Table 1
Subslab Vapor Analytical Results
Grede Foundry
Former Western Metals - 1215 N. 62nd Street, Wauwatosa, Wisconsin
Project Reference #13609

Sample Point:		**Grede SV-1**	**Grede SV-1R**						**Grede SV-6**	**Grede SV-7**	Screening Level for Residential Sub-slab Vapor to Indoor Air Pathway[3]	Screening Level for Small Commercial Sub-slab Vapor to Indoor Air Pathway[4]	Screening Level for Large Commercial/Industrial Sub-slab Vapor to Indoor Air Pathway[2]
VOCs (Detects Only)	Unit	1-hour sub-slab sample	0.5-hour sub-slab sample	0.5-hour sub-slab sample	0.5-hour sub-slab sample	0.5-hour sub-slab sample	0.5-hour sub-slab sample	12 day passive sub-slab	0.5-hour sub-slab sample	0.5-hour sub-slab sample			
		Collection Date											
		09/26/13	03/14/19	10/22/19	03/10/20	05/08/20	03/09/22	2/23/23-3/7/23	03/09/22	03/09/22			
cis-1,2-Dichloroethene	µg/m^3	<11.3	<0.35	<0.39	<0.30	<0.18	<0.197	16	<0.197	<0.197	1,400	5,800	18,000
trans-1,2-Dichloroethene	µg/m^3	<11.3	<0.46	<0.48	<0.40	<0.26	<0.231	<36	<0.231	<0.231	1,400	5,800	18,000
1,1-Dichloroethene	µg/m^3	NA	<0.44	<0.38	<0.38	<0.19	<0.21	NA	<0.21	<0.21	7,000	29,000	88,000
1,1-Dichloroethane	µg/m^3	NA	<0.36	<0.50	<0.31	<0.18	<0.187	NA	<0.187	<0.187	590	2,600	7,700
Tetrachloroethene	µg/m^3	<9.6	3.6	20.9	961	19.4	0.81 J	<7.6	1.15	2.78	1,400	5,800	18,000
1,1,1-Trichloroethane	µg/m^3	NA	5.0	9.1	8.9	8.6	2.56	<19	72	20.9	170,000	730,000	2,200,000
Trichloroethene	µg/m^3	**{[911]}**	**[773]**	**{[935]}**	**{[930]}**	**{[1280]}**	**115**	**100**	7.4	**150**	70	290	880
Vinyl chloride	µg/m^3	<3.6	<0.20	<0.22	<0.18	<0.15	<0.148	<96	<0.148	<0.15	56	930	2,800

Notes

1. µg/m^3 = micrograms per cubic meter

2. Vapor Risk Screening Level based on Vapor Action Levels (VALs) described in WDNR publication PUB-RR-800 "Addressing Vapor Intrusion at Remediation & Redevelopment Sites in Wisconsin" (dated January 2018), which in turn references EPA Region 3 Risk-Based Concentrations for industrial air (Regional Screening Level Master Table - November 2022 [http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm]), and WDNR January 2023 "Indoor Air Vapor Action Levels for Various VOCs Quick Look-Up Table". Vapor Risk Screening Level adjusted to 1-in-100,000 increase in lifetime cancer risk for carcinogens per WDNR publication PUB-RR-800; VAL is not adjusted for non-carcinogens (i.e., harzard index = 1). Furthermore, Vapor Risk Screening Level has been adjusted with an **Attenuation Factor of 0.01** for the subslab to ambient air pathway as provided in WDNR publication PUB-RR-800 for a **large commercial/industrial** building and deep soil gas samples.

3. Residential Vapor Risk Screening Level = Risk-based concentrations based on VALs for **residential** air which has been adjusted with an **Attenuation Factor of 0.03** for the subslab / soil gas vapor to ambient air pathway in a **residential building**. VALs for residential indoor air based on WDNR publication RR-800 "Addressing Vapor Intrusion at Remediation & Redevelopment Sites in Wisconsin" (dated January 2018) which in turn references EPA Region 3 Risk-Based Concentrations for residential air [Regional Screening Level (RSL) Summary Table (TR=1E-06, HQ=1) November 2022] and residential air in January 2023 "WI Vapor Quick Look-Up Table, Indoor Air Vapor Action Levels And Vapor Risk Screening Levels". VAL adjusted to 1-in-100,000 increase in lifetime cancer risk for carcinogens per WDNR publication RR-800; VAL is not adjusted for non-carcinogens (i.e., hazard index = 1).

