APPENDIX A

WISCONSIN ADMINISTRATIVE CODE, WELL HEAD PROTECTION PLAN

The Wisconsin Administrative Code, Chapter NR 811, Section 16(5) states:

(5) Well Head Protection Plan. A well head protection plan shall be provided for all new wells for municipal water systems. The plan shall be developed by the owner of the municipal water system or its agent. No new municipal well may be placed into service until the department has approved the well head protection plan. The plan shall include but is not limited to:

(a) Identification of the recharge area for the proposed well.
(b) Identification of the zone of influence for the proposed well.
(c) Identification of the groundwater flow direction.
(d) An inventory of existing potential contamination sources within a ½ mile radius of the proposed well and an assessment of existing potential contamination sources within the recharge area of the well.
(e) Establishment of a well head protection area for the proposed well. The well head protection area shall encompass, at a minimum, that portion of the recharge area equivalent to a 5 year time of travel to the well. The well head protection area may be determined by a hydrogeologic investigation.
(f) A public education program for well head protection.
(g) A water conservation program.
(h) A contingency plan for providing safe water and protecting the well from contamination based on the inventory and assessment of potential contamination sources.
(i) A management plan, based upon an assessment of alternatives for addressing potential contamination sources, describing the local ordinances, zoning requirements, monitoring program, and other local initiatives proposed within the well head protection area established in subpar.(e). The management plan shall address maintaining the separation distances established by well siting in sub.(4)(d).

APPENDIX B

SURVEY PLAT - UNIT WELL 28

12' UTILITY EASEMENT

284.46'

S49°46"E

329.58'

S01°49'46"W 329.58'

12' UTILITY EASEMENT

45.12'

126.65'

183.02'

N13°16'34"E 400.00'

737.04'

154.02'

138.40'

160.96'

N00°47'38"W

35.36'

485.29'

S89°12'22"W

917.51'

SAUK

NO VEHICULAR ACCESS

SAUK

S89°12'22"W

NOTE: THERE SHALL BE NO VEHICULAR ACCESS FROM LOT 6 TO OLD SAUK ROAD

10' UTILITY EASEMENT

12' UTILITY EASEMENT

N76°43'26"W

EXCELSIOR DRIVE

112.69'

268.96'

S13°16'34"W

334.86'

737.04'

133.22'

155.54'

S00°47'38"E

160.96'

35.36'

12' UTILITY EASEMENT

12' UTILITY EASEMENT

704.00'

675.50'

665.80'

S87°55'26"E

N76°43'26"W

S76°43'26"E

10

9

8

7

6

OLD SAUK RD.

182.51'

302.51'

S89°12'22"W

33'

S00°47'38"E 150.00'

O.L. 3 (WELL SITE)

N89°12'22"E 120.00'

251.00'

241.00'

120.00'

S89°12'22"W

20' PLANTING STRIP

101.00'

150.00'

60.00'

N00°47'38"W 311.00'

LANDS

350.60'

S89°12'22"W

1,494.09'

OLD

S89°12'22"W

66'

CITY OF MADISON CONCRETE MONUMENT W/BRASS CAP SOUTH QUARTER CORNER SECTION 15, T7N, R8E

LANDS

SCALE: ONE INCH = ONE HUNDRED FEET

0 100 200 300 400 500

6' UTILITY EASEMENT

16.11'

282.67'

46.95'

150.74'

95.50'

N04°16'45"E 197.69'

335.00'

N11°37'03"E

6' UTILITY EASEMENT

389.52'

820.02'

LANDS

DISTANCES SHOWN ALONG CURVES ARE CHORD DISTANCES.

ARROWS INDICATE THE DIRECTION OF DRAINAGE SWALE CONSTRUCTION DURING GRADING. DRAINAGE SWALES SHALL BE MAINTAINED BY THE LOT OWNERS UNLESS MODIFIED WITH THE APPROVAL OF THE CITY ENGINEER.

6'

UTILITY EASEMENTS (UNLESS OTHERWISE NOTED)

OUTLOT 3 IS DEDICATED TO THE CITY OF MADISON.

WISCONSIN RICHARD RASMUSSEN S-1284 Madison Wis. LAND SURVEYOR

GRID NORTH

REVISED: MAY 23, 1984
REVISED: JUNE 11, 1984
REVISED: JANUARY 6, 1986
REVISED: JANUARY 16, 1986

APPENDIX C

UNIT WELL 28 CONSTRUCTION REPORT AND FORMATION LOG

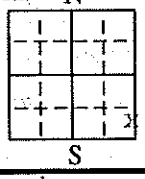
Well Construction Report For WISCONSIN UNIQUE WELL NUMBER LK 016

State of Wisconsin
Private Water Supply - WS/2
Department of Natural Resources
Box 7921
Madison, WI 53707 (Please type or print using a black pen.)

Property Owner: Madison, City of
Telephone Number: (608) 261-9243
Mailing Address: Madison Water Utility, 523 E. Main Street
City: Madison | State: WI | Zip Code: 53703
County of Well Location: Dane | Co. Well Permit No. W_____ | Well Completion Date (mm-dd-yy): 04-20-98

Well Constructor (Business Name): Municipal Well & Pump | License #: WD0013
Address: 20950 Enterprise Ave.
City: Brookfield | State: WI | Zip Code: 53045

2. Mark well location with a dot in correct 40-acre parcel of section.



1. Well Location — Please use decimals instead of fractions.
☐ Town ☒ City ☐ Village of Madison | Fire # (If avail.)
Grid or Street Address or Road Name and Number (If avail): 8210 Old Sauk Rd.
Subdivision Name: Well #28 | Lot # | Block #
Gov't Lot #_____ or SE 1/4 of SE 1/4 of Section 15, T 7 N; R 8 ☒ E ☐ W

3. Well Type ☒ New ☐ Replacement ☐ Reconstruction
of previous unique well # _____ constructed in 19 ____
Reason for new, replaced or reconstructed well? New well

4. Well serves _____ # of homes and or municipality
(Ex: barn, restaurant, church, school, industry, etc.)

High Capacity: Well? ☒ Yes ☐ No; Property? ☒ Yes ☐ No

☒ Drilled ☐ Driven Point ☐ Jetted ☐ Other _____

5. Well located on highest point of property, consistent with the general layout and surroundings? ☒ Yes ☐ No If no, explain on back side.

Well located in floodplain? ☐ Yes ☒ No
Distance in Feet From Well To Nearest:
_____ 1. Landfill
_____ 2. Building Overhang
_____ 3. Septic or Holding Tank (circle one)
_____ 4. Sewage Absorption Unit
_____ 5. Nonconforming Pit
_____ 6. Buried Home Heating Oil Tank
_____ 7. Buried Petroleum Tank
_____ 8. Shoreline/Swimming Pool
_____ 9. Downspout/Yard Hydrant
_____ 10. Privy
_____ 11. Foundation Drain to Clearwater
_____ 12. Foundation Drain to Sewer
_____ 13. Building Drain ☐ Cast Iron or Plastic ☐ Other
_____ 14. Building Sewer ☐ Gravity ☐ Pressure ☐ Cast Iron or Plastic ☐ Other
_____ 15. Collector or Street Sewer
_____ 16. Clearwater Sump
_____ 17. Wastewater Sump
_____ 18. Paved Animal Barn Pen
_____ 19. Animal Yard or Shelter
_____ 20. Silo - Type _____
_____ 21. Barn Gutter
_____ 22. Manure Pipe ☐ Gravity ☐ Pressur ☐ Cast Iron or Plastic ☐ Other
_____ 23. Other Manure Storage _____ Other NR 112 Waste Source
_____ 24. _____

6. Drillhole Dimensions

Dia. (in.)	From (ft.)	To (ft.)
40	surface	90
35	90	400
29	400	500
24	500	882

Method of constructing upper enlarged drillhole only.
☐ 1. Rotary - Mud Circulation
☐ 2. Rotary - Air
☐ 3. Rotary - Foam
☒ 4. Reverse Rotary
☐ 5. Cable-tool Bit _____ in. dia.
☐ 6. Temp. Outer Casing _____ in. dia.
Removed? ☐ Yes ☐ No
If no, explain _____
☐ 7. Other _____

9. Geology

DNR USE ONLY	Type, Caving/Noncaving, Color, Hardness, Etc.	From (ft.)	To (ft.)
	Drift	Surface	28
	Broken limestone w/sand	28	88
	Limestone	88	112
	Sandstone	112	762
	Shale	762	766
	Sandstone	766	877
	Granite (Pre-Cambri)	877	882

7. Casing, Liner, Screen Material, Weight, Specification Manufacturer & Method of Assembly

Dia. (in.)		From (ft.)	To (ft.)
36	API-5L B/X-42 0.500" wall, PE, Beveled, 189.57#/pt.	surface	90
30	API-5L 0.500" wall, PE Beveled 157.53#/Ft.	+2	400

Dia. (in.)	screen type, material & slot size	From	To

10. Static Water Level
_____ ft. above ground surface
141 ft. below ground surface

12. Well Is:
24 in. ☒ Above ☐ Below Grade
Developed? ☒ Yes ☐ No
Disinfected? ☒ Yes ☐ No
Capped? ☒ Yes ☐ No

11. Pump Test
Pumping Level 275 ft. below surface
Pumping at 2100 GPM for 24 hours

13. Did you permanently seal all unused, noncomplying, or unsafe wells?
☐ Yes ☒ No If no, explain none on site

Grout or Other Sealing Material

Method / Kind of Sealing Material	From (ft.)	To (ft.)	# Sacks Cement
Press. grout / Neat cement	surface	90	600
Neat cement	0	400	1194

14. Signature of Point Driver or Licensed Supervisory Driller — Date Signed 5/13/98

Signature of Drill Rig Operator (Mandatory unless same as above) Harold Albrecht — Date Signed 5/13/98

Make additional comments on reverse side about geology, additional screens, water quality, etc.

WELL CONSTRUCTION REPORT

Well Construction Report For
WISCONSIN UNIQUE WELL NUMBER **LK016**

Property Owner: CITY OF MADISON
Telephone Number: 608 – 261 – 9243

Mailing Address: 523 E MAIN ST
City: MADISON | State: WI | Zip Code: 53703

County of Well Location: DANE | Co. Well Permit No. | Well Completion Date: April 20, 1998

Cnty: 13 | Well Constructor (Business Name): MUNICIPAL WELL @ PUMP INC | License #: 13

Dist: 1 | Address: 20950 ENTERPRISE AVE
City: BROOKFIELD | State: WI | Zip Code: 53045

M (M=Munic. O=OTM N=NonCom P=Priv Z=Other X=Non-Pot. A=Anode L-Loop H=Drillhole)

2. Dates: 05/18/98 Rc'd | Create | 06/12/98 Last FM

1. Well Location: C (T=Town C=City V=Village) of MADISON | Fire # (If avail.)
Grid or Street Address or Road Name and Number: 8210 OLD SAUK RD
Subdivision Name: WELL # 28 | Lot # | Block #
Gov't Lot # ____ or SE 1/4 of SE 1/4 of
Section 15, T 7 N; R 8 E (E/W)

3. Well Type: 1 (1 = New 2 = Replacement 3 = Reconstruction)
of previous unique well # ____ constructed in 19 0
Reason for new, replaced or reconstructed well?: NEW WELL

1 (1 = Drilled 2 = Driven Point 3 = Jetted 4 = Other)

4. Well serves ____ # of homes and or MUNICIPALITY
(Ex: barn, restaurant, church, school, industry, etc.)
High Capacity: Well? Y Property? Y

5. Well located on highest point of property, consistent with the general layout and surroundings?
Well located in floodplain? N
Distance in Feet From Well To Nearest:
1. Landfill
2. Building Overhang
3. Septic or Holding Tank (circle one)
4. Sewage Absorption Unit
5. Nonconforming Pit
6. Buried Home Heating Oil Tank
7. Buried Petroleum Tank
8. Shoreline/Swimming Pool
9. Downspout/Yard Hydrant Y
10. Privy
11. Foundation Drain to Clearwater
12. Foundation Drain to Sewer
13. Building Drain (1 = Cast Iron or Plastic 2 = Other)
14. Building Sewer (1=Gravity 2=Pressure; 1 = Cast Iron or Plastic 2 = Other)
15. Collector or Street Sewer
16. Clearwater Sump
17. Wastewater Sump
18. Paved Animal Barn Pen
19. Animal Yard or Shelter
20. Silo - Type
21. Barn Gutter
22. Manure Pipe (1=Gravity 2=Pressure; 1 = Cast Iron or Plastic 2 = Other)
23. Other Manure Storage
Other NR 112 Waste Source
24.

6. Drillhole Dimensions

Dia. (in.)	From (ft.)	To (ft.)
40.0	surface	90
35.0	90	400
29.0	400	500
24.0	500	882

Method of constructing upper enlarged drillhole only.
1. Rotary - Mud Circulation
2. Rotary - Air
3. Rotary - Foam
X 4. Reverse Rotary
5. Cable-tool Bit ____ in. dia.
6. Temp. Outer Casing ____ in. dia. Removed?
7. Other

DNR USE ONLY	9. Geology Type, Caving/Noncaving, Color, Hardness, Etc.	From (ft.)	To (ft.)
D	DRIFT	Surface	28
BLS	BROKEN LIMESTONE WITH	28	88
L	LIMESTONE	88	112
N	SANDSTONE	112	762
H	SHALE	762	766
N	SANDSTONE	766	877
Q	GRANITE PRECAMBRI	877	882

7. Casing, Liner, Screen Material, Weight, Specification Manufacturer & Method of Assembly

Dia. (in.)	Material	From (ft.)	To (ft.)
36.0	API SL B X 42 0 500 WALL PE BEVELED 189 57 #PT	surface	90
30.0	API 5L 0 500 WALL PE BEVELED 157 53 #FT	2	400
Dia. (in.)	screen type, material & slot size	From	To

8. Grout or Other Sealing Material

Method / Kind of Sealing Material	From (ft.)	To (ft.)	# Sacks Cement
PRESS GROUT NEAT CEMENT	surface	90.0	600 S
NEAT CEMENT	90.0	400.0	1194 S

10. Static Water Level: 141.0 ft. B ground surface (A=Above B=Below)

11. Pump Test: Pumping Level 275.0 ft. below ground surface; Pumping at 2100. GPM M 24.00 hrs

12. Well Is: 24 in. A Grade (A=Above B=Below)
Developed? Y
Disinfected? Y
Capped? Y
Depth (feet)

13. Did you permanently seal all unused, noncomplying, or unsafe wells? N
If no, explain: NONE ON SITE

14. Signature of Point Driver or Licensed Supervisory Driller: TG | Date Signed: 5/13/98
Signature of Drill Rig Operator (Mandatory unless same as above): HA | Date Signed: 5/13/98

Additional Comments? | More Geo? | Owner Sent Label? Y

Madison Well No. 28 12-10-97
(Log of strata) Harold A

0-2 Top Soil
2-6 Sandy yellow clay
6-16 Gravel, cobbles & rocks
16-28 dirty sand & gravel w/ weathered Limestone
28-32 yellow L. Stone (smooth drilling)
32-37 Broken yellow L.S & med to fine sand.
37-39 Yellow L.S
39-40 White sandy L.S.
40-42 Soft white shale
42-60 Redish tan cemented Sandstone.
60-71 Tan sandstone (creviced)
71-77 Yellow sandy L.S (")
77-79 Yellow L.S (")
79-84-88 " " (") w/ red shale
88-104 Yellow L.S
104-108 " " w/ red shale layers
108-112 Yellow L.S w/ soft green shale & fine SS layers
112-123 Yellow & Redish fine cemented SS
123-129 Greenish-Gray fine SS
129-199 Yellow fairly soft SS
199-203-211 Greenish shaley SS
~~203~~ 211-219 Brownish yellow sandy dolimite
219-230 Clean tan SS
230-254 Clean White/Yelow SS

Madison #28 Well cont'd

12-10-9
Harold

254 - 257½	Brownish Yellow cemented SS
257½ 266½	clean yellow / white SS
266½ - 271	Brn cemented SS
271 - 292	clean White / yellow SS
292 - 295	tan / light Brn SS
295 - 339½	Yellowish White SS
339½ - 345	" " " w/ green shale ch
345 - 359	" " SS
359 - 364	Brown sandy dolimite
364 - 370	Light gray shale w/ Pink layers
370 - 371	Soft gray shale
371 - 374	Brittle gray shale

APPENDIX D

HYDRAULIC CONDUCTIVITY ESTIMATE

TGUESS -- Version 1.3

AQUIFER PROPERTIES AS DETERMINED BY ANALYSIS OF SPECIFIC CAPACITIES

WELL NUMBER.....= 1 MADISON Unit WELL 28

INPUT DATA (English units):

WELL DIAMETER .....=	24 [in]
STATIC WATER LEVEL .....=	141 [ft]
DEPTH TO WATER DURING TEST .....=	275 [ft]
DURATION OF THE TEST .....=	24 [hrs]
PUMPING RATE .....=	2100 [gpm]
THICKNESS OF AQUIFER .....=	503 [ft]
OPEN INTERVAL (SCREEN LENGTH) ...=	477 [ft]
STORAGE COEFFICIENT .....=	.0003
WELL LOSS COEFFICIENT .....=	1

RESULTS:

SPECIFIC CAPACITY .....=	1.8729E+01[gpm/ft]
TRANSMISSIVITY .....=	5.9405E-02[ft^2/sec] = 5133 ft^2/day
HYDRAULIC CONDUCTIVITY .....=	1.1810E-04[ft/sec] = 10.2 ft/day
NUMBER OF ITERATIONS .....=	4

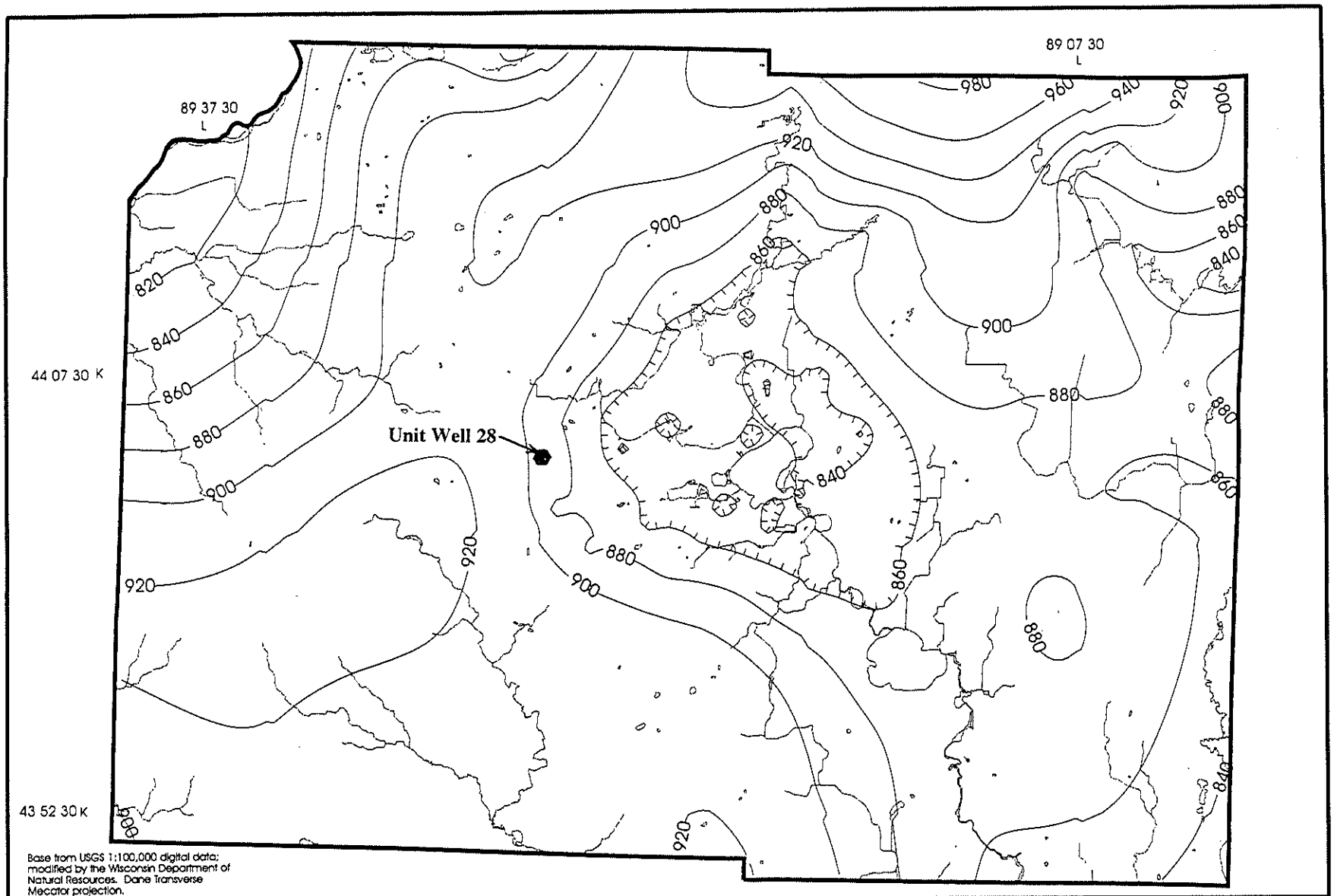
$T = 38,392$ gpd/ft

$K = 76.3$ gpd/ft^2

APPENDIX E

POTENTIOMETRIC SURFACE - LOWER BEDROCK (MOUNT SIMON) AQUIFER AND AREAS OF RECHARGE AND DISCHARGE

MAP 6



Measured Altitude of the Potentiometric Surface of the Mt. Simon Aquifer Dane County, Wisconsin

Explanation

— 900 — Measured potentiometric contour. Contour interval 20 feet. Datum is sea level.

N

0 5

1" = 5 miles

Source: DCRPC, 1999

Source: Wisconsin Geological and Natural History Survey, 1999.

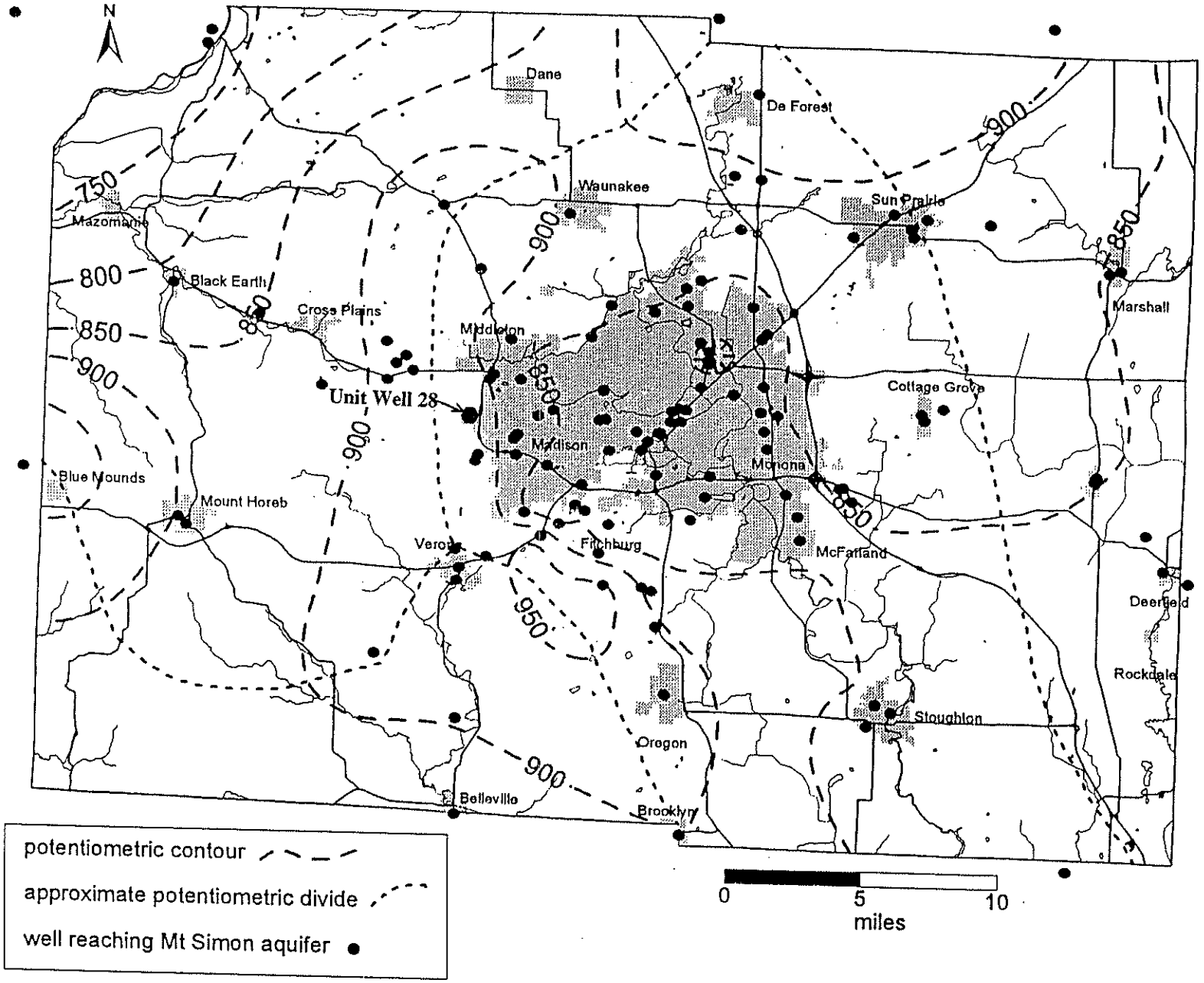
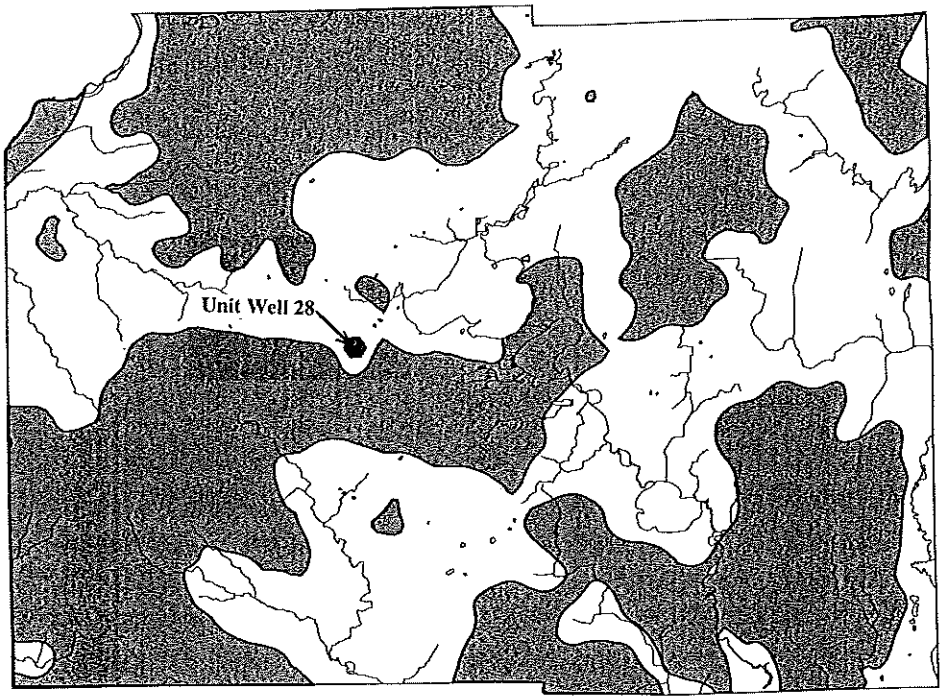


Figure 9. Potentiometric surface of the Mt Simon aquifer, 1995.

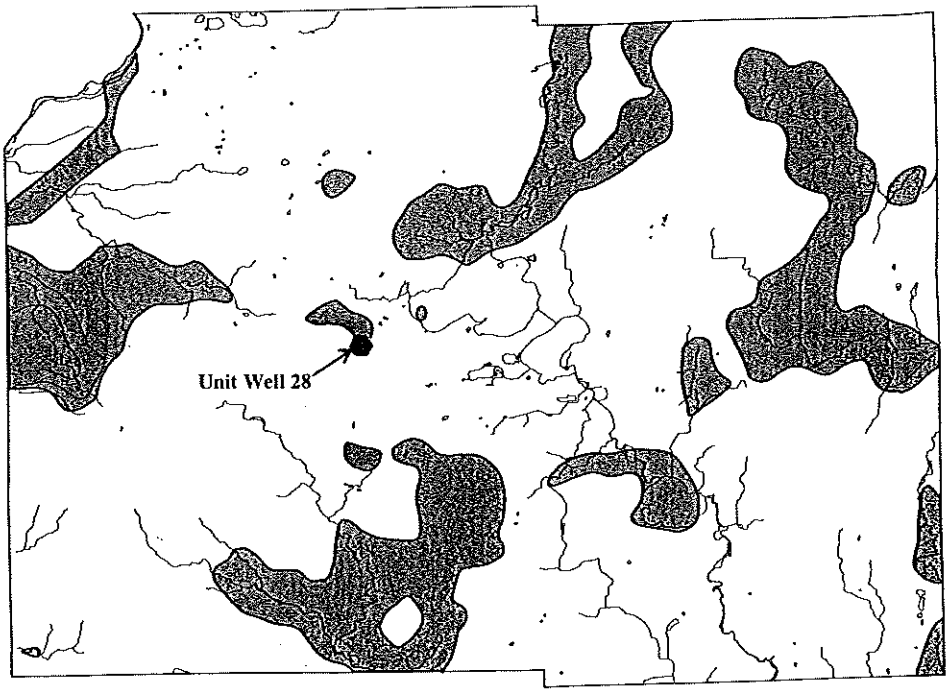
Source: Bradbury et. al., 1999

MAP 7

A



B



Areas of Recharge to and Discharge from the Mt. Simon Aquifer* Dane County, Wisconsin

A: areas of recharge

B: areas of discharge

0 miles 9

N

*Based on measured water levels

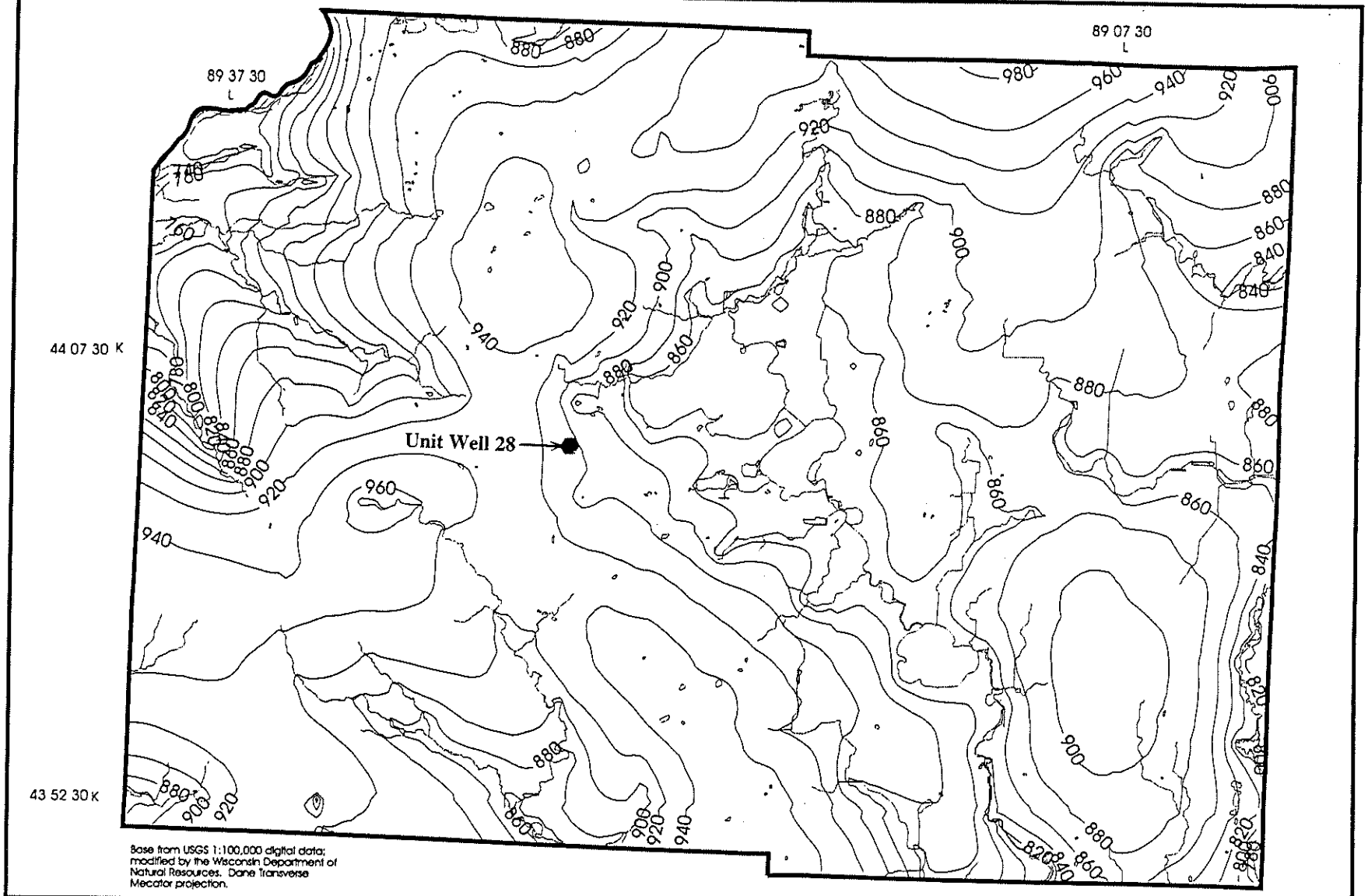
Source: *Hydrogeology of Dane County*, Bradbury, et. al., 1999.

