

**APPENDIX**

**FOR CHAPTER H 63  
WIS. ADM. CODE**

**FORMS USED BY THE DEPARTMENT  
IN ADMINISTRATION OF THIS  
ADMINISTRATIVE CODE**

**INSTRUCTIONS AND EXAMPLE OF  
SIZING PRESSURE DISTRIBUTION SYSTEMS**

278-84

# WISCONSIN ADMINISTRATIVE CODE

H 63 Appendix

**EH 115** Rev. 9/78

## REPORT ON SOIL BORINGS AND PERCOLATION TESTS WISCONSIN DEPARTMENT OF HEALTH AND SOCIAL SERVICES P.O. BOX 309, MADISON, WISCONSIN 53701

LOCATION: \_\_\_\_\_, \_\_\_\_\_, Section \_\_\_\_\_, T \_\_\_\_\_, N, R \_\_\_\_\_, E (or) W, Township or Municipality \_\_\_\_\_

Lot No. \_\_\_\_\_, Block No. \_\_\_\_\_, \_\_\_\_\_ Subdivision Name \_\_\_\_\_ County \_\_\_\_\_

Owner's/Buyers Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

TYPE OF OCCUPANCY: Residence \_\_\_\_\_ No. of Bedrooms \_\_\_\_\_ COMMERCIAL \_\_\_\_\_

EFFLUENT DISPOSAL SYSTEM: NEW \_\_\_\_\_ REPLACEMENT \_\_\_\_\_ ALTERNATE SYSTEM \_\_\_\_\_ OTHER \_\_\_\_\_

DATES OBSERVATIONS MADE: SOIL BORINGS \_\_\_\_\_ PERCOLATION TESTS \_\_\_\_\_

SOIL MAP SHEET \_\_\_\_\_ NAME OF SOIL MAP UNIT \_\_\_\_\_

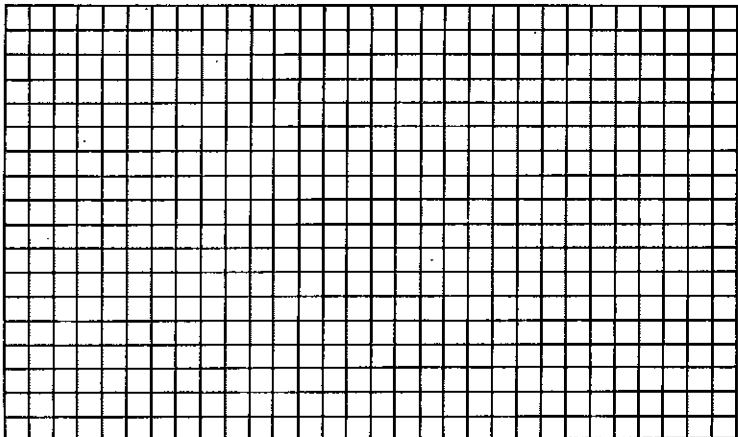
### PERCOLATION TESTS

TEST NUMBER	DEPTH INCHES	CHARACTER OF SOIL THICKNESS IN INCHES	HOURS SINCE HOLE 1ST WETTED	WATER IN HOLE AFTER SWELLING	TEST TIME INTERVAL IN MINUTES	DROP IN WATER LEVEL, INCHES			RATE MIN/IN
						PERIOD 1	PERIOD 2	PERIOD 3	
P--									
P--									
P--									
P--									
P--									
P--									

### SOIL BORING TESTS

TEST NUMBER	TOTAL DEPTH INCHES	DEPTH TO GROUNDWATER, INCHES		CHARACTER OF SOIL WITH THICKNESS, COLOR, TEXTURE, MOTTLING AND DEPTH TO BEDROCK IF OBSERVED IN INCHES
		OBSERVED	ESTIMATED HIGHEST	
B--				
B--				
B--				
B--				
B--				
B--				

PLAN VIEW (Locate percolation tests, soil bore holes and suitable soil areas.) Indicate on the plan the location and square feet of suitable areas. Indicate number of square feet of absorption area needed for building type and occupancy \_\_\_\_\_, Indicate scale or distances. Give horizontal and vertical reference points. Indicate slope.



I, the undersigned, hereby certify that the soil tests reported on this form were made by me in accord with the procedures and methods specified in the Wisconsin Administrative Code, and that the data recorded and location of test holes are correct to the best of my knowledge and belief.

Name (print) \_\_\_\_\_ Certification No. \_\_\_\_\_

Address \_\_\_\_\_

Name of installer if known \_\_\_\_\_

Copy A — Local Authority

CST Signature \_\_\_\_\_

HEALTH AND SOCIAL SERVICES

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PLB 67



State and County Permit Application for Private Domestic Sewage Systems

State Permit # \_\_\_\_\_ County Permit # \_\_\_\_\_ County \_\_\_\_\_

\*DENOTES STATE APPROVAL REQUIRED

Date Approval Received from State if Required \_\_\_\_\_ State Plan I.D. # \_\_\_\_\_

A. OWNER OF PROPERTY \_\_\_\_\_ Making Address \_\_\_\_\_

B. LOCATION \_\_\_\_\_ Section \_\_\_\_\_ T \_\_\_\_\_ N \_\_\_\_\_ R \_\_\_\_\_ E (or) W Lot# \_\_\_\_\_ City \_\_\_\_\_ Subdivision Name, \_\_\_\_\_ nearest road, lake or landmark Blk# \_\_\_\_\_ Village \_\_\_\_\_ Township \_\_\_\_\_

C. TYPE OF OCCUPANCY \*Commercial \_\_\_\_\_ \*Industrial \_\_\_\_\_ \*Other (Specify) \_\_\_\_\_ \*Variance \_\_\_\_\_ Single family \_\_\_\_\_ Duplex \_\_\_\_\_ No. of Bedrooms \_\_\_\_\_ No. of Persons \_\_\_\_\_

D. SEPTIC TANK CAPACITY \_\_\_\_\_ Total gallons \_\_\_\_\_ No. of tanks \_\_\_\_\_ HOLDING TANK CAPACITY \_\_\_\_\_ Total gallons \_\_\_\_\_ No. of tanks \_\_\_\_\_ Prefab concrete \_\_\_\_\_ Poured-in-Place \_\_\_\_\_ Steel \_\_\_\_\_ Fiberglass \_\_\_\_\_ Other (Specify) \_\_\_\_\_ New Installation \_\_\_\_\_ Replacement \_\_\_\_\_ Lift Pump Tank or Siphon Chamber \_\_\_\_\_ Total gallons: Prefab concrete \_\_\_\_\_ Poured-in-Place \_\_\_\_\_ Other (Specify) \_\_\_\_\_

E EFFLUENT DISPOSAL SYSTEM Percolation Rate \_\_\_\_\_ Total Absorb Area \_\_\_\_\_ sq. ft. New \_\_\_\_\_ Replacement \_\_\_\_\_ Alternate (Specify) \_\_\_\_\_ Seepage Trench: \_\_\_\_\_ No. of Lines Ft. \_\_\_\_\_ Width \_\_\_\_\_ Depth \_\_\_\_\_ Tile depth (top) \_\_\_\_\_ No. of Trenches Seepage Bed: \_\_\_\_\_ Length \_\_\_\_\_ Width \_\_\_\_\_ Depth \_\_\_\_\_ Tile depth (top) \_\_\_\_\_ No. of Lines Seepage Pit: \_\_\_\_\_ Inside diameter \_\_\_\_\_ Liquid Depth \_\_\_\_\_ No. of Seepage Pits \_\_\_\_\_ Distance from critical slope \_\_\_\_\_ Percent slope of land \_\_\_\_\_

