

April 29, 2020

Ms. Haley Faulds
Indiana Department of Environmental Management
Office of Land Quality, State Cleanup Section
100 N. Senate Ave., IGCN, Room 1101
Indianapolis, IN 46204
hfaulds@idem.in.gov

Re: Indiana University Foundation Property
Crosstown West Parcel
1791 and 1789 East 10th Street
Bloomington, Indiana

Dear Ms. Faulds:

On behalf of the Indiana University Foundation, KERAMIDA wishes to notify you that, due to the economic and social impacts of the Coronavirus crisis, the development of the above-referenced parcel is presently cancelled. Consequently, the assessment of potential petroleum impacts from the old, closed gas station which existed there is placed on hold and will resume at a future day.

Investigation of this west parcel was started with the sampling of soils. The soil data, presented in a figure, are attached. All petroleum compounds detected were at very low levels, and IUF and KERAMIDA believe delaying the completion of the investigation does not pose any risk. The properties to the west and south belong to IU.

Please note that the delineation on this parcel of the chlorinated plume from the old dry cleaner shop at the adjacent parcel will be completed.

If you have any questions, please contact me.

Sincerely,
KERAMIDA Inc.

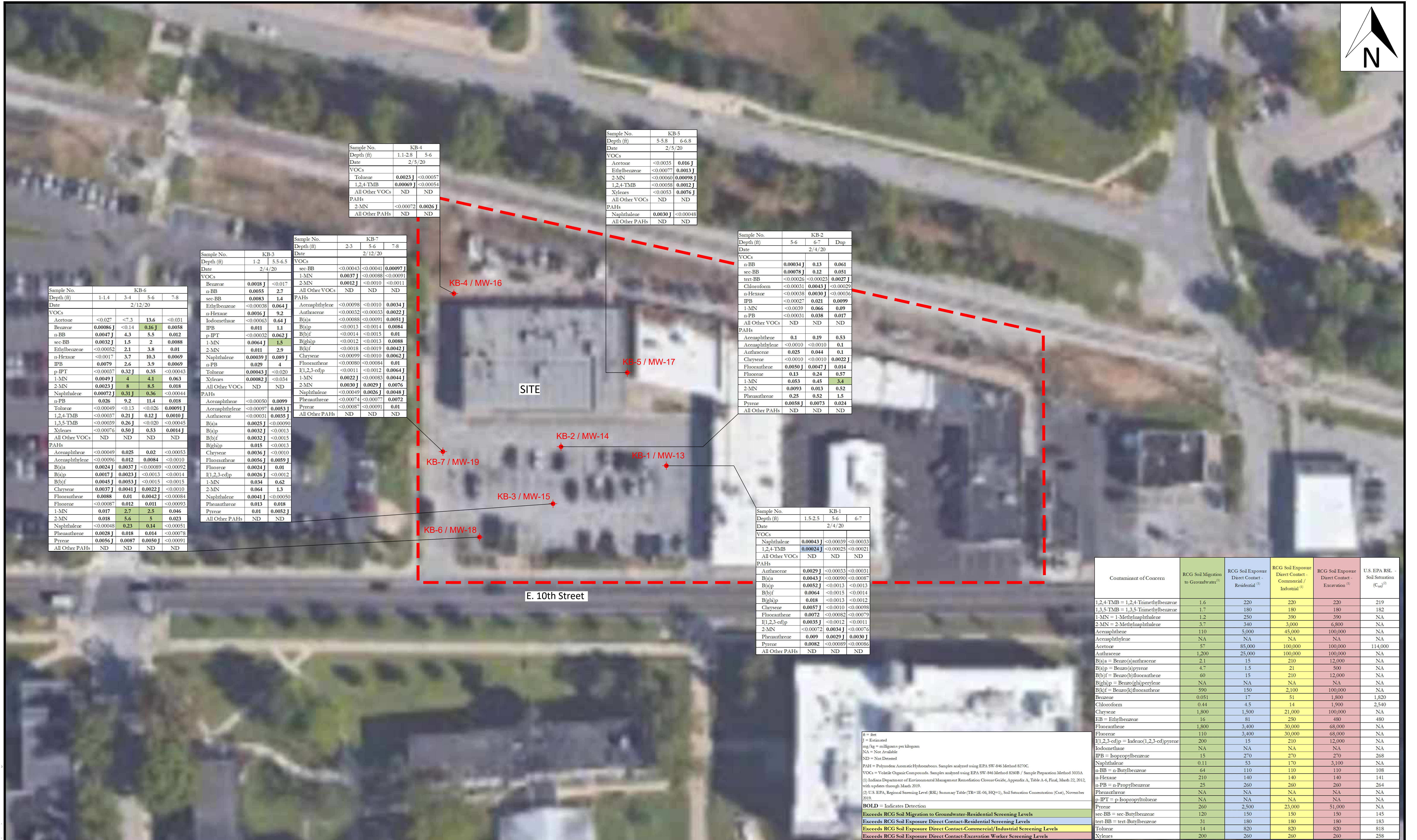
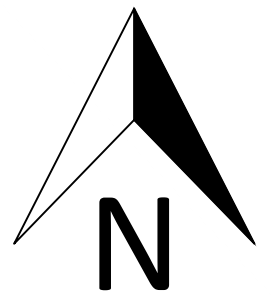


