



WARREN COUNTY
ENVIRONMENTAL HEALTH
COMMUNITIES OF CHOICE

301 N. BUXTON SUITE 214 INDIANOLA IA 50125
PHONE (515) 961-1065 FAX (515)961-1082
E-Mail EnvironHealth@co.warren.ia.us

Our office provides this summary of the information needed in regard to installation or repairs of private sewage disposal (septic) systems. If you have questions after reading this material, please feel free to call us anytime Monday-Friday, 8:00 a.m. to 4:30 p.m.

BASIC REQUIREMENTS

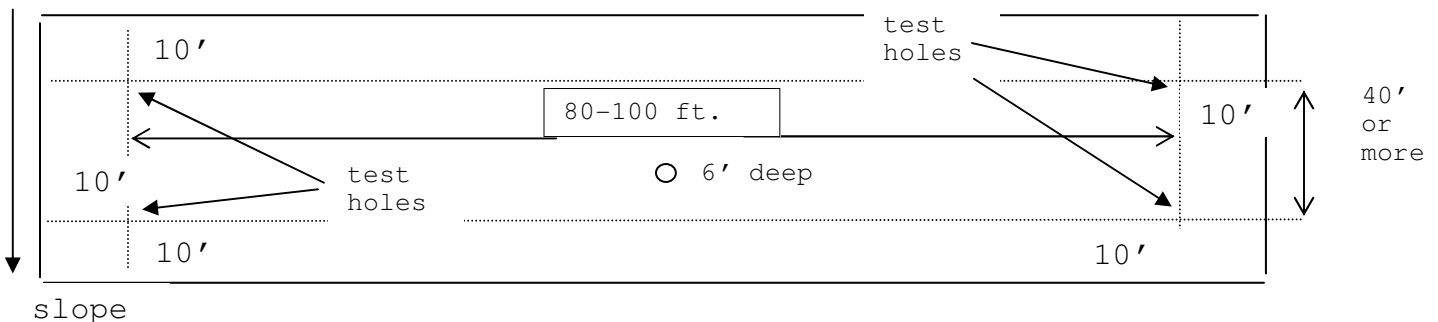
1. **Percolation Test or Soil Analysis.** A percolation test or soil analysis is needed to determine the soil's ability to absorb the water from a private sewer. The Warren County policy is to accept only percolation tests or soil analyses done by an Iowa Certified Engineer (see last page for possible contacts). An **original or notarized copy** of the test or analysis shall be filed with this office. There will be a delay of as much as three days from the time we receive a percolation test or analysis before the permit can be issued. Personnel from this office prior to issuance of a permit must inspect each site. If the soil will not absorb water fast enough or absorbs the water too quickly or the soils are deemed to be unsuitable for a subsurface absorption system, an alternative system will need to be installed. Percolation tests and soil analyses are valid for one year from the date of the test.

Percolation Test Directions

The approved method of conducting a percolation test is contained in Appendix B of IAC Chapter 69. Your engineer is expected to follow this procedure. A copy of the entire Chapter 69 is available in our office or on our website www.co.warren.ia.us

Test Hole Pattern

Be sure to place the test hole pattern with regard to the minimum distances appearing later in this document. Said test hole pattern shall consist of a minimum of four (4) holes in a somewhat rectangular or parallelogram pattern. The distance between the holes should be 80 to 100 feet across the slope and 40 feet or more up and down the slope; i.e. the test area should encompass the area where the lateral lines will be installed. An example of how a test may be laid out is shown below.



Test holes may be between 4 - 12" in diameter with a maximum depth of 36". (Holes less than 34"

will restrict the allowable depth of trenches.) **Each test hole** must be pre-soaked a minimum of 15 hours and no more than 30 hours before a test is conducted.

A six (6) foot test hole is required in the approximate center to check for bedrock and/or high ground water. All five test holes must be flagged. The four corner test holes must be connected by yellow caution tape or roped off as to prevent traffic compaction or damage by earth moving equipment.

If the percolation test or soil analysis fails, there are other sewage disposal systems that may be used. These different types of systems, may include the following:

- At Grade
- Intermittent (Subsurface) Sand Filter
- Mound
- Constructed Wetland (*Only where soil percolation rates exceed 120 minutes per inch.*)
- Mechanical Aerobic (*An owner-signed maintenance agreement must be submitted prior to permit issuance, and a maintenance agreement with a manufacturer-approved contractor must be in place and current as long as the system is in use.*)
- Other alternatives as stated in Iowa Administrative Code Section 567, Chapter 69. Such as a Bio-Peat Filter.

