

US EPA ARCHIVE DOCUMENT

Memorandum



Date: September 7, 2012
To: EPA & MDNR
From: Burns & McDonnell
Subject: Elmwood Park Neighborhood Sampling Results

In 2011 PerkinElmer began implementation of its MDNR-approved supplemental investigation work plan by conducting groundwater monitoring in the Elmwood Park Neighborhood. The next phase followed in May 2012 with the first of three planned in-home sampling events measuring organic vapors in the air within and under the residents' homes. The work plan calls for three sampling events in order to determine vapor levels that may vary with the seasons.

Burns & McDonnell conducted the second in-home event on August 21-24, 2012. Residences sampled were:

- [REDACTED]
- [REDACTED]

The results from this August sampling event are similar to the May sampling event; the dry conditions resulted in similar levels as the wet conditions. The data was once again compared to EPA action levels and Site-Specific screening levels to determine the appropriate course of action.

The 2011 EPA action levels for TCE and PCE used to evaluate the findings of these tests are based on conservative human health risk calculations. The Site-Specific screening levels are based on even more conservative human health risk calculations. A result above an action level or a screening level in a given sample does not mean there is imminent health risk to the residents of the home sampled.

Based on the May and August results, vapor mitigation systems will be installed at [REDACTED] and [REDACTED], and [REDACTED]. We have completed system design of the vapor mitigation systems for these 3 homes, and expect to begin system installation later this month. Also, based on PerkinElmer's desire to be proactive, given the August detections above the EPA action level in the apartment at [REDACTED] and the home at [REDACTED] and their location in relation to the TCE plume in the immediate area, we are proposing to install vapor mitigation systems in these residences as well.

We will continue to monitor the levels in all homes within the sampling program, and will take appropriate action based on the data collected.

