CFM (mixed outside air and sub-slab air) from the sub-slab material in the NW corner. The area of influence of this system falls off to negligible at the interior boundary of the tool room, as the original compacted soil away from the structural deterioration is resistive to lower range (i.e., 1.5 wci or less) pressure differential. As part of this phase, a 3" riser and suction cavity (labeled SP-4) in the central west area were added to the original system.

Continuing monitoring and measurement during the construction process informed additional refinements to the mitigation system. Given the below set of conditions, it was determined that the original radon fan should be replaced with a high pressure radial blower. The conditions are as follows:

a) the volatile and uncertain sub-slab air pathways clearly present beneath the slab and between the DEC work site and the NW corner of the building

b) some of the pressure differential readings (especially in the SW corner) were judged to be marginal

c) lowering of the DOH air guideline for TCE since completion of the original system

d) likelihood of further structural deterioration at foundation areas otherwise necessary to contain vacuum

e) landlord's strong request to restrict additional drilling in slab

Work concluded on October 6, 2015 with the installation of (4) permanent vacuum measurement points that can also serve as vapor monitoring points. At commissioning, all components inspected for condition and proper operation.

3. SUB-SLAB DEPRESSURIZATION SYSTEM GENERAL DESCRIPTION

3.1. Introduction. The system consists of (2) SSD systems operating independently. Each individual system consists of a rooftop fan and one or more vapor extraction points. The systems were constructed using principles and equipment typically used for radon mitigation in buildings as detailed in the final NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006). The SSD systems were installed as a permanent, integral addition to the structure. The NW System consists of an RP-265 fan, (1) suction point (labeled SP-5) and a 4" riser. The Central System consists of an OBAR 76-UD fan, (4) suction cavities (labeled SP-1, SP-2, SP-3 and SP-4) and a 3" pipe network. The key components of the SSD system are described below.

3.2. Suction Points. The location of each suction point (vapor extraction point) is shown on the attachment to this document titled "SSD System – More Fire and Glass". Each suction point consists of a 5" core boring into the slab through which 1- 2 cubic feet of sub-slab material has been removed. Mechanically suspended Schedule 40 3" or 4" PVC pipe has been inserted into the boring and sealed with urethane sealant.

3.3. Riser Piping. The riser piping consists of 3" or 4" schedule 40 PVC pipe that follows a route from the extraction point to an exterior mounted vacuum fan through a roof penetration. Weatherproof flashing or sealant has been applied to all penetrations. Vent pipes were installed at a pitch that ensures that any rainwater or condensation within the pipes drains downward into the ground beneath the slab. Piping is independently supported, and not supported from existing building mechanical systems.

3.4. Exhaust Fans. NW System exhaust fan consist of (1) RADONAWAY RP-265 centrifugal fan which consumes approximately 120w of electricity and produces a static pressure differential of up to 2.3 water column inch (wci). Central System exhaust fan consist of (1) OBAR UD-76 radial blower which consumes approximately 350w of electricity and produces a static pressure differential of up to 36 water column inch (wci). Fans have a roof disconnect switch connected to a circuit in the vicinity. Fans are mounted with rubber Fernco couplings, for simplified replacement.

3.5. Instrumentation and Control. There is no centralized instrumentation or control for the SSD System. Individual fans can be switched either from the roof positioned disconnect of at the breaker. Each exhaust fan system is equipped with a vacuum indicator mounted in a visible location on a riser pipe. The indicator consists of an oil filled U-tube style manometer. The indicator is inspected by observing the level of colored fluid. This indicator is designed primarily to give a simple visual check that vacuum is present in the riser pipe, specifically by observation that the fluid levels on each side f the indicator are not even. Indicators are marked at levels observed on October 6, 2015.

3.7. Sealing measures. Polyurethane sealants and mechanical barriers have been applied to floor cracks, slab penetrations and other openings to enhance the barriers between sub-slab and ambient air and improve the efficiency of the SSD System. The barrier applied to the exterior NW corner of the building should be considered as temporary and in addition, permanent measures are recommended as structural deterioration has been observed. Sealant has been applied in the vicinity of suction points and at cracks in concrete. Additional enhancement of the barrier between the basement boiler room and ambient air is recommended and would be expected to improve system performance.