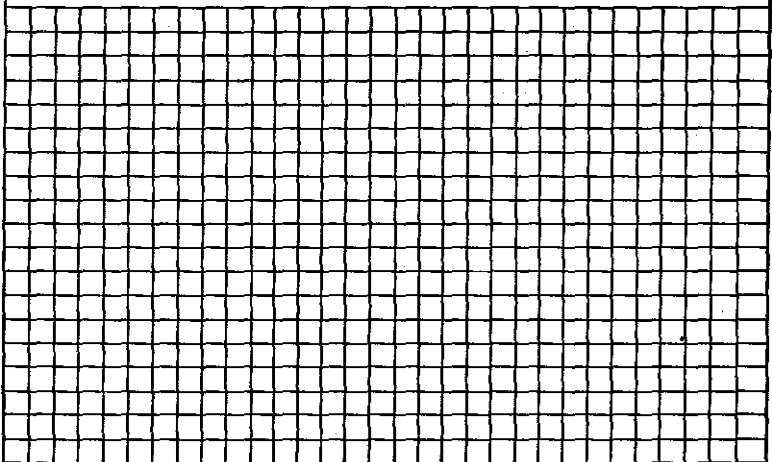
WATER SUPPLY: Private  Joint  Community  Municipal

Owners name as listed on EH 115 if other than present owner: \_\_\_\_\_

I, the undersigned, do hereby certify that the information I have reported is in accord with Section H62.20, Wisconsin Administrative Code, and that I have sized the effluent disposal system from the EH 115 prepared by the Certified Soil Tester.

NAME \_\_\_\_\_ C.S.I. # \_\_\_\_\_ and other information obtained from \_\_\_\_\_ (soil builder) Plumber's Signature \_\_\_\_\_ MP MPRS# \_\_\_\_\_ Phone # \_\_\_\_\_ Plumber's Address \_\_\_\_\_

PLAN VIEW: Provide sketch below of system (include direction of slope and all distances in accord with H62.20. Well location shall be included on the sketch. Indicate or dimension location of all wells on the property or neighbors property. If well has not been drilled please indicate.



Do Not Write in Space Below FOR COUNTY AND STATE DEPARTMENT USE ONLY Date of Application \_\_\_\_\_ Fees Paid: State \_\_\_\_\_ County \_\_\_\_\_ Date \_\_\_\_\_ Permit Issued/Rejected (date) \_\_\_\_\_ Issuing Agent Name \_\_\_\_\_ Inspection Yes \_\_\_\_\_ No \_\_\_\_\_ State Valid# \_\_\_\_\_ Date Rec'd \_\_\_\_\_ 1. county (white copy) 3. owner (green copy) 2. state (pink copy) 4. plumber (canary copy)

DIVISION OF HEALTH, P.O. BOX 309, MADISON, WI 53701

Revised Date 7/1/78



PLB 68

COUNTY

# SANITARY PERMIT

No. \_\_\_\_\_

ISSUED TO \_\_\_\_\_

PLUMBER \_\_\_\_\_ LIC. # \_\_\_\_\_

TOWN OF \_\_\_\_\_ LOCATED \_\_\_\_\_

\_\_\_\_\_ SEC. \_\_\_\_\_ T. \_\_\_\_\_ N/R. \_\_\_\_\_

AND/OR LOT \_\_\_\_\_ BLOCK \_\_\_\_\_

\_\_\_\_\_ SUBDIVISION

### CHAPTER 145, 185 WISCONSIN STATUTES

- (a) The purpose of the sanitary permit is to allow installation of the private sewage system described in the application for permit.
- (b) The approval of the sanitary permit is based on regulations in force on the date of issue.
- (c) The sanitary permit is valid for 2 years and may be renewed for similar periods thereafter. Application for renewal shall be made through the county and shall comply with regulations in effect at the time.
- (d) Changed regulations will not impair the validity of a sanitary permit until the time of renewal.
- (e) Renewal of the sanitary permit will be based on regulations in force at the time renewal is sought. Changed regulations may impede renewal.
- (f) The sanitary permit is transferable. A sanitary permit transfer shall be obtained from the county authority.
- \* If you wish to renew the permit, or transfer ownership of the permit, please contact the county authority.

\_\_\_\_\_  
AUTHORIZED ISSUING OFFICER - DATE

THIS PERMIT EXPIRES \_\_\_\_\_ UNLESS RENEWED BEFORE THAT DATE

# POST IN PLAIN VIEW

VISIBLE FROM THE ROAD FRONTING THE LOT  
DURING CONSTRUCTION

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Revised 11/1/87

PLB 68-T

COUNTY

# SANITARY PERMIT

No. \_\_\_\_\_

## TRANSFER

OWNER \_\_\_\_\_

PLUMBER \_\_\_\_\_ LIC. # \_\_\_\_\_

TOWN OF \_\_\_\_\_ LOCATED \_\_\_\_\_

\_\_\_\_\_ SEC. \_\_\_\_\_ T. \_\_\_\_\_ N/R.

AND/OR LOT \_\_\_\_\_ BLOCK \_\_\_\_\_

\_\_\_\_\_ SUBDIVISION

\_\_\_\_\_ AUTHORIZED ISSUING OFFICER - DATE \_\_\_\_\_

THIS PERMIT EXPIRES \_\_\_\_\_ UNLESS RENEWED BEFORE THAT DATE

# POST IN PLAIN VIEW

VISIBLE FROM THE ROAD FRONTING THE LOT  
DURING CONSTRUCTION

### CHAPTER 145.185 WISCONSIN STATUTES

- (a) The purpose of the sanitary permit is to allow installation of the private sewage system described in the application for permit.
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  - (f) The sanitary permit is transferable. A sanitary permit transfer shall be obtained from the county authority.
- \* If you wish to renew, the permit or transfer ownership of the permit, please contact the county authority.

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# HEALTH AND SOCIAL SERVICES

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H 63 Appendix

8501

PLB 100a 12/78

**Detach And Return Upper  
Portion Of This Form With  
Any Return Correspondence**



**State of Wisconsin**  
DIVISION OF HEALTH  
SECTION OF PLUMBING  
AND FIRE PROTECTION SYSTEMS  
MAIL ADDRESS: P.O. BOX 309  
MADISON, WISCONSIN 53701  
608-266-3815

DATE:	PROJECT:
	PLAN ID. #

DETACH HERE

PROJECT NAME \_\_\_\_\_ PLAN ID. # \_\_\_\_\_

**This is to acknowledge receipt of your plans and specifications for the above-indicated project.**

Preliminary review indicates the plan review fee required is \$ \_\_\_\_\_

<input type="checkbox"/> Plan accepted for review.	Fee received is \$ _____
Fee is being returned because of <input type="checkbox"/> Overpayment <input type="checkbox"/> Underpayment. Providing one of the two categories above is checked, remit correct fee in one payment.	

