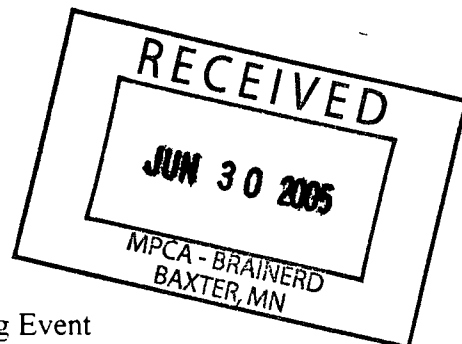


# COTEAU ENVIRONMENTAL

312 9th Ave. SE, Suite C • Watertown, SD 57201 • Bus (605) 886-4009 • Fax (605) 882-4152  
728 Janes Circle Dr. SW • Alexandria, MN 56308 • Bus/Fax (320) 846-4668

June 27, 2005

Mr. Brian Borgerding  
North American State Bank  
P.O. Box 189  
Belgrade, MN 56312



RE: Applicant Status Update - 6<sup>th</sup> Ground Water Monitoring Event  
Former KC Kwik Stop  
230 1<sup>st</sup> Street  
Brooten, Minnesota  
MPCA Leak No. 14698

Dear Mr. Borgerding:

Coteau Environmental (Coteau) has prepared this letter report regarding the results of the sixth (6<sup>th</sup>) quarterly ground water monitoring event at the above-referenced site. Fluid levels were measured in all monitor wells on May 5, 2005. Based on fluid level measurements in the monitor wells, ground water flow was to the southeast. Ground water elevations are illustrated on Figure 1. No measurable free-phase product was encountered in the monitor wells on May 5, 2005. A residential basement at 110 South Western Avenue was not screened for organic vapors on May 5, 2005 because the occupant of the property was not present when Coteau personnel were on site.

Ground water samples were collected for laboratory analysis from monitor wells MW-1, MW-2, MW-3, MW-4, MW-5 and MW-6 on May 5, 2005. Ground water samples were purged by removing a minimum of five (5) well casing volumes from the well prior to sampling using a dedicated polyethylene bailer.

Ground water samples collected from the monitor wells were analyzed for volatile organic compounds (VOC's) and total petroleum hydrocarbons (TPH) using gasoline range organics (GRO) methodology. No BTEX or TPH as GRO concentrations were identified, above laboratory detection limits, in ground water collected from monitor wells MW-1, MW-2 and MW-6. Toluene, ethyl benzene, xylenes and TPH as GRO impacts in were detected in ground water collected from monitor well MW-3 at concentrations of 29, 130, 98 and 650 parts per billion (ppb), respectively. Ethyl

1953

OFFICE OF THE  
ATTORNEY GENERAL

benzene, xylenes and TPH as GRO were detected in ground water collected from monitor well MW-4 at concentrations of 16, 24.8, and 380 ppb, respectively. In addition, BTEX and TPH as GRO impacts were detected in ground water collected from monitor well MW-5 at concentrations of 2,400, 20,000, 22,000, 9,600 and 49,000 ppb, respectively. Benzene, toluene and ethyl benzene impacts in ground water collected from monitor well MW-5 was above the Minnesota Department of Health (MDH) health risk limits (HRL's) of 10, 1,000 and 700 ppb, respectively. Ground water benzene and TPH as GRO concentrations are illustrated in Figures 2 and 3, respectively, and included in Table 1.

If you have any questions regarding this letter report, please call me at (605) 886-4009. Coteau appreciates the opportunity to provide professional environmental consulting services to North American State Bank.

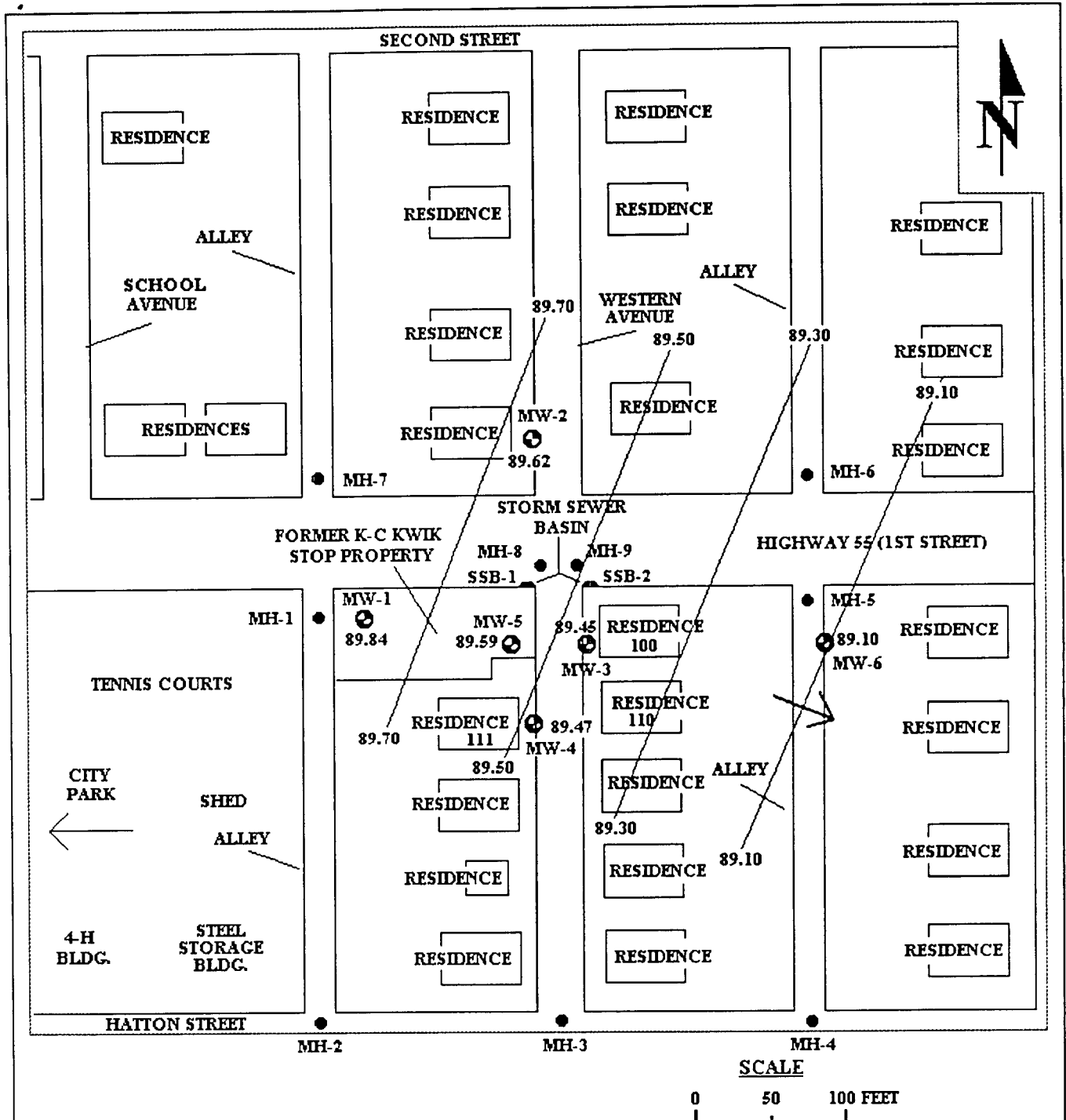
Sincerely,

COTEAU ENVIRONMENTAL

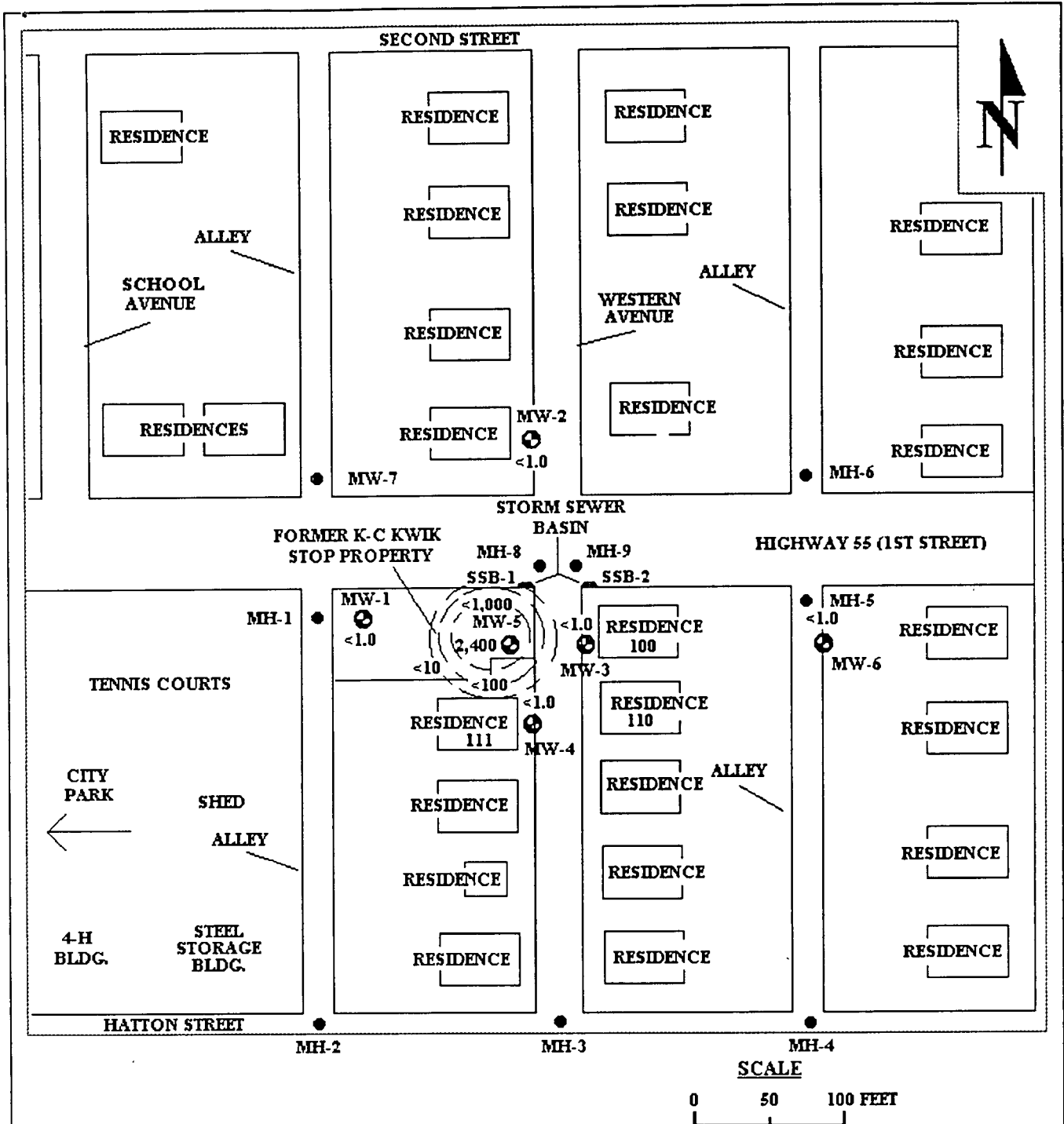


Nathan F. Hunke, P.G., M.S.  
Senior Hydrogeologist

cc: Mr. Jason Lindquist - MPCA

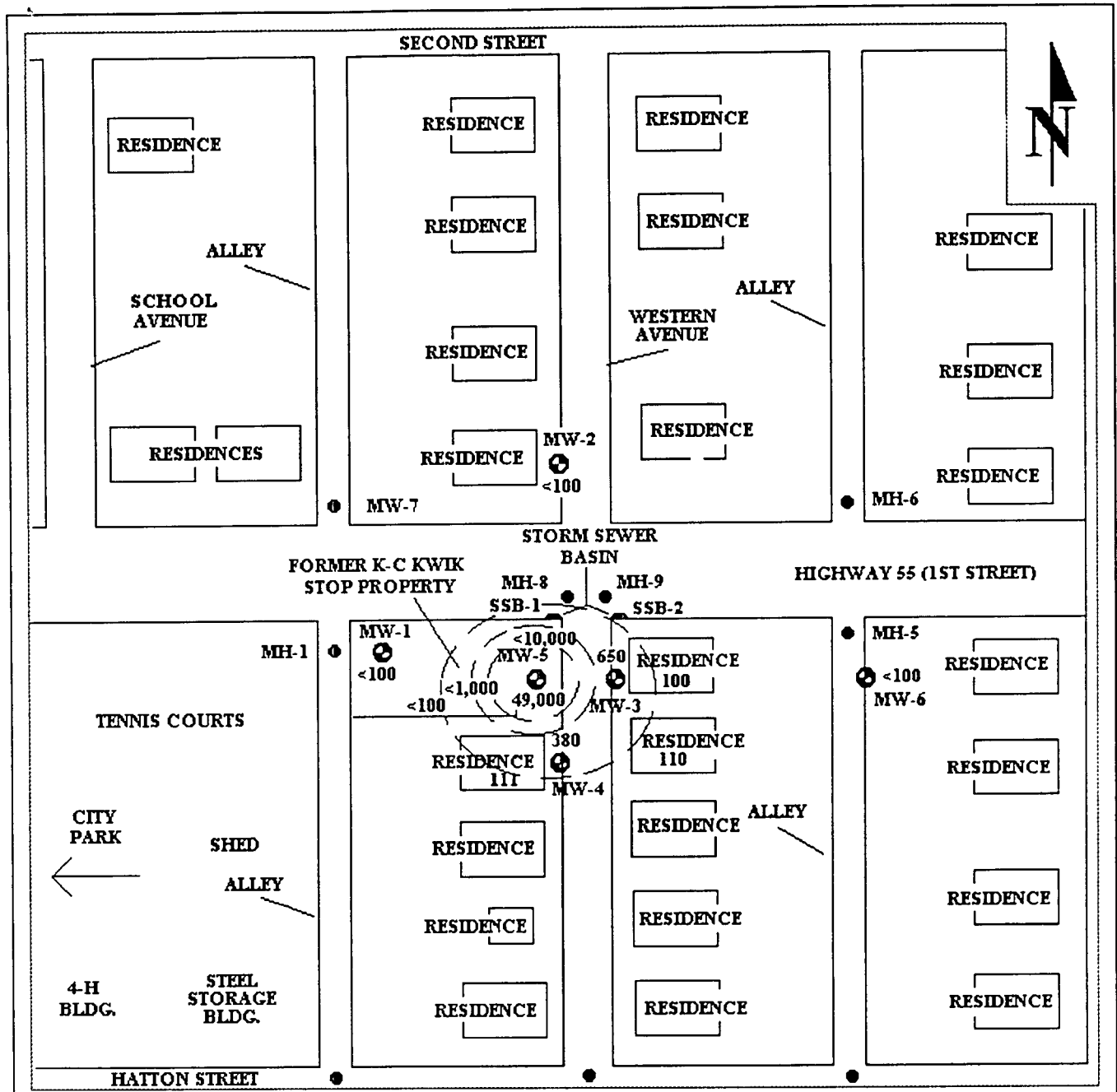


<b>FORMER K-C KWIK STOP BROOTEN, MINNESOTA</b>		
<b>GROUND WATER ELEVATION MAY 5, 2005</b>		
<b>DATE</b>	<b>REVISED</b>	COTEAU ENVIRONMENTAL 728 JANES CIRCLE DRIVE SW ALEXANDRIA, MN 56308 (320) 846-4668
<b>DRAWN BY:</b>		<b>DATE: JUNE 05</b>
		<b>FIGURE: 1</b>



- KEY**
- MW-1 MONITOR WELL LOCATION
  - MH-2 MANHOLE LOCATION
  - MW-5 GROUND WATER BENZENE CONCENTRATION (PPB)
  - 2,400 GROUND WATER BENZENE CONTOUR (APPROXIMATE)
  - <1,000 - GROUND WATER BENZENE CONTOUR (APPROXIMATE)
  - PPB PARTS PER BILLION
  - SSB-1 STORM SEWER CATCH BASIN

FORMER K-C KWIK STOP BROOTEN, MINNESOTA		
GROUND WATER BENZENE CONCENTRATIONS MAY 5, 2005		
DATE	REVISED	COTEAU ENVIRONMENTAL 728 JANES CIRCLE DRIVE SW ALEXANDRIA, MN 56308 320-846-4668
DRAWN BY:		DATE: JUNE 05
		FIGURE: 2



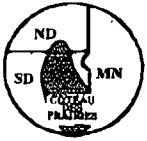
- KEY**
- MW-1 MONITOR WELL LOCATION
  - MH-2 MANHOLE LOCATION
  - MW-5 GROUND WATER TPH AS GRO CONCENTRATION (PPB)
  - 49,000 GROUND WATER TPH AS GRO CONTOUR (APPROXIMATE)
  - <10,000 GROUND WATER TPH AS GRO CONTOUR (APPROXIMATE)
  - PPB TOTAL PETROLEUM HYDROCARBONS
  - TPH GASOLINE RANGE ORGANICS
  - GRO
  - SSB-1 STORM SEWER CATCH BASIN

<b>FORMER K-C KWIK STOP BROOTEN, MINNESOTA</b>		
GROUND WATER TPH AS GRO CONCENTRATIONS MAY 5, 2005		
DATE	REVISED	COTEAU ENVIRONMENTAL 728 JANES CIRCLE DRIVE SW ALEXANDRIA, MN 56308 (320) 8464668
DRAWN BY:		DATE: JUNE 05
		FIGURE: 3

