MADISON KIPP PUBLIC MEETING

February 29, 2012

Meeting Objectives

1. Present recent work completed

2. Solicit Public Comments and Concerns

3. Chart Future Course

Draft Scope of Work
Work Elements

1. Soil Vapor Investigation and Remedial Measures

2. Groundwater Investigation and Remedial Measures

3. Soil Investigation and Remedial Measures

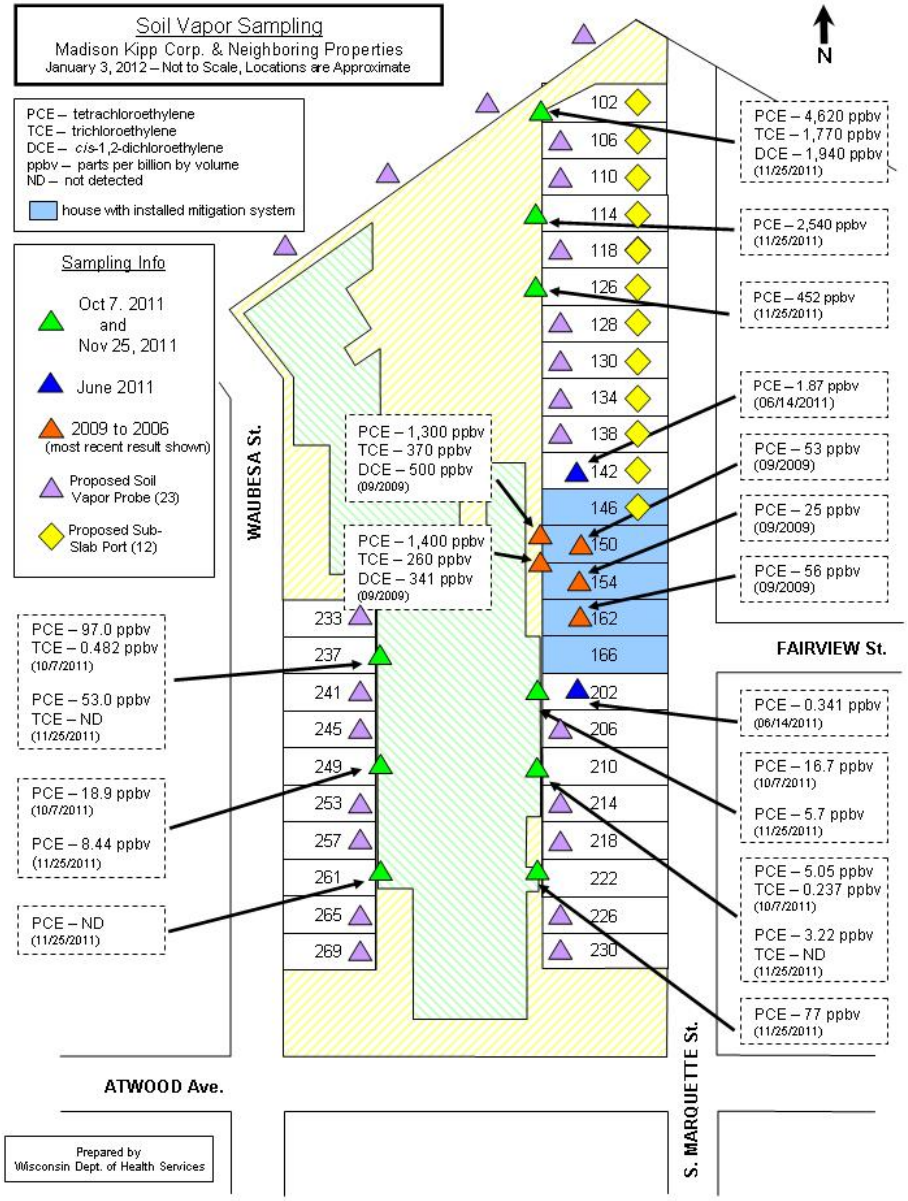
Soil Vapor Work Element

Current Tasks:

