Mendocino County
Division of Environmental Health

SITE EVALUATION

REPORT FORMAT

FOR

ON-SITE SEWAGE SYSTEMS

FORM #42.04 Revised June 1998

MENDOCINO COUNTY Environmental Health

Site Evaluation Report

Site Address:_____ Site Evaluator:_____
City:_____ APN:_____
Owner Name:_____ Land Div. # :_____
Mailing Address:_____ Home phone:_____
City:_____ Work phone:_____
State, Zip: _____
Location Description:_____
_____
Project Description(# of bedrooms):_____
Water Source:_____
Distance to Wastewater System: _____

	Initial Area	**Expansion Area**
Profile #		
Slope (%)		
Effective Soil Depth (IN)		
Absorption System Type		
Distribution Method		
Soil Suitability Class		
Soil Perc Rate (MPI)		
Design App. Rate (G/SF/D)		
Design Flow (G/D)		
Absorption Area (SF)		
Linear Area (SF/LF)		
Total Trench (LF)		
Trench Depth (IN)		
Trench Width (IN)		
Effective Absorption Depth (IN)		

Trench Calculation: Design Flow ÷ Design App. Rate ÷ Linear Area = Total Trench(LF)

Requested Waiver:_____
(attach justification)
Special Design Features:_____
_____
Site Evaluator's Statement: I hereby certify that I have examined the above designated site using approved procedures, and that to the best of my information, knowledge and belief it complies with all State and County requirements for an On-site Sewage System at the time of this evaluation.

Date:_____ (seal) **Signed:**_____
___

Environmental Health

Waiver Statement

REQUESTED WAIVER:

REQUIRED FINDINGS:

- Waivers will be considered only if no other reasonable alternative exists on the property in question.
- The type of discharge situation in question (i.e., land division, commercial facility, existing lot, repair system) shall be a consideration in determining the propriety of granting a waiver.
- Public health will not be endangered nor water quality impaired as a result of the granting of this waiver.
- To eliminate or preclude hazards to public health and water quality, the waiver of site criteria and evaluation methods may be made by the Health Officer for the repair of failing systems, though the guidelines shall be followed to the extent practicable.

FINDINGS PARTICULAR TO THE TYPE OF WAIVER :
(See: *GUIDELINES FOR THE ISSUANCE OF WAIVERS July 1, 1992*)

I hereby certify that the foregoing facts are true and correct to the best of my information, understanding and belief.

Qualified Individual Signature: Date:

DEPUTY HEALTH OFFICER DETERMINATION:

To the best of my knowledge, based on the above findings by the qualified individual, and my own knowledge of the conditions on the property in question, the public health will not be endangered nor water quality impaired as a result of the issuance of this waiver.

Deputy Health Officer Signature: Date:

MENDOCINO COUNTY Division of Environmental Health

Soil Profile Description

Owner Name
Site Address
APN
Subdivision #

Test Date
Recorded by
Slope
Profile #

horizon depth range / color / mottles / gravel / texture / structure / consistence / roots / pores / boundary /
[sample depth / texture zone / density /Avg.perc rate at this depth]

Soil depiction	Trench depiction
0 ground surface	
12	
24	
36	
48	
60	
72	
84	
96	
108	
120	

I certify the test was carried out by the procedures specified by the Mendocino County Division of Environmental Health. I declare under penalty of perjury that the foregoing is true and correct.

Signed:_____

INSTRUCTIONS FOR SOIL PROFILE REPORTS

1. QUALIFIED INDIVIDUALS: Soil profiles may only be interpreted by qualified individuals.

2. EXCAVATIONS: To perform the soil profile report, excavate two (2) soil profile trenches. One hole is excavated in the proposed initial leach field area, the other in the proposed reserve area. If the soil profile trenches are dissimilar, additional trenches must be excavated to resolve discrepancies. The trenches are excavated to a depth of 5 (five) feet and gently sloping so ladders are not needed. Then, while observing from the surface of the ground, an additional 3 (three) feet is excavated on one end to eight (8) feet total. This soil can be inspected as it is excavated.
SAFETY REGULATIONS PROHIBIT INDIVIDUALS ENTERING UN-SHORED EXCAVATIONS GREATER THAN 5 (FIVE) FEET IN DEPTH.