- No fee has been remitted. Plans submitted with no fees will be held in abeyance.
- Plans being returned.
- Additional information required. SEE BELOW.

**I. Plan Submission**

- Additional information shall be submitted in triplicate unless specifically noted.
- Plans not clear, legible or permanent.
- All information submitted shall be signed, sealed or stamped in accord with Section H 62.25(2)(a) Wisconsin Administrative Code.
- Affidavit enclosed.

**II. Alternate sewage Disposal Systems (Mound Systems)**

- PLB 108 (Application for use of an alternate system).
- County onsite required (1 copy).  Design calculation for pressurized distribution
- Cross section of mound.  Pipe lateral layout.  Plan view of alternate.

**III. Private Sewage Disposal Systems**

- Ground slope with 2' contours in entire area of soil absorption system extending 25' on all sides.
- Elevation of permanent reference point (benchmark).
- Location of area suitable for replacement system - provide soil test data.
- Plot plan showing lot size and all lateral distances from sewage disposal system or holding tank to bldgs, lot lines, well, watercourse, etc.
- Construction detail of septic, holding or lift pump tank if site constructed or tank manufacturer if precast.
- Construction detail and cross-section of soil absorption system.
- Soil boring and percolation test on EH 115 completed by certified soil tester (1 copy).
- Complete data relative to anticipated use of bldg.  3 copies of PLB 60 enclosed.
- Deed restriction required (1 copy).

**IV. Holding Tanks**

- Profile of holding tank.
- Holding tank agreement signed by owner and local unit of government (sample enclosed).
- Reason for installing holding tank soil test or statement from county (1 copy).

**V. Lift Pump**

- Calculations for total lift pump discharge, head and gallons pumped per cycle.
- Size, length & depth of force main.
- Detail & model of pump or automatic siphons including size, pump curves, drawdown and average flow rate GPM.
- Cross section of lift pump tank showing pump(s) or siphon(s).

**VI. Systems In Fill (Fill must be placed prior to plan submission)**

- Total area filled (fill to extend 20' beyond edge of trench before side slope begins)
- Depth and type of fill.
- Copy of onsite report by county or district plumbing supervisor.
-

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FB. 1-A

WISCONSIN DEPARTMENT OF HEALTH & SOCIAL SERVICES
Division of Health
Section of Plumbing & Fire Protection Systems

ON-SITE WASTE DISPOSAL INSPECTION REPORT

Name of Premises

Street City Address County

Master Plumber Address

Owner Address

County Permits Appropriate State Permits

Type of Building: Public Single Family or Duplex

CHECK APPROPRIATE BOX FOR VIOLATION

TYPE OF TREATMENT SYSTEM

- Building Sewer
Septic Tank
Holding Tank
Seepage Bed
Seepage Trench
Seepage Pit

- Conventional Soil Absorption System
Conventional System-in-fill
Alternate Mound System
Holding Tank
Experimental System

BRIEF, FACTUAL COMMENTS AND SKETCH:

Large grid area for sketching and comments.

SEE ATTACHED

DISCUSSED WITH PLUMBER Yes No SIGNATURE (Voluntary)

DATE OF INSPECTION Signature of Inspector

White - Inspector

Yellow - Local Inspector

Pink - Plumber or Responsible Party



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REPORT ON INSPECTION OF SANITARY PERMIT # \_\_\_\_\_

(1) Name and Address of Permit Holder _____ Person/Persons at Site _____	(2) Date of Inspection _____
Name, Address, License No. of Installing Plumber _____	Time of Inspection _____

(3) INSTALLATION CONSISTS OF:  Septic Tank  Seepage Trench  Dosing Chamber  
 Seepage Pit  Seepage Bed  Holding Tank  Fill System

(4) BENCHMARK: (Permanent reference Point) Describe: \_\_\_\_\_  
 Elevation of vertical reference point: \_\_\_\_\_ Slope at site: \_\_\_\_\_

(5) MATERIAL AND DEPTH OF SEWER: \_\_\_\_\_

(6) SEPTIC TANK: Manufacturer: \_\_\_\_\_ Liquid Capacity: \_\_\_\_\_  
 Tank Inlet Elevation: \_\_\_\_\_ Tank Outlet Elev: \_\_\_\_\_  
 # ft to lot or property line: \_\_\_\_\_ # ft to well: \_\_\_\_\_

(7) DOSING TANK: Manufacturer: \_\_\_\_\_ # of gallons: \_\_\_\_\_  
 # of gallon pump set for a cycle \_\_\_\_\_ gallons; total capacity of distribution  
 lines \_\_\_\_\_ gallon; size of pump \_\_\_\_\_ head; gallon per minute \_\_\_\_\_;  
 horsepower \_\_\_\_\_; brand name of pump and model number \_\_\_\_\_  
 Is the warning device installed?  YES  NO Wired?  YES  NO

(8) HOLDING TANK: Manufacturer: \_\_\_\_\_; # of gallons \_\_\_\_\_;  
 construction \_\_\_\_\_; depth to the cover \_\_\_\_\_ ft; If septic tank is  
 being used are baffles removed?  YES  NO; \_\_\_\_\_ ft from residence;  
 \_\_\_\_\_ ft from well; \_\_\_\_\_ ft from property line. Type of warning device \_\_\_\_\_  
 Is the warning device installed?  YES  NO; Wired?  YES  NO;  
 Locking device on cover?  YES  NO; Diameter of vent and material \_\_\_\_\_;  
 Distance from building to vent \_\_\_\_\_

(9) SEEPAGE PIT SIZE: \_\_\_\_\_ # of pits; \_\_\_\_\_ ft diameter; \_\_\_\_\_ ft liquid depth;  
 \_\_\_\_\_ ft to residence; \_\_\_\_\_ ft to well; \_\_\_\_\_ ft to property line;  
 \_\_\_\_\_ ft to ordinary high water mark of lake or stream; \_\_\_\_\_ ft to edge of slopes  
 greater than \_\_\_\_\_; seepage pit inlet pipe-elevation \_\_\_\_\_ ft; bottom of  
 seepage pit elevation \_\_\_\_\_ ft.

(10) SEEPAGE BED SIZE: \_\_\_\_\_ ft width; \_\_\_\_\_ ft length; \_\_\_\_\_ tile depth;  
 \_\_\_\_\_ lineal feet tile; \_\_\_\_\_ ft to residence; \_\_\_\_\_ ft to well; \_\_\_\_\_ ft to lot or  
 property line; \_\_\_\_\_ ft to ordinary high water mark of lake or stream; \_\_\_\_\_ ft to edge  
 of slopes greater than 20% falling away toward lakes, water courses or drainage ditches  
 Elevation of tank discharge line entering bed \_\_\_\_\_ ft.

(11) SEEPAGE TRENCH: Total length of seepage trench \_\_\_\_\_ ft; width \_\_\_\_\_ ft;  
 tile depth \_\_\_\_\_ ft; \_\_\_\_\_ ft to well; \_\_\_\_\_ ft to ordinary high water mark of  
 lake or stream; \_\_\_\_\_ ft to edge of slopes greater than 20% falling away toward lakes,  
 water courses or drainage ditches; elevation of tank discharge line entering seepage  
 trench \_\_\_\_\_ ft.