2. **Septic Permit.** Prior to beginning the installation of your private sewage disposal system, you (or an agent of your choice) must secure a permit from our office. This can be done once we have received and validated an engineer's report as stated above. The permit fee is \$200.00 for any type of new system that is installed by a Registered Contractor as defined in Chapter 31 Onsite Wastewater Treatment Systems. The permit fee is \$400.00 for any type of new system that is installed by a Homeowner. The permit fee is \$50.00 for Repair Permit with a prior permit, without a prior permit \$100.00.

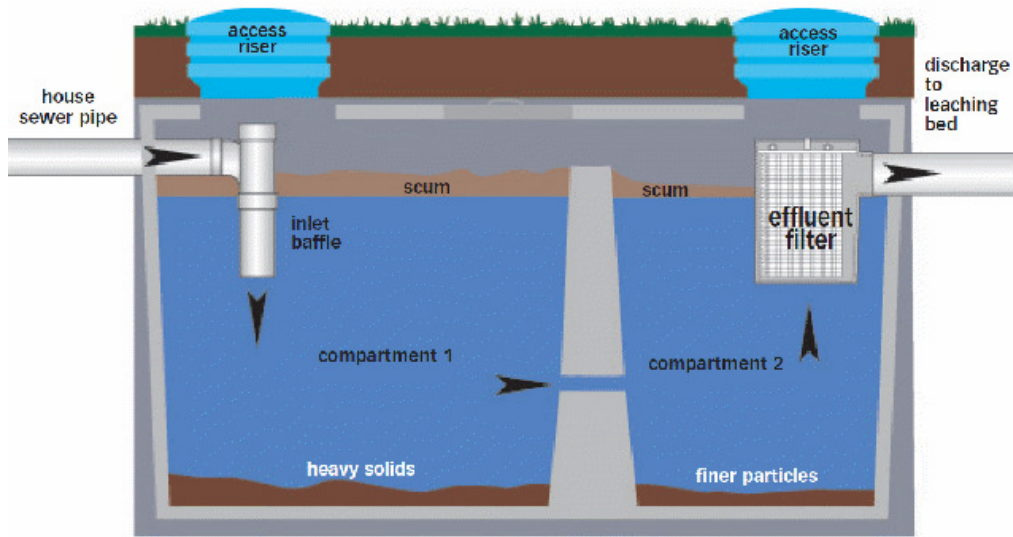
3. **Inspection.** Our office should be advised at least 24 hours prior to installation so that we can schedule the inspection. The system must be exposed so that the Sanitarian can do a thorough inspection.

4. **Final Approval.** Once final approval is given, we will send the homeowner a copy of the permit application along with a map of the system. A record of the system will also be on file in our office.

SEPTIC TANKS

If poured concrete septic tanks are used, the minimum thickness of the walls and bottom shall be six (6) inches. If reinforced poured concrete septic tanks are used, the minimum thickness shall be four (4) inches. Pre-cast special concrete mix, vibrated and reinforced may be two (2) inches. Plastic or fiberglass tanks are also acceptable.

The tank may be placed at any depth below the ground surface. However, the top of the tank must be visible above the surface of the ground by using a manhole riser and cap. Construction of the pipe from the house to the septic tank(s) is to remain watertight and root-proof.



The septic tank(s) shall be located in accordance with the clearances shown below. The distances quoted are considered minimum and should be increased where possible to provide better protection.

From any private water supply	50 feet
From any public water supply	200 feet *
From any lake, reservoir, or pond (<i>1 acre or more in size</i>)	50 feet
From any stream or pond (<i>under 1 acre in size</i>)	25 feet
From edge of any drainage ditch	10 feet
From any dwelling or other structure	10 feet
From property lines	10 feet
From other type subsurface sewage treatment systems	5 feet
From any ground water heat pump bore holes	50 feet
From water lines under pressure	10 feet
From suction water lines	50 feet
From foundation drains or subsurface tile	10 feet

* (Septic lines should not cross water lines and if at all possible, the two should be separated by a minimum of 10 feet laterally.)

Construction

There are a number of commercial septic tanks on the market which, if of the proper size and construction, will give satisfactory service. The prospective user is cautioned, however, against installing too small a tank.

Liquid capacity of tank

The minimum size septic tank allowed for a home with one (1) to three (3) bedrooms is 1,250 gallons. For each additional bedroom, 250 gallons shall be added to the capacity of the tank. Sand filter systems and mound systems can have two septic tanks installed in a series or one tank sized per number of bedrooms, and an effluent filter meeting NSF Standard 46. See Chapter 69 Iowa Administrative Code.