Source: DCRPC, 1999

APPENDIX F

POTENTIOMETRIC SURFACE - WATER TABLE ELEVATION

MAP 4



Measured Altitude of the Water Table Level
Dane County, Wisconsin

— 900 — Measured water-table contour. Contour interval 20 feet. Datum is sea level.

N

0 5

1" = 5 miles

Source: DCRPC, 1999

Source: Wisconsin Geological and Natural History Survey, 1999.

APPENDIX G

DISTANCE-DRAWDOWN CALCULATION
(ZONE OF INFLUENCE)

Distance-Drawdown Calculations
Using Theis Equation
With Adjustment For Aquifer Dewatering (Water Table Condition)

Assumptions: **Well 28** **Madison** **Zone of Influence**

Hydraulic Conductivity [K]	76.30	GPD/ft^2
Aquifer Thickness [B]	503	ft.
Storativity [S]	0.0003	
Pumping Rate [Q]	2083.00	gpm
Pumping Duration [TM]	30.00	Days

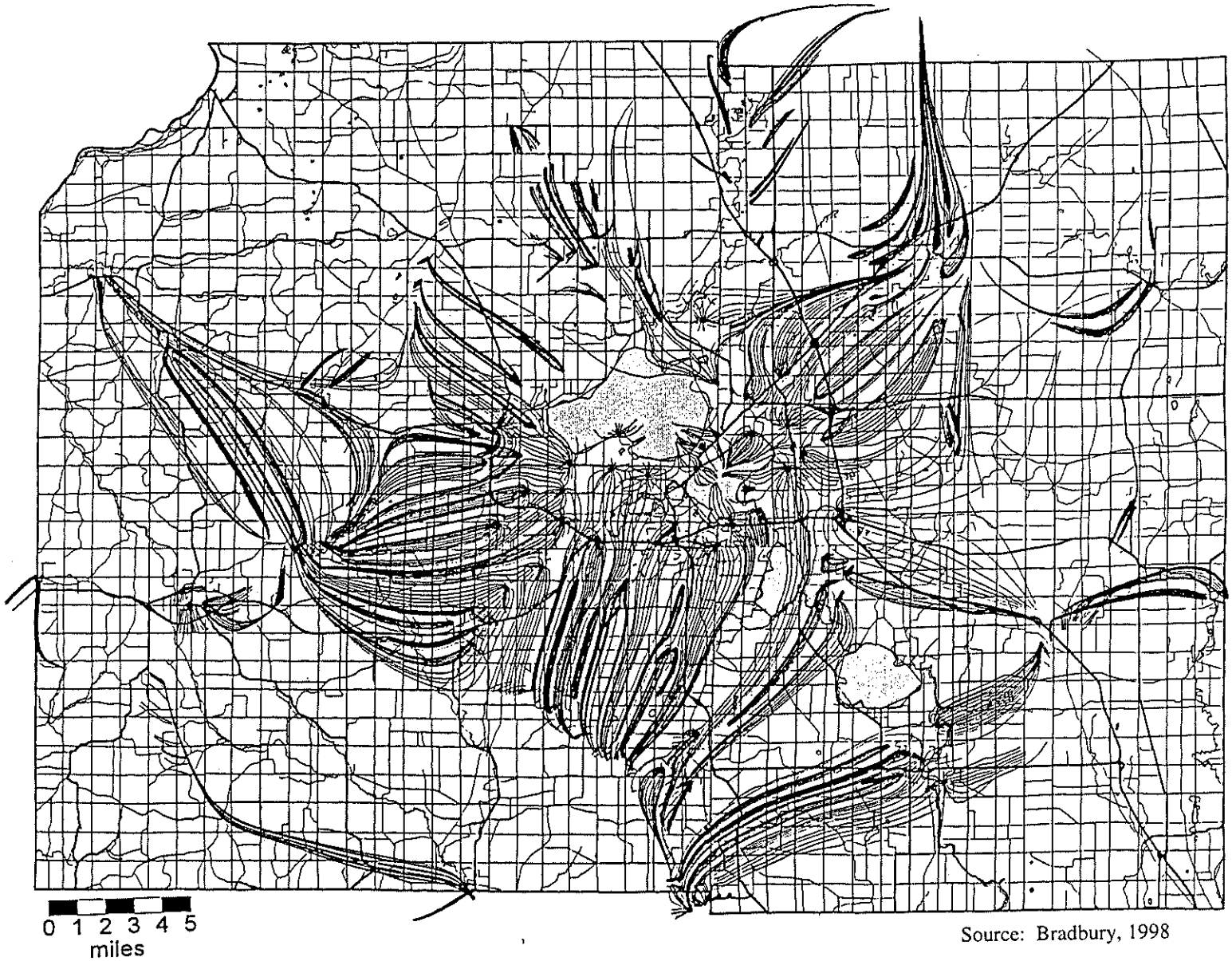
Results:

Radius From Well r (ft.)	Well Function W(u)	Apparent Drawdown s (ft.)	Drawdown Adjusted For Dewatering s' (ft.)
1.00	20.865034	129.77	153.05
10	16.259864	101.13	114.06
30	14.062640	87.46	96.77
50	13.040990	81.11	88.98
100	11.654699	72.49	78.63
200	10.268419	63.86	68.53
300	9.457513	58.82	62.73
400	8.882183	55.24	58.66
500	8.435940	52.47	55.53
750	7.625162	47.42	49.90
1000	7.050011	43.85	45.95
2000	5.665179	35.23	36.56
3000	4.856685	30.21	31.17
4000	4.284731	26.65	27.39
5000	3.842792	23.90	24.50
7500	3.046939	18.95	19.32
10000	2.492491	15.50	15.75
12500	2.072774	12.89	13.06
15000	1.740121	10.82	10.94
20000	1.243858	7.74	7.80
30000	0.641901	3.99	4.01
40000	0.322326	2.00	2.01
49450	0.160567	**1.00**	1.00
50000	0.153936	0.96	0.96
60000	0.069084	0.43	0.43
104343	0.000804	0.01	0.01
104344	0.000804	**0.00**	0.00

APPENDIX H

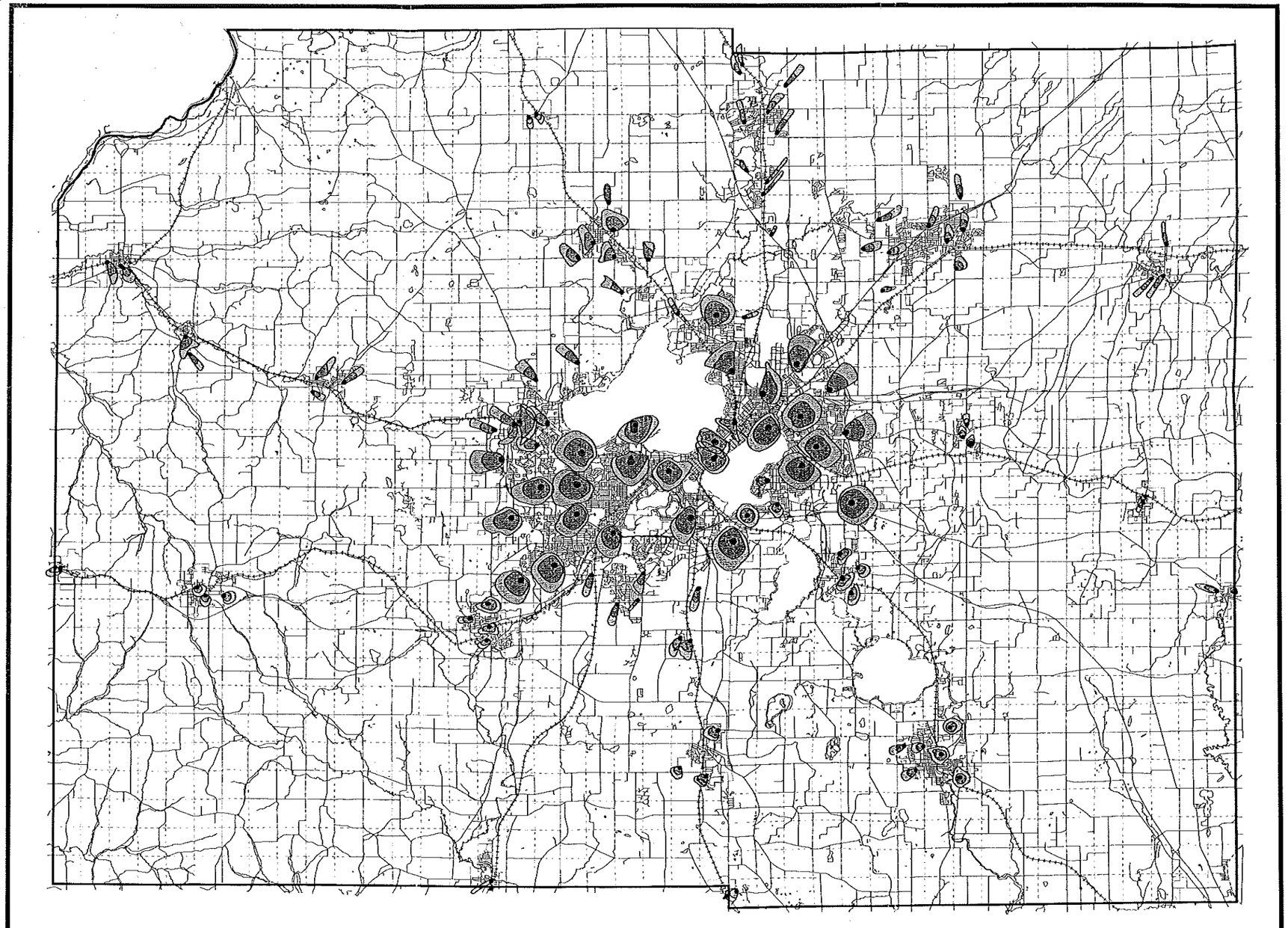
ZOCS FOR MUNICIPAL WELLS IN DANE COUNTY

Fig. 2
Ultimate Zones of Contribution for
Municipalities in Dane County, WI.



Source: Bradbury, 1998

MAP 21



Zones of Contribution for Municipal Wells
(Projected 2020 Pumping Rates)
Dane County, Wisconsin

- Well

5 - Year Zone of Contribution
50 - Year Zone of Contribution
100 - Year Zone of Contribution

(Source: Wisconsin Geological and Natural History Survey, June 3, 1998).

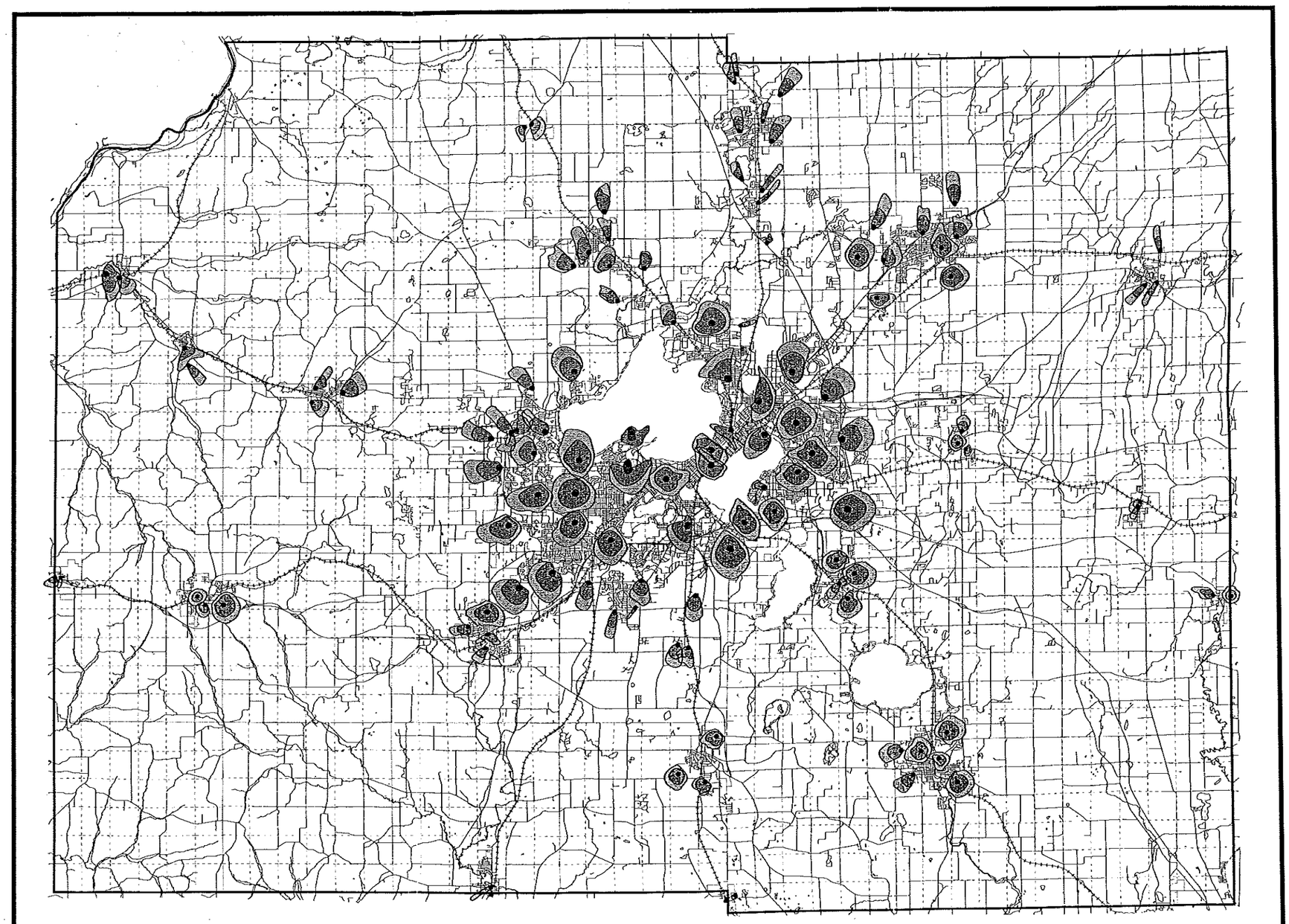
Dane County, Wisconsin
July, 1999

0 N 4
Miles

Prepared by: The Dane County Regional Planning Commission

Source: DCRPC, 1999

MAP 22



Zones of Contribution for Municipal Wells
(50% Capacity Pumping Rates)
Dane County, Wisconsin

- Well

5 - Year Zone of Contribution
50 - Year Zone of Contribution
100 - Year Zone of Contribution

(Source: Wisconsin Geological and Natural History Survey, June 3, 1998).

Dane County, Wisconsin
July, 1999

0 N 4
Miles

Prepared by: The Dane County Regional Planning Commission

Source: DCRPC, 1999

APPENDIX I

CONTAMINANT SOURCE INVENTORY
(DECEMBER 2001)

M E M O

Date: December 23, 2001

To: Files

From: Joel Giraud, Earth Tech JRG

Subject: **Contamination Source Inventory**
Unit Well 28 - Wellhead Protection Planning
City of Madison, Wisconsin
Earth Tech Project No. 46945

Following are the results of a contamination source inventory (CSI) performed for the area surrounding Unit Well 28. Figure 1 shows the location of Unit Well 28. The CSI included a windshield survey, a review of government records, aerial photographs, risk and activity maps (DCRPC, 1999), and interviews with businesses and local regulatory personnel. The results of the CSI are summarized in Table 1.

WINDSHIELD SURVEY

A windshield survey of the study area was conducted on December 13, 2001. Potential sources of contamination identified during the windshield survey and during the review of government records are summarized in Table 1 and are shown on Figure 1.

The nearest private sewage disposal system (tank and drain field) appears to be located 100 feet west of Unit Well 28. It is reported by the City of Madison Water Utility that the private residences located immediately west of Unit Well 28 have signed easements whereby they will discontinue use of the private sewage disposal systems and will connect to the City of Madison sanitary sewer system. Other private sanitary sewage disposal systems are located along Sauk Court approximately 1,850 feet west of Unit Well 28.

The nearest private well is located at 6924/26 Old Sauk Road, approximately 100 feet west of Unit Well 28. The well is likely terminated in the Upper Bedrock aquifer.

The nearest storm sewer is located in Old Sauk Road, approximately 100 feet south of Unit Well 28.

The nearest sanitary sewer is located in Old Sauk Road approximately 100 feet south of Unit Well 28.

On the basis of the site reconnaissance and a review of the Wisconsin registered storage tank list, the nearest underground storage tanks (USTs) are believed to be located at the Mobil Mart gas station located approximately 600 feet southeast of Unit Well 28, and at the Attic Angel Association approximately 600 feet southwest of Unit Well 28. There are no reported leaking underground storage tanks (LUSTs) in the vicinity of Unit Well 28.

On the basis of the site reconnaissance and a review of the Wisconsin registered storage tank list, the nearest aboveground storage tank (AST) is believed to be located approximately 5,100 feet northwest of Unit Well 28, on Black Hawk Road.

A dry cleaning business is located approximately 1,850 feet east of Unit Well 28.

The nearest golf course is Pleasant View Golf Club and is located approximately 5,500 feet northwest of Unit Well 28. The golf course appears to be sidegradient from the Unit Well 28 capture zone.

There are no apparent solid waste storage sites in the immediate vicinity of Unit Well 28. It appears that the nearest solid waste storage site is located approximately 2 miles west of Unit Well 28 on the west (opposite) side of the groundwater divide. The Dennis Howard Dump is located approximately 4,000 feet east of Unit Well 28.

The nearest cemetery (Lutheran Church Cemetery) is located approximately 2,400 to 2,800 feet west of Unit Well 28.

The nearest pond is located approximately 1,300 feet south-southwest of Unit Well 28. Other ponds are located approximately ½ mile north and northwest of Unit Well 28.

The DCRPC (1999) Map 29 shows there are State approved septage application sites approximately 1 to 1.5 miles west of Unit Well 28. Greg Kester, DNR, and Mike Northouse, Madison Metropolitan Sewerage District (MMSD), confirmed that there are several permitted sludge and septage disposal sites in the vicinity of Unit Well 28. Many of the permitted sites are not being used for septage and sludge disposal, because the properties are being developed for other uses, and because there are ordinances prohibiting truck traffic. MMSD stated that in 2000/2001 they applied a small quantity of biosolids on a research plot at the University Farms site located in the vicinity of Elderbury Road for research purposes. In 1990, the MMSD applied biosolids to a field located in the NW 1/4 of Section 21, T7N, R8E, Town of Middleton. MMSD said the majority of their active biosolids application areas are south and east of the City of Madison. The DNR reported that Ring Septic Service and Speedway Sewer Service have permitted land application sites in Section 16, 20, and 21, T7N, R8E, Town of Middleton.

No bulk salt storage sheds, or bulk pesticide, fertilizer storage, and/or mix-load sites were identified within a 1-mile radius of Unit Well 28, or within the upgradient recharge area beyond a 1-mile radius.

GOVERNMENT DATABASE REVIEW

A review of government records (lists) was performed of the latest available information pertaining to existing and potential contamination sources within a 1-mile radius of Unit Well 28. A summary of databases reviewed is attached.

REVIEW OF HISTORIC AERIAL PHOTOGRAPHS

A 1974 aerial photograph in the Soil Survey of Dane County, Wisconsin (Glocker, 1978) and a 2000 aerial photo provided by the City of Madison Water Utility were reviewed to evaluate historical and current historical land uses, respectively. The 1974 aerial photo shows the land use in the vicinity of Unit Well 28 was historically primarily agricultural (row crop) land with sparse residential development. Current land uses in areas 1 mile west of Unit Well 28 and beyond appear to be similar to historical land uses shown on the 1974 photo. In 1974, the Unit Well 28 site was open field area. There were homes along Sauk Road immediately

west of the Unit Well 28 site. Major sewered commercial and residential development has occurred in the vicinity of Unit Well 28 since 1974.

Information obtained from the review of aerial photographs confirmed the land use history of the site and adjoining properties. No recognized environmental conditions were identified on the aerial photos.

INTERVIEWS WITH REGULATORY AND GOVERNMENT PERSONNEL, AND BUSINESS REPRESENTATIVES

Interviews were conducted with the following individuals regarding potential contamination sources in the vicinity of Unit Well 28. Businesses that were on the USEPA RCRA generator lists were also contacted to discuss on-site manufacturing processes and waste disposal practices.

Mike Griffin, Sanitarian, Dane County Environmental Health (608-242-6515).

Greg Hansen, General Electric Lunar Corp., Madison, Wisconsin (608-828-2663).

Greg Kester, State Residuals Coordinator, Wisconsin Department of Natural Resources, Madison, Wisconsin (608-267-7694).

Michael Koran, Fertilizer/Pesticide Specialist, Wisconsin Department of Agriculture, Trade and Consumer Protection (608-224-5058)

Todd Meyer, Covance Labs, Inc., Madison, Wisconsin (608-242-2712).

Mike Northouse, Madison Metropolitan Sewerage District, Madison, Wisconsin (608-222-1201).

Jonathan Ranum, John Deere Credit, Madison, Wisconsin (608-831-1980).

Charlie Ziegler, Artesyn Technologies, Madison, Wisconsin (608-831-5500).

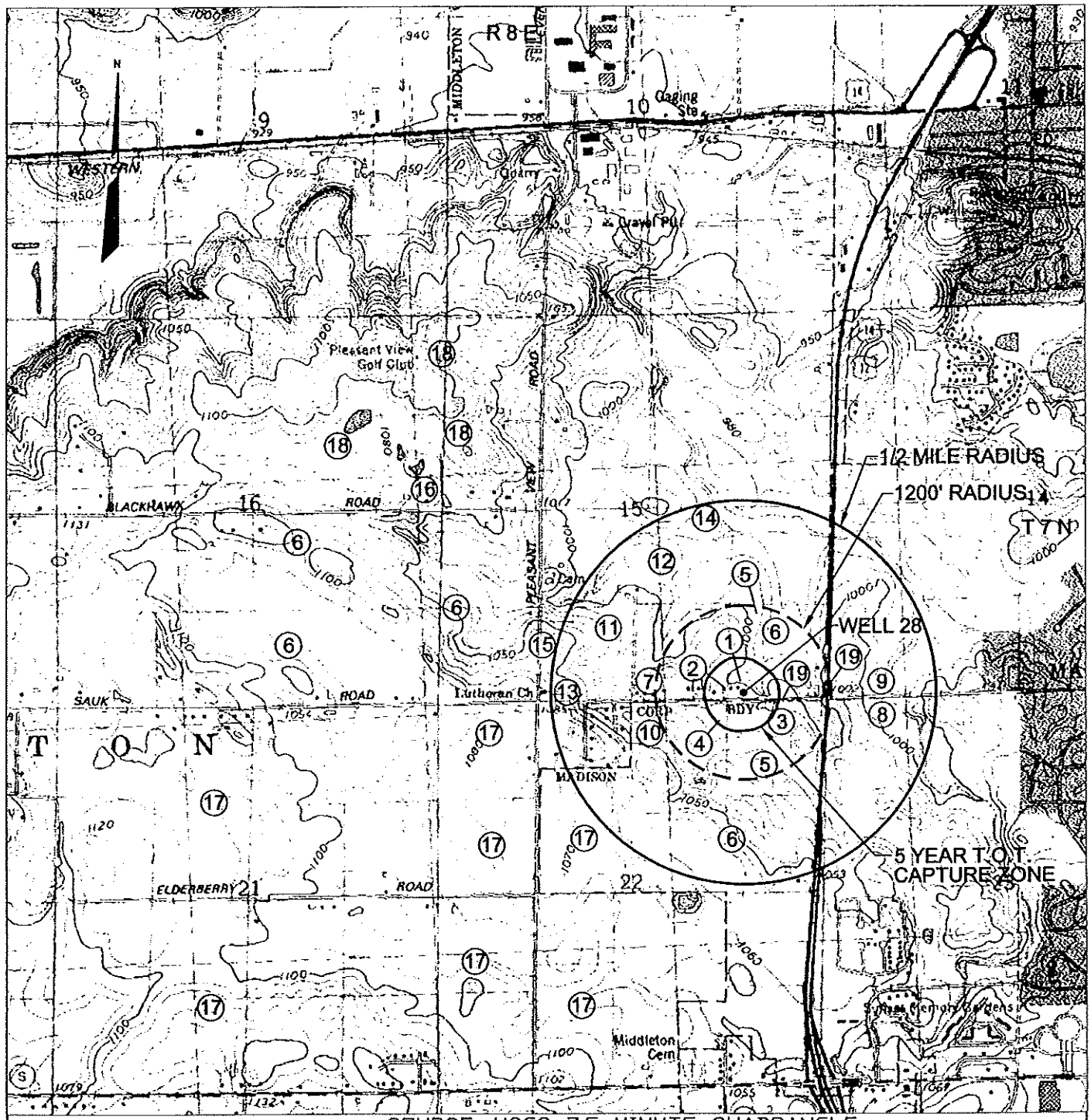
No additional information about potential or existing contamination sources, other environmental conditions, or sensitive areas were obtained during the interviews.

REFERENCES

DCRPC, 1999. Dane County Groundwater Protection Plan. Appendix G of the Dane County Water Quality Plan, Dane County Regional Planning Commission, Madison, Wisconsin.

EcoSearch Environmental Resources, Inc., November 27, 2001. Priority Risk Report - Government Records Search, Well 28, Old Sauk Road, Madison, Wisconsin.

Glocker, C.L., 1978. Soil Survey of Dane County, Wisconsin, Map No. 88. U.S. Department of Agriculture.



SOURCE: USGS 7.5 MINUTE QUADRANGLE, MIDDLETON, WISCONSIN, 1982

T.O.T. = TIME OF TRAVEL

(3) POTENTIAL CONTAMINATION SOURCE OR ROUTE

SCALE 1: 24000

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL

DANE COUNTY

INDEX MAP

EARTH TECH

FIGURE 1

CONTAMINATION SOURCE INVENTORY UNIT WELL 28

MADISON, WISCONSIN

DECEMBER 2001

46945

TABLE 1
CONTAMINATION SOURCE INVENTORY SUMMARY
WELLHEAD PROTECTION UNIT WELL 28
MADISON, WISCONSIN
DECEMBER 2001

Map Site No.	Owner/Location	Database or Reference Source	Existing, Potential, or Former Contamination Sources	Reported Status	Approximate Distance to Unit Well 28	Location within Capture Zone	Estimated Threat to Supply Wells
1	Residence 6924/26 West Old Sauk Road Madison, WI	Visual Inspection	Private Well - Pitless adaptor stick-up	Active	Approx. 75-100 ft west-northwest	5 year TOT	Low
2	Residence 6934 West Old Sauk Road Madison, WI	Visual Inspection	Private sewage disposal system vent	Unknown	300 ft west-northwest	5 year TOT	Moderate
3	Mobil Mart 633 Junction Road	Visual Inspection	USTs, gasoline and diesel 6 pump islands	Active	600 ft southeast	5 year TOT	Moderate
4	Attic Angel Association 8301 Old Sauk Road Madison, WI 53562	EcoSearch - Wisconsin Registered Storage Tank Database, Agency ID No. 181484	Aboveground 405-gal, diesel storage tank Tank ID No. 662592 - for backup generator supply	Active	600 ft southwest	5 year TOT	Moderate
5	Numerous properties throughout area	Visual Inspection	Parking Surfaces - Runoff to drainage ways and detention areas	Active	Variable	5 year TOT and beyond	Low-Moderate
6	Numerous properties throughout area	Visual Inspection	Grass Areas - Potential nutrient loading	Active	Variable	5 year TOT and beyond	Low-Moderate
7	Thomas Mohoney 6988 West Old Sauk Road Middleton, WI 53562	EcoSearch - Wisconsin Registered Storage Tank Database, Agency ID No. 136810	Former 100-gal, fuel oil underground storage tank Tank ID No. 277675	Closed/Removed	1,400 ft west	Upgradient beyond 5 year TOT	Low
8	TLC Dry Cleaning 668 North High Point Road Madison, WI	Visual Inspection	Dry cleaning fluids	Active	1,850 ft east	Downgradient beyond capture zone	Low
9	Duane Hawkinson 7810 Old Sauk Road Middleton, WI	EcoSearch - Wisconsin Registered Storage Tank Database, Agency ID No. 72358 Visual Inspection	100-gal, fuel oil underground storage tank Tank ID No. 277480 No UST observed - location is Klein Insurance Bldg.	Reported active in database, but could not locate	1,850 ft east	Downgradient beyond capture zone	Low
10	Sauk Court Middleton, WI	Visual Inspection	Private water supply wells Private sewage disposal systems	Active	1,850 ft west-southwest	Upgradient beyond 5 year TOT	Low-Moderate
11	Covance Labs Inc. West 802 Deming Way Madison, WI 53717	EcoSearch - RCRA Generator RCRA Notifier Site, EPA No. WIR 12443	Analytical Laboratory - Agri chemistry and food packaging analysis, chemical storage and use, spent chemicals disposed of quarterly by Onyx or other contractor	Active	2,000 ft northwest	Upgradient beyond 5 year capture zone	Low
12	John Deere Credit 8402 Excelsior Drive Madison, WI 53717	EcoSearch RCRA Small Quantity Generator EPA No. WID 988629895	Small quantities of chiller oil generated on site Disposed of at Safety Klean Corp.	Active	2,100 ft northwest	Upgradient beyond 5 year TOT	Low
13	Lutheran Church Cemetery NE corner of intersection of W Old Sauk Rd and Pleasant View Rd Madison, WI	Visual Inspection	Cemetery	Active	2,400 - 2,800 ft west	Upgradient beyond 5 year TOT	Low
14	Artesyn Technologies 8310 Excelsior Drive Madison, WI 53717	EcoSearch RCRA Small Quantity Generator EPA No. WID 988601167	Manufacturer of computer circuit boards User and generator of solder and isopropyl alcohol - disposed of with licensed contractor	Active	2,400 ft north-northwest	Upgradient beyond 5 year TOT	Low
15	General Electric-Lunar Corp. 726 Heartland Trail Madison, WI 53717	EcoSearch RCRA Small Quantity Generator EPA No. WID 45443	User and generates waste - zcrotri degreaser, isopropyl alcohol, lead litharge, and absorbent pigmatting, small quantities of 1-2 drums per year Contractor disposal - Onyx and Renewable Resources	Active	2,500 ft west-north	Upgradient beyond 5 year TOT	Low

TABLE 1 (cont.)							
Map Site No.	**Owner/Location**	**Database or Reference Source**	**Existing, Potential, or Former Contamination Sources**	**Reported Status**	**Approximate Distance to Unit Well 28**	**Location within Capture Zone**	**Estimated Threat to Supply Wells**
16	Business 9118(?) Blackhawk Road Middleton, WI	Visual Inspection	Aboveground storage tank, in secondary containment vessel, est. 500 gal, fenced	Active	5,100 ft northwest	Beyond 50 year TOT (sidegradient)	Low
17	Numerous Parcels	Visual Inspection	Agricultural Fields - Row crops Nutrient loading	Active	2,000 ft +, west, southwest, northwest	Within 50 year TOT	Low
18	Pleasant View Golf Club 1322 Pleasant View Road Middleton, WI 53562	Visual Inspection	Grass Areas - Nutrient, pesticide, herbicide loading	Active	5,500 ft northwest	Beyond 50 year TOT (sidegradient)	Low
19	Highways 12/14 and Old Sauk Rd. Madison, WI	Visual Inspection	Salt application Potential spills	Active	100 ft +	5 year TOT and beyond	Low-Moderate

Database Descriptions -- Federal Databases

NPL

National Priorities List

US Environmental Protection Agency
Office of Solid Waste and Emergency Response
(703) 603-8881

Data Date: August 14, 2001
Release Date: August 14, 2001
Active Date: November 2, 2001
Last Contact Date: November 2, 2001

The NPL is a subset of the CERCLIS and lists over 1,150 of the nation's most dangerous sites of uncontrolled or hazardous waste which require cleanup. Also known as the Superfund List, the sites are scored according to the hazardous ranking system.