(12) Has system been installed in area indicated on EH 115?  YES  NO

(13) Has system been installed in floodway?  YES  NO Floodplain?  YES  NO

DILHR-SBD-6095(N. 05/80)

Signature of Inspector: \_\_\_\_\_

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Pib. 106

Plan Identification No. \_\_\_\_\_

Construction Inspection of Alternate Design Sewage Disposal Systems

Wisconsin Department of Health & Social Services  
Section of Plumbing & Fire Protection Systems

Owner's Name \_\_\_\_\_

Mailing Address \_\_\_\_\_

A. Site Investigation at onset of construction

1. Name of Installer \_\_\_\_\_

2. County \_\_\_\_\_ Inspector \_\_\_\_\_ Date \_\_\_\_\_

3. Package No. \_\_\_\_\_

4. Preliminary onsite made by \_\_\_\_\_ Date \_\_\_\_\_

5. Depth to limiting factor (50% unconsolidated rock or estimated ground water level) \_\_\_\_\_

6. Percolation rate \_\_\_\_\_

7. County installation permit number \_\_\_\_\_

8. Are percolation and soil boring holes evident? Yes \_\_\_\_\_ No \_\_\_\_\_

9. Is system located in area of soil tests? Yes \_\_\_\_\_ No \_\_\_\_\_

10. Is system located in area shown on state approved plans? Yes \_\_\_\_\_ No \_\_\_\_\_

11. Ground slope in area of system \_\_\_\_\_

12. Site data is correct as presented by C.S.T. and system designer? Yes \_\_\_\_\_ No \_\_\_\_\_

B. Inspection of Construction

1. Disposal site plowed and properly prepared? Yes \_\_\_\_\_ No \_\_\_\_\_

2. Disposal site conditions wet or damp? Wet \_\_\_\_\_ Damp \_\_\_\_\_ Dry \_\_\_\_\_

3. Type of fill material \_\_\_\_\_

4. Depth of fill (1' Minimum) \_\_\_\_\_

5. Is a crawler type tractor used? Yes \_\_\_\_\_ No \_\_\_\_\_

a. Blade \_\_\_\_\_ Bucket \_\_\_\_\_

6. Has site been driven on by any vehicles? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, explain \_\_\_\_\_

7. Trench width as indicated on approved plans? Yes \_\_\_\_\_ No \_\_\_\_\_
8. Trench spacing as indicated on approved plans? Yes \_\_\_\_\_ No \_\_\_\_\_
9. Have trench bottoms been properly leveled? Yes \_\_\_\_\_ No \_\_\_\_\_
10. Trench length and number as shown on approved plans? Yes \_\_\_\_\_ No \_\_\_\_\_
11. Distribution piping proper diameter? Yes \_\_\_\_\_ No \_\_\_\_\_
12. Holes in distribution piping properly sized? Yes \_\_\_\_\_ No \_\_\_\_\_
13. Holes in distribution piping properly spaced? Yes \_\_\_\_\_ No \_\_\_\_\_
14. Holes in distribution piping in a straight line? Yes \_\_\_\_\_ No \_\_\_\_\_
15. Distribution holes drilled straight into piping Yes \_\_\_\_\_ No \_\_\_\_\_
16. Depth of gravel below distribution piping \_\_\_\_\_
17. Depth of gravel above distribution piping \_\_\_\_\_
18. Thickness of marsh hay covering \_\_\_\_\_
19. Permanent marker at end of each trench \_\_\_\_\_
20. Depth of fill over center of system \_\_\_\_\_
21. Depth of fill over outer trenches \_\_\_\_\_
22. Side slopes \_\_\_\_\_
23. Type of fill used above trenches \_\_\_\_\_
24. Depth of top soil \_\_\_\_\_
25. Seeded? Yes \_\_\_\_\_ No \_\_\_\_\_  
If no, has mulch been placed over mound? Yes \_\_\_\_\_ No \_\_\_\_\_

## C. Pumping Chamber

1. Diameter of inlet \_\_\_\_\_
2. Diameter of outlet \_\_\_\_\_
3. Head \_\_\_\_\_
4. Size of pump tank \_\_\_\_\_ gallons
5. Draw down or gallons pumped per cycle \_\_\_\_\_
6. Manufacturer and type of pump same as that indicated on approved plans? Yes \_\_\_\_\_ No \_\_\_\_\_  
If no, indicate Mfg. and Model # of pump used. \_\_\_\_\_
7. Quick disconnect provided? Yes \_\_\_\_\_ No \_\_\_\_\_
8. Diameter of manhole \_\_\_\_\_
9. Height of manhole above finished grade \_\_\_\_\_
10. Diameter of vent \_\_\_\_\_
11. Height of vent above finished grade \_\_\_\_\_
12. Pump tank located as shown on approved plans? Yes \_\_\_\_\_ No \_\_\_\_\_

## D. Septic Tank

1. Properly installed? Yes \_\_\_\_\_ No \_\_\_\_\_

## COMMENTS

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I, the undersigned, hereby certify that the questions were answered on the basis of my personal inspection or knowledge of the construction of this alternate system and further that all data and answers recorded on this form are correct and to the best of my knowledge and belief.

Name: \_\_\_\_\_ Signature: \_\_\_\_\_

Title: \_\_\_\_\_

---

WE HAVE INCLUDED TWO COPIES OF THIS FORM FOR COMPLETION BY YOUR OFFICE. WHEN INSPECTION OF CONSTRUCTION IS COMPLETE, ONE COMPLETED FORM SHALL BE RETURNED TO THIS OFFICE WITHIN TEN (10) DAYS AFTER YOUR FINAL INSPECTION OF THIS ALTERNATE SYSTEM.

Date received by Section of Plumbing & Fire Protection Systems \_\_\_\_\_

Plan Identification No. \_\_\_\_\_

Dear Sir:

Plans and specifications have been received and assigned the above plan identification number. Preliminary review of these plans indicate the plans have not been sealed or stamped in accord with Section H62.25 (2) (a), Wisconsin Administrative Code.

Section H62.25 (2) (a) specifically indicates that all plans shall be sealed or stamped in accord with Chapter A-E 1, Wisconsin Administrative Code. A master plumber or master plumber restricted sewer may design and submit plans and specifications for those systems he is to install. Each sheet of plans and specifications the master plumber or master plumber restricted sewer submits shall be signed, dated and include his license number. Where more than one sheet is bound together into one volume, only the title sheet need be signed, dated and include the license number.

Rather than return the plans at this time because of this oversight and the recent effective date of the new regulation, please have the party preparing the plans, sign the affidavit below. Provided this affidavit is not returned in two weeks the plans will be returned.

.....

**AFFIDAVIT**

I, the undersigned, hereby certify that the plans and specifications submitted and assigned the above project number were prepared by or under my direction and control.