3.6. Monitoring Points. There are (4) sub-slab vacuum test points as shown on the attached figure. These consist of permanent reusable Swagelok stainless points, supplied by the environmental consultant, grouted into the slab. These were established to aid in vacuum testing and vapor monitoring.

3.7. PERFORMANCE EVALUATION

(Measurement date – October 6, 2015) In order to verify system effectiveness and as a performance evaluation, test points were established at various distances from the suction cavities suitable to determine that the sub-slab was being depressurized, as shown in the following table: (locations per sketch)

Test Point	Vacuum in negative wci
1	.013
2	.012
3	.006
4	.004

4. SUB-SLAB DEPRESSURIZATION SYSTEM OPERATION

4.1. All fans should be kept in continuous operation. New York State Soil Vapor Intrusion Guidance (2006) specifies that operation, maintenance and monitoring of the SSD system should be included as part of site management. Until subsurface remediation efforts eventually address VOCs in soil and/or groundwater to acceptable levels (i.e. SSD operation no longer required) operation of the SSD system should continue. At that point, the vapor mitigation system may be shut down and/or removed and O&M requirements would cease.

4.2. Reset. Fans restart automatically in event of power loss.

4.3. In the event of unusual fan noise, failure to start, physical damage, or repeated circuit breaker trip, turn fan off and call for service. MITIGATION TECH –585- 637-7430

4.4. Regularly inspect fan gauge to verify that value, indicated by a mark on the gauge, has not changed significantly from the position of the mark. Gauge is inspected by observing the level of colored fluid or, in the case of a dial gauge, the position of the indicator needle.

4.5. Normal system operation requires unchanged structural conditions. Report any changes in structure, HVAC systems, slab conditions, etc., so that the change can be evaluated for impact on the SSD System. For service, call MITIGATION TECH at 637-7430