CERCLA (Active)

Comprehensive Environmental Response, Compensation, and Liability Information System (Active)

US Environmental Protection Agency
Office of Solid Waste and Emergency Response
1-800-775-5037

Data Date: August 14, 2001
Release Date: August 14, 2001
Active Date: November 14, 2001
Last Contact Date: November 12, 2001

CERCLIS maintains information on over 15,000 sites nationally identified as hazardous or potentially hazardous which may require action. These sites are currently being investigated or an investigation has been completed regarding the release of hazardous substances. The most serious of this list as ranked by the hazardous ranking system are transferred to the NPL.

CERCLA (NFRAP Archive)

Comprehensive Environmental Response, Compensation, and Liability Information System (NFRAP Archive)

US Environmental Protection Agency
Office of Solid Waste and Emergency Response
1-800-775-5037

Data Date: August 14, 2001
Release Date: August 14, 2001
Active Date: November 14, 2001
Last Contact Date: November 12, 2001

For more complete information purposes we include sites which have been reclassified as No Further Remedial Action Planned (NFRAP) by the EPA. This action was taken by the EPA beginning February 1995 as a part of the Brownfields Redevelopment Program. These former CERCLIS sites, also known as the CERCLIS Archive, have been delisted because a lack of significant contamination was found.

RCRA TSD

Resource Conservation and Recovery Information System -- Treatment, Storage, and Disposal Facilities

US Environmental Protection Agency
Office of Solid Waste and Emergency Response
(202) 260-4610

Data Date: June 15, 2000
Release Date: June 15, 2000
Active Date: June 18, 2001
Last Contact Date: October 11, 2001

RCRIS contains information on hazardous waste handlers regulated by the US Environmental Protection Agency under the Resource Conservation and Recovery Act (RCRA). It is a national system used to track events and activities which fall under RCRA. The TSD database is a subset of the complete RCRIS file which includes facilities which treat, store, dispose, or incinerate hazardous waste. Additionally, compliance and corrective action (CORRACTS) information is included.

RCRA Generator

Resource Conservation and Recovery Information System - Large and Small Quantity Generators, Transporters, and Notifiers

US Environmental Protection Agency
Office of Solid Waste and Emergency Response
800-424-9346

Data Date: June 20, 2000
Release Date: June 20, 2000
Active Date: June 19, 2001
Last Contact Date: October 11, 2001

RCRIS contains information on hazardous waste handlers regulated by the US Environmental Protection Agency under the Resource Conservation and Recovery Act (RCRA). It is a national system used to track events and activities which fall under RCRA. The generators database is a subset of the complete RCRIS file which includes hazardous waste generators which create more than 100kg of hazardous waste per month or meet other requirements of RCRA. We also include RCRA Notifiers, Transporters, and formerly regulated RCRA Sites for more complete hazardous waste information. Additionally, compliance and corrective action information is included.

RAATS

RCRA Administrative Action Tracking System

US Environmental Protection Agency
Office of Enforcement and Compliance Assurance
(202) 564-4104

Data Date: April 14, 1995
Release Date: Not Available
Active Date: April 17, 1995
Last Contact Date: October 11, 2001

The RCRA Administrative Action Tracking System contains additional information on RCRA enforcement actions. Data includes the type of action, proposed penalty, and final penalty amount. This is a historical database and will not be updated by the source agency. EcoSearch will call once a year to verify historical status.

CORRACTS

Resource Conservation and Recovery Information System -- Corrective Action Sites

US Environmental Protection Agency
Office of Solid Waste and Emergency Response
(202) 260-4610

Data Date: April 15, 2000
Release Date: April 15, 2000
Active Date: August 7, 2000
Last Contact Date: November 9, 2001

The CORRACTS database includes RCRIS (Resource Conservation and Recovery Information System) sites with reported corrective action. This information is also reported in the standard RCRIS detailed data.

ERNS

Emergency Response Notification System

US Environmental Protection Agency
Office of Solid Waste and Emergency Response
(202) 260-2342

Data Date: January 1, 2001
Release Date: January 1, 2001
Active Date: March 17, 2001
Last Contact Date: October 11, 2001

ERNS is a national database which contains information on specific notification of releases of oil and hazardous substances into the environment. The system stores data regarding the site of the spill, the material released, and the medium into which it occured.

PADS

PCB Activity Database System

US Environmental Protection Agency
Office of Pollution Prevention and Toxics
(202) 260-3992

Data Date: November 20, 1999
Release Date: November 20, 1999
Active Date: February 18, 2000
Last Contact Date: October 12, 2001

This database stores information about facilities which handle PCBs and file EPA form 7710-53. It is divided into storage facilities, disposers, generators, and transporters.

TRI

Toxic Release Inventory

US Environmental Protection Agency
Office of Pollution Prevention and Toxics
(202) 260-1531

Data Date: October 1997
Release Date: November 2000
Active Date: March 17, 2000
Last Contact Date: October 11, 2001

TRI contains information from facilities which manufacture, process, or import any of the over 300 listed toxic chemicals which are released directly into air, water, or land or are transported off-site. The database includes facts on amounts of chemicals stored and emitted from the facility. This database is released on an infrequent basis by the US EPA. EcoSearch includes information from 1987 through the 1996 reporting year.

SSTS

Section Seven Tracking System

US Environmental Protection Agency
Office of Prevention, Pesticides, and Toxic Substances
(202) 564-5008

Data Date: July 31, 1998
Release Date: Not Available
Active Date: August 27, 1998
Last Contact Date: October 11, 2001

Formerly FATES, this system tracks the registration of pesticide-producing establishments and tracks the types and amounts of pesticides, active ingredients, and devices which are sold, produced, or distributed annually.

DOCKET

Civil Enforcement Docket

US Environmental Protection Agency
Office of Enforcement
(202) 564-4114

Data Date: September 3, 1998
Release Date: Not Available
Active Date: February 3, 1999
Last Contact Date: October 11, 2001

The Civil Enforcement Docket is information on civil and administrative actions filed by the Department of Justice for the US Environmental Protection Agency. This record has been continually updated since 1972 and includes data regarding facility name, dates, laws violated, and penalties assessed.

TSCA

Toxic Substances Control Act Inventory

US Environmental Protection Agency

(202) 554-1404

Data Date: May 14, 1986
Release Date: Not Available

Last Contact Date: October 11, 2001

The Toxic Substances Control Act Inventory includes the locations and chemical production information of more than 7000 processors and manufacturers of chemicals. This database is no longer released to the public by the US EPA.

Database Descriptions -- State Databases

HRL (HWS)

Wisconsin Hazard Ranking List

Wisconsin Department of Natural Resources
Bureau for Remediation and Redevelopment
(608)-267-0559

Data Date: December 14, 1994
Release Date: Not Available
Active Date: January 11, 1995
Last Contact Date: October 30, 2001

This list provides information on known sites or facilities which present a substantial danger to the public health, welfare, or the environment in the State of Wisconsin. It is released on an infrequent basis by the Wisconsin DNR.

ERP (HWS)

Wisconsin Environmental Repair Program Sites

Wisconsin Department of Natural Resources
Bureau for Remediation and Redevelopment
(608) 261-6424

Data Date: September 18, 2001
Release Date: September 18, 2001
Active Date: October 18, 2001
Last Contact Date: October 18, 2001

The Bureau for Remediation and Redevelopment compiles a list of reported contaminated sites slated for cleanup under the Environmental Repair Fund (the Environmental Fund). These sites are associated with a variety of non-LUST contamination.

SWF

Wisconsin Registry of Waste Disposal Sites

Wisconsin Department of Natural Resources
Emergency and Remedial Response Program
(608) 266-2621

Data Date: June 15, 1999
Release Date: July 30, 1999
Active Date: November 18, 1999
Last Contact Date: October 8, 2001

This database provides information on waste disposal sites in the state of Wisconsin. It is released on an infrequent basis by the DNR.

LUST

Wisconsin Leaking Underground Storage Tank List

Wisconsin Department of Natural Resources
Bureau for Remediation and Redevelopment
(608) 267-3532

Data Date: September 18, 2001
Release Date: September 18, 2001
Active Date: October 30, 2001
Last Contact Date: October 30, 2001

This database provides data referring to underground storage tanks with reported releases into the environment.

RST

Wisconsin Registered Storage Tank List

Department of Commerce

(608) 266-0956

Data Date:	October 5, 2001
Release Date:	October 5, 2001
Active Date:	October 20, 2001
Last Contact Date:	October 20, 2001

The Wisconsin RST List provides the location of registered storage tanks in the state of Wisconsin.

SPILLS

Wisconsin DNR Spills Database

Wisconsin Department of Natural Resources
Bureau for Remediation and Redevelopment
608-266-2857

Data Date:	September 18, 2001
Release Date:	September 18, 2001
Active Date:	October 30, 2001
Last Contact Date:	October 30, 2001

The Wisconsin Spills Database includes information on reported spills in the State of Wisconsin.

APPENDIX J

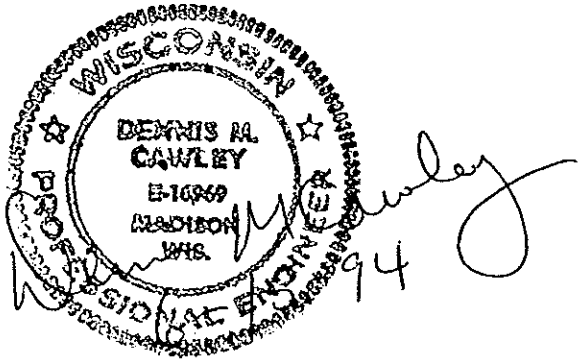
CONTAMINANT SOURCE INVENTORY (1994) AND FOLLOW-UP CORRESPONDENCE

WELL SITE

SURVEY REPORT

FOR THE MADISON WATER UTILITY

Submitted by: Dennis M. Cawley, P.E.
Madison Water Utility
523 East Main Street
Madison, WI 53703



POTENTIAL CONTAMINATION SOURCES

In order to determine potential contamination sources the Madison Water Utility has surveyed the area and has included as part of this report a map showing all land uses within 1/2 mile of the proposed well site.

Also included is a list of potential contaminant sources obtained from Wisconsin Department of Natural Resources publication WR 325-93, "A Guide for Conducting Potential Contaminant Source Inventories for Wellhead Protection". Those potential contaminant sources are noted on the list.

The most immediate potential for contamination would appear to be the nine residential properties on Old Sauk Road, immediately west of the well site. All of these properties, except one, are in the Town of Middleton and are served by private wells and septic systems. In addition, there are various other properties southwest of the well site on Shawn Trail and Sauk Court which are also in the Town of Middleton and where the same conditions exist.

On the Giese property, immediately west of the alternative site, there is an above ground storage tank that once held LP gas. According to Mr. Giese this tank has not been used for 4-5 years.

The land on the south side of Old Sauk Road is currently being used to grow corn which means there is the probability of fertilizer and pesticide application on this land.

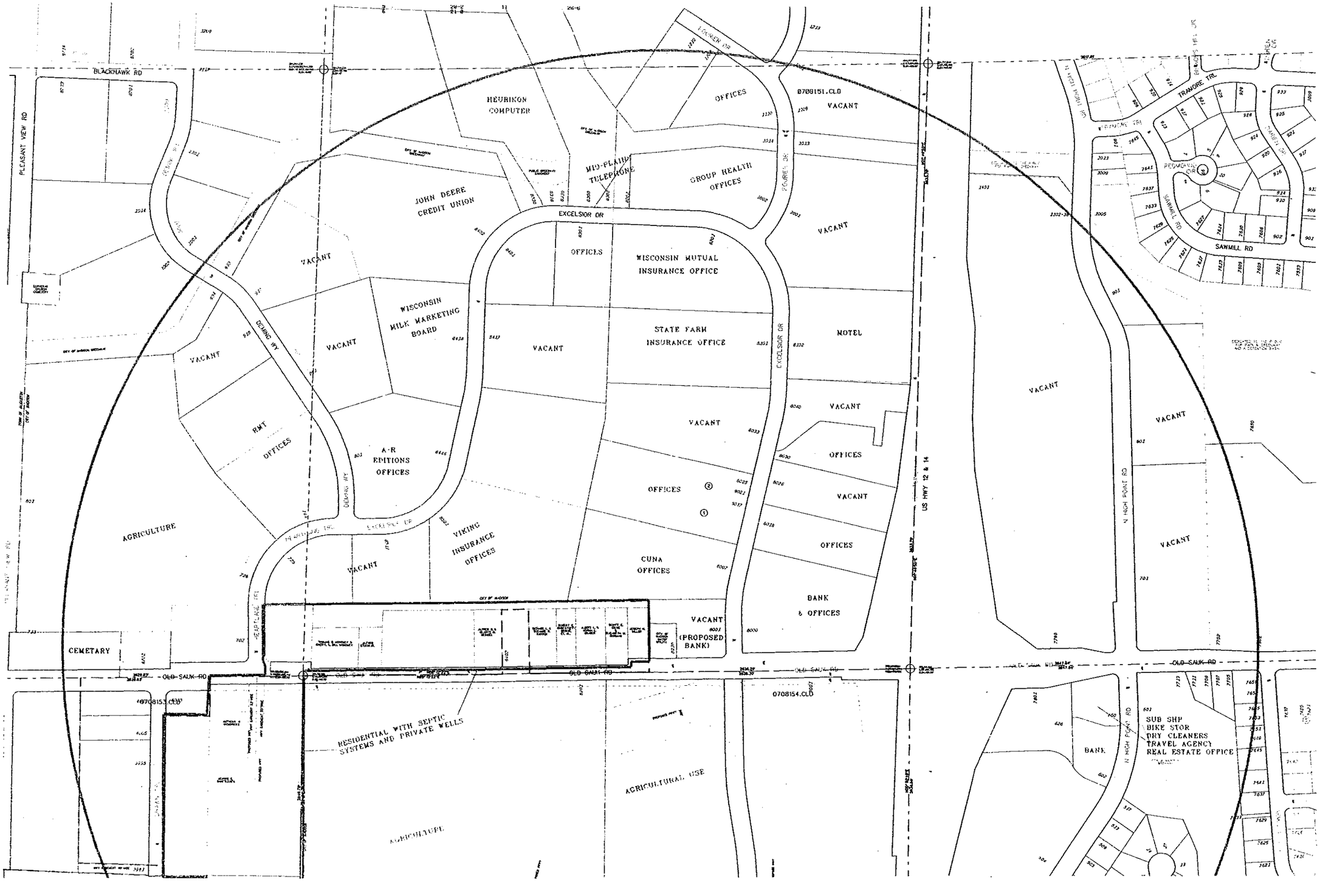
In addition, there is a cemetery 2400 feet west of the proposed site and a dry cleaners 1900 feet southeast of this site.

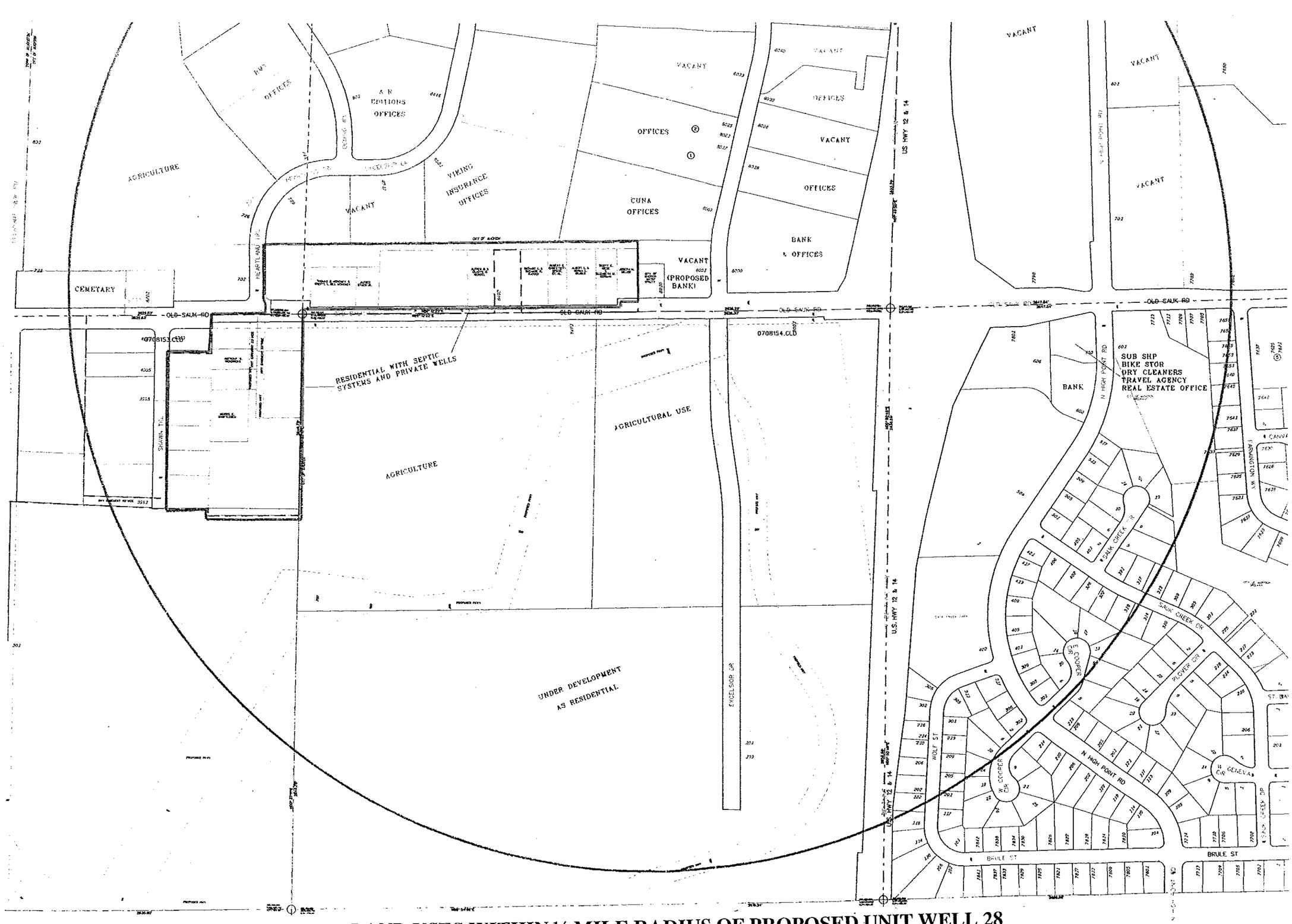
There are also existing municipal sanitary and storm sewer mains in the study area, but these are more than 200 feet from the well site. The city of Madison Engineering Division has agreed that all sanitary sewer mains extended within 200 feet of the well and all storm sewer mains extended within 50 feet of the well will be constructed to water main pressure pipe standards.

CONCLUSION

Due to the need for additional water supply in this part of the city, and due to the need of the adjacent land owner to be able to schedule his development, your prompt review of this study would be appreciated. If I can be of any assistance to you during the course of your review, feel free to contact me at (608) 266-4646.

LAND USES WITHIN ½ MILE RADIUS OF PROPOSED UNIT WELL 28





LAND USES WITHIN ½ MILE RADIUS OF PROPOSED UNIT WELL 28

Table 1

Inventory of Potential Contaminant Sources

1___ Abandoned Wells

2_X_ Above Ground Storage Tank

3_X_ Agricultural Fertilizer Use

4_X_ Agricultural Pesticide Use

5___ Airport

6___ Animal Feedlot, Barnyard Waste Storage Pit

7___ Auto Repair, Body Shop, Salvage, Car Wash

8_X_ Cemetery

9___ Chemical Production or Storage

10___ Electroplaters, Metal Refinishing

11___ Fertilizer/Pesticide Storage, Mixing, Production or Loading

12___ Golf Course

13___ Grain Storage Site

14___ Hazardous Waste Site

15___ Holding Pond/Lagoon

16___ Infiltration Pond

17___ Injection, Drainage Well

18___ Irrigation System

19___ Landfill (active or abandoned)

20_X_ Laundromat or Dry Cleaner

21___ Machine Shop

22___ Manure Spreading

23_X_ Municipal Sewer

24___ Mining Operation (Gravel Pit, Quarry)

25___ Oil or Gas Pipeline

26___ Photo Processors

27___ Plastics Manufacturing

28___ Printers

29_X_ Private Wells

30___ Production or Other Wells

31___ Road Salt Storage (usage)

32_X_ Septic Systems

33___ Service or Gas Stations

34___ Sewage Treatment Plant

35___ Underground Storage Tank

36___ Urban Fertilizer and Pesticide Use

37___ Waste Tailing Piles

38___ Wood Preserving Facility

39___ Other (Specify)

Water Utility

City of Madison

Gary A. Graham, Manager

September 13, 1995

Norm Hahn
State of Wisconsin
Department of Natural Resources
P.O. Box 7921
Madison, WI 53707

RE: Proposed City of Madison Old Sauk Road Well Site

Dear Norm:

This letter is in response to your correspondence of October 17, 1994, with questions concerning the proposed Old Sauk Road well site.

1. The reason that the test well will be drilled only to the top of the Mount Simon formation is that the Madison Water Utility feels that it is not cost effective to drill deeper. We are not concerned about adequate capacity, only about water quality and unusual geologic formations. We expect that these problems, if present, will be evident in the upper geologic formations. This test well will be pumped at a rate of 300 gpm for 24-hours. We will test the water for inorganics and VOCs, and especially for iron and manganese.

2. Middleton Well No. 6 is 5800 feet north of the proposed site. Madison Well No. 16 is 8500 feet southeast of the proposed site.

3. Calculations and assumptions for the zone of influence have been prepared by Ken Bradbury of WGNHS and are shown on the attached sheet.

4. Ken Bradbury's distance-drawdown analysis shows that there is a potential for this well to impact neighboring municipal wells. For example his model shows that at Middleton Well No. 6, the static water level could be lowered as much as 22 feet. In accordance with NR 811.13 this analysis has been performed assuming 30-days continuous pumping with no recharge. Because this represents a worst case scenario, I feel the actual impact will be less.

   This well is not located in the Black Earth Creek watershed. At its closest location this watershed is approximately 6700 feet northwest of the well site. Ken Bradbury's model does indicate there is a potential for impact on this watershed, but, due to its distance from the well, I feel this impact will be minimal especially when compared to those municipal wells inside the watershed.

523 East Main Street
Madison, Wisconsin 53703
608 266 4651

5. Since a final building layout for this site has not been determined, the exact location of this well has not been determined. I am certain, however, that the final well location will be within a 30-foot radius of the center of the site.

6. Since the well site survey report was originally sent to your office, the adjoining property owner has withdrawn his request for a property trade. Therefore, the only site under consideration is the existing Water Utility property.

7. The above ground storage tank is approximately 200 feet west of the site. The closest agriculture fertilizer and pesticide use is approximately 180 feet south of the site. The cemetery is 2350 feet west of the site. The Dry Cleaners is 1900 feet southeast of the site. The closest municipal sewer is 300 feet east of the site. The closest private well and septic system is 120 feet west of site. All distances are measured from the center of the site.

8. The major disadvantages to the proposed well site are the existing sources of contamination with the most critical being the existing private wells and septic systems immediately west of this well site. If necessary, the Madison Water Utility is prepared to request that the City of Madison extend public sanitary sewer to eliminate the septic systems.

   The advantage to this site is that the Madison Water Utility already owns the site and thus it is ready for immediate development. It is also adjacent to an existing 16" distribution main. If a new site must be found, it would likely be west of the existing site, due to the presence of existing development and existing municipal wells. This would increase the possibility of this well having an impact on the Black Earth Creek watershed. This would also delay the time this well could be put into service and increase the cost due to the need to extend distribution mains

9. A study of the DNR's Wisconsin wetlands inventory map shows that there are no platted wetlands within a ½ mile radius of the site. The closest platted wetland is a small area 3000 feet south of the site and this area is currently being farmed. The next closest wetland is known as Stricker Pond and it is 5600 feet northeast of the site.

   The operation of this proposed well should have no impact on any wetlands.

I hope this information is satisfactory for your approval of this project.

Sincerely,

MADISON WATER UTILITY

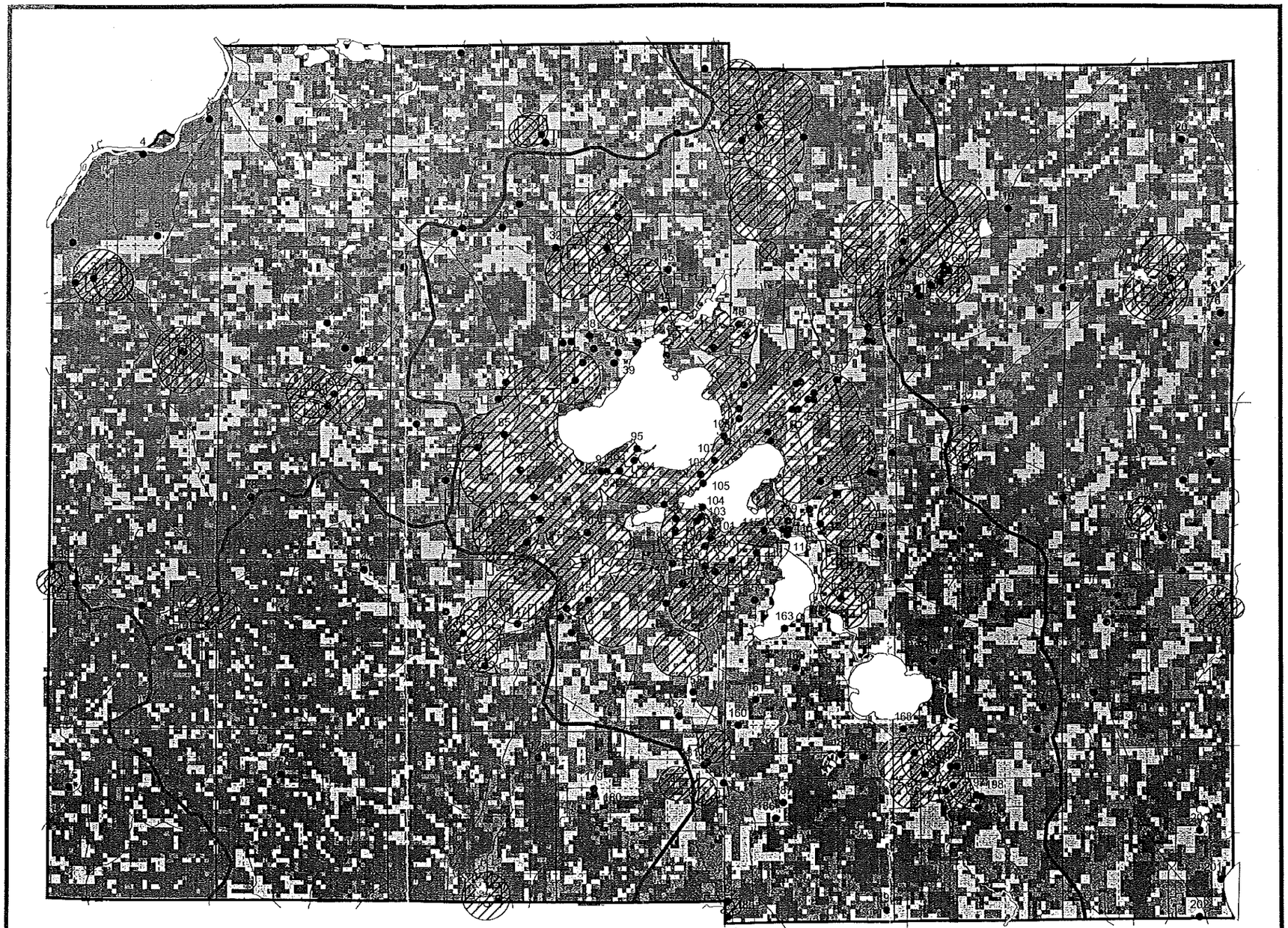
Dennis M. Cawley
Senior Civil Engineer

DMC:kw/olsauk.site

APPENDIX K

SOLID WASTE STORAGE SITES IN DANE COUNTY

MAP 23



Source: DCRPC, 1999

Appendix C

Solid Waste Disposal Sites in Dane County

DCRPC: 1993a

Map No.	Site Name	Township	Section	Years of Operation	Type of Waste[1]	DNR ID No.[2]	Source of Information[3]
1	T. Mazomanie	Mazomanie	SE SE 6	1949-1971	W,T,G	—	DCRPC Dane Co. Solid Waste Plan
2	V. Mazomanie	Mazomanie	SE NE 18	?	W	Post-Reg.	DNR County Files Bureau
3	Wick Bldg. Systems	Mazomanie	NE NE 17	1967-1973	W, D	480 Temp.	DNR Licensing Log 1970
4	August Shemanek*	Mazomanie	SW 22	?	U	Post-Reg.	DNR County Files Bureau
5	Mazomanie Land Disposal	Mazomanie	NE SE 3	1971-1983	H,D,W,T,G	WID980678197	ERRIS 10/20/83
6	V. Prairie du Sac	Mazomanie	NW SE 13	?	?	—	Public
7	T. Roxbury	Roxbury	NW SW 16	pre-1970-1991	T,G,M	608	DNR Madison Area Files
8	T. Dane	Dane	NE 4	1965-1969	U	Pre-Reg.	DCRPC Dane Co. Solid Waste Plan
9	T. Dane	Dane	NW SE 35	1970-1992	G	335	DNR Madison Area Files
10	V. Dane	Dane	NE NW 24	1958-1974	W,T,G	—	DCRPC Dane Co. Solid Waste Plan
11	V. Dane	Dane	SE NW 24	? - 1990	W,T,G	1142	DNR Madison Area Files
12	T. Vienna	Vienna	NW NW 23	1970-1986	D,W,T,G	928	DNR Madison Area Files
13	V. DeForest	Vienna	SW SW 1	1971-1991	W,T,G	1835	DNR Madison Area Files
14	V. DeForest	Windsor	NW NW 17	?-1971	W,T,G	—	DCRPC Dane Co. Solid Waste Plan
15	T. Windsor*	Windsor	SW SW 8	1971-1972	W,T,G	—	DCRPC Dane Co. Solid Waste Plan
16	V. DeForest	Windsor	18	?	?	Post-Reg.	DNR Central Files
17	T. Windsor	Windsor	SW NE 16	1972-1991	W,T,G	519	DNR Madison Area Files
18	T. Bristol	Bristol	NW SE 5	1968-1991	T,G	579	DNR Madison Area Files
19	Eckel Sanitary Service	Bristol	NE NE 34	1969-1970	T,G	Pre-Reg.	DCRPC Dane Co. Solid Waste Plan
20	T. York	York	NW SW 14	pre-1969-1990	W,T,G	537	DNR Madison
21	V. Black Earth - School Playground	Black Earth	N 1/2 SE 26	?	?	Pre-Reg.	Public
22	V. Black Earth - Fireman's Park	Black Earth	N 1/2 SE 26	?	?	Pre-Reg.	Public
23	T. Berry	Berry	SE 22	1971-1992	W,T,G	1927	DNR Madison Area Files
24	V. Cross Plains	Berry	NE SW 26	1968-1990	D,W,T,G	64	DNR Madison Area Files
25	V. Cross Plains	Berry	SE SE 26	1956-1968	W,T	Pre-Reg.	DCRPC Dane Co. Solid Waste Plan
26	T. Berry	Berry	SW SW 25	?-1971	D,W,T,G	285 Temp.	DNR Licensing Log 1970
27	George Pulvermacher	Springfield	NW SE 7	?	U	Post-Reg.	DNR County Files Bureau Site questioned by Town Clerk
28	Jerome Dedrich	Springfield	NE SW 4	?-1972	T	2420 Temp.	DNR Madison Area Files
29	Thomas Helt Disposal	Springfield	SW NE 4	1969-1973	U	—	DNR Madison Area Files
30	T. Springfield	Springfield	SW NW 2	1972-1988	T	256	DNR Madison Area Files
31	T. Springfield	Springfield	SW 35	?-1972	T,G	—	DCRPC Dane Co. Solid Waste Plan
32	V. Waunakee	Springfield	NE 12	?-1953	U	Pre-Reg.	DCRPC Dane Co. Solid Waste Plan
33	Metropolitan Refuse District	Westport	SW NW 30	1961-	W,T,G	107	Active Site
34	Metropolitan Refuse District	Westport	NW 30	?	?	107 Temp.	DNR County Files Bureau
35	Herbrand Sand & Gravel-Midwest Steel	Westport	NW SE 31	1972-1978	H,W	Post-Reg.	DNR County Files Bureau
36	UW-Madison Burning Pit	Westport	NE NE 31	1972-1981	H	Post-Reg.	DNR County Files Bureau
37	Westport Sand & Gravel (Demo)	Westport	SW 29	?	D	Post-Reg.	DNR County Files Bureau
38	Ramesh Pit (Demo)	Westport	W 1/2 NW 29	?	D	Post-Reg.	DNR County Files Bureau
39	Unnamed Site	Westport	NE 32	?	?	—	Greater Madison Board of Realtors Not Listed in DNR Inventory
40	T. Westport	Westport	SW SW 28	1960s	T,G	—	DCRPC Dane Co. Solid Waste Plan Existence questioned by DNR
41	T. Westport	Westport	SE 28	1940s	T,G	Pre-Reg.	DCRPC Dane Co. Solid Waste Plan
42	Mendota State Hospital	Westport	SE SE 27	?	U	—	DNR County Files Bureau
43	C. Madison-Lakeview	Westport	NE SW 25	1920-1960?	U	Pre-Reg.	Public
44	Harold Zelgler	Westport	SW NE 22	1976	D	Post-Reg.	DNR County Files Bureau
45	T. Westport	Westport	SE SE 10	1966-1987	D,W,T,G	509	DNR Madison Area Files