NAME \_\_\_\_\_ TITLE \_\_\_\_\_

(Type or Print)

OR MASTER PLUMBER

LICENSE NO. \_\_\_\_\_

REGISTRATION  
NUMBER \_\_\_\_\_

ADDRESS \_\_\_\_\_

SIGNATURE \_\_\_\_\_

Plb. = 60  
1/78

PROJECT DETAIL DATA SHEET

NAME OF BUSINESS \_\_\_\_\_

LEGAL DESCRIPTION \_\_\_\_\_

OWNER \_\_\_\_\_

MAILING ADDRESS \_\_\_\_\_  
Zip \_\_\_\_\_

ARCHITECT, ENGINEER,  
PLUMBER OR DESIGNER \_\_\_\_\_

ADDRESS \_\_\_\_\_  
Zip \_\_\_\_\_

TELEPHONE NUMBER \_\_\_\_\_

1. Check appropriate building usage(s) and fill in the information requested opposite each usage listed. Please consult Section H 62.20.

Existing building \_\_\_\_\_ New building \_\_\_\_\_ Addition \_\_\_\_\_

- ( ) Apartments and condominiums ..... Number of bedrooms \_\_\_\_\_
- ( ) Assembly hall ..... Seating capacity \_\_\_\_\_
- ( ) Bar ..... Seating Capacity \_\_\_\_\_ # of meals served \_\_\_\_\_
- ( ) Bowling alley ..... Number of lanes \_\_\_\_\_ ( ) With Bar \_\_\_\_\_
- ( ) Campground and camping resorts ..... Number of sewerer sites \_\_\_\_\_  
Number of unsewered sites \_\_\_\_\_  
Total number of sites \_\_\_\_\_
- ( ) Camps ..... ( ) Day use only Number of persons \_\_\_\_\_  
( ) Day and night Number of persons \_\_\_\_\_
- ( ) Catchbasin ..... Number \_\_\_\_\_
- ( ) Church ..... ( ) No kitchen Number of persons \_\_\_\_\_  
( ) With kitchen Number of persons \_\_\_\_\_
- ( ) Dance hall ..... Number of persons \_\_\_\_\_
- ( ) Dining hall ..... Number of meals served daily \_\_\_\_\_
- ( ) Dog kennels ..... Number of of enclosures \_\_\_\_\_
- ( ) Drive-in restaurant ..... Inside seating capacity \_\_\_\_\_
- ( ) Dump station ..... Number of dump stations \_\_\_\_\_  
Car-service—Number of car spaces \_\_\_\_\_
- ( ) Employes (total of all shifts) ..... Number of employes \_\_\_\_\_
- ( ) Hotel ( ) Motel ( ) Cottages ..... Number of units with 2 persons per unit \_\_\_\_\_  
Number of units with 4 persons per unit \_\_\_\_\_
- ( ) Medical and dental office bldgs ..... Number of doctors, nurses, medical staff \_\_\_\_\_  
Number of office personnel \_\_\_\_\_  
Number of of patients \_\_\_\_\_
- ( ) Mobile home parks: ..... Number of sites \_\_\_\_\_
- ( ) Nursing homes ..... Number of beds \_\_\_\_\_
- ( ) Parks ..... Number of persons \_\_\_\_\_  
( ) Toilets ( ) Showers \_\_\_\_\_
- ( ) Restaurant ..... Seating capacity \_\_\_\_\_  
( ) Dishwasher and/or disposal? \_\_\_\_\_  
( ) 24-Hour service \_\_\_\_\_
- ( ) Retail store ..... Total number of customers \_\_\_\_\_

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- ( ) Schools ..... Number of classrooms \_\_\_\_ ( ) Meals ( ) Showers
- ( ) Self service laundry ..... Total number of machines \_\_\_\_\_
- ( ) Service station ..... Number of cars served daily \_\_\_\_\_
- ( ) OTHER .... (Specify) .....

COMPLETE OTHER SIDE

2. Indicate whether the following facilities are present.

- Floor drain                    yes \_\_\_\_ no \_\_\_\_      Number of drains \_\_\_\_
- Flood waste grinder        yes \_\_\_\_ no \_\_\_\_
- Dishwasher                    yes \_\_\_\_ no \_\_\_\_
- Automatic clothes washer    yes \_\_\_\_ no \_\_\_\_      Number of clothes washers \_\_\_\_

3. Septic tank capacity \_\_\_\_\_  
 Holding tank capacity \_\_\_\_\_  
 Septic or holding tank manufacturer \_\_\_\_\_

4. SEEPAGE TRENCHES:    Total square feet \_\_\_\_\_ width of trenches \_\_\_\_\_  
    length of trenches \_\_\_\_\_ depth \_\_\_\_\_  
    number of trenches \_\_\_\_\_

SEEPAGE BEDS:            total square feet \_\_\_\_\_ width \_\_\_\_\_  
    length of bed \_\_\_\_\_ depth \_\_\_\_\_

SEEPAGE PITS:            total square feet \_\_\_\_\_  
    outside diameter \_\_\_\_\_  
    depth below inlet \_\_\_\_\_  
    total depth from top  
    to bottom of pit: \_\_\_\_\_

Signature of person completing form:

FOR DEPARTMENTAL USE ONLY

Address \_\_\_\_\_

Zip

Telephone Number \_\_\_\_\_

Date \_\_\_\_\_

**INDIVIDUAL SEPTIC TANK REPLACEMENT  
OR REHABILITATION GRANT PROGRAM**

**Preliminary Inspection Report Form**

- 1) Local Governing Body (check one, state name):
- \_\_\_\_\_ Municipality \_\_\_\_\_
- \_\_\_\_\_ Township \_\_\_\_\_
- \_\_\_\_\_ City \_\_\_\_\_
- \_\_\_\_\_ Village \_\_\_\_\_
- \_\_\_\_\_ Sanitary District \_\_\_\_\_
- \_\_\_\_\_ County \_\_\_\_\_
- 2) Signature of Inspecting Official, Title: \_\_\_\_\_ , \_\_\_\_\_
- 3) Date of Inspection: \_\_\_\_\_
- 4) Legal Description of Subject Property:
- \_\_\_\_\_ ¼, \_\_\_\_\_ ¼, Section \_\_\_\_\_, T \_\_\_\_\_ N, R \_\_\_\_\_ E (or) W
- Township or Municipality \_\_\_\_\_
- Lot Number \_\_\_\_\_, Block Number \_\_\_\_\_
- Subdivision Name \_\_\_\_\_, County \_\_\_\_\_
- 5) Building Usage (check one):
- \_\_\_\_\_ Residence, Number Bedrooms \_\_\_\_\_
- \_\_\_\_\_ Other, brief description \_\_\_\_\_
- 6) Name of Owner: \_\_\_\_\_
- Mailing Address: \_\_\_\_\_
- Telephone: \_\_\_\_\_
- 7) Septic System Failure Due to:
- \_\_\_\_\_ System not accepting discharge, creating backup of sewage in building served.
- \_\_\_\_\_ Ponding of sewage on ground surface.
- \_\_\_\_\_ Introduction of sewage to wells, aquifers, groundwaters, or surfacewaters in any manner.
- \_\_\_\_\_ Discharge of sewage into outfall such as drainage ditch, drainway, or drain tile.
- 8) Approximate Age of Failing System: \_\_\_\_\_
- 9) Suggested Replacement System:
- \_\_\_\_\_ Conventional Sewage Disposal
- \_\_\_\_\_ Alternate Mound
- \_\_\_\_\_ System-In-Fill
- \_\_\_\_\_ Holding Tank

(OVER)

**COUNTY SOILS REPORT  
(If on-site was conducted)**

List any results of boring/percolation tests, site limitations, sketch of site, etc.