Attachment

**Residential Indoor Air Analytical Results
Missouri Metals Site
Overland, Missouri**

				PCE		TCE		1,1-DCE		cis-1,2-DCE		trans-1,2-DCE		Vinyl Chloride	
Site-Specific Screening Levels ¹				9.36		0.43		210		7.30		63		0.16	
EPA Action Level ²				42		2.1		NA		NA		NA		NA	
Units				µg/m ³		µg/m ³		µg/m ³		µg/m ³		µg/m ³		µg/m ³	
House Address	Sample ID	Sample Location	Sample Collection Date	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
[REDACTED]	IA-01	Apartment	05/08/12	1.4	0.068	1.2	0.054	0.052	0.040	ND	0.040	ND	0.040	ND	0.051
			08/22/12	1.4	0.20	0.35	0.16	ND	0.12	ND	0.12	ND	0.12	ND	0.15
	IA-02	Apartment	05/10/12	0.45	0.068	0.59	0.054	ND	0.400	0.082	0.040	ND	0.040	ND	0.051
			08/22/12	0.41	0.068	0.42	0.054	ND	0.040	ND	0.040	ND	0.040	ND	0.051
	IA-03	Apartment	05/10/12	0.37	0.068	0.78	0.054	ND	0.040	0.071	0.040	ND	0.040	ND	0.051
			08/24/12	0.3	0.14	2.8	0.11	ND	0.079	ND	0.079	ND	0.079	ND	0.10
	IA-04	Basement	05/08/12	35	0.68	2.4	0.54	ND	0.40	1.3	0.40	ND	0.40	ND	0.51
			08/22/12	34	0.68	2.3	0.54	ND	0.40	0.83	0.40	ND	0.40	ND	0.51
	IA-11	Main Floor	08/22/12	15	0.35	1.2	0.28	ND	0.20	0.41	0.20	ND	0.20	ND	0.26
	IA-05	Basement	05/08/12	0.9	0.068	0.91	0.054	ND	0.040	ND	0.040	ND	0.040	ND	0.051
			08/22/12	0.72	0.20	0.91	0.16	ND	0.12	ND	0.12	ND	0.12	ND	0.15
	IA-12	Main Floor	08/22/12	0.57	0.20	0.87	0.16	ND	0.12	ND	0.12	ND	0.12	ND	0.15
	IA-06	Basement	05/09/12	0.4	0.068	0.6	0.054	ND	0.040	0.055	0.040	ND	0.040	ND	0.051
			08/22/12	2.4	0.14	5.8	0.11	ND	0.079	2.0	0.079	ND	0.079	ND	0.10
	IA-13	Main Floor	08/22/12	0.86	0.068	0.77	0.054	ND	0.040	0.52	0.04	ND	0.040	ND	0.051
	IA-07	Basement	05/08/12	4.5	2.7	119	2.1	ND	1.6	71	1.6	ND	1.6	ND	1.0
			08/22/12	1.4	0.20	31	0.54	ND	0.12	2.2	0.12	0.18	0.12	ND	0.15
IA-15	Main Floor	08/22/12	1.3	0.20	29	0.54	ND	0.12	2.1	0.12	0.15	0.12	ND	0.15	
IA-08	Basement	05/08/12	0.87	0.85	37	0.67	ND	0.50	23	0.50	ND	0.50	ND	0.64	
		08/23/12	1.8	0.20	50.4	1.1	ND	0.12	29 J	0.79	0.90	0.12	ND	0.15	
IA-14	Main Floor	08/24/12	1.4	0.20	48	1.1	ND	0.12	28	0.79	0.72	0.12	ND	0.15	
IA-09	Basement	05/10/12	0.67	0.27	0.47	0.21	ND	0.16	ND	0.16	ND	0.16	ND	0.20	
		08/24/12	2.2	0.68	ND	0.54	ND	0.40	ND	0.40	ND	0.40	ND	0.51	
IA-16	Main Floor	08/24/12	2.3	0.68	ND	0.54	ND	0.40	ND	0.40	ND	0.40	ND	0.51	
IA-10	Basement	05/10/12	0.23	0.068	1.9	0.054	ND	0.040	0.31	0.040	ND	0.040	ND	0.051	
		08/24/12	0.28	0.068	0.51	0.054	ND	0.040	ND	0.040	ND	0.040	ND	0.051	
IA-17	Main Floor	08/24/12	0.31	0.068	0.40	0.054	ND	0.040	ND	0.040	ND	0.040	ND	0.051	
NA	AMB-01	Outside	05/09/12	0.21	0.068	0.41	0.054	ND	0.040	ND	0.040	ND	0.040	ND	0.051
	AMB-02	Outside	08/24/12	0.16	0.068	0.15	0.054	ND	0.040	ND	0.040	ND	0.040	ND	0.051
	AMB-03	Outside	08/24/12	0.15	0.068	0.25	0.054	ND	0.040	0.069	0.040	ND	0.040	ND	0.051
	AMB-04	Outside	08/24/12	0.17	0.068	0.16	0.054	ND	0.040	ND	0.040	ND	0.040	ND	0.051
	AMB-05	Outside	08/24/12	ND	0.27	ND	0.21	ND	0.16	ND	0.16	ND	0.16	ND	0.20

**Residential Indoor Air Analytical Results
Missouri Metals Site
Overland, Missouri**

Notes:

¹ - Site-Specific Screening levels as calculated in Table 5-1 of the Supplemental Investigation Work Plan (revised March 13, 2012).

² - EPA Action level provided by USEPA and MDHSS.

NA - Not Applicable

VOCs - Volatile Organic Compounds.

RL - Reporting Limits.

ND - Not Detected.

PCE - Tetrachloroethene.

TCE - Trichloroethene.

DCE - Dichloroethene.

USEPA - United States Environmental Protection Agency

MDHSS - Missouri Department of Health & Senior Services

$\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter.

J - Estimated.

█ - Exceeds EPA Action Level

Bolded Values - Exceed Site-Specific Screening Level.

*A sample result will be also bolded if the sample result is ND and half of the RL exceeds a screening level.