Source: DCRPC, 1999

Solid Waste Disposal Sites in Dane County

DCRPC: 1993a

Map No.	Site Name	Township	Section	Years of Operation	Type of Waste[1]	DNR ID No.[2]	Source of Information[3]
46	V. Waunakee	Westport	NE 8	1950s	U	Pre-Reg.	DCRPC Dane Co. Solid Waste Plan
47	Scientific Protein Lab	Westport	NW NW 4	1976-1977	U	—	DNR Madison Area Files
48	V. Maple Bluff	Burke	SE SW 18	1954-	W	166	Active Site
49	Findorff Demolition	Burke	NE 19	?	D,W	Post-Reg.	DNR Southern District Files
50	C. Madison-Truax Field	Burke	NW NE 31	1948-1972	W,T,G,H	—	DNR Madison Area Files
51	C. Madison-Oscar Mayer RDF Receiving Facility	Burke	SE SW 31	1977-	T	2872?	DNR
52	Madison Crushing and Excavation	Burke	SE SW 33	pre-1972	D	672 Temp.	DNR Madison Area Files
53	Gilomen Truck & Equipment	Burke	SW SE 33	?	D,T	Post-Reg.	DNR County Files Bureau
54	H. Samuels Midwest Steel	Burke	SE NE 33	?	Auto shredder	Post-Reg.	DNR Southern District Files
55	C. Madison-Sycamore	Burke	NW SW 34	1972-1977	D,W,T,G	1935 Temp.	DNR Madison Area Files
56	C. Madison-Sycamore Brush Site	Burke	SW NW 34	1963-1975	W	304 Temp.	DNR Madison Area Files
57	Russ Darrow Foundry	Burke	SW SE 28	1976-1977	F	2682 Temp.	DNR Southern District Files
58	RTRV Partnership	Burke	SE 28	1977-1992	F	2529	DNR Madison Area Files
59	Leona Gerke	Burke	SE SE 27	?	D	2632 Temp.	DNR Madison Area Files
60	T. Burke	Burke	NE SE 23	1975-1991	D,W,T,G	1127	DNR Madison Area Files
61	Otto Zerwick	Burke	NW SW 24	?	?	Post-Reg.	DNR County Files Bureau
62	Madison Prairie Demolition*	Burke	NE NE 23	1981-	D,F,Ash	2918	Active Site
63	J.P. West	Sun Prairie	SW 18	Early 1950s	Organic wastes	Pre-Reg.	DCRPC Dane Co. Solid Waste Plan
64	Herbert Hellenbrand	Sun Prairie	SE SE 7	?	D	2449 Temp.	DNR Madison Area Files
65	Marvin Starks Demolition	Sun Prairie	SE SE 7	?-1975	D	2448 Temp.	DNR Madison Area Files
66	C. Sun Prairie	Sun Prairie	SW SW 8	?-1992	D,W	231	DNR Madison Area Files
67	C. Sun Prairie - Miller Drive	Sun Prairie	SE 8	1970-1974	W	—	DCRPC Dane Co. Solid Waste Plan
68	C. Sun Prairie	Sun Prairie	SW NE 8	1971-1974	W	814 Temp.	DNR Madison Area Files
69	C. Sun Prairie-Angel Park Speedway	Sun Prairie	NE NE 8	?	U	Post-Reg.	Unlicensed Site Log
70	C. Sun Prairie-Transfer Receiving Facility	Sun Prairie	SW SE 5	1980-	W,T,G	2823?	DNR
71	Wisconsin Cheeseman Incinerator	Sun Prairie	SW 6	1972-	T	1856?	DNR
72	Don Simon Realtors	Sun Prairie	NW NW 6	?	U	Post-Reg.	DNR County Files Bureau
73	T. Sun Prairie	Sun Prairie	NW SW 13	1970-1990	W,T,G	620	DNR Madison Area Files
74	T. Sun Prairie	Sun Prairie	SE SE 12	?-1970	U	620 Temp.	DCRPC Dane Co. Solid Waste Plan
75	Phillip Freidel	Medina	NE SE 10	?	?	Post-Reg.	DNR County Files Bureau
76	V. Marshall	Medina	SW SE 13	1970-1988	W,T,G	961	DNR Madison Area Files
77	T. Medina	Medina	SE SW 24	1970-1990	W,T	854	DNR Madison Area Files
78	T. Cross Plains	Cross Plains	SE SW 20	?	D,W,T	325 Temp.	DNR Madison Area Files
79	V. Cross Plains - Transport Gas Station	Cross Plains	NE SE 3	1956-1963	T,G	Pre-Reg.	DCRPC Dane Co. Solid Waste Plan
80	Valley Street Brewery	Cross Plains	NW 2	?	?	Pre-Reg.	Jerry Brunner
81	Refuse Hideaway	Middleton	SW NW 8	1973-1988	D,W,T,G,H	1953	DNR Southern District Files
82	Heather Crest Farms	Middleton	NW NW 21	?-1973	T	Post-Reg.	DNR County Files Bureau
83	Pleasant View Golf Course	Middleton	NW NW 15	?	T	—	DNR Southern District Files
84	Ray Weitzel	Middleton	SE NE 3	?	?	Post-Reg.	DNR County Files Bureau
85	Prefinished Millwork Corp.	Middleton	NW SW 11	?	?	WID063524342	ERRIS 10/20/83
86	Dennis Howard Dump	Middleton	SW SE 14	?-1977	W,T	Post-Reg.	DNR County Files Bureau
87	C. Madison-Mineral Point	Middleton	SW 24	1965-1971	H,T,G	303 Temp.	DNR Madison Area Files
88	Herman Schnoor	Middleton	NE SW 25	?-1973	D	—	DNR Southern District Files
89	C. Madison-Greentree Hills	Middleton	SW NW 36	1973-1982	W,T,G	1714 Temp.	DNR Madison Area Files
90	C. Madison Odana Hills Golf Course	Madison	NE NE 31	?	?	—	Public
91	C. Madison-Old Brickyard	Madison	SW SE 17	1938-1941	U	Pre-Reg.	DCRPC Dane Co. Solid Waste Plan
92	V. Shorewood-Steve's Liquor & Kohls	Madison	SE 17	?	?	Pre-Reg.	Public
93	V. Shorewood Hills - Doctors Park	Madison	SE SW 16	?	W	Pre-Reg.	DNR Southern District Files
94	UW-University Bay	Madison	SW NE 16	1968(?)-1971	D, Ash	—	DCRPC Dane Co. Solid Waste Plan
95	UW-Picnic Point	Madison	NE NE 16	?	D,W	Pre-Reg.	DNR Southern District Files

Solid Waste Disposal Sites in Dane County

DCRPC: 1993a

Map No.	Site Name	Township	Section	Years of Operation	Type of Waste[1]	DNR ID No.[2]	Source of Information[3]
96	C. Madison-St. Mary's Parking Lot	Madison	NE NE 27	?	U	Pre-Reg.	Public
97	C. Madison-Fiore Plat	Madison	NW SW 26	1932-1935	U	Pre-Reg.	DCRPC Dane Co. Solid Waste Plan
98	C. Madison-Bowman Field	Madison	SW SW 26	?	U	Pre-Reg.	City of Madison
99	Icke Construction	Madison	NW SW 36	?-1983	D, Ash	2041 Temp.	DNR Madison Area Files
100	Coyle Inc.	Madison	NE NW 36	?	U	Post-Reg.	DNR County Files Bureau
101	Lennes Schlobohm	Madison	NE NW 36	?	D	Post-Reg.	DNR County Files Bureau
102	C. Madison-Olin	Madison	NW SW 25	1945-1976	U	305 Temp.	City of Madison
103	C. Madison-Olin Milling	Madison	NW SW 25	?	T,G	2026?	DNR Southern District Files
104	C. Madison-Lakeside	Madison	NW NW 25	1937-1939	U	Pre-Reg.	DCRPC Dane Co. Solid Waste Plan
105	C. Madison-Law Park	Madison	NW 24	1941-1946	U	Pre-Reg.	DCRPC Dane Co. Solid Waste Plan
106	C. Madison - Madison Square	Madison	SW SW 13	1953-1969	?	Pre-Reg.	Newspaper Article
107	Madison Gas & Electric RDF Storage Facility	Madison	S 1/2 13	?	T,RDF	2769?	DNR Southern District Files
108	Madison Gas & Electric	Madison	SE 12	1941(?)-1944	U	Pre-Reg.	DCRPC Dane Co. Solid Waste Plan
109	C. Madison-Burr Jones	Blooming Grove	NW 7	1927-1930	U	Pre-Reg.	DCRPC Dane Co. Solid Waste Plan
110	C. Madison-Demetral Field	Blooming Grove	NE NW 6	1952-1967	T,G	1967 Temp.	City of Madison
111	Garver Supply	Blooming Grove	NW SE 5	?	D	—	DNR Southern District Files
112	C. Madison-Olbrich Park	Blooming Grove	SE 5	1946-1951	U	Pre-Reg.	DCRPC Dane Co. Solid Waste Plan
113	Nutri-Feed Corp.	Blooming Grove	W 1/2 31	?	?	2631 Temp.	DNR
114	Madison Metropolitan Sewerage District	Blooming Grove	SW SW 29	—	Sludge	—	Active Site
115	Gisholt Foundry	Blooming Grove	NE NW 29	1971-1972	F	—	DNR Madison Area Files
116	L.S. Lunder Construction Co.	Blooming Grove	N 1/2 NW 28	?	?	407 Temp.	DNR Licensing Log 1970
117	C. Monona	Blooming Grove	NW NW 28	1963-1972	W,G	50 Temp.	DNR License Log 1970
118	Harp & Kettle Cheesehouse	Blooming Grove	NW 28	?	D	Post-Reg.	DNR County Files Bureau
119	Goben Cars	Blooming Grove	SW SW(?)21	?	D,W	Post-Reg.	DNR County Files Bureau
120	Hy-Ho Silver Inc.	Blooming Grove	W 1/2 NW 22	?	?	WID980610596	ERRIS 10/20/83
121	L.A.O. Machine Shop	Blooming Grove	SE SW 22	?	?	Post-Reg.	DNR Southern District Files
122	Terra Engineering & Construction Corp.	Blooming Grove	SE SE 15	1972-	D,W	1912	Active Site
123	Midwest Steel	Blooming Grove	NE SW 15	1976-1980	Auto Shredder	2528 Temp.	DNR Southern District Files
124	T. Blooming Grove	Blooming Grove	NW NW 13	1954-1960	U	Pre-Reg.	DCRPC Dane Co. Solid Waste Plan
125	D & M Construction	Blooming Grove	NW 13	?	D,G	Post-Reg.	DNR County Files Bureau
126	T. Blooming Grove	Blooming Grove	SW NE 12	1961-1991	W,T,G	569	DNR Madison Area Files
127	C. Madison - Yahara Hills Golf Course	Blooming Grove	NE SW 25	?	?	—	Public
128	Dane County-Rodefeld	Blooming Grove	NE 25	1985-	D,W,T,G	3018	Active Site
129	T. Cottage Grove	Cottage Grove	NW NE 28	1969-1988	D,W,T,G	585	DNR Madison Area Files
130	Fred Schroeder	Cottage Grove	SW SW 16	?-1974	T,F	Post-Reg.	DNR County Files Bureau
131	Hydrite Chemical Company	Cottage Grove	NW NE 16	?	?	WID000808824	ERRIS 84
132	Irving Smith Fill Site	Cottage Grove	NW NE 4	?	D,W	Pre-Reg.	DNR Southern District Files
133	Taliaferre Tire Storage Site	Cottage Grove	NE 24	?-1973	Tires	—	DNR Madison Area Files
134	V. Deerfield	Deerfield	SW SW 22	?-1981	D,W	8 Temp.	DNR Southern District Files
135	T. Deerfield	Deerfield	SW SE 27	1970-1991	W,T,G	1095	DNR Madison Area Files
136	Thompson State Camp	Deerfield	SE SW 35	1969-1970	T,G	492 Temp.	DNR Licensing Log-1970
137	Zickert Farm	Deerfield	NE SW 14	?	?	Post-Reg.	DNR County Files Bureau
138	Unnamed Site	Deerfield	NW 13	?	?	Post-Reg.	Greater Madison Board of Realtors Not Listed in DNR Inventory
139	Blue Mounds State Park - Near entrance	Blue Mounds	SW NW 6	?	?	Pre-Reg.	Public
140	Brigham Farm	Blue Mounds	SW SW 5	?-1976	D,W	Post-Reg.	DNR County Files Bureau

Solid Waste Disposal Sites in Dane County

DCRPC: 1993a

Map No.	Site Name	Township	Section	Years of Operation	Type of Waste[1]	DNR ID No.[2]	Source of Information[3]
141	V. Mt. Horeb	Blue Mounds	NE SW 10	Pre-1943	U	Pre-Reg.	DCRPC Dane Co. Solid Waste Plan
142	V. Mt. Horeb	Blue Mounds	SE SE 14	1943-1975	D,W,T,G	1329 Temp.	DNR Madison Area Files
143	Edgar Markwardt	Springdale	SW NW 1	1960s	H	Pre-Reg.	DNR Southern District Files
144	T. Verona	Verona	SW SW 9	pre-1968-1990	W,T,G	712	DNR Madison Area Files
145	C. Verona	Verona	NE SE 16	1968-1971	W,T	—	DCRPC Dane Co. Solid Waste Plan
146	C. Verona	Verona	NE SW 22	1940-1950	T,G	Pre-Reg.	DNR Madison Area Files
147	Dane County-Verona Landfill	Verona	NE 14	1977-1986	D,W,T,G	2680	DNR Madison Area Files
148	C. Fitchburg	Fitchburg	NE SW 18	?	U	Pre-Reg.	Public
149	Keith Hammersley, Jr.	Fitchburg	SE SW 7	1970-1980	D,W,T	1128 Temp.	DNR Southern District Files
150	Wis. Brick & Block	Fitchburg	NE SW 7	?	D,W,T,G,Tires	Post-Reg.	DNR County Files Bureau
151	Hammersley Stone Co. - Yanggen	Fitchburg	NE NE 7		D	Demo	Co. Solid Waste Tracking System
152	Oregon State Farm	Fitchburg	SE NW 35	?-1972	G	246 Temp.	DNR Madison Area Files
153	Wis. School for Girls	Fitchburg	NE SE 26	1969-1971	T,G	518 Temp.	DNR Licensing Log-1970
154	Nevin Hatchery	Fitchburg	SE NE 10	1974	D	831 Temp.	DNR Licensing Log-1970
155	Hammersley Const. Co.	Fitchburg	SE SW 2	1977	D	One-Time	DNR County Files Bureau
156	Stewart Watson	Fitchburg	NW NW 2	?	D	Post-Reg.	DNR County Files Bureau
157	Schuepbach	Fitchburg	NW 1	?-1973	D,W	—	Dane Co. - Existence of site is questioned
158	Madison Crushing Co.	Fitchburg	NW SE 1	1971-1973	D,F	Post-Reg.	DCRPC Dane Co. Solid Waste Plan
159	Holtzman Solid Waste	Dunn	SE SE 6	pre-1971-1992	Lab animals	247	DNR Southern District Files
160	Waste Management of Wis.-City Disposal[4]	Dunn	SE SW 30	1966-1977	H,D,W,T,G	37 Temp.	DNR Madison Area Files
161	Arlo Ladell (T & H)	Dunn	NW NW 29	?	?	WID980610125	ERRIS 10/20/83
162	T. Dunn	Dunn	NW NE 21	1970-1991	T,G	1871	DNR Madison Area Files
163	Crescent Drive Site	Dunn	SW 9	?	?	—	Greater Madison Board of Realtors Not Listed in DNR Inventory
164	V. McFarland	Dunn	NW SW 2	1972-1975	W	929 Temp.?	Newspaper Article
165	Lloyd Dowming	Pleasant Springs	NW NW 6	?-1973	T	—	DNR Southern District Files
166	Old Time Auto Parts - I 90 Rubble	Pleasant Springs	NE SW 9	?	?	—	Greater Madison Board of Realtors Not Listed in DNR Inventory
167	Clifford Sagen	Pleasant Springs	SE SW 17	?	D	Post-Reg.	DNR Dane Co. Files Bur.
168	T. Pleasant Springs - 2 acres	Pleasant Springs	E 1/2 NW 31	1940-1966	?	—	Greater Madison Board of Realtors Not Listed in DNR Inventory
169	T. Pleasant Springs	Pleasant Springs	SW NW 36	1972-1989	D,W,T,G	1955	DNR Madison Area Files
170	T. Pleasant Springs[4]	Pleasant Springs	NE SW 25	1967-1972	W,T,G	7 Temp.	DNR Licensing Log - 1970
171	T. Christiana	Christiana	NW NW 29	?-1970	U	Pre-Reg.	DCRPC Dane Co. Solid Waste Plan
172	T. Christiana	Christiana	NE SW 8	?-1986	W,T	803	DNR Madison Area Files
173	Bob Birkrem	Christiana	NE SE 5	?	D,G	Post-Reg.	DNR Dane Co. Files Bur.
174	Melster Candy Kitchens	Christiana	NW NE 12	?	U	Post-Reg.	Unlicensed Site Log
175	T. Perry	Perry	NE NE 18	1970-1991	D,W,T	778	DNR Southern District Files
176	T. Primrose	Primrose	NE SW 9	1970-1974	T,G	1218 Temp.	DNR Licensing Log-1970
177	V. Belleville	Montrose	SE SE 34	1972-1988	D,W	79 Temp.	DNR Southern District Files
178	T. Montrose	Montrose	SE SW 1	?-1973	D,W,G	757 Temp.	DNR Licensing Log-1970
179	T. Oregon	Oregon	NE NW 17	?-1974	W	576 Temp.	DNR Licensing Log-1970
180	Dane County Hwy. Dept.-Aces' Pit[4]	Oregon	SE NW 17	?-1974	D,W,T	985 Temp.	DNR Madison Area Files
181	V. Oregon - Senior Citizen Center	Oregon	NW 12	?	?	Pre-Reg.	Public
182	V. Oregon - Kiser Park	Oregon	NE NW 12	?	?	Pre-Reg.	Public
183	Oregon Kar Body	Rutland	NW NW 7	?-1973	D	—	DNR Southern District Files
184	Disposal Site North of STH 92	Rutland	SW NW 31	?	?	Pre-Reg.	Greater Madison Board of Realtors Not Listed in DNR Inventory
185	V. Brooklyn	Rutland	SW SW 31	1969-1988	D,W	581	DNR Madison Area Files

Solid Waste Disposal Sites in Dane County

DCRPC: 1993a

Map No.	Site Name	Township	Section	Years of Operation	Type of Waste[1]	DNR ID No.[2]	Source of Information[3]
186	T. Rutland	Rutland	SE NE 17	1974-1992	W,T,G	2115	DNR Madison Area Files
187	Oregon Race Track	Rutland	SW SW 9	?-1973	T	Post-Reg.	DNR Dane County Files Bureau
188	T. Rutland	Rutland	NW NW 2	1970-1974	W,T,G	1584 Temp	DNR Licensed Site
189	Every Farm	Rutland	SE NE 2	1963-1966	H	WID980610794	ERRIS 10/20/83
190	T. Rutland	Rutland	NW SE 36	1950s	U	Pre-Reg.	DCRPC Dane Co. Solid Waste Plan
191	Petty Realty - Keenan Lane	Dunkirk	NE NE 6	?	?	Post-Reg.	DNR County Files Bureau
192	C. Stoughton - St. Ann's School	Dunkirk	SW SW 5	?	U	Pre-Reg.	Public
193	C. Stoughton	Dunkirk	SE NE 8	?	U	Pre-Reg.	DNR Madison Area Files
194	C. Stoughton - Nelson St.	Dunkirk	NW NW 9	?	?	Pre-Reg.	Mrs. Hanson
195	C. Stoughton	Dunkirk	NW SW 4	?	?	133 Temp.	DNR
196	C. Stoughton (Amundson Park)	Dunkirk	NE SW 4	1953-1978	H	WID?	DNR Madison Area Files
197	Thomas Matson (Demo Site)	Dunkirk	NW SW 10	?	U,D	Post-Reg.	DNR County Files Bureau
198	Orrin Hagen Farm	Dunkirk	NE SW 10	Late 1950s-early 1960s	H	WID980610059	ERRIS 10/20/83
199	T. Dunkirk*	Dunkirk	NE NE 16	?-1986	W,T,G	860	DNR Madison Area Files
200	T. Albion	Albion	NE NE 23	1967-1972	G	Pre-Reg.	DNR Southern District Files
201	Gus Oberg's Bar	Albion	NW SE 25	?	D,W,T	2731 Temp	DNR
202	T. Albion	Albion	SE SE 35	1973-1986	D,W,T	987?	DNR

*There may be other nearby or associated disposal sites.

Note: All landfills are closed or inactive, except for Map #33, 48, 62, 122 and 128.

[1]Type of Waste

- U = Undifferentiated
- W = Wood and brush
- T = Trash
- G = Garbage (discarded materials from food processing and consumption)
- D = Construction and demolition waste
- F = Foundry waste
- H = Hazardous waste

[2]DNR ID No.

WID: Prefix identifies sites that have formally received hazardous waste generator numbers from the U.S. Environmental Protection Agency (EPA).

Temp: Indicates that a temporary permit or license has been issued.

Post-Reg or Pre-Reg: Indicates whether disposal occurred previous to or following the 1969 requirements that landfills be licensed by the state.

Demo: Demolition sites requiring permits are noted by "one-time" or "Demo."

[3]Source of Information

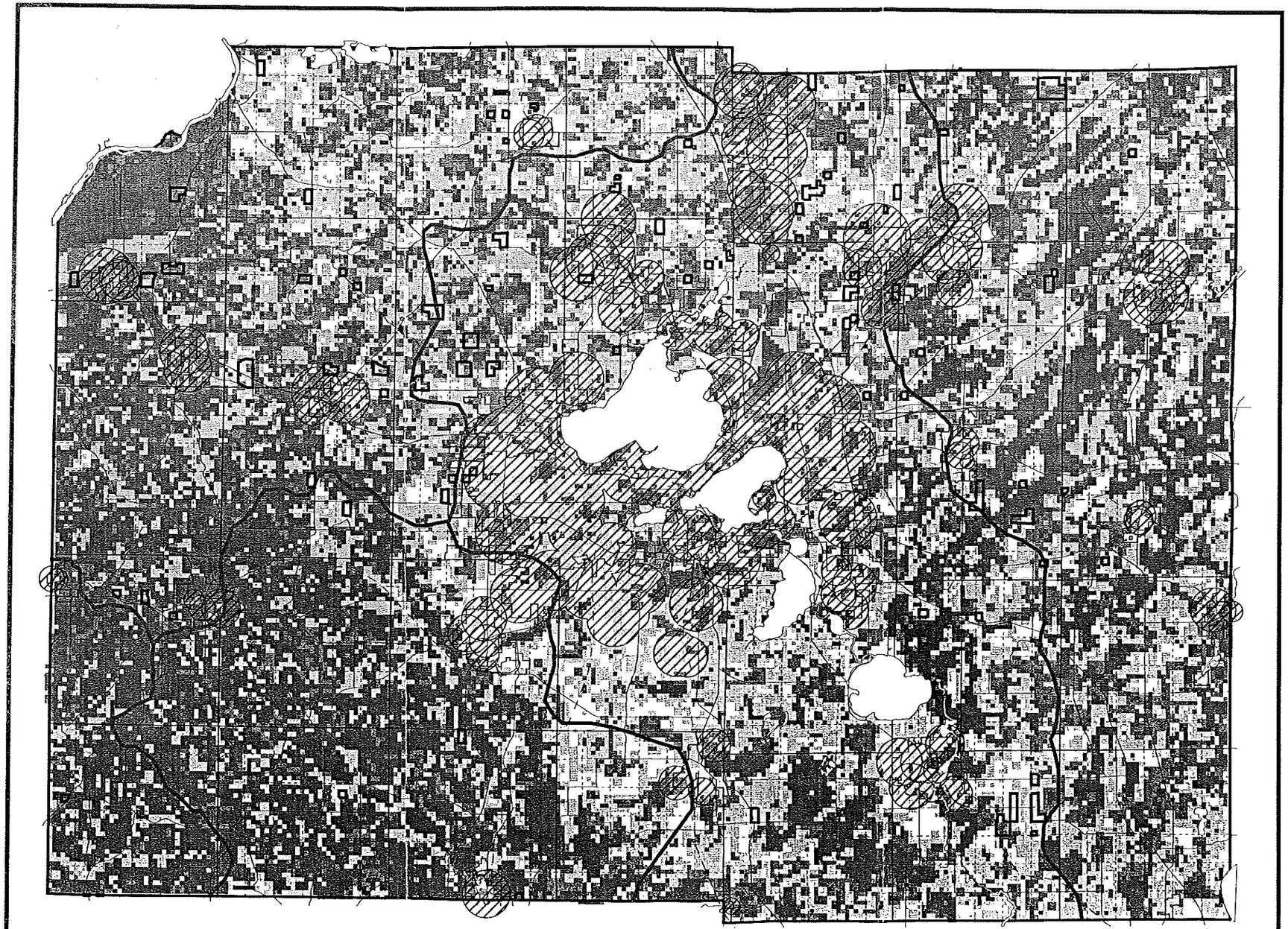
This can include: DNR Area, District and Central Office files as of 6/93; Dane County Regional Planning Commission reports; Greater Madison Board of Realtors Listing 3/93; newspaper articles; the name of a private citizen knowledgeable about the site; or a reference to various other federal or DNR listings. For example, ERRIS = EPA Emergency and Remedial Response Information List.

NOTE: This table and associated map indicate only the general location of waste disposal sites identified by the DNR and other governmental units and private entities. In many cases, the exact boundaries and precise contents of the sites are not known.

APPENDIX L

STATE APPROVED SEPTAGE APPLICATION SITES IN DANE COUNTY

MAP 29



State Approved Septage Application Sites and Groundwater Contamination Risk from Surface Activities

Risk
- Low
- Moderate
- High
- Extreme

- Well Protection Zone
- Major Groundwater Divide
- Septage Disposal Sites

(Source: Dane County Regional Planning Commission, 11/97).

Dane County, Wisconsin
July, 1999

0 N 4
Miles

Prepared by: The Dane County Regional Planning Commission

Source: DCRPC, 1999

APPENDIX M

PROHIBITED LAND USES IN WHPAs, POTENTIAL SOURCES OF GROUNDWATER CONTAMINATION AND LAND USES, AND THEIR RELATIVE RISK TO GROUNDWATER

TABLE M-1
RECOMMENDED PROHIBITED LAND USES
UNIT WELL 28 WELLHEAD PROTECTION ZONES
MADISON, WISCONSIN

ZONE A - PROHIBITED USES

Commercial animal confinement facilities
Animal waste facilities
Asphalt products manufacturing
Auto body repair businesses
Auto sales & service
Auto salvage yards (junk yards)
Bus or truck terminals
Commercial bulk fertilizer and/or pesticide facilities (storage, mixing and/or loading)
Cemeteries
Dry cleaning businesses/facilities
Electroplating businesses/facilities
Exterminating businesses/facilities
Fuel storage tanks (heating oil)
Furniture manufacturing and refinishing
Garage and vehicular towing
Hazardous and/or toxic materials storage
Hazardous and/or toxic waste facilities
Industrial businesses that use hazardous chemicals as defined by the EPA
Industrial pipelines
Landfills or waste disposal facilities
Machine shops
Paint and coating manufacturing
Photo processing
Plastics manufacturing
Printing and duplicating businesses that use hazardous chemicals as defined by the EPA
Public and municipal maintenance garages
Radioactive waste facilities
Recycling facilities
Research laboratories
Retail liquid motor fuel dispensing facilities
Salt storage
Septage and/or sewage sludge spreading
Spray wastewater facilities
Stormwater impoundments/retention areas
Underground and aboveground petroleum and chemical product storage tanks
Unsewered residential, commercial, or industrial development
Vehicle Repair shops
Wastewater treatment or disposal facilities

ZONE B - PROHIBITED USES

Commercial animal confinement facilities
Animal waste facilities
Asphalt products manufacturing
Auto body repair businesses
Auto salvage yards (junk yards)
Bus or truck terminals
Commercial bulk fertilizer and/or pesticide facilities (storage, mixing and/or loading)
Dry cleaning businesses/facilities
Electroplating businesses/facilities
Exterminating businesses/facilities

TABLE M-1 (cont.)

ZONE B - PROHIBITED USES (cont.)