# HEALTH AND SOCIAL SERVICES

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## On-site Investigation For Conventional System-In-Fill

Owner's name: \_\_\_\_\_

Legal description: \_\_\_\_\_

Building usage: Commercial \_\_\_\_\_ Residential \_\_\_\_\_ Number of bedrooms \_\_\_\_\_

New building: \_\_\_\_\_ Replacement system: \_\_\_\_\_

Square feet soil absorption system required: \_\_\_\_\_

Depth in inches to limiting factor before placement of fill: \_\_\_\_\_

Fill is placed to overcome depth to: ground water \_\_\_\_\_ bedrock \_\_\_\_\_

Depth of fill material: \_\_\_\_\_

Depth to limiting factor after placement of fill: \_\_\_\_\_

Has fill been placed 20 feet all around area proposed for initial and replacement area? \_\_\_\_\_

Is there 6 feet minimum separation between initial and replacement system area? \_\_\_\_\_

Total area filled: \_\_\_\_\_ long x \_\_\_\_\_ wide (do not include side slope area)

Date fill was placed: \_\_\_\_\_

Length of time fill has been in place: \_\_\_\_\_

Was top soil removed prior to placement of fill? \_\_\_\_\_

Was vegetation removed prior to placement of fill? \_\_\_\_\_

Is texture of fill material same as existing soil? \_\_\_\_\_

Indicate texture of fill material: \_\_\_\_\_

Has the site limitation been overcome by the placement of fill? \_\_\_\_\_

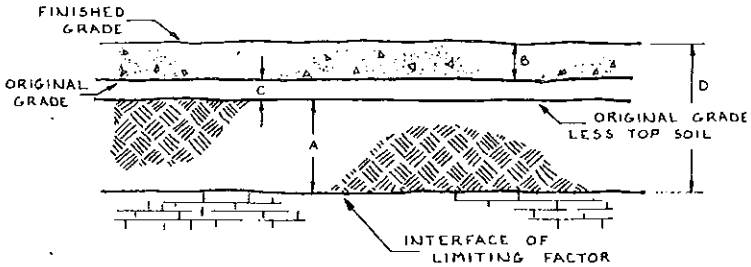
Signature of person completing form: \_\_\_\_\_

Date: \_\_\_\_\_

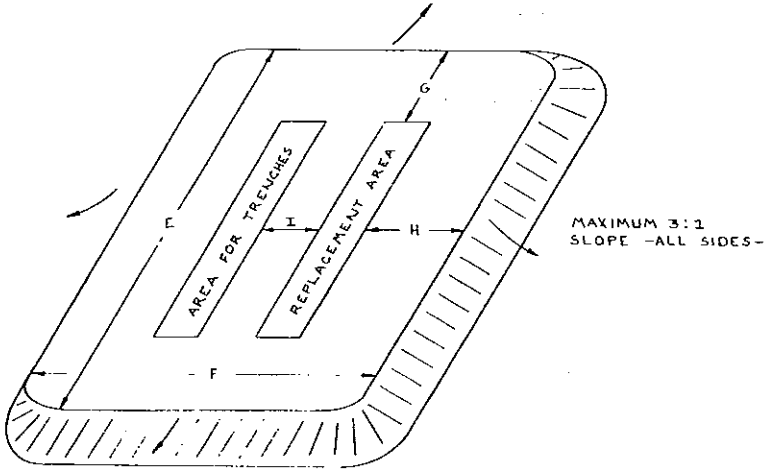
PLEASE COMPLETE SKETCHES ON REVERSE SIDE

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- A. Depth to limiting factor (ground water or bedrock) \_\_\_\_\_
- B. Depth of fill material \_\_\_\_\_
- C. Depth of topsoil or vegetation \_\_\_\_\_ Was this removed before fill placed? \_\_\_\_\_
- D. Finished depth to limiting factor \_\_\_\_\_



- E. Total length of area filled \_\_\_\_\_
- F. Total width of area filled \_\_\_\_\_
- G. Dimension from proposed end of trench to edge of fill (min. 20') \_\_\_\_\_
- H. Dimension from proposed end of trench to edge of fill (min. 20') \_\_\_\_\_
- I. Separation of trenches (min. 6') \_\_\_\_\_

**GROUND WATER MONITORING:**

**REQUEST FOR ADDITIONAL INFORMATION**

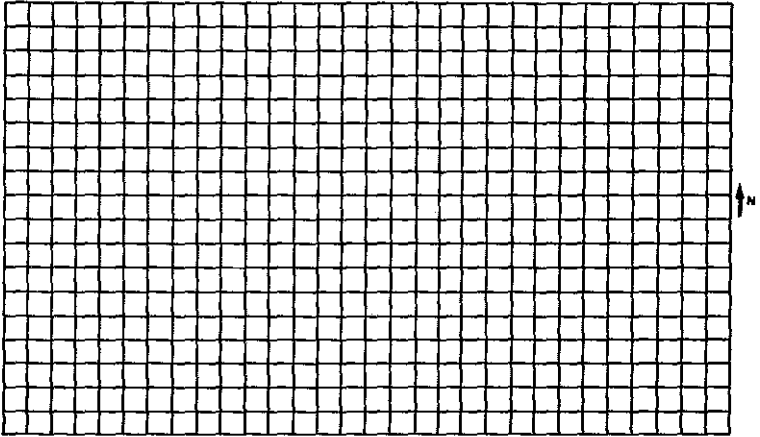
**PLEASE PROVIDE OR CLARIFY THE FOLLOWING:**

- Legal description of property
- Owner's name and mailing address
- Depth and/or location of monitoring wells
- Monthly rainfall
- Daily rainfall data for March, April and May
- Observations and reporting of data is incomplete
- Plot plan required showing location of all monitoring wells
- Surface elevation of all monitoring wells
- Information regarding artificial drainage
- EH-115: Report on Soil Borings and Percolation Tests
- Data report form not signed by Certified Soil Tester
- Data not submitted on PLB. 119 form
- Data not submitted in duplicate—one additional copy required
- Verification of data and procedures from county



**PLOT PLAN**

Provide a diagram (plot plan) showing accurate locations and surface elevations of all monitoring wells.

**ARTIFICIAL DRAINAGE**

Check the site for artificial drainage. If the site is affected by such drainage, submit complete details system. Indicate who will be responsible for maintenance of the drainage system. Indicate who will be responsible for maintenance of the drainage system. Check one:

- No artificial drainage affecting this site.
- Information regarding artificial drainage affecting this site is attached.

Attach an EH-115 or EH-44 (if a proposed subdivision), for soil information and estimated depth to high groundwater using mottling. Submit 2 copies of the Groundwater Monitoring Report Form to the Bureau of Environmental Health, P. O. Box 309, Madison, WI 53701, and submit one copy to the local authority.

I, the undersigned, hereby certify that the data recorded and location of tests reported on this form are correct to the best of my knowledge and belief.

Date \_\_\_\_\_ CST No. \_\_\_\_\_

Signature \_\_\_\_\_

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Plan Identification No. \_\_\_\_\_

Gentlemen:

We have received a (PLB. 119) Groundwater Monitoring Report form from \_\_\_\_\_, CST for the \_\_\_\_\_ property located in the \_\_\_\_\_

Please answer or verify the following and return to this office. Monitoring data will be reviewed upon receipt of this information.

