

Beggs, Tauren R - DNR

From: John Emery <emery.ja@gmail.com>
Sent: Saturday, January 13, 2018 1:36 PM
To: Omni Environmental Chris Rogers; Omni Environmental Assoc Don Brittnacher
Cc: Beggs, Tauren R - DNR; A1 Vacuum Center; Adam Olinski
Subject: Updated System Report for Allyn Property, BRRTS # 02-31-564071
Attachments: Vapor Mitigation System description 111 Steele St 011318.pdf; Long-Term OM&M Plan 111 Steele St 011418.pdf

Hello Chris & Don - Attached you will find two files comprising our updated system report for the Allyn property in Algoma. I have worked with A-1 Vacuum & Radon to comply with the new RR-800 guidance as you recommended, to the best of our understanding.

The first file narrative includes System Description, Decommissioning Plan, System Contacts, photos of system components, and system location layout with vapor pressure readings. The second file is our Long-Term OM&M Plan using the spreadsheet template provided by the DNR.

Please review & advise if this updated report meets requirements or needs additional updates. Once complete, my understanding is that you will submit our report to Tauren Beggs at the DNR for final approval.

Looking forward to your reply,
John Emery

Vapor Mitigation System designed and installed by A-1 Vacuum & Radon at 111 Steele St. Algoma, WI, on 6/22/17

System Description:

This vapor extraction sub-slab depressurization system follows USEP/AARST-NRPP guidelines. This system provides a pathway to exhaust volatile organic compounds before they enter the interior of the structure. Exhaust piping is connected to the sub slab. This exhaust piping terminates at a point of safety above any windows outside the building. The exhaust piping connects with the sub slab at two separate points (figure 1, figure 2). These two suction points are connected into a single pipe (figure 2) before exiting the structure and exhausting outside (figure 3). Any repairs to the exhaust piping must use 3-inch schedule 40 PVC pipe. Consult with a mitigation professional before making any modifications to the system. This includes any changes to the configuration of the exhaust piping, fan, or changes in the foundation.

A fan installed in line with the exhaust piping, but outside the structure (figure 4), provides active mitigation by creating a draw on air below the foundation. Negative pressure measurements detailing the effectiveness of the system at various points throughout the sub slab are mapped in diagram 1. The mitigation fan includes a power switch secured to the outside wall of the building (figure 4). This power switch may be secured with a lock (not supplied by the mitigation installers) to prevent unwanted disabling of the fan. The fan is warrantied for 5 years from the date of installation. The manufacturer will cover the cost of the fan (less installation) should it need replacement during this time. All related manufacturer warranty filings, along with proper dated records of installation, can be completed and submitted by A-1 Vacuum & Radon.

A U-tube manometer is installed on the main vertical riser inside the building to monitor system performance (figure 5). While the fan is active, and the exhaust pipe is unobstructed, the U-tube should read a higher liquid level on the side entering the pipe. If the main vertical riser ever becomes obstructed by finished walls, an access panel must be included to allow continued monitoring of the system. A sticker is applied adjacent to the U-tube that explains the function of the U-tube, and contains contact information should service be needed.

Cont'd

Decommissioning Plan:

Concentrations of hazardous compounds may decrease over time to the point where active vapor mitigation is no longer needed. To determine if mitigation is no longer needed the system would be shutdown to allow sub-slab retesting. First samples to be collected 2-4 weeks after shutdown. Second samples to be collected 2-6 months after shutdown. Third samples to be collected within 1 year of shutdown. At least two samples must be collected during the heating season. If concentrations of any sample exceed screening levels during decommissioning testing, then restart fan and return to Long-Term OM&M.

Once decommissioning testing criteria are met then the DNR must be notified at least 45 days prior to decommissioning the system. Provide the VI test data to support decommissioning the system & request DNR approval to proceed with decommissioning.

The system may be converted to a passive system by simply turning off the fan, which will continue to allow a passive pathway for moisture to vent from the sub slab. To completely decommission this system, remove all piping and repair holes in the foundation and exterior wall. During installation a small pocket of sub slab soil is removed to enhance system airflow. Fill this void with crushed stone suitable for drain tile before filling foundation hole with concrete. Consult a licensed electrician to remove electrical wiring for the fan.

