Environmental Consultants
and Contractors

2830 Dairy Drive
Madison, WI 53718-6751

608 224-2830
FAX 608 224-2839
www.scsengineers.com

SCS ENGINEERS

May 2, 2016
File No. 25212159.01

Mr. Richard Feest
Pinkey's Capitol Auto Body
120 W. Melvina Street
Milwaukee, WI 53212

Subject: Installation Documentation and Maintenance Plan for Vapor Mitigation System
3935 N. Palmer Street, Milwaukee, Wisconsin

Dear Mr. Feest:

SCS coordinated the installation of a sub-slab depressurization (vapor mitigation) system at your property located at 3935N. Palmer Street (Figure 1). The system was installed by Acura Services, LLC, of Oregon, Wisconsin, on February 6, 2014. Documentation of the system installation, performance testing, depressurization measurements documenting effectiveness of the system, photo documentation, blower specifications, and a maintenance plan with instructions for operation and maintenance of the system are included as Attachment A. Testing of the mitigation system with manometers indicated good depressurization and resultant soil gas capture under the slab.

Please contact SCS at (608) 224-2830 if you have any questions regarding the system installation, operation or maintenance.

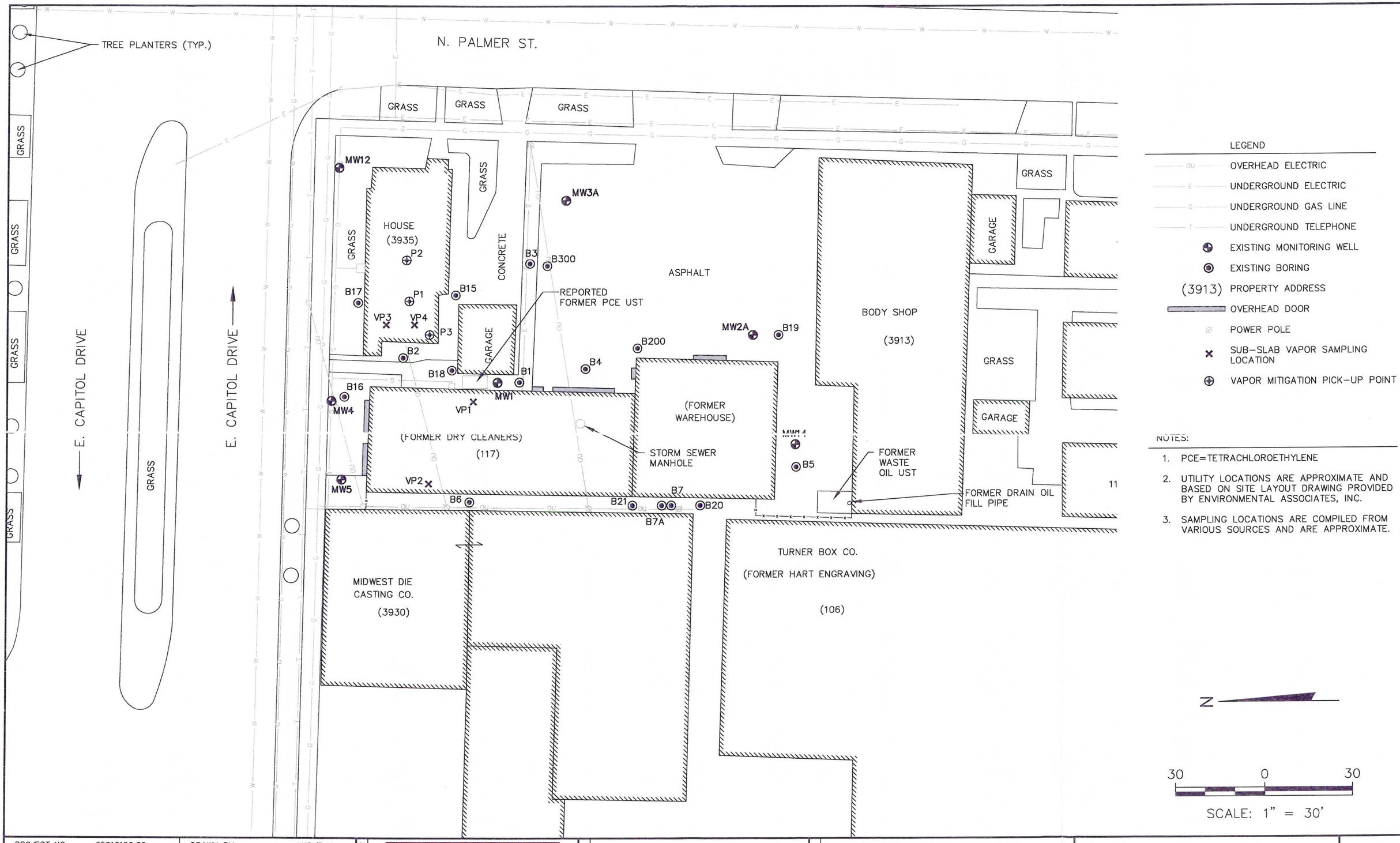
Sincerely,

Betty J. Socha, PG
Senior Project Manager
SCS ENGINEERS

cc: Mr. Lou Dodulik, Mudroch & Dodulik, S.C.
Ms. Nancy Ryan, Wisconsin Department of Natural Resources

Enclosures: Figure 1 – Environmental Sampling Locations
Attachment A - Documentation for Vapor Mitigation System Installation and Maintenance Plan