TABLE 1  
 LABORATORY ANALYTICAL RESULTS  
 GROUND WATER SAMPLES

Water sample	Date	Concentrations (ppb)						
		Benzene (10.0)	Toluene (1,000)	Ethyl Benzene (700)	Total Xylenes (10,000)	TPH as GRO	TPH as DRO	MTBE
MW-1	05/05/05	<1.0	<1.0	<1.0	<3.0	<100	NA	<1.0
MW-2	05/05/05	<1.0	<1.0	<1.0	<3.0	<100	NA	<1.0
MW-3	05/05/05	<1.0	29	130	98	650	NA	<1.0
MW-4	05/05/05	<1.0	<1.0	16	24.8	380	NA	<1.0
MW-5	05/05/05	2,400	20,000	2,200	9,600	49,000	NA	<20
MW-6	05/05/05	<1.0	<1.0	<1.0	<3.0	<100	NA	<1.0
FIELD BLANK	05/05/05	<1.0	<1.0	<1.0	<3.0	<100	NA	NA
TRIP BLANK	05/05/05	<1.0	<1.0	<1.0	<3.0	NA	NA	NA

NA = Not analyzed for parameter



# COTEAU ENVIRONMENTAL - FAX COVER SHEET

File  
KC 14698

312 9<sup>th</sup> Ave. SE, Suite C • Watertown, SD 57201 • Phone (605) 886-4009

<b>Send to:</b> Steven Palzkill, P.G.	<b>From:</b> Nate Hunke, M.S., P.G.
<b>Company:</b> MPCA	<b>Date:</b> January 10, 2006
<b>Office Location:</b> Brainerd, Minnesota	<b>Office Location:</b> Watertown, SD
<b>Fax Number:</b> (218) 828-2594	<b>Fax Number:</b> 605-882-4152

Urgent     Reply ASAP     Please Review     For your information

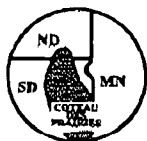
Total pages, including cover: 14

Comments:

As discussed. Call with any questions.
Additional 1-23-06 AMR Report
Sample results for Air Sample 12/17/05

*The attached pages contain confidential information which can only be reviewed by the above individual. If you have received this communication in error, please immediately notify us by telephone and return the original message to us at the above address via the U.S. Postal Service. Thank you.*





# COTEAU ENVIRONMENTAL - FAX COVER SHEET

NG - 10:20am  
01/10/06  
FAXED

312 9<sup>th</sup> Ave. SE, Suite C • Watertown, SD 57201 • Phone (605) 886-4009

<b>Send to:</b> Steven Palzkill, P.G.	<b>From:</b> Nate Hunke, M.S., P.G.
<b>Company:</b> MPCA	<b>Date:</b> January 10, 2006
<b>Office Location:</b> Brainerd, Minnesota	<b>Office Location:</b> Watertown, SD
<b>Fax Number:</b> (218) 828-2594	<b>Fax Number:</b> 605-882-4152

Urgent     Reply ASAP     Please Review     For your information

Total pages, including cover: 14

Comments:

As discussed. Call with any questions.

*The attached pages contain confidential information which can only be reviewed by the above individual. If you have received this communication in error, please immediately notify us by telephone and return the original message to us at the above address via the U S Postal Service. Thank you.*



Pace Analytical Services, Inc.  
1700 Elm Street, Suite 200  
Minneapolis, MN 55414  
Phone: (612)607-1700  
Fax: (612)607-6444

January 04, 2006

Scott Hunke  
Coteau Environmental  
728 Janes Circle Drive SW  
Alexandria, MN 56308

RE: Project: 1025374  
Project ID: KC KWIK STOP BROOTEN, MN

Dear Scott Hunke:

Enclosed are the analytical results for sample(s) received by the laboratory on December 20, 2005. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Daryl Peterson  
daryl.peterson@pacelabs.com

Illinois Certification #: 200011  
Iowa Certification # 368  
Minnesota Certification #: 027-053-137  
Wisconsin Certification #: 999407970

Enclosures

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#### REPORT OF LABORATORY ANALYSIS

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Fax: (612)607-8444

**SAMPLE SUMMARY**

Project. 1025374  
Project ID KC KWIK STOP BROOTEN,MN

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1025374001	543-110 WESTERN AVE	Air	12/17/05 00:00	12/20/05 16:10

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Fax: (612)607-6444

**SAMPLE ANALYTE COUNT**

Project: 1025374  
Project ID: KC KWIK STOP BROOTEN,MN

Lab ID	Sample ID	Method	Analytes Reported
1025374001	543-110 WESTERN AVE	TO-15	58

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 Fax: (612)607-6444

## ANALYTICAL RESULTS

Project: 1025374

Project ID: KC KWIK STOP BROOTEN,MN

The results are reported as received by the laboratory

Lab ID: 1025374001 Date Collected: 12/17/05 00:00 Matrix: Air  
 Sample ID: 543-110 WESTERN AVE Date Received: 12/20/05 16:10

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
Air											
TO15 MSV AIR Analytical Method: TO-15											
Acetone	16.0	ppbv	None	4.1	7.4		01/03/06 22:46	HRG	67-64-1		
Benzene	ND	ppbv		0.77	1.48		12/28/05 04:08	HRG	71-43-2		
Bromodichloromethane	ND	ppbv		0.75	1.48		12/28/05 04:08	HRG	75-27-4		
Bromoform	ND	ppbv		0.77	1.48		12/28/05 04:08	HRG	75-25-2		
Bromomethane	ND	ppbv		0.75	1.48		12/28/05 04:08	HRG	74-83-9		
1,3-Butadiene	ND	ppbv		0.77	1.48		12/28/05 04:08	HRG	106-99-0		
2-Butanone (MEK)	1.5	ppbv	5000	0.81	1.48		12/28/05 04:08	HRG	78-93-3		
Carbon disulfide	ND	ppbv		0.74	1.48		12/28/05 04:08	HRG	75-15-0		
Carbon tetrachloride	ND	ppbv		0.75	1.48		12/28/05 04:08	HRG	56-23-5		
Chlorobenzene	ND	ppbv		0.77	1.48		12/28/05 04:08	HRG	108-90-7		
Chloroethane	ND	ppbv		0.75	1.48		12/28/05 04:08	HRG	75-00-3		
Chloroform	ND	ppbv		0.75	1.48		12/28/05 04:08	HRG	67-66-3		
Chloromethane	ND	ppbv		0.74	1.48		12/28/05 04:08	HRG	74-87-3		
Cyclohexane	ND	ppbv		0.77	1.48		12/28/05 04:08	HRG	110-82-7		
Dibromochloromethane	ND	ppbv		0.78	1.48		12/28/05 04:08	HRG	124-48-1		
1,2-Dibromoethane (EDB)	ND	ppbv		0.77	1.48		12/28/05 04:08	HRG	106-93-4		
1,2-Dichlorobenzene	ND	ppbv		0.75	1.48		12/28/05 04:08	HRG	95-50-1		
1,3-Dichlorobenzene	ND	ppbv		0.75	1.48		12/28/05 04:08	HRG	541-73-1		
1,4-Dichlorobenzene	ND	ppbv		0.75	1.48		12/28/05 04:08	HRG	106-46-7		
Dichlorodifluoromethane	ND	ppbv		0.75	1.48		12/28/05 04:08	HRG	75-71-8		
1,1-Dichloroethane	ND	ppbv		0.77	1.48		12/28/05 04:08	HRG	75-34-3		
1,2-Dichloroethane	ND	ppbv		0.77	1.48		12/28/05 04:08	HRG	107-06-2		
1,1-Dichloroethene	ND	ppbv		0.77	1.48		12/28/05 04:08	HRG	75-35-4		
cis-1,2-Dichloroethene	ND	ppbv		0.77	1.48		12/28/05 04:08	HRG	156-59-2		
trans-1,2-Dichloroethene	ND	ppbv		1.5	1.48		12/28/05 04:08	HRG	156-60-5	2	
1,2-Dichloropropane	ND	ppbv		0.77	1.48		12/28/05 04:08	HRG	78-87-5		
cis-1,3-Dichloropropene	ND	ppbv		0.75	1.48		12/28/05 04:08	HRG	10061-01-5		
trans-1,3-Dichloropropene	ND	ppbv		0.77	1.48		12/28/05 04:08	HRG	10061-02-6		
Dichlorotetrafluoroethane	ND	ppbv		0.84	1.48		12/28/05 04:08	HRG	76-14-2		
Ethyl acetate	ND	ppbv		0.75	1.48		12/28/05 04:08	HRG	141-78-6		
Ethylbenzene	ND	ppbv		0.77	1.48		12/28/05 04:08	HRG	100-41-4		
4-Ethyltoluene	ND	ppbv		0.78	1.48		12/28/05 04:08	HRG	622-96-8		
n-Heptane	ND	ppbv		0.77	1.48		12/28/05 04:08	HRG	142-82-5		
Hexachloro-1,3-butadiene	ND	ppbv		0.74	1.48		12/28/05 04:08	HRG	87-69-3	1	
n-Hexane	ND	ppbv		0.78	1.48		12/28/05 04:08	HRG	110-54-3		
2-Hexanone	ND	ppbv		0.81	1.48		12/28/05 04:08	HRG	591-78-6		
Methylene Chloride	ND	ppbv		0.77	1.48		12/28/05 04:08	HRG	75-09-2		

Date: 01/04/2006

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## REPORT OF LABORATORY ANALYSIS

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Phone: (612)607-1700  
Fax: (612)607-6444

## ANALYTICAL RESULTS

Project 1025374

Project ID: KC KWIK STOP BROOTEN, MN

The results are reported as received by the laboratory.

Lab ID: 1025374001 Date Collected: 12/17/05 00:00 Matrix: Air  
Sample ID: 543-110 WESTERN AVE Date Received: 12/20/05 16:10

Parameters	Results	Units	Report Limit	DF Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
4-Methyl-2-pentanone (MIBK)	ND	ppbv	0.81	1.48		12/28/05 04:08	HRG	108-10-1		
Methyl-tert-butyl ether	ND	ppbv	1.5	1.48		12/28/05 04:08	HRG	1634-04-4		
Propylene	ND	ppbv	3.0	1.48		12/28/05 04:08	HRG	115-07-1		
Styrene	ND	ppbv	0.81	1.48		12/28/05 04:08	HRG	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ppbv	0.77	1.48		12/28/05 04:08	HRG	79-34-5		
Tetrachloroethene	ND	ppbv	0.77	1.48		12/28/05 04:08	HRG	127-18-4		
Tetrahydrofuran	ND	ppbv	0.77	1.48		12/28/05 04:08	HRG	109-99-9		
THC as Gas	110	ppbv	29.6	1.48		12/28/05 04:08	HRG			
Toluene	4.1	ppbv	0.77	1.48		12/28/05 04:08	HRG	108-88-3		
1,2,4-Trichlorobenzene	ND	ppbv	0.77	1.48		12/28/05 04:08	HRG	120-82-1		
1,1,1-Trichloroethane	ND	ppbv	0.77	1.48		12/28/05 04:08	HRG	71-55-6		
1,1,2-Trichloroethane	ND	ppbv	0.77	1.48		12/28/05 04:08	HRG	79-00-5		
Trichloroethene	ND	ppbv	0.77	1.48		12/28/05 04:08	HRG	79-01-6		
Trichlorofluoromethane	ND	ppbv	0.74	1.48		12/28/05 04:08	HRG	75-69-4		
1,1,2-Trichlorotrifluoroethane	ND	ppbv	0.77	1.48		12/28/05 04:08	HRG	76-13-1		
1,2,4-Trimethylbenzene	ND	ppbv	0.75	1.48		12/28/05 04:08	HRG	95-83-6		
1,3,5-Trimethylbenzene	ND	ppbv	0.77	1.48		12/28/05 04:08	HRG	108-67-8		
Vinyl acetate	ND	ppbv	0.81	1.48		12/28/05 04:08	HRG	108-06-4		
Vinyl chloride	ND	ppbv	0.75	1.48		12/28/05 04:08	HRG	75-01-4		
m&p-Xylene	2.5	ppbv	1.5	1.48		12/28/05 04:08	HRG	1330-20-7		
o-Xylene	ND	ppbv	0.77	1.48		12/28/05 04:08	HRG	95-47-6		

Date: 01/04/2006

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## REPORT OF LABORATORY ANALYSIS

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Fax: (612)607-6444

## ANALYTICAL RESULTS QUALIFIERS

Project 1025374  
Project ID KC KWIK STOP BROOTEN,MN

---

### PARAMETER QUALIFIERS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

MDL - Adjusted Method Detection Limit

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene

### ANALYTE QUALIFIERS

- [1] The continuing calibration for this compound is outside of method control limits. The result for this compound should be considered an estimation
- [2] The initial calibration for this compound is outside of method control limits. The result for this compound is an estimation.

Date: 01/04/2006

Page 6 of 13

## REPORT OF LABORATORY ANALYSIS

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Minneapolis, MN 55414  
Phone: (612)607-1700  
Fax: (612)607-6444

### QUALITY CONTROL DATA

Project: 1025374

Project ID: KÇ KWIK STOP BROOTEN,MN

QC Batch: AIR/3183

Analysis Method: TO-15

QC Batch Method: TO-15

Analysis Description: TO15 MSV AIR

Associated Lab Samples: 1025374001

METHOD BLANK: 176448

Associated Lab Samples: 1025374001

Parameter	Units	Blank	Reporting
		Result	Limit Qualifiers
1,1-Dichloroethane	ppbv	ND	0.52
1,1-Dichloroethene	ppbv	ND	0.52
1,1,1-Trichloroethane	ppbv	ND	0.52
1,1,2-Trichloroethane	ppbv	ND	0.52
1,1,2,2-Tetrachloroethane	ppbv	ND	0.52
1,2,4-Trichlorobenzene	ppbv	ND	0.52
1,2-Dichlorobenzene	ppbv	ND	0.51
1,2-Dichloroethane	ppbv	ND	0.52
1,2-Dibromoethane (EDB)	ppbv	ND	0.52
1,2-Dichloropropane	ppbv	ND	0.52
1,2,4-Trimethylbenzene	ppbv	ND	0.51
1,3-Butadiene	ppbv	ND	0.52
1,3-Dichlorobenzene	ppbv	ND	0.51
1,3,5-Trimethylbenzene	ppbv	ND	0.52
1,4-Dichlorobenzene	ppbv	ND	0.51
2-Butanone (MEK)	ppbv	ND	0.55
2-Hexanone	ppbv	ND	0.55
4-Ethyltoluene	ppbv	ND	0.53
Carbon disulfide	ppbv	ND	0.50
Dichlorotetrafluoroethane	ppbv	ND	0.51
Acetone	ppbv	ND	0.55
Benzene	ppbv	ND	0.52
Bromodichloromethane	ppbv	ND	0.51
Bromomethane	ppbv	ND	0.51
Bromoform	ppbv	ND	0.52
cis-1,2-Dichloroethane	ppbv	ND	0.52
cis-1,3-Dichloropropene	ppbv	ND	0.51
Carbon tetrachloride	ppbv	ND	0.51
Cyclohexane	ppbv	ND	0.52
Chlorobenzene	ppbv	ND	0.52
Chloroethane	ppbv	ND	0.51
Chloroform	ppbv	ND	0.51
Chloromethane	ppbv	ND	0.50
Dibromochloromethane	ppbv	ND	0.53
Dichlorodifluoromethane	ppbv	ND	0.51
Ethyl acetate	ppbv	ND	0.51
Ethylbenzene	ppbv	ND	0.52
Hexachloro-1,3-butadiene	ppbv	ND	0.50 2
Methylene Chloride	ppbv	ND	0.52

Date: 01/04/2006

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 Phone: (612)607-1700  
 Fax: (612)607-6444

### QUALITY CONTROL DATA

Project: 1025374

Project ID: KC KWIK STOP BROOTEN,MN

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Methyl-tert-butyl ether	ppbv	ND	1.0	
4-Methyl-2-pentanone (MIBK)	ppbv	ND	0.55	
m&p-Xylene	ppbv	ND	1.0	
n-Heptane	ppbv	ND	0.52	
n-Hexane	ppbv	ND	0.53	
o-Xylene	ppbv	ND	0.52	
Propylene	ppbv	ND	2.0	
Styrene	ppbv	ND	0.55	
trans-1,2-Dichloroethene	ppbv	ND	1.0	3
trans-1,3-Dichloropropene	ppbv	ND	0.52	
Tetrachloroethene	ppbv	ND	0.52	
Tetrahydrofuran	ppbv	ND	0.52	
1,1,2-Trichlorotrifluoroethane	ppbv	ND	0.52	
Toluene	ppbv	ND	0.52	
Trichloroethene	ppbv	ND	0.52	
Trichlorofluoromethane	ppbv	ND	0.50	
Vinyl acetate	ppbv	ND	0.55	
Vinyl chloride	ppbv	ND	0.51	

