US EPA ARCHIVE DOCUMENT

RE: Elmwood Park Vapor Mitigation System installation update
Zychinski, Tom
to:
John Frey
10/11/2012 01:34 PM
Cc:
David Hoefer, Dan Gravatt, "Goldberg, Joel (Joel.Goldberg@PERKINELMER.COM)", "Healy, Jack (jack.healy@perkinelmer.com)", "Wallace, Chip", "Wasco, Stephanie (Stephanie.Wasco@PERKINELMER.COM)", "Dale A. Guariglia (daguariglia@bryancave.com)", "srollins@haslc.com", "mhentrich@haslc.com", "jboley@haslc.com", "mstroker@haslc.com", "Roberts, Wane", 26682
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From: "Zychinski, Tom" <tzychinski@burnsmcd.com> Sort List...

To: John Frey/R7/USEPA/US@EPA

Cc: David Hoefer/R7/USEPA/US@EPA, Dan Gravatt/R7/USEPA/US@EPA, "Goldberg, Joel (Joel.Goldberg@PERKINELMER.COM)" <Joel.Goldberg@PERKINELMER.COM>, "Healy, Jack (jack.healy@perkinelmer.com)" <jack.healy@perkinelmer.com>, "Wallace, Chip" <arthur.wallace@perkinelmer.com>, "Wasco, Stephanie (Stephanie.Wasco@PERKINELMER.COM)" <Stephanie.Wasco@PERKINELMER.COM>, "Dale A. Guariglia (daguariglia@bryancave.com)" <daguariglia@bryancave.com>, "srollins@haslc.com" <srollins@haslc.com>, "mhentrich@haslc.com" <mhentrich@haslc.com>, "jboley@haslc.com" <jboley@haslc.com>, "mstroker@haslc.com" <mstroker@haslc.com>, "Roberts, Wane" <Wayne.Roberts@dnr.mo.gov>, 26682 <26682@burnsmcd.com>

1 Attachment

VI Mitigation Installation Letter.pdf

40393297

John, a letter summarizing the vapor mitigation system installation activities is attached. As requested in your letter dated September 27, 2012, we have scheduled an indoor air sampling event for October 29 and 30 to verify the effectiveness of the systems. During this event we will only be sampling these five residences, and only indoor air samples will be collected. Also, we will deliver the information packets regarding the system to

each of the residents during this sampling event. Please let me know if you have any questions.

Tom Zychinski, P.G.
Burns & McDonnell
Environmental Manager, St. Louis Region
425 S. Woods Mill Road, Suite 300
St. Louis, MO 63017

Office: 314-682-1583
Mobile: 314-210-9782

From: Zychinski, Tom
Sent: Friday, September 21, 2012 3:33 PM
To: John Frey (Frey.John@epamail.epa.gov); 'dennis.stinson@dnr.mo.gov' (dennis.stinson@dnr.mo.gov)
Cc: Goldberg, Joel (Joel.Goldberg@PERKINELMER.COM); Healy, Jack (jack.healy@perkinelmer.com); Wallace, Chip; Wasco, Stephanie (Stephanie.Wasco@PERKINELMER.COM); Dale A. Guariglia (daguariglia@bryancave.com); 26682
Subject: Elmwood Park Vapor Mitigation System installation update

As of this afternoon, all 5 systems are installed and operating. The only thing out of the ordinary that occurred during installation was that the house at [redacted] has a sump that we were not aware of (discovered as we went to install the system; was covered by clutter in basement). As with the other sumps, we were able to seal it and add a battery back-up.

As for follow-up items, we will prepare a brief memo to document the installation. We will also gather the necessary items to prepare the information packets described in our design plan, and will then forward them to the Housing Authority. In addition, I asked Mike Hentrich from the Housing Authority to check on the systems next week to make sure they are operating and that there are no tenant questions.

Please let me know if you have any questions.

Burns & McDonnell
SINCE 1898

October 11, 2012

John Frey
U.S. EPA Region 7
Superfund Division
11201 Renner Blvd.
Lenexa, KS 66219

Re: Vapor Intrusion Mitigation System Installation
[redacted] and [redacted] and [redacted] and [redacted]
PerkinElmer, Inc. Missouri Metals Site
Overland, Missouri

Dear Mr. Frey:

Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) has installed vapor intrusion mitigation systems in the residences at [redacted] and [redacted] and [redacted] and [redacted] located near the Missouri Metals facility in Overland, Missouri (Site). Diagnostic testing was performed on September 17, 2012 and mitigation systems were installed on September 20 and 21, 2012. Construction of the mitigation systems involved retrofitting and sealing the existing sumps, sealing noticeable cracks and joints in the floor slabs, and installing sub-slab depressurization (SSD) systems. On-site construction services were performed by St. Louis Radon, Inc.

