

**SMALL WASTEWATER (SEPTIC SYSTEM) APPLICATION
FREMONT COUNTY, WYOMING**

Application fee: \$150.00 for replacement systems, \$175.00 for new systems and \$200.00 for non-conventional systems, payable to Fremont County Planning Department
Please allow at least **2 WEEKS** to process this application. Incomplete applications will delay processing.

Step 1: Plan the layout for your home site, well, and septic system with the following minimum distance requirements in mind:

<u>From</u>	<u>To Septic Tank</u>	<u>To Leach field</u>
Wells (including neighboring wells)	50'	100'
Open waterway (including streams, lakes or ditches)	50'	50'
Potable water line	25'	25'
Building foundation (without foundation drain)	5'	10'
Building foundation (with foundation drain)	5'	25'
Break in slope greater than 15%	15'	15'
Property line	10'	10'
Septic tank	n/a	10'

Be sure to choose a site where the bottom of the leach field is at least 4 ft. from the high groundwater level and at least 4 ft. from any bedrock or impermeable soil layer. If this is not possible please notify the Planning Department.

Step 2: Run percolation tests in the area of the proposed leach field. Instructions and forms are on pages 5-7 of the application.

Step 3: Complete and submit the application packet with payment to:

Fremont County Planning Dept.
450 North 2nd Street, Room 360
Lander, WY 82520

If you have any questions or need assistance contact the Planning Department at 857-3697 (Riverton) or 1-800-967-2297, ext. 1830 (outside Lander or Riverton), or fax to 332-1177.

Marcel Lopez, Small Wastewater Specialist (332-1830 or 330-4010)
Steve Warner, Small Wastewater Specialist (332-1078 or 330-8203)

Step 4: Prior to construction, please make an appointment for a site evaluation. During the site evaluation we will provide specific information as to the size and configuration of the leach field. (If using Quick4 Standard Infiltrators an approximate leach field size can be calculated using the following information: each chamber is equivalent to 26.5 ft² in a trench configuration and 22.5 ft² in a bed configuration, or for the ARC 36 chambers 34.7 ft² in a trench configuration and 28.7 ft² in a bed configuration.)

Step 5: INSPECTION Prior to backfilling, the system must be inspected by a representative of the Planning Department. A 48-hour advance notice would be appreciated if possible.

IMPORTANT REMINDER: Before undertaking any excavation, contractors and landowners have a duty to call to locate any utilities buried beneath worksites. Public utilities have established a nationwide network. **This is a free public service & it's the law.** In Wyoming this service is called **One Call of Wyoming:**

Example

Owner(s) Name: <u>John & Becky Smith</u>	Installer Name: <u>Dave Adams</u>
Mailing Address: <u>123 Washboard Rd.</u> <u>Lander, WY 82520</u>	Mailing Address: <u>55 Long Rd.</u> <u>Riverton, WY 82501</u>
Phone: <u>555-1234</u>	Phone: <u>555-1122</u>

1. Physical Address of Property: 101 Fake St.
2. Location of Property: Section 10 T 2N R 3E
3. Subdivision Name: Freeland Estates Lot # 3 Block # N/A
4. Lot Size: _____ ft. by _____ ft., Area: _____ s.f. or 5 1/2 acres
5. Type of Building: single family home (single family home/ mobile home/ office/etc.)
(b) basement, floor drain, garbage disposal, water softener (check all that apply)
6. Water Source: community well, private well, cistern, municipal
7. Drain field site conditions: (a) Ground slope: 3 %
(b) Type of soil: silt and clay (sand, silt, clay, gravel, etc.)
(c) Depth to peak groundwater is at least 8 ft.
(d) Depth to impermeable soil/bedrock is at least 8 ft.
8. Septic tank: (a) Size: 1,000 gallons (Minimum 1,000 gal. for 1 to 4 bedrooms. Add 250 gal. for each additional bedroom)
(b) Type of tank: pre-cast concrete (concrete, plastic, etc.)
(c) Manufacturer: The Concrete Place
9. Percolation Rate: 25 mpi (see page 5 for procedure and page 6 for data sheet)
10. Loading Rate: 0.42 gpd/s.f. (locate your percolation rate on the "Loading Rate Table" on page 7 to identify your loading rate)
11. Wastewater volume produced (choose a or b):
(a) permanent structure: 150gpd/bedroom x 4 bedrooms = 600 gpd
(b) mobile home: 1 or 2 bdrms = 350, 3 bdrms = 500, 4 bdrms = 650gpd (circle one)