System contacts:

Owners representative: John Emery, 920-360-5050, emery.ja@gmail.com

Mitigation professional: Adam Olinski, A-1 Vacuum & Radon, Green Bay, WI, 920-465-9333

Environmental engineer & VI testing: Chris Rogers, Omni Associates,
Appleton, WI, 920- 830-6331

DNR contact: Tauren Beggs, DNR NE WI Regional office, Green Bay, WI, 920-662-5178

Attachments:

System components, Figures 1-5, page 3

Diagram 1 – Vapor Mitigation location and Vapor Pressure readings, page 4

Long-Term OM&M Plan - Description of system components, check points, troubleshooting & annual inspection log. Log to be posted in the building near the system.

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Figure 1



Figure 2



Figure 3



Figure 4



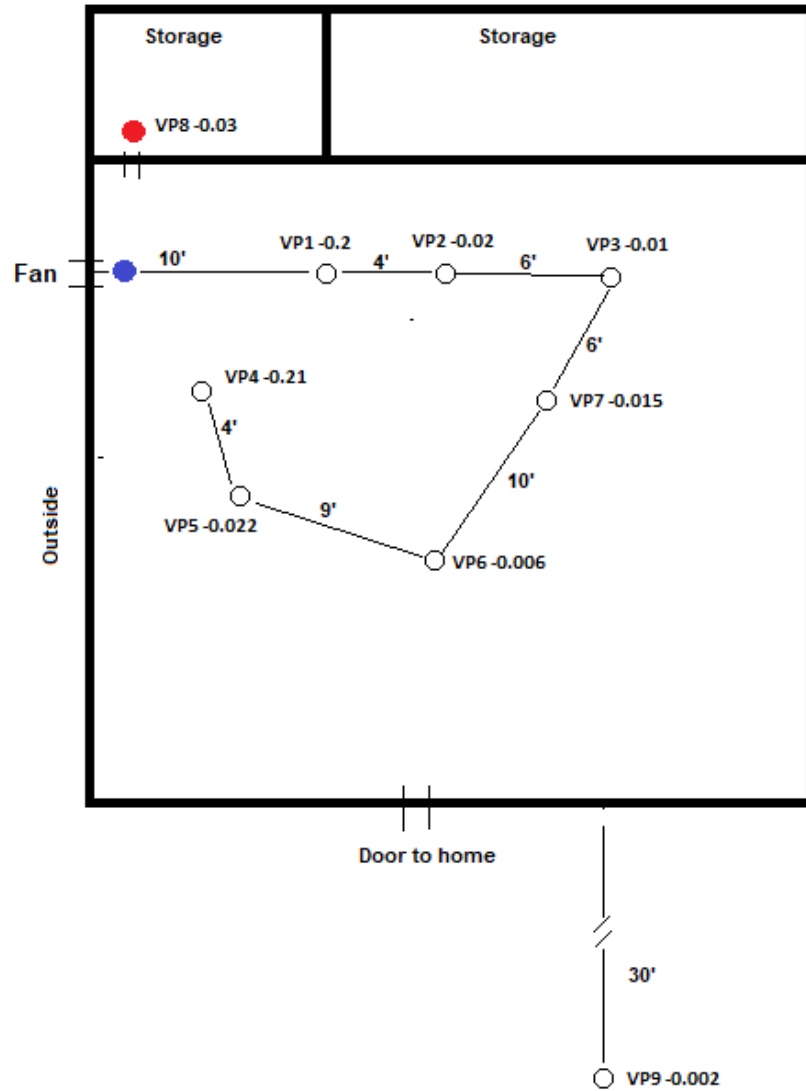
Figure 5



Cont'd

Diagram 1
Vapor Mitigation location and Vapor Pressure Readings







- Suction Point #1 ●
- Suction Point #2 ●



Long-Term OM&M Plan continued on separate electronic file

LONG-TERM OPERATION, MONITORING & MAINTENANCE (OM&M)