Garage and vehicular towing
Hazardous and/or toxic materials storage
Hazardous and/or toxic waste facilities
Industrial businesses that use hazardous chemicals as defined by the EPA
Landfills or waste disposal facilities
Manufacturing businesses that use hazardous chemicals as defined by the EPA
Paint and coating manufacturing
Printing and duplicating businesses that use hazardous chemicals as defined by the EPA
Public and municipal maintenance garages
Radioactive waste facilities
Recycling facilities
Retail liquid motor fuel dispensing facilities
Salt storage
Septage and/or sewage sludge spreading
Spray wastewater facilities
Underground and aboveground petroleum and chemical product storage tanks (less than 600 feet from well)
Unsewered residential, commercial, or industrial development (if sewage system receives 8,000 gallons per day or more)
Vehicle Repair shops
Wastewater treatment or disposal facilities

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Source: USEPA 1993, Wellhead Protection: A Guide for Small Communities, EPA/625/R-93/002

Table 4-4. Potential Sources of Ground Water Contamination

Source	Health, Environmental, or Aesthetic Contaminant[1,2,3]
NATURALLY OCCURRING SOURCES	
Rocks and soils	*Aesthetic Contaminants:* Iron and iron bacteria; manganese; calcium and magnesium (hardness) *Health and Environmental Contaminants:* Arsenic; asbestos; metals; chlorides; fluorides; sulfates; sulfate-reducing bacteria and other microorganisms
Contaminated water	Excessive sodium; bacteria; viruses; low pH (acid) water
Decaying organic matter	Bacteria
Geological radioactive gas	Radionuclides (radon, etc.)
Natural hydrogeological events and formations	Salt-water/brackish water intrusion (or intrusion of other poor quality water); contamination by a variety of substances through sink-hole infiltration in limestone terrains
AGRICULTURAL SOURCES	
Animal feedlots and burial areas	Livestock sewage wastes; nitrates; phosphates; chloride; chemical sprays and dips for controlling insect, bacterial, viral, and fungal pests on livestock; coliform[4] and noncoliform bacteria; viruses
Manure spreading areas and storage pits	Livestock sewage wastes; nitrates
Livestock waste disposal areas	Livestock sewage wastes; nitrates
Crop areas and irrigation sites	Pesticides;[5] fertilizers;[6] gasoline and motor oils from chemical applicators
Chemical storage areas and containers	Pesticide[5] and fertilizer[6] residues
Farm machinery areas	Automotive wastes;[7] welding wastes
Agricultural drainage wells and canals	Pesticides;[5] fertilizers;[6] bacteria; salt water (in areas where the fresh-saltwater interface lies at shallow depths and where the water table is lowered by channelization, pumping, or other causes)
RESIDENTIAL SOURCES	
Common household maintenance and hobbies	*Common Household Products:*[8] Household cleaners; oven cleaners; drain cleaners; toilet cleaners; disinfectants; metal polishes; jewelry cleaners; shoe polishes; synthetic detergents; bleach; laundry soil and stain removers; spot removers and dry cleaning fluid; solvents; lye or caustic soda; household pesticides;[9] photochemicals; printing ink; other common products *Wall and Furniture Treatments:* Paints; varnishes; stains; dyes; wood preservatives (creosote); paint and lacquer thinners; paint and varnish removers and deglossers; paint brush cleaners; floor and furniture strippers *Mechanical Repair and Other Maintenance Products:* Automotive wastes;[7] waste oils; diesel fuel; kerosene; #2 heating oil; grease; degreasers for driveways and garages; metal degreasers; asphalt and roofing tar; tar removers; lubricants; rustproofers; car wash detergents; car waxes and polishes; rock salt; refrigerants
Lawns and gardens	Fertilizers;[5] herbicides and other pesticides used for lawn and garden maintenance[10]
Swimming pools	Swimming pool maintenance chemicals[11]
Septic systems, cesspools, and sewer lines	Septage; coliform and noncoliform bacteria;[4] viruses; nitrates; heavy metals; synthetic detergents; cooking and motor oils; bleach; pesticides;[9,10] paints; paint thinner; photographic chemicals; swimming pool chemicals;[11] septic tank/cesspool cleaner chemicals;[12] elevated levels of chloride, sulfate, calcium, magnesium, potassium, and phosphate
Underground storage tanks	Home heating oil
Apartments and condominiums	Swimming pool maintenance chemicals;[11] pesticides for lawn and garden maintenance and cockroach, termite, ant, rodent, and other pest control;[9,10] wastes from onsite sewage treatment plants; household hazardous wastes[8]

Table 4-4. Potential Sources of Ground Water Contamination (continued)

Source	Health, Environmental, or Aesthetic Contaminant[1,2,3]
MUNICIPAL SOURCES	
Schools and government offices and grounds	Solvents; pesticides;[9,10] acids; alkalis; waste oils; machinery/vehicle servicing wastes; gasoline and heating oil from storage tanks; general building wastes[13]
Park lands	Fertilizers;[6] herbicides;[10] insecticides[9]
Public and residential areas infested with mosquitoes, gypsy moths, ticks, ants, or other pests	Pesticides[5,9]
Highways, road maintenance depots, and deicing operations	Herbicides in highway rights-of-way;[5,10] road salt (sodium and calcium chloride); road salt anticaking additives (ferric ferrocyanide, sodium ferrocyanide); road salt anticorrosives (phosphate and chromate); automotive wastes[7]
Municipal sewage treatment plants and sewer lines	Municipal wastewater; sludge;14 treatment chemicals[15]
Storage, treatment, and disposal ponds, lagoons, and other surface impoundments	Sewage wastewater; nitrates; other liquid wastes; microbiological contaminants
Land areas applied with wastewater or wastewater byproducts	Organic matter; nitrate; inorganic salts; heavy metals; coliform and noncoliform bacteria;[4] viruses; nitrates; sludge;[14] nonhazardous wastes[16]
Storm water drains and basins	Urban runoff; gasoline; oil; other petroleum products; road salt; microbiological contaminants
Combined sewer overflows (municipal sewers and storm water drains)	Municipal wastewater; sludge;[14] treatment chemicals;[15] urban runoff; gasoline; oil; other petroleum products; road salt; microbial contaminants
Recycling/reduction facilities	Residential and commercial solid waste residues
Municipal waste landfills	Leachate; organic and inorganic chemical contaminants; wastes from households[8] and businesses;[13] nitrates; oils; metals
Open dumping and burning sites, closed dumps	Organic and inorganic chemicals; metals; oils; wastes from households[8] and businesses[13]
Municipal incinerators	Heavy metals; hydrocarbons; formaldehyde; methane; ethane; ethylene; acetylene; sulfur and nitrogen compounds
Water supply wells, monitoring wells, older wells, domestic and livestock wells, unsealed and abandoned wells, and test hole wells	Surface runoff; effluents from barnyards, feedlots, septic tanks, or cesspools; gasoline; used motor oil; road salt
Sumps and dry wells	Storm water runoff; spilled liquids; used oil; antifreeze; gasoline; other petroleum products; road salt; pesticides;[5] and a wide variety of other substances
Drainage wells	Pesticides;[9,10] bacteria
Well pumping that causes interaquifer leakage, induced filtration, landward migration of sea water in coastal areas; etc.	Saltwater; excessively mineralized water
Artificial ground water recharge	Storm water runoff; excess irrigation water; stream flow; cooling water; treated sewage effluent; other substances that may contain contaminants, such as nitrates, metals, detergents, synthetic organic compounds, bacteria, and viruses
COMMERCIAL SOURCES	
Airports, abandoned airfields	Jet fuels; deicers; diesel fuel; chlorinated solvents; automotive wastes;[7] heating oil; building wastes[13]
Auto repair shops	Waste oils; solvents; acids; paints; automotive wastes;[7] miscellaneous cutting oils
Barber and beauty shops	Perm solutions; dyes; miscellaneous chemicals contained in hair rinses
Boat yards and marinas	Diesel fuels; oil; septage from boat waste disposal areas; wood preservative and treatment chemicals; paints; waxes; varnishes; automotive wastes[7]

Table 4-4. Potential Sources of Ground Water Contamination (continued)

Source	Health, Environmental, or Aesthetic Contaminant[1,2,3]
Bowling alleys	Epoxy; urethane-based floor finish
Car dealerships (especially those with service departments)	Automotive wastes;[7] waste oils; solvents; miscellaneous wastes
Car washes	Soaps; detergents; waxes; miscellaneous chemicals
Camp grounds	Septage; gasoline; diesel fuel from boats; pesticides for controlling mosquitoes, ants, ticks, gypsy moths, and other pests;[5,9] household hazardous wastes from recreational vehicles (RVs)[8]
Carpet stores	Glues and other adhesives; fuel from storage tanks if forklifts are used
Cemeteries	Leachate; lawn and garden maintenance chemicals[10]
Construction trade areas and materials (plumbing, heating and air conditioning, painting, paper hanging, decorating, drywall and plastering, acoustical insulation, carpentry, flooring, roofing and sheet metal, wrecking and demolition, etc.)	Solvents; asbestos; paints; glues and other adhesives; waste insulation; lacquers; tars; sealants; epoxy waste; miscellaneous chemical wastes
Country clubs	Fertilizers;[6] herbicides;[5,10] pesticides for controlling mosquitoes, ticks, ants, gypsy moths, and other pests;[9] swimming pool chemicals;[11] automotive wastes
Dry cleaners	Solvents (perchloroethylene, petroleum solvents, Freon); spotting chemicals (trichloroethane, methylchloroform, ammonia, peroxides, hydrochloric acid, rust removers, amyl acetate)
Funeral services and crematories	Formaldehyde; wetting agents; fumigants; solvents
Furniture repair and finishing shops	Paints; solvents; degreasing and solvent recovery sludges
Gasoline services stations	Oils; solvents; miscellaneous wastes
Golf courses	Fertilizers;[6] herbicides;[5,10] pesticides for controlling mosquitoes, ticks, ants, gypsy moths, and other pests[9]
Hardware/lumber/parts stores	Hazardous chemical products in inventories; heating oil and fork lift fuel from storage tanks; wood-staining and treating products such as creosote
Heating oil companies, underground storage tanks	Heating oil; wastes from truck maintenance areas[7]
Horticultural practices, garden nurseries, florists	Herbicides, insecticides, fungicides, and other pesticides[10]
Jewelry/metal plating shops	Sodium and hydrogen cyanide; metallic salts; hydrochloric acid; sulfuric acid; chromic acid
Laundromats	Detergents; bleaches; fabric dyes
Medical institutions	X-ray developers and fixers;[17] infectious wastes; radiological wastes; biological wastes; disinfectants; asbestos; beryllium; dental acids; miscellaneous chemicals
Office buildings and office complexes	Building wastes;[13] lawn and garden maintenance chemicals;[10] gasoline; motor oil
Paint stores	Paints; paint thinners; lacquers; varnishes; other wood treatments
Pharmacies	Spilled and returned products
Photography shops, photo processing laboratories	Biosludges; silver sludges; cyanides; miscellaneous sludges
Print shops	Solvents; inks; dyes; oils; photographic chemicals
Railroad tracks and yards	Diesel fuel; herbicides for rights-of-way; creosote for preserving wood ties
Research laboratories	X-ray developers and fixers;[17] infectious wastes; radiological wastes; biological wastes; disinfectants; asbestos; beryllium; solvents; infectious materials; drugs; disinfectants (quaternary ammonia, hexachlorophene, peroxides, chlornexade, bleach); miscellaneous chemicals

Table 4-4. Potential Sources of Ground Water Contamination (continued)

Source	Health, Environmental, or Aesthetic Contaminant[1,2,3]
COMMERCIAL SOURCES (continued)	
Scrap and junk yards	Any wastes from businesses[13] and households;[8] oils
Sports and hobby shops	Gunpowder and ammunition; rocket engine fuel; model airplane glue
Above-ground and underground storage tanks	Heating oil; diesel fuel; gasoline; other petroleum products; other commercially used chemicals
Transportation services for passenger transit (local and interurban)	Waste oil; solvents; gasoline and diesel fuel from vehicles and storage tanks; fuel oil; other automotive wastes[7]
Veterinary services	Solvents; infectious materials; vaccines; drugs; disinfectants (quaternary ammonia, hexachlorophene, peroxides, chlornexade, bleach); x-ray developers and fixers[17]
INDUSTRIAL SOURCES	
Material stockpiles (coal, metallic ores, phosphates, gypsum)	Acid drainage; other hazardous and nonhazardous wastes[16]
Waste tailing ponds (commonly for the disposal of mining wastes)	Acids; metals; dissolved solids; radioactive ores; other hazardous and nonhazardous wastes[15]
Transport and transfer stations (trucking terminals and rail yards)	Fuel tanks; repair shop wastes;[7] other hazardous and nonhazardous wastes[15]
Above-ground and underground storage tanks and containers	Heating oil; diesel and gasoline fuel; other petroleum products; hazardous and nonhazardous materials and wastes[16]
Storage, treatment, and disposal ponds, lagoons, and other surface impoundments	Hazardous and nonhazardous liquid wastes;[16] septage; sludge[14]
Chemical landfills	Leachate; hazardous and nonhazardous wastes;[16] nitrates
Radioactive waste disposal sites	Radioactive wastes from medical facilities, power plants, and defense operations; radionuclides (uranium, plutonium)
Unattended wet and dry excavation sites (unregulated dumps)	A wide range of substances; solid and liquid wastes; oil-field brines; spent acids from steel mill operations; snow removal piles containing large amounts of salt
Operating and abandoned production and exploratory wells (for gas, oil, coal, geothermal, and heat recovery); test hole wells; monitoring and excavation wells	Metals; acids; minerals; sulfides; other hazardous and nonhazardous chemicals[16]
Dry wells	Saline water from wells pumped to keep them dry
Injection wells	Highly toxic wastes; hazardous and nonhazardous industrial wastes;[16] oil-field brines
Well drilling operations	Brines associated with oil and gas operations
INDUSTRIAL PROCESSES (PRESENTLY OPERATED OR TORN-DOWN FACILITIES)[18]	
Asphalt plants	Petroleum derivatives
Communications equipment manufacturers	Nitric, hydrochloric, and sulfuric acid wastes; heavy metal sludges; copper-contaminated etchant (e.g., ammonium persulfate); cutting oil and degreasing solvent (trichloroethane, Freon, or trichloroethylene); waste oils; corrosive soldering flux; paint sludge; waste plating solution
Electric and electronic equipment manufacturers and storage facilities	Cyanides; metal sludges; caustics (chromic acid); solvents; oils; alkalis; acids; paints and paint sludges; calcium fluoride sludges; methylene chloride; perchloroethylene; trichloroethane; acetone; methanol; toluene; PCBs
Electroplaters	Boric, hydrochloric, hydrofluoric, and sulfuric acids; sodium and potassium hydroxide; chromic acid; sodium and hydrogen cyanide; metallic salts
Foundries and metal fabricators	Paint wastes; acids; heavy metals; metal sludges; plating wastes; oils; solvents; explosive wastes

Table 4-4. Potential Sources of Ground Water Contamination (continued)

Source	Health, Environmental, or Aesthetic Contaminant[1,2,3]
Furniture and fixtures manufacturers	Paints; solvents; degreasing sludges; solvent recovery sludges
Machine and metalworking shops	Solvents; metals; miscellaneous organics; sludges; oily metal shavings; lubricant and cutting oils; degreasers (tetrachlorethylene); metal marking fluids; mold-release agents
Mining operations (surface and underground), underground storage mines	Mine spoils or tailings that often contain metals; acids; highly corrosive mineralized waters; metal sulfides
Unsealed abandoned mines used as waste pits	Metals; acids; minerals; sulfides; other hazardous and nonhazardous chemicals[16]
Paper mills	Metals; acids; minerals; sulfides; other hazardous and nonhazardous chemicals;[16] organic sludges; sodium hydroxide; chlorine; hypochlorite; chlorine dioxide; hydrogen peroxide
Petroleum production and storage companies, secondary recovery of petroleum	Hydrocarbons; oil-field brines (highly mineralized salt solutions)
Industrial pipelines	Corrosive fluids; hydrocarbons; other hazardous and nonhazardous materials and wastes[16]
Photo processing laboratories	Cyanides; biosludges; silver sludges; miscellaneous sludges
Plastics materials and synthetics producers	Solvents; oils; miscellaneous organics and inorganics (phenols, resins); paint wastes; cyanides; acids; alkalis; wastewater treatment sludges; cellulose esters; surfactant; glycols; phenols; formaldehyde; peroxides; etc.
Primary metal industries (blast furnaces, steel works, and rolling mills)	Heavy metal wastewater treatment sludge; pickling liquor; waste oil; ammonia scrubber liquor; acid tar sludge; alkaline cleaners; degreasing solvents; slag; metal dust
Publishers, printers, and allied industries	Solvents; inks; dyes; oils; miscellaneous organics; photographic chemicals
Public utilities (phone, electric power, gas)	PCBs from transformers and capacitors; oils; solvents; sludges; acid solution; metal plating solutions (chromium, nickel, cadmium); herbicides from utility rights-of-way
Sawmills and planers	Treated wood residue (copper quinolate, mercury, sodium bazide); tanner gas; paint sludges; solvents; creosote; coating and gluing wastes
Stone, clay, and glass manufacturers	Solvents; oils and grease; alkalis; acetic wastes; asbestos; heavy metal sludges; phenolic solids or sludges; metal-finishing sludge
Welders	Oxygen, acetylene
Wood preserving facilities	Wood preservatives; creosote

[1]In general, ground water contamination stems from the *misuse and improper disposal* of liquid and solid wastes; the *illegal dumping or abandonment* of household, commercial, or industrial chemicals; the *accidental spilling* of chemicals from trucks, railways, aircraft, handling facilities, and storage tanks; or the *improper siting, design, construction, operation, or maintenance* of agricultural, residential, municipal, commercial, and industrial drinking water wells and liquid and solid waste disposal facilities. Contaminants also can stem from *atmospheric pollutants*, such as airborne sulfur and nitrogen compounds, which are created by smoke, flue dust, aerosols, and automobile emissions, fall as acid rain, and percolate through the soil. When the sources listed in this table are used and managed properly, ground water contamination is not likely to occur.

[2]Contaminants can reach ground water from activities occurring on the land surface, such as industrial waste storage; from sources below the land surface but above the water table, such as septic systems; from structures beneath the water table, such as wells; or from contaminated recharge water.

[3]This table lists the most common wastes, but not all potential wastes. For example, it is not possible to list all potential contaminants contained in storm water runoff or research laboratory wastes.

[4]Coliform bacteria can indicate the presence of pathogenic (disease-causing) microorganisms that may be transmitted in human feces. Diseases such as typhoid fever, hepatitis, diarrhea, and dysentery can result from sewage contamination of water supplies.

[5]Pesticides include herbicides, insecticides, rodenticides, fungicides, and avicides. EPA has registered approximately 50,000 different pesticide products for use in the United States. Many are highly toxic and quite mobile in the subsurface. An EPA survey found that the most common pesticides found in drinking water wells were DCPA (dacthal) and atrazine, which EPA classifies as *moderately toxic* (class 3) and *slightly toxic* (class 4) materials, respectively.

[6]The EPA National Pesticides Survey found that the use of fertilizers correlates to nitrate contamination of ground water supplies.

[7]Automotive wastes can include gasoline; antifreeze; automatic transmission fluid; battery acid; engine and radiator flushes; engine and metal degreasers; hydraulic (brake) fluid; and motor oils.

[8]Toxic or hazardous components of common household products are noted in Table 3-2.

[9]Common household pesticides for controlling pests such as ants, termites, bees, wasps, flies, cockroaches, silverfish, mites, ticks, fleas, worms, rats, and mice can contain active ingredients including napthalene, phosphorus, xylene, chloroform, heavy metals, chlorinated hydrocarbons, arsenic, strychnine, kerosene, nitrosamines, and dioxin.

[10]Common pesticides used for lawn and garden maintenance (i.e., weed killers, and mite, grub, and aphid controls) include such chemicals as 2,4-D; chlorpyrifos; diazinon; benomyl; captan; dicofol; and methoxychlor.

[11]Swimming pool chemicals can contain free and combined chlorine; bromine; iodine; mercury-based, copper-based, and quaternary algicides; cyanuric acid; calcium or sodium hypochlorite; muriatic acid; sodium carbonate.

[12]Septic tank/cesspool cleaners include synthetic organic chemicals such as 1,1,1 trichloroethane, tetrachloroethylene, carbon tetrachloride, and methylene chloride.

[13]Common wastes from public and commercial buildings include automotive wastes; rock salt; and residues from cleaning products that may contain chemicals such as xylenols, glycol esters, isopropanol, 1,1,1-trichloroethane, sulfonates, chlorinated phenolys, and cresols.

[14]Municipal wastewater treatment sludge can contain organic matter; nitrates; inorganic salts; heavy metals; coliform and noncoliform bacteria; and viruses.

[15]Municipal wastewater treatment chemicals include calcium oxide; alum; activated alum, carbon, and silica; polymers; ion exchange resins; sodium hydroxide; chlorine; ozone; and corrosion inhibitors.

[16]The Resource Conservation and Recovery Act (RCRA) defines a hazardous waste as a solid waste that may cause an increase in mortality or serious illness or pose a substantial threat to human health and the environment when improperly treated, stored, transported, disposed of, or otherwise managed. A waste is hazardous if it exhibits characteristics of ignitability, corrosivity, reactivity, and/or toxicity. Not covered by RCRA regulations are domestic sewage; irrigation waters or industrial discharges allowed by the Clean Water Act; certain nuclear and mining wastes; household wastes; agricultural wastes (excluding some pesticides); and small quantity hazardous wastes (i.e., less than 220 pounds per month) generated by businesses.

[17]X-ray developers and fixers may contain reclaimable silver, glutaldehyde, hydroquinone, phenedone, potassium bromide, sodium sulfite, sodium carbonate, thiosulfates, and potassium alum.

[18]This table lists potential ground water contaminants from many common industries, but it does not address all industries.

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Table 4-5. Land Uses and Their Relative Risk to Ground Water

LEAST RISK	A.	1. Land surrounding a well or reservoir, owned by a water company. 2. Permanent open space dedicated to passive recreation. 3. Federal, state, municipal, and private parks. 4. Woodlands managed for forest products. 5. Permanent open space dedicated to active recreation.
	B.	1. Field crops: pasture, hay, grains, vegetables. 2. Low density residential: lots larger than 2 acres. 3. Churches, municipal offices.
	C.	1. Agricultural production: dairy, livestock, poultry, nurseries, orchards, berries. 2. Golf course, quarries. 3. Medium density residential: lots from 1/2 to 1 acre.
	D.	1. Institutional uses: schools, hospitals, nursing homes, prisons, garages, salt storage, sewage treatment facilities. 2. High density housing: lots smaller than 1/2 acre. 3. Commercial uses: limited hazardous material storage and only sewage disposal.
	E.	1. Retail commercial: gasoline, farm equipment, automotive, sales and services; dry cleaners; photo processor; medical arts; furniture strippers; machine shops; radiator repair; printers; fuel oil distributors. 2. Industrial: all forms of manufacturing and processing, research facilities. 3. Underground storage of chemicals, petroleum.
GREATEST RISK		4. Waste disposal: pits, ponds, lagoons, injection wells used for waste disposal; bulky waste and domestic garbage landfills; hazardous waste treatment, storage and disposal sites.

Source: Adapted from U.S. EPA, 1989a.

Source: USEPA 1993, Wellhead Protection: A Guide for Small Communities, EPA/625/R-93/002

APPENDIX N

CLEAN SWEEP COLLECTION PROGRAM

Clean Sweep

Dane County - City of Madison

This Year's Collection Program
May 1 through October 26, 2001
Tuesday, Wednesday, Friday, Saturday
7:30 a.m. to 2:00 p.m.

Location: Dane County Highway Garage
2302 Fish Hatchery Road
Madison, Wisconsin

For further information:
Dale Cardwell
608-294-5358 (office)
e-mail: dcardwell@ci.madison.wi.us

Household Recyclables

- Accepted any day the site is open

Small Business

- Accepted by appointment on any Wednesday
- There is a per-pound charge for materials brought in
- Accepted other days, as time permits, with a non-scheduled drop-off fee of $50
- Business Waste Disposal Program Application

Small Business Hazardous Waste Collection (764k)

Business Waste Disposal Program (98.8k)

Get Acrobat Reader

Ag Clean Sweep

Disposal of unwanted, unused, damaged, or banned hazardous chemicals for:

Producers of Agriculture Crops and Commodities - No Charge

Other Agri-Businesses Such As: Golf Courses and Farm Coops - will be charged one-half price of Small Businesses

AGRICULTURAL CLEANSWEEP BROCHURE

AGRICULTURAL CLEANSWEEP PRE-REGISTRATION FORM

* Accepted by appointment only during the hours of 8 a.m. to 12 p.m. on the following dates:

June 5 & 19	* Dane County Highway Garage 2302 Fish Hatchery Road, Madison
July 17	* Dane County Highway Garage
August 15	Village Shop, 301 Blue Mounds, Mt. Horeb, Wisconsin
September 18	* Dane County Highway Garage
October 16	* Dane County Highway Garage

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For further information contact:

Dale Cardwell	Mindy Habecker	David Bursack
Clean Sweep	UW-Dane Co. Extension	Dane Co. Emergency Mgt.
(294-5358)	(224-3718)	(266-9051)
dcardwell@ci.madison.wi.us	habecker@co.dane.wi.us	bursack@co.dane.wi.us

Link to recycling: www.co.dane.wi.us/pubworks/recyc.htm/

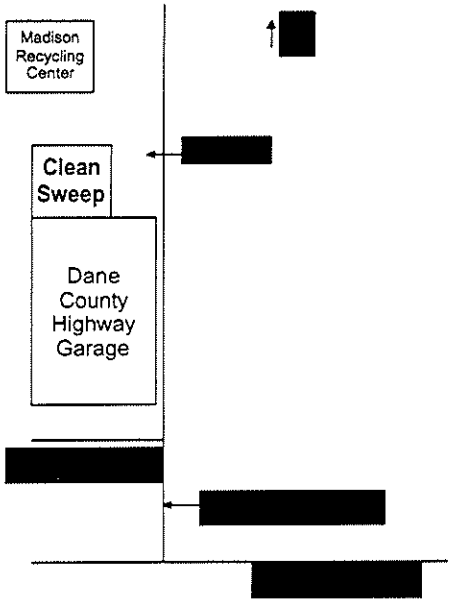
Link to Clean Sweep: www.co.dane.wi.us/pubworks/recyc/csaccept.htm

Link to City of Madison Clean Sweep Information:
www.ci.madison.wi.us/health/envhealth/clnswp.html or
www.ci.madison.wi.us/streets/hazard.html

[Dane County Home Page] [Elected Offices and Departments]

[Emergency Management Home Page] [Public Works - Recycle Home Page]

Revised: March 12, 2002



Dane County Clean Sweep

Location: 2302 Fish Hatchery Rd.
Madison, WI 53713

We are available at a convenient location and time for you.

Call (608) 294-5366 for information or to register. A trained hazardous waste professional will assist you. After completing an inventory of the material you will bring, a scheduled date and drop off time will be provided to you. Appointments are made on Wednesdays.

Cleansweep Representative

Dale Cardwell
210 Martin Luther King, Jr. Blvd., Rm. 507
Madison, WI 53709
www.ci.madison.wi.us/health/EnvHlth/smallbus.htm
(608) 294-5358 (Office)
(608) 267-3105 (Site)
(608) 266-4269 (Fax)
dcardwell@ci.madison.wi.us

DANE COUNTY/CITY OF MADISON CLEANSWEEP
210 MARTIN LUTHER KING JR BLVD RM 507
MADISON WI 53709

CLEAN SWEEP
&
Product Exchange

Dane County - City of Madison

Small Business Hazardous Waste Collection

Madison Department of Public Health
210 Martin Luther King, Jr. Blvd.
City-County Building, Room 507
Madison, WI 53710
294-5366

Business Convenience

Businesses can dispose of hazardous materials and wastes conveniently and cost effectively through the Dane County Cleansweep Small Business Hazardous Waste Disposal Program. Businesses classified as VSQGs* can dispose of their hazardous materials or wastes simply and conveniently by supplying an inventory of materials for disposal. The business then schedules an appointment to drop off their materials on one of the many dates available through the Cleansweep season (May through October).

Common hazardous wastes that are accepted include:*

- Automotive Products
- Ballasts
- Corrosives
- Insecticides and Pesticides
- Mercury
- Paints
- Paint-Related Products
- Solvents
- Solvent-Based Products
- Solvent-Based Cleaners
- Degreasers and Strippers
- Adhesives, Glues and Caulks

*A complete list of materials and products and the costs associated with disposal will be provided upon request.

* To meet the legal classification of a Very Small Quantity Generator (VSQG), businesses must generate 220 pounds or less of hazardous waste in a month and store no more than 2,200 pounds of hazardous waste on site at any time. They may have no more than two pounds of acutely hazardous waste on site. All VSQG participants are responsible for the proper packing and transportation of their waste materials to the Clean Sweep site. A VSQG is responsible for their waste from "cradle to grave" under CERCLA.

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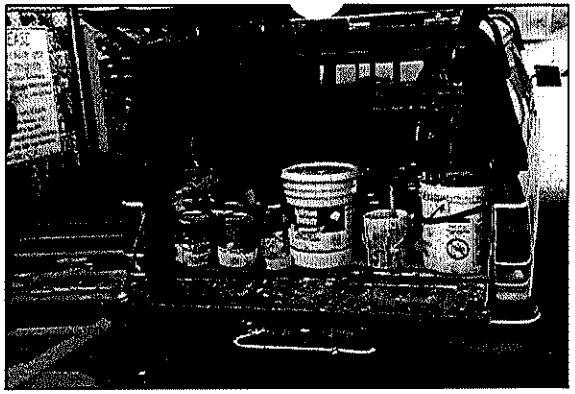

Benefits for Business

Reduced Costs

State law requires that all Wisconsin businesses producing hazardous waste, to manage and dispose of their materials and wastes properly. For generators of large quantities of waste this means hiring a chemical contractor to sort, package, and transport the waste to a licensed facility. This option proves very costly for generators of small quantities of waste, especially if they have different waste streams (e.g. solvents and paints). Because the program is an add-on to the Household Hazardous Waste Program, economies of scale provide significant cost savings.

Reduced Regulations

The Dane County Clean Sweep, through approval of the Wisconsin DNR, has designed a program to assist generators of small quantities of waste to simply, safely and cost effectively dispose of their materials. Ordinarily the procedures required and the paperwork involved is confusing and complicated. Through special rulemaking by the Wisconsin DNR, manifest requirements are waived and Clean Sweep programs have been authorized to accept business waste.

Proper Treatment

As a VSQG, you may consider your waste to be properly managed by using a Clean Sweep program. Facilities to which this waste is sent are audited regularly. And to minimize liability, these materials are disposed through a hierarchy of disposal: **Reuse, Recycle, Treatment, or Incineration.** By utilizing a hierarchy of disposal, wastes are disposed of in the most cost efficient and environmentally conscious manner.

Clean Sweep

Dane County - City of Madison

Business Waste Disposal Application

Date: May 1 2002

Business Name:

Type of Business:

Mailing Address:

City:

State: WI Zip Code:

Contact Person:

Telephone #:

Fax:

E-mail:

I realize that the Dane County Business Waste Dis
disposal (and other associated costs) of the receipt
these charges upon receipt of an invoice. I underst
wastes approved by the Dane County Business Wa
through this project. I understand that the Dane Co
is not assuming liability for my wastes and that fut

Furthermore, I certify
hazardous waste regulations as they pertain to my
waste listed was generated by a Very small Quanti
further certify that a copy of this receipt shall be k
hazardous waste generation for regulatory review
date.

I certify that I have reviewed the information in thi
knowledge, it is accurate.

Name: M

Material/Waste Chemical & Trade Name	Use	Solid or Liquid	Size of Container (1 gal. 55 Drum)	C
		Select One		
		Select One		
		Select One		
		Select One		
		Select One		

		Select One		
		Select One		
		Select One		

* MSDS = Material Safety Data Sheets

Submit Clear Form

[Dane County Home Page] [Emergency Management Home Page] [CleanSweep Home Page]

Date:____/____/____

Business Name Type of Business

Mailing Address

City/Town/Village State Zip Code

Contact Person (print)

Telephone: Fax :

Certification

I realize that the Dane County Business Waste Disposal Program will bill my agency for disposal (and other associated costs) of the receipted wastes, and I will be obligated to pay these charges upon receipt of an invoice. I understand that only the types and quantities of wastes approved by the Dane County Business Waste Disposal Program can be disposed of through this project. I understand that the Dane County Business Waste Disposal Program is not assuming liability for my wastes and that future liability remains with my business.

Furthermore, I _____ certify that I am
(Print Name)

currently knowledgeable of the hazardous waste regulations as they pertain to my business and certify that the hazardous waste listed was generated by a Very Small Quantity Generator of hazardous waste. I further certify that a copy of this receipt shall be kept in the business files at the place of hazardous waste generation for regulatory review for a minimum of three years from this date.

I certify that I have reviewed the information in this application and that, to the best of my knowledgeable, it is accurate.

Signature Date

Material/Waste Chemical & Trade Name	Use	Solid or Liquid	Size of Container (1 gal. 55 drum)	No. of Containers	MSDS (Y/N)

Business Waste Disposal Program Information and Application

CLEAN SWEEP & Product Exchange
Dane County - City of Madison

What's Happening?

The Clean Sweep Collection Program for households has been a service provided jointly by the Dane County Department of Public Works and the City of Madison Department of Public Health. These two departments are now sponsoring a program for businesses who generate small amounts of hazardous materials. The program referred to as the Business Waste Disposal Program, will allow businesses to drop off, by appointment, hazardous materials at a collection point for proper disposal.

State law requires all Wisconsin businesses producing hazardous materials to manage and dispose of their materials/wastes properly. Options for businesses generating small amounts of waste are not readily available and those available are often viewed by business as complicated and costly. This program is designed to allow small generators to dispose of hazardous materials/waste in a simpler and less costly manner.

To participate, businesses will be required to pay the costs associated with handling and disposal. However, costs are expected to be lower for participants in this program than the cost of individual companies arranging for disposal on their own.

What Hazardous Wastes Could My Business Have?

Hazardous materials/wastes are those that are toxic, flammable, corrosive, or reactive. Some examples of common hazardous materials/wastes from small generators are:

parts-washer solvents
paint-gun cleaners
PCB wastes
acids and bases
laboratory wastes
solvent-based cleaners/degreasers
petroleum based products
automotive products
etching compounds
PCB contaminated oils
inks
mercury
thinners
strippers
paints
pesticides
herbicides
insecticides
dioxin
oils

Who Can Participate?

In order to participate, a business may not generate more waste than is defined in the WDNR definition of a Very Small Quantity Generator (VSQG). A VSQG produces less than 100 kilograms (220 pounds or 22 gallons) of hazardous waste per month (or less than approximately 264 gallons each year). Through the VSQG program, businesses are allowed to dispose of containers up to 55 gallons of hazardous materials/waste.

Businesses producing more than 264 gallons of materials/waste per year must manage or dispose of their wastes through a hazardous waste contractor and are **NOT** eligible to participate in this project.

What Materials Will be Accepted? (not inclusive)

- Paint and Paint-Related Materials
- Solvent Materials, Thinners, Strippers, Inks, Solvent-Based Materials/Wastes
- Corrosives
- Poisons and Pesticides
- Lab Chemicals
- Petroleum-Based Materials/Wastes
- Heavy Metals and Heavy Metal-Based Materials Wastes
- Used Photographic Fixers

Wastes Not Accepted

- Explosives
- Infectious (medical) Wastes
- Radioactive Wastes
- Certain Poisons, Pesticides and Reactive Wastes

For More Information . . .