METHOD BLANK: 176448

Associated Lab Samples: 1025374001

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
THC as Gas	ppbv	ND	20.0	

LABORATORY CONTROL SAMPLE 176449

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ppbv	10.7	9.8	91	59-136	
1,1-Dichloroethene	ppbv	10.8	11.1	103	60-137	
1,1,1-Trichloroethane	ppbv	10.6	10.7	101	60-134	
1,1,2-Trichloroethane	ppbv	10.7	10.6	99	64-129	
1,1,2,2-Tetrachloroethane	ppbv	10.8	10.5	99	55-141	
1,2,4-Trichlorobenzene	ppbv	10.4	15.3	147	50-150	
1,2-Dichlorobenzene	ppbv	10.4	12.0	115	60-139	
1,2-Dichloroethane	ppbv	10.6	11.1	105	56-141	
1,2-Dibromoethane (EDB)	ppbv	10.5	11.5	109	61-136	
1,2-Dichloropropane	ppbv	10.5	10.7	101	57-131	
1,2,4-Trimethylbenzene	ppbv	10.4	10.7	103	63-137	
1,3-Butadiene	ppbv	10.7	11.4	107	53-140	
1,3-Dichlorobenzene	ppbv	10.5	12.8	122	59-136	

Date: 01/04/2006

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### REPORT OF LABORATORY ANALYSIS

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Minneapolis, MN 55414  
Phone (612)607-1700  
Fax: (612)607-6444

### QUALITY CONTROL DATA

Project: 1025374

Project ID: KC KWIK STOP BROOTEN,MN

LABORATORY CONTROL SAMPLE. 176449

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,3,5-Trimethylbenzene	ppbv	10.4	10.6	102	61-134	
1,4-Dichlorobenzene	ppbv	10.5	12.3	118	59-130	
2-Butanone (MEK)	ppbv	10.4	11.6	111	54-133	
2-Hexanone	ppbv	10.4	15.3	147	54-139	1
4-Ethyltoluene	ppbv	10.3	11.0	107	61-138	
Carbon disulfide	ppbv	10.4	12.0	115	50-150	
Dichlorotetrafluoroethane	ppbv	9.9	9.7	98	59-130	
Acetone	ppbv	10.3	12.7	123	50-139	
Benzene	ppbv	10.6	10.6	100	64-125	
Bromodichloromethane	ppbv	10.4	11.0	106	61-131	
Bromomethane	ppbv	10.1	10.3	102	55-135	
Bromoform	ppbv	10.4	11.6	112	66-138	
cis-1,2-Dichloroethene	ppbv	10.7	11.4	106	62-135	
cis-1,3-Dichloropropene	ppbv	10.5	12.6	120	64-133	
Carbon tetrachloride	ppbv	10.7	10.6	99	58-135	
Cyclohexane	ppbv	10.2	12.0	118	54-139	
Chlorobenzene	ppbv	10.6	10.6	100	62-139	
Chloroethane	ppbv	10	10.7	107	56-140	
Chloroform	ppbv	9.8	9.5	97	50-150	
Chloromethane	ppbv	9.9	9.3	94	56-144	
Dibromochloromethane	ppbv	10.4	12.3	118	50-150	
Dichlorodifluoromethane	ppbv	10.1	9.5	94	60-130	
Ethyl acetate	ppbv	9.8	11.0	113	60-132	
Ethylbenzene	ppbv	10.5	12.5	119	65-140	
Hexachloro-1,3-butadiene	ppbv	10.4	12.3	118	50-150	2
Methylene Chloride	ppbv	10.8	10.7	99	56-138	
Methyl-tert-butyl ether	ppbv	10.2	13.9	136	50-150	
4-Methyl-2-pentanone (MIBK)	ppbv	10.4	11.5	110	53-139	
m&p-Xylene	ppbv	20.8	24.9	120	60-132	
n-Heptane	ppbv	10.2	10	98	62-135	
n-Hexane	ppbv	10.1	11.9	118	62-134	
o-Xylene	ppbv	10.6	10.1	95	64-132	
Propylene	ppbv	10.6	9.6	91	56-125	
Styrene	ppbv	10.5	10.1	96	69-134	
trans-1,2-Dichloroethene	ppbv	10	12.2	122	50-150	3
trans-1,3-Dichloropropene	ppbv	11	10.9	99	70-142	
Tetrachloroethene	ppbv	10.5	11.0	105	60-137	
Tetrahydrofuran	ppbv	10.2	9.9	97	52-139	
1,1,2-Trichlorotrifluoroethane	ppbv	10.9	11.0	101	55-137	
Toluene	ppbv	10.6	12.3	116	69-130	
Trichloroethene	ppbv	10.4	11.2	108	60-134	
Trichlorofluoromethane	ppbv	10.2	10.4	102	58-141	
Vinyl acetate	ppbv	10.6	12.8	121	61-142	
Vinyl chloride	ppbv	10	10.1	101	66-132	

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 Fax: (612)807-6444

### QUALITY CONTROL DATA

Project: 1025374

Project ID: KC KWIK STOP BROOTEN, MN

SAMPLE DUPLICATE: 176450

Parameter	Units	1025369004	DUP	RPD	Max	Qualifiers
		Result	Result		RPD	
1,1-Dichloroethane	ppbv	ND	ND	0	30	
1,1-Dichloroethene	ppbv	ND	ND	0	30	
1,1,1-Trichloroethane	ppbv	ND	ND	0	30	
1,1,2-Trichloroethane	ppbv	ND	ND	0	30	
1,1,2,2-Tetrachloroethane	ppbv	ND	ND	0	30	
1,2,4-Trichlorobenzene	ppbv	ND	ND	0	30	
1,2-Dichlorobenzene	ppbv	ND	ND	0	30	
1,2-Dichloroethane	ppbv	ND	ND	0	30	
1,2-Dibromoethane (EDB)	ppbv	ND	ND	0	30	
1,2-Dichloropropane	ppbv	ND	ND	0	30	
1,2,4-Trimethylbenzene	ppbv	ND	ND	0	30	
1,3-Butadiene	ppbv	ND	ND	0	30	
1,3-Dichlorobenzene	ppbv	ND	ND	0	30	
1,3,5-Trimethylbenzene	ppbv	ND	ND	0	30	
1,4-Dichlorobenzene	ppbv	ND	ND	0	30	
2-Butanone (MEK)	ppbv	ND	ND	0	30	
2-Hexanone	ppbv	ND	ND	0	30	
4-Ethyltoluene	ppbv	ND	ND	0	30	
Carbon disulfide	ppbv	ND	ND	0	30	
Dichlorotetrafluoroethane	ppbv	ND	ND	0	30	
Acetone	ppbv	20.7	17.0	20	30	
Benzene	ppbv	ND	ND	0	30	
Bromodichloromethane	ppbv	ND	ND	0	30	
Bromomethane	ppbv	ND	ND	0	30	
Bromoform	ppbv	ND	ND	0	30	
cis-1,2-Dichloroethene	ppbv	ND	ND	0	30	
cis-1,3-Dichloropropene	ppbv	ND	ND	0	30	
Carbon tetrachloride	ppbv	ND	ND	0	30	
Cyclohexane	ppbv	ND	ND	0	30	
Chlorobenzene	ppbv	ND	ND	0	30	
Chloroethane	ppbv	ND	ND	0	30	
Chloroform	ppbv	ND	ND	0	30	
Chloromethane	ppbv	ND	ND	0	30	
Dibromochloromethane	ppbv	ND	ND	0	30	
Dichlorodifluoromethane	ppbv	ND	ND	0	30	
Ethyl acetate	ppbv	ND	ND	0	30	
Ethylbenzene	ppbv	ND	ND	0	30	
Hexachloro-1,3-butadiene	ppbv	ND	ND	0	30	2
Methylene Chloride	ppbv	ND	ND	0	30	

Date: 01/04/2006

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 Fax: (612)607-6444

### QUALITY CONTROL DATA

Project 1025374

Project ID: KC KWIK STOP BROOTEN, MN

SAMPLE DUPLICATE: 176450

Parameter	Units	1025369004 Result	DUP Result	RPD	Max RPD	Qualifiers
Methyl-tert-butyl ether	ppbv	ND	ND	0	30	
4-Methyl-2-pentanone (MIBK)	ppbv	ND	ND	0	30	
m&p-Xylene	ppbv	ND	ND	0	30	
n-Heptane	ppbv	ND	ND	0	30	
n-Hexane	ppbv	ND	ND	0	30	
o-Xylene	ppbv	ND	ND	0	30	
Propylene	ppbv	ND	ND	0	30	
Styrene	ppbv	ND	ND	0	30	
trans-1,2-Dichloroethene	ppbv	ND	ND	0	30	3
trans-1,3-Dichloropropene	ppbv	ND	ND	0	30	
Tetrachloroethene	ppbv	ND	ND	0	30	
Tetrahydrofuran	ppbv	ND	ND	0	30	
1,1,2- Trichlorotrifluoroethane	ppbv	ND	ND	0	30	
Toluene	ppbv	16.1	19.8	20	30	
Trichloroethene	ppbv	ND	ND	0	30	
Trichlorofluoromethane	ppbv	ND	ND	0	30	
Vinyl acetate	ppbv	ND	ND	0	30	
Vinyl chloride	ppbv	ND	ND	0	30	

SAMPLE DUPLICATE: 176450

Parameter	Units	1025369004 Result	DUP Result	RPD	Max RPD	Qualifiers
THC as Gas	ppbv	ND	ND	0	30	

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## QUALITY CONTROL DATA QUALIFIERS

Project: 1025374  
Project ID: KC KWIK STOP BROOTEN,MN

---

### QUALITY CONTROL PARAMETER QUALIFIERS

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

### QUALITY CONTROL ANALYTE QUALIFIERS

- [1] Result for this analyte was above the acceptable LCS recovery limit. Results for this analyte in associated samples may be biased high.
- [2] The continuing calibration for this compound is outside of method control limits. The result for this compound should be considered an estimation.
- [3] The initial calibration for this compound is outside of method control limits. The result for this compound is an estimation.

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1025374

Project ID: KC KWIK STOP BROOTEN, MN

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1025374001	543-110 WESTERN AVE	TO-15	AIR/3183		

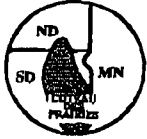
Date: 01/04/2006

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# COTEAU ENVIRONMENTAL - FAX COVER SHEET

312 9<sup>th</sup> Ave. SE, Suite C • Watertown, SD 57201 • Phone (605) 886-4009

<b>Send to:</b> Steven Palzkill, P.G.	<b>From:</b> Nate Hunke, M.S., P.G.
<b>Company:</b> MPCA	<b>Date:</b> February 2, 2006
<b>Office Location:</b> Brainerd, Minnesota	<b>Office Location:</b> Watertown, SD
<b>Fax Number:</b> (218) 828-2594	<b>Fax Number:</b> 605-882-4152

Urgent     Reply ASAP     Please Review     For your information

Total pages, including cover: 2

**Comments:**

Steve, this is a revised Table 7 for the annual report dated January 23, 2006. Please call with any questions.

*The attached pages contain confidential information which can only be reviewed by the above individual. If you have received this communication in error, please immediately notify us by telephone and return the original message to us at the above address via the U.S. Postal Service. Thank you.*

0.86

Table 7  
Soil Vapor Intrusion Laboratory Analytical Results

Sample	Date Sampled	Methylene Chloride	Benzene	Toluene	1,2,4-Tri-methyl benzene	1,2-DCA	Ethyl benzene	Xylenes	Acetone	Chlor-methane	2-Butanone	Carbon disulfide	4-Ethyl-toluene	n-Heptane	THC as Gas	Tri-chloro-ethylene	1,3,5-Tri-methyl-benzene	n-hexane
110 Western Ave.	11-9-05	10.19	229.59	ND	ND	ND	16.06	56.85	36.06	ND	2.4	3.3	2.7	1.0	715	ND	4.23	5.9
110 Western Ave.	12-17-05	ND	15.46	ND	ND	ND	ND	10.85	38.72	ND	1.5	ND	ND	ND	110	ND	ND	0.78
MDH Acute HRV (ug/m <sup>3</sup> )		10,000	1,000	37,000	None	None	10,000	43,000	None	None	None	None	None	None	None	2,000	None	None
MDH Chronic HRV (ug/m <sup>3</sup> )		20	1.3-4.5	460	None	None	None	None	None	None	None	None	None	None	None	None	None	None
EPA Reference Conc. (ug/m <sup>3</sup> )		None	None	None	6	None	1,000	700	350	90	None	None	None	None	None	None	6	None
MDH ISC (ug/m <sup>3</sup> )		None	None	None	None	0.38	None	None	None	None	None	None	None	None	None	0.4	None	None

7.98

Sub Slab

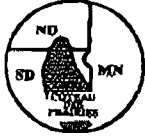
Results are reported in micrograms per cubic meter soil vapor (ug/m<sup>3</sup>).

Notes: ND = Nondetectable MDH = Minnesota Department of Health  
HRV = Health Risk Value EPA = Environmental Protection Agency

ISC = MDH Interim Screening Concentration

Shaded values are above the MDH Acute HRV, the MDH Chronic HRV, the EPA Reference Concentration or the MDH ISC.  
THC = Area sum of target and non-target compounds in the gasoline range.





# COTEAU ENVIRONMENTAL - FAX COVER SHEET

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<b>Send to:</b> Steven Palzkill, P.G.	<b>From:</b> Nate Hunke, M.S., P.G.
<b>Company:</b> MPCA	<b>Date:</b> February 3, 2006
<b>Office Location:</b> Brainerd, Minnesota	<b>Office Location:</b> Watertown, SD
<b>Fax Number:</b> (218) 828-2594	<b>Fax Number:</b> 605-882-4152

Urgent   
 Reply ASAP   
 Please Review   
 For your information

Total pages, including cover: 6

Comments:

Steve, the vapor survey for the former KC's Kwik Stop in Brooten, MN. MPCA No. 14698. 110 Western Avenue. Please call with any questions.

*The attached pages contain confidential information which can only be reviewed by the above individual. If you have received this communication in error, please immediately notify us by telephone and return the original message to us at the above address via the U.S. Postal Service. Thank you.*

**Appendix 2**

- (a) Example Indoor Air Quality Building Survey
- (b) Instructions for Residents of Homes Being Sampled

Source: MA DEP 2002 /

1030

### Indoor Air Quality Building Survey

Date: 12/16/05

Address: 110 WESTERN AVE  
BROOKFIELD, MA 01506

Contact Name: MURRIS GROSS  
Phone: home: (320) 346-2497 work: ( )

#### List of Current Occupants/Occupation:

Age (if under 18)	Sex (M/F)	Occupation
59	M	RETIRED
67	F	RETIRED

#### Building Construction Characteristics:

What type of building is it? (Circle appropriate responses)

- Single Family
- Multi-Family
- School
- Commercial
- Ranch
- 2-Family
- Duplex
- Raised Ranch
- Apartment House (# of units \_\_\_\_\_)
- Cape
- Condominium (# of units \_\_\_\_\_)
- Colonial
- Other (Specify) \_\_\_\_\_
- Split Level
- Mobile Home

General description of building construction materials: WOOD PLASTER  
SHEET ROCK, POWDER BASEMENT

How many occupied stories does the building have? 2

Year built? 1920

Has the building been weatherized with any of the following? (Circle all that apply)

- Insulation
- Storm Windows
- Energy-efficient windows
- Other (specify)

Attached garage? (Y/N) N Vehicle(s) present? (Y/N) \_\_\_\_\_

What type of basement does the building have? (Circle all that apply)  
Full basement Crawl space Slab-on-Grade Other (specify)

What are the characteristics of the basement? (Circle all that apply)  
Finished Basement Floor: Concrete Foundation Walls: Poured Concrete Moisture: Wet  
Unfinished Partially Finished (50%) Dirt Other (specify) \_\_\_\_\_ Field Stone Damp  
Dry

Is a basement sump present? (Y/N) N Sealed to indoor air? (Y/N) Y

Does the basement have any of the following characteristics (e.g. preferential vapor pathways) that might permit soil vapor entry? (Circle all that apply)

Cracks Pipe/Utility conduits Other (specify) \_\_\_\_\_  
Foundation/slab drainage Sump pumps

**Heating and Ventilation System(s) Present:**

What types of heating system(s) are used in this building? (Circle all that apply)  
Hot Air Circulation Heat Pump Steam Radiation Wood Stove

Hot Air Radiation Unvented Kerosene Heater Electric Baseboard Heat

Other (specify) Air Conditioner central window Fireplace (wood/gas)

What types of fuels are used in this building? (Circle all that apply)  
Natural gas Electric Coal Other (specify) \_\_\_\_\_

Fuel Oil Wood Solar

What type of mechanical ventilation systems are present and/or currently operating in this building? (Circle all that apply)

Central Air Conditioning Mechanical Fan Bathroom Vent Fan  
*CEILING*

Individual Air Conditioning Kitchen Range Hood Air-to-Air Heat Exchanger

Open Windows Other (specify) \_\_\_\_\_

**Sources of Chemical Contaminants:**

Which of these are present in the building? (Check all that apply)

Potential VOC Source	Location of Source	Major Ingredients	Removed Prior to Air Sampling? (Y/N/NA)
Paint or Paint thinners			
Gas-powered equipment			
Gasoline storage cans			
Cleaning solvents			
Air fresheners			
Oven cleaners			
Carpet / upholstery cleaners			
Hairspray			
Nail polish / remover			
Bathroom cleaner			
Appliance cleaner			
Furniture / floor polish			
Moth balls			
Fuel oil tank			
Wood stove			
Fireplace			
Perfume / colognes			
Hobby supplies			
Scented potpourri, etc			
Other			
Other			
Other			