4.6. Ensure that a periodic inspection is performed

Thank you

Nicholas E. Mouganis EPA listing # 15415-I; NEHA ID# 100722

JOB NO. 3617147328		SHEET 1	OF 1
PHASE		TASK .03	
JOB NAME Scobell			
BY JKR		DATE 8/28/2015	
CHECKED BY		DATE	

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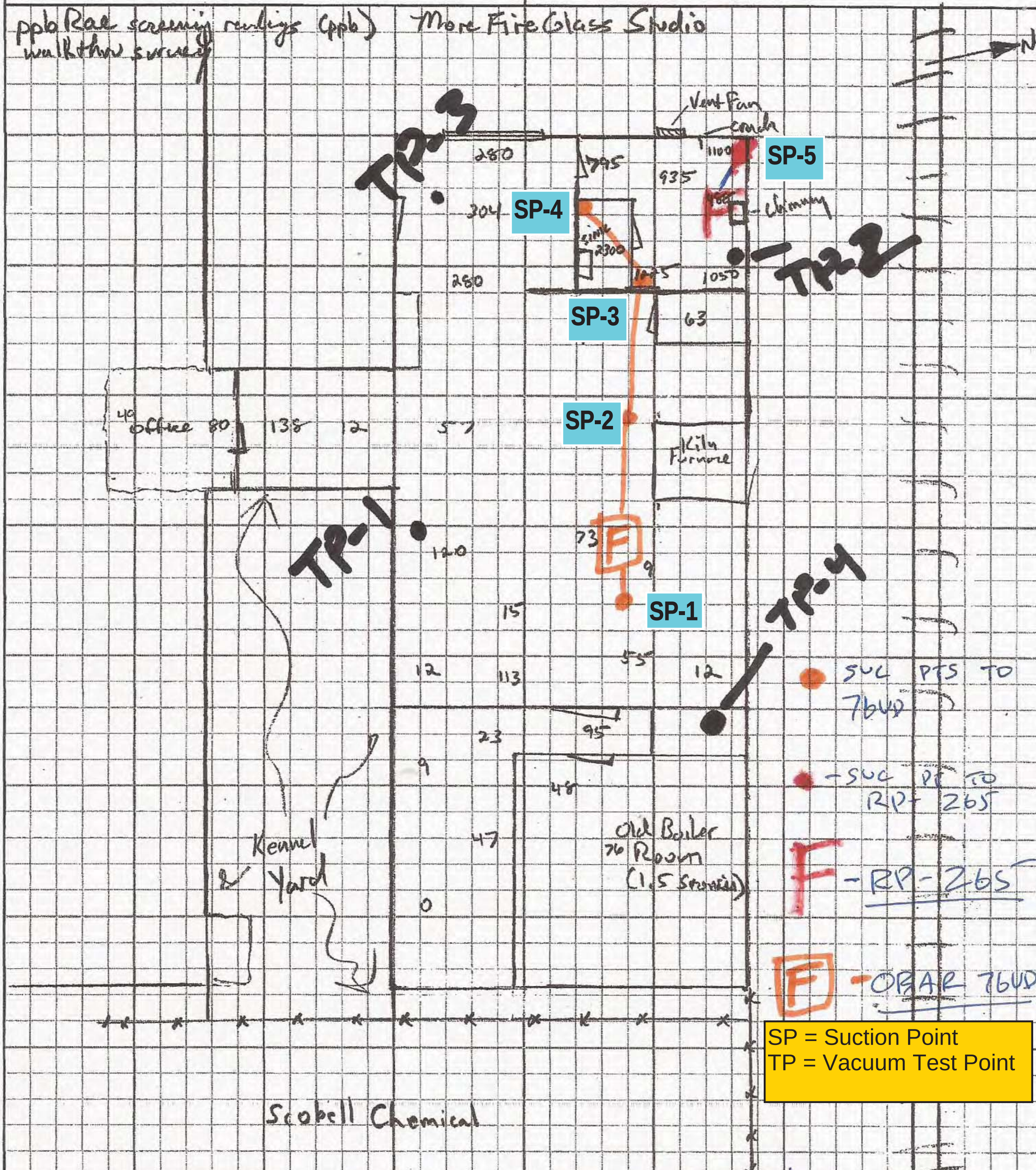


SSD SYSTEM - MORE FIRE & GLASS
10/6/15 - INSTALLED by MITIGATION TECH

THE OBAR GBR76

COMPACT RADIAL BLOWER

Based on 25 years of experience and 2 years of research and development, the patent pending GBR series of compact radial blowers provide the perfect combination of performance and design.

GBR76 WITH ROOF MOUNT

PERFORMANCE

- GBR76 SOE 16” WC @ 0 Max flow 155 cfm.
- GBR76 HO 41” WC @ 0 Max flow 160 cfm.
- Built in speed control to customize performance.
- Condensate bypass built in.
- 18 month warranty 40,000 hr sealed bearings.

DESIGN

- Our modular design means the blower and manifold assembly can be removed and replaced as a unit. This makes repairs cost effective and easy and allows contractors to upgrade systems simply by swapping assemblies.
- The GBR series is based on a bypass blower designed to handle combustible materials.
- The housing is not required to be air tight so you can add gauges and alarms without compromising the system.
- Built in condensate bypass.
- Built in speed control.
- Quick disconnect electrical harness.
- All UL listed components including UL listed enclosure for outside use.
- Wall fastening lugs included.
- GBR series roof and wall mounts available to quickly configure the blowers for your installation while providing a custom built look.
- Compact design 16”x 14”x 8” weighing only 18 lbs.