Vicky Keramida, Ph.D.
CEO & Chief Technical Officer

cc: Stacy Knapper, Indiana University Foundation (aknapper@iu.edu)
John Wilhite, Indiana University Foundation (jowilhit@iu.edu)
Terri Czajka, Esq., Ice Miller (terri.czajka@icemiller.com)
Tim Junk, IDEM (tjunk@idem.in.gov)

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Sample No.		KB-4	
Depth (ft)		1.1-2.8	5-6
Date		2/5/20	
VOCs			
Toluene	0.0023 J	<0.00057	
1,2,4-TMB	0.00069 J	<0.00054	
All Other VOCs	ND	ND	
PAHs			
2-MN	<0.00072	0.0026 J	
All Other PAHs	ND	ND	

Sample No.		KB-5	
Depth (ft)		5-5.8	6-6.8
Date		2/5/20	
VOCs			
Acetone	<0.0035	0.016 J	
Ethylbenzene	<0.00077	0.0013 J	
2-MN	<0.00060	0.00098 J	
1,2,4-TMB	<0.00058	0.0012 J	
Xylenes	<0.0053	0.0076 J	
All Other VOCs	ND	ND	
PAHs			
Naphthalene	0.0030 J	<0.00048	
All Other PAHs	ND	ND	

Sample No.		KB-2		
Depth (ft)		5-6	6-7	Dup
Date		2/4/20		
VOCs				
n-BB	0.00034 J	0.13	0.061	
sec-BB	0.00078 J	0.12	0.051	
tert-BB	<0.00026	<0.00023	0.0027 J	
Chloroform	<0.00031	0.0043 J	<0.00029	
n-Hexane	<0.00038	0.0030 J	<0.00036	
IPB	<0.00027	0.021	0.0099	
1-MN	<0.00039	0.066	0.09	
n-PB	<0.00031	0.038	0.017	
All Other VOCs	ND	ND	ND	
PAHs				
Acenaphthene	0.1	0.19	0.53	
Acenaphthylene	<0.0010	<0.0010	0.1	
Anthracene	0.025	0.044	0.1	
Chrysene	<0.0010	<0.0010	0.0022 J	
Fluoranthene	0.0050 J	0.0047 J	0.014	
Fluorene	0.13	0.24	0.57	
1-MN	0.053	0.45	3.4	
2-MN	0.0093	0.013	0.52	
Phenanthrene	0.25	0.52	1.5	
Pyrene	0.0058 J	0.0073	0.024	
All Other PAHs	ND	ND	ND	

Sample No.		KB-6			
Depth (ft)		1-1.4	3-4	5-6	7-8
Date		2/12/20			
VOCs					
Acetone	<0.027	<7.3	13.6	<0.031	
Benzene	0.00086 J	<0.14	0.16 J	0.0058	
n-BB	0.0047 J	4.3	5.5	0.012	
sec-BB	0.0032 J	1.5	2	0.0088	
Ethylbenzene	<0.00052	2.1	3.8	0.01	
n-Hexane	<0.0017	3.7	10.3	0.0069	
IPB	0.0079	2.6	3.9	0.0069	
p-IPT	<0.00037	0.32 J	0.35	<0.00043	
1-MN	0.0049 J	4	4.1	0.063	
2-MN	0.0023 J	8	8.5	0.018	
Naphthalene	0.00072 J	0.31 J	0.36	<0.00044	
n-PB	0.026	9.2	11.4	0.018	
Toluene	<0.00049	<0.13	<0.026	0.00091 J	
1,2,4-TMB	<0.00037	0.21 J	0.12 J	0.0010 J	
1,3,5-TMB	<0.00039	0.26 J	<0.020	<0.00045	
Xylenes	<0.00076	0.50 J	0.53	0.0014 J	
All Other VOCs	ND	ND	ND	ND	
PAHs					
Acenaphthene	<0.00049	0.025	0.02	<0.00053	
Acenaphthylene	<0.00096	0.012	0.0084	<0.0010	
B(a)a	0.0024 J	0.0037 J	<0.00089	<0.00092	
B(a)p	0.0017 J	0.0023 J	<0.0013	<0.0014	
B(b)f	0.0045 J	0.0053 J	<0.0015	<0.0015	
Chrysene	0.0037 J	0.0041 J	0.0022 J	<0.0010	
Fluoranthene	0.0088	0.01	0.0042 J	<0.00084	
Fluorene	<0.00087	0.012	0.011	<0.00093	
1-MN	0.017	2.7	2.5	0.046	
2-MN	0.018	5.6	5	0.023	
Naphthalene	<0.00048	0.23	0.14	<0.00051	
Phenanthrene	0.0028 J	0.018	0.014	<0.00078	
Pyrene	0.0056 J	0.0087	0.0050 J	<0.00091	
All Other PAHs	ND	ND	ND	ND	