Do one or more smokers occupy this building on a regular basis? (Y/N) N

Has anybody smoked in the building in the last 48 hours? (Y/N) N

Do the occupants frequently have clothes dry-cleaned? (Y/N) N

Any recent remodeling or repainting? (Y/N, describe) N

Any obvious pressed wood products (e.g. hardwood plywood wall paneling, particleboard, fiberboard)? (Y/N) WALL PANELING

Are there any new upholstery, drapes, carpets, or other textiles? (Y/N) N

Has the building been treated with any insecticides/pesticides? If so, how often and what chemicals are used? NO

Do any of the occupants apply pesticides/herbicides in the yard or garden? If so, how often and what chemicals are used? NO

**Outdoor Sources of Contamination:**

Are there any stationary emission sources in the vicinity of the building? NO

Are there any mobile sources (e.g. highway, bus stop, high-traffic area) in the vicinity of the building? NO

**Weather Conditions During Sampling:**

Outside Temperature (°F): 10° F

Prevailing wind direction: WEST/NW

Describe general weather conditions (e.g. sunny, cloudy, rain): CLOUDY

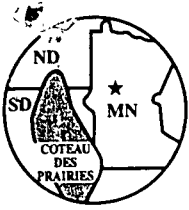
Was there any significant precipitation (>0.1 inches) within 12 hours preceding sampling? (Y/N) N

Type of ground cover (e.g. grass, pavement, etc.) outside the building: 2-3 INCHES SNOW

**General Comments:**

Is there any other information about the structural features of this building, the habits of its occupants or potential sources of chemical contaminants to the indoor air that may be of importance in evaluating the indoor air quality of the building?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# COTEAU ENVIRONMENTAL

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728 Janes Circle Dr. SW • Alexandria, MN 56308 • Bus/Fax (320) 846-4668  
May 17, 2006

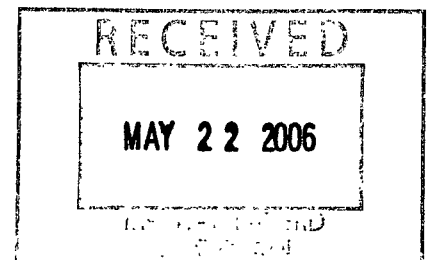
Mr. Brian Borgerding  
North American State Bank  
P.O. Box 189  
Belgrade, MN 56312

RE: Active Remediation-Petroleum Vapor Mitigation System  
Corrective Action Design  
Former KC Kwik Stop  
230 1<sup>ST</sup> Street  
Brooten, Minnesota  
MPCA No. 14698

Dear Mr. Borgerding:

Coteau Environmental (Coteau) has prepared this corrective action design (CAD) relating to installation of the proposed petroleum vapor mitigation system at the above-referenced site. This work plan was prepared based on telephone correspondence with Mr. John Kahler with the Minnesota Pollution Control Agency (MPCA) and Coteau on March 7, 2006. Based on MPCA correspondence, installation of a passive ventilation system in the basement located at 110 South Western Avenue is required to mitigate petroleum vapor migration into the 110 South Western Avenue residence. In addition, it is likely that vapors are entering the residence through an open cistern in the basement of the residence. Therefore, the cistern be permanently plugged. Please note that evaporation water from the furnace currently discharges to the cistern. Therefore, the discharge will need to be rerouted to the drain to the sanitary sewer system of the residence.

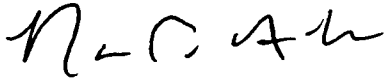
The enclosed CAD includes plans and specifications for the proposed vapor mitigation system. In addition, sampling and reporting specifications are included with the proposed CAD. A copy of the CAD will be submitted to the MPCA for review and approval. Following approval of the CAD, bids from qualified plumbing contractors will be procured.



If you have any questions regarding the enclosed corrective action design, please contact me at (888) 781-0272. Coteau Environmental appreciates the opportunity to provide professional consulting services to North American State Bank of Belgrade, Minnesota.

Sincerely,

**COTEAU ENVIRONMENTAL**

A handwritten signature in black ink, appearing to read 'N. T. Hunke'.

Nathan T. Hunke, M.S., P.G., CPRR  
Senior Hydrogeologist

cc: Mr. Steve Palzkill, MPCA



ACTIVE REMEDIATION-PETROLEUM VAPOR MITIGATION SYSTEM  
CORRECTIVE ACTION DESIGN  
FORMER KC KWIK STOP  
230 1<sup>ST</sup> STREET  
BROOTEN, MINNESOTA  
MPCA NO. 14698

Prepared for:

Mr. Brian Borgerding  
North American State Bank  
P.O. Box 189  
Belgrade, MN 56312

May 17, 2006

Prepared by:

Coteau Environmental  
3930 Sunnybrook Drive NW  
Alexandria, MN 56308  
(320) 846-4668

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3. Proposed SSD System Indoor Installation
4. Proposed Cistern Sealing

PETROLEUM-VAPOR MITIGATION SYSTEM  
CORRECTIVE ACTION DESIGN  
FORMER KC'S KWIK STOP  
BROOTEN, MINNESOTA

Coteau Environmental (Coteau) has prepared this corrective action design (CAD) relating to installation of the proposed petroleum-vapor mitigation system at the above-referenced site (Figure 1). This work plan was prepared based on telephone correspondence with Mr. John Kahler with the Minnesota Pollution Control Agency (MPCA) on March 7, 2006. Based on correspondence with the MPCA, installation of a passive ventilation system in the basement located at 110 South Western Avenue is required to mitigate the migration of petroleum vapors into the 110 South Western residence. In addition, an open cistern exists in the basement of the residence. The open cistern is currently utilized for discharge of condensation water from the residential furnace. Sealing of the cistern along with rerouting the condensation water to a drain to the sanitary sewer is required.

Petroleum-Vapor Mitigation System

A passive sub-slab depressurization (SSD) system will be installed in the 110 South Western Avenue residence to mitigate petroleum vapor migration into the residential basement (Figure 2). These types of ventilation systems are commonly used for radon gas mitigation (EPA, 1993 and 1994). The "passive" SSD system uses PVC pipe and an attic or "whirly bird" fan to draw soil vapors that accumulate below the basement floor and exhaust the vapors to above the roof. Three (3)-inch PVC pipe is installed through the concrete floor of the basement (Figure 3). The thickness of the concrete floor of the 110 South Western basement is approximately two (2) inches. To provide optimum communication between the sub-slab soil and the passive SSD system, adequate sub-slab material is excavated from the area immediately below the slab penetration point of the passive SSD system vent pipes (Figure 4). Following installation of the three (3)-inch PVC pipe in the basement slab, the pipe is sealed using sealant or concrete. The PVC pipe will be routed from the basement of the residence to the roof. An abandoned chimney in the 110 South Western residence will provide a path to the roof for the SSD ventilation system. The passive SSD system attic or "whirly bird" fan will be secured to the top of the PVC pipe that protrudes from the roof of the structure to create a vacuum under the basement floor to vent the vapors to the outside air. The

PVC pipe will protrude above the roof line of the building. To prevent the vapors from reentering the structure or other structures in the vicinity of the 110 South Western Avenue residence, the PVC pipe will protrude from the residence at least 10 feet away from any opening in the structure that is less than two feet below the exhaust point, be above the eave of the roof, be 10 feet or more above ground level, be 10 feet or more from any window, door, or other opening into conditioned spaces of the structure that is less than two feet below the exhaust point, and be ten feet or more from any opening into an adjacent building.

A cistern exists in the basement of the 110 South Western Avenue residential basement (Figure 5). For radon, sump pits (or cisterns) that permit entry of soil-gas or that would allow conditioned indoor air to be drawn into a sub-slab depressurization system should be covered and sealed (EPA, 1994). Therefore, the cistern will be sealed to prevent conditioned indoor air to be drawn into the proposed passive SSD system, following installation, and to prevent petroleum vapor migration into the structure from the subsurface. The sump pit exhibits dimensions of 2.67 feet wide by 5 feet deep. Therefore, the volume of the cistern is approximately 27.8 cubic feet or 1.03 cubic yards. The sump pit will be filled with approximately 1.0 cubic yard of fill material and sealed at the level of the basement floor with a two (2)-inch layer of concrete.

Please note that condensation water from the furnace of the residence currently discharges to the cistern. The discharge will be rerouted to the drain to the sanitary sewer system of the residential basement. Currently, the drains of the 110 South Western Avenue residence discharge to the City of Brooten sanitary sewer. A condensation pump will be installed to route the furnace condensation to the drain.

#### Post-Installation Vapor Mitigation System Testing

To test the operation of the passive SSD system, a “smoke” test be performed following installation. This test will be completed by puffing smoke near cracks in the floor of the basement. If the passive SSD system is working properly, the smoke should be pulled down and disappear through the cracks. Then if the system is operating properly, when the system is made inoperable by preventing the attic fan from spinning, during testing, the smoke should reappear from the crack. During testing, a shop vacuum will be utilized to create a vacuum in the sub-slab soil. If system

testing demonstrates that the system is not working properly, additional PVC pipes will be installed in the floor of the basement to enhance the effectiveness of the passive SSD system.

In addition to the “smoke” test, a vapor sample will be collected from the 110 South Western Avenue basement, following installation of the passive SSD system. One (1) indoor air sample will be collected from the basement of the residence at 110 South Western Avenue, on a quarterly basis, and analyzed for volatile organic compounds (Appendix A, Minnesota Soil Gas List, Guidance Document c-prp4-01a) utilizing EPA method TO-15. In addition, a photoionization detector (PID) reading, the final pressure and the time of sample collection will be recorded on the chain of custody form.

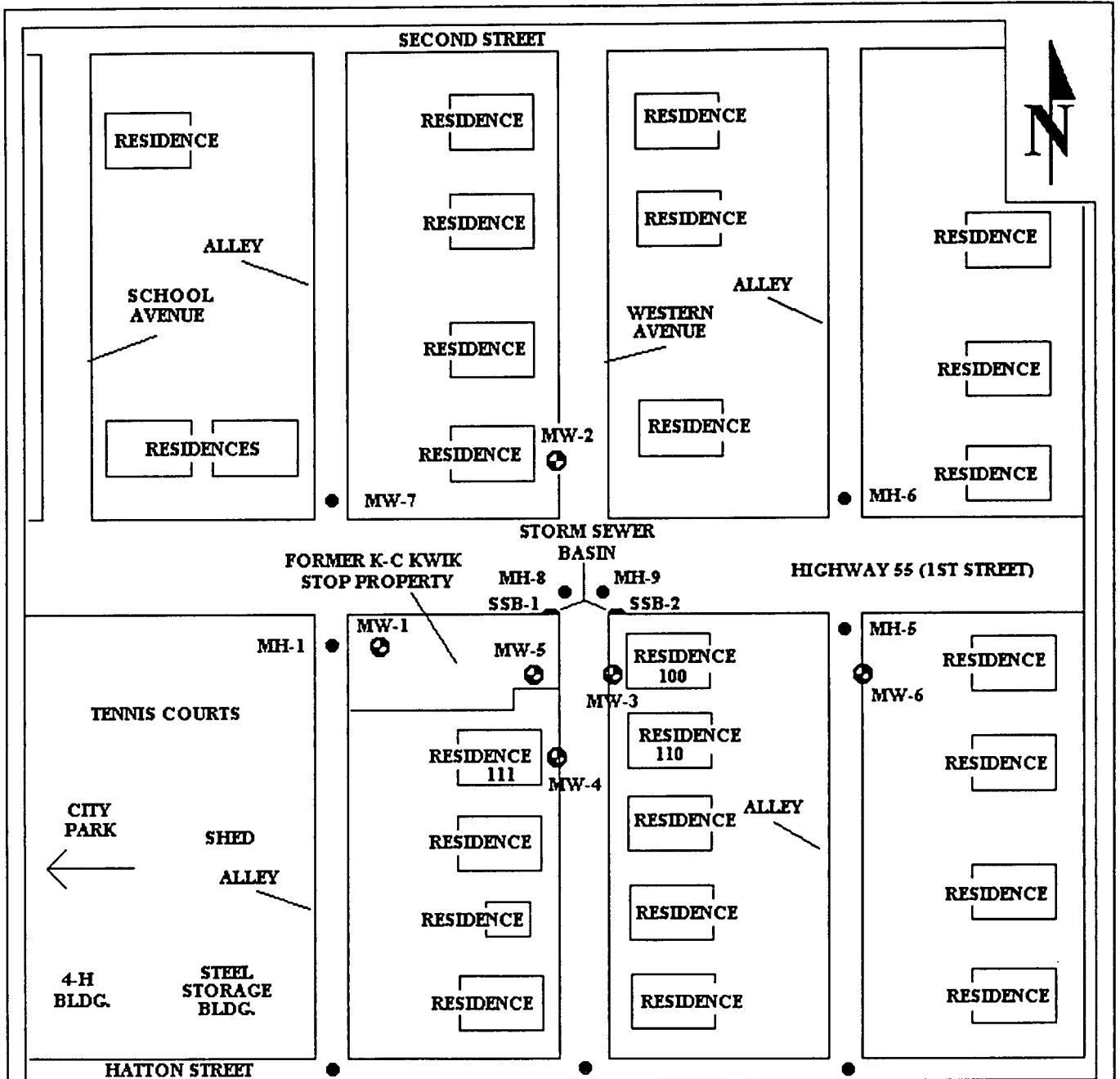
#### Vapor Mitigation System CAD Reporting

A report detailing the results of the installation of the proposed vapor mitigation system will be submitted to the MPCA following system installation and startup. The Corrective Action Design (CAD) Installation Notification Worksheet (MPCA Guidance Document 4-11) will be completed to report the installation and startup of the proposed vapor mitigation system. The reporting requirements not included on this work sheet will be discussed with MPCA staff, prior to completion of the CAD Installation Notification Worksheet. In addition, the results of the initial vapor monitoring will be included in Guidance Document 4-11. Subsequent quarterly vapor monitoring events will be included with the annual report format, MPCA guidance document No. 4.08. The annual report form (No. 4-08) will be utilized for annual monitoring reporting, presenting data, methods and procedures, conclusions and recommendations.

## REFERENCES

Environmental Protection Agency, 1994, Radon Mitigation Standards (RMS), Office of Air and Radiation, Office of Radiation and Indoor Air Indoor Environments Division (6609J), EPA 402-R-93-078, October 1993 (Revised April 1994).

Environmental Protection Agency, 1993, Radon reduction techniques for existing detached houses, Technical Guidance (3<sup>rd</sup> Edition) for active depressurization systems; Office of Research and Development, EPA/625/R-93/011.



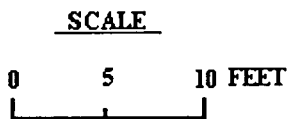
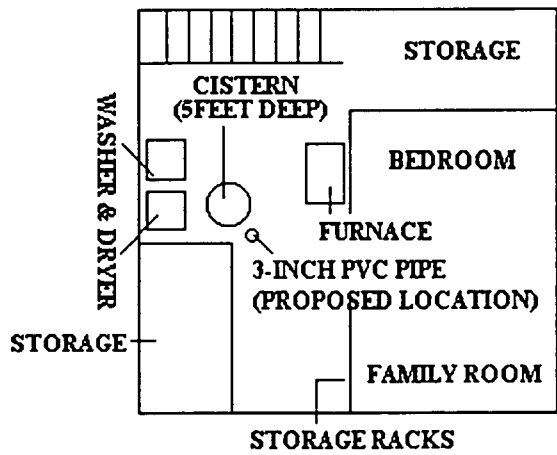
**KEY**  
 MW-1 MONITOR WELL LOCATION  
 MH-2 MANHOLE LOCATION

**FORMER K-C KWIK STOP  
BROOTEN, MINNESOTA**

**SITE MAP**

DATE	REVISED	COTEAU ENVIRONMENTAL 728 JANES CIRCLE DRIVE SW ALEXANDRIA, MN 56308 (320) 846-4668
DRAWN BY:		DATE: MAY 06
		FIGURE: 1