OBAR SYSTEMS INC 117 POCANTECS ROAD HIGHLAND LAKES NJ 07422   800 949 6227

GBR76 SOE	0”	2”	4”	6”	8”	10”	12”	16”	Wattage
SOE 16	150	140	129	118	105	90	75	35	150-320
SOE 12	125	115	100	83	62	39	0		110-200
SOE 8	105	90	70	42	0				60-120
SOE 4	75	50	0						37-50

GBR SOE performance using built in potentiometer set at sealed vacuums of 16, 12, 8, and 4” WC

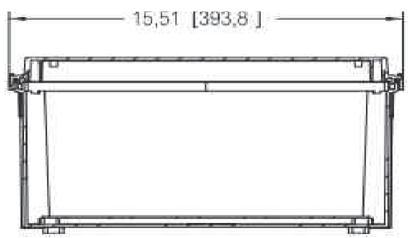
GBR76 HO	0”	10”	20”	30”	40”	Wattage
HO 40	155	110	72	40	10	400-575
HO 30	150	108	70	22	0	375-415
HO 20	141	99	20	0		200-350

GBR76 HO performance using built in potentiometer set at sealed vacuums of 40, 30, and 20” WC

Blower Specifications

Notes:

- **Input Voltage Range:** 108-132 Volts AC RMS, 50/60 Hz, single phase.
- **Input Current:** 6 amps AC RMS
- **Operating Temperature (Ambient Air and Working Air):** 0°C to 50°C
- **Storage Temperature:** -40°C to 85°C
- **Dielectric Testing:** 1500 Volts AC RMS 60 Hz applied for one second between input pins and ground, 3mA leakage maximum.
- **Speed Control Methods:** PWM (Pulse Width Modulation) (1 kHz to 10 kHz)
  0 to 10 VDC speed control.
  Mechanical: A potentiometer is available for speed control of the blower. The potentiometer can be preset for a specific speed. Access for speed adjustment located in motor housing.
- **Approximate Weight:** 4.8 Lbs. / 2.2 Kg
- **Regulatory Agency Certification:** Underwriters Laboratories Inc. UL507 Recognized under File E94403 and compliant under the CE Low Voltage Directive 2006/95/EC.
- **Design Features:** Designed to provide variable airflow for low NOx & CO emission in high efficiency gas fired combustion systems. Built with non-sparking materials. Blower housing assembly constructed of die cast aluminum. Impeller constructed from hardened aluminum. Rubber isolation mounts built into blower construction to dampen vibration within the motor. Two piece blower housing assembly sealed with O-ring gasket for combustion applications. Customer is responsible to check for any leakage once the blower is installed into the final application.
- **Miscellaneous:** Blower inlet, discharge, and all motor cooling inlet and discharge vents must not be obstructed. Motor ventilation air to be free of oils and other foreign particles, (i.e. breathing quality air). Blower is to be mounted so ventilation air cannot be re-circulated.
  POWER CONNECTION: Blower connector, AMP Universal MATE-N-LOK, part no. 1-350943-0.
  SPEED CONNECTION: Blower connector, Molex Mini-Fit Jr., part no. 39-30-3056.
  Mating harnesses available upon request.



Screw cover

Enclosure Specifications

Rating:

