December 13, 2013

Mr. Ed Olson and Al Timm
Voluntary Investigation & Cleanup Program
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, MN 55155

RE: Soil Vapor Sampling Summary Report
MN Bio Business Center, Rochester, MN

Dear Ed and Al:

On behalf of the City of Rochester (Client), Landmark Environmental, LLC (Landmark) completed a soil vapor investigation (Investigation) at the above-referenced property (Property) on October 18, 2013. The Investigation was conducted in accordance with the Soil Vapor Sampling Work Plan submitted to the Minnesota Pollution Control Agency (MPCA) Voluntary Investigation and Cleanup (VIC) Program by Landmark on May 2, 2012, and an email from Landmark dated December 13, 2012. These submittals were approved by the MPCA in an email dated December 18, 2012.

Soil gas and sump headspace sampling was conducted to assess the potential risk of vapor intrusion resulting from residual volatile organic compounds (VOC) contamination in the fractured bedrock and groundwater at the Property. Sampling activities were conducted in general accordance with the following MPCA vapor intrusion guidance documents:

- Vapor Intrusion Technical Support Document, Remediation Division, August 2010; and,

- Risk-Based Guidance for the Vapor Intrusion Pathway, Superfund RCRA and Voluntary Cleanup Section, September 2008.

Soil vapor samples were collected from 4 interior soil vapor sampling ports (LSG-7 through LSG-10) in conjunction with collecting air samples from the headspace of each of the two stormwater sumps (SP-1 and SP-2) located in the basement of the Property building (see **Figure 1**). The DPE system was shut down on August 26, 2013, to evaluate the potential contaminant rebound concentrations in the soil vapor and groundwater through August 2014.

Permanent soil vapor sampling ports, LSG-7 through LSG-10, were installed during the December 21, 2012, soil vapor sampling event. These sampling ports were installed by coring 1-inch holes through the foundation walls near the basement ceiling. The samples collected at LSG-7 and LSG-9 were representative of sub-slab soil vapor samples because they were collected below the Property building slab. LSG-7, which was near the former SG-1 sampling location, was collected beneath the slab of Dooley's Pub. LSG-9, the north sampling location,

was collected beneath the slab on grade section of the Property building. These two sample locations are representative of sub-slab samples collected within 1 foot below the bottom of the slab per MPCA requirements. Soil vapor samples, which are not considered "sub-slab" soil vapor samples because they were not located beneath a building slab, were collected at LSG-8 located on the east side of the Property building beneath the sidewalk and LSG-10 located on the west side of the Property building beneath the alley. The soil vapor sample from LSG-8 was collected approximately 6 inches below the concrete surface of the sidewalk. The soil vapor sample LSG-10 was collected approximately 3 feet beneath the concrete surface of the alley. In addition to collecting soil vapor samples at locations LSG-7 through LSG-10, Landmark also collected grab headspace samples from storm sewer sumps SP-1 and SP-2 located in the basement of the Property building.

The soil vapor samples were collected in an evacuated, 1 L (liter) Summa canister equipped with a dedicated pneumatic flow controller. Prior to collecting the soil gas samples, at a minimum, two volumes of air were purged from the sampling train using a hand-operated syringe. The sampling line (1/4-inch outer diameter [O.D.] Teflon tubing) was attached to the canister inlet using a Swagelok nut and set of stainless steel ferrules. The sampling line was attached to the tubing in the soil void created (approximately 1-inch O.D.) using new small length of inert tubing. The pneumatic flow controller was pre-set by the laboratory so that the canister fills at a rate in no less than 10 minutes. The Summa canister was equipped with a pressure gauge to monitor vacuum. The sump pit samples were grab samples collected over approximately 10 minutes. Following the collection of the soil vapor samples, the soil vapor VOC concentration was measured using a photoionization detector (PID). In addition, Summa canister start and end vacuum levels along with PID measurements were recorded on a field sampling forms. The Summa canisters were submitted to Legend Technical Services, Inc. (Legend) for analysis of VOCs using U.S. Environmental Protection Agency (EPA) Method TO-15.