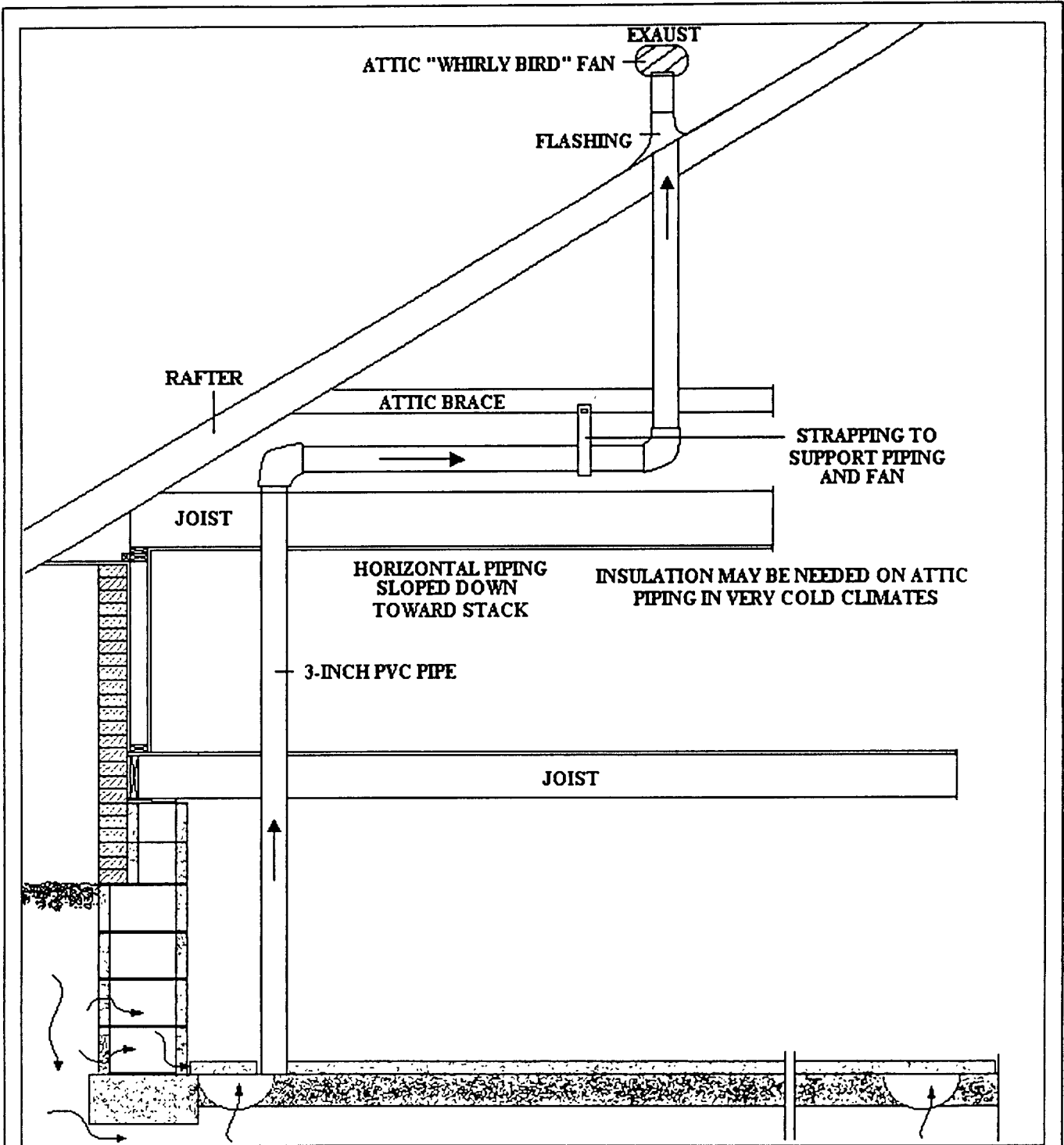




**FORMER K-C KWIK STOP  
BROOTEN, MINNESOTA**

**BASEMENT - 110 WESTERN AVENUE  
BROOTEN, MINNESOTA**

DATE	REVISED	COTEAU ENVIRONMENTAL 728 JANES CIRCLE DRIVE ALEXANDRIA, MN 56308 (320) 846-4668
DRAWN BY:		DATE: MAY 06
		FIGURE: 2



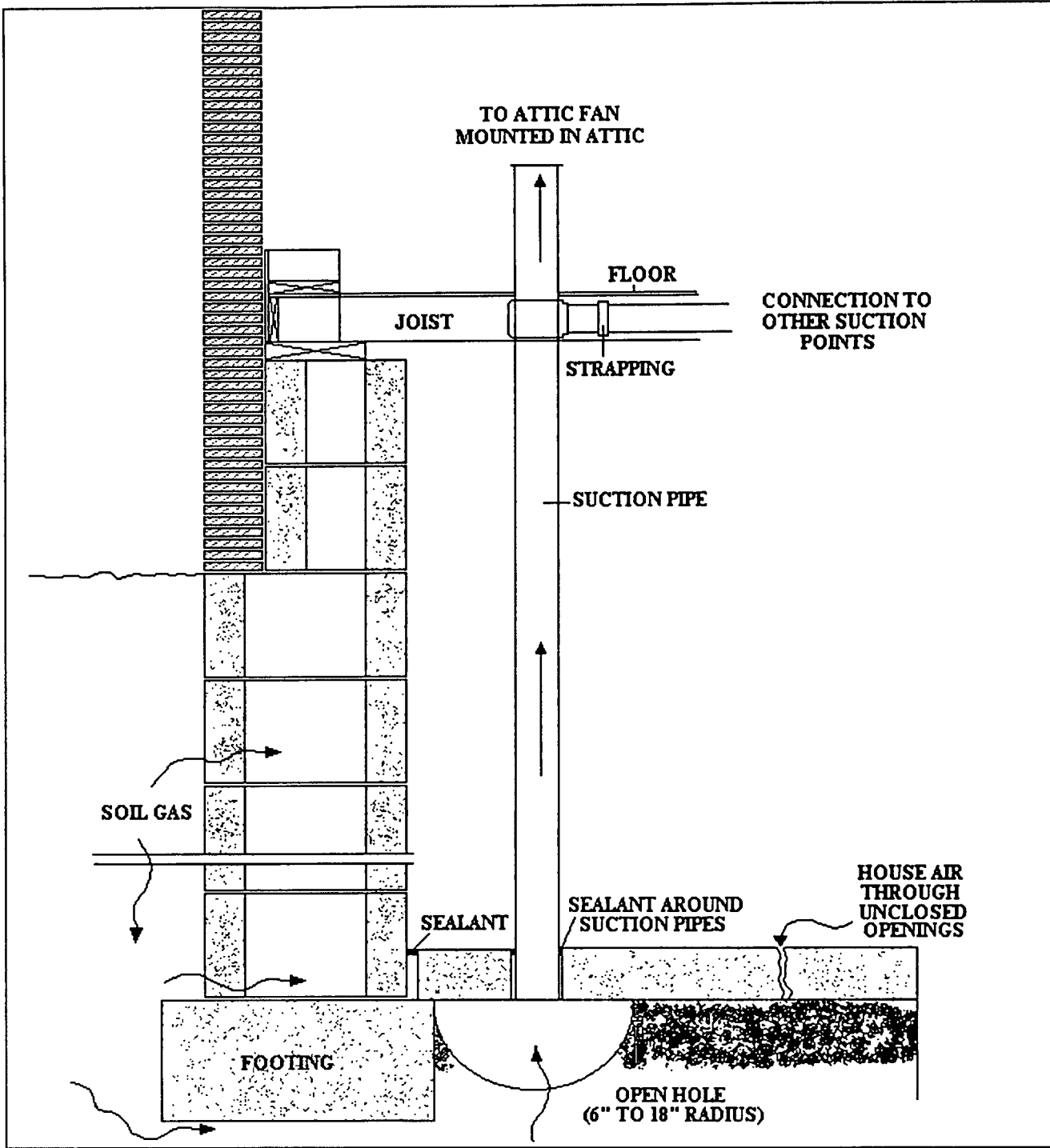
FROM: EPA, 1993

NOT TO SCALE

**FORMER K-C KWIK STOP  
BROOTEN, MINNESOTA**

PROPOSED SSD SYSTEM CONFIGURATION  
110 SOUTH WESTERN AVE.  
BROOTEN, MINNESOTA

DATE	REVISED	COTEAU ENVIRONMENTAL 728 JANES CIRCLE DRIVE ALEXANDRIA, MN 56308 (320) 846-4668
DRAWN BY:		DATE: MAY 06
		FIGURE: 3



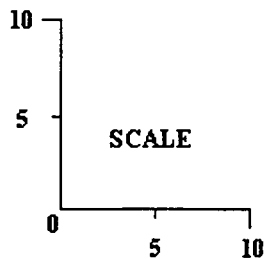
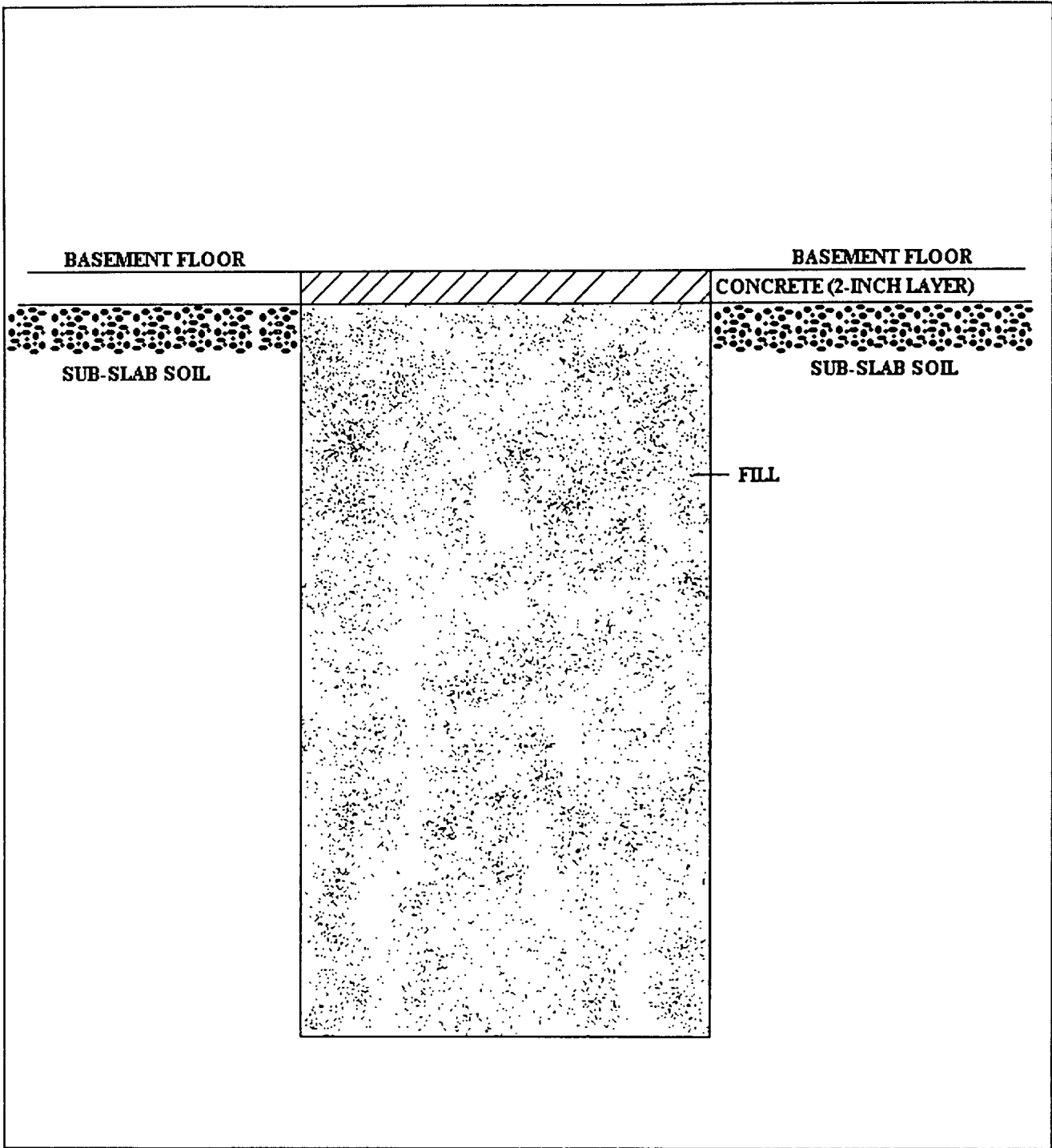
FROM: EPA, 1993

NOT TO SCALE

**FORMER K-C KWIK STOP  
BROOTEN, MINNESOTA**

PROPOSED SSD SYSTEM INDOOR INSTALLATION  
110 SOUTH WESTERN AVENUE  
BROOTEN, MINNESOTA

DATE	REVISED	COTEAU ENVIRONMENTAL 728 JANES CIRCLE DRIVE ALEXANDRIA, MN 56308 (320) 846-4668
DRAWN BY:		DATE: MAY 06
		FIGURE: 4



**FORMER K-C KWIK STOP  
BROOTEN, MINNESOTA**

**PROPOSED CISTERN SEALING  
110 SOUTH WESTERN AVE.  
BROOTEN, MINNESOTA**

DATE	REVISED	COTEAU ENVIRONMENTAL 728 JANES CIRCLE DRIVE ALEXANDRIA, MN 56308 (320) 846-4668
DRAWN BY:		DATE: MAY 06
		FIGURE: 5



# COTEAU ENVIRONMENTAL

312 9th Ave. SE, Suite C • Watertown, SD 57201 • Bus (605) 886-4009 • Fax (605) 882-4152  
728 Janes Circle Dr. SW • Alexandria, MN 56308 • Bus/Fax (320) 846-4668  
May 17, 2006

Mr. Brian Borgerding  
North American State Bank  
P.O. Box 189  
Belgrade, MN 56312

RECEIVED  
MAY 22 2006

RE: Active Remediation-Petroleum Vapor Mitigation System  
Corrective Action Design  
Former KC Kwik Stop  
230 1<sup>ST</sup> Street  
Brooten, Minnesota  
MPCA No. 14698

Dear Mr. Borgerding:

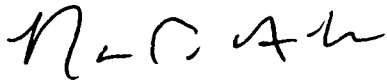
Coteau Environmental (Coteau) has prepared this corrective action design (CAD) relating to installation of the proposed petroleum vapor mitigation system at the above-referenced site. This work plan was prepared based on telephone correspondence with Mr. John Kahler with the Minnesota Pollution Control Agency (MPCA) and Coteau on March 7, 2006. Based on MPCA correspondence, installation of a passive ventilation system in the basement located at 110 South Western Avenue is required to mitigate petroleum vapor migration into the 110 South Western Avenue residence. In addition, it is likely that vapors are entering the residence through an open cistern in the basement of the residence. Therefore, the cistern be permanently plugged. Please note that evaporation water from the furnace currently discharges to the cistern. Therefore, the discharge will need to be rerouted to the drain to the sanitary sewer system of the residence.

The enclosed CAD includes plans and specifications for the proposed vapor mitigation system. In addition, sampling and reporting specifications are included with the proposed CAD. A copy of the CAD will be submitted to the MPCA for review and approval. Following approval of the CAD, bids from qualified plumbing contractors will be procured.

If you have any questions regarding the enclosed corrective action design, please contact me at (888) 781-0272. Coteau Environmental appreciates the opportunity to provide professional consulting services to North American State Bank of Belgrade, Minnesota.

Sincerely,

**COTEAU ENVIRONMENTAL**

A handwritten signature in black ink, appearing to read "N. T. Hunke". The letters are cursive and somewhat stylized.

Nathan T. Hunke, M.S., P.G., CPRR  
Senior Hydrogeologist

cc: Mr. Steve Palzkill, MPCA

ACTIVE REMEDIATION-PETROLEUM VAPOR MITIGATION SYSTEM  
CORRECTIVE ACTION DESIGN  
FORMER KC KWIK STOP  
230 1<sup>ST</sup> STREET  
BROOTEN, MINNESOTA  
MPCA NO. 14698

Prepared for:

Mr. Brian Borgerding  
North American State Bank  
P.O. Box 189  
Belgrade, MN 56312

May 17, 2006

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3930 Sunnybrook Drive NW  
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RECOMMENDATIONS ..... 4



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FORMER KC'S KWIK STOP  
BROOTEN, MINNESOTA

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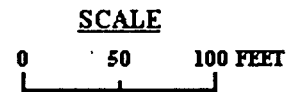
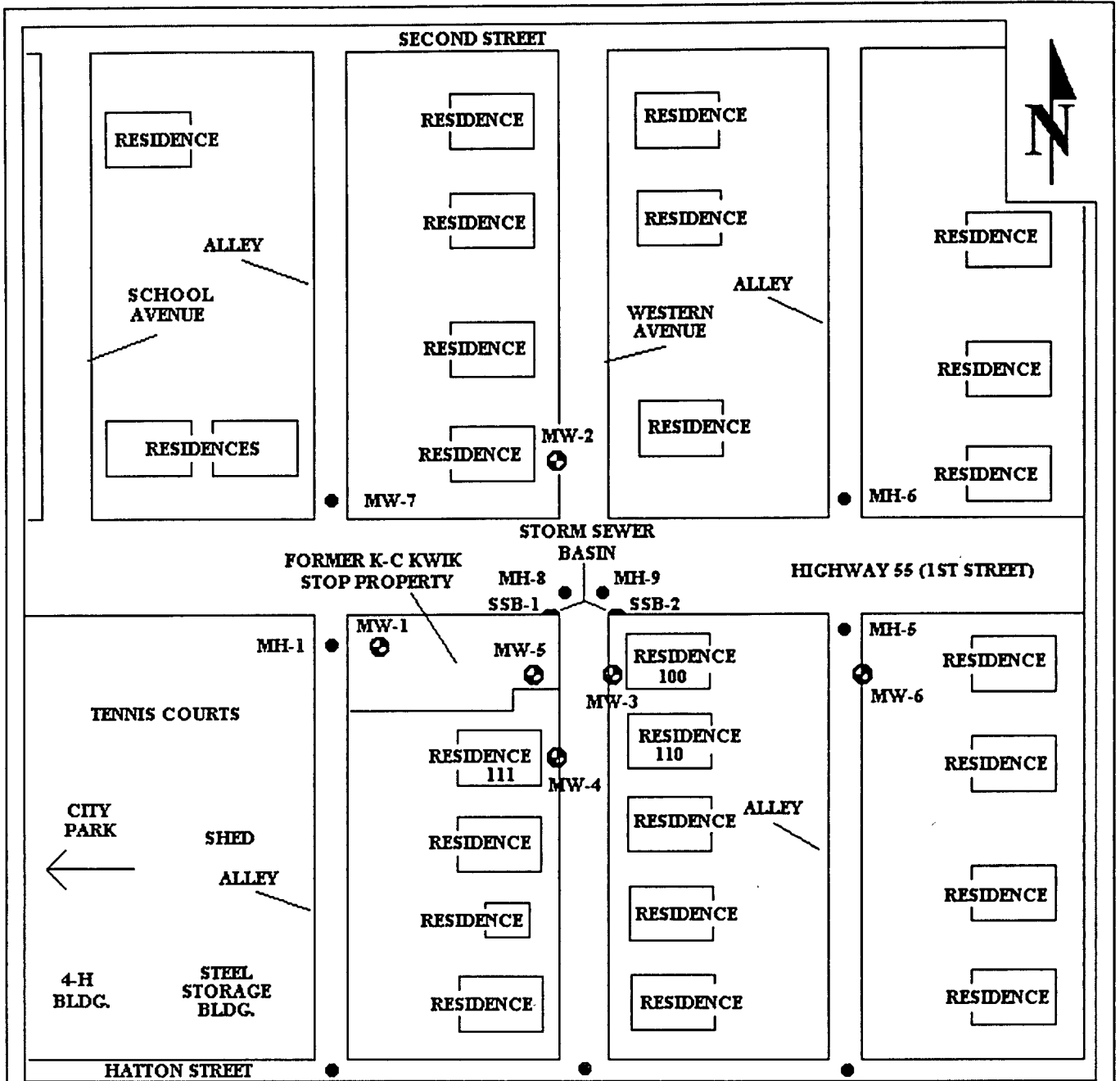
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## REFERENCES