Ingress Protection (EN 60529): 66/67

Electrical insulation: Totally insulated

Halogen free (DIN/VDE 0472, Part 815): yes

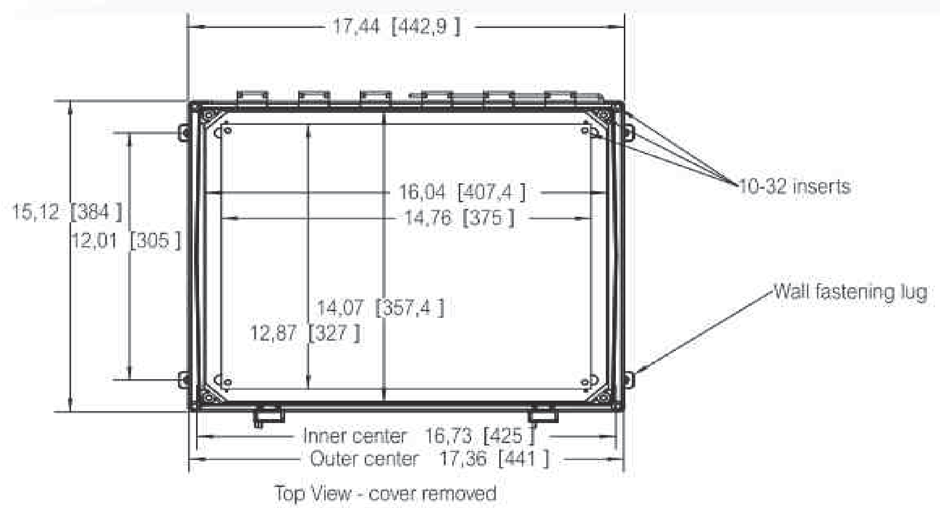
UV resistance: UL 508

Flammability Rating (UL 746 C 5): complies with UL 508

Glow Wire Test (IEC 695-2-1) °C: 960

NEMA Class: UL Type 4, 4X, 6, 6P, 12 and 13

Certificates: Underwriters Laboratories



Top View - cover removed

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ATTACHMENT 3

PHOTOGRAPHS

80 Rockwood- More Fire Glass Studio- Photos

Bing Map aerial photo of 80 Rockwood – showing More Fire Glass Studio Location

80 Rockwood- More Fire Glass Studio- Photos

Exterior West Wall (outside of fan in photo to right) -2015

Interior Tool Room (inside fan) (New Suction Point 5 – September 2015

Exterior of North Side (exterior of kiln fan in center) - 2015

80 Rockwood- More Fire Glass Studio- Photos

Cracked Foundation
– NE corner -2015

Sealing gaps with
rigid insulation
September 2015

Two-inch insulation
board over sealed
area. Rain water
shown coming off
parking lot and
around corner.
– September 2015

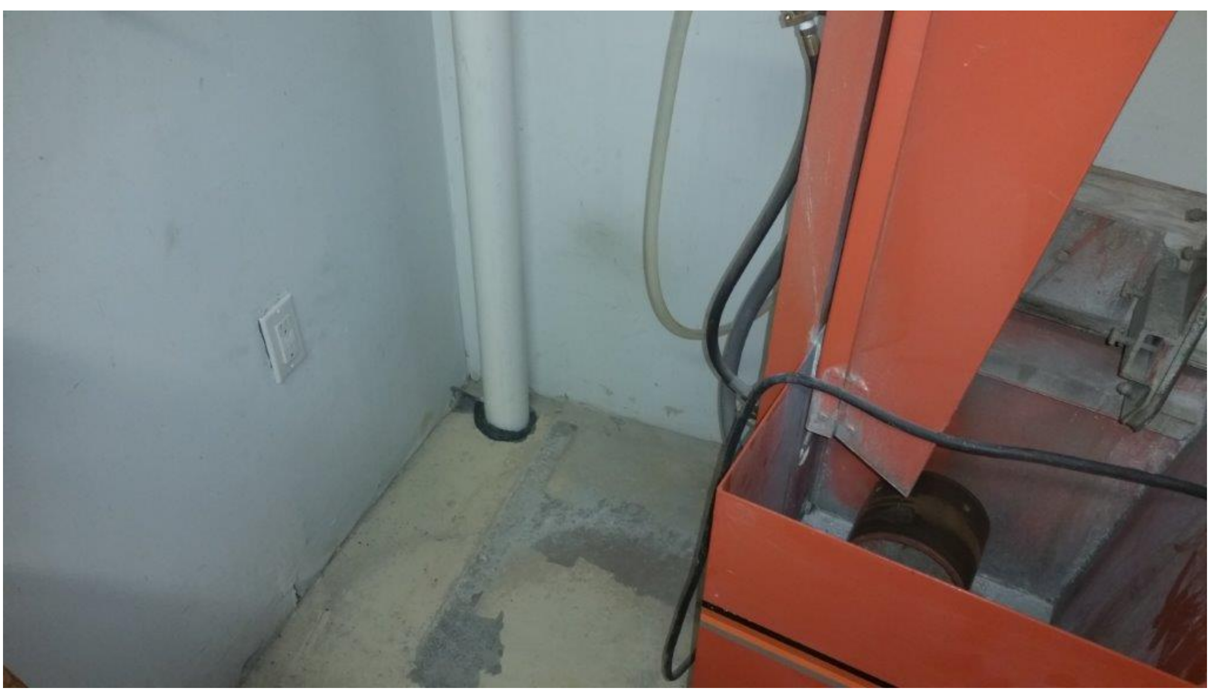
80 Rockwood- More Fire Glass Studio- Photos