Sample No.		KB-3		
Depth (ft)		1-2	5.5-6.5	
Date		2/4/20		
VOCs				
Benzene	0.0018 J	<0.017		
n-BB	0.0055	2.7		
sec-BB	0.0083	1.4		
Ethylbenzene	<0.00038	0.064 J		
n-Hexane	0.0016 J	9.2		
Iodomethane	<0.00063	0.64 J		
IPB	0.011	1.1		
p-IPT	<0.00032	0.062 J		
1-MN	0.0064 J	1.5		
2-MN	0.0011	2.9		
Naphthalene	0.00039 J	0.089 J		
n-PB	0.029	4		
Toluene	0.00043 J	<0.020		
Xylenes	0.00082 J	<0.034		
All Other VOCs	ND	ND		
PAHs				
Acenaphthene	<0.00050	0.0099		
Acenaphthylene	<0.00097	0.0053 J		
Anthracene	<0.00031	0.0035 J		
B(a)a	0.0025 J	<0.00090		
B(a)p	0.0032 J	<0.0013		
B(b)f	0.0032 J	<0.0015		
B(k)l	0.015	<0.0013		
Chrysene	0.0036 J	<0.0010		
Fluoranthene	0.0056 J	0.0059 J		
Fluorene	0.0024 J	0.01		
I(1,2,3-cd)P	0.0026 J	<0.0012		
1-MN	0.034	0.62		
2-MN	0.064	1.3		
Naphthalene	0.0041 J	<0.00050		
Phenanthrene	0.013	0.018		
Pyrene	0.01	0.0052 J		
All Other PAHs	ND	ND		

Sample No.		KB-7		
Depth (ft)		2-3	5-6	7-8
Date		2/12/20		
VOCs				
sec-BB	<0.00043	<0.00041	0.00097 J	
1-MN	0.0037 J	<0.00088	<0.00091	
2-MN	0.0012 J	<0.0010	<0.0011	
All Other VOCs	ND	ND	ND	
PAHs				
Acenaphthylene	<0.00098	<0.0010	0.0034 J	
Anthracene	<0.00032	<0.00033	0.0022 J	
B(a)a	<0.00088	<0.00091	0.0051 J	
B(a)p	<0.0013	<0.0014	0.0084	
B(b)f	<0.0014	<0.0015	0.01	
B(k)l	<0.0012	<0.0013	0.0088	
B(k)l	<0.0018	<0.0019	0.0042 J	
Chrysene	<0.00099	<0.0010	0.0062 J	
Fluoranthene	<0.00080	<0.00084	0.01	
I(1,2,3-cd)P	<0.0011	<0.0012	0.0064 J	
1-MN	0.0022 J	<0.00083	0.0044 J	
2-MN	0.0030 J	0.0029 J	0.0076	
Naphthalene	<0.00049	0.0026 J	0.0048 J	
Phenanthrene	<0.00074	<0.00077	0.0072	
Pyrene	<0.00087	<0.00091	0.01	
All Other PAHs	ND	ND	ND	

Sample No.		KB-1		
Depth (ft)		1.5-2.5	5-6	6-7
Date		2/4/20		
VOCs				
Naphthalene	0.00043 J	<0.00039	<0.00033	
1,2,4-TMB	0.00024 J	<0.00025	<0.00021	
All Other VOCs	ND	ND	ND	
PAHs				
Anthracene	0.0029 J	<0.00033	<0.00031	
B(a)a	0.0043 J	<0.00090	<0.00087	
B(a)p	0.0052 J	<0.0013	<0.0013	
B(b)f	0.0064	<0.0015	<0.0014	
B(k)l	0.018	<0.0013	<0.0012	
Chrysene	0.0057 J	<0.0010	<0.00098	
Fluoranthene	0.0072	<0.00082	<0.00079	
I(1,2,3-cd)P	0.0035 J	<0.0012	<0.0011	
2-MN	<0.00072	0.0034 J	<0.00076	
Phenanthrene	0.009	0.0029 J	0.0030 J	
Pyrene	0.0082	<0.00089	<0.00086	
All Other PAHs	ND	ND	ND	