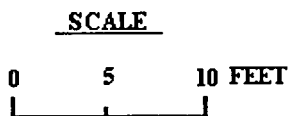
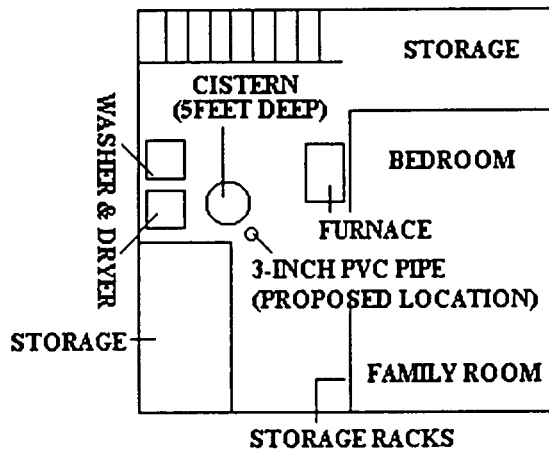
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- KEY**
- MW-1 MONITOR WELL LOCATION
  - MH-2 MANHOLE LOCATION

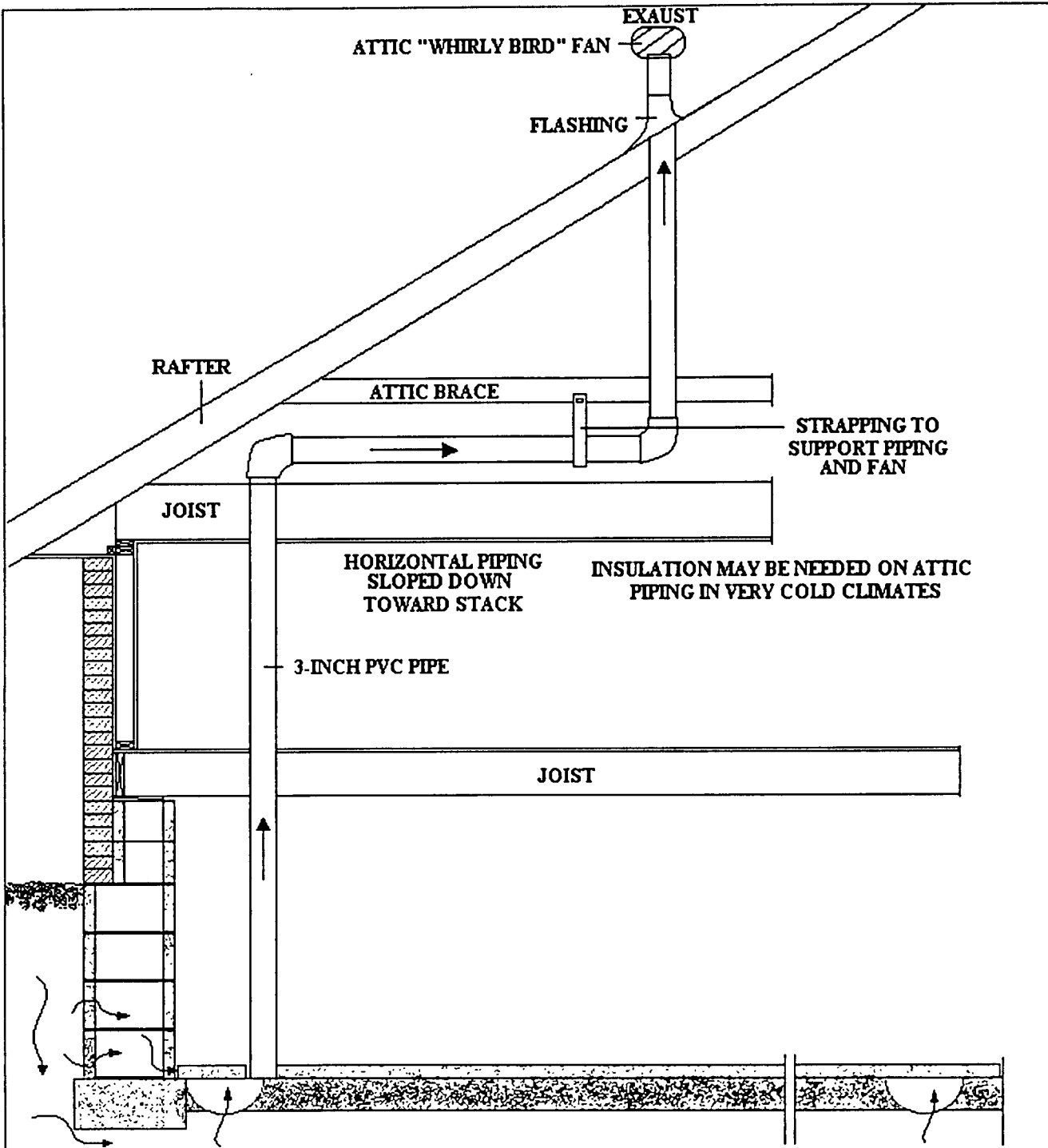
<b>FORMER K-C KWIK STOP BROOTEN, MINNESOTA</b>		
<b>SITE MAP</b>		
DATE	REVISED	COTEAU ENVIRONMENTAL 728 JANES CIRCLE DRIVE SW ALEXANDRIA, MN 56308 (320) 846-4668
DRAWN BY:		DATE: MAY 06
		FIGURE: 1



**FORMER K-C KWIK STOP  
BROOTEN, MINNESOTA**

BASEMENT - 110 WESTERN AVENUE  
BROOTEN, MINNESOTA

DATE	REVISED	COTEAU ENVIRONMENTAL 728 JANES CIRCLE DRIVE ALEXANDRIA, MN 56308 (320) 846-4668
DRAWN BY:		DATE: MAY 06
		FIGURE: 2



FROM: EPA, 1993

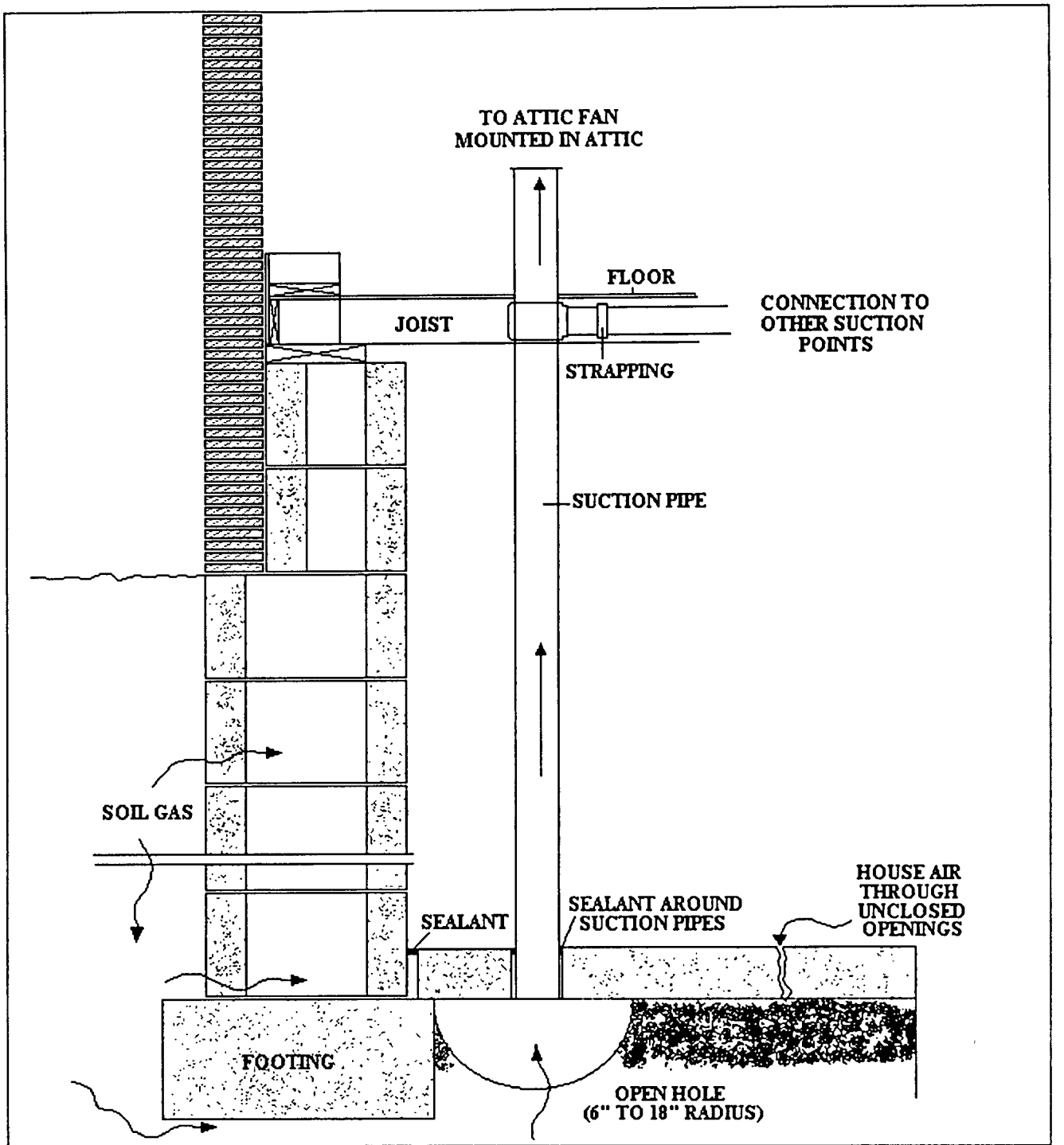
NOT TO SCALE

**FORMER K-C KWIK STOP  
BROOTEN, MINNESOTA**

PROPOSED SSD SYSTEM CONFIGURATION  
110 SOUTH WESTERN AVE.  
BROOTEN, MINNESOTA

DATE	REVISED	COTEAU ENVIRONMENTAL 728 JANES CIRCLE DRIVE ALEXANDRIA, MN 56308 (320) 846-4668
DRAWN BY:		DATE: MAY 06
		FIGURE: 3





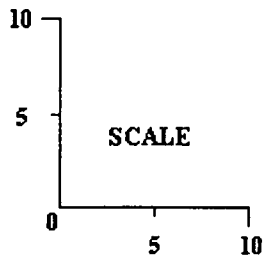
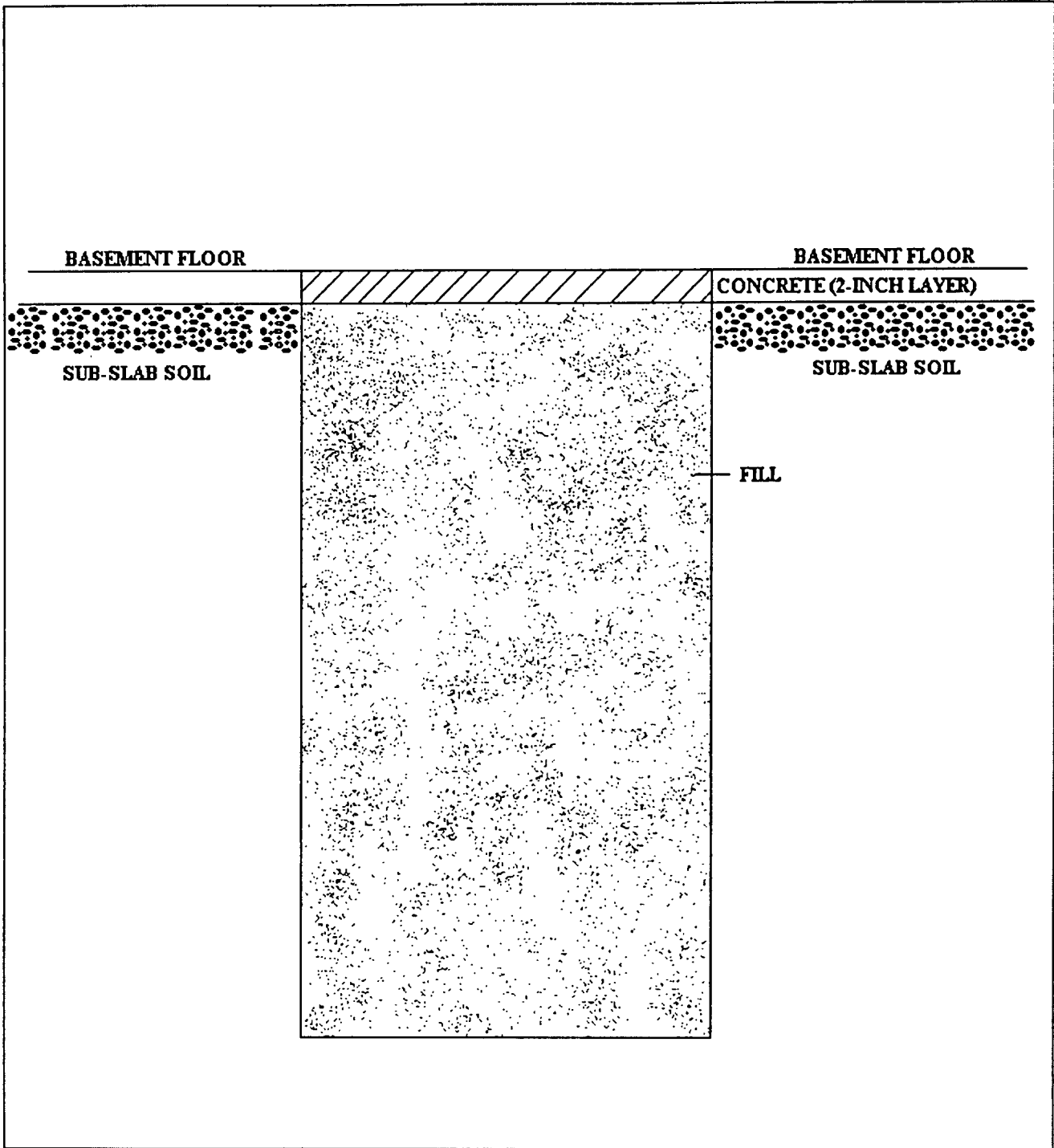
FROM: EPA, 1993

NOT TO SCALE

**FORMER K-C KWIK STOP  
BROOTEN, MINNESOTA**

PROPOSED SSD SYSTEM INDOOR INSTALLATION  
110 SOUTH WESTERN AVENUE  
BROOTEN, MINNESOTA

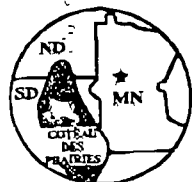
DATE	REVISED	COTEAU ENVIRONMENTAL 728 JANES CIRCLE DRIVE ALEXANDRIA, MN 56308 (320) 846-4668
DRAWN BY:		DATE: MAY 06
		FIGURE: 4



**FORMER K-C KWIK STOP  
BROOTEN, MINNESOTA**

**PROPOSED CISTERN SEALING  
110 SOUTH WESTERN AVE.  
BROOTEN, MINNESOTA**

DATE	REVISED	COTEAU ENVIRONMENTAL 728 JANES CIRCLE DRIVE ALEXANDRIA, MN 56308 (320) 846-4668
DRAWN BY:		DATE: MAY 06
		FIGURE: 5



# COTEAU ENVIRONMENTAL

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728 Janes Circle Dr. SW • Alexandria, MN 56308 • Bus/Fax (320) 846-4668

September 18, 2006

Mr. Brian Borgerding  
North American State Bank  
P.O. Box 189  
Belgrade, MN 56312

RE: Applicant Status Update - Vapor Monitoring  
Former KC Kwik Stop  
230 1<sup>st</sup> Street  
Brooten, Minnesota  
MPCA Leak No. 14698

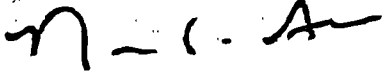
Dear Mr. Borgerding:

Coteau Environmental (Coteau) has prepared this letter report regarding the vapor monitoring completed at the above-referenced site. On August 22, 2006, Coteau personnel collected an indoor air sample from the basement of 110 South Western Avenue. The air sample was collected over a 24-hour period, utilizing a Summa canister. The indoor air sample was sent to Pace Analytical Services in St. Paul, Minnesota, accompanied by a chain-of-custody form. The sample was laboratory analyzed for volatile organic compounds (VOC's) utilizing EPA method TO-15. Benzene, toluene, ethyl benzene and total xylenes impacts were detected in the air sample collected from the basement of 110 South Western Avenue at concentrations of 3.7, 28.2, 6.9 and 36.1 micrograms per cubic meter ( $\text{ug}/\text{m}^3$ ), respectively. Acetone, 2-butanone, chloromethane, 4-ethyltoluene, dichlorodifluoromethane and n-hexane were also identified in the air sample at concentrations of 153, 11.4, 1.1, 3.0, 8.9 and 5.4  $\text{ug}/\text{m}^3$ , respectively. In addition, methylene chloride, 4-methyl-2-pentanone, naphthalene, styrene and trichloroflouromethane were identified in the air sample at concentrations of 25.6, 2.4, 16.4, 2.8 and 1.8  $\text{ug}/\text{m}^3$ , respectively. The benzene and methylene chloride concentrations are above the Minnesota Department of Health Chronic Health Risk Values of 1.3-4.5 and 20  $\text{ug}/\text{m}^3$ , respectively. In addition, the 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene concentrations are above the Environmental Protection Agency (EPA) Reference Concentrations of 6  $\text{ug}/\text{m}^3$  for each compounds. Laboratory analytical results for the previously

If you have any questions regarding this letter report, please call me at (320) 846-4668.  
Coteau appreciates the opportunity to provide professional environmental consulting services to  
North American State Bank.