I:\25212159\Correspondence-Other\Feest Vapor Mitigation System Maintenance Plan.docx



LEGEND

— OU —	OVERHEAD ELECTRIC
— E —	UNDERGROUND ELECTRIC
— G —	UNDERGROUND GAS LINE
— T —	UNDERGROUND TELEPHONE
⊕	EXISTING MONITORING WELL
◉	EXISTING BORING
(3913)	PROPERTY ADDRESS
▬	OVERHEAD DOOR
⌀	POWER POLE
×	SUB-SLAB VAPOR SAMPLING LOCATION
⊕	VAPOR MITIGATION PICK-UP POINT

NOTES:

1. PCE=TETRACHLOROETHYLENE
2. UTILITY LOCATIONS ARE APPROXIMATE AND BASED ON SITE LAYOUT DRAWING PROVIDED BY ENVIRONMENTAL ASSOCIATES, INC.
3. SAMPLING LOCATIONS ARE COMPILED FROM VARIOUS SOURCES AND ARE APPROXIMATE.

SCALE: 1" = 30'

PROJECT NO.	25212159.00	DRAWN BY:	AHB/BJM
DRAWN:	07/12/12	CHECKED BY:	BS
REVISED:	08/07/15	APPROVED BY:	

ENGINEER
SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

CLIENT
HUNN FAMILY TRUST
946 ELM GROVE ROAD
ELM GROVE, WISCONSIN

SITE
FORMER QUEENS WAY CLEANERS
117 E. CAPITOL DRIVE
MILWAUKEE, WI

ENVIRONMENTAL SAMPLING LOCATIONS

FIGURE
1

I:\25212159\Drawings-General\SITE LAYOUT.dwg , 8/7/2015 1:36:15 PM

ATTACHMENT A

Acura Services, LLC, Installation Documentation Report and Maintenance Plan

#25212159

Acura Services LLC

Radon & Soil Gas Mitigation Services

Anthony G. Hendricks P.E.

February 9, 2014

SCS Engineers
Ms. Betty Socha; Senior Project Manager/Hydrogeologist
(608) 216-7331 cell (608) 212-6664

Post Mitigation Report For

The Hunn Family Trust, 3935 N. Palmer St., Milwaukee, WI

A mitigation system was installed in this rental property on February 6, 2014. The main part of the basement is approximately 24 feet wide by 44 feet long.