1. Complete testing of the existing five in home vapor mitigation systems.

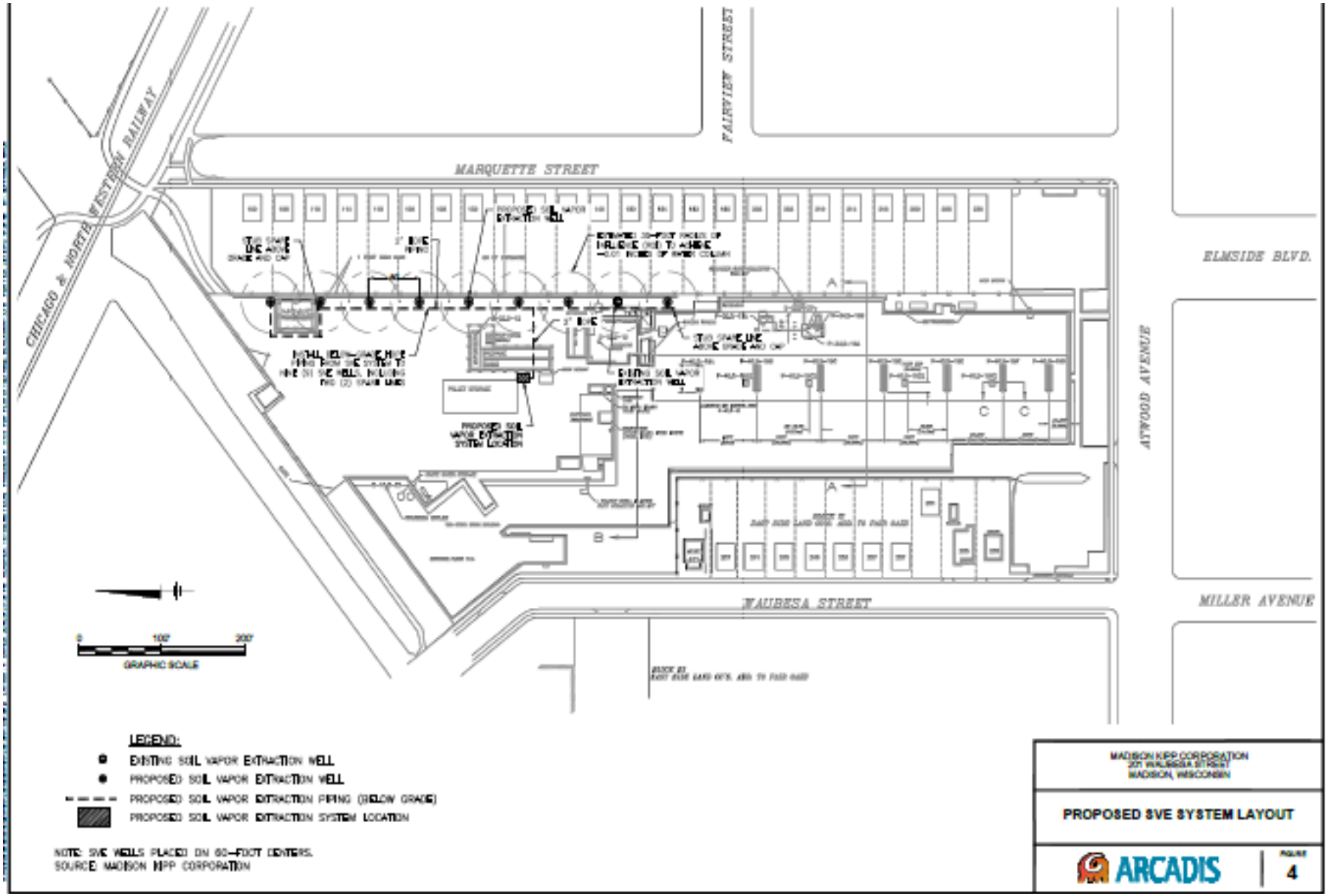
2. Conduct proposed soil and subslab/indoor air sampling

3. Install and operate the interim soil vapor extraction system


Soil Vapor Sampling
Madison Kipp Corp. & Neighboring Properties
January 3, 2012 – Not to Scale, Locations are Approximate
PCE – tetrachloroethylene
TCE – trichloroethylene
DCE – cis-1,2-dichloroethylene
ppbv – parts per billion by volume
ND – not detected
house with installed mitigation system
Sampling Info
Oct 7. 2011 and Nov 25, 2011
June 2011
2009 to 2006 (most recent result shown)
Proposed Soil Vapor Probe (23)
Proposed Sub-Slab Port (12)
N
WAUBESA St.
FAIRVIEW St.
S. MARQUETTE St.
ATWOOD Ave.
102
106
110
114
118
126
128
130
134
138
142
146
150
154
162
166
202
206
210
214
218
222
226
230
233
237
241
245
249
253
257
261
265
269
PCE – 4,620 ppbv
TCE – 1,770 ppbv
DCE – 1,940 ppbv
(11/25/2011)
PCE – 2,540 ppbv
(11/25/2011)
PCE – 452 ppbv
(11/25/2011)
PCE – 1.87 ppbv
(06/14/2011)
PCE – 53 ppbv
(09/2009)
PCE – 25 ppbv
(09/2009)
PCE – 56 ppbv
(09/2009)
PCE – 1,300 ppbv
TCE – 370 ppbv
DCE – 500 ppbv
(09/2009)
PCE – 1,400 ppbv
TCE – 260 ppbv
DCE – 341 ppbv
(09/2009)
PCE – 97.0 ppbv
TCE – 0.482 ppbv
(10/7/2011)
PCE – 53.0 ppbv
TCE – ND
(11/25/2011)
PCE – 18.9 ppbv
(10/7/2011)
PCE – 8.44 ppbv
(11/25/2011)
PCE – ND
(11/25/2011)
PCE – 0.341 ppbv
(06/14/2011)
PCE – 16.7 ppbv
(10/7/2011)
PCE – 5.7 ppbv
(11/25/2011)
PCE – 5.05 ppbv
TCE – 0.237 ppbv
(10/7/2011)
PCE – 3.22 ppbv
TCE – ND
(11/25/2011)
PCE – 77 ppbv
(11/25/2011)
Prepared by
Wisconsin Dept. of Health Services

Access Coordination

- Signed Access Agreements
- Schedule Sampling Times
- Provide Contact Phone Numbers


CHICAGO & NORTH WESTERN RAILWAY
MARQUETTE STREET
FAIRVIEW STREET
ELMSIDE BLVD.
ATWOOD AVENUE
MILLER AVENUE
WAUBESA STREET
0
100
200
GRAPHIC SCALE
LEGEND:
EXISTING SOIL VAPOR EXTRACTION WELL
PROPOSED SOIL VAPOR EXTRACTION WELL
PROPOSED SOIL VAPOR EXTRACTION PIPING (BELOW GRADE)
PROPOSED SOIL VAPOR EXTRACTION SYSTEM LOCATION
NOTE: SVE WELLS PLACED ON 60-FOOT CENTERS.
SOURCE: MADISON KIPP CORPORATION
MADISON KIPP CORPORATION
201 WAUBESA STREET
MADISON, WISCONSIN
PROPOSED SVE SYSTEM LAYOUT
ARCADIS
FIGURE
4

SVE Basis of Design

- Utilize nine wells in the northeast portion of property
  - Spaced wells every 60 feet (35-foot radius of influence (ROI) with overlap between points)
  - Eight new SVE wells were installed the week of February 20, 2012; total of nine wells including existing Extraction Well SVE-1.