As shown in attached **Table 1**, all of the pre- and post-sampling PID readings at LSG-7 through LSG-10 and SP-1 and SP-2 were zero parts per million (ppm). As shown in the attached analytical summary **Table 2**. All of the detected parameters, except for tetrachloroethene (PCE) at SP-2, were below the MPCA's applicable 10X Commercial/Industrial Intrusion Screening Values (I-ISVs) and the MPCA's 10X Residential Intrusion Screening Values (R-ISVs). The PCE headspace concentration at SP-2 was 10,000 micrograms per cubic meter. The analytical laboratory report from Legend is attached.

The October 18, 2013, soil vapor results show that contaminated soil remediation and DPE system operation at the Property have continued to effectively reduced the soil vapor concentrations on the Property and on adjacent properties. The fact that the soil vapor sampling results did not exceed the R-ISV's and I-ISVs after the DPE system was shut down for 53 days, demonstrates that there is minimal risk of off-site soil vapor migration from the Property to adjacent properties. Sump SP-2, which collects water from the elevator pit drain tile, is vented to the passive venting system.

The next soil vapor sampling event will be conducted in the 1st quarter of 2014. On behalf of the Client, Landmark requests that the MPCA VIC Program review and approve this Investigation report.

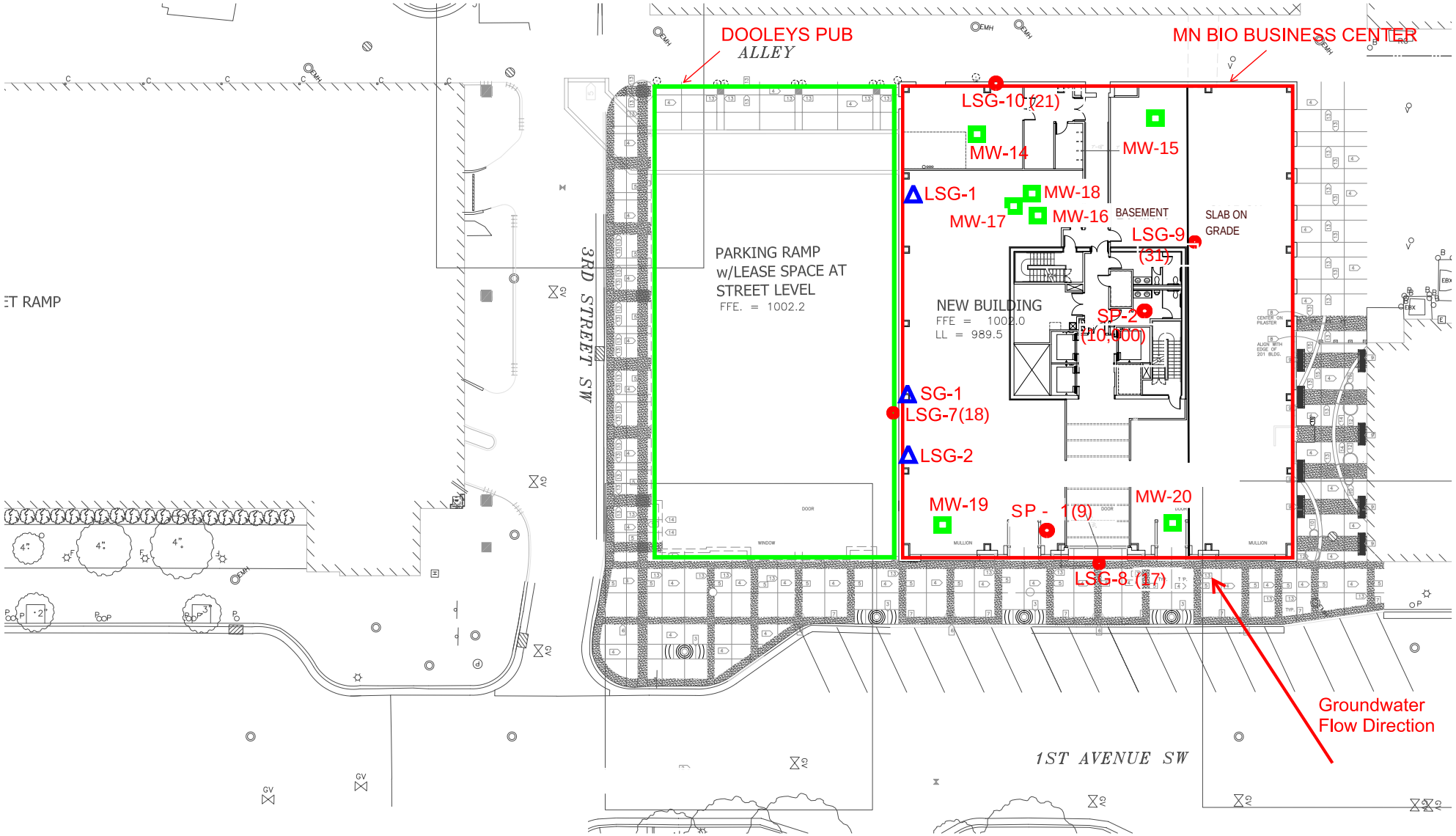
Please contact me at jskramstad@landmarkenv.com or 952-877-9601 if you have any comments or questions.