Pickup Point(s)

After communication testing demonstrated that the material under the basement slab was very tight material, SCS Engineers was consulted about the need for three pickup points and the locations of those pickup points. Based on discussions concerning the area of greatest risk for vapor intrusion, as directed by SCS, three locations for pickup points were chosen. 1) One pickup point is located near the middle of the basement. 2) A second pickup point is located in the laundry room beside the utility sink. 3) A third pick up point is located in the laundry room in the corner. The spacing between pickup points is approximately 12 feet. A hole was opened in the concrete floor for each pickup point. The material under the concrete was very tight damp soil. The holes were dug to a depth of 36 inches. Approximately 6 buckets of material was removed. The soil was deposited in a drum supplied by SCS on site. A sump lid was installed over each hole and sealed. The discharge piping was installed on the sump lids then routed to join and finally exit through the rim joist for discharge. The fan was mounted on an upturned elbow. The final discharge is over a foot above the eave line. A stainless steel ice/debris trap was installed in the discharge piping above the fan.

Depressurization Testing

One fan was tested. The fan that was found to be acceptable has a maximum 3.9 inches of water column. The fan demonstrated that a negative pressure was achieved at several locations. 1) a) Five feet north of the first pickup point minus 0.026; b) five feet east of the first pickup point minus 0.016. 2) a) In the laundry room in a sample port installed by SCS and within three feet of pickup point three minus 1.857; b) Near the door to the laundry room about 11 feet from the 3rd pickup point and 8 feet from the second pickup point minus 0.105.

105 Chelsea Ct.
Oregon, WI 53575

(608) 772-2349 or (608) 835-8812
hendricks_at@yahoo.com

Acura Services LLC

Radon & Soil Gas Mitigation Services
Anthony G. Hendricks P.E.

Fan Installed

AMG Eagle with maximum suction of 3.9 inches of water column. The fan comes with a manufacture's warranty of five years. Warranty and operation and maintenance information was left attached to the riser pipe in a plastic sleeve.

Manometer & Installation Information

A manometer was installed on the riser pipe. The manometer read 3.5 inches of water column. Based on the fan curve this would be approximately 18 cfm of soil gas discharge. A label was installed beside the manometer with the following information: Date of Start Up, Installer, Installers Phone Number, Fan Model and Inches of WC at startup.

Conclusion

The results of the testing demonstrate that the slab has been successfully depressurized in the area most at risk for vapor intrusion.

Note: All pressure readings made with Infiltec Digital Micro-Manometer.

Prepared by: Anthony G. Hendricks P.E.

105 Chelsea Ct.
Oregon, WI 53575

(608) 772-2349 or (608) 835-8812
hendricks_at@yahoo.com

SCS Engineers - Daily Field Sheet

Project Name:	3935 N. Palmer, Milwk., WI
Project Number:	
Date:	2/6/14
Location:	

SCS Engineers Field Personnel

	Name	Role	Time In	On Site	Off Site	Time Out	Break	Total Hours
1								
2								
3								
4								

SCS Engineers Office/Admin Personnel

	Name	Role	Time In	Time Out	Break	Total Hours
1						
2						
3						
4						
5						

Co Acura Services LLC

	Name	Role	Time In	On Site	Off Site	Time Out	Break	Total Hours
1	Anthony Hendricks	Mitigator	5:30	7:30	6:30	~~6:30~~	0.5	~~1.5~~
2	Pat Canon	Assistant	5:30	7:30	6:30	~~6:30~~	0.5	1.5
3	Mike Kveny	Asst.	5:30	7:30	6:30	~~6:30~~	0.5	1.5
4								

8:30pm Lunch

Material Quantities

	Description	Quantity	Unit
2" PVC	PVC	40'	
2" Pipe	PVC	40'	
2" Fittings	PVC	10	
2" Fittings	PVC	9	
Other: 5 couplers	Flat-	3	

Fan etc

Regulatory or other personnel on site

	Name	Affiliation	On Site	Off Site
1	Tony K.	SCS Engineers	8:30	11:30
2				
3				
4				

Contact: Rick 414-406-6693

SCS Engineers - Daily Field Sheet

Project Name:	3935 N. Palmer, Milwk. WI
Project Number:	
Date:	2/6/14
Location:	

Site Description and Weather: Basement - Dark / Rough crude; Weather Frigid - snow Ice on Ground

Summary of Activities :

Arrived 7:30 had trouble getting Access. Gained Entry 8 A.M.
did communication testing, measured building did A preliminary layout.
Discuss poor communication testing with Tony K.; started installing pickup points. After discussions Revised layout of pickup points. Continued with development of pickup points.
Each pickup point excavated to 36", water appeared in the bottom of each pickup point.
Opened hole through layers of brick to outside of building.
Installed piping connecting all pickup points.
Installed Fan and discharge piping started up system.
Recorded startup Information.