4. Small Commercial Vapor Risk Screening Level = Risk-based concentrations based on VALs for **small commercial** air which has been adjusted with an **Attenuation Factor of 0.03** for the subslab / soil gas vapor to ambient air pathway in a **small commercial building**. VALs for small commercial building indoor air based on WDNR publication PUB-RR-800 "Addressing Vapor Intrusion at Remediation & Redevelopment Sites in Wisconsin" (dated January 2018) which in turn references EPA Region 3 Risk-Based Concentrations for industrial air [Regional Screening Level (RSL) Summary Table (TR=1E-06, HQ=1) November 2022] and small commercial air in January 2023 "WI Vapor Quick Look-Up Table, Indoor Air Vapor Action Levels And Vapor Risk Screening Levels". VAL adjusted to 1-in-100,000 increase in lifetime cancer risk for carcinogens per WDNR publication RR-800; VAL is not adjusted for non-carcinogens (i.e., hazard index = 1).

4. Exceedances: **BOLD** = Concentration exceeds Residential VRSL
[ ] = Concentration exceeds Small Commercial VRSL
{ } = Concentration exceeds Large Commercial / Industrial VRSL

Data entered / updated by: kal Date: 3/27/2023
Data checked by: SRM Date: 3/27/2023

Table 1
Subslab Vapor Analytical Results -- 6228 W. State Street
Project Reference #13609

Sample Point:					SV-2					SV-3					SV-4				
VOCs (Detects Only)	Unit	Vapor Risk Screening Level [1]	Vapor Risk Screening Level 2	Vapor Risk Screening Level [3]	0.5-hour sub-slab sample	0.5-hour sub-slab sample	0.5-hour sub-slab sample	0.5-hour sub-slab sample	4 day passive sub-slab	0.5-hour sub-slab sample	0.5-hour sub-slab sample	0.5-hour sub-slab sample	0.5-hour sub-slab sample	4 day passive sub-slab	0.5-hour sub-slab sample	0.5-hour sub-slab sample	0.5-hour sub-slab sample	0.5-hour sub-slab sample	4 day passive sub-slab
		Residential Air	Small Commercial Air	Large Commercial Air	Collection Date					Collection Date					Collection Date				
					04/15/14	03/14/19	10/22/19	03/10/20	3/3/23-3/7/23	04/15/14	03/14/19	10/22/19	03/10/20	3/3/23-3/7/23	04/15/14	03/14/19	10/22/19	03/10/20	3/3/23-3/7/23
cis-1,2-Dichloroethene	µg/m^3	1,400	5,800	18,000	1.3	<0.34	<0.34	<0.33	<14	<5.6	<0.55	0.43 J	<0.31	<14	<23.3	<0.32	0.69 J	<0.30	<13
trans-1,2-Dichloroethene	µg/m^3	1,400	5,800	18,000	<1.2	<0.44	<0.41	<0.42	<32	<5.6	<0.72	<0.42	<0.40	<32	<23.3	<0.42	<0.42	<0.40	<32
1,1-Dichloroethene	µg/m^3	7,000	29,000	88,000	<1.2	<0.42	<0.33	<0.41	NA	<5.6	<0.69	0.92 J	<0.38	NA	<23.3	<0.40	<0.34	<0.38	NA
1,1-Dichloroethane	µg/m^3	590	2,600	7,700	<1.2	<0.35	<0.42	<0.34	NA	<5.7	<0.57	<0.44	<0.31	NA	<23.6	2.0	<0.44	<0.31	NA
Tetrachloroethene	µg/m^3	1,400	5,800	18,000	1170	153	201	**2460**	190	5070	318	560	1390	150	**1570**	995	**3410**	**3370**	**2000**
1,1,1-Trichloroethane	µg/m^3	170,000	730,000	2,200,000	759	72	24.2	58.3	29	581	53	72.0	87.9	18	1580	1340	1560	1450	190
Trichloroethene	µg/m^3	70	290	880	<0.79	<0.40	0.54J	4.8	<9.8	78.3	58.0	**90.7**	**95.9**	23	{[**1620**]}	24.5	113	**246**	**130**
Vinyl chloride	µg/m^3	56	930	2,800	<0.37	<0.20	<0.19	<0.19	<84	<1.8	<0.32	<0.20	<0.18	<85	<7.5	<0.18	<0.20	<0.18	<84