Sincerely,

Jason D. Skramstad

Encl.

cc: Mr. Terry Spaeth, City of Rochester



- SP-1 December 21, 2012 Sump Pit Vapor Sampling Location (ug/m3)
- MW-19 Monitoring Well of Interest
- LSG-11 December 21, 2012 Soil Vapor Sampling Locations (ug/m3)
- LSG-2 Previous Soil Vapor Sampling Location of Interest

Note: The Applicable Screening Criteria for PCE is the MPCA 10X Industrial Intrusion Screening Value, which is 600 ug/m3

GENERAL NOTES:

KEYNOTES:

LEGEND:

LAYOUT AND MATERIALS PLAN

L101

FIGURE 1 - SOIL VAPOR SAMPLING LOCATIONS AND PCE RESULTS

TABLE 1
October 18, 2013
Soil Vapor Field Readings
MN Bio Business Center
Rochester, MN

Location	Can Number	Regulator Number	Pre PID	Post PID	Start Time/Vacuum	Post Time/Vacuum
LSG-7	00571	42	0.0	0.0	11:15/-27	11:25/-6
LSG-8	00444	57	0.0	0.0	11:32/-27	08:20/-6
LGP-9	00423	21	0.0	0.0	10:46/-28	10:56/-6
LSG-10	00374	19	0.0	0.0	11:04/-27	11:13-6
SP-1	00371	18	0.0	0.0	11:20/-29	11:30/-6
SP-2	00372	9	0.0	0.0	11:10/-29	11:21/-6

Table 2
Soil Vapor Sampling Results
MN Bio Business Center
Rochester, MN
(ug/m^3)