Air Sampling

- Air sampling of the SVE discharge will be completed in accordance with NR 419
  - Samples will be collected daily for 3 days, then weekly for 3 weeks, then monthly thereafter
  - Samples will be collected in summa canisters and analyzed for VOCs
  - Results will be compared to NR 445 Table A

ARCADIS

Table C2. Estimate of Mass Removed during Soil Vapor Extraction Pilot Test, Madison-Kipp Corporation, Madison, Wisconsin.

Date	Total VOC Concentration [1]	System Flow Rate	Dilution Air Valve Position	Emission Rate [2]	Mass Removed [3]	Cumulative Mass Removed
	µg/m³	cfm	percent open	lb/hr	lb/day	lb
2/9/2012 18:10	349,132	60	0	0.08	0.08	0.08
2/10/2012 13:00	175,433	60	0	0.04	0.28	0.35
			Average Emission Rate	0.06	0.18	

[1] Total VOC concentration was based on the sum of all detected analyte concentrations in Samples EFF-1 and EFF-2.

[2] Emission rates were determined using the following equation:

$$\text{Emission Rate} = \text{Influent Conc.} * \text{Flow Rate} * 60\ \text{min/hr} * (1\ \text{m}^3/35.31\ \text{ft}^3) * (1\ \text{lb}/4.54\text{x}10^8\ \text{mg})$$

[3] Mass removed is calculated based on the average emission rate for two consecutive sample dates multiplied by the operating time between those sample date.

$$\text{Mass Removed} = [(\text{Emission Rate}_1 + \text{Emission Rate}_2) / 2] * [(\text{Date}_2 - \text{Date}_1) * 24]$$

[4] Emission factors were determined from detected soil gas vapor concentrations collected after completion of pilot test (Sample EFF-2).

[5] When compounds are not detected above the laboratory reporting limit, emissions are calculated using 1/2 the reporting limit.

cfm	Cubic feet per minute.
lb/day	Pounds per day.
lb/hr	Pounds per hour.
µg/m³	Micrograms per cubic meter.

Air discharge requirements

Table E1. Maximum Estimated Organic Compound Emission Rate, Phase I Soil Vapor Extraction System, Madison-Kipp Corporation, Madison, Wisconsin.

Vent System Flow Rate (cfm)		288	
Vapor Phase Constituent	**Highest Estimated Effluent Concentration µg/m³**	**Estimated Emission Rate lb/hr**	**Wisconsin Administrative Code Threshold Values lb/hr**
Tetrachloroethene	325,000	0.350	9.11 (3)
Trichloroethene	4,600	0.005	14.4 (3)
trans-1,2-Dichloroethene	563	0.001	42.6 (3)(4)
cis-1,2-Dichloroethene	14,600	0.016	
	Maximum Estimated Organic Compound Emission Rate	***0.372***	5.7 (5)

1. Calculations based on an air flow rate of 32 CFM per well (9 wells total).
2. Emission factors were determined from detected soil gas vapor concentrations collected during first hour of pilot test (sample EFF-1).
3. As specified in Table A of Wisconsin Administrative Code Chapter NR445.07. Values are based on a stack height of less than 25 feet.
4. Threshold value is based on total of trans-1,2-Dichlorethen and cis-1,2-Dichlorethene.
5. As specified in Wisconsin Administrative Code Chapter NR406.04(1)(m).

cfm Cubic feet per minute.
µg/m³ Micrograms per cubic meter.
lb/hr Pounds per hour.

Soil Vapor Work Element

- The soil vapor extraction system shall be operated:
- " eliminate or intercept alleged exposure to and off site migration of soil vapors from the Madison-Kipp property to off site properties…"

Vapor Mitigation

If an SVE system proves not feasible, vapor mitigation systems will be installed at those locations deemed necessary by the Department based on existing data.

Groundwater Work Element

Remedial Goals: Achieve compliance to the extent feasible with enforcement standards at points of standards application for compounds of concern or show that natural attenuation will achieve compliance with standards for compounds of concern within a reasonable period of time.

1. Design, install and operate a Department approved expansion to the current ozone injection system to address shallow and deep groundwater contamination in the area of well MW2D and well nest 3.
2. Install deep groundwater monitoring wells to determine extent of deep groundwater contamination
3. Implement an approved groundwater monitoring plan to track progress toward compliance with state groundwater standards and changes in groundwater quality on and off site.