Notes

1. µg/m^3 = micrograms per cubic meter

2. Vapor Risk Screening Level based on Vapor Action Levels (VALs) described in WDNR publication PUB-RR-800 "Addressing Vapor Intrusion at Remediation & Redevelopment Sites in Wisconsin" (dated January 2018), which in turn references EPA Region 3 Risk-Based Concentrations for industrial air (Regional Screening Level Master Table - **November 2022** [http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm]), and WDNR January 2023 "Indoor Air Vapor Action Levels for Various VOCs Quick Look-Up Table". Vapor Risk Screening Level adjusted to **1-in-100,000 increase in lifetime cancer risk** for carcinogens per WDNR publication PUB-RR-800; VAL is not adjusted for non-carcinogens (i.e., **harzard index = 1**). Furthermore, Vapor Risk Screening Level has been adjusted with an **Attenuation Factor of 0.03** for the subslab to ambient air pathway as provided in WDNR publication PUB-RR-800 for a small commercial/industrial building.

3. Vapor Risk Screening Level based on Vapor Action Levels (VALs) described in WDNR publication PUB-RR-800 "Addressing Vapor Intrusion at Remediation & Redevelopment Sites in Wisconsin" (dated January 2018), which in turn references EPA Region 3 Risk-Based Concentrations for industrial air (Regional Screening Level Master Table - **November 2022** [http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm]), and WDNR January 2023 "Indoor Air Vapor Action Levels for Various VOCs Quick Look-Up Table". Vapor Risk Screening Level adjusted to **1-in-100,000 increase in lifetime cancer risk** for carcinogens per WDNR publication PUB-RR-800; VAL is not adjusted for non-carcinogens (i.e., **harzard index = 1**). Furthermore, Vapor Risk Screening Level has been adjusted with an **Attenuation Factor of 0.01** for the subslab to ambient air pathway as provided in WDNR publication PUB-RR-800 for a large commercial/industrial building.

4. Vapor Risk Screening Level based on Vapor Action Levels (VALs) described in WDNR publication PUB-RR-800 "Addressing Vapor Intrusion at Remediation & Redevelopment Sites in Wisconsin" (dated January 2018), which in turn references EPA Region 3 Risk-Based Concentrations for residential air (Regional Screening Level Master Table - **November 2022** [http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm]), and WDNR January 2023 "Indoor Air Vapor Action Levels for Various VOCs Quick Look-Up Table". Vapor Risk Screening Level adjusted to **1-in-100,000 increase in lifetime cancer risk** for carcinogens per WDNR publication PUB-RR-800; VAL is not adjusted for non-carcinogens (i.e., **harzard index = 1**). Furthermore, Vapor Risk Screening Level has been adjusted with an **Attenuation Factor of 0.03** for the subslab to ambient air pathway as provided in WDNR publication PUB-RR-800 for a large commercial/industrial building.