**Residential Subslab Analytical Results
Missouri Metals Site
Overland, Missouri**

Site-Specific Screening Levels ¹			PCE		TCE		1,1-DCE		cis-1,2-DCE		trans-1,2-DCE		Vinyl Chloride		
			93.6		4.3		2100		73		630		1.6		
Units			µg/m ³		µg/m ³		µg/m ³		µg/m ³		µg/m ³		µg/m ³		
House Address	Sample ID	Sample Date	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	
[REDACTED]	SSV-01	05/08/12	4.2	2.7	4.4	2.1	ND	1.6	ND	1.6	ND	1.6	ND	1.0	
		08/21/12	ND	2.7	6.1	2.1	ND	1.6	ND	1.6	ND	1.6	ND	1.0	
	SSV-02	05/10/12	4.5 J	2.7	8.3 J	2.1	ND	1.6	ND	1.6	ND	1.6	ND	1.0	
		08/21/12	3.3	2.7	7.2	2.1	ND	1.6	ND	1.6	ND	1.6	ND	1.0	
	SSV-03	05/10/12	ND	2.7	4.8	2.1	ND	1.6	ND	1.6	ND	1.6	ND	1.0	
		08/23/12	ND	2.7	6.9	2.1	ND	1.6	ND	1.6	ND	1.6	ND	1.0	
	SSV-04	05/08/12	4,400	54	200	43	ND	31	ND	31	ND	31	ND	20	
		08/21/12	9,700	66	350	11	ND	8.0	ND	8.0	ND	8.0	ND	5.2	
	SSV-05	05/08/12	19,000	200	400	160	ND	120	ND	120	ND	120	ND	76	
		08/21/12	22,000	190	550	30	ND	22	ND	22	ND	22	ND	14	
	SSV-06	05/08/12	1,100	14	ND	11	ND	7.9	ND	7.9	ND	7.9	ND	5.1	
		08/21/12	1,200	11	6.0	2.1	ND	1.6	ND	1.6	ND	1.6	ND	1.0	
	SSV-07	05/08/12	250	2.7	ND	2.1	ND	1.6	ND	1.6	ND	1.6	ND	1.0	
		08/21/12	270	2.7	ND	2.1	ND	1.6	ND	1.6	ND	1.6	ND	1.0	
	SSV-08	05/09/12	410 J	46	4,500 J	37	ND	27	840 J	27	ND	27	ND	17	
		08/21/12	2,100	65	44,000	330	ND	38	7,400	38	67	38	ND	24	
	SSV-09	05/09/12	78	5.4	530	4.3	4.3	3.2	100	3.2	4.2	3.2	2.6	2	
		08/21/12	290	6.4	2,500	25	ND	3.8	310	3.8	ND	3.8	ND	2.4	
	SSV-10	05/08/12	Not Sampled due to water present at sub-slab sampling location.												
		08/22/12	ND	350	200,000	1,400	ND	210	15,000	210	740	210	ND	130	
	SSV-11	05/08/12	Not Sampled due to water present at sub-slab sampling location.												
		08/22/12	9.4	6.3	1,700	21	ND	3.7	530	3.7	130	3.7	ND	2.4	
	SSV-12	05/08/12	Not Sampled due to water present at sub-slab sampling location.												
		08/23/12	830	54	39,000	210	ND	32	21,000	160	810	32	ND	20	
	SSV-13	05/08/12	Not Sampled due to water present at sub-slab sampling location.												
		08/23/12	470	27	21,000	110	ND	16	13,000	81	340	16	ND	10	
	SSV-14	05/10/12	7.9	2.7	ND	2.1	ND	1.6	ND	1.6	ND	1.6	ND	1.0	
		08/23/12	20	2.7	ND	2.1	ND	1.6	ND	1.6	ND	1.6	ND	1.0	
	SSV-15	05/10/12	3.8	2.7	ND	2.1	ND	1.6	ND	1.6	ND	1.6	ND	1.0	
		08/23/12	4.6	2.7	13	2.1	ND	1.6	2.0	1.6	ND	1.6	ND	1.0	
	SSV-16	05/10/12	49	2.7	ND	2.1	ND	1.6	ND	1.6	ND	1.6	ND	1.0	
		08/23/12	24	2.7	95	2.1	ND	1.6	7.7	1.6	ND	1.6	ND	1.0	
	SSV-17	05/10/12	9.8	2.7	ND	2.1	ND	1.6	ND	1.6	ND	1.6	ND	1.0	
		08/23/12	21	2.7	ND	2.1	ND	1.6	ND	1.6	ND	1.6	ND	1.0	

**Residential Subslab Analytical Results
Missouri Metals Site
Overland, Missouri**

Notes:

¹ - Site-Specific Screening levels as calculated in Table 5-1 of the Supplemental Investigation Work Plan (revised March 13, 2012).