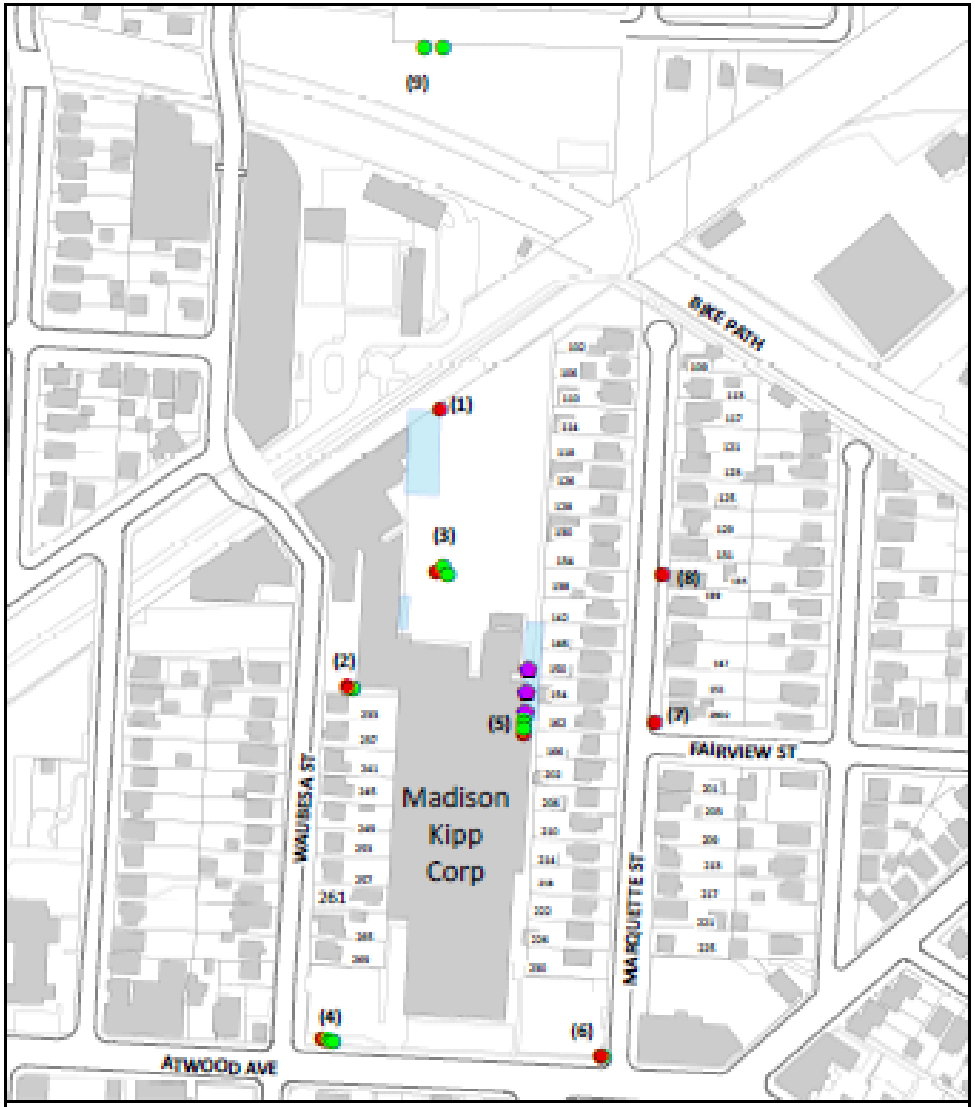


FIGURE 1
Madison Kipp Corp
Location of Monitoring Wells
and Soils Treated with BIOX
Prepared by City of Madison Engineering
2/7/12

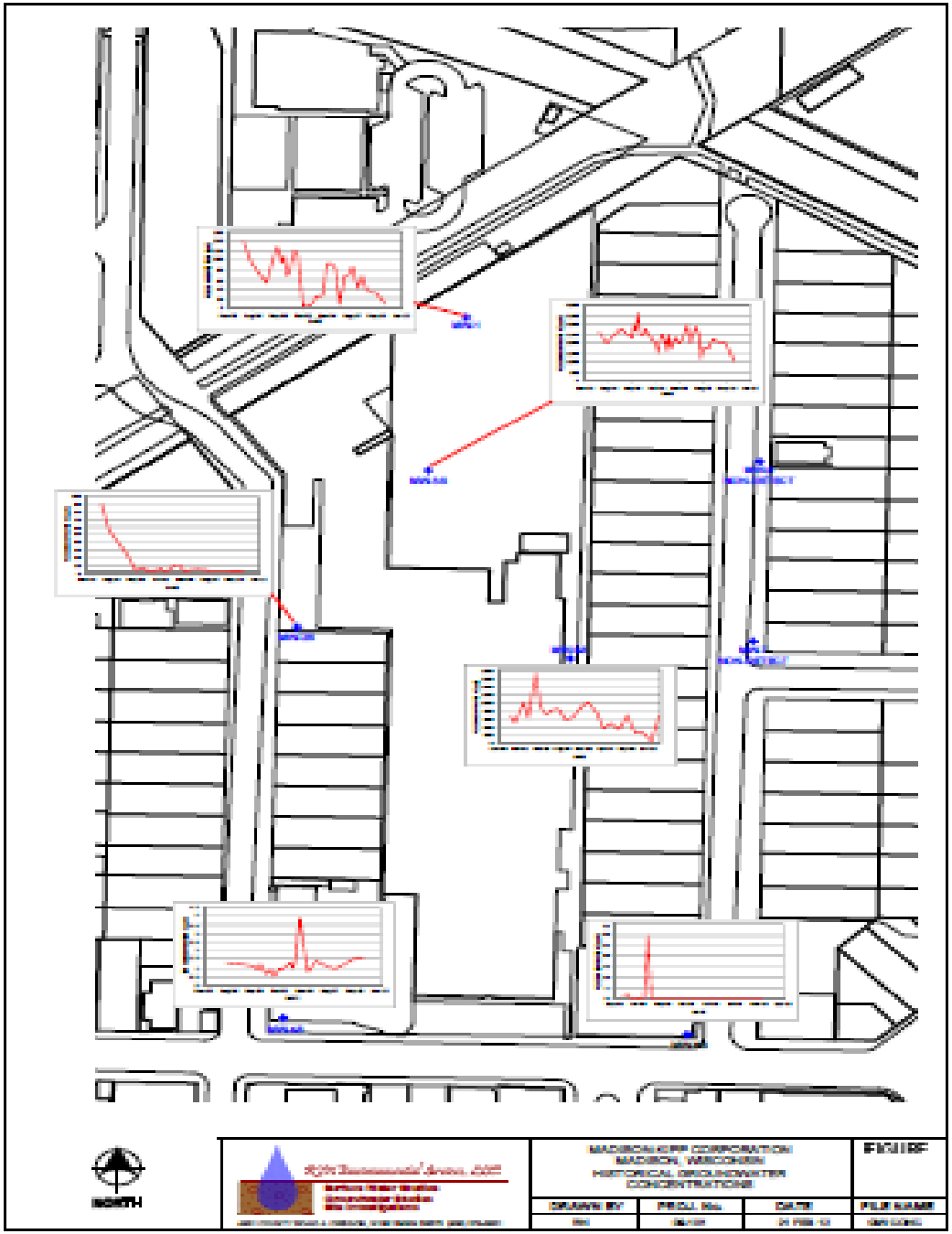
N

0 90 180 270 360 Feet

1 Inch = 180 feet

Legend

- Groundwater Ozone Treatment Well
- Soil treated with BIOX
- Shallow Well (water table)
- Deep Well (piezometer)