4. Exceedances:
BOLD = Concentration exceeds Residential VRSL
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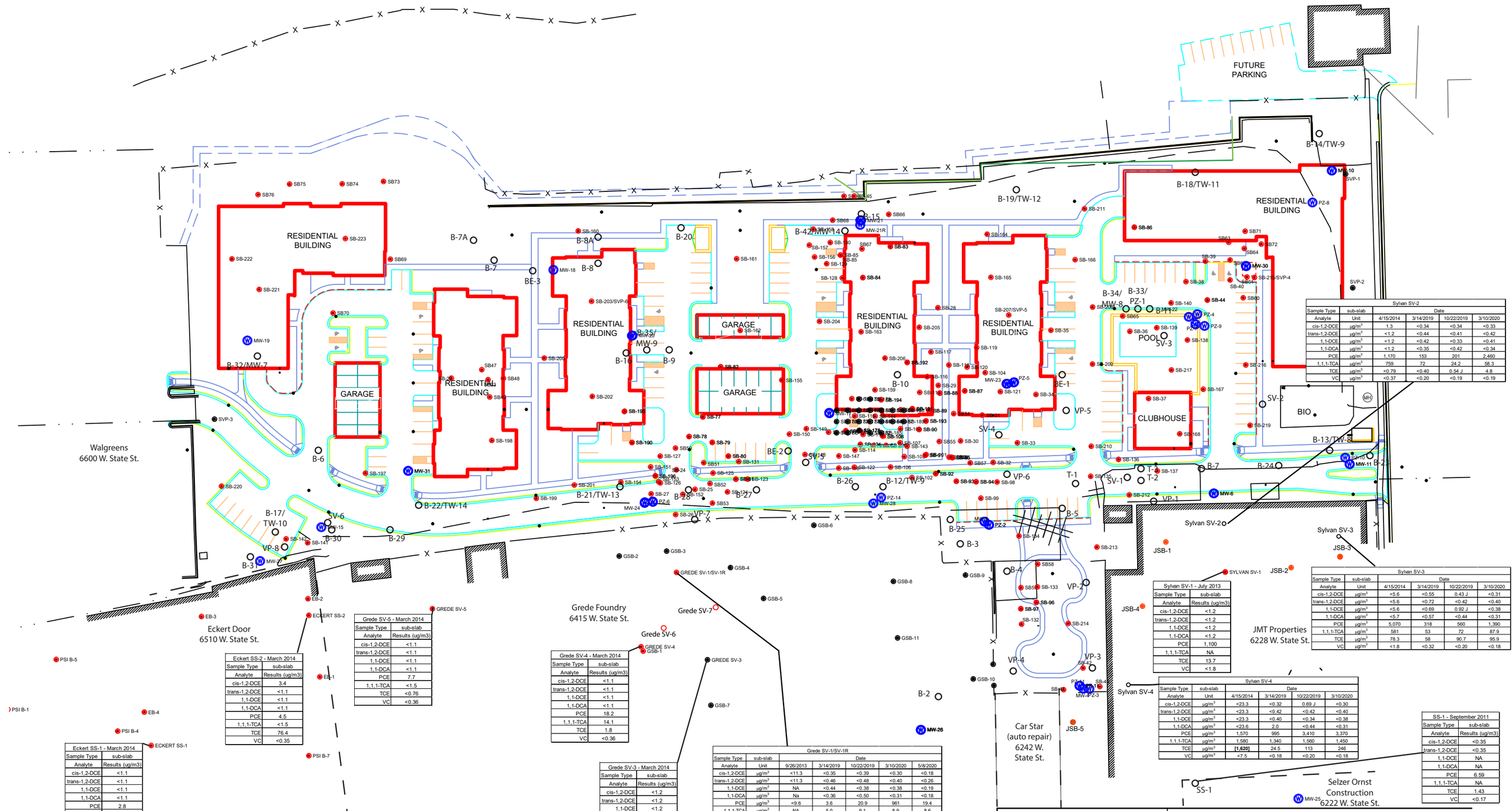

Sylvan SV-2					
Sample Type	sub-slab	Date			
Analyte	Unit	4/15/2014	3/14/2019	10/22/2019	3/10/2020
cis-1,2-DCE	µg/m³	1.3	<0.34	<0.34	<0.33
trans-1,2-DCE	µg/m³	<1.2	<0.44	<0.41	<0.42
1,1-DCE	µg/m³	<1.2	<0.42	<0.33	<0.41
1,1-DCA	µg/m³	<1.2	<0.35	<0.42	<0.34
PCE	µg/m³	1,170	153	201	2,460
1,1,1-TCA	µg/m³	759	72	24.2	58.3
TCE	µg/m³	<0.79	<0.40	0.54 J	4.8
VC	µg/m³	<0.37	<0.20	<0.19	<0.19

Sylvan SV-3					
Sample Type	sub-slab	Date			
Analyte	Unit	4/15/2014	3/14/2019	10/22/2019	3/10/2020
cis-1,2-DCE	µg/m³	<5.6	<0.55	0.43 J	<0.31
trans-1,2-DCE	µg/m³	<5.6	<0.72	<0.42	<0.40
1,1-DCE	µg/m³	<5.6	<0.69	0.92 J	<0.38
1,1-DCA	µg/m³	<5.7	<0.57	<0.44	<0.31
PCE	µg/m³	5,070	318	560	1,390
1,1,1-TCA	µg/m³	581	53	72	87.9
TCE	µg/m³	78.3	58	90.7	95.9
VC	µg/m³	<1.8	<0.32	<0.20	<0.18

Sylvan SV-1 - July 2013	
Sample Type	sub-slab
Analyte	Results (ug/m3)
cis-1,2-DCE	<1.2
trans-1,2-DCE	<1.2
1,1-DCE	<1.2
1,1-DCA	<1.2
PCE	1,100
1,1,1-TCA	NA
TCE	13.7
VC	<1.8