1. Were you notified by the CST of the intent to monitor groundwater levels at the above-mentioned site?
2. Were the wells properly installed?
3. Provide all observations you made during the time the site was monitored.
4. Did the soil tester monitor the site according to section H 62.20 (3) (f), Wis. Adm. Code?
5. List any comments or pertinent information.

\_\_\_\_\_  
Signature of Person Completing Form

HEALTH AND SOCIAL SERVICES

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WISCONSIN DEPARTMENT OF HEALTH & SOCIAL SERVICES
DIVISION OF HEALTH, BUREAU OF ENVIRONMENTAL HEALTH
P. O. BOX 309, MADISON, WISCONSIN 53701

APPLICATION FOR THE USE OF A MOUND SYSTEM

\*\*\*\*\*

Location 1/4 1/4 S T N, R E (or) W

Town or Municipality Street Address

Lot No. Block Subdivision County

Landowner's Name:

Mailing Address:

\*\*\*\*\*

I (We), the undersigned, hereby make application for permission to install a mound system on the above-described premises. I recognize that the above premises are not suited for a conventional septic tank-soil absorption field. If permission is granted, I agree to have the system installed in conformance with the Division's approval of plans and specifications.

I further understand that the alternate system is more complex in nature than a conventional septic tank system and as such will require detailed inspection during construction and monitoring after the system is put into use. I agree to permit both county officials charged with administering county sanitary ordinances and Division employees or other authorized persons to have access to the above described premises at any reasonable time for the purpose of inspecting the construction of or monitoring of the system. I further agree to either personally or by my agent contact the proper county official to arrange the time and date to begin construction of the system.

I understand that this application does not permit me (the applicant) or my agent (the contractor) to begin installation. If the system is approved, the Division will send the applicant a Letter Authorizing the Construction of a Mound System.

I agree to give notice to any subsequent buyer that an application for an alternate system has been made and if installed, that the premises are served by an alternate system and further agree to give that buyer a copy of this application.

The Division receives this application subject to this understanding and subject to all the conditions and obligations set out in this application.

Date Signature of Applicant
STATE OF WISCONSIN )
County of ) ss. Subscribed and sworn to before me
this day of , 19.
Notary Public, State of Wisconsin
My Commission expires:

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APPLICATION FOR DEVELOPMENT OF FLOOD PLAIN
Department of Health and Social Services

When the installation of a new, replacement or expanded private sewage disposal system is proposed for a flood plain area, this form must be completed and submitted to the Division of Health along with plans and other necessary data.

OWNER'S NAME \_\_\_\_\_ DATE \_\_\_\_\_

ADDRESS \_\_\_\_\_

ADDRESS OF BUILDING OR LOCATION OF PROPERTY \_\_\_\_\_

LEGAL DESCRIPTION \_\_\_\_\_

TOWNSHIP \_\_\_\_\_ COUNTY \_\_\_\_\_

Is this system new \_\_\_\_\_ replacement \_\_\_\_\_ expanded \_\_\_\_\_

Is area:

In regional floodway? yes \_\_\_\_\_ no \_\_\_\_\_ not determined \_\_\_\_\_

In regional fringe flood area? yes \_\_\_\_\_ no \_\_\_\_\_ not determined \_\_\_\_\_

Contiguous to ground higher than any of the above? yes \_\_\_\_\_ no \_\_\_\_\_

What is the established regional flood elevation? \_\_\_\_\_

Are flood plain maps published and available or determined by the Department of Natural Resources? \_\_\_\_\_

Has or will permission be granted for the following:

Fill required for building? yes \_\_\_\_\_ no \_\_\_\_\_

Building permit? yes \_\_\_\_\_ no \_\_\_\_\_

Sewage disposal system (sanitary permit)? yes \_\_\_\_\_ no \_\_\_\_\_

Action taken locally by \_\_\_\_\_

Comments regarding development (zoning administrator, board of appeals, etc.):

Favorable \_\_\_\_\_ Unfavorable \_\_\_\_\_

Special Recommendations: \_\_\_\_\_

Signatures:

County Representative \_\_\_\_\_

Department of Natural Resources \_\_\_\_\_

Division of Health \_\_\_\_\_



HOLDING TANK AGREEMENT

This Agreement, made and entered into this day of \_\_\_\_\_, A.D., 19\_\_ by  
and between the \_\_\_\_\_, hereinafter called  
"Owner", and \_\_\_\_\_ hereinafter called the

WHEREAS, application has been made for a building permit on the following described property, to wit:

or that said property is not located in such a manner as to be serviced by a municipal sewer system or on site soil absorption system for domestic sewage, and continued use of the premises requires that a holding tank be installed on the property for the purpose of proper disposal of domestic sewage.

NOW, THEREFORE, in consideration and as an inducement to the Town of \_\_\_\_\_ to issue a holding tank permit for the above described premises, the Owners hereby agree and bind ourselves as follows:

1. Owners agree that they will conform to all the rules and regulations of Plumbing Code in the building of their septic system including the holding tank. They agree that any time the Town of \_\_\_\_\_ through its Plumbing Inspector or Health Officer deems it necessary to pump out said holding tank, the Owners shall have same pumped out in twenty-four (24) hours, or \_\_\_\_\_ will have said work done and charge same back to Owners and place same on their tax bill as a special charge. The Owners further agree that the Town of \_\_\_\_\_ is hereby granted the right, license and authority to enter upon their property above described, at any reasonable time, to inspect, pump and haul, if necessary, from the said holding tank.

2. That all charges and costs incurred by the Town of \_\_\_\_\_ for inspection, pumping, hauling or otherwise servicing and maintaining said holding tank in such a manner as to prevent or abate any nuisance or health hazard caused by such holding tank shall be paid by the Owners. \_\_\_\_\_ shall notify the Owners of any such cost which shall be paid by Owners. \_\_\_\_\_ shall notify the Owners of any such cost which shall be paid by Owners within thirty (30) days from date of notice and in the event that Owners shall not pay said cost within thirty (30) days, Owners hereby specifically agree that all of said costs and charges may be placed on the tax roll as a special assessment for the abatement of nuisance, and said tax shall be collected as provided by Statute of the State of Wisconsin.

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3. That a quarterly pumping report shall be submitted by the Owner or his agent to the local government and the county which shall state the Owner's name, location of the property on which the holding tank is located, the pumper's name, the dates, volumes pumped and the disposal site. An annual pumping report or the fourth quarter report including a summary of the pumping history of the previous year shall be submitted to the Department by the governmental unit responsible, per s. 145.01 (15), Stats.

4. Owners further agree that in the event that municipal sewers shall be installed so as to make the premises available to such municipal sewer service they will pay all special assessments levied against the premises as the property share of costs of the installation of such sanitary sewer and shall not assert any claim as to lack of benefit or reasonableness as to the installation of municipal sewers by reason of the fact that the Owners have been permitted to install a holding tank, and that upon municipal sewer service becoming available, Owners will abandon use of the said holding tank and connect the premises to the municipal sewer.

5. This agreement shall be binding upon the Owner, their heirs and assignees and run with the deed.

WITNESS our hands and seals this \_\_\_\_\_ day of \_\_\_\_\_, 19 \_\_\_\_.