NORTH
MADISON-KIPP CORPORATION
MADISON, WISCONSIN
HISTORICAL GROUNDWATER
CONCENTRATIONS
FIGURE
DRAWN BY
PROJ. No.
DATE
FILE NAME

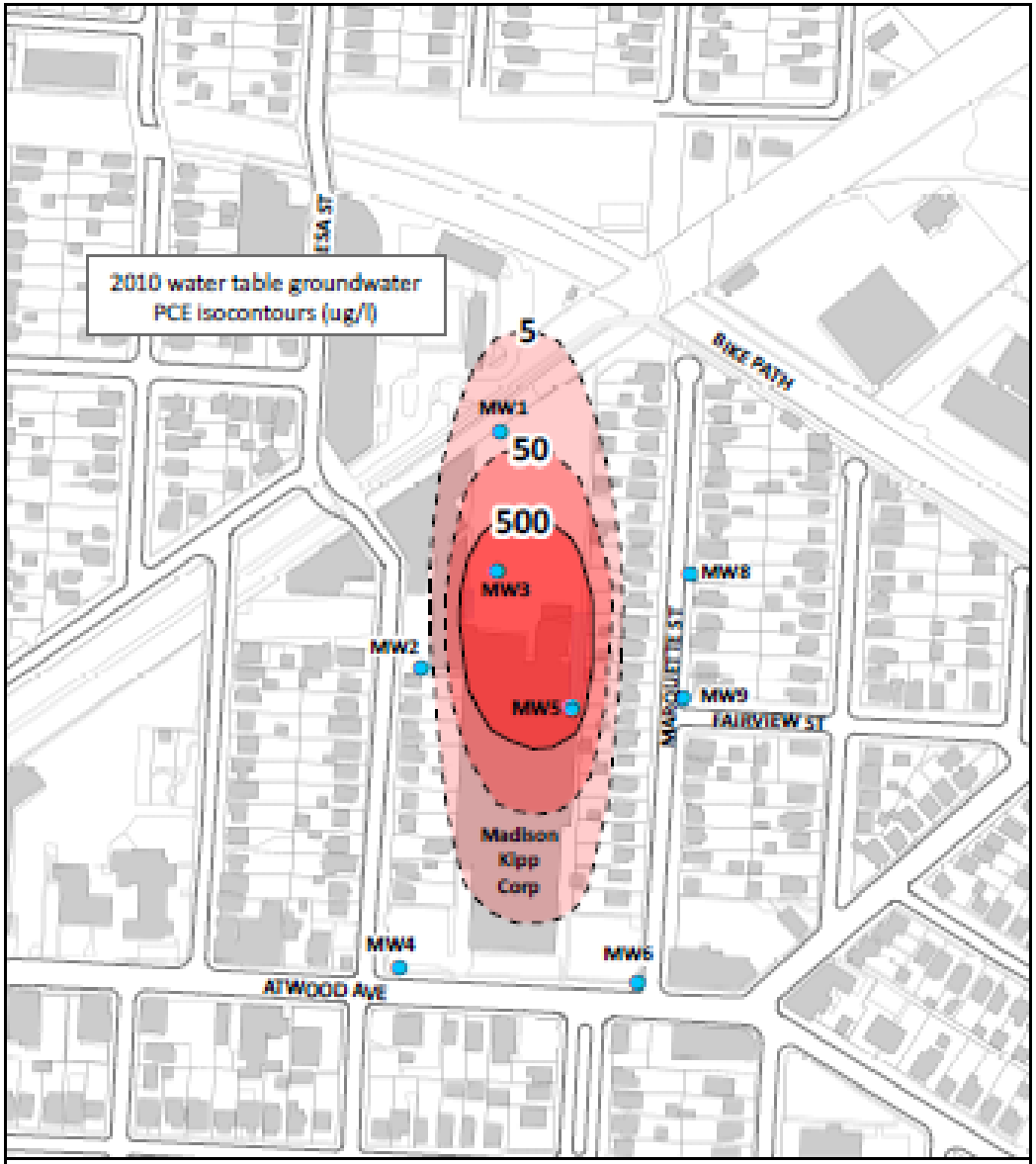
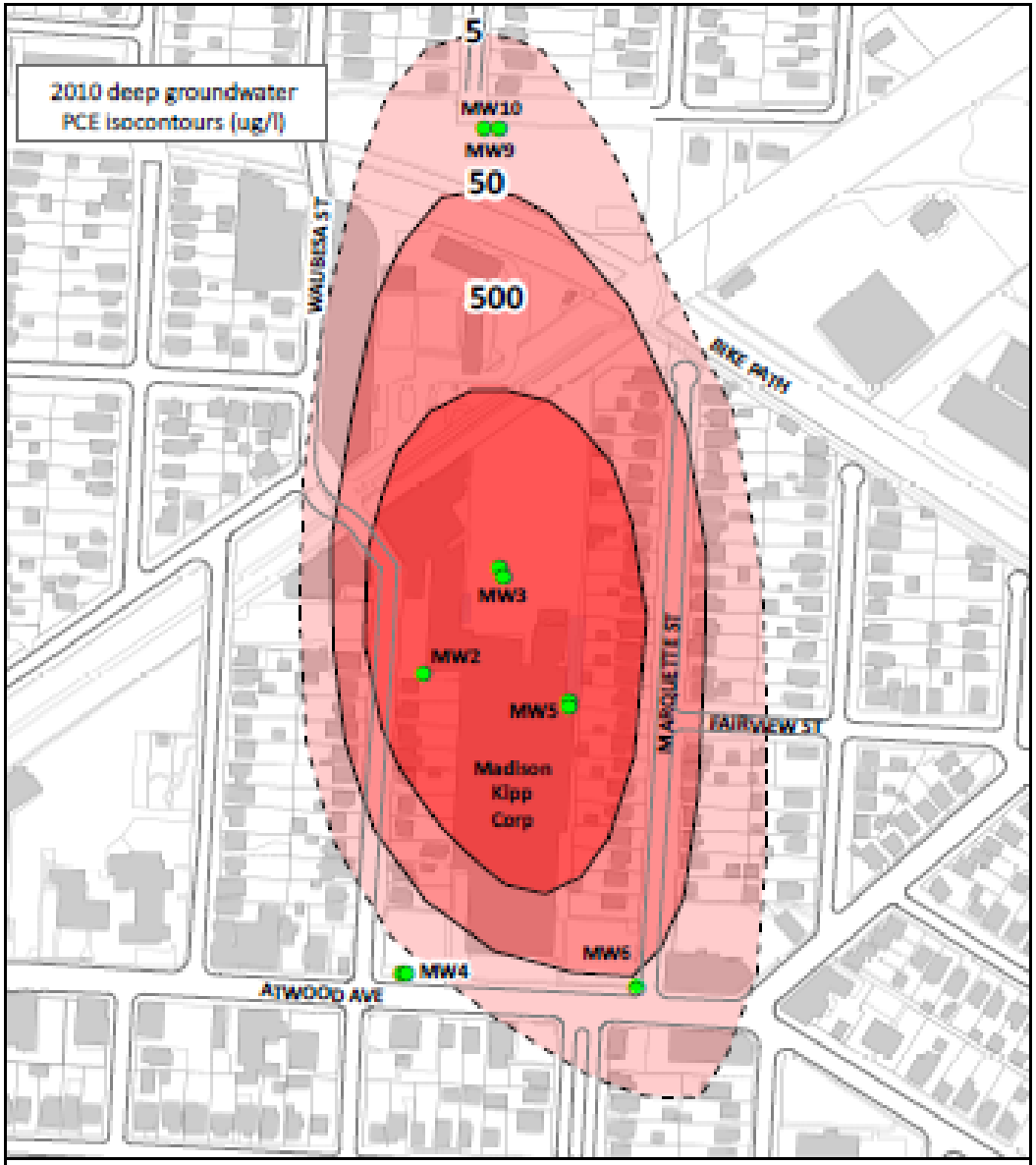