I certify that the above described facility has been submitted in accordance with local, county and state statutes, as required, and that said facility shall be constructed as authorized under the provisions specified in Wyoming. Water Quality Rules and Regulations, Chapter XI. This application is effective for a period of (1) year to five (5) years maximum from the date of this application

Becky Smith
Signature of Owner

Feb. 10, 2008
Date

Owner(s)
Name: _____
Mailing
Address: _____

Phone: _____

Installer
Name: _____
Mailing
Address: _____

Phone: _____

1. Physical Address of Property: _____
2. Location of Property: Section _____ T _____ R _____
3. Subdivision Name: _____ Lot # _____ Block# _____
4. Lot Size: _____ ft. by _____ ft., Area: _____ ft² or _____ acres
5. (a) Type of Building: _____ (single family home/ mobile home/ office/ etc.)
(b) _____ basement, _____ floor drain, _____ garbage disposal, _____ water softener (*check all that apply*)
6. Water Source: _____ community well, _____ private well, _____ cistern, _____ municipal
7. Drain field site conditions: (a) Ground slope: _____ %
(b) Type of soil: _____ (sand, silt, clay, gravel, etc.)
(c) Depth to peak groundwater is at least _____ ft.
(d) Depth to impermeable soil/bedrock is at least _____ ft.
8. Septic tank: (a) Size: _____ gallons (Minimum 1,000 gal. for 1 to 4 bedrooms. Add 250 gal. for each additional bedroom)
(b) Manufacturer: _____
9. Percolation Rate: _____ mpi (See page 5 for procedure and page 6 for data sheet)
10. Loading Rate: _____ gpd/s.f. (Locate your percolation rate on the "Loading Rate Table" on page 7)
11. Wastewater volume produced (choose a or b):
(a) permanent structure: 150 gpd/bedroom x _____ bedrooms = _____ gpd
(b) mobile home: 1 or 2 bdrms = 350, 3 bdrms = 500, 4 bdrms = 650gpd (circle one)

I certify that the above described facility has been submitted in accordance with local, county and state statutes, as required, and that said facility shall be constructed as authorized under the provisions specified in Wyoming. Water Quality Rules and Regulations, Chapter XI. This application is effective for a period of (1) year to five (5) years maximum from the date of this application

Signature of Owner

Date

Example

12. Drain field size calculations:

$$\begin{array}{r} \text{Wastewater volume} = \underline{600} \text{ gpd} \\ \div \\ \text{Loading Rate} = \underline{0.42} \text{ gpd/s.f.} \end{array} = \underline{1,429} \text{ ft}^2$$

13. Drain field layout:

(a) Type of system: (check one)

Rock and perforated pipe Trench

Rock and perforated pipe Bed

Chamber Trench system

Chamber Bed system

(b) Request the appropriate design sheet during the pre-construction site evaluation with the Planning Department staff.

Construction Requirements

SEPTIC TANK

1. Tank design must comply with Wyoming DEQ standards.
2. The septic tank must contain baffles and/or "T's" that extend into the middle third of the liquid depth. A 6" cleanout exposed above ground must be installed for each compartment of the tank.
3. If using a polyethylene tank it should be filled with water prior to backfilling.
4. Tank must be set on top of compacted or undisturbed soil.

BUILDING SEWER

1. All solid pipe between the house and the tank and between the tank and field must have a minimum slope of 1/4" per foot (2%) for a 4" pipe.
2. The septic tank inlet and outlet pipes shall be 4" schedule 40 PVC and shall extend past the septic tank excavation to undisturbed soil.
3. Cleanouts shall be provided at least every 100 ft. and up grade of any change in alignment greater than 22.5 degrees. A cleanout just outside the house is encouraged, regardless of the distance to the tank.

LEACHFIELD

1. A minimum of 6" of washed stone under the pipe and a minimum of 2" of washed stone over the pipe is required. The stone must be covered by untreated building paper, filter cloth or 2" of straw before backfilling. Do not use plastic sheeting or tar paper.
2. The bottom of all beds and trenches must be level.
3. A minimum of 12" of backfill is required to cover the field.
4. The field must be 15 ft. from the break in slope if the slope is steeper than 20%.