VAPOR MITIGATION SYSTEM AT 111 STEELE ST., ALGOMA, WI

SYSTEM COMPONENT		WHAT DOES IT DO?	WHAT DO I CHECK?	WHAT SHOULD I SEE?	WHAT TO FIX?	ANNUAL INSEPECTION						GENERAL NOTES
NAME	PHOTO					DATE	NOTES	DATE	NOTES	DATE	NOTES	
Fan		Fan creates a vacuum and lowers pressure below foundation. The fan also removes soil gases from below foundation for discharge to atmosphere.	Fan Operation	Fan is on	Fan may need to be replaced every 10 to 20 years. Replacement fan to have similar specifications as original with respect to flow and vacuum. ORIGINAL = Model RP145							
			Fan Location	Fan mounted outside & secure								
			Motor Noise	Fan motor is quiet (loud motor may indicate problem)								
Suction Point #1		Soil gases are collected in drain tile below the foundation, and tight seal prevents soil gas from getting inside the structure. Pipe conveys the vacuum from the fan, and collects soil gases for discharge to the atmosphere.	Pipe and Floor Seal Integrity	Floor seal is air tight around edge and at pipe penetrations.	Floor seals or vent pipe may need to be re-sealed or replaced if cracks or leaks appear. See NOTE below regarding pipe alterations. Have professional test pressures if pipes are modified							
			Vent Pipe Condition									
Suction Point #2		Soil gases are collected in drain tile below the foundation, and tight seal prevents soil gas from getting inside the structure. Pipe conveys the vacuum from the fan, and collects soil gases for discharge to the atmosphere.	Pipe and Floor Seal Integrity	Floor seal is air tight around edge and at pipe penetrations.	Floor seals or vent pipe may need to be re-sealed or replaced if cracks or leaks appear. See NOTE below regarding pipe alterations. Have professional test pressures if pipes are modified							
			Vent Pipe Condition									
Manometer or Differential Pressure Gauge		Measures differential pressure between vacuum side of vent pipe and indoor space. This measurement confirms there is a vacuum being pulled by the fan.	Liquid Level on Manometer	Liquid level in manometer is between 0.2 and 1.0 on the right-hand side.	A change in liquid level indicates a change in the vacuum below foundation. This could be caused by failure of fan, blockage of vent pipe, change in water level below building, or other conditions. Troubleshoot or hire professional to identify cause and repair if needed.	DATE	MANOMETER LEVEL	DATE	MANOMETER LEVEL	DATE	MANOMETER LEVEL	
Outdoor Vent Pipe		Pipe carries soil gas outside and vents them to the atmosphere.	Vent Pipe Condition	Vent pipe remains connected to fan. End of pipe free from obstructions.	Vent pipe may require replacement, or cleaning to remove ice or debris. See NOTE below regarding pipe alterations. Have professional test pressures if pipes are modified.							
			Vent Pipe Location	The exhaust is more than 15 feet from windows or air intakes.								
Foundation Floor		Foundation is a barrier that minimizes soil gas entry into building, and helps fan to work efficiently.	Foundation Condition	No penetrating cracks or holes in foundation below grade.	Seal cracks or other penetrations as you would to prevent water from entering. If building floor plan has changed, contact a professional contractor and/or the DNR to evaluate if modifications to the vapor mitigation system are necessary.							
			Foundation Footprint	Check if there have been alterations or additions to building.								

NOTE: Minimize alterations to vent pipes. Changes to fittings, diameter, material type, or number of bends, can cause pressure losses that make system less effective.

Beggs, Tauren R - DNR

From: Beggs, Tauren R - DNR
Sent: Friday, December 22, 2017 8:30 AM
To: 'John Emery'
Cc: Don Brittnacher
Subject: RE: System Report for Allyn Property, BRRTS # 02-31-564071

Hi John,

I have taken a look at the documentation you provided. Back in February 2017 I included in an email to you what documentation the contractor who installs the vapor mitigation system needs to provide: photo documentation of the installed system, system design figure(s), system information/manual, documentation of communication testing that would be provided by the vapor mitigation contractor to Don, so Don can include that documentation in his reports and operation, monitoring, and maintenance plan that would be submitted to the DNR.

Does the contractor have the other documentation (photos of the system, system design figure(s), system information/manual) that he could provide to you or Don that could be provided as follow up documentation? The other thing I am wondering about is the communication testing results. On the figure provided, the individual communication testing locations (VP1 – VP9) all show positive readings. Sub-slab depressurization systems are designed to achieve lower sub-slab air pressure relative to indoor air pressure, so vapors don't migrate into the building. Therefore, communication testing should show negative readings, not positive. This should be clarified with the contractor to determine if these readings are positive or negative.