Site Conditions upon departure:

Clean

Field Sheet Completed by:

Na Anthony Hendricks

Signature A.G. H.

Date: 2/6/14

Acura Services LLC

Radon & Soil Gas Mitigation Services
Anthony G. Hendricks P.E.

Maintenance Plan For The Sub Slab Depressurization System

System Installed In The Year 2014
Installed by Acura Services LLC

System Description

Soil gas enters a home due to a positive pressure under the slab (floor) of the basement. A sub slab depressurization system works by changing that positive pressure into a negative pressure. The negative pressure created by the pickup point and fan sucking on the pickup point causes the soil gas to flow to the pickup point and to be exhausted through the fan outside the home. As long as that negative pressure is maintained the soil gas that would enter the home is captured and exhausted outside along with any harmful constituents of that gas. Harmful constituents of the gas include volatile organic compounds and radon for example.

Fan Operation & Maintenance

The fan, the manometer and the on/off switch are the only moving parts to this sub slab depressurization system. The fan is designed to run all day year round. If the fan stops or is shut down the pressure under the slab will probably return to positive and potentially allow sub slab soil vapors to enter the home. The functioning of the fan is therefore the most essential component of the system.

The manometer, which reads inches of water column, indicates the proper operation of the fan. The manometer reading at startup is recorded on a label affixed on the riser pipe beside the manometer. This reference allows you to compare that initial reading with any current reading. The manometer may bounce around a small amount due to changing weather conditions overall that variation will be small compared to the initial reading. Any significant change needs to be evaluated to insure that the system is operating properly.

If the manometer reading drops to zero, that is both sides of the manometer are at the same level the system needs to be checked out.

Step One: Determine if the manometer is hooked up properly. A small tube on one side of the manometer has been placed in a hole drilled in the riser pipe. If for any reason that tube has been pulled out of the riser pipe or from the manometer the manometer will not read properly. To correct reinsert the tube into the

hole in the riser pipe or the tube of the manometer. Once this is done the manometer reading should return to approximately the initial startup reading.

Step Two: After checking the manometer you find that the fan is not running. First check the breaker in the electric panel to see if it is on. If the breaker is off turn it to on. If the breaker is in the proper position got outside to check the lockable on/off switch for the fan. A child or other person may have turned the switch off. If in the off position move to the switch to the on position and listen for the fan to start up. Once the fan is on; check the manometer reading to verify that the fan is operating normally. To prevent this happening in the future you may insert a lock into the lockable on/off switch. Make sure the switch is in the on position. Verify by checking the manometer immediately.

Step Three: What if after checking the fan operation you find it's not running. On the riser pipe is the contact information for Acura Services LLC. Call for assistance. Although these are high quality fans made specifically for mitigation systems all mechanical devices can and will fail. When calling please have the following information available; 1) Startup Date; 2) Initial manometer reading; 3) Fan Model (This information will be on the fan name plate and/or the label on the riser pipe.)

Warning Check The Manometer Regularly

The manometer is the primary run indicator for the system. Get in the habit of checking the manometer regularly. All fans wear out eventually and since these systems are user friendly they tend to get ignored over time. If your laundry is in the basement a good habit is to check the manometer every time you do laundry. Checking the manometer a minimum of once a week is recommended. Daily is better.

The mitigation system is designed to protect your health from harmful soil vapors. You are responsible to see that the system is functioning properly. By keeping a regular check on the manometer you can feel confident that you and your family are being protected.