12. Minimum square feet of infiltrative surface needed:

$$\text{Wastewater volume} = \text{_____ gpd}$$
$$\div \text{_____} = \text{_____ ft}^2$$

$$\text{Loading Rate} = \text{_____ gpd/ft}^2$$

For Office Use Only

13. Drain field layout:

(a) Type of system: (check one)

Rock and perforated pipe **Trench**

Rock and perforated pipe **Bed**

Chamber Trench system

Chamber Bed system

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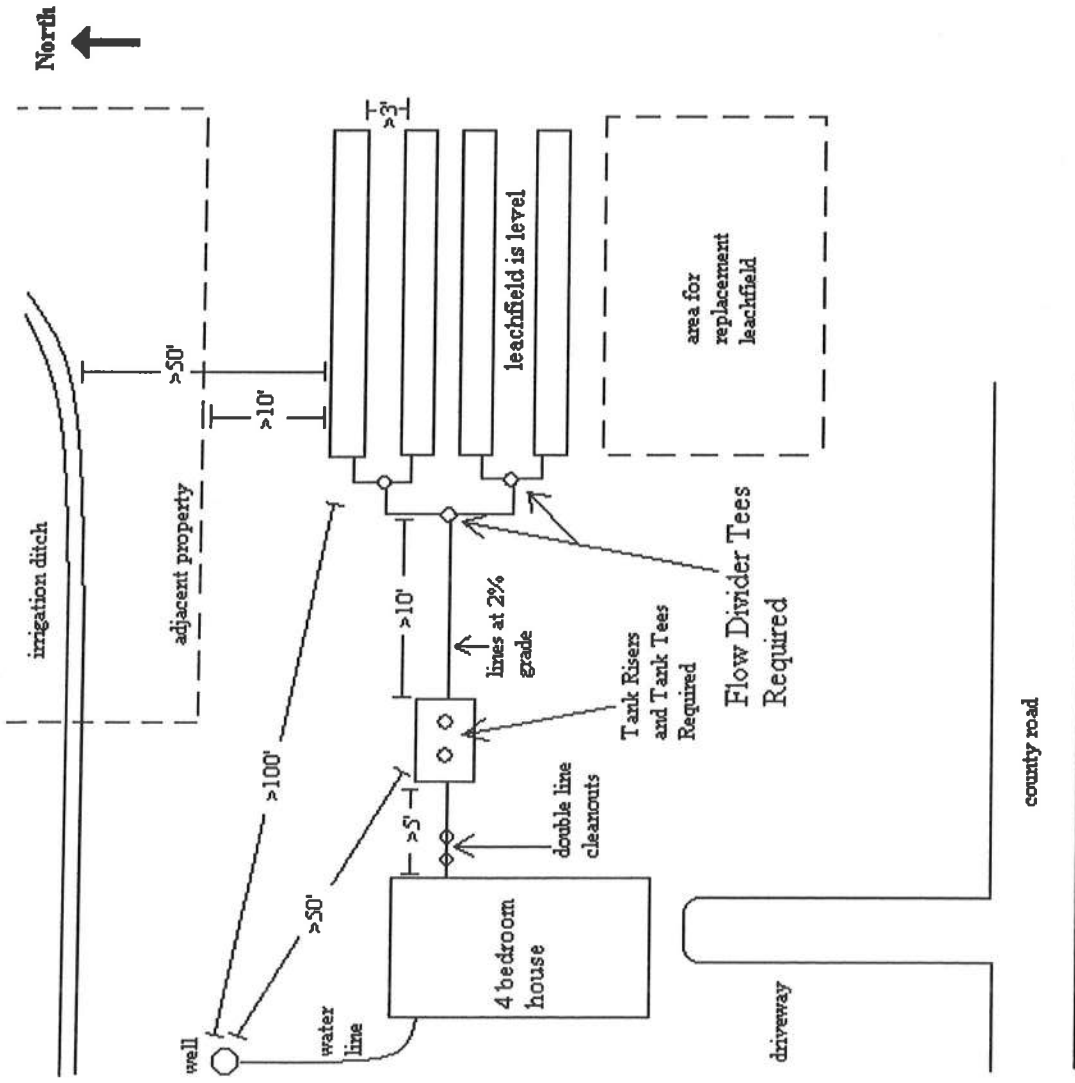
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2. The bottom of all beds and trenches must be level.
3. A minimum of 12" of backfill is required to cover the field.
4. The field must be 15 ft. from the break in slope if the slope is steeper than 20%.

Example Plan



PLAN SHEET

Make a drawing of your property, including:

1. property lines
2. all buildings
3. all wells within 200'
4. drinking water lines
5. streams, ditches, surface bodies of water
6. breaks in slope greater than 15%
7. septic tank
8. leachfield
9. a NORTH ARROW
10. the road you will use to access the house
11. the driveway
12. an area for future installation of a REPLACEMENT LEACHFIELD

Show the relative distances of these features. See table below for minimum distance requirements.