Sincerely,

**COTEAU ENVIRONMENTAL**

A handwritten signature in black ink, appearing to read 'N-T-Hunke', written over the company name.

Nathan T. Hunke, P.G., M.S.  
Senior Hydrogeologist

**Table 1**  
**Soil Vapor Intrusion Laboratory Analytical Results**

Boring Number	Date Sampled	Methylene Chloride	Benzene	Toluene	1,2,4-Tri methyl benzene	1,3,5-Tri methyl benzene	1,2-DCA	4-Ethyl toluene	Ethyl benzene	Total Xylenes	Acetone	Chloro-methane	Carbon disulfide	THC as Gas	2-Butanone	n-Heptane	n-Hexane	Tri chloro ethane
SV-1 (Sub Slab)	11/9/05	10.6		203		4.3	ND	13.5	16.3	57.8	36	ND	10.4	3,100	7.2	4.17	21.1	4.7
Indoor Air -110 Western Ave.	12/17/05	ND	ND	15.7	ND	ND	ND	ND	ND	11	38.6	ND	ND	477	4.5	ND	ND	ND
Indoor Air -110 Western Ave.	3/14/06	ND	ND	16.8	ND	ND	ND	ND	133	509.1	33.0	ND	ND	ND	ND	ND	ND	21.6
Indoor Air -110 Western Ave.	8/22/06			28.2			ND	8.9	6.9	36.1	153	1.1	ND	NA	11.4	ND	5.4	ND
MDH Acute HRV (ug/hr)		25.8	3.7	37,000	22.4	6.1	None	None	10,000	43,000	None	None	6,000	None	None	None	None	None
MDH Chronic HRV (ug/hr)		20	1.3-4.5	400	None	None	None	None	None	None	None	None	700	None	None	None	2,000	None
EPA Reference Conc (ug/m <sup>3</sup> )		None	None	None	6	6	None	None	1,000	700	350	90	None	None	None	None	None	None
MDH ISC (ug/hr)		None	None	None	None	None	0.38	None	None	None	None	None	None	None	None	None	None	None

Results are reported in micrograms per cubic meter soil vapor (ug/m<sup>3</sup>).

SV-1 sample was taken beneath the basement concrete floor of 110 South Western Avenue.

Ambient air sample was taken in the basement of 110 South Western Avenue.

Notes: NA = Not analyzed for parameter.

MDH = Minnesota Department of Health

EPA = Environmental Protection Agency

Shaded values are above the MDH Acute HRV, the MDH Chronic HRV, the EPA Reference Concentration or the MDH ISC.

ND = Not detected at or above reporting limit.

HRV = Health Risk Value

ISC = MDH Interim Screening Concentration

**Table 1 (Continued)**  
**Soil Vapor Intrusion Laboratory Analytical Results**

Boring Number	Date Sampled	Dichlorodifluoro methane	4-Methyl-2-pentanone	Naphthalene	Styrene	Trichlorofluoro methane
SV-1 (Sub Slab)	11/9/05	ND	ND	NA	ND	ND
Indoor Air -110 Western Ave	12/17/05	ND	ND	NA	ND	ND
Indoor Air - 110 Western Ave	3/14/06	ND	ND	ND	ND	ND
Indoor Air - 110 Western Ave	8/22/06	3.0	24	16.4	2.8	1.8
MDH Acute HRV (ug/m <sup>3</sup> )		None	None	None	21,000	None
MDH Chronic HRV (ug/m <sup>3</sup> )		None	None	None	1,000	None
EPA Reference Conc (ug/m <sup>3</sup> )		200	None	None	None	700
MDH ISC (ug/m <sup>3</sup> )		None	None	None	None	None

Results are reported in micrograms per cubic meter soil vapor (ug/m<sup>3</sup>).

SV-1 sample was taken beneath the basement concrete floor of 110 South Western Avenue.

Ambient air sample was taken in the basement of 110 South Western Avenue.

Notes: NA = Not analyzed for parameter,  
reporting limit.

ND = Not detected at or above

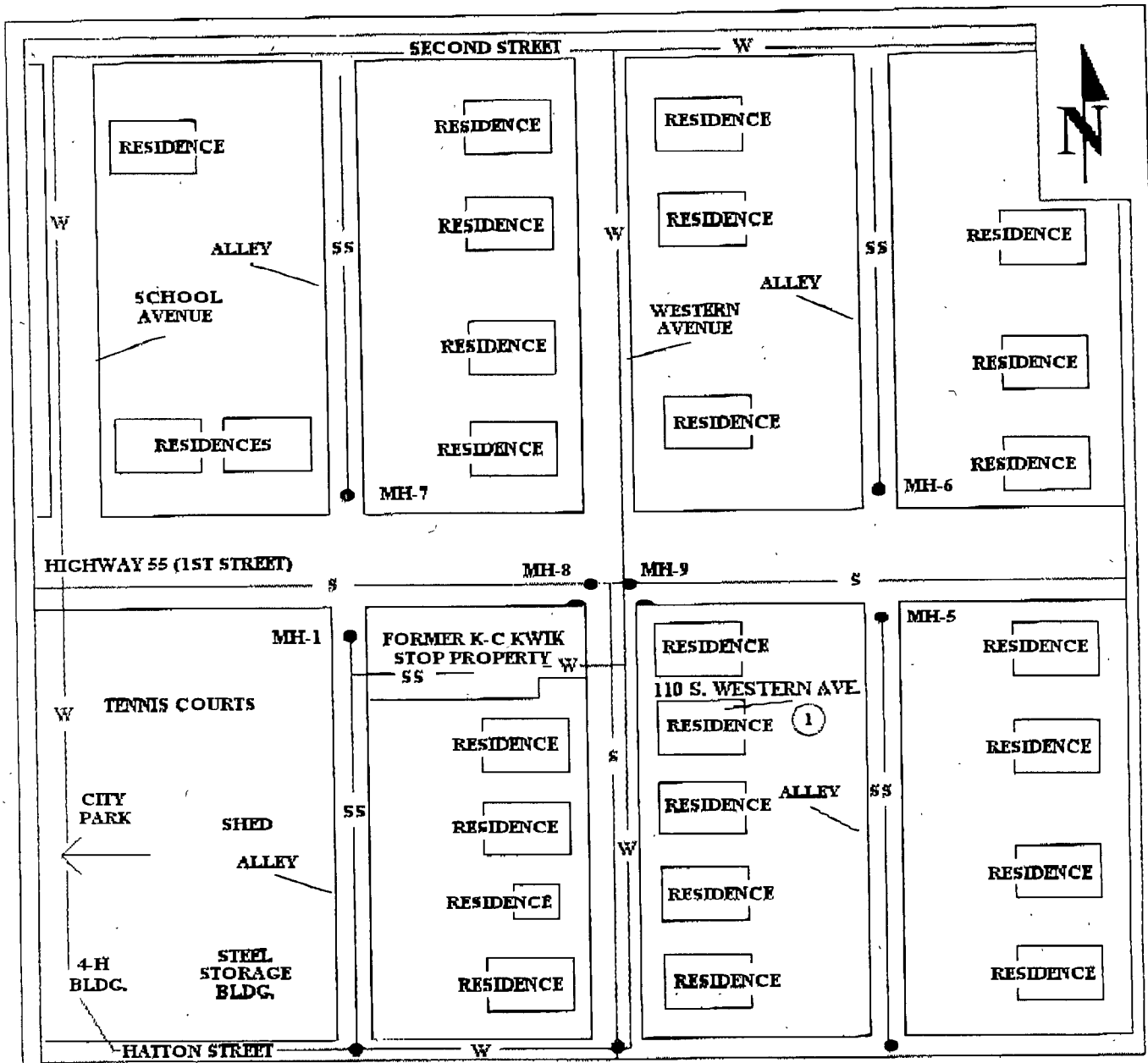
MDH = Minnesota Department of Health

HRV = Health Risk Value

EPA = Environmental Protection Agency  
Concentration

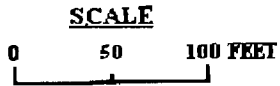
ISC = MDH Interim Screening

Shaded values are above the MDH Acute HRV, the MDH Chronic HRV, the EPA Reference Concentration or the MDH ISC.



**KEY**

- ① VAPOR INTRUSION ASSESSMENT LOCATION
- W— WATER LINE
- SS— SANITARY SEWER LINE
- S— STORM SEWER LINE
- MH-2 ● MANHOLE LOCATION



<b>FORMER K-C KWIK STOP BROOTEN, MINNESOTA</b>		
<b>VAPOR SURVEY MAP</b>		
<b>DATE</b>	<b>REVISED</b>	COTEAU ENVIRONMENTAL 728 JANES CIRCLE DR. SW ALEXANDRIA, MN 56308 (320) 846-4668
<b>DRAWN BY:</b>		<b>DATE: SEPT 06</b>
		<b>FIGURE: 1</b>



Pace Analytical Services, Inc.  
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September 06, 2006

Scott Hunke  
Coteau Environmental  
728 Janes Circle Drive SW  
Alexandria, MN 56308

RE: Project: KC KWIK STOP BROOMEN, MN  
Pace Project No.: 1037376

Dear Scott Hunke:

Enclosed are the analytical results for sample(s) received by the laboratory on August 24, 2006. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Seth Jacobson

seth.jacobson@pacelabs.com  
Project Manager

Illinois Certification #: 200011  
Iowa Certification #: 368  
Minnesota Certification #: 027-053-137  
Wisconsin Certification #: 999407970

Enclosures

### REPORT OF LABORATORY ANALYSIS

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**PROJECT NARRATIVE**

Project KC KWIK STOP BROOMEN, MN  
Pace Project No.: 1037376

---

**Method:** TO-15  
**Description:** TO15 MSV AIR  
**Client:** Coteau Environmental  
**Date:** September 08, 2006

**General Information:**

1 sample was analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Initial Calibrations (Including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: AIR/4531

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

- LCS (Lab ID: 256792)
- Hexachloro-1,3-butadiene
- Tetrahydrofuran

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: AIR/4531

D6: The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 255793)
- 1,1,2,2-Tetrachloroethane

**Additional Comments:**

Workorder Comments:

**REPORT OF LABORATORY ANALYSIS**

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## PROJECT NARRATIVE

Project: KC KWIK STOP BROOMFN, MN  
Pace Project No.: 1037376

Method: TO-15  
Description: TO15 MSV AIR  
Client: Coteau Environmental  
Date: September 08, 2006

### Workorder Comments:

All sample analyses were completed on a DB5 column. 500 cc of sample was concentrated using an Entech 7000/7100 sample concentration system.

### Analyte Comments:

#### QC Batch: AIR/4531

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- 110 S WESTERN AVE (Lab ID: 1037376001)  
- Acetone

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- DUP (Lab ID: 255793)  
- Acetone

This data package has been reviewed for quality and completeness and is approved for release.

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### SAMPLE SUMMARY

Project: KC KWIK STOP BROOMEN, MN  
Pace Project No.: 1037376

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1037376001	110 S WESTERN AVE	Air	08/22/06 09:40	08/24/06 17 05

### REPORT OF LABORATORY ANALYSIS

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**SAMPLE ANALYTE COUNT**

Project KC KWIK STOP BROOMEN, MN  
Pace Project No.: 1037376

Lab ID	Sample ID	Method	Analytes Reported
1037376001	110 S WESTERN AVE	TO-15	58

**REPORT OF LABORATORY ANALYSIS**

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## ANALYTICAL RESULTS

Project KC KWIK STOP BROOMEN, MN

Pace Project No.: 1037376

Sample: 110 S WESTERN AVE Lab ID: 1037376001 Collected: 08/22/06 09:40 Received: 08/24/06 17:05 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR Analytical Method: TO-15								
Acetone	153	ug/m3	0.69	1.43		09/01/06 21:10	67-64-1	E
Benzene	3.7	ug/m3	0.93	1.43		09/01/06 21:10	71-43-2	
Bromodichloromethane	ND	ug/m3	2.0	1.43		09/01/06 21:10	75-27-4	
Bromoform	ND	ug/m3	3.0	1.43		09/01/06 21:10	75-25-2	
Bromomethane	ND	ug/m3	1.1	1.43		09/01/06 21:10	74-83-9	
1,3-Butadiene	ND	ug/m3	0.64	1.43		09/01/06 21:10	106-99-0	
2-Butanone (MEK)	11.4	ug/m3	0.86	1.43		09/01/06 21:10	78-93-3	
Carbon disulfide	ND	ug/m3	0.80	1.43		09/01/06 21:10	75-15-0	
Carbon tetrachloride	ND	ug/m3	1.9	1.43		09/01/06 21:10	56-23-5	
Chlorobenzene	ND	ug/m3	1.3	1.43		09/01/06 21:10	108-90-7	
Chloroethane	ND	ug/m3	0.77	1.43		09/01/06 21:10	75-00-3	
Chloroform	ND	ug/m3	1.4	1.43		09/01/06 21:10	67-66-3	
Chloromethane	1.1	ug/m3	0.60	1.43		09/01/06 21:10	74-87-3	
Cyclohexane	ND	ug/m3	0.97	1.43		09/01/06 21:10	110-82-7	
Dibromochloromethane	ND	ug/m3	2.4	1.43		09/01/06 21:10	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/m3	2.3	1.43		09/01/06 21:10	106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	1.7	1.43		09/01/06 21:10	95-50-1	
1,3-Dichlorobenzene	ND	ug/m3	1.7	1.43		09/01/06 21:10	541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	1.7	1.43		09/01/06 21:10	106-46-7	
Dichlorodifluoromethane	3.0	ug/m3	1.4	1.43		09/01/06 21:10	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.2	1.43		09/01/06 21:10	75-34-3	
1,2-Dichloroethane	ND	ug/m3	1.2	1.43		09/01/06 21:10	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.2	1.43		09/01/06 21:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.2	1.43		09/01/06 21:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.2	1.43		09/01/06 21:10	156-60-5	
1,2-Dichloropropane	ND	ug/m3	1.3	1.43		09/01/06 21:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/m3	1.3	1.43		09/01/06 21:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	1.3	1.43		09/01/06 21:10	10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	2.0	1.43		09/01/06 21:10	76-14-2	
Ethyl acetate	ND	ug/m3	1.0	1.43		09/01/06 21:10	141-78-6	
Ethylbenzene	6.9	ug/m3	1.3	1.43		09/01/06 21:10	100-41-4	
4-Ethyltoluene	8.9	ug/m3	3.6	1.43		09/01/06 21:10	622-96-8	
n-Heptane	ND	ug/m3	1.2	1.43		09/01/06 21:10	142-82-5	
Hexachloro-1,3-butadiene	ND	ug/m3	3.1	1.43		09/01/06 21:10	87-68-3	
n-Hexane	5.4	ug/m3	1.0	1.43		09/01/06 21:10	110-54-3	
2-Hexanone	ND	ug/m3	1.2	1.43		09/01/06 21:10	591-78-6	
Methylene Chloride	25.6	ug/m3	1.0	1.43		09/01/06 21:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	2.4	ug/m3	1.2	1.43		09/01/06 21:10	108-10-1	
Methyl-tert-butyl ether	ND	ug/m3	1.0	1.43		09/01/06 21:10	1634-04-4	
Naphthalene	16.4	ug/m3	3.9	1.43		09/01/06 21:10	91-20-3	
Propylene	ND	ug/m3	0.50	1.43		09/01/06 21:10	115-07-1	
Styrene	2.8	ug/m3	1.2	1.43		09/01/06 21:10	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/m3	2.0	1.43		09/01/06 21:10	79-34-5	
Tetrachloroethene	ND	ug/m3	2.0	1.43		09/01/06 21:10	127-18-4	
Tetrahydrofuran	ND	ug/m3	0.86	1.43		09/01/06 21:10	109-99-9	
Toluene	28.2	ug/m3	1.1	1.43		09/01/06 21:10	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	1.4	1.43		09/01/06 21:10	120-82-1	