Sylvan SV-4					
Sample Type	sub-slab	Date			
Analyte	Unit	4/15/2014	3/14/2019	10/22/2019	3/10/2020
cis-1,2-DCE	µg/m³	<23.3	<0.32	0.69 J	<0.30
trans-1,2-DCE	µg/m³	<23.3	<0.42	<0.42	<0.40
1,1-DCE	µg/m³	<23.3	<0.40	<0.34	<0.38
1,1-DCA	µg/m³	<23.6	2.0	<0.44	<0.31
PCE	µg/m³	1,570	995	3,410	3,370
1,1,1-TCA	µg/m³	1,580	1,340	1,560	1,450
TCE	µg/m³	**[1,620]**	24.5	113	246
VC	µg/m³	<7.5	<0.18	<0.20	<0.18

SS-1 - September 2011	
Sample Type	sub-slab
Analyte	Results (ug/m3)
cis-1,2-DCE	<0.35
trans-1,2-DCE	<0.35
1,1-DCE	NA
1,1-DCA	NA
PCE	6.59
1,1,1-TCA	NA
TCE	1.43
VC	<0.17

Grede SV-5 - March 2014	
Sample Type	sub-slab
Analyte	Results (ug/m3)
cis-1,2-DCE	<1.1
trans-1,2-DCE	<1.1
1,1-DCE	<1.1
1,1-DCA	<1.1
PCE	7.7
1,1,1-TCA	<1.5
TCE	<0.76
VC	<0.36

Eckert SS-2 - March 2014	
Sample Type	sub-slab
Analyte	Results (ug/m3)
cis-1,2-DCE	3.4
trans-1,2-DCE	<1.1
1,1-DCE	<1.1
1,1-DCA	<1.1
PCE	4.5
1,1,1-TCA	<1.5
TCE	76.4
VC	<0.35

Eckert SS-1 - March 2014	
Sample Type	sub-slab
Analyte	Results (ug/m3)
cis-1,2-DCE	<1.1
trans-1,2-DCE	<1.1
1,1-DCE	<1.1
1,1-DCA	<1.1
PCE	2.8
1,1,1-TCA	<1.5
TCE	<0.74
VC	<0.35

Grede SV-4 - March 2014	
Sample Type	sub-slab
Analyte	Results (ug/m3)
cis-1,2-DCE	<1.1
trans-1,2-DCE	<1.1
1,1-DCE	<1.1
1,1-DCA	<1.1
PCE	18.2
1,1,1-TCA	14.1
TCE	1.8
VC	<0.36

Grede SV-3 - March 2014	
Sample Type	sub-slab
Analyte	Results (ug/m3)
cis-1,2-DCE	<1.2
trans-1,2-DCE	<1.2
1,1-DCE	<1.2
1,1-DCA	<1.2
PCE	80.8
1,1,1-TCA	36.6
TCE	323
VC	<0.39

Grede SV-1/SV-1R						
Sample Type	sub-slab	Date				
Analyte	Unit	9/26/2013	3/14/2019	10/22/2019	3/10/2020	5/8/2020
cis-1,2-DCE	µg/m³	<11.3	<0.35	<0.39	<0.30	<0.18
trans-1,2-DCE	µg/m³	<11.3	<0.46	<0.48	<0.40	<0.26
1,1-DCE	µg/m³	NA	<0.44	<0.38	<0.38	<0.19
1,1-DCA	µg/m³	Na	<0.36	<0.50	<0.31	<0.18
PCE	µg/m³	<9.6	3.6	20.9	961	19.4
1,1,1-TCA	µg/m³	NA	5.0	9.1	8.9	8.6
TCE	µg/m³	**[911]**	773	**[935]**	**[930]**	**[1280]**
VC	µg/m³	<3.6	<0.20	<0.22	<0.18	<0.15

Grede SV-2 - March 2014	
Sample Type	sub-slab
Analyte	Results (ug/m3)
cis-1,2-DCE	<1.1
trans-1,2-DCE	<1.1
1,1-DCE	<1.1
1,1-DCA	<1.1
PCE	31.4
1,1,1-TCA	1.7
TCE	<0.74
VC	<0.35

Former Western Metals
1215 N. 62nd Street
Wauwatosa, WI

THE SIGMA GROUP
Single Source. Sound Solutions.
www.thesigmagroup.com
1300 West Canal Street
Milwaukee, WI 53233
Phone: 414-643-4200
Fax: 414-643-4210

Figure 8

Sub-Slab Results Map