From	To Septic Tank	To Leachfield
Wells	50'	100'
Open waterway	50'	50'
Potable water line	25'	25'
Building foundation (without fndn. drain)	5'	10'
Building foundation (with fndn. drain)	5'	25'
Break in slope	15'	15'
Property line	10'	10'
Septic tank	N/A	10'

Reviewed by:

Date of Authorization:

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	<u>From</u>	<u>To Septic Tank</u>	<u>To Leachfield</u>
Wells	50'	100'	50'
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Potable water line			
Building foundation (without fndn. drain)	5'		10'
Building foundation (with fndn. drain)	5'		25'
Break in slope	15'		15'
Property line	10'		10'
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Reviewed by:

Date of Authorization:

PERCOLATION TEST PROCEDURE INSTRUCTIONS

General Information - Complete the general information areas of sections 1., 2., and 3. at the top of the data sheet.

Location of Percolation Test Holes - The percolation(perc) test holes shall be spaced uniformly over the proposed soil absorption (leach field) site. **A minimum of three(3) test holes are required.** More than 3 can be used if desired.

Test Hole Preparation - Test holes that are 4 to 12 inches in diameter shall be dug or bored to the proposed depth of the leach field (typical depths are 30 to 42 inches). The side walls shall be vertical and a natural soil surface (one which is not smeared from digging) shall be exposed by scraping the sides and bottom of the test hole with a sharp pointed instrument. Any loose material shall be removed from the test hole and several inches of coarse sand or gravel placed in the bottom of the test hole in order to prevent scouring and sealing before the water is poured in.

Presoaking - **PRESOAKING IS ABSOLUTELY REQUIRED** in order to get valid percolation test results. The purpose of presoaking is to have the water conditions in the soil reach a stable condition similar to that which exists during continual wastewater application in a leach field. The minimum time of presoaking varies with soil type and soil conditions, but must be sufficiently long so that the water seeps away at a steady rate. The following presoaking instructions are usually sufficient to establish the proper soil moisture conditions.

- a. Sandy or loose soils - Fill the test hole to within several inches of the top and allow it to seep away. Fill the hole a 2nd and 3rd time and let the water seep away. If the water continues to all seep away in ten(10) minutes or less, this indicates that the soil is excessively permeable and the site is unsuitable for a standard subsurface disposal system. In this case, the special requirements of Chapter 11, Section 36(d) shall be followed. If water remains after 10 minutes, then further presoaking is necessary before taking any measurements. Refer to the next section for further presoaking instructions.
- b. Other suitable soils - If the soil is suitable for a standard subsurface leach field, then the test holes should be presoaked for at least 4 hours. Maintain at least 12 inches of water in the test holes for at least 4 hours, then allow the soil to swell for 12 hours (overnight is good) before starting the actual perc test measurements.

Perc Rate Measurements - Start the test by filling each test hole with approximately 12 to 18 inches of water. Let the soil rehydrate for about 15 minutes and then refill to 12 to 18 inches deep. Next, decide on a time interval for your test. Time intervals of 10 or 15 minutes are typical. Once decided, **the time interval must remain constant** throughout the test so that it can be determined when the water level drop rate has stabilized. Measure the initial water level (from a fixed reference point such as a flat board across the top of the hole) in each hole and record on the "Start" line in the test data table. To continue, record the actual water level in each hole at the end of each successive time interval. After each water level measurement, calculate the water level drop from the previous measurement and record in the test data table. Continue the test until the water level drop rate (right half of each column) has stabilized; ie. - 3 consecutive equal drop rates within 1/8 inch of each other. Please note that some test holes may take longer than others to stabilize. The test should be continued at each test hole until each drop rate stabilizes. Also please note, a minimum of 6 inches of water should be maintained in the test hole. If the level drops below 6 inches, some additional water should be added between time intervals. Before you use the test data sheet, **make several extra blank copies before you start** in case the tests take more than 10 intervals to stabilize or if you intend to use more than 3 test holes.

Perc Rate Calculation - After the water level drop rates have stabilized in all of the test holes, transfer the last water level drop measurement to the final drop row in the data table. To calculate the perc rate for each test hole, divide the time interval by the final drop. This is the perc rate in minutes per inch(mpi). Depending on how many test holes were used, determine the design percolation rate using either 3a or 3b at the bottom of the percolation test results data sheet.