The diagnostic testing was performed at [redacted] An extraction point was core drilled in one corner of the basement floor slab, and a poly-vinyl chloride (PVC) riser pipe and temporary fan were connected to the extraction point. A pressure field extension test was performed by measuring the differential pressure across the basement floor slab using a Shortridge ADM870 electronic micromanometer. Test points were drilled in center of the slab and in the corner opposite the extraction point. The measurements were significantly above the minimum vacuum pressure of 0.025 to 0.035 inches water column (in.-wc) (6 to 9 Pascals [Pa]) recommended by ASTM Standard E2121 – 12, *Standard Practice for Installing Radon Mitigation Systems in Existing Low-Rise Residential Buildings*[1], indicating that the proposed SSD systems would be effective.

Vapor intrusion mitigation systems were installed at five residences; four of the residences ([redacted] and [redacted] and [redacted] and [redacted] were single-family homes with basements and one residence ([redacted] was a slab-on-grade apartment. Three of the residences ([redacted] and [redacted] and [redacted] had existing sumps.

[1] ASTM Standard E2121-12, "Standard Practice for Installing Radon Mitigation Systems in Existing Low-Rise Residential Buildings," ASTM International, West Conshohocken, PA, 2012, DOI: 10.1520/E2121-12

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In the homes with existing sumps, the following services were performed: a battery backup power supply and backup pump were added; the high water level/pump fault alarms were connected; a new sump cover was fitted; and the sump was sealed airtight.

In the four single-family homes, an extraction point for the SSD system was core drilled in one corner of the basement floor slab and a small extraction pit was excavated. A 3-in. inner diameter (ID) PVC riser pipe was installed, beginning at the extraction pit, extending vertically to the floor joist, and exiting the home above grade. An in-line fan was installed just outside the home, and additional PVC piping extended vertically to an exhaust point above the roof.

To demonstrate SSD system performance, pressure field extension test points were drilled in the center of each basement slab and in the corner opposite the extraction point. At each test point, the differential pressure was measured using a Shortridge ADM870 electronic micromanometer. The measurements in each home exceeded the minimum vacuum pressure of 0.025 to 0.035 in.-wc recommended by ASTM Standard E2121 – 12, as shown on Table 1.

Table 1 – Differential Pressure Measurements

Address	PVC riser pipe (in.-wc)	Center of slab (in.-wc)	Opposite corner of slab (in.-wc)
[redacted]	1.5	0.31	0.12
	1.4	0.82	0.14
	1.4	0.17	0.16
	1.0	0.33	0.08
	1.1	Not measured	Not measured

In the slab-on-grade apartment ([redacted] the extraction point for the SSD system was core drilled in a partially-finished laundry closet. The PVC riser pipe was routed vertically to the attic, where the in-line fan was installed, and continued through the roof to the exhaust point. Pressure field extension test points were not established, due to the finished nature of the apartment.

An information package is currently being prepared and will be provided to the owner of each residence. The package will include the following: a description of the SSD system and its basic operating principles; how the owner or tenant can check that the system is operating properly; how the system will be maintained and monitored and by whom; who to contact if the system

stops operating properly; and copies of all building permits, contracts, warranties, standard operating procedures and maintenance manuals.

If you have any questions, please contact me at 314-682-1583.

Sincerely,

Tom Zychinski

Tom Zychinski, RG
Project Manager

Cc: David Hoefer, USEPA
Dan Gravatt, USEPA
Chip Wallace, PerkinElmer
Jack Healy, PerkinElmer
Joel Goldberg, PerkinElmer
Stephanie Wasco, PerkinElmer
Susan Rollins, Housing Authority of St. Louis County
Mike Hentrich, Housing Authority of St. Louis County
John Boley, Housing Authority of St. Louis County
Mark Stroker, Primm Place Partners
Dale Guariglia, Bryan Cave
Wane Roberts, MDNR