TOWN OF \_\_\_\_\_ OWNERS

by \_\_\_\_\_

by \_\_\_\_\_

STATE OF WISCONSIN

Personally came before me this \_\_\_\_\_ day of \_\_\_\_\_,

19 \_\_\_\_, the above named \_\_\_\_\_

Owners, to me known to be the persons who executed the foregoing instrument and acknowledged the same.

THIS INSTRUMENT  
DRAFTED BY:

\_\_\_\_\_  
NOTARY PUBLIC

My commission expires:

## DESIGN OF PRESSURE DISTRIBUTION NETWORKS FOR SOIL ABSORPTION FIELDS

To obtain uniform application of wastewater effluent over the entire infiltrative surface of a soil absorption field, pressure distribution systems are required. Section H 63.14 specifies the design criteria for pressure distribution systems. They are designed by balancing the headlosses such that the volume of water passing out each hole in the network will be equal. This is achieved by allowing 75 to 85 percent of the total headloss in the network to be lost when the water passes through the hole while only 10 to 15 percent of the total headloss occurs in delivering the water to each hole.

Since the design can become quite tedious, a simplified method has been developed by the use of the tables and nomographs in s. 63.14. With this method, only a straight edge and pencil is needed to complete the design. To demonstrate the use of the tables and nomographs, this example is given.

### Example:

Design a pressure system for a soil absorption system consisting of 5 trenches, each 3 feet wide by 40 feet long. The trenches are to be spaced 9 feet on center.

**Step 1:** Select the desired distribution pipe length from the dimensions of the required soil absorption area. Two layouts would be suitable for this system. The distribution pipes in each trench may be fed by a manifold along one end of the trenches or by a central manifold. In the first design, 5 distribution pipes are used, each 40 feet long. In the second design, there are 8 distribution pipes, each 20 feet long. The first design will be used in this example.

**Step 2:** Select an appropriate distribution pipe diameter compatible with the chosen hole diameter and hole spacing from Table 5.

Holes in  $\frac{1}{4}$ -in diameter spaced every 2.5 feet will be used in this example, though other combinations would be just as suitable. From Table 5, either a 1  $\frac{1}{4}$ -in or 1  $\frac{1}{2}$ -in distribution pipe is required for a 40 foot distribution pipe. Select the larger 1  $\frac{1}{2}$ -in diameter distribution pipe.

**Step 3:** Determine the total discharge rate of each distribution pipe and the number of holes required by using the nomograph in Table 6.

Place a straight edge on the nomograph in Table 6 aligning the 40 foot mark on the Distribution Pipe Length scale with the 2.5 ft mark on the Hole Spacing scale. Where the straight edge crosses the Number of Holes scale, read off the number of holes per distribution pipe; 16 in this example. To obtain the distribution pipe discharge rate, realign the straight edge to join the 16 mark on the Number of Holes scale with the  $\frac{1}{4}$ -in mark on the Hole Diameter scale. Where the straight edge crosses the Distribution Pipe Discharge scale, the discharge rate is given. In this example, it is nearly 20 gpm as shown.

**Step 4:** Select the appropriate manifold size based on the number, length and discharge rate of the distribution pipes from Table 7. For central manifold designs use the lower column headings and left row headings. For end manifold designs, use the lower column headings and the right row headings. (If necessary, repeat steps 1 through 4 until an acceptable network is laid out.)

The manifold length is that length of pipe required to connect all the distribution pipes downstream from the manifold inlet. In this example, the inlet to the manifold is to be at one end. There are to be 5 distribution pipes spaced 9 feet apart requiring a manifold 36 feet long. Since an end manifold design is to be used, the flow per distribution pipe of 20 gpm (from step 3) is read on the right side of Table 7, the number of 5 read on the bottom under the manifold length at 35 feet. In this design, a 3-in manifold is sufficient (See Table 7.) (If the inlet had been in the center of the manifold, the manifold length would have been 18 feet serving 2 distribution pipes. In that case, the manifold could be 2-in diameter.)

**Step 5:** Determine the minimum dose volume required based on the total pipe volume from the nomograph in Table 11.

On the nomograph in Table 11, the straight edge is placed on 1½-in mark on the Distribution Pipe Diameter scale (from step 2), and the 40 mark on the Distribution Pipe Length scale. The volume of the distribution pipe is read off the Pipe Volume scale. In this example, it is approximately 3.7 gal. Next, turn the straight edge maintaining the point on the Pipe Volume scale and align it with 5 on the Number of Distribution Pipes scale. The minimum dose volume read off the Dose Volume scale is approximately 200 gal. However, the final dose volume selected may be larger than this minimum depending on the desired number of doses per day. (See s. H 63.14 (6), Wis. Adm. Code).

**Step 6:** Determine the minimum pump or siphon discharge rate from the nomograph in Table 8.

Using the nomograph in Table 8, the dosage rate is read from the Dosing Rate scale by aligning the straight edge with 20 gpm on the Distribution Pipe Discharge Rate scale (step 3) with 5 on the Number of Distribution Pipes scale. The minimum rate is 100 gpm.

**Step 7:** Select the proper pump or siphon from the head-discharge characteristics described by the manufacturers.

The total dynamic head of the network must first be computed. For a pump system, this is equal to the elevation differences between the pump and the distribution pipe inverts, the friction loss in the pipe which delivers the liquid from the pump to the distribution system at the required rate, and 3 feet of head to compensate for losses in the distribution system. The pump able to pump the minimum discharge rate at the total dynamic head computed is selected.

Siphon selection is based on the manufacturer's stated average discharge rate. This rate is for free discharge. Therefore, to maintain this rate, the siphon discharge pipe invert must be ele-

vated above the distribution pipe inverts a distance equal to the estimated distribution system. These losses included the friction loss in the delivery pipe from the siphon to the network at the minimum discharge rate determined in step 7 plus 3 feet of head to compensate for losses within the distribution system. Where the delivery pipe is more than 50 feet long, its diameter should be one size larger than the siphon discharge diameter to facilitate air venting.

Assume the dosing tank is located 25 feet from the distribution system inlet, and the difference in elevation between the pump and the inverts of the distribution pipes is 5 feet. At a rate of 100 gpm the headloss in 100 feet of a 3-in plastic delivery pipe can be read from Table 9. Therefore, for 25 feet the headloss is 2.09 feet  $\times$  25 feet/100 ft = 0.52 ft. The total dynamic head of the system is 5 feet of elevation head plus 0.5 feet of friction head in the delivery pipe plus 3 feet of account for losses in the distribution system. Therefore, a pump should be selected which is able to pump at least 100 gpm against 8.5 feet of head.

If a siphon were used, its discharge invert would be elevated 0.5 feet plus 3 feet or a minimum of 3.5 feet above the distribution pipe inverts.

In summary, the final design consists of five 40 foot distribution pipes, each 1½-in in diameter connected with a 3-in end manifold with the inlet from the dosing chamber at one end of the manifold. The inverts of the distribution pipes are perforated with ¼-in holes spaced every 2.5 feet. The first hole should be located one half of the hole spacing or 1.25 feet from the manifold. If the last hole is equal to or greater than half the hole spacing from the end of the distribution pipe, put another hole in the bottom of the cap or next to it.