RL - Reporting Limits.

ND - Not Detected.

PCE - Tetrachloroethene.

TCE - Trichloroethene.

DCE - Dichloroethene.

$\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter.

J - Estimated.

Bolded Values - Exceed Site-Specific Screening Level.

***A sample result will be also bolded if the sample result is ND and half of the RL exceeds a screening level.**

**Residential Sump Air Analytical Results
Missouri Metals Site
Overland, Missouri**

			PCE		TCE		1,1-DCE		cis-1,2-DCE		trans-1,2-DCE		Vinyl Chloride	
Site-Specific Screening Levels ¹			9.36		0.43		210		7.30		63		0.16	
Units			µg/m ³		µg/m ³		µg/m ³		µg/m ³		µg/m ³		µg/m ³	
House Address	Sample ID	Sample Collection Date	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
[REDACTED]	SUA-01	05/08/12	7.8	4.3	410	3.4	ND	2.5	170	2.5	ND	2.5	ND	1.6
		08/22/12	59	2.7	1,900	11	ND	1.6	110	1.6	7.9	1.6	ND	1.0
	SUA-02	05/08/12	ND	0.17	1.8	0.13	0.12	0.099	8.9	0.099	ND	0.099	ND	0.13
		08/24/12	8.2	1.4	290	2.1	ND	0.79	170	1.6	4.4	0.79	ND	0.51
	SUA-03	05/10/12	0.18	0.068	1.3	0.054	ND	0.040	0.25	0.040	ND	0.040	ND	0.051
		08/24/12	0.40	0.068	0.46	0.054	ND	0.040	ND	0.040	ND	0.040	ND	0.051

Notes:

¹ - Site-Specific Screening levels as calculated in Table 5-1 of the Supplemental Investigation Work Plan (revised March 13, 2012).

RL - Reporting Limits.

ND - Not Detected.

PCE - Tetrachloroethene.

TCE - Trichloroethene.

DCE - Dichloroethene.

µg/m³ - Micrograms per cubic meter.

Bolded Values - Exceed Site-Specific Screening Level.

*A sample result will be also bolded if the sample result is ND and half of the RL exceeds a screening level.

**Residential Sump Water Analytical Results
Missouri Metals Site
Overland, Missouri**

			PCE		TCE		1,1-DCE		cis-1,2-DCE		trans-1,2-DCE		Vinyl Chloride	
Site-Specific Screening Levels ¹			12.9		1.07		197		43.8		378		0.141	
Units			µg/L		µg/L		µg/L		µg/L		µg/L		µg/L	
House Address	Sample ID	Sample Date	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
[REDACTED]	SUW-01	05/08/12	39 J	22	1,900 J	22	22 UJ	22	690 J	22	22 UJ	22	22 UJ	22
		08/22/12	2.0 J	8.8	100	8.8	ND	8.8	21	8.8	ND	8.8	ND	8.8
	SUW-02	05/08/12	11 J	17	900	17	ND	17	1,100	17	6.6 J	17	ND	17
		08/24/12	Not Sampled - No Sump Water Present											
	SUW-03	05/09/12	ND	1.0	0.14 J	1.0	ND	1.0	0.29 J	1.0	ND	1.0	ND	1.0
		08/24/12	Not Sampled - No Sump Water Present											

Notes:

¹ - Site-Specific Screening levels as calculated in Table 5-1 of the Supplemental Investigation Work Plan (revised March 13, 2012).

RL - Reporting Limits.

ND - Not Detected.

PCE - Tetrachloroethene.

TCE - Trichloroethene.

DCE - Dichloroethene.

µg/L - Micrograms per Liter.

UJ - Estimated non-detect.

J - Estimated.

Bolded Values - Exceed Site-Specific Screening Level.

***A sample result will be also bolded if the sample result is ND and half of the RL exceeds a screening level.**