I would clarify these things with the contractor prior to conducting the indoor air testing in the living spaces. Otherwise, the system has been running long enough that you can go ahead and test the indoor air.

I hope you have a nice Christmas and New Year!

Regards,

We are committed to service excellence.

Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.

Tauren R. Beggs

Phone: (920) 662-5178

Tauren.Beggs@wisconsin.gov

From: John Emery [mailto:emery.ja@gmail.com]
Sent: Wednesday, December 6, 2017 3:20 PM
To: Don Brittnacher <Don.Brittnacher@omni.com>
Cc: Beggs, Tauren R - DNR <Tauren.Beggs@wisconsin.gov>
Subject: System Report for Allyn Property, BRRTS # 02-31-564071

Hello Don - This is documentation for our new vapor mitigation system installed & running continuously since June 22, 2017.

Attached is the system diagram with vapor pressure readings and also the OM&M Manual submitted by the installer A-1 Radon.

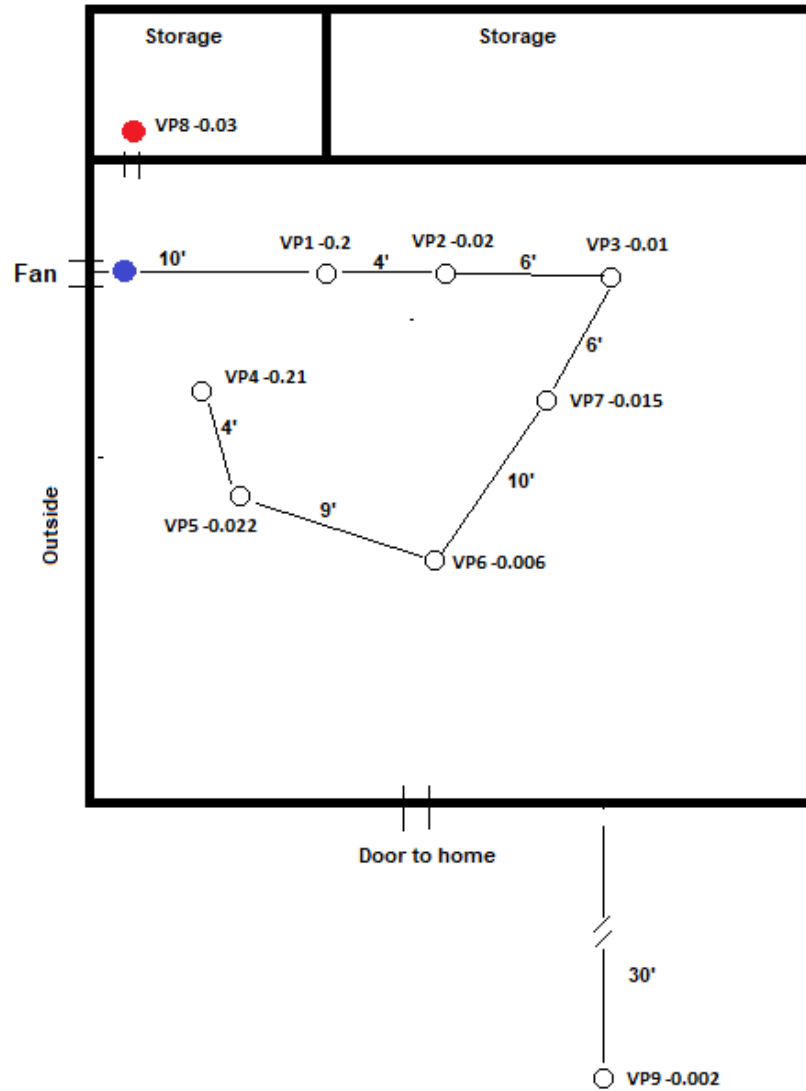
Note we have two suction points in the rear of the building where the highest contamination occurred with good communication readings throughout that area. We also have communication to the living space at the front of the building so we expect to have mitigation throughout the entire building.

If these documents meet requirements and are approved by the DNR, I would like to schedule followup vapor testing in the living space sometime in early January, if possible. Any questions let me know.

Thank you,
John

Diagram 1
Vapor Mitigation location and Vapor Pressure Readings







- Suction Point #1 ●
- Suction Point #2 ●



Long-Term OM&M Plan continued on separate electronic file

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