If You Plan on Remodeling or Ad an Addition to Your Home?

Some remodeling may impact the effectiveness of the system. Call Acura Services LLC to discuss the planned project so any potential impact to the mitigation system may be evaluated. **Warning;** Most builders do not understand the importance of mitigation systems and may give you assurances that the system will not be impacted. These assurances may not be valid.

Maintenance

The fan is the only major moving part. The fan is maintenance free. By checking the manometer regularly you'll be checking the proper operation of the fan. There is an Ice/Debris trap with a stainless steel screen just above the fan. The manufacture recommends that this be cleaned annually. Shut off the fan then remove the screw in plug. Clean out any debris trapped on the screen. Screw the plug back in and turn the fan back on.

If you have any further questions about your mitigation system call Acura Services LLC. We take pride in our systems and want you and your family to enjoy a healthy home.

Installation & Wiring Instructions for AMG In Line Centrifugal Duct Fans

Model: AMG Spirit, Fury, Legend, Hawk, Maverick, Prowler, Eagle

IMPORTANT NOTE : DO NOT CONNECT THE POWER SUPPLY UNTIL THE FAN IS COMPLETELY INSTALLED. MAKE SURE THE ELECTRICAL SERVICE TO THE FAN IS LOCKED IN "OFF" POSITION.

PLEASE READ AND SAVE THESE INSTRUCTIONS :

Warning – To reduce the risk of fire, electric shock or injury to persons, observe the following.

1. This unit is only for use in the manner intended by the manufacturer. If you have any questions contact the manufacturer Festa Manufacturing Enterprises LLC.
2. Installation work and electrical wiring must be done by qualified person'(s) in accordance with all applicable codes and standards, including fire-rated construction.
3. Sufficient air is needed for proper combustion and exhausting of gases through the flue, (chimney) of fuel burning equipment to prevent back drafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the local code authorities.
4. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.
5. Ducted fans must always be vented to the outdoors.
6. These units can be mounted indoors or outdoors.
7. Do not use these fans with solid state speed controllers.
8. The electric motor is protected by an internal overheat device to prevent/minimize motor damage. If the motor stops working, immediate inspection should be carried out by suitably qualified persons.
9. Before servicing or cleaning the unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
10. Do not use in a window.
11. If this unit is to be installed over a tub or shower, it must be marked as appropriate for the application and be connected to a GFCI (Ground Fault Circuit Interrupter) – protected branch circuit.
12. Never place a switch where it can be reached from a tub or shower.
13. CAUTION: For General Ventilating Use Only. Do Not use to Exhaust Hazardous Or Explosive Materials and Vapours.
12. CAUTION: This unit has an unguarded impeller. Do Not Use in Locations Readily Accessible To People or Animals.

Installation of FME AMG PATRIOT Radon Fans.

The FME AMG PATRIOT Fan can be mounted indoors or outdoors. We suggest that EPA recommendations be used in choosing the fan location. The AMG Fans may be mounted directly onto the piping system or fastened to a supporting structure. When mounting directly onto a vertical piping system, it is the installers responsibility to make provision to prevent the pipe system sliding into and onto the fan motor and impeller. When installing a system with short duct runs terminating close to the fan i.e. within 60" (1.5m) suitable guards should be incorporated. It is the responsibility of the installer to ensure that all aspects of the system are taken into consideration. Rigid ducting sections should be connected to fan spigots by flexible connectors and clips. The flexible connectors used should be suitable for routine servicing and vibration isolation.

3935 N. Palmer Street, Milwaukee, WI
SCS Engineers Project #25212159.01

Photo 1: Main pick-up point (P2), located near the middle of the building. Vapor mitigation system installed February 6, 2014, by Acura Services, LLC.

Photo 2: Pick-up point (P3), located nearest the source, southwest corner of the building. Vapor mitigation system installed February 6, 2014, by Acura Services, LLC.

3935 N. Palmer Street, Milwaukee, WI
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Photo 3: Vent pipe located on the north side of the building. Vapor mitigation system installed February 6, 2014, by Acura Services, LLC.