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## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: KC KWIK STOP BROOMEN, MN

Pace Project No.: 1037376

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Sample: 110 S WESTERN AVE Lab ID: 1037376001 Collected: 08/22/06 09:40 Received: 08/24/06 17:05 Matrix: Air								
TO15 MSV AIR Analytical Method: TO-15								
1,1,1-Trichloroethane	ND	ug/m3	1.6	1.43		09/01/06 21:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.6	1.43		09/01/06 21:10	79-00-5	
Trichloroethene	ND	ug/m3	1.6	1.43		09/01/06 21:10	79-01-6	
Trichlorofluoromethane	1.8	ug/m3	1.6	1.43		09/01/06 21:10	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	2.3	1.43		09/01/06 21:10	78-13-1	
1,2,4-Trimethylbenzene	22.4	ug/m3	3.6	1.43		09/01/06 21:10	95-63-6	
1,3,5-Trimethylbenzene	6.1	ug/m3	3.6	1.43		09/01/06 21:10	108-67-8	
Vinyl acetate	ND	ug/m3	1.0	1.43		09/01/06 21:10	108-05-4	
Vinyl chloride	ND	ug/m3	0.74	1.43		09/01/06 21:10	75-01-4	
m&p-Xylene	25.9	ug/m3	2.5	1.43		09/01/06 21:10	1330-20-7	
o-Xylene	10.2	ug/m3	1.3	1.43		09/01/06 21:10	95-47-6	

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## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: KC KWIK STOP BROOMEN, MN  
Pace Project No.: 1037376

QC Batch: AIR/4531 Analysis Method: TO-15  
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level  
Associated Lab Samples: 1037376001

METHOD BLANK: 255791  
Associated Lab Samples: 1037376001

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
1,1-Dichloroethane	ug/m3	ND	0.82	
1,1-Dichloroethene	ug/m3	ND	0.81	
1,1,1-Trichloroethane	ug/m3	ND	1.1	
1,1,2-Trichloroethane	ug/m3	ND	1.1	
1,1,2,2-Tetrachloroethane	ug/m3	ND	1.4	
1,2,4-Trichlorobenzene	ug/m3	ND	0.99	
1,2-Dichlorobenzene	ug/m3	ND	1.2	
1,2-Dichloroethane	ug/m3	ND	0.82	
1,2-Dibromoethane (EDB)	ug/m3	ND	1.6	
1,2-Dichloropropane	ug/m3	ND	0.94	
1,2,4-Trimethylbenzene	ug/m3	ND	2.6	
1,3-Butadiene	ug/m3	ND	0.45	
1,3-Dichlorobenzene	ug/m3	ND	1.2	
1,3,5-Trimethylbenzene	ug/m3	ND	2.5	
1,4-Dichlorobenzene	ug/m3	ND	1.2	
2-Butanone (MEK)	ug/m3	ND	0.60	
2-Hexanone	ug/m3	ND	0.83	
4-Ethyltoluene	ug/m3	ND	2.5	
Carbon disulfide	ug/m3	ND	0.63	
Dichlorotetrafluoroethane	ug/m3	ND	1.4	
Acetone	ug/m3	ND	0.48	
Benzene	ug/m3	ND	0.86	
Bromodichloromethane	ug/m3	ND	1.4	
Bromomethane	ug/m3	ND	0.79	
Bromoform	ug/m3	ND	2.1	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	
cis-1,3-Dichloropropene	ug/m3	ND	0.92	
Carbon tetrachloride	ug/m3	ND	1.3	
Cyclohexane	ug/m3	ND	0.88	
Chlorobenzene	ug/m3	ND	0.94	
Chloroethane	ug/m3	ND	0.54	
Chloroform	ug/m3	ND	0.99	
Chloromethane	ug/m3	ND	0.42	
Dibromochloromethane	ug/m3	ND	1.7	
Dichlorodifluoromethane	ug/m3	ND	1.0	
Ethyl acetate	ug/m3	ND	0.73	
Ethylbenzene	ug/m3	ND	0.88	
Hexachloro-1,3-butadiene	ug/m3	ND	2.2	
Methylene Chloride	ug/m3	ND	0.71	
Methyl-tert-butyl ether	ug/m3	ND	0.73	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	0.83	
m&p-Xylene	ug/m3	ND	1.8	
Naphthalene	ug/m3	ND	2.7	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: KC KWIK STOP BROOMEN, MN  
Pace Project No.: 1037378

METHOD BLANK: 255791

Associated Lab Samples: 1037378001

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
n-Heptane	ug/m3	ND	0.83	
n-Hexane	ug/m3	ND	0.72	
o-Xylene	ug/m3	ND	0.88	
Propylene	ug/m3	ND	0.35	
Styrene	ug/m3	ND	0.87	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	
trans-1,3-Dichloropropene	ug/m3	ND	0.92	
Tetrachloroethene	ug/m3	ND	1.4	
Tetrahydrofuran	ug/m3	ND	0.60	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	1.6	
Toluene	ug/m3	ND	0.77	
Trichloroethene	ug/m3	ND	1.1	
Trichlorofluoromethane	ug/m3	ND	1.1	
Vinyl acetate	ug/m3	ND	0.71	
Vinyl chloride	ug/m3	ND	0.52	

LABORATORY CONTROL SAMPLE: 255792

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/m3	43.6	51.2	117	59-136	
1,1-Dichloroethane	ug/m3	41.9	45.3	108	60-137	
1,1,1-Trichloroethane	ug/m3	58.3	51.0	88	60-134	
1,1,2-Trichloroethane	ug/m3	59.4	60.6	102	64-129	
1,1,2,2-Tetrachloroethane	ug/m3	74	80.0	108	55-141	
1,2,4-Trichlorobenzene	ug/m3	80.6	106	132	50-150	
1,2-Dichlorobenzene	ug/m3	64.8	58.0	89	60-139	
1,2-Dichloroethane	ug/m3	43.6	39.3	90	56-141	
1,2-Dibromoethane (EDB)	ug/m3	82.8	86.4	104	61-136	
1,2-Dichloropropane	ug/m3	48.4	44.2	90	57-131	
1,2,4-Trimethylbenzene	ug/m3	53	38.2	72	63-137	
1,3-Butadiene	ug/m3	24.3	22.8	94	53-140	
1,3-Dichlorobenzene	ug/m3	67.3	57.8	86	59-136	
1,3,5-Trimethylbenzene	ug/m3	52.5	38.9	74	61-134	
1,4-Dichlorobenzene	ug/m3	64.2	56.7	88	59-130	
2-Butanone (MEK)	ug/m3	32.4	25.1	78	54-133	
2-Hexanone	ug/m3	45.8	41.6	91	54-139	
4-Ethyltoluene	ug/m3	55	53.3	97	61-138	
Carbon disulfide	ug/m3	33.3	29.9	90	50-150	
Dichlorotetrafluoroethane	ug/m3	71.8	82.2	114	59-130	
Acetone	ug/m3	24.4	24.4	100	50-139	
Benzene	ug/m3	34.4	38.5	112	64-125	
Bromodichloromethane	ug/m3	70.9	77.2	109	61-131	
Bromomethane	ug/m3	40.3	41.0	102	55-135	
Bromoform	ug/m3	110	139	126	66-138	
cis-1,2-Dichloroethene	ug/m3	42.7	42.8	100	62-135	

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### REPORT OF LABORATORY ANALYSIS

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1700 Elm Street, Suite 200  
Minneapolis, MN 55414  
Phone: (612)607-1700  
Fax: (612)807-6444

### QUALITY CONTROL DATA

Project: KC KWIK STOP BROOMEN, MN  
Pace Project No: 1037376

LABORATORY CONTROL SAMPLE: 255792

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
cis-1,3-Dichloropropene	ug/m3	48.9	40.5	83	64-133	
Carbon tetrachloride	ug/m3	67.8	62.3	92	58-135	
Cyclohexane	ug/m3	35.7	31.2	87	54-139	
Chlorobenzene	ug/m3	49.6	48.4	97	62-139	
Chloroethane	ug/m3	27.1	27.1	100	56-140	
Chloroform	ug/m3	48.7	49.7	102	50-150	
Chloromethane	ug/m3	21	21.0	100	56-144	
Dibromochloromethane	ug/m3	95.3	103	108	50-150	
Dichlorodifluoromethane	ug/m3	50.8	54.0	106	60-130	
Ethyl acetate	ug/m3	35.9	24.2	67	60-132	
Ethylbenzene	ug/m3	46.4	34.9	75	65-140	
Hexachloro-1,3-butadiene	ug/m3	115	191	166	50-150 L1	
Methylene Chloride	ug/m3	37.1	43.5	117	56-138	
Methyl-tert-butyl ether	ug/m3	38.1	28.4	74	50-150	
4-Methyl-2-pentanone (MIBK)	ug/m3	45.8	37.8	82	53-139	
m&p-Xylene	ug/m3	92.7	73.5	79	60-132	
Naphthalene	ug/m3	55.3	59.8	108	70-130	
n-Heptane	ug/m3	43.3	44.1	102	62-135	
n-Hexane	ug/m3	35.8	33.6	94	62-134	
o-Xylene	ug/m3	46.8	38.4	82	64-132	
Propylene	ug/m3	18.4	18.7	102	56-125	
Styrene	ug/m3	45.9	35.2	77	69-134	
trans-1,2-Dichloroethene	ug/m3	39.9	44.5	111	50-150	
trans-1,3-Dichloropropene	ug/m3	50.8	43.2	85	70-142	
Tetrachloroethene	ug/m3	67.6	63.6	94	60-137	
Tetrahydrofuran	ug/m3	31.6	53.8	171	52-139 L1	
1,1,2-Trichlorotrifluoroethane	ug/m3	81.8	98.7	121	55-137	
Toluene	ug/m3	41	35.0	85	69-130	
Trichloroethene	ug/m3	56.8	54.5	96	60-134	
Trichlorofluoromethane	ug/m3	57.7	56.3	98	56-141	
Vinyl acetate	ug/m3	38.3	30.1	79	61-142	
Vinyl chloride	ug/m3	26.3	27.2	104	66-132	

SAMPLE DUPLICATE: 255793

Parameter	Units	1037376001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1-Dichloroethane	ug/m3	ND	ND	0	25	
1,1-Dichloroethene	ug/m3	ND	ND	0	25	
1,1,1-Trichloroethane	ug/m3	ND	ND	0	25	
1,1,2-Trichloroethane	ug/m3	ND	ND	0	26	
1,1,2,2-Tetrachloroethane	ug/m3	ND	2.4	200	25 D6	
1,2,4-Trichlorobenzene	ug/m3	ND	ND	0	25	
1,2-Dichlorobenzene	ug/m3	ND	ND	0	25	
1,2-Dichloroethane	ug/m3	ND	ND	0	25	
1,2-Dibromoethane (EDR)	ug/m3	ND	ND	0	25	
1,2-Dichloropropane	ug/m3	ND	ND	0	25	
1,2,4-Trimethylbenzene	ug/m3	22.4	22.3	6	25	

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### QUALITY CONTROL DATA

Project: KC KWIK STOP BROOMEN, MN  
Pace Project No.: 1037378

SAMPLE DUPLICATE: 255793

Parameter	Units	1037378001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,3-Butadiene	ug/m3	ND	ND	0	25	
1,3-Dichlorobenzene	ug/m3	ND	ND	0	25	
1,3,5-Trimethylbenzene	ug/m3	6.1	6.1	.2	25	
1,4-Dichlorobenzene	ug/m3	ND	ND	0	25	
2-Butanone (MEK)	ug/m3	11.4	11.0	4	25	
2-Hexanone	ug/m3	ND	ND	0	25	
4-Ethyltoluene	ug/m3	8.9	9.0	2	25	
Carbon disulfide	ug/m3	ND	ND	0	25	
Dichlorotetrafluoroethane	ug/m3	ND	ND	0	25	
Acetone	ug/m3	153	143	6	25 E	
Benzene	ug/m3	3.7	3.8	1	25	
Bromodichloromethane	ug/m3	ND	ND	0	25	
Bromomethane	ug/m3	ND	ND	0	25	
Bromoform	ug/m3	ND	ND	0	25	
cis-1,2-Dichloroethene	ug/m3	ND	ND	0	25	
cis-1,3-Dichloropropene	ug/m3	ND	ND	0	25	
Carbon tetrachloride	ug/m3	ND	ND	0	25	
Cyclohexane	ug/m3	ND	ND	0	25	
Chlorobenzene	ug/m3	ND	ND	0	25	
Chloroethane	ug/m3	ND	ND	0	25	
Chloroform	ug/m3	ND	ND	0	25	
Chloromethane	ug/m3	1.1	1.1	.8	25	
Dibromochloromethane	ug/m3	ND	ND	0	25	
Dichlorodifluoromethane	ug/m3	3.0	3.0	.3	25	
Ethyl acetate	ug/m3	ND	ND	0	25	
Ethylbenzene	ug/m3	6.9	7.0	.7	25	
Hexachloro-1,3-butadiene	ug/m3	ND	ND	0	25	
Methylene Chloride	ug/m3	25.6	25.6	.1	25	
Methyl-tert-butyl ether	ug/m3	ND	ND	0	25	
4-Methyl-2-pentanone (MIBK)	ug/m3	2.4	2.4	2	25	
m&p-Xylene	ug/m3	25.9	28.1	.6	25	
Naphthalene	ug/m3	16.4	16.6	1	25	
n-Heptane	ug/m3	ND	ND	0	25	
n-Hexane	ug/m3	5.4	5.3	1	25	
o-Xylene	ug/m3	10.2	10.3	.8	25	
Propylene	ug/m3	ND	ND	0	25	
Styrene	ug/m3	2.8	2.7	2	25	
trans-1,2-Dichloroethene	ug/m3	ND	ND	0	25	
trans-1,3-Dichloropropene	ug/m3	ND	ND	0	25	
Tetrachloroethene	ug/m3	ND	ND	0	25	
Tetrahydrofuran	ug/m3	ND	ND	0	25	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	ND	0	25	
Toluene	ug/m3	28.2	28.5	1	25	
Trichloroethene	ug/m3	ND	ND	0	25	
Trichlorofluoromethane	ug/m3	1.8	1.7	2	25	
Vinyl acetate	ug/m3	ND	ND	0	25	
Vinyl chloride	ug/m3	ND	ND	0	25	

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### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: KC KWIK STOP BROOMEN, MN  
Pace Project No.: 1037376

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

### ANALYTE QUALIFIERS

- DB The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
- E Analyte concentration exceeded the calibration range. The reported result is estimated.
- L1 Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

## REPORT OF LABORATORY ANALYSIS

Page 12 of 13

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project KC KWIK STOP BROOMEN, MN  
Pace Project No.: 1037376

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1037376001	110 S WESTERN AVE	TO-15	AIR/4531		

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### REPORT OF LABORATORY ANALYSIS

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# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.



**Page:** 1 of 1  
**1011182**

**REGULATORY AGENCY:**  
 RPDDES  GROUND WATER  DRINKING WATER  
 LIST  RCRA  Other

**SITE LOCATION:**  
 JOG  IL  IN  ME  MN  NC  
 OH  SC  WI  OTHER

### Section C

Regulatory Information

**Attention:** SCOTT  
**Company Name:** CORTEAN  
**Address:**  
**Phase Circle Reference:**  
**Phase Project Manager:**  
**Phase Profile #:**

### Section B

Required Project Information

**Report To:** CORTEAN  
**Copy To:** CORTEAN  
**Purchase Order No.:**  
**Project Name:** KC KWIK STOP  
**Project Number:** 230067001

### Section A

Required Client Information

**Company:** CORTEAN ENVIRONMENTAL  
**Address:** 728 JAMES CIRCLE DE  
 ALEXANDRIA, MN 56308  
**Phone:** 328-846-4468 **Fax:** 328-862-4152  
**Requested Due Date/TAT:**

**Section D Required Client Information**  
**SAMPLE ID**  
 One Character per box.  
 (A-Z, 0-9, -)

1	1	1	0	5	W	E	S	T	E	R	N	A	R	E	A	R	G
2	C	A	N	I	S	T	R	E	R	E	R	E	R	E	R	E	R
3																	
4																	
5																	
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7																	
8																	
9																	
10																	
11																	
12																	

LITERALS	COMPOSITE START			COMPOSITE END			DATE			TIME			TEMP	AT COLLECTION	OF	CONTAINERS	PRESERVES	LAB ID	PASS PROJECT NUMBER		
	DATE	TIME		DATE	TIME		DATE	TIME													
1	8/21/06	0935		8/22/06	0740														1001		
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

REQUISITIONED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITION
[Signature]	8/21/06	0935	[Signature]	8/22/06	0740	NO
						NO
						NO
						NO
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						NO

**Additional Comments:**  
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**SAMPLER NAME AND SIGNATURE**  
 PRINT Name of SAMPLER: SCOTT HUNKE