SUBSURFACE ABSORPTION SYSTEMS (LATERALS)

The subsurface absorption system shall be located in accordance with the percolation test pattern of holes and with the clearances as follows:

From any private water supply	100 feet
From any public water supply	200 feet
From any lake or reservoir (<i>1 acre or more in size</i>)	100 feet
From any stream or pond (<i>under 1 acre in size</i>)	25 feet
From edge of any drainage ditch	10 feet
From any dwelling or other structure	10 feet
From property lines	10 feet
From other type subsurface sewage treatment systems	10 feet
From any ground water heat pump bore holes	100 feet
From water lines under pressure	10 feet
From suction water lines	100 feet
From foundation drains or subsurface tile	10 feet

Distribution box

A distribution box shall be located at the head of the absorption field or subsurface sand filter for controlling the flow of sewage to each individual line. It is very important that the flow be equalized to all of the different lines. A satisfactory method of obtaining this flow is with speed levelers. After the levelers are in place, the box should be filled with water to be sure that the flow into each lateral pipe is equal. Concrete should be placed around the outside of the box to ensure stability as the backfill settles around the installation.



Construction

The lateral lines shall be located in accordance with clearances shown on page #4. The distances specified are to be considered minimum and increased when possible to provide for a greater margin of safety.

A covering of untreated paper, such as building paper, or similar permeable material is to be placed over the gravel in the trench before backfilling. This will keep the backfilled material out of the gravel until normal settling occurs in the trench.

The following design features shall be followed when constructing lateral lines:

<u>Item</u>	<u>Unit</u>	<u>Maximum</u>	<u>Minimum</u>
Number of lateral trenches	----	----	3
Length of trenches	feet	100'	----
Width of trenches	inches	36"	18"
Distance between parallel trenches (wall to wall)	feet	----	6'
Depth of trench bottom	inches	36"	18"
Slope of 4" rigid distribution pipe	inches/100'	6"	2"
Depth of septic rock: under pipe	inches	24"	6"
over pipe	inches	----	2"
Size of septic rock	inches	2.5"	3/4"
Depth of earth fill	inches	see trench depth	6"

Note: for SB2 plastic laterals, the above items apply except SB2 laterals are to be installed with no slope in the lines and no septic rock material is to be used.

Adjustments to the total footage may be given for the following type of pipe:
36" leaching chamber = a reduction of 25%.

Information concerning alternative systems is available from our office.

EXPIRATION OF SEPTIC PERMITS / PERCOLATION TESTS

Percolation tests and septic permits are good for one year. If you are not able to install the system by the expiration date of either document, you will need to request an extension from the Environmental Health Office. You may request the extension by contacting our office.

Upon receipt of your request, we will do another site evaluation of the percolation/soil analysis site to determine if site is still adequate for septic system installation, and a \$50.00 trip fee will be charged to you.

*Order of these providers does not indicate preference.

Professional Engineers for Percolation test or Soil Analysis

Abaci Consulting, Inc. (Soil)	10540 Hickman Rd., Clive 50325	515-986-5048
Associated Engineering Co. of Iowa	2917 MLK Jr. Pkwy, Des Moines 50310	515-255-3156
Boeckman, Louis Boeckman Services (Soil)	1990 Clover Ave., Creston 50801	641-782-4595
Brown, Curtis	15631 Johnson, Indianola 50125	515-961-7379
Campbell, Brian	301 NE Trilein Dr. #1, Ankeny, IA 50021	515-963-4385
CMT, Doug Clement (Soil)	1717 NE 58 th Ave., Des Moines 50313	515-263-0794
Carroll, James (Soil)	1549 NW 92 nd St., Clive 50325	515-225-3846
Choquette, Ken PE	1410 Pensylvania Ave., Des Moines 50316	515-306-0019
Claman, Dave	610 Meadow Pl., Ames 50010	515-292-9512
Lee Engineers & Surveyors (Soil)	3031 NW 86 th St., Urbandale 50322	515-252-7457
May, Jeff	310 S. 7 th St., Knoxville, 50138	641-891-2308
Neilson/Garden & Associates	1907 17 th Ave., East, PO Box 451, Oskaloosa 52577	641-672-2526
Vance & Hochstetler	110 Green, Winterset 50273	515-462-3995

Certified Installers of Onsite Wastewater Treatment Systems (CIOWTS)