FIGURE 1
2010 Tetrachloroethylene (PCE) Isocontrous in Shallow Water Table Wells
Prepared by City of Madison Engineering (2/29/12)

Note: Data for MW7 and MW8 are from August 2011.
Dashed lines are approximate.

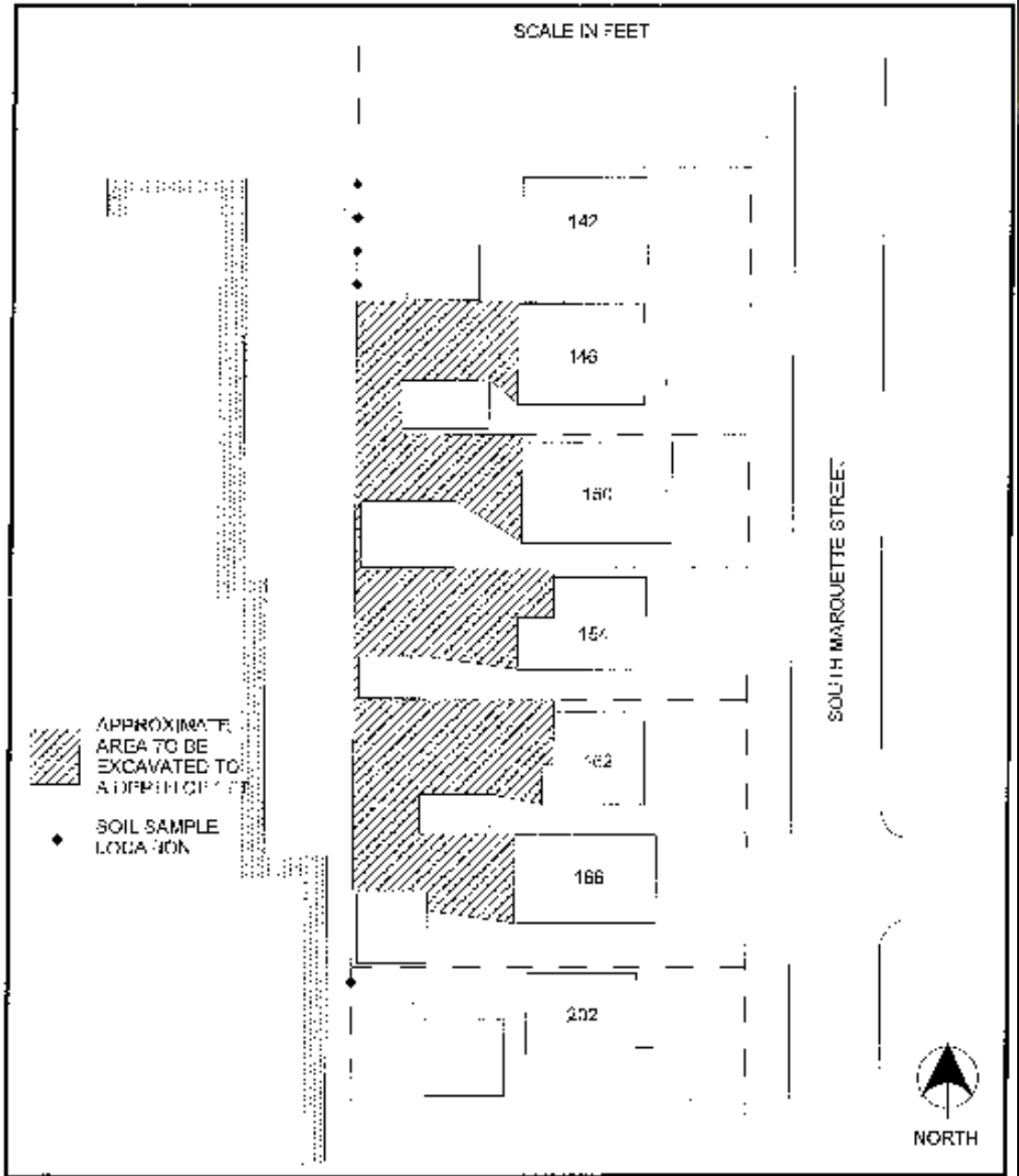

2010 deep groundwater
PCE isocontours (ug/l)
5
50
500
MW10
MW9
MW3
MW2
MW5
MW6
MW4
Madison
Kipp
Corp
WAUBESA ST
MARQUETTE ST
BIKE PATH
FAIRVIEW ST
ATWOOD AVE
FIGURE 1
2010 Tetrachloroethylene (PCE) Isocontrous in Deep Groundwater Wells
Prepared by City of Madison Engineering (2/27/12)
Note: Piezometers have 5-foot screens placed between 790 and 810 ft AMSL.
0 110 220 330 440 Feet
1 inch = 225 feet
N
Legend
Deep Wells (piezometers)
PCE groundwater plume - 5 ug/l
PCE groundwater plume - 50 ug/l
PCE groundwater plume - 500 ug/l