Parameter	MPCA Commercial 10X ISV	MPCA Residential 10X ISV	LSG-7 12/21/2012	LSG-7 10/18/2013	LSG-8 12/21/2012	LSG-8 10/18/2013
1,1,1-Trichloroethane	100000	50000	<2.7	<2.7	<2.7	<2.7
1,1,2,2-Tetrachloroethane	10	2	<3.4	<3.4	<3.4	<3.4
1,1,2-Trichloroethane	20	6	<2.7	<2.7	<2.7	<2.7
1,1-Dichloroethane	10000	5000	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethene	6000	2000	<2.0	<2.0	<2.0	<2.0
1,2,4-Trichlorobenzene	100	40	<3.7	<3.7	<3.7	<3.7
1,2,4-Trimethylbenzene	200	70	**6.1**	**1.1**	**5.5**	**1.2**
1,2-Dibromoethane	1	0.2	<3.8	<3.8	<3.8	<3.8
1,2-Dichlorobenzene	6000	2000	<3.0	<3.0	<3.0	<3.0
1,2-Dichloroethane	10	4	<2.0	<2.0	<2.0	<2.0
1,2-Dichloropropane	100	40	<2.3	<2.3	<2.3	<2.3
1,3,5-Trimethylbenzene	200	60	**2.1**	<1.0	**2.1**	<1.0
1,3-Butadiene	10	3	<1.1	<1.1	<1.1	<1.1
1,3-Dichlorobenzene	NA	NA	<3.0	<3.0	<3.0	<3.0
1,4-Dichlorobenzene	2000	600	<3.0	<3.0	<3.0	<3.0
2-Butanone	100000	50000	**5.4**	<1.5	**5.4**	<1.5
4-Ethyltoluene	NA	NA	**3.1**	<2.5	**2.8**	<2.5
Acetone	870000	310000	**55**	**7.8**	**49**	**13**
Benzene	130	45	<0.64	**2**	<0.64	<0.64
Benzyl chloride	30	10	<2.6	<2.6	<2.6	<2.6
Bromodichloromethane	NA	NA	<3.4	<3.4	<3.4	<3.4
Bromoform	300	90	<5.2	<5.2	<5.2	<5.2
Bromomethane	100	50	<1.9	<1.9	<1.9	<1.9
Carbon disulfide	20000	7000	<1.6	<1.6	<1.6	<1.6
Carbon tetrachloride	20	7	<3.1	<3.1	<3.1	<3.1
Chlorobenzene	1000	500	<2.3	<2.3	<2.3	<2.3
Chloroethane	300000	100000	<1.3	<1.3	<1.3	<1.3
Chloroform	3000	1000	<2.4	<2.4	<2.4	<2.4
Chloromethane	3000	900	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	NA	NA	<2.0	<2.0	<2.0	<2.0
cis-1,3-Dichloropropene	600	200	<2.3	<2.3	<2.3	<2.3
Cyclohexane	200000	60000	**14**	**1.8**	**7.9**	<1.7
Dibromochloromethane	NA	NA	<4.3	<4.3	<4.3	<4.3
Dichlorodifluoromethane	6000	2000	<2.5	<2.5	<2.5	<2.5
Dichlorotetrafluoroethane	NA	NA	<3.5	<3.5	<3.5	<3.5
Ethanol	420000	150000	**490**	**24**	**470**	**36**
Ethyl acetate	80000	30000	<1.8	<1.8	<1.8	<1.8
Ethylbenzene	30000	10000	**4.5**	<0.87	**4**	<0.87
Hexachlorobutadiene	10	5	<5.3	<5.3	<5.3	<5.3
Isopropyl alcohol	200000	70000	**13**	**21**	**18**	**29**
m,p-Xylene	3000	1000	**3.6**	**2**	**2**	<1.7
Methyl butyl ketone	NA	NA	**2.1**	<2.0	<2.0	<2.0
Methyl isobutyl ketone	80000	30000	<2.0	<2.0	<2.0	<2.0
Methyl tert-butyl ether	80000	30000	<1.8	<1.8	<1.8	<1.8
Methylene chloride	600	200	**4**	**3.3**	<1.7	**6.3**
Naphthalene	300	90	<2.6	<2.6	<2.6	<2.6
n-Heptane	NA	NA	<2.0	<2.0	<2.0	<2.0
n-Hexane	60000	20000	**38**	**4.2**	**8.3**	**2.2**
o-Xylene	3000	1000	**1.8**	<0.87	<0.87	<0.87
Propylene	80000	30000	<0.86	<0.86	<0.86	<0.86
Styrene	30000	10000	**14**	<2.1	**23**	<2.1
Tetrachloroethene	600	200	**26**	**18**	**20**	**17**
Tetrahydrofuran	NA	NA	**3.8**	**3.4**	**3.5**	**4.4**
Toluene	100000	50000	**3900**	**94**	**970**	**49**
trans-1,2-Dichloroethene	2000	600	<2.0	<2.0	<2.0	**6.5**
trans-1,3-Dichloropropene	600	200	<2.3	<2.3	<2.3	<2.3
Trichloroethene	80	30	<2.7	**27**	<2.7	**7**
Trichlorofluoromethane	20000	7000	<2.8	<2.8	<2.8	<2.8
Trichlorotrifluoroethane	800000	300000	<3.8	<3.8	<3.8	<3.8
Vinyl acetate	6000	2000	<1.8	<1.8	<1.8	<1.8
Vinyl chloride	30	10	<1.3	<0.51	<1.3	<0.51

Notes:
BOLD: exceeds laboratory method detection.
[ ] exceeds MPCA 10X Commercial/Industrial ISV.

Table 2
Soil Vapor Sampling Results
MN Bio Business Center
Rochester, MN
(ug/m^3)

Parameter	MPCA Commercial 10X ISV	MPCA Residential 10X ISV	LSG-9 12/21/2012	LSG-9 10/18/2013	LSG-10 12/21/2012	LSG-10 10/18/2013
1,1,1-Trichloroethane	100000	50000	<2.7	<2.7	<2.7	<2.7
1,1,2,2-Tetrachloroethane	10	2	<3.4	<3.4	<3.4	<3.4
1,1,2-Trichloroethane	20	6	<2.7	<2.7	<2.7	<2.7
1,1-Dichloroethane	10000	5000	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethene	6000	2000	<2.0	<2.0	<2.0	<2.0
1,2,4-Trichlorobenzene	100	40	<3.7	<3.7	<3.7	<3.7
1,2,4-Trimethylbenzene	200	70	**1.5**	<1.0	**3.4**	<1.0
1,2-Dibromoethane	1	0.2	<3.8	<3.8	<3.8	<3.8
1,2-Dichlorobenzene	6000	2000	<3.0	<3.0	<3.0	<3.0
1,2-Dichloroethane	10	4	<2.0	<2.0	<2.0	<2.0
1,2-Dichloropropane	100	40	<2.3	<2.3	<2.3	<2.3
1,3,5-Trimethylbenzene	200	60	<0.98	<1.0	**1.4**	<1.0
1,3-Butadiene	10	3	<1.1	<1.1	<1.1	<1.1
1,3-Dichlorobenzene	NA	NA	<3.0	<3.0	<3.0	<3.0
1,4-Dichlorobenzene	2000	600	<3.0	<3.0	<3.0	<3.0
2-Butanone	100000	50000	**6.1**	**1.7**	**11**	**3.2**
4-Ethyltoluene	NA	NA	<2.5	<2.5	<2.5	<2.5
Acetone	870000	310000	**35**	**8.6**	**390**	**32**
Benzene	130	45	<0.64	<0.64	**0.72**	<0.64
Benzyl chloride	30	10	<2.6	<2.6	<2.6	<2.6
Bromodichloromethane	NA	NA	<3.4	<3.4	<3.4	<3.4
Bromoform	300	90	<5.2	<5.2	<5.2	<5.2
Bromomethane	100	50	<1.9	<1.9	<1.9	<1.9
Carbon disulfide	20000	7000	<1.6	<1.6	<1.6	<1.6
Carbon tetrachloride	20	7	<3.1	<3.1	<3.1	<3.1
Chlorobenzene	1000	500	<2.3	<2.3	<2.3	<2.3
Chloroethane	300000	100000	<1.3	<1.3	<1.3	<1.3
Chloroform	3000	1000	<2.4	<2.4	<2.4	<2.4
Chloromethane	3000	900	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	NA	NA	<2.0	<2.0	<2.0	<2.0
cis-1,3-Dichloropropene	600	200	<2.3	<2.3	<2.3	<2.3
Cyclohexane	200000	60000	**11**	<1.7	**47**	**11**
Dibromochloromethane	NA	NA	<4.3	<4.3	<4.3	<4.3
Dichlorodifluoromethane	6000	2000	<2.5	<2.5	<2.5	<2.5
Dichlorotetrafluoroethane	NA	NA	<3.5	<3.5	<3.5	<3.5
Ethanol	420000	150000	**240**	**35**	**1700**	**85**
Ethyl acetate	80000	30000	<1.8	<1.8	<1.8	<1.8
Ethylbenzene	30000	10000	**0.96**	<0.87	**3.2**	<0.87
Hexachlorobutadiene	10	5	<5.3	<5.3	<5.3	<5.3
Isopropyl alcohol	200000	70000	**20**	**40**	**26**	**80**
m,p-Xylene	3000	1000	<1.7	<1.7	**3.2**	<1.7
Methyl butyl ketone	NA	NA	<2.0	<2.0	**2.3**	<2.0
Methyl isobutyl ketone	80000	30000	<2.0	<2.0	**2.6**	<2.0
Methyl tert-butyl ether	80000	30000	<1.8	<1.8	<1.8	<1.8
Methylene chloride	600	200	**2.6**	<1.7	**2.1**	<1.7
Naphthalene	300	90	<2.6	<2.6	<2.6	<2.6
n-Heptane	NA	NA	<2.0	<2.0	<2.0	<2.0
n-Hexane	60000	20000	**4.6**	<1.8	**220**	**37**
o-Xylene	3000	1000	<0.87	<0.87	**1.6**	<0.87
Propylene	80000	30000	<0.86	<0.86	<0.86	<0.86
Styrene	30000	10000	<2.1	<2.1	**6.8**	<2.1
Tetrachloroethene	600	200	**150**	**31**	**36**	**21**
Tetrahydrofuran	NA	NA	**6.9**	**6.1**	**3.7**	**6.9**
Toluene	100000	50000	**21**	**1.7**	**3900**	**110**
trans-1,2-Dichloroethene	2000	600	<2.0	<2.0	<2.0	<2.0
trans-1,3-Dichloropropene	600	200	<2.3	<2.3	<2.3	<2.3
Trichloroethene	80	30	<2.7	<1.1	<2.7	<1.1
Trichlorofluoromethane	20000	7000	<2.8	<2.8	<2.8	<2.8
Trichlorotrifluoroethane	800000	300000	**1300**	<3.8	**6.9**	<3.8
Vinyl acetate	6000	2000	<1.8	<1.8	<1.8	<1.8
Vinyl chloride	30	10	<1.3	<0.51	<1.3	<0.51

Notes:
BOLD: exceeds laboratory metl
exceeds MPCA

Table 2
Soil Vapor Sampling Results
MN Bio Business Center
Rochester, MN
(ug/m^3)

Parameter	MPCA Commercial 10X ISV	MPCA Residential 10X ISV	SP-1 12/21/2012	SP-1 10/18/2013	SP-2 12/21/2012	SP-2 10/18/2013
1,1,1-Trichloroethane	100000	50000	<2.7	<2.7	<2.7	<2.7
1,1,2,2-Tetrachloroethane	10	2	<3.4	<3.4	<3.4	<3.4
1,1,2-Trichloroethane	20	6	<2.7	<2.7	<2.7	<2.7
1,1-Dichloroethane	10000	5000	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethene	6000	2000	<2.0	<2.0	<2.0	<2.0
1,2,4-Trichlorobenzene	100	40	<3.7	<3.7	<3.7	<3.7
1,2,4-Trimethylbenzene	200	70	<0.98	<1.0	<0.98	<1.0
1,2-Dibromoethane	1	0.2	<3.8	<3.8	<3.8	<3.8
1,2-Dichlorobenzene	6000	2000	<3.0	<3.0	<3.0	<3.0
1,2-Dichloroethane	10	4	<2.0	<2.0	<2.0	<2.0
1,2-Dichloropropane	100	40	<2.3	<2.3	<2.3	<2.3
1,3,5-Trimethylbenzene	200	60	<0.98	<1.0	<0.98	<1.0
1,3-Butadiene	10	3	<1.1	<1.1	<1.1	<1.1
1,3-Dichlorobenzene	NA	NA	<3.0	<3.0	<3.0	<3.0
1,4-Dichlorobenzene	2000	600	<3.0	<3.0	<3.0	<3.0
2-Butanone	100000	50000	<1.5	<1.5	**3.1**	2.3
4-Ethyltoluene	NA	NA	<2.5	<2.5	<2.5	<2.5
Acetone	870000	310000	**5.3**	**23**	**4.7**	**35**
Benzene	130	45	<0.64	<0.64	**0.73**	<0.64
Benzyl chloride	30	10	<2.6	<2.6	<2.6	<2.6
Bromodichloromethane	NA	NA	<3.4	<3.4	<3.4	<3.4
Bromoform	300	90	<5.2	<5.2	<5.2	<5.2
Bromomethane	100	50	<1.9	<1.9	<1.9	<1.9
Carbon disulfide	20000	7000	<1.6	<1.6	<1.6	<1.6
Carbon tetrachloride	20	7	<3.1	<3.1	<3.1	<3.1
Chlorobenzene	1000	500	<2.3	<2.3	<2.3	<2.3
Chloroethane	300000	100000	<1.3	<1.3	<1.3	<1.3
Chloroform	3000	1000	<2.4	<2.4	<2.4	<2.4
Chloromethane	3000	900	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	NA	NA	<2.0	<2.0	<2.0	<2.0
cis-1,3-Dichloropropene	600	200	<2.3	<2.3	<2.3	<2.3
Cyclohexane	200000	60000	<1.7	<1.7	<1.7	<1.7
Dibromochloromethane	NA	NA	<4.3	<4.3	<4.3	<4.3
Dichlorodifluoromethane	6000	2000	<2.5	<2.5	<2.5	<2.5
Dichlorotetrafluoroethane	NA	NA	<3.5	<3.5	<3.5	<3.5
Ethanol	420000	150000	**7.9**	**230**	**12**	**130**
Ethyl acetate	80000	30000	<1.8	<1.8	<1.8	<1.8
Ethylbenzene	30000	10000	<0.87	<0.87	<0.87	<0.87
Hexachlorobutadiene	10	5	<5.3	<5.3	<5.3	<5.3
Isopropyl alcohol	200000	70000	**3.8**	**240**	**4.8**	**170**
m,p-Xylene	3000	1000	<1.7	<1.7	<1.7	<1.7
Methyl butyl ketone	NA	NA	<2.0	<2.0	<2.0	<2.0
Methyl isobutyl ketone	80000	30000	<2.0	<2.0	<2.0	<2.0
Methyl tert-butyl ether	80000	30000	<1.8	<1.8	<1.8	<1.8
Methylene chloride	600	200	**2.6**	**2.6**	**2.2**	**2.1**
Naphthalene	300	90	<2.6	<2.6	<2.6	<2.6
n-Heptane	NA	NA	<2.0	<2.0	<2.0	<2.0
n-Hexane	60000	20000	<1.8	<1.8	**2.8**	<1.8
o-Xylene	3000	1000	<0.87	<0.87	<0.87	<0.87
Propylene	80000	30000	<0.86	<0.86	<0.86	<0.86
Styrene	30000	10000	<2.1	<2.1	<2.1	<2.1
Tetrachloroethene	600	200	**47**	**9**	**39**	**10000**
Tetrahydrofuran	NA	NA	<1.5	**3.9**	**2.1**	<1.5
Toluene	100000	50000	<0.75	**1.8**	**1.2**	**1.2**
trans-1,2-Dichloroethene	2000	600	<2.0	<2.0	<2.0	<2.0
trans-1,3-Dichloropropene	600	200	<2.3	<2.3	<2.3	<2.3
Trichloroethene	80	30	<2.7	<1.1	<2.7	**3.3**
Trichlorofluoromethane	20000	7000	<2.8	<2.8	<2.8	<2.8
Trichlorotrifluoroethane	800000	300000	**75**	<3.8	**6**	**900**
Vinyl acetate	6000	2000	<1.8	<1.8	<1.8	<1.8
Vinyl chloride	30	10	<1.3	<0.51	<1.3	<0.51

Notes:
BOLD: exceeds laboratory metl
exceeds MPCA