3. REPORTING: The smeared soil surface of the soil profile trench is picked off with a sharp instrument in order to expose the characteristics of the natural soil layering.
3.1 Make a preliminary determination of the depth of each soil layer or strata.
3.2 Within each strata or layer make the following determinations:
(*see Chapter 3 of the Soil Survey Manual for detailed information on the proper method of soil description*)

1 horizon depth range
2 background soil color using the Munsel Color Chart
3 abundance, size and distinctness of mottles
4 gravel content by volume
5 soil texture (USDA, Soil Conservation Service Classification)
6 strength and grade of soil structure
7 soil consistence for dry, moist and wet regimes
8 abundance and size of roots
9 abundance and size of pores
10 boundary distinctness

3.3 Review and revise preliminary soil strata.

4. ADDITIONAL REPORTING: The following conditions should also be noted on the report:
4.1 Impermeable layers such as claypans, hardpans, cementation.
4.2 Depth to bedrock, fractured rock, or other parent material.
4.3 Water seepage. If water seepage is encountered, the hole should be left open to observe static water level, record depth to the static level.

5. LOCATION: No soil description is useful unless the exact location is known. Record on a plot plan the locations of soil profile trenches triangulated from permanent landmarks or monumented property corners.

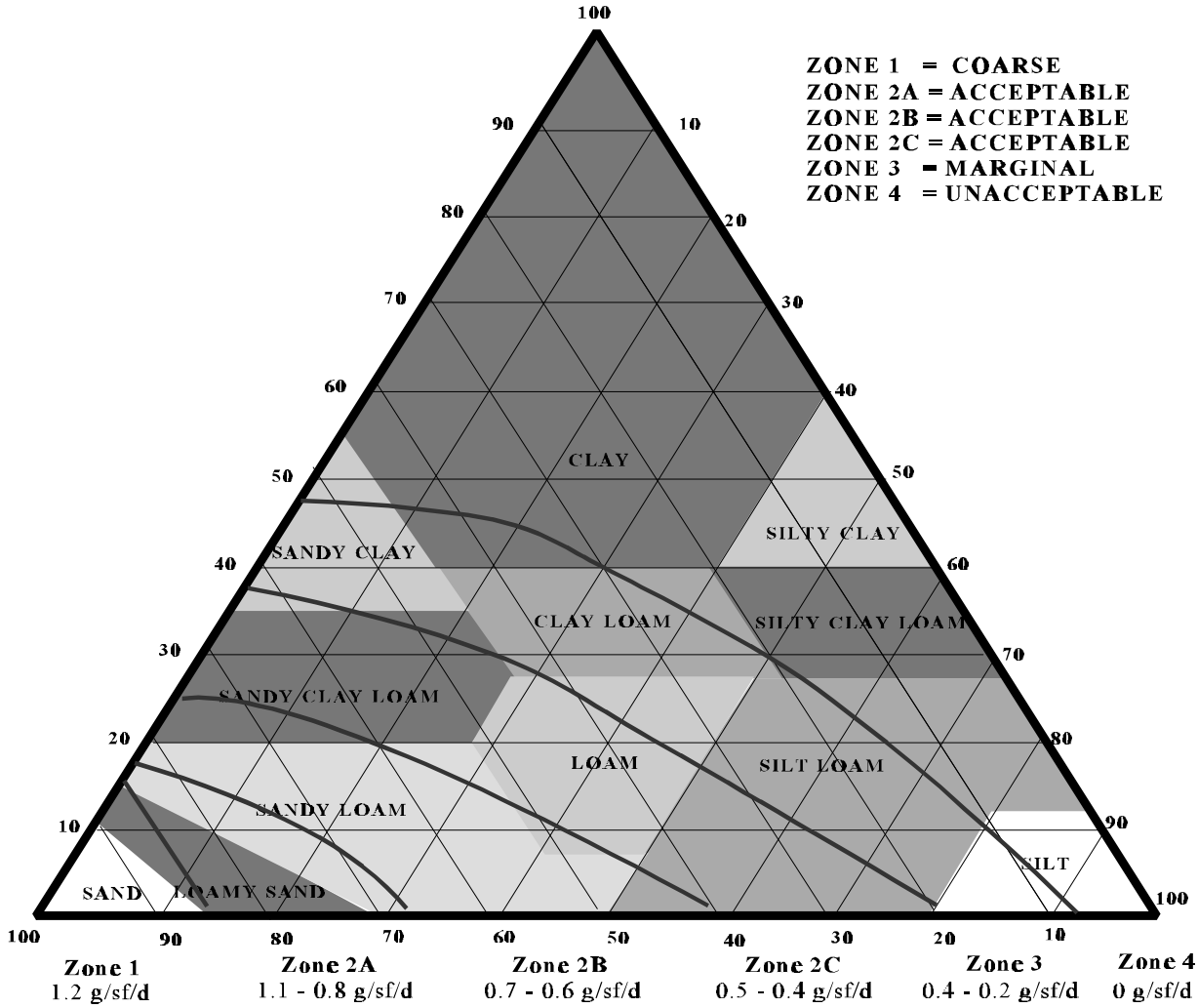
MENDOCINO COUNTY Environmental Health
Hydrometer Test Worksheet