Dale Cardwell, Cleansweep Representative
210 Martin Luther King, Jr. Blvd., Rm. 507
Madison, WI 53709
www.ci.madison.wi.us/health/EnvHlth/smallbus.htm
(608) 294-5358 (Office)
(608) 267-3105 (Site)
(608) 266-4269 (Fax)
dcardwell@ci.madison.wi.us

How to Apply

In order to dispose of wastes through this program, businesses are to apply for and receive prior approval from the Cleansweep Manager for specific types and quantities of materials/wastes. Upon approval by the manager, the generator will be given an appointment for drop off of the materials/wastes. Small business collections will normally be scheduled on Wednesdays.

What Will It Cost?

Participants are required to pay for their share of the handling and disposal costs which include contractor costs, testing (if required), handling/packaging and transportation from the collection site. The program expects costs to be significantly lower than they would be individually because of the larger quantity of materials/wastes and resulting from economies of scale. The final invoice will include the cost per pound determined at drop off and any additional charges that may be incurred.

How to Transport Your Materials/ Wastes?

Container sizes up to 55 gallons will be accepted. All containers must be securely closed, clearly labeled, and accompanied by the shipping papers. The generator will have the capacity to off load their own containers from the vehicle in which they are transported.

How Can My Business Participate?

Step 1: **Fill out the attached application and return to the Program Manager.** Be sure to fill out all sections of the application form.

Step 2: **The application will be reviewed and your eligibility determined.** In reviewing the application, your VSQG status is determined and a determination of whether the wastes you listed can be disposed through the program.

Step 3: **You will be apprized of your appointment date and time.** There are specified collection days in the season. Appointments will be scheduled for applications received no later than the Tuesday prior to a scheduled drop day.

Step 4: **Bring your materials/waste to the collection site at your scheduled time.** The collection site is located at 2302 Fish Hatchery Rd. Only the types and quantities of materials/wastes listed on your pre-approved application will be accepted.

Step 5: **All materials are weighed and a receipt issued.** A final bill is sent to you that may include additional costs due to costs of disposal, testing and handling.

Accepted Product/Waste Streams Defined

The waste streams outlined are based on the program's method of disposal for each waste stream. They reflect how the program processes the materials in order to comply with the waste hauler's transportation requirements as well as the most efficient method of packaging to facilitate disposition of the materials when they reach final destination.

The goals of the program are to **reuse** (use the product as it was originally intended), **recycle** (process and use the material as originally intended) or **treat** (process and use the resulting material in some other manner) as great a percentage of the materials collected as possible while being cost effective. The program reused, recycled or treated 95% of the materials collected in 1996. The materials that cannot be disposed in the above manner are incinerated.

Materials in different waste streams **should not be** combined. If this is done, the resulting charge will be of the highest priced material in the mixture, regardless of quantity (e.g. 1 qt. halogenated solvent mixed with 2 gals. of non halogenated solvent will result in a charge of $.73 for 2 gals and 1 qt of halogenated solvent).

The product/waste streams defined below are commonly collected and include but are not limited to the items listed. Any product/material for disposal that is not listed below, may be included in the product inventory form for review and approval.

Definitions

Paints & Other Oil-Based Products: Latex (water-based) and oil or solvent-based paints, varnish, stains, and polyurethane, paints containing lead or other heavy metals, industrial and specification paints and coatings, oil-based products, such as tung or linseed oil and other sealants or industrial waxes, or refinishing products, fuel oil, automotive products such as brake, power steering, and hydraulic fluids.

- Do not mix water-based with oil or solvent-based materials. While they are disposed at the same rate, the method of disposal varies.
- If the container (5 gallon size or less) is less than 1/2 full, is water based, and is liquid, flush down an indoor drain (not in septic systems). These products include latex paint, latex paint additives, wallpapering products and floor finishes in which the instructions for use include mixing with water. Semisolid or non-liquid water-based materials such as latex glues, adhesives, caulking or joint compound may be put in your normal trash.
- The material is hazardous if the container indicates that the material is flammable or combustible. Small amounts (less than an inch or two in the bottom of the container may be dried out by adding absorbent such as oil dry or shredded newspaper to absorb the liquid. When this has dried, the container may be thrown into the regular trash.

Non-Halogenated Solvents: Concrete and deck preservatives and sealers, thinners, turpentine, lacquer thinner, acetone, and products containing petroleum distillates, solvent based automotive products such as Heet, gasoline and gasoline and oil mixtures.

Halogenated Solvents: Materials containing chloride such as: parts cleaners/degreasers and strippers. Chemicals to look for are: methylene chloride, MEK, 1,1,1-trichloroethane, carbon tetrachloride, and trichloroethylene.

Accepted Product/Waste Steams Defined

Pesticides, Poisons, & Cyanides: pesticides, herbicides and fungicides used for normal commercial or household lawn care; poisons contain heavy metals such as mercury, lead or potassium dichromate; cyanides such as Cyanogas. Agricultural pesticides are not included or accepted at this time. *Fertilizers not containing a pesticide may be land filled as well as pH altering chemicals such as sulfur and lime.*

Oxidizers: Pool chemicals and stump remover. Chemicals to look for: sodium peroxide, perchlorates, benzoyl peroxide, chlorine, sodium/calcium hypochlorite, sodium bisulphate, chlorites, chlorates, chromic acid, nitrates, zinc phosphide, chromium trioxide, and ammonium dichromate

Flammable Solids: Isocyanate based resins, cyanoacrylate esters, thermite (reactive w/air), copper (reactive w/air), bronze, and aluminum powder, ethyl ether, sodium hydrosulfite based brighteners (ethers, cleaners), lithium batteries, naphthalene and paraformaldehyde.

Flammable Liquids: Flammable or combustible materials that have not hardened such as resins, epoxy, adhesives, glues and caulking, foundation and roofing tars. *The materials included here may be any flammable or combustible product listed in the paint category that has deteriorated to a point where it cannot be reconstituted or where it cannot be reused or recycled but has not hardened completely. If solid, the material is no longer hazardous and may be put in the landfill. Flammable liquids are treated.*

Acids/Alkaline: Acids such as acetic, sulfuric, phosphoric, oxalic, muriatic, perchloric, hydrofluoric acid; etching compounds: ferric chlorides; jewelry making compounds: gold cyanide and nitric acid and alkaline such as phosphate cleaners, sodium/calcium hydroxide.

PCB Waste - Ballasts: Old ballasts/transformers - new ballasts/transformers will state that they do not contain PCBs and may be put in the landfill.

PCB Waste - Non-Ballasts: Automotive processes that generate PCBs and some paints. PCB contamination may be unknown until testing is performed.

Pressurized Containers: Aerosol cans containing paints, pesticides, cleansers, strippers, degreasers, or any commonly used product in a standard aerosol container, 1# propane cylinders, 20# propane cylinders. *All others upon approval.*

Metallic Mercury: Liquid mercury and that found in barometers, thermometers, light switches, etc.

Organic Peroxides: Wood bleach (hydrogen peroxide), dicamyl peroxide, methyl ethyl ketone peroxide, hardener w/bentoyl peroxide.

Madison Department of Public Health

210 Martin Luther King, Jr. Blvd. Room 507, Madison, WI 53703 Ph: (608) 266-4821 Fax: (608) 266-4858

Environmental Health & Lab

Administration

Coalitions & Collaborations

Community Health Improvement Plan

Environmental Health & Lab

Our Locations

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Publications, Reports & Videos

Air Quality / Animal Control / Awards & Recognitions / Beaches / Clean Sweep / External Links / Food Protection Program / Hazardous Waste / Laboratory Testing Services / Lead Hazards / Licensing Application & Fee Schedule / Lodging / Smoking Regulations / Swimming Pools/Whirlpools / Tattoo & Body Piercing / Water Quality /

Clean Sweep

The site will be open for the 2002 season from Wednesday, May 1st through Saturday, October 26th. The site is open on Tuesdays, Wednesdays, Fridays, and Saturdays from 7:30 am to 2:00 pm and is located at 2302 Fish Hatchery Rd. (north end) at the corner of Fish Hatchery and Badger Roads.

Our goal is to take materials that cannot be disposed of elsewhere either by the home-owner or through another agency or business in Madison or Dane County. Clean Sweep takes any and all materials that are flammable or combustible, corrosive, or reactive. While many materials in liquid state may be hazardous, once a container is empty or the material in it is solid, it is not hazardous and the proper disposal is to throw it out.

Clean Sweep can accept any number of containers; however, the container cannot be larger than a 5 gallon pail. Amounts greater than 5 gallons should be transferred into 1 or 5 gallon containers to be accepted at the Clean Sweep. The following items are accepted by Clean Sweep:

- **Paints and Paint related Products:** Latex paints if the container is greater than 1/3 full, **oil-based paints** such as varnish, stain, and shellac, **automotive paints, solvents** such as thinners, turpentine, mineral spirits, toluene, acetone and xylol, wood stripper, and almost any kind of product used to clean, seal, or coat paint and metals. Clean Sweep prefers not to accept many water-based products.
- **Pesticides and Poisons:** pet and banned pesticides mercury, stump remover, pool chemicals, wood bleaches, and ballasts.
- **Ignitables and Aerosols:** aerosol cans, propane cylinders and tanks, gasoline, kerosene, fuel oil, driveway, and roof and foundation sealants (that are not already hard).
- **Unknown Materials (those that are not labeled):** Please note from where in your home you collected these and with what other products it was stored. We will identify these for you when you bring them in.

Location:	**Clean Sweep**	Hours:
Dane County Highway Garage 2302 Fish Hatchery Rd. (north end), corner of Fish Hatchery and Badger Roads	**& Product Exchange** Dane County - City of Madison	Tuesday, Wednesday, Friday, Saturday 7:30am - 2:00pm May 1 - October 26

Take to Clean Sweep

Paints & Paint-Related Products	Latex paints if container is greater than 1/3 full, Oil or Solvent-Based Paints including Automotive paints, Solvents such as finish removers, stain, varnish, thinner, turpentine, and furniture strippers (for more information see "Products & Materials to Flush or Throw Away" below).
Pesticides & Poisons	Mercury, cyanide, stump remover, pool chemicals, herbicides, insecticides, per pesticides including: *Aldrin, Chlordane, DBCP, DDT, Dieldrin, Endrin, Helptachlor, Kepone, Lindane, Mirex, Silvex, Tosaphene, 2,4,5-T.*
Household Products Containing Organic Solvents	Photographic Fixer, pastes, polishes, caulks that are combustible or flammable. Check the label for *Mineral Spirits, Petroleum Distillates, Phenol, Carbon Tetrachloride, Benzene, Diethyl or Dimethyl Phthalate, Methylene Chloride, Toluene, Xylene, Chlorinated Solvants* (See "Recycling Hazardous Materials" below).
Ignitables & Aerosols	Aerosol cans, propane cylinders, gasoline, kerosene, fuel oil, driveway sealant (if not hard).

Transporting

Products and materials should be packaged to keep them from spilling or breaking on the way to Clean Sweep. Leave materials in their original containers. Do no mix like or unlike materials together. Leaking containers may be placed, as is, in another containter. Label that container.

Products & Materials to Flush or Throw Out

Empty Containers & Solid Material	When a container is empty or the material in it is solid, it is no longer hazardous and may be thrown out in the regular trash. The exceptions to this rule are solids or powders containing pesticides, poisons, mercury, lead, or other heavy metals. **Empty paint cans cannot be recycled.** Put the empty or solid 1 or 5 gallon containers, without the lids, out for curbside pickup.
Water-Based Products & Cleansers	**Latex paints and water-based products are not hazardous.** Cleansers or any product that would have gone down the drain in normal use may be flushed down a sanitary sewer drain including septic systems. Flush small amounts of latex paint (less that 1/3 full container) or if not in its original container down a sanitary sewer drain. If the paint is hard on the bottom with some liquid on top (latex paints and driveway sealant), pour the liquid down a sanitary sewer drain. Water-based semi-solid like caulk, joint compound, adhesives, and glues may be thrown in your regular trash.

Recycling Hazardous Products

Many products in this category will need to be disposed through other municipal services or handled through private businesses in Dane County. Information about the disposal of flourescent tubes, waste oil, batteries, fire extinguishers, medical waste, and explosives is available through the information line at 294-5366 or on the Hazardous Materials Recycling & Disposal Options web page.

Dirty Thinners	Reuse thinner and other solvents for rinsing brushes and guns. Let solids from dirty thinner, turpentine, etc., settle in the bottom of a clear container. Filter the remaining liquid through cheese cloth or an old nylon until the solvent is clear. Dry and dispose of the particles and paint chips in your regular trash.

Gasoline	Gasoline drained from a snowblower, lawn mower, chainsaw, etc. that is mixed with oil may be used up in your vehicle. Check the gasoline to see if it is clear except for the color of the oil used. If clear, pour into your gas tank on a 10:1 ratio (10 gallons of new gas to 1 gallon of old gas). The small amount of oil in the old gas will not affect the performance of your vehicle. If your gas cannot be used in this way, bring it into Clean Sweep in a container that you can leave.

Product Exchange

Need a pint of stain or gallon of basement paint? Does your roof need patching or are you stripping a piece of furniture? Have the insects gotten to your roses? Just need a dab and not a whole quart? Let the Clean Sweep & Product Exchange be your source.

Products brought in by you and your neighbors that are perfectly good and usable are made available, free of charge, to our customers, or you to use up around your home, yard, farm, or on your vehicle. All products are free to the public. Special requests taken.

Hours: Tuesday, Wednesday, Friday, Saturday
7:30am to 2:00pm
May 1 through October 26

[Dane County Home Page] [Public Works Home Page] [Recycling Information]

Revised: January 18, 2002

APPENDIX O

CITY OF MADISON WELL ABANDONMENT ORDINANCE - DANE COUNTY ORDINANCE RELATING TO PRIVATE WATER SYSTEMS

City of Madison Well Abandonment Ordinance

13.21 WELL ABANDONMENT.

(1) Purpose. To prevent contamination of groundwater and to protect public health, safety and welfare by assuring that unused, unsafe or noncomplying wells, wells which may serve as conduits for contamination or wells which may be illegally cross-connected to the Madison Water Utility are properly abandoned.

(2) Applicability. This ordinance applies to all wells located in the City of Madison or on premises served by the Madison Water Utility.

(3) Definitions.

Noncomplying means a well or pump installation which does not comply with the provisions of Ch. NR 812, Wisconsin Administrative Code, in effect at the time the well was constructed, a contamination source was installed, the pump was installed or work was done on either the well or pump installation.

Pump installation means the pump and related equipment used for withdrawing water from a well including the discharge piping, the underground connections, pitless adapters, pressure tanks, pits, sampling faucets and well seals or caps.

Unsafe means a well or pump installation which produces water which is bacteriologically contaminated or contaminated with substances in excess of the standards of Chapters NR 809 or 140, Wisconsin Administrative Code, or for which a Health Advisory has been issued by the Department of Natural Resources.

Unused means a well or pump installation which is not in use or does not have a functional pumping system.

Well means an excavation or opening into the ground made by digging, boring, drilling, driving, or other methods for the purpose of obtaining groundwater for consumption or other use. Wells for the express purpose of monitoring the quality of ground water and/or gases and/or soil characteristics are exempt from this Ordinance.

Well abandonment means the filling and sealing of a well according to the provisions of Chap. NR 812, Wisconsin Administrative Code.

(4) Abandonment Required. All wells located in the City of Madison or on premises served by the Madison Water Utility shall be abandoned if no valid well operation permit has been obtained from the Madison Water Utility or if so required under NR Sec. 812.26(2),Wisconsin Administrative Code. An application for a well operation permit shall be made within ninety (90) days of the date of any abandonment notice from the Madison Water Utility. (Am. by Ord. 12,567, 5-3-00)

(5) Well Operation Permit. No person may operate a well without having obtained a well operation permit. The Madison Water Utility may grant a permit to a private well owner to operate a well for a period not to exceed five (5) years providing the conditions of this section are met. An owner may request renewal of a well operation permit by submitting information verifying that the conditions of this section are met. The Madison Water Utility, or its agent, may conduct inspections or have water quality tests conducted at the applicant's expense to obtain or verify information necessary for consideration of a permit application or renewal. Permit applications and renewals shall be made on forms provided by the Madison Water Utility. A permit fee of one hundred dollars ($100) shall accompany the application. This fee shall include the cost of conducting bacterial examinations of water samples obtained from the well. The Madison Water Utility may require abandonment of a well for failure to renew a permit or to pay renewal fee within ninety (90) days of the date of any abandonment notice from the Madison Water Utility; otherwise, abandonment shall be required. The following conditions must be met for issuance or renewal of a well operation permit:

(a) The well and pump installation meet or are upgraded to meet the requirements of Chap. NR 812, Wisconsin Administrative Code.

(b) The well construction and pump installation have a history of producing bacteriologically safe water as evidenced by at least two (2) samplings taken a minimum of two (2) weeks apart. No exception to this condition may be made for unsafe wells, unless the Department of Natural Resources approves, in writing, the continued use of the well.

(c) There are no cross-connections between the well and pump installation and the Madison Water Utility.

(Am. by Ord. 12,567, 5-3-00)

(6) Required Inspection. Whenever real property with a well on the premises is conveyed pursuant to Chapter 706, Wisconsin Statutes, the seller shall contact the Madison Water Utility at least fourteen (14) days prior to the transfer of property. Upon proper

notice, the Madison Water Utility may conduct an inspection to determine whether the well should be permitted or abandoned under this section.

(7) A representative of the Madison Water Utility shall have the power and authority at all reasonable times, for any proper purpose, to enter upon any property in the City of Madison and make inspection thereof. If entry is refused, such representative may obtain a special inspection warrant under Section 66.0119, Wisconsin Statutes. Upon request by a representative of the Madison Water Utility, the owner, lessee or occupant of any property so served shall furnish to the inspection agency any pertinent information regarding the well on such property if such information is known to such owner, lessee or occupant. (Am. by Ord. 12,567, 5-3-00)

(8) Abandonment Procedures.

(a) All wells abandoned under the jurisdiction of this ordinance or rule shall be abandoned according to the procedures and methods of Chap. NR 812, Wisconsin Administrative Code. All debris, pump, piping, unsealed liners and any other obstructions which may interfere with sealing operations shall be removed prior to abandonment.

(b) The owner of the well, or the owner's agent, shall notify the Madison Water Utility at least forty-eight (48) hours prior to commencement of any well abandonment activities. The abandonment of the well may be observed by the Madison Water Utility.

(c) An abandonment report form, supplied by the Department of Natural Resources, shall be submitted by the well owner to the Madison Water Utility and the Department of Natural Resources within ten (10) days of the completion of the well abandonment.

(d) The Madison Water Utility may require any person who has abandoned a well not in compliance with Subdivision (a) to return and take corrective action so that the well is abandoned by him or her in a complying manner. (Cr. by Ord. 12,567, 5-3-00)

(9) This law does not supersede the State Plumbing Code, Section NR 811, Wisconsin Administrative Code, or Chapter 18 of the Madison General Ordinances entitled "Plumbing Code" but is supplementary to them.

(10) Penalties. The penalty for violation of this section may be not less than twenty-five dollars ($25) nor more than one-hundred dollars ($100) and the cost of prosecution. Each day of violation is a separate offense. If any person fails to comply with this ordinance for more than ten (10) days after receiving written notice of the violation, the City may impose a penalty and cause the well abandonment to be performed and the expense to be assessed as a special tax against the property.

(Sec. 13.21 Cr. by Ord. 10,136, 11-14-90; Am. by Ord. 12,345, 3-12-99; Am. by Ord. 12,567, 5-3-00)

13.22 PENALTY. Any person violating any provision of this chapter for which a separate penalty has not been imposed shall be punished by a fine of not less than ten dollars ($10) nor more than one hundred dollars ($100).

TITLE 9
HEALTH AND SANITATION

Chapter 45 Relating to Private Water Systems.
Chapter 46 Private Sewage System Ordinance and Health Ordinance.
Chapter 47 Animal Control.

CHAPTER 45
RELATING TO PRIVATE WATER SYSTEMS

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45.02 Jurisdiction.
45.03 Purpose.
45.04 Intent.
45.05 Effective Date.
45.06 Severability and Non-liability.
45.07 Repeal.
45.08 Definitions.
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45.11 County Responsibilities; Private Well Location Permits.
45.12 County Responsibilities; Existing Private Water Systems.
45.13 Cooperation With Other Units.
45.14 Administrator.
45.15 Qualifications of Administrator.
45.16 Powers of Administrator.
45.17 Duties of Administrator.
[45.18 - 45.20 reserved.]
45.21 Requirements and Permits.
45.22 Appeals.
45.23 Violations.
45.24 Administrative Directives and Orders.
45.25 Enforcement Actions.
[45.26 - 45.50 reserved.]
45.51 Fee Schedules.
[45.52 - 45.99 reserved.]

45.01 AUTHORITY AND ADOPTION. (1) This ordinance is adopted under the authority of ss. 59.067 and 162.07, Wis. Stats., and Ch. NR 845, Wis. Admin. Code.
(2) This ordinance is subject to the provisions of ss. 59.067 and 162.07, Wis. Stats., and all rules promulgated thereunder regulating private water systems.
(3) This ordinance may not be more lenient nor more stringent than the rules promulgated pursuant to ch. 162, Stats.
(4) Failure to comply with any of the provisions of such regulations shall constitute a violation of this ordinance, actionable according to the penalties provided herein.
(5) This ordinance applies to the entire county and includes cities, towns, villages and sanitary districts in the county.

45.02 JURISDICTION. The provisions of this ordinance shall apply to all private water systems within Dane County.

45.03 PURPOSE. The purpose of this ordinance is to protect the drinking water and groundwater resources of the county by governing access to groundwater through regulating (1) private well location and (2) existing private water systems.

45.04 INTENT. The intent of this ordinance is to regulate (1) the locations of wells and (2) existing water systems and to provide for the administration and enforcement of this ordinance.

45.05 EFFECTIVE DATE. (1) This ordinance shall be effective July 1, 1987 for well location.
[History: (2) rep., OA 29, 1995-96, pub. 12/06/95.]

45.06 SEVERABILITY AND NON-LIABILITY. If any section, provision or portion of this ordinance is adjudged unconstitutional or invalid by a court of competent jurisdiction, the remainder of this ordinance shall not be affected. The county asserts that there is no liability on the part of the board of supervisors, its agencies or employees for any health hazards or damages that may occur as a result of reliance upon, and compliance with, this ordinance.

45.07 REPEAL. All other county ordinances or parts of ordinances inconsistent or conflicting with this ordinance, to the extent of the inconsistency only, are repealed.

45.08 DEFINITIONS. As used in this ordinance, the following words and phrases have the meanings indicated:
(1) *Administrator* means the county employee designated by the county executive to issue permits for private well location and to administer ch. NR 812, Wis. Admin. Code, in the county as authorized by the department. The administrator is hereby empowered to delegate his or her authority under this ordinance to any or all of the certified well inspectors employed by the community support and health services department of the County of Dane.

(2) *Central office* means the department's bureau of water supply, located in Madison, which functions as the coordinating authority for the statewide water supply program.
(3) *Community water system* has the meaning designated in s. NR 811.02(7), Wis. Admin. Code.
(4) *County* means the County of Dane.
(5) *County office staff* means county office personnel trained to answer general well location questions and to accept permit applications.
(6) *Delegation level* means the program level, as set forth in s. NR 845.05, Wis. Admin. Code, at which a county is authorized to administer and enforce ch. NR 812, Wis. Admin. Code.
(7) *Department* means the Department of Natural Resources of the State of Wisconsin.
(8) *District office* means the department's office located in Madison, Wisconsin.
(10) *Existing installations* has the meaning designated in ch. NR 812, Wis. Admin. Code.
(11) *Health hazard* means a condition which constitutes:
(a) A violation of ch. NR 812, Wis. Admin. Code, regarding the installation, construction, operation or maintenance of a private well; or
(b) Confirmed bacteriologically unsafe well water quality.
(12) *Noncommunity water system* means a public water supply system that serves at least 25 people at least 60 days each year. A noncommunity water system commonly serves a transient population rather than permanent year-round residents. This is typically an individual well serving a restaurant, industry, service station, tavern, motel, campground or church.
(13) *Noncomplying well* means a private water system not in compliance with all provisions of ch. NR 812, Wis. Admin. Code, in effect at the time the well was constructed.
(14) *Person* means an individual, corporation, company, association, cooperative, trust, institution, partnership, state, public utility, sanitary district, municipality or federal agency.
(15) *Personal interest* means having a financial interest in a property or being related by marriage or birth to a person having a financial interest in a property.
(16) *Primary drinking water standards* means those maximum contaminant levels which represent minimum public health standards set forth in ch. NR 809, Wis. Admin. Code.
(17) *Private water system* means the water collection, storage and treatment facilities and all structures, piping and appurtenances by which water is provided for human consumption by other than community water systems. For the purpose of this ordinance, it includes non-community water systems.
(18) *Private water systems ordinance* means a county ordinance, approved by the department, regulating private water systems at the county's authorized delegation level.
(19) *Private well* means, for the purpose of this ordinance, any drilled, driven point, dug, bored or jetted well constructed for the purpose of obtaining groundwater for potable use, including wells constructed in special well casing depth areas and noncommunity wells. It does not include springs, or private or public wells that require written plan approval from the department.
(20) *Public water system* has the meaning designated in ch. NR 812, Wis. Admin. Code.
(21) *Reconstruction* means modifying the original construction of a private well. It includes, but is not limited to, deepening, lining, installing or replacing a screen, underreaming, hydrofracturing and blasting.
(22) *Variance* means an approval issued by the department under ch. NR 812, Wis. Admin. Code, allowing a private water system to vary from ch. NR 812, Wis. Admin. Code, requirements if department approved conditions are met.
(23) *Water system* means the water collection, storage, treatment facilities and all structures, piping and appurtenances by which water is provided.
(24) *Well* has the meaning designated in ch. 162, Wis. Stats.
(25) *Well construction* means the procedures, methods, materials and equipment used during the construction or reconstruction of a private well.
(25m) *Well constructor* means any person who constructs a well.
(26) *Well location permit* means a permit, or comparable registration system, issued by the county which allows the construction or reconstruction of a private well.
[History: (1) am., Sub. 1 to OA 43, 1987-88, pub. 06/18/88; (9) rep., (12) am. and (25m) cr., OA 29, 1995-96, pub. 12/06/95.]

[45.09 and 45.10 reserved.]

45.11 COUNTY RESPONSIBILITIES; PRIVATE WELL LOCATION PERMITS. In accepting Level 1 and Level 5 responsibility from the department, the county hereby agrees to:

(1) Issue permits authorizing the location of new and replacement private wells, including drilled, driven point, dug, bored or jetted wells, or the reconstruction or rehabilitation of existing private wells.
(2) Conduct inspections of wells for which well location permits are required as soon as possible after the well is constructed.
(3) Determine whether the casing height of a permitted well complies with ch. NR 812, Wis. Admin. Code, and that there is a cap or seal on the upper terminus of the well.
(4) Require the abandonment of wells not in service, or that will be taken out of service, if the well is unused, noncomplying or bacteriologically unsafe. A county may require abandonment of a well with water exceeding a primary drinking water standard listed in ch. NR 809, Wis. Admin. Code, or which has other chemical compounds, including inorganic and organic compounds, for which state health advisory limits have been issued after consultation with and approval by the department.
(5) Require upgrading of all inspected private wells that are not in compliance with the minimum private well locational distances in ch. NR 812, Wis. Admin. Code.
[History: (intro.) am., OA 29, 1995-96, pub. 12/06/95.]

45.12 COUNTY RESPONSIBILITIES; EXISTING PRIVATE WATER SYSTEMS. (1) On the request of a property owner or a lending institution, the administrator will conduct an evaluation of the well and collect a water sample for coliform bacteria analysis and, if also requested, collect a nitrate-nitrogen sample from the private water supply.
(2) The administrator will conduct a private water system evaluation whenever any water sample is collected as part of a complaint or problem follow-up, unless directed not to do so by the department.
(3) The administrator shall require upgrading of all inspected private water systems that are not in compliance with the minimum private well location standards of ch. NR 812, Wis. Admin. Code.
[History: 45.12 am., OA 29, 1995-96, pub. 12/06/95.]

45.13 COOPERATION WITH OTHER UNITS. The administrator shall cooperate with all other governmental units and agencies in the enforcement of all state and local laws and regulations pertaining to matters in this ordinance.

45.14 ADMINISTRATOR. (1) The county director of environmental health shall act as the Dane County administrator and is assigned the duties of administering the private water system program in accordance with department rules.
(2) The administrator shall have the power and duty to enforce the provisions of this ordinance and all other ordinances, laws and orders of the county and of the State of Wisconsin which relate to the construction, alteration or installation of all private water systems within the county, at the county's authorized delegation level.

45.15 QUALIFICATIONS OF ADMINISTRATOR. (1) The administrator shall be informed on the principles and practices of private well construction. If the administrator has a personal interest in the construction or modification of any well subject to the provisions of ch. 162, Wis. Stats., ch. NR 812, Wis. Admin. Code, or county ordinance, the county executive shall, after consultation with the department, designate another knowledgeable person to examine the application to issue the required permit(s) and to make the necessary inspections.

45.16 POWERS OF ADMINISTRATOR. The administrator shall have all the powers necessary to enforce the provisions of this ordinance commensurate with the level or levels of the county's delegated authority, including the following:
(1) In the discharge of his or her duties, the administrator or an authorized assistant may enter any building or property upon presentation of the proper credential, during reasonable hours for the purpose of inspecting the private water system and may request the owner or operator to produce the private well location required under this ordinance. No person may interfere with the administrator or an authorized assistant in the performance of his or her duties. Any person interfering shall be in violation of this ordinance and subject to penalty as provided by this ordinance. If consent to enter property for inspection purposes is denied, the administrator may obtain a special inspection warrant under ss. 66.122 and 66.123, Wis. Stats.
(2) Order any person owning, operating or installing a private water system to abandon, repair or place it in a complying safe or sanitary condition if the system is found to be unused, bacteriologically unsafe or not in compliance with ch. NR 812, Wis. Admin. Code, or this ordinance.

(3) Prohibit the use of any new well which is found to be installed, located, constructed, operated or maintained so as to be a health hazard to the users, neighbors or community.
(4) Appoint assistants to aid in processing applications for well location permits.
(5) Enforce any or all ordinances applicable to private water systems in accordance with department rules.
(6) If the administrator of the private water systems ordinance or an authorized assistant determines that the location or construction of a private well does not comply with this ordinance, the administrator or assistant shall post, in a conspicuous place upon the site, a suspension of work order demanding cessation of work. The administrator shall notify the well constructor and property owner in writing of the noncompliance and the nature of the work to be discontinued and corrected, identifying the location and the name of the person issuing the order. It shall be a violation of this ordinance to engage in work at conflict with the terms of an order or to make an unauthorized removal of a posted order. Work may resume on the site only under the direction of the administrator.
[**History:** (3) am., OA 29, 1995-96, pub. 12/06/95.]

45.17 DUTIES OF ADMINISTRATOR. It shall be the duty of the administrator to enforce the provisions of this ordinance and perform the following duties commensurate with the level or levels of the county's delegated authority:
(1) Record all permits, fees, inspections and other official actions and make an annual report thereon to the county board of supervisors.
(2) Provide the department with copies of all permits and correspondence as required by ch. NR 845, Wis. Admin. Code.
(3) Inspect the location of new private water systems upon completion.
(5) Investigate and record all private water system complaints.
(6) Investigate cases of noncompliance with this ordinance, ch. NR 812, Wis. Admin. Code, and ch. 162, Wis. Stats., issue orders to abate the noncompliance and submit complaints to the corporation counsel for enforcement.
(7) Refer complaints and cases of noncompliance believed to be or known to be beyond the scope of the county's delegation level to the department.
(8) Cooperate with all other governmental units and agencies in the enforcement of all state and local laws and regulations of matters related to this ordinance.
(9) Assist the department as specified in ch. NR 845, Wis. Admin. Code.
(10) Refer variance requests and actions which require department approval to the department.
(11) Advise owners not to drink or use water from private water systems under conditions specified in ch. NR 845, Wis. Admin. Code.
(12) The administrator, a trained county inspector or county office staff shall be available at the administrator's office for answering questions regarding permit applications and for accepting applications for well location for a minimum of four regularly scheduled hours each working day.
[**History:** (4) rep., OA 29, 1995-96, pub. 12/06/95.]

[45.18 - 45.20 reserved.]