An Example Test Data Sheet is provided on the back of these instructions to demonstrate how to record the data.

PERCOLATION TEST RESULTS

1. Performed by: Mike Plumber Test Date(s): 6-23 & 6-24, 99

Credentials or Status of Tester: Contractor / installer

(Owner, contractor, installer, engineer, geologist, sanitarian, soil scientist, or other)

2. The **time interval (ti)** between water level measurements was: 10 minutes.

3. **TEST DATA:** The test holes were **PRESOAKED** for: hours, or X overnight

Test Hole # is: 1 2 3
 Hole depth (inches) = 34 " 38 " 37 "

Interval Number	Elapsed Time	Water Level / Drop	Water Level / Drop	Water Level / Drop
Start =	<u>0 min</u>	<u>17"</u>		
1	<u>10</u>	<u>18 1/4</u>	<u>1 1/4</u> ←	Water level drop between intervals
2	<u>20</u>	<u>19 1/4</u>	<u>1</u> ←	The actual water level below the top of the test hole
3	<u>30</u>	<u>20</u>	<u>3/4</u>	
4	<u>40</u>	<u>20 5/8</u>	<u>5/8</u>	
5	<u>50</u>	<u>15</u>	<u>Refill</u> ←	Refill hole if needed and Re-measure actual water level
6	<u>60</u>	<u>15 1/2</u>	<u>1/2</u>	
7	<u>70</u>	<u>15 7/8</u>	<u>3/8</u>	Continue test until 3 consecutive "drops" are the same to within 1/8 inch total variation
8	<u>80</u>	<u>16 3/8</u>	<u>1/2</u>	

Final Drop
 (NOT Total) = 1/2 "

Perc rate(mpi) is:

[ti / Final Drop] = $10 / \frac{1}{2} =$ 20.0 mpi

a. If 6 or more holes were tested, the average perc rate was: NA mpi, or

b. If 3 to 5 holes were tested, the slowest perc rate (largest number) was: 20.0 mpi

PERCOLATION TEST RESULTS

1. Performed by: _____ Test Date(s): _____

Credentials or Status of Tester: _____

(Owner, contractor, installer, engineer, geologist, sanitarian, soil scientist, or other)

2. The **time interval (ti)** between water level measurements was: _____ minutes.

3. **TEST DATA:** The test holes were **PRESOAKED** for: _____ hours, or ___ overnight.

Test Hole # is: _____

Hole depth (inches) = _____

Interval Number	Elapsed Time	Water Level / Drop	Water Level / Drop	Water Level / Drop
Start =	0 min	_____	_____	_____
1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
6	_____	_____	_____	_____
7	_____	_____	_____	_____
8	_____	_____	_____	_____
9	_____	_____	_____	_____
10	_____	_____	_____	_____

Final Drop

(NOT Total) = _____

Perc rate(mpi) is:

[ti / Final Drop] = _____

a. If 6 or more holes were tested, the average perc rate was: _____ mpi, or

b. If 3 to 5 holes were tested, the slowest perc rate (largest number) was: _____ mpi.

LOADING RATE TABLE

<u>Percolation Rate (minutes per inch)</u>	<u>Loading Rate</u>	<u>Percolation Rate (minutes per inch)</u>	<u>Loading Rate</u>
	Cannot use	31	0.39
Less than 1 mpi	this generic	32	0.385
	package *	33	0.38
		34	0.375
1 to 5 mpi	0.80	35	0.37
6	0.75	36	0.365
7	0.71	37	0.36
8	0.68	38	0.357
9	0.65	39	0.353
10	0.62	40	0.35
11	0.60	41	0.347
12	0.58	42	0.343
13	0.56	43	0.34
14	0.54	44	0.337
15	0.52	45	0.333
16	0.505	46	0.33
17	0.49	47	0.327
18	0.48	48	0.325
19	0.47	49	0.323
20	0.46	50	0.32
21	0.45	51	0.318
22	0.44	52	0.316
23	0.435	53	0.314
24	0.43	54	0.312
25	0.42	55	0.31
26	0.415	56	0.308
27	0.41	57	0.306
28	0.405	58	0.304
29	0.40	59	0.302
30	0.395	60	0.30
		More than 60 mpi	Cannot use this generic Package *

* Note - If the perc rate for your site is less than 1 mpi or greater than 60 mpi, you cannot use this generic application package. You must hire a Wyoming Registered Professional Engineer and submit an application customized for your specific site conditions.