A-1 Complete Septic Service	5900 SE 6 th Ave., Des Moines 50317	515-265-3986
Becker, Chris	3312 68 th St., Urbandale 50322	515-278-6985
Bedwell Builders	2924 Quaker St, St. Charles 50240	641-396-2462
Beyer Backhoe, Vance Beyer	1774 Co. Line Rd., Otley 50214	515-627-5205 or 515-780-2525
Brown's Dirtwork	4396 NW 6 th Dr., Des Moines 50313	515-282-0203
City Rule Plumbing & Heating	804 N. Main St., Grimes 50111	515-243-7152
CMK Plumbing, Inc.	1850 NW 110 th St., Grimes 50111	515-277-9940
Davidson Trenching & Backhoe	5591 Pierce St., St. Charles 50240	641-297-2103
*Forest Septic Tank Service	P.O. Box 219, Indianola 50125	515-961-2113
Franzen Plumbing	P.O. Box 413 Altoona, IA 50009	515-266-1221
Golightly Construction	3556 H. Ave., Earlham 50072	515-758-3926
Gottchalk & Son	1867 170 th St., Perry 50220	515-229-0910
H & H Plumbing, Inc.	170 th St., Granger 50109	515-277-5755
Hansen Services	P.O. Box 421, Granger 50109	515-202-5005
Harkin, Mike	3311 140 th St., Cumming 50061	515-981-9465
Harleen Trenching	2066 X. Ave., Madrid 50156	515-685-4441
Harmann Excavating	P.O. Box 307, Panora 50216	641-757-0907
Herr Plumbing, Inc.	10200 Dennis Dr., Ste. 4, Urbandale 50322	515-223-9643
Huff & Son Well Boring	1996 295 th Ln., Winterset 50273	515-462-3569
Jirak Plumbing	303 E. Front St., Stuart 50250	515-523-1335
Jolly, Rod	529 Johnson St., Pleasantville 50225	515-848-3508
Kephart Construction	310 W. Clinton St., St. Charles 50240	641-396-2239
L & D Trenching (Bob Lee)	2932 SE 14 th St., Runnells 50237	515-966-2456
Luellen Brothers Inc.	1403 Sugar Grove Ave., Dallas Center 50063	515-992-3222
*Pella PreCast Products, Inc.	912 West 11th St., Pella 50219	641-628-1357
*River to River Septic	P.O. Box 460, Waukee 50263	515-987-3913
*Shilling Excavating Inc.	1095 Story Dr., Knoxville 50138	641-842-7191
Son's Construction	Box 161, St. Charles 50240	641-396-2681
Spellman Backhoe Service	1725 P. Ave., Bouton 50039	515-677-2423
*Steenhoek Septics	2340 Keokuk Dr., Pella 50219	641-628-9505
Thomas Bros. Septic Service	5591 SE Sixth Ave., Pleasant Hill 50317	515-265-5077
Trunnel (Aaron) Digging & Plumbing	106 W. South St., Prairie City, 50228	515-994-3367
Vanderpool Construction	1100 N. 14 th St., Indianola 50125	515-961-4682
Varied Construction	4280 NW 11 th St., Des Moines 50313	515-284-0552
Wiedmann, Gary	2750 Hamilton St., Norwalk 50211	515-981-4744 or 515-360-3517

***Denotes mechanical system distributor & Or Maintenance Contractor**

Septic Tank Pumpers

Anytime Septic Services II – Vance Smith	502 West Main St., St. Charles, IA 50240	641-396-2440
Dave’s Pumping Service – David Heckard	1685 Upland Trl., Prole, IA 50229	515-462-1903
Forest Septic Tank Service – Jody Forest	PO Box 219, Indianola, IA 50125	515-961-2113
Killen Construction – Mike Killen	1679 140 th Ave., Carlisle, IA 50047	515-480-6082
Mayer Septic Pumping – John Mayer	1509 Hwy 92, Winterset, IA 50273	515-462-2624
Nash Well Co. – Dan Nash	19974 McKinley St., Milo, IA 50166	641-942-7148
Wiegert Disposal Inc. – Jon Wiegert	PO Box 344, Martensdale, IA 50160	641-764-2389

Peat Filter Maintenance Agreement Providers

The following providers are ones utilized in the immediate area. Order of the providers does not indicate preference. For a complete list you may contact the Iowa DNR

A-1 Complete Septic Service	5930 SE 6th Ave Des Moines IA 50327	515-265-3986
Forest Septic	PO Box 219 Indianola, IA 50125	515-961-2113
River to River Onsite Septic Solutions	PO Box 460 Waukee, IA 50263	515-987-3913
Onsite Septic Solutions	1541 NE 66 th Ave.Des Moines, IA 50313	515-244-4646