45.21 REQUIREMENTS AND PERMITS. (1) No person may install a private well or water system unless the owner of the property on which the private water system is to be installed holds a valid well location permit issued by the county or has made arrangements to acquire a permit by notifying the administrator prior to construction. Notification shall include providing the administrator with the property owner's name and address, property legal description, proposed starting date and identification of the person who will be obtaining the permit. Unless other arrangements are made in advance, the permit shall be applied for on the first workday following initial construction.
(2) No private water system may be located, installed or operated within the jurisdictional limits of the county without the appropriate permit being obtained in compliance with sub. (1) above and without being in full compliance with the provisions of this ordinance and all other applicable state and local laws and regulations. Permit applications for the location of a well shall be made by the property owner or the property owner's designated agent. Permits shall be issued from the office of the administrator.
(3) The permit application shall be on forms provided by the administrator.
(4) Well location permit applications shall be signed by the property owner or the property owner's designated agent. Well location permit applications shall be submitted to the administrator at least 2 working days prior to construction if the property owner or well constructor is interested in receiving information about potential contamination sources such as landfills, underground storage tanks, primary and replacement on-site sewage disposal system

areas on the development site and on adjacent properties, and special casing areas. When a well permit application is submitted less than 2 working days prior to construction, the well constructor shall be responsible for maintaining full compliance with all provisions of ch. NR 812, Wis. Admin. Code. The permit application may be submitted by the property owner or the property owner's designated agent and shall be issued to the property owner.

(5)(a) The administrator shall assist applicants by answering questions and providing forms, reviewing applications and approve, disapprove or notify an applicant of the need to seek a variance or special approval from the department or return the permit application due to incompleteness for all private water systems to be constructed or modified in the county, within 2 working days following submission of the permit application. The administrator may reserve final approval or disapproval of a permit which requires department action until the variance or special approval request has been acted on by the department.

(b) If a permit is disapproved because an applicant submits an incomplete or inaccurate application, one-half of the application fee shall be retained by the county. Any reapplication shall require the same fee as a new application.

(7) The administrator shall issue written notice to each applicant whose permit application is disapproved. An application shall be disapproved if the well construction would result in noncompliance with ch. NR 812, Wis. Admin. Code, or if a well construction variance or special approval request was denied by the department. Each notice shall:

(a) State the specific reason for denial.

(b) Inform the applicant of the right to request a special approval or a variance from the department and the procedures for making such a request.

(8) When construction occurs on a weekend or holiday, notification shall be provided to the administrator on the first workday following the weekend or holiday in the same manner as described in sub. 4 above. Unless other arrangements are made with the administrator, the permit application shall be obtained on the first workday following the weekend or holiday. The well constructor shall be responsible for maintaining full compliance with all provisions of ch. NR 812, Wis. Admin. Code.

(10) A permit transfer application shall be submitted to the county when there is a change of property owner after the application is submitted but before well construction is completed. Failure to submit a transfer application to the county shall invalidate a previously issued permit. The application shall be on a form made available by the administrator.

(11) As soon as the well location permit is received it shall be displayed conspicuously at the well site during construction for a minimum of 7 days following completion of construction or until the well has been inspected by county staff, whichever occurs first.

(12) A well location permit shall be valid for a period of one year or until construction is completed, whichever comes first. If the permit expires, a new application shall be submitted to the administrator. Reapplications shall be evaluated so that construction will comply with the provisions of ch. NR 812, Wis. Admin. Code, in effect at the time of the reapplication. The administrator may require additional inspection and fees for reapplications.

(13) A well location permit is not required nor shall be issued by the county for private water systems requiring written plan approval from the department.

(14) Any permit issued under this section shall be void if any false or inaccurate statement is made or if any inaccuracy is shown on any application for a permit.

(15) No permit may be issued to any property owner or designated agent of the property owner who is in violation of this ordinance, until the violation has been corrected, unless the permit is to allow correction of the violation.

[History: (5)(a) and (b) am., Sub. 1 to OA 43, 1987-88, pub. 06/18/88; (1), (2), (4), (5), (7), (8), (10), (11) and (15) am. and (6) and (9) rep., OA 29, 1995-96, pub. 12/06/95.]

45.22 APPEALS. Persons seeking to appeal a decision of the administrator under this ordinance shall file written letters of appeal with the administrator. The administrator shall place the appeal on the agenda of the county board of health and the appeal shall be given a due process proceeding in accord with s. 46.17. The board shall decide whether to uphold, uphold with modifications or reverse the administrator's decision based upon the terms and intent of this ordinance and of relevant state laws and administrative rules. No appellate decision of the committee shall have the effect of approving an existing or proposed condition that would violate this ordinance or state law or administrative rule. Appeals that may only be approved by the

granting of a variance to ch. NR 812, Wis. Admin. Code, shall be referred to the department pursuant to ch. NR 845, Wis. Admin. Code. Board appellate decisions shall be made in writing and shall be filed in the administrator's office. Appeals of decisions made by authorized agents on the behalf of the administrator shall be made first to the administrator and then be appealable as provided herein.

45.23 VIOLATIONS. The administrator shall investigate violations of this ordinance and ch. NR 812, Wis. Admin. Code, at the county's authorized delegation level(s), issue orders to abate the violations and submit orders to the corporation counsel for enforcement.

45.24 ADMINISTRATIVE DIRECTIVES AND ORDERS. (1) The administrator, after investigation and a determination that a violation exists, may issue a written field directive. This field directive may consist of a hand written note on an inspection report, or similar paper, identifying the violation that has occurred and assigning a date by which the violation must be corrected, and shall include the inspector's telephone number and office address.
(2) A formal letter may be issued which states the violation, the ordinance, administrative rule or statutory section violated, the date the violation was noted, the name of the inspector who noted the violation and the date by which the correction must be made.
(3) Upon discovery and after documentation of a violation, the administrator may issue a correction order. The administrator may use a stepped enforcement procedure by issuing a directive before an order or may proceed directly to issuing a correction order. An order shall include the following:
(a) The location of the violation (site).
(b) The name of the parties: owner, permittee, well constructor.
(c) The section of the ordinance and Wisconsin Administrative Code violated.
(d) The date of inspection of the site where the violation occurred.
(e) The name of the person who conducted the inspection which revealed the violation.
(f) The date by which the correction must be completed.
(g) The name of the person who must be contacted regarding subsequent inspection of the site.
(h) A statement that if the order is not complied with, the administrator will refer the violation to the corporation counsel with a recommendation to seek injunctive relief or forfeitures, or both, from the circuit court of Dane County. Orders must be signed by the administrator.
(i) Orders shall be served on the owner or well constructor by certified mail. Where appropriate, the administrator may request the sheriff to serve any particular order. The administrator shall report all orders that have not been complied with to the corporation counsel for enforcement.
[History: (3)(i) am., Sub. 1 to OA 43, 1987-88, pub. 06/18/88.]

45.25 ENFORCEMENT ACTIONS. (1) An enforcement action may be brought by the corporation counsel against a person or persons for any of the following violations:
(a) Failure to comply with any provision of this ordinance;
(b) Failure to comply with any permit specification or requirement;
(c) Failure to comply with any directive or order issued by the county administrator;
(d) Resisting, obstructing or interfering with the county administrator's or an authorized assistant's actions undertaken pursuant to this ordinance.
(2) The county corporation counsel may, for any violation, seek injunctive relief or forfeitures of not less than $50.00 nor more than $200.00, or both, for each violation.
(3) Each day a violation exists is a separate offense.
(4) Any person who has the ability to pay any forfeiture entered against him or her under this ordinance but refuses to do so may be confined in the county jail until such forfeiture is paid, but in no event to exceed thirty (30) days. In determining whether an individual has the ability to pay a forfeiture imposed under this section, all items of income and all assets may be considered regardless of whether or not the income or assets are subject to garnishment, lien or attachment by judgment creditors under the laws of this state.
[History: (2) am., OA 16, 2000-01, pub. 02/05/01.]

[45.26 - 45.50 reserved.]

45.51 FEE SCHEDULES. (1) The fee for a well siting permit shall be $50.
(2) The fee for a transfer of a well siting permit shall be $25.

(3) The fee for a reinspection of a well site shall be $25.
(4) The fee for a well abandonment permit shall be $25.

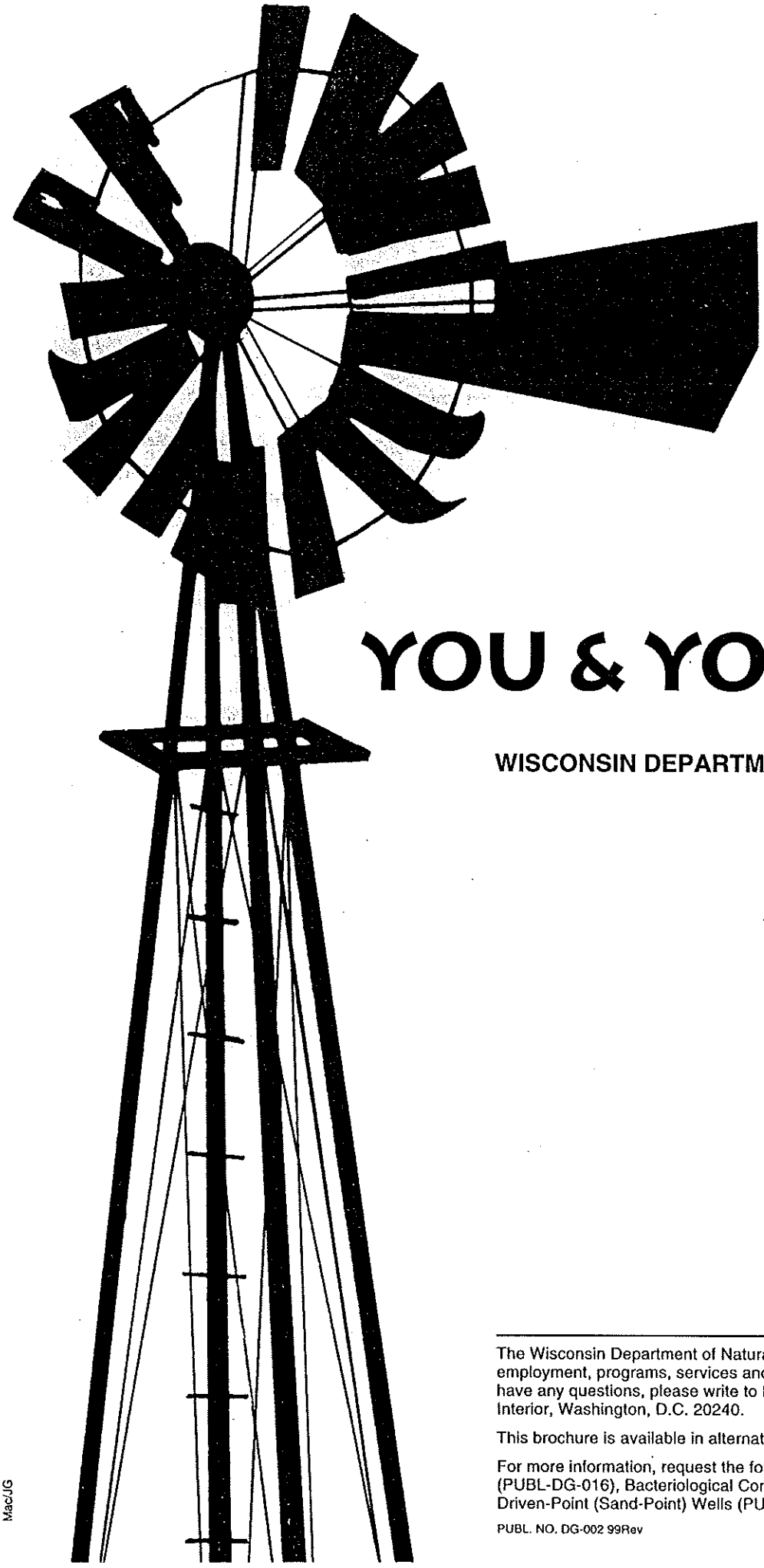
[45.52 – 45.99 reserved.]

END OF CHAPTER

[**History:** Ch. 45 cr., OA 4, 1987-88, pub. 09/14/87; references throughout chap. 45 to NR 11.03(2), NR 109, NR 112, NR 145 and NR 145.05 were changed to, respectively, NR 811.02(7), NR 809, NR 812, NR 845 and NR 845.05, OA 29, 1995-96, pub. 12/06/95.]

APPENDIX P

PRIVATE WELLS AND WELL ABANDONMENT INFORMATION



YOU & YOUR WELL

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

The Wisconsin Department of Natural Resources provides equal opportunity in its employment, programs, services and functions under an Affirmative Action Plan. If you have any questions, please write to Equal Opportunity office, Department of the Interior, Washington, D.C. 20240.

This brochure is available in alternate format upon request.

For more information, request the following brochures: Well Abandonment (PUBL-DG-016), Bacteriological Contamination of Drinking Water (PUBL-DG-003), Driven-Point (Sand-Point) Wells (PUBL-DG-022-92)

PUBL. NO. DG-002 99Rev

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Is there a new well in your future? Perhaps you are building a new home, or are simply considering replacing or upgrading an existing water supply. Whatever the case, here is some information that can help you.

Who regulates water wells?

Wisconsin has had well regulations since 1936, and today is recognized as a national leader in well protection. NR 812, (formerly NR 112), Wis. Adm. Code, is administered by the Department of Natural Resources (DNR). The Well Code is based on the sound premise that if a well and water system is properly located, constructed, installed and maintained the well should provide safe water continuously without the need for treatment. Most county zoning and public health offices have a copy of the Well Code. For information about the code, contact a DNR regional water supply staff person or a licensed well driller or pump installer. Consult with licensed individuals or neighbors for background information on water quality.

When is an approval required prior to construction?

Some DNR approved county ordinances require that a "well permit" be obtained prior to construction. Check with your local health department or zoning office.

State statutes require that any owner who constructs and/or operates a well or combination of wells on one property capable of producing at least 70 gallons per minute all together, must obtain an approval from the DNR prior to construction.

Approvals are also required for constructing school water systems, wastewater treatment plant water systems and community water systems governed under chapter NR 811 and for some types of water treatment.

Who can construct wells? Who can install pumps?

Well Driller—Only those persons holding a current well drilling license from the Department of Natural Resources may construct or reconstruct (deepen or install a liner or screen) potable wells.

Pump Installer—Only those persons holding a current pump installer license from the Department of Natural Resources may install and replace pumps, pitless adapters and accessory piping and pressure tanks on both drilled and driven point potable wells.

Exceptions—A well drilling license is not required for constructing driven point wells.

A license is not required for a person constructing a well or installing a pump on property owned *and* occupied by him or her. State law requires, however, that no matter who does the work, it must comply with the State Private Well Code (ch. NR 812).

A license is not required for an individual constructing a nonpotable well or installing a pump in a nonpotable well, however the installation must comply with the well code.

What are the responsibilities of a well constructor to the owner?

The well must be constructed or reconstructed in compliance with ch. NR 812, and upon completion of a well construction or reconstruction, a well driller or point driver is required to:

1. Test pump and flush the well.
2. Disinfect the well.
3. Collect a water sample for a bacteriological test; submit the sample to a laboratory certified for bacteriological testing; and provide a report of the results to the owner within 10 days of receiving the water test results. (The DNR recommends that the water also be tested for nitrates.)
4. Provide the owner or his agent with a copy of a Well Construction Report, that describes how the well was constructed, within 30 days of completion of the well. The report assigns a unique number to the well.

The water sample test results and well construction report must also be sent to the Department.

What are the responsibilities of a pump installer to the owner?

A pump installer must install the pump, the pitless adapter, pressure tank and sample faucet in compliance with the Well Code, disinfect the pump and distribution system after installation, flush it, take a water sample for bacteriological analysis (as described in #3 above) and report the results to the owner.

The pump installer may delegate the sample collection to the owner or another agent, by leaving the sample bottle, instructions and form.

Some private well location requirements (from NR 812)

Always ensure that your well is located upslope and as far as possible from potential sources of contamination, but at least:

- 8 feet from an approved building sewer pipe or 25 feet from building sewers made of other non-approved materials.
- 8 feet from a swimming pool.
- 8 feet from any "clear water drain" (for example, a rainwater downspout outlet or foundation drain discharging to the ground).
- 100 feet from any buried petroleum tank, except that only 25 feet of separation is required for a buried fuel oil tank if the tank is used only for private residential heating.
- 25 feet from a septic or holding tank, or laundry or wastewater sump.
- 25 feet from the high water mark of a lake, pond or stream.
- 50 feet from a privy, soil absorption system ("drainfield") or mound system; or a municipal sanitary sewer or private collector storm sewer, either larger than 6" in diameter or serving more than 4 living units.
- 50 feet from the nearest existing or future grave site in a cemetery.
- 250 feet from a sludge disposal area, a salvage yard or a salt storage area.
- 250 feet from an absorption, storage, retention or treatment pond; ridge and furrow system; or spray irrigation waste disposal site.
- 1,200 feet from any existing, proposed or abandoned landfill site.

NOTE: This list is not complete. Consult NR 812 or the DNR for specific requirements. Figures A and B show well location requirements.

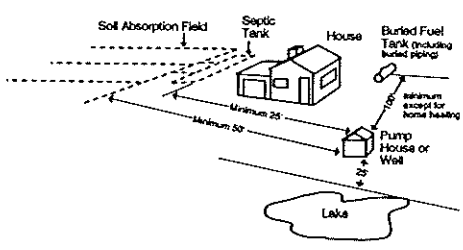


Figure A Common separation distances on residential lots

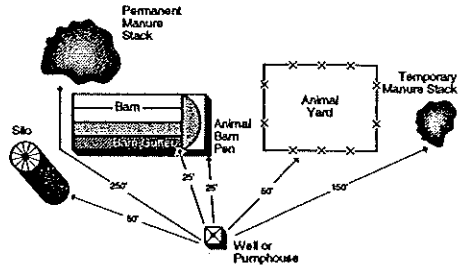


Figure B Common separation distances on farms

Some general DOs and DON'Ts

DO Make certain the well constructor extends the well casing pipe at least 12 inches above the finished ground surface and two feet above the floodplain. (Take future landscaping into account.)

DO Properly install a vermin-proof well cap and conduit to prevent entrance of insects into the well.

DO Make certain any underground connection to the well is made with an approved pitless adapter or unit. Properly installed, this will provide a water tight connection to the well and allow pump repair or well cleansing without further excavation around the well, unless it is a driven point well.

DO Properly fill and seal any unused wells from the bottom to the top (a DNR brochure on Well Abandonment is available).

DO Collect a water sample for bacteriological analysis at least once each year and anytime you notice a change in taste, odor, color or appearance. Sample for nitrate if the water is to be used for an infant or a pregnant woman.

DO Construct your driven point well to a depth of at least 25 feet (not including the screen), or, 10 feet below the static water level, whichever is greater. Shallow wells are not recommended in areas of small lots and high density homes.

DO Install an accessible downward-facing, non-threaded sampling faucet between the pump and the pressure tank or on the "T" for the tank. It must be at least 12 inches above the floor to allow for sampling water directly from the well.

DO Use only approved well casing pipe. (see NR 812.17).

DON'T Install a well in the basement or crawl space of your home or the well won't be accessible for repair. If the basement is of the walk-out type, installation is permissible (but not recommended), if certain requirements are met. Offset pumps may be installed in dry basements.

DON'T Construct a well, pump, or pressure tank pit. Pits may only be constructed after obtaining State approval and must be built to stringent State specifications. The DNR *does not* recommend pits because of the potential for flooding and subsequent contamination of the water supply. Pitless adapters and units have made pits unnecessary and obsolete.

DON'T Bury an unprotected suction line from a well to a pump installed in a basement. If it develops a hole or crack, it could allow surface water to enter. Instead use a pitless adapter or unit with a concentric pressurized piping arrangement (inner-suction, outer-pressure) to connect the offset pump to well. Also, *do not* use a non-pressure conduit to enclose the suction piping.

DON'T Use any well for disposal or drainage of solid wastes, sewage, surface water or wastewater. This includes water from heat exchangers (heat pumps). This can contaminate our precious aquifers.

DON'T Develop a spring as a drinking water source without obtaining advance approval from DNR. The DNR does *not* recommend the use of a spring as a source of water from drinking because they usually are not properly protected from contamination.

Types of acceptable pump installations

Offset Pumps (usually installed apart from the well in house basement or separate building) with a seal-cross fitting or a flange adapter and pressurized, concentric discharge. Connections are made below frost depth, eliminating the potential for freezing.

1. Shallow-well pump (Figure C)
2. Packer jet assembly pump (Figure D)

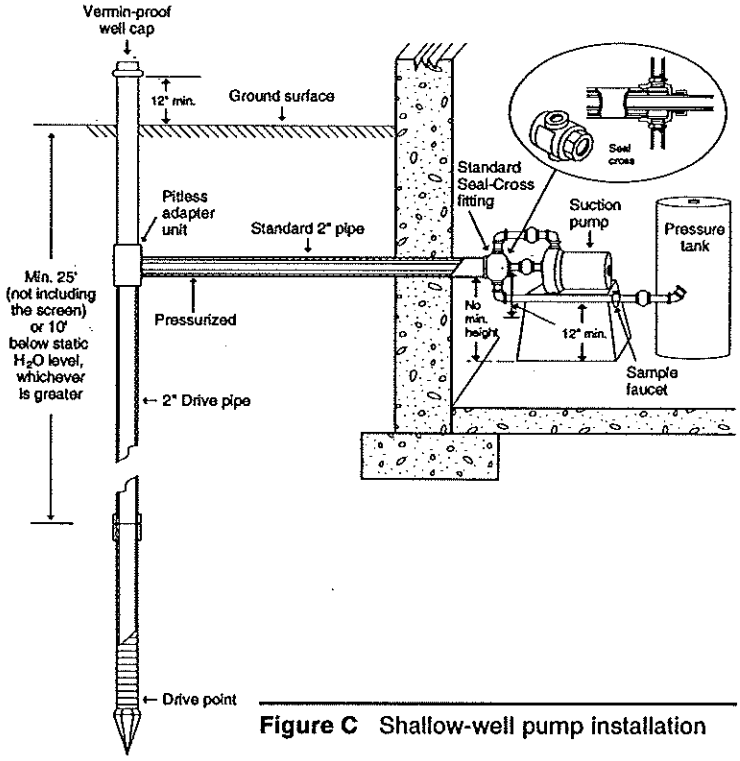


Figure C Shallow-well pump installation

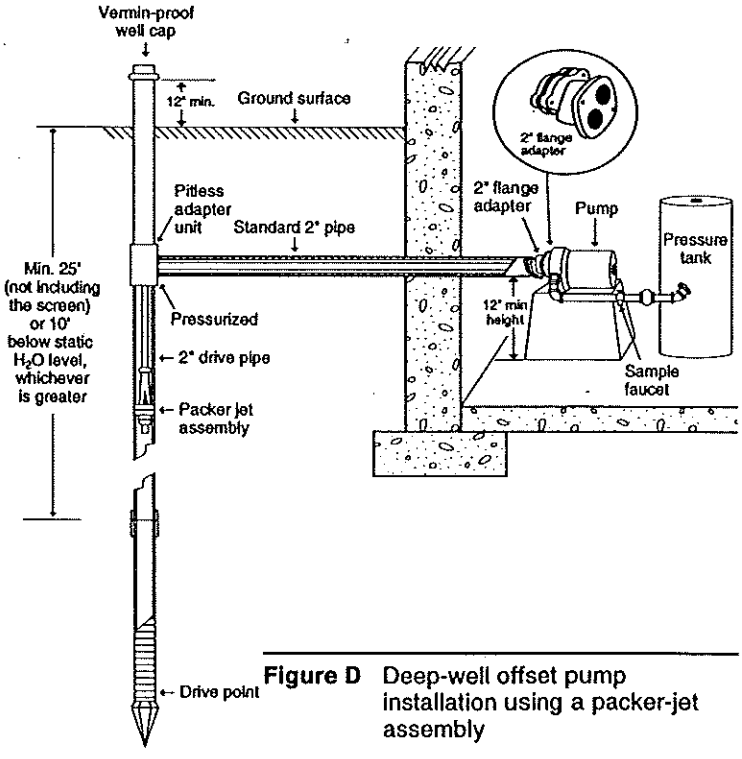


Figure D Deep-well offset pump installation using a packer-jet assembly

Submersible Pumps installed inside well and below water level with:

1. An above-ground discharge pipe enclosed in a heated shelter (Figure E); or
2. Approved above-ground discharge unit, directed to an inside pressure tank (Figure F); or
3. A below-ground discharge with approved pitless adapter or pitless unit (Figure G); or
4. A buried pitless receiver tank (Figure H).

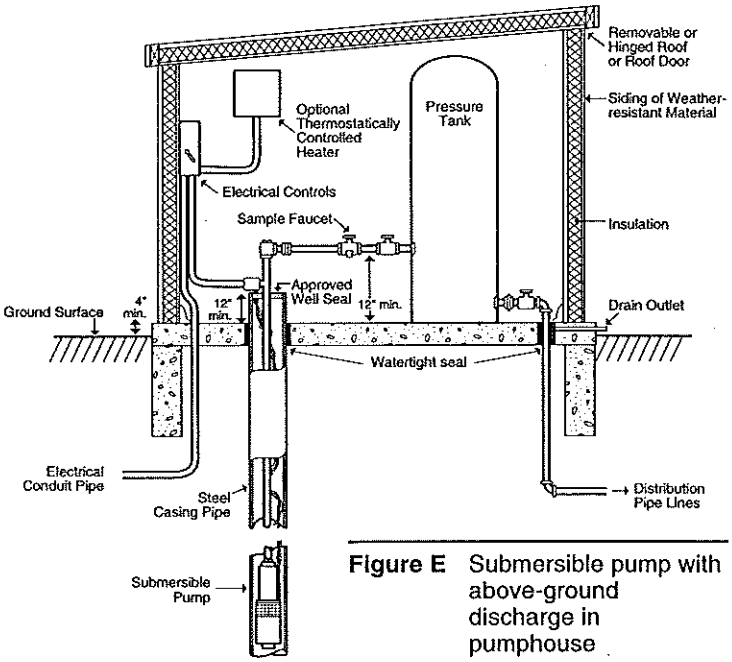


Figure E Submersible pump with above-ground discharge in pumphouse

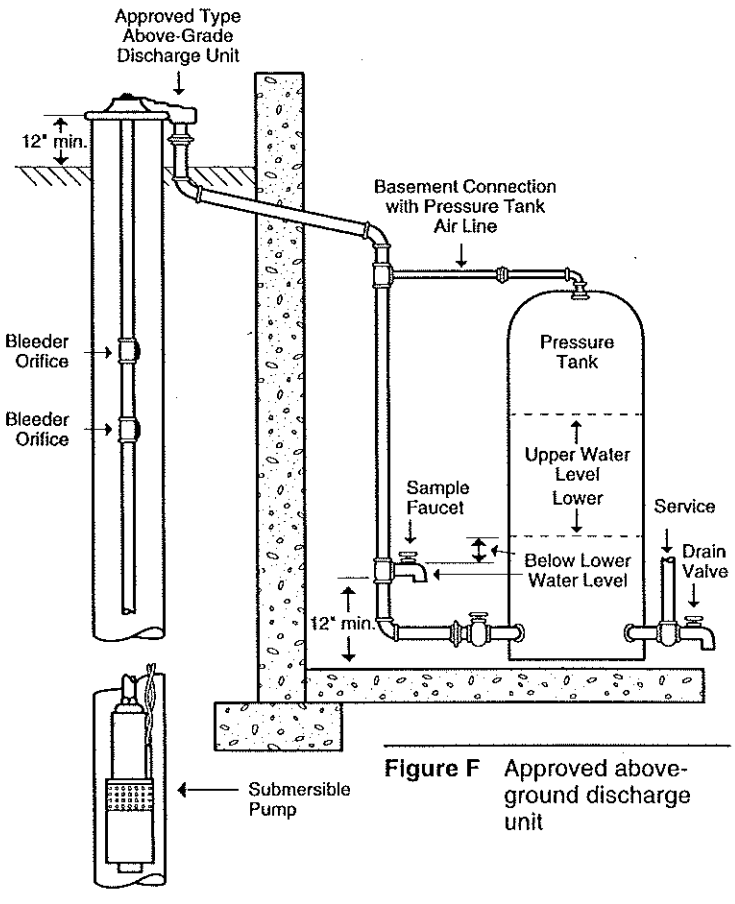


Figure F Approved above-ground discharge unit

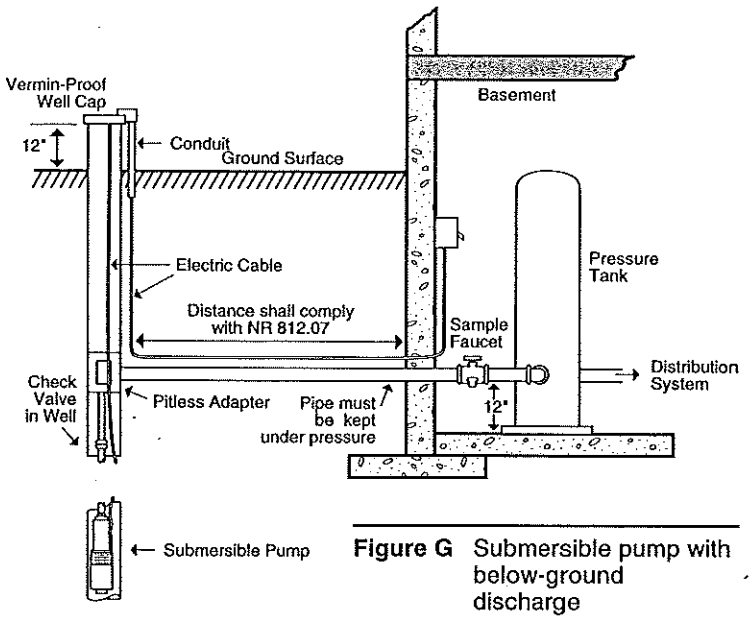


Figure G Submersible pump with below-ground discharge

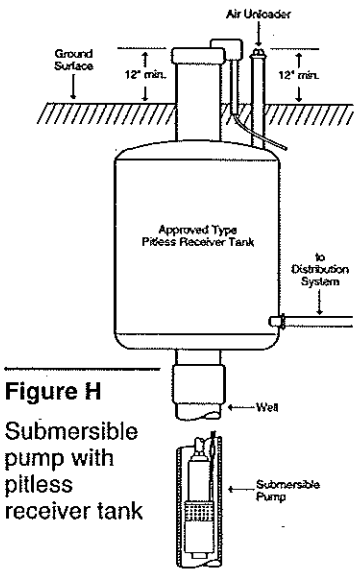


Figure H Submersible pump with pitless receiver tank

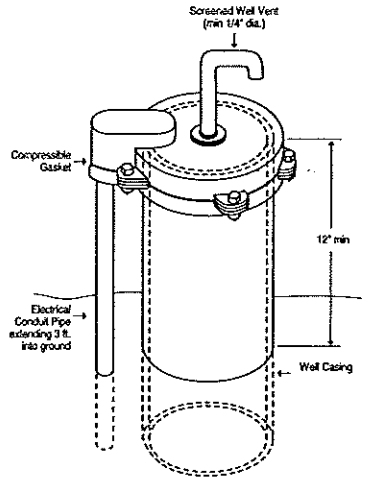


Figure I Example of a vermin-proof cap

Well Code requirements have been simplified for this pamphlet.