Soils Work Element

Remedial goal is to eliminate the soil contamination direct contact exposure pathway to adjacent residents by removing any soils with contamination levels in excess of remedial action levels in the top one foot of soil.

Tasks:

1. Implement the chosen remedial action at 146, 150, 154, 162 and 166 S. Marquette Street.
   A. Remedial action: excavate all readily accessible contaminated soil to a depth of one foot from the areas designated in Figure 1. Excavated areas will be backfilled and reseeded.



RMT Environmental Services, LLC
Surface Water Studies
Groundwater Studies
Site Investigations

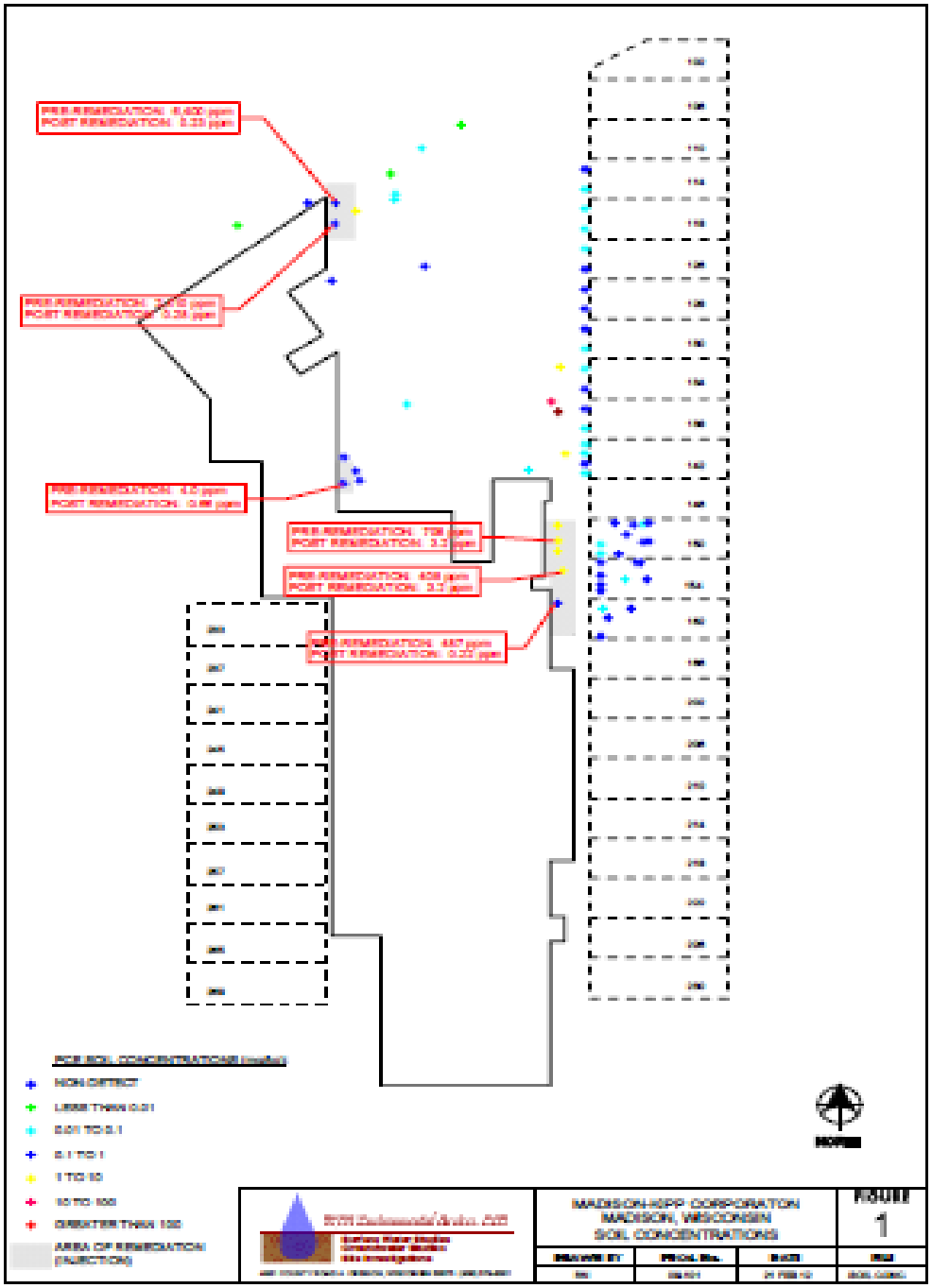
MADISON-KIPP CORPORATION
MADISON, WISCONSIN
MARQUETTE STREET PROPERTIES
EXCAVATION AREA AND SAMPLE LOCATIONS