Contaminant of Concern	RCG Soil Migration to Groundwater ⁽¹⁾	RCG Soil Exposure Direct Contact - Residential ⁽¹⁾	RCG Soil Exposure Direct Contact - Commercial/Industrial ⁽¹⁾	RCG Soil Exposure Direct Contact - Excavation ⁽¹⁾	U.S. EPA RSL - Soil Saturation (C _{soil}) ⁽²⁾
1,2,4-TMB = 1,2,4-Trimethylbenzene	1.6	220	220	220	219
1,3,5-TMB = 1,3,5-Trimethylbenzene	1.7	180	180	180	182
1-MN = 1-Methylanthracene	1.2	250	390	390	NA
2-MN = 2-Methylanthracene	3.7	340	3,000	6,800	NA
Acenaphthene	110	5,000	45,000	100,000	NA
Acenaphthylene	NA	NA	NA	NA	NA
Acetone	57	85,000	100,000	100,000	114,000
Anthracene	1,200	25,000	100,000	100,000	NA
B(a)a = Benzo(a)anthracene	2.1	15	210	12,000	NA
B(a)p = Benzo(a)pyrene	4.7	15	21	500	NA
B(b)f = Benzo(b)fluoranthene	60	15	210	12,000	NA
B(k)l = Benzo(k)fluoranthene	NA	NA	NA	NA	NA
B(k)l = Benzo(k)fluoranthene	590	150	2,100	100,000	NA
Benzene	0.051	17	51	1,800	1,820
Chloroform	0.44	4.5	14	1,900	2,540
Chrysene	1,800	1,500	21,000	100,000	NA
EB = Ethylbenzene	16	81	250	480	480
Fluoranthene	1,800	3,400	30,000	68,000	NA
Fluorene	110	3,400	30,000	68,000	NA
I(1,2,3-cd)P = Indeno(1,2,3-cd)pyrene	200	15	210	12,000	NA
Iodomethane	NA	NA	NA	NA	NA
IPB = Isopropylbenzene	15	270	270	270	268
Naphthalene	0.11	53	170	3,100	NA
n-BB = n-Butylbenzene	64	110	110	110	108
n-Hexane	210	140	140	140	141
n-PB = n-Propylbenzene	25	260	260	260	264
Phenanthrene	NA	NA	NA	NA	NA
p-IPT = p-Isopropyltoluene	NA	NA	NA	NA	NA
Pyrene	260	2,500	23,000	51,000	NA
sec-BB = sec-Butylbenzene	120	150	150	145	145
tert-BB = tert-Butylbenzene	31	180	180	180	183
Toluene	14	820	820	820	818
Xylenes	200	260	260	260	258

E = Est
 J = Estimated
 ng/kg = milligrams per kilogram
 NA = Not Available
 ND = Not Detected
 PAH = Polycyclic Aromatic Hydrocarbons. Samples analyzed using EPA SW-846 Method 8270C.
 VOCs = Volatile Organic Compounds. Samples analyzed using EPA SW-846 Method 8260B / Sample Preparation Method 3035A.
 (1) Indiana Department of Environmental Management Remediation Closure Guide, Appendix A, Table A-6, Final, March 22, 2012, with updates through March 2019.
 (2) U.S. EPA, Regional Screening Level (RSL) Summary Table (TR-1E-06, HQ=1), Soil Saturation Concentration (C_{soil}), November 2018.
BOLD = Indicates Detection
 Exceeds RCG Soil Migration to Groundwater-Residential Screening Levels
 Exceeds RCG Soil Exposure Direct Contact-Residential Screening Levels
 Exceeds RCG Soil Exposure Direct Contact-Commercial/Industrial Screening Levels
 Exceeds RCG Soil Exposure Direct Contact-Excavation Worker Screening Levels

LEGEND
 Approximate Site Boundary
 Soil Boring / Monitoring Well Location

SCALE:



Project: Crosstown Cleaners
 1807 E. 10th Street
 Bloomington, IN 47408
 Project Number: 19183
 Date: April 24, 2020
 Drawn By: S. Grady
 Approved By: BW/BH
 File No.: 19183-Figures

Figure 5
 Soil Analytical
 Results Map
 (mg/kg)