For specific details on the Wisconsin Well Code (NR 812), contact the Drinking Water and Groundwater staff at one of the following DNR offices:

DNR Northern Region
810 W. Maple Street
Spooner, WI 54801
(715) 635-2101

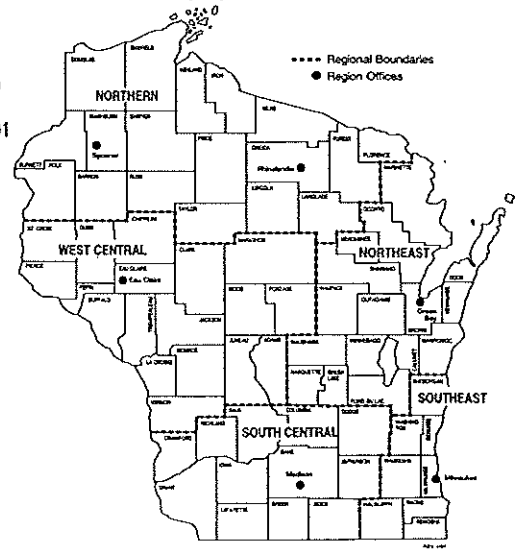
107 Sutliff
Rhinelander, WI 54501
(715) 365-8900

DNR West Central Region
P.O.Box 4001
Eau Claire, WI 54702-4001
(715) 839-3700

DNR Northeast Region
1125 N. Military Avenue
P.O.Box 10448
Green Bay, WI 54307
(920) 492-5800

DNR Southeast Region
2300 N. Dr. Martin Luther King Jr. Dr.
P.O.Box 12436
Milwaukee, WI 53212
(414) 263-8500

DNR South Central Region
Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711
(608) 275-3266



Well Abandonment

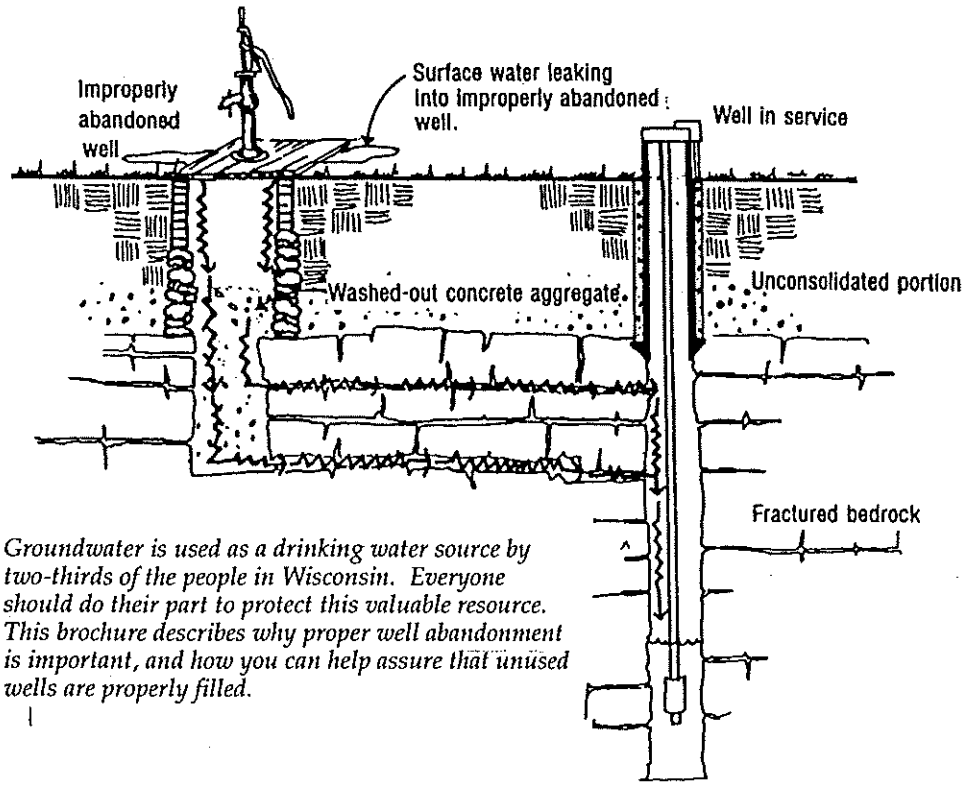
Why are unused and improperly abandoned wells threats to groundwater?

Unused and improperly abandoned wells are a significant threat to groundwater quality. If not properly filled with impermeable material, abandoned wells can directly channel contaminated surface or soil water into groundwater. Water that gets into abandoned wells bypasses the purifying action that normally takes place in the upper layers of the soil. Because groundwater flows in soil and bedrock formations (aquifers), contamination that enters old wells can move to nearby drinking water wells. Many thousands of improperly abandoned wells are threatening groundwater in Wisconsin. Whenever you see an old deteriorating windmill in the countryside, there is likely an improperly abandoned well underneath.

How can unused and improperly abandoned wells threaten groundwater and personal safety?

- Contaminated surface water can enter a well if the casing pipe does not extend high enough above the ground surface and the well cap has been broken or removed; or if there are cracks or holes in the casing due to damage or deterioration with age.
- Contaminated surface water can seep down along the casing pipe of an improperly constructed well.
- Wells in low areas are sometimes illegally left open to drain surface water from heavy rainfall or snowmelt.
- Open wells offer tempting disposal receptacles for liquid and solid wastes. The disposal of any pollutant or wastewater in a well is prohibited by State codes.
- Large-diameter open wells pose safety hazards for small children and animals. Several years ago a small boy fell into an unfinished well in Italy and died after a valiant rescue attempt. In 1987, a small girl fell into a well in Midland, Texas and was rescued but only after three days of hard work. In 1987, an 11-year old boy fell through a wooden cover into an old dug well on a farm in Missouri and drowned. Although such occurrences are infrequent, they should never be allowed to happen.
- Improperly abandoned flowing wells can be a nuisance and may lower artesian pressure in neighboring wells.

Effect of Improper Abandonment



Groundwater is used as a drinking water source by two-thirds of the people in Wisconsin. Everyone should do their part to protect this valuable resource. This brochure describes why proper well abandonment is important, and how you can help assure that unused wells are properly filled.

When should wells be properly abandoned?

Wells must be properly filled when they are removed from service. Wells are removed from service for a number of reasons, including construction of a replacement well, destruction of the building being served, failure of the well to produce safe water, failure of the well to meet the State Well Code (NR 812) standards, or when a community water system is extended into an area formerly served by individual private wells.

After wells are removed from service they are seldom used. They often get forgotten after a property transfer and, in time, may get covered by a parking lot or a building. Sometimes in this way all traces of old wells disappear. Such wells can cause groundwater contamination. In one recent case in Wisconsin, a house burned down over an improperly abandoned well located in the basement. The well provided a point of entrance into the aquifer and allowed ash-laden water to contaminate the neighbor's well.

In another case, a buried well having only a stone set on the top of the open casing caused severe contamination of the drinking water pumped from another well on the same property. The unused well was near both an animal yard and a sewage absorption field and thus provided direct access for the entrance of contamination into the groundwater.

After a well gets covered, it is very difficult, if not impossible, to find it and determine if it's causing contamination. When new wells are constructed in an area with improperly abandoned wells, they may have to be cased much deeper or to alternate aquifers to provide safe water. These problems can be avoided by the proper filling of unused wells.

Chapters NR 811 and NR 812, Wis. Adm. Codes, require proper abandonment, by permanent filling, of unused wells.

Who can perform proper well abandonment work?

Although current law allows any person to do well abandonment work, the DNR recommends that licensed Well Drillers and Pump Installers be hired to fill wells. These contractors are familiar with correct abandonment materials and procedures, are knowledgeable about wells, and have access to the necessary equipment. It's usually more economical to fill an old unused well at the same time the Well Driller is at the site constructing a new well.

How should a well be properly abandoned?

First determine the construction and condition of the well

The first step in proper abandonment is to obtain information on the construction and condition of the well. Construction information is best obtained from the Well Construction Report on file with the Wisconsin Geological and Natural History Survey (WGNHS) or with DNR. The records date back to 1936. If you call to request a report, you must furnish a legal description in terms of 1/4-1/4 Section, 1/4-Section, Section, Township and Range designations of the property where the well is located. It's also helpful if you can obtain the name of the Well Driller, the property owner or agent at the time of drilling, the approximate date of construction and the street address or Lot #. The chances of finding the report are greater with more information. The telephone number at the WGNHS is (608) 262-7430. You may also contact the nearest DNR office for this information.

A site inspection will help you locate the well and see what condition it is in. You should determine if the well is easily accessible in the yard; or if it is in a pit or a basement. It's possible the top of the well is buried in the yard, in which case you may be able to find it using a metal detector.

During your inspection you can also check to see if the pump has been removed.

Clearing and filling the well

Before the well is filled, the pump and its associated piping, any ungrouted liner pipe, or other obstacles must be removed from the well. If debris has been thrown in the well, a Well Driller may have to first drill it out. After the well is cleared, it must be filled from the bottom up with neat cement grout, sand-cement grout, concrete or bentonite chips. Well Drillers and Pump Installers are familiar with these materials and know how to calculate and place the proper volume of material. If you choose to fill the well yourself, contact the DNR for the proper mixture of materials and methods for determining material volume.

The filling material must be placed through a conductor (tremie) pipe extending to the bottom of the well except when approved bentonite chips are used according to DNR instructions (see pages 4 and 5). Use of a conductor pipe will assure that the filling material won't be diluted by the water in the well and will not plug in the well part-way down. The bottom of the conductor pipe must be kept submerged in the material during filling, but may be pulled as the well is being filled.

Except when using bentonite chips, do not just pour or dump the filling material into the well without the use of a conductor pipe because this could cause the filling material to become diluted or bridge in the well part-way down. If dilution occurs, the fill material will not be impermeable. If bridging occurs, the well will only get partially filled. An improperly filled well can be as much a threat to groundwater quality as an open well.

After properly filling the well from the bottom up, the filling material may terminate a few feet below the ground surface to allow the top of the casing to be cut off, if preferred. The casing may also be left in place. If the well discharged through a non-pressure conduit, the end of this conduit (in the basement) must be sealed watertight with a steel plate.

Flowing wells

Flowing artesian wells that flow at high rates may require special techniques to reduce the flow before the well is filled. Contact the DNR for more information.

For very deep, large-diameter drilled wells, contact the DNR water supply staff for acceptable alternate procedures and materials. In some cases chlorinated, sand-free pea gravel may be used to fill the lower portions of bedrock wells to reduce the cost of material.

Driven-point (sand-point) wells

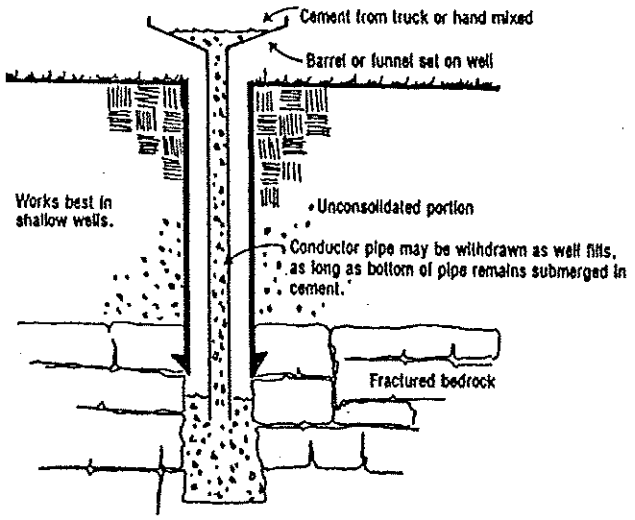
Driven-point or jetted wells 2 inches or less in diameter must be filled with neat cement grout. You may simply pour the grout down the casing, or, if you wish, pump it down through a conductor pipe. You may pull the drive pipe and screen before pouring the grout if the well is 25-feet deep or less. Bentonite chips may not be used for these wells because the chips can too easily bridge in the casing pipe.

Many driven-point wells terminate in pits or in the basements of buildings. Since April 10, 1953 such well locations have been prohibited by the State Well Code. If your well was constructed after this date, the well does not comply and must be properly abandoned and filled.

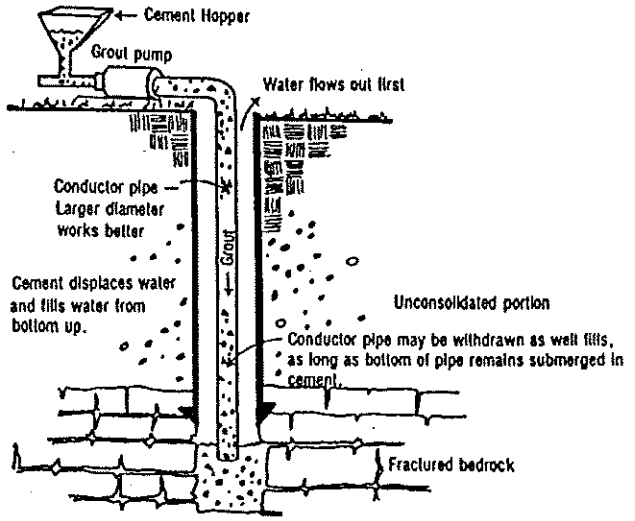
Dug wells

To properly abandon a dug well, first remove the well cover and remove any piping or debris before filling the well. (If a drilled well extends below the dug well it must be filled first.) You must fill the dug well with clean clay, silt, clean native clay or silt-type soil (if compacted), concrete, sand-cement grout or bentonite chips. If the dug well penetrates partially or completely into bedrock, fill the well with concrete or sand-cement grout to a point at least two feet above the top of the bedrock. The top 5 feet of curbing of the dug well must be removed to allow for a good contact between the filling material and the soil. You may cave the curbing into the dug well while the well is being filled if you do it in a manner to prevent plugging of the filling material part-way down; or you may do it near the end of the filling procedure.

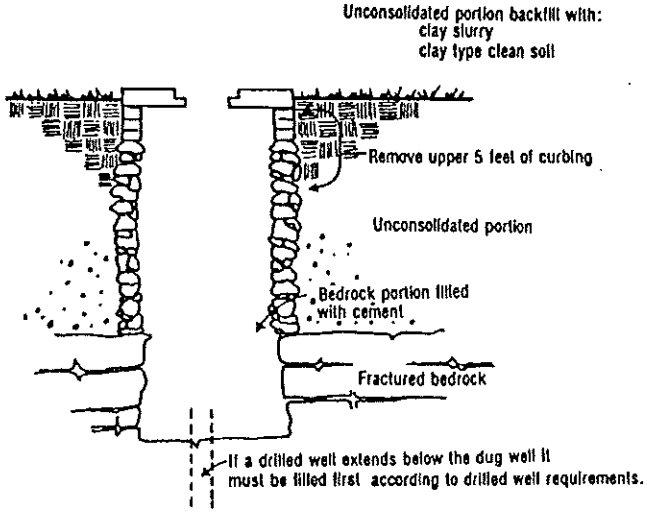
Gravity method for well abandonment



Pumped method for well abandonment



Dug well abandonment



If the dug well is less than 18 inches in diameter, you must use a conductor (tremie) pipe to place the filling material except when bentonite chips are used. For very deep or large diameter dug wells, alternate materials may be allowed. Contact the DNR for more information.

Well pits

When a pit well is abandoned, the pit must also be filled. To properly abandon a well pit, perforate or knock in at least one wall, break up or perforate the floor, and then fill the pit with clean native clay, silt, or clean native soil. If the pit is a subsurface pump room (alcove) connected to the building foundation, the pit does not have to be filled.

Well Abandonment Using Chipped Bentonite

In Wisconsin chipped bentonite products may be used to fill wells and drillholes. The chips may be used for both sand and gravel formation wells and bedrock wells. They may be used for wells & drillholes meeting the following specifications.

- 4 inches or larger in diameter.
- Not more than 500 feet deep.
- Not more than 350 feet of water standing in the well or drillhole.

(Note: Chipped bentonite may not be used to fill wells or drillholes filled with drilling mud or clay slurry and may not be used for small diameter driven point wells.)

Chipped bentonite may also be used for the following:

- To fill dug wells.
- As an alternative to concrete in the top 5 feet when clay slurry is used to fill a well or drillhole from the bottom up to the 5-foot depth.

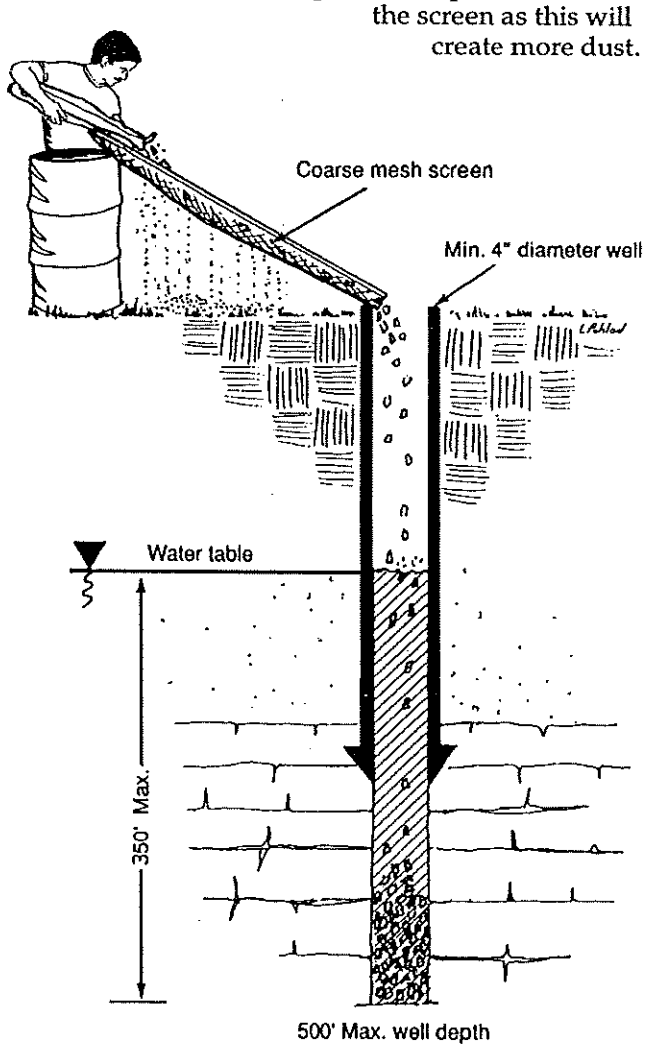
(Note: Bentonite chips come in two basic size ranges (1/4" - 3/8" and 1/2"- 3/4" chips). The 1/4" - 3/8" chips should be used for 4-inch diameter wells. Bentonite chips are irregularly shaped pieces of sodium bentonite clay that look very much like crushed limestone. They should <u>not</u> be confused with pellets or tablets.)

Use the following procedures when using chipped bentonite:

1. Determine the construction details of the well or drillhole including at least the:
   a. Well or drillhole diameter, by simply measuring the inside diameter of the well casing pipe or drillhole; and
   b. Well or drillhole depth, by lowering a weighted line down to the bottom.
2. Remove the pump, pump piping and any other material obstructions or debris in the well or drillhole that could prevent complete filling.
3. Calculate the volume of the well or drillhole to determine the number of the bags of chips that will be required by using:
   a. The attached Table I; OR
   b. $\frac{\pi r^2 h}{0.69\ ft^3/bag}$ r = well radius (in feet), h = well depth (in feet)
   0.69 = number of ft^3 filled by one 50 lb. bag
   π = pi = 3.14

(Remember: Divide the well radius (in inches) by 12 to get the radius in feet.)

4. Fine particles and dust contained in the bags of bentonite chips must not be allowed to enter the well. This is prevented by pouring the bentonite chips out of the bag such that they tumble under their own weight down across a coarse-mesh screen 2 to 3 feet in length, thus allowing the dust to fall through the screen onto the ground. The screen should be formed into a U-shape like a rain gutter. One end of the screen should be placed on the top of the well casing while the other end is supported at a steep angle. Removal of the dust prevents bridging of the chips at the water table. Do not push or pull the chips down across the screen as this will create more dust.



5. Pour the bentonite chips across the screen into the top of the well at a rate not faster than 3 minutes per bag. Pour at this rate so bridging of the chips does not occur—the chips must fall all the way to the bottom of the well. (*Do not* use a conductor-tremie pipe).
6. Make sure the well "accepts" the entire number of bags calculated to fill it. If it doesn't, bridging may have occurred. The point of bridging must be broken so the bentonite chips will fall to the bottom. If the bridge cannot be broken, the well may have to be drilled out and re-filled with neat cement grout.
7. If the standing water in the well does not rise to the surface during the filling procedure, clean, uncontaminated water must be poured down into the well (through the chips) until water rises up to the top of the well and stays there. The chips will swell and create an impermeable plug in the well.

• Approved chipped bentonite products:

Econoplug - Economy Mud Products Co. (Both coarse—1/2" to 3/4"; and medium 1/4" to 3/8" chips) (Mfg. by Wyo-Ben, Inc.)

Enviroplug - Wyo-Ben, Inc. (Both coarse chips: 3/8" to 3/4" and medium chips: 1/4" to 3/8")

Holeplug - N.L. Baroid, Inc. (3/8" and 3/4" chips)

Naturapel - Wyo-Ben, Inc. (Chips)

PdsCo Plug - PdsCo. (Polymer Drilling Systems) (Medium and Coarse Chips)

Permaplug - Cathodic Engineering Equipment Co. (Both medium - 3/8" & coarse - 3/4" chips)

Pure Gold Chips - CETCO (Both coarse Chips: 3/8" to 3/4" and medium chips: 1/4" to 3/8")

Tower Plug - Black Hills Bentonite Co. (3/8" and 3/4" chips)

Volclay Chips - CETCO (Both coarse Chips: 3/8" to 3/4" and medium chips: 1/4" to 3/8"

Well Plug - Fluidril Mud Systems (3/8" and 3/4" chips)

Opti Seal - Bentonite Corp. (3/8" and 3/4" chips)

Table I

Method for Determining the Number of 50 lb. Bags of Chipped Bentonite to Fill a Well

Hole Size and Volume Table

Hole Diameter Inches	Hole Volume (ft3/foot)	Pounds Chipped Bentonite To Fill 1 Ft	Feet Filled By One Bag Chipped Bentonite	Bags Chipped Bentonite to fill 100 Ft
4	0.087	6.3	7.9	12.6
4-1/2	0.110	7.9	6.3	15.8
5	0.136	9.8	5.1	19.6
5-1/2	0.165	11.9	4.2	23.8
6	0.196	14.1	3.5	28.2
6-1/2	0.230	16.6	3.0	33.2
7	0.267	19.2	2.6	38.4
7-1/2	0.307	22.1	2.3	44.2
8	0.349	25.1	2.0	50.2
8-1/2	0.394	28.4	1.8	56.8
9	0.442	31.8	1.6	63.6
9-1/2	0.492	35.4	1.4	70.8
10	0.545	39.2	1.3	78.4
11	0.660	47.5	1.1	95.0
12	0.785	56.5	0.89	113.0
15	1.227	88.3	0.57	176.6
18	1.767	127.2	0.39	254.4
20	2.182	157.1	0.32	314.2
25	3.409	245.4	0.20	490.8
30	4.909	353.4	0.14	706.8

Must I report the well abandonment to the DNR?

Yes. When groundwater contamination investigations are undertaken, it's important to know the location of active, unused and former wells. Further, this information is important documentation for property transfers. Well abandonment report forms (Form #3300-5B or 3300-5W) are available from the DNR's central or regional offices or from counties delegated to enforce the State Well Code. You must use these forms to report how the well was filled and document that the well no longer exists. The form must be completed and signed by the person performing the abandonment work. The second copy is the owner's copy. Send the original to the appropriate DNR regional office indicated at the end of this brochure or to the appropriate county office.

What administrative rules cover well filling and sealing?

NR 812.26 governs proper abandonment of private water supply wells. The filling requirements are also printed on the back of the well abandonment form. NR 811.17, Wis. Adm. Code, governs the proper abandonment of the public water supply wells.

Where can I obtain additional information or report improperly abandoned wells?

To obtain more information, or to report knowledge of improperly abandoned wells, please contact the Drinking Water and Groundwater staff at one of the following DNR offices:

DNR REGION CONTACT LIST

NORTHERN REGION
Department of Natural Resources
810 W. Maple Street
Spooner, WI 54801
(715) 635-2101

Department of Natural Resources
P.O.Box 818
Rhinelander, WI 54501
(715) 365-8900

WEST CENTRAL REGION
Department of Natural Resources
P.O.Box 4001
Eau Claire, WI 54702-4001
(715) 839-3700

NORTHEAST REGION
Department of Natural Resources
1125 N. Military Avenue
P.O.Box 10448
Green Bay, WI 54307
(920) 492-5800

SOUTHEAST REGION
Department of Natural Resources
2300 N. Dr. Martin Luther King Jr. Dr.
P.O.Box 12436
Milwaukee, WI 53212
(414) 263-8500

SOUTH CENTRAL REGION
Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711
(608) 275-3266

REV 7-97

The Wisconsin Department of Natural Resources provides equal opportunity in its employment, programs, services and functions under an Affirmative Action Plan. If you have any questions, please write to Equal Opportunity office, Department of the Interior, Washington, D.C. 20240.

This brochure is available in alternate format upon request. Please call 608/266-0821.

APPENDIX Q

WELLHEAD PROTECTION ORDINANCE

AGENDA #_____
Copy Mailed to Alderpersons_____

CITY OF MADISON, WISCONSIN

AN ORDINANCE _____

creating Section 28.06(1)(h) of the Madison General Ordinances to add Wellhead Protection Districts to the list of zoning districts, **creating Section 28.107** of the Madison General Ordinances to establish Wellhead Protection Districts, **creating new Section 13.22** of the Madison General Ordinances to administer approval of uses in Wellhead Protection Districts, and **renumbering current Section 13.22** to Section 13.23.

Drafted by: Katherine C. Noonan
Assistant City Attorney

Date: March 22, 2002

Fiscal Note:

SPONSORS:

PRESENTED _____
REFERRED Plan Commission;
Water Utility
REREFERRED _____

REPORTED BACK _____

ADOPTED _____ POF _____
RULES SUSP. _____ TABLED _____
PUBLIC HEARING _____

* * * *

MAYOR SIGNED _____
PUBLISHED _____

* * * *

APPROVAL OF FISCAL NOTE IS NEEDED
BY THE COMPTROLLER'S OFFICE
Approved By

_____
Comptroller's Office

* * * *

ORDINANCE NUMBER _____
ID NUMBER _____

ANALYSIS: Pursuant to Wisconsin Administrative Code Ch. NR811, a Wellhead Protection Plan is required for all new wells for municipal water systems. The plan must include a management plan that addresses potential contamination sources and how they will be managed by local ordinances and other local initiatives.

1. Subdivision (h) entitled "Wellhead Protection Districts" of Subsection (1) entitled "Establishment of Zoning Districts" of Section 28.06 entitled "Zoning Districts and Zoning Map Amendments" of the Madison General Ordinances is created to read as follows:

"(h) Wellhead Protection Districts.
1. WP-28 Wellhead Protection District No. 28. See 28.107(6)."

2. Section 28.107 entitled "Wellhead Protection Districts" of the Madison General Ordinances is created to read as follows:

Approved as to form:

_____
Larry W. O'Brien, Interim City Attorney

"28.107 **WELLHEAD PROTECTION DISTRICTS.**

(1) Statement of Purpose. The Common Council of the City of Madison finds that certain uses can seriously threaten or degrade groundwater quality. To promote the public health, safety, and general welfare of the City of Madison, the Wellhead Protection Districts are created to protect municipal water supplies.

(2) Applicability. The requirements of the Wellhead Protection Districts shall apply to all zoning lots located in such districts in addition to all requirements in the Madison General Ordinances that apply to the principal zoning district classification of said zoning lots.

(3) Protection Zones. Each wellhead shall have two (2) zones of protection around it.
   (a) Zone A shall be the area around the well in which it has been determined that groundwater and potential contaminants will take five (5) years or less to reach the pumping well.
   (b) Zone B shall be the smaller of the area around the well in which it has been determined that groundwater and potential contaminants will take one hundred (100) years or less to reach the pumping well, or the area within a twelve hundred (1,200) foot radius around the well.

(4) Uses. All uses in Zones A and B of any Wellhead Protection District shall be approved by the Water Utility General Manger or his/her designee. A use may be approved with conditions.
   (a) Permitted Uses In Zones A and B. Any use allowed as permitted in the principal zoning district, except those uses not approved pursuant to Sec. 13.22.
   (b) Conditional Uses In Zones A and B. Any use allowed as a conditional use in the principal zoning district except those uses not approved pursuant to Sec. 13.22. All conditional uses are subject to the provisions of Sec. 28.12(11).

(5) Existing Uses. Any lawful use existing at the time of the creation of a Wellhead Protection District may be continued, however, no expansion or enlargement of such use is allowed without approval pursuant to Sec. 13.22 by the Water Utility General Manager or his/her designee.

(6) Wellhead Protection District No. 28. The location of Well No. 28 and the surrounding Zone A and Zone B are shown in Section 28.107(6)(a).
   (a) Map of Wellhead District No. 28.

INSERT MAP

3. New Section 13.22 entitled "Wellhead Protection" of the Madison General Ordinances is created to read as follows:

"13.22 **WELLHEAD PROTECTION.**

(1) To prevent contamination of wells supplying municipal water systems, the Water Utility General Manager or his/her designee shall review all proposed uses on zoning lots in Zones A and B in Wellhead Protection Districts.

(2) Review will be based on the presence, use, or storage on the lot of hazardous chemicals, as defined by the Environmental Protection Agency. Consideration will be given to factors including but not limited to the following: whether the zoning lot is in Zone A or Zone B, effective storage or containment of particular hazardous chemicals, and the magnitude and/or frequency of use of the hazardous chemicals. Approval of the use may be contingent on specific conditions being met. A current list of hazardous chemicals, as defined by the Environmental Protection Agency, shall be maintained."

4. Current Section 13.22 entitled "Penalty" of the Madison General Ordinances is renumbered to Section 13.23.

N

0′ 300′ 600′

SCALE

ZONE B

ZONE A

WELLHEAD PROTECTION AREA

ZONE B

ZONE A

UNIT WELL 28

5 YEAR TIME OF TRAVEL CAPTURE ZONE

1200′ RADIUS

PLEASANT VIEW RD

US HWY 12 & 14

U.S. HWY 12 & 14

W OLD SAUK RD

OLD SAUK RD

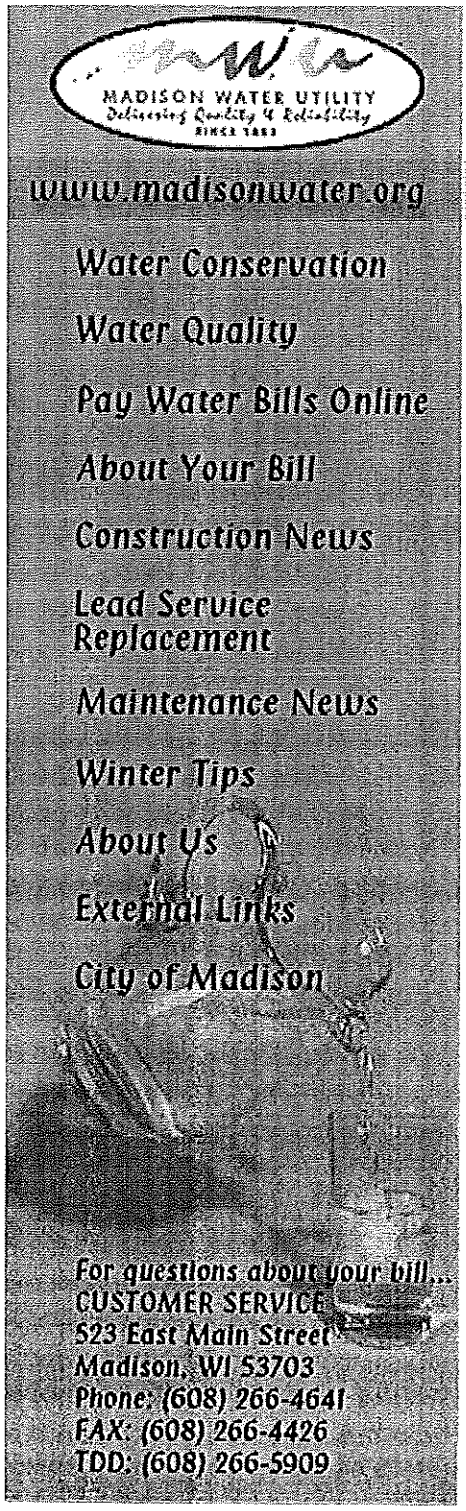
MAP OF WELLHEAD DISTRICT NO. 28

MADISON, WISCONSIN

APRIL 2002

APPENDIX R

WATER CONSERVATION INFORMATION



MADISON WATER UTILITY

Delivering Quality & Reliability Since 1882

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Water Conservation:

The mission of the Madison Water Utility is to provide and maintain an adequate supply of safe water for consumption and fire protection, with quality service and at a reasonable price, for present and future generations. Hydrologic studies have shown that the aquifer supports sufficient quantities of water to meet the City's projected water demands indefinitely, with appropriate management and reasonable conservation measures. Remember, it's your water—use it—but don't abuse it.

Following are some conservation tips to remember when using our precious resource, water:

1.) Water lawns during the cooler morning hours, before 10 a.m., and evenings after 8 p.m. By doing this, you put more water to use due to less evaporation in the hot sun.

2.) Most lawn experts agree that an established lawn needs only an inch of water per week to remain healthy. Place your sprinkler so you are not sprinkling the driveway or sidewalks.

3.) Mow your grass to a length of 2 to 3 inches. This will shade the soil and prevent evaporation.

4.) Landscape with plants native to our area that don't require a lot of watering.

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5.) Repair leaky faucets and toilets. At one drop a second, a leaking faucet or leaking hose can easily waste 3600 gallons or more a year. Most leaks are easily repaired with basic know-how and simple tools.

6.) Install water saving devices. There are many devices you can either buy inexpensively or make yourself. Aerators, flow regulators and displacement devices, which reduce water used in older toilets, can make significant reductions in the amount of water you use.

7.) Run dishwashers and clothes washing machines using full loads.

8.) Electrical energy is needed to pump water from the well and send it to your home. Conserving energy, and water, will be critical during electrical power shortages. Spread out peak water usage periods for both indoor and outdoor usage.