Sealing floor cracks and cracked chimney in tool room – August 2015

Floor Cracks and Chimney Sealed- August 2015

80 Rockwood- More Fire Glass Studio- Photos

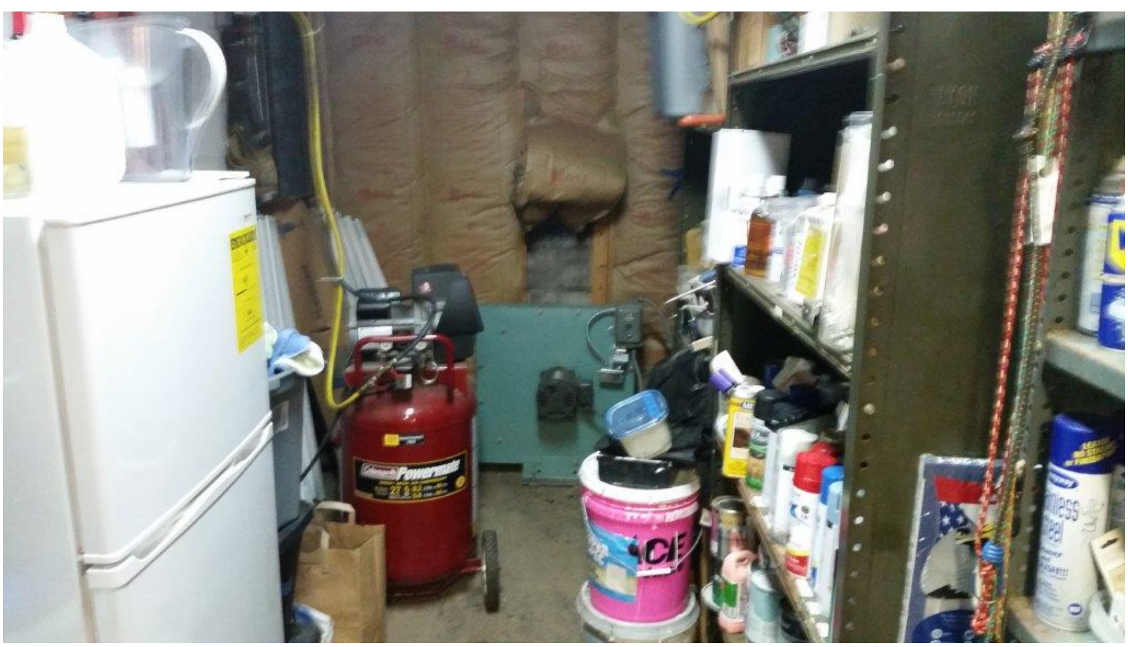
New suction point in tool room – SP-5
September 2015



New Suction Point in Tool Room Closet – SP-4
September 2015

80 Rockwood- More Fire Glass Studio- Photos

Finished Gallery looking south (connector
between buildings – office behind door - 2015



Chemical room with blower for Kiln-
August 2015

80 Rockwood- More Fire Glass Studio- Photos

New Fan – RadonAway – RP365 – on roof, looking north - September 2015

New High Pressure Fan – Obar – 76 UD on roof, looking east September 2015

80 Rockwood- More Fire Glass Studio- Photos

VaporPin® permanent vacuum measurement/vapor sampling point (TP) set in concrete; ¼-inch barbed fitting will attach to ¼-inch outside diameter rigid/Teflon tubing with small piece of ¼-inch inside diameter Tygon tubing.

VaporPin® stainless steel cover installed over vacuum measurement point (TP). Cover unscrews counterclockwise from VaporPin®.