Site Address:			Lab Test Date:			
APN:			Project #			
Owner Name:			Site Evaluator:			
Sample ID Number						
Sample Depth						
Slake Test (pass or fail)						
HYDROMETER TEST						
A. Oven dry wt. (gm)						
B. Start Time						
C. Temp @ 40 sec (°F)						
D. Hydrometer reading @ 40 sec (gm/l)						
E. Composite correction (gm/l)						
F. True Density @ 40 sec (gm/l)						
G. Temp @ 2 hrs. (°F.)						
H. Hydrometer reading @ 2 hrs. (gm/l)						
I. Composite correction (gm/l)						
J. True density @ 2 hrs. (gm/l)						
K. %Sand = 100-[(F + A) x100]						
L. %Clay = (J ÷ A) x 100						
M. %Silt = 100 - (K + L)						
Coarse Particles						
N. Wt. Coarse particles retained (gm)						
O. Wt of total sample (gm)						
P. % Coarse particles = (N ÷ O) x 100						
Bulk Density						
Q. Total sample wt (gm)						
R. Coarse particles wt. (gm)						
S. Total sample vol. (cc)						
T. Coarse particles vol. (cc)						
U. Bulk Density = [(O - R) ÷ (S - T)] (gm/cc)						
W. Adjusted Sand (%)						
X. Adjusted Clay (%)						
Y. Adjusted Silt (%)						
Z. **Soil Suitability Zone**						

I certify the test was carried out by the procedures specified by the Mendocino County Division of Environmental Health. I declare under penalty of perjury that the foregoing is true and correct.

Signed:_____

Soil Texture Suitability Chart



INSTRUCTIONS:

1. Plot texture on triangle based on percent sand, silt, and clay as determined by hydrometer analysis.
2. Adjust for coarse particles (gravel not fractured rock) by moving the plotted point in the sand direction an additional 2% for each 10% by volume of gravels greater than 2 mm in diameter.
3. Adjust for compactness of the soil by moving the plotted point in the clay direction an additional 15% for soils having a bulk-density greater than 1.7 gm/cc.

NOTE: For soils falling in sand, loamy sand or sandy loam texture classification, the bulk density analysis will generally not affect suitability and analysis not be necessary.

MENDOCINO COUNTY Environmental Health
Percolation Test Data

Owner Name
Site Address
APN
Subdivision #

Test Date
Recorded by
Slope %
Profile #

Depth =		Dia (d_h) =		Pipe(d_p)=		Adj. =	

Hole#	Start Time (T_s)	Start Level (w_s)	Read Time (T_r)	Read Level (w_r)	ΔTime (T_{r-s})	ΔLevel (W_{s-r})	in/hr	MPI	Adj. MPI
Trial #									
Trial #									
Trial #									
Trial #									
Trial #									
Trial #									
Trial #									
Trial #									

Depth =		Dia (d_h) =		Pipe(d_p)=		Adj. =	

Hole#	Start Time (T_s)	Start Level (w_s)	Read Time (T_r)	Read Level (w_r)	ΔTime (t_{r-s})	ΔLevel (W_{s-r})	in/hr	MPI	Adj. MPI
Trial #									
Trial #									
Trial #									
Trial #									
Trial #									
Trial #									
Trial