FIGURE 1

DRAWN BY	PROJ. No.	DATE	FILE NAME

Soils Work Element

2. Collect soils samples from the western portion of parcels 114, 118, 126, 130, 134, 138, 142, and 202 S. Marquette Street as shown on Figure 2
3. Based on soil analytical results determine which parcels have soil contamination levels exceeding the "Remedial Action Level" (RAL)
4. For the purposes of this scope of work the Remedial Action Levels are:
   - 1,2 DCE 15.6 ppm
   - PCE .123 ppm
   - TCE 1.43 ppm
   - VC .382 ppm


PCB SOIL CONCENTRATIONS (mg/kg)
NON DETECT
LESS THAN 0.01
0.01 TO 0.1
0.1 TO 1
1 TO 10
10 TO 100
GREATER THAN 100
AREA OF REMEDIATION (TYP.)
MADISON-KIPP CORPORATION
MADISON, WISCONSIN
SOIL CONCENTRATIONS
FIGURE
1

Site-specific

Resident Risk-Based Screening Levels for Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL), ca (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat**

Chicago, IL (US Climatic Zone VII) was used in calculating both the Volatilizatic and Particulate Emission Factors, per draft RR-890 guidance available at: http://dnr.wi.gov/org/aw/rr/wi_regs/RR-890_draft.pdf

Chemical	CAS Number	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	RfD Ref	Chronic RfC (mg/m^3)	RfC Ref	GIABS	ABS	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)
Dichloroethylene, 1,2-cis-	156-59-2	-		-		2.00E-03	U	-		1	-	3.88E+03	2.37E+03
Tetrachloroethylene	127-18-4	2.10E-03	U	2.60E-07	U	6.00E-03	U	4.00E-02	U	1	-	3.65E+03	1.66E+02
Trichloroethylene	79-01-6	4.60E-02	U	4.10E-06	U	5.00E-04	U	2.00E-03	U	1	-	3.43E+03	6.92E+02
Vinyl Chloride	75-01-4	7.20E-01	U	4.40E-06	U	3.00E-03	U	1.00E-01	U	1	-	1.48E+03	3.92E+03

Chemical	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Dichloroethylene, 1,2-cis-	1.43E+09	-	-	-	-	1.56E+02	-	-	1.56E+02	1.56E+02 nc
Tetrachloroethylene	1.43E+09	3.05E+02	-	3.41E+01	3.07E+01	4.69E+02	-	1.52E+02	1.15E+02	3.07E+01 ca**
Trichloroethylene	1.43E+09	3.24E+00	-	8.04E-01	6.44E-01	3.91E+01	-	7.15E+00	6.05E+00	6.44E-01 ca**
Vinyl Chloride	1.43E+09	9.32E-02	-	2.39E-01	6.71E-02	2.35E+02	-	1.55E+02	9.33E+01	6.71E-02 ca

Feb. 29 - Deadline

Goal: Access requested from homeowners for Sub-slab samples

March 16 - Deadline

Goal: **Complete sub-slab sampling**

March 29 - Deadline

Goal: **Complete backyard vapor probes installation and sampling**

Redesigned web page: Search "Kipp" at dnr.wi.gov

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Enter search terms or keywords Search

Madison-Kipp Corporation

Madison, Wisconsin

Subscribe to DNR updates on the investigation and cleanup at Madison-Kipp

Groundwater and soils at certain locations on the Madison-Kipp Corporation (MKC) property in Madison are contaminated with chlorinated solvents. Investigations are continuing to determine the extent of contamination around the neighboring areas to the east of the MKC property at 201 Waubesa Street.

Cleanup & redevelopment

Find
information on contaminated land activities.

Subscribe
to cleanup and redevelopment newsletters.

Site history | Health information | Public information | Documents | FAQ | Legal action | Contacts

The DNR is working with state, local and private parties to keep the public informed of important findings, during ongoing environmental work at Madison-Kipp.

Community members listen to a DNR presentation at a 2011 public meeting regarding Madison-Kipp.

MKC investigation and cleanup neighborhood updates

- Frequently Asked Questions – 02/07/12 [PDF]
- Neighborhood Update – 12/19/11 [PDF]
- Neighborhood Update – 11/3/11 [PDF]

Related links

- Open records policy & procedures
- Vapor intrusion
- Environmental liability

Contact information
For information on this page, contact:

Eric Ballez
Remediation & Redevelopment
608-267-0543

Public meetings

DNR staff will coordinate with the city of Madison and our other partners to host public information meetings. Meetings will be held to coincide with the release of important reports and technical findings, and otherwise on an as-needed basis.

- 10-15-11 Public Meeting DNR Presentation [PDF]

On-line documentation

Select documents and reports will be made available for online download and viewing, as they are available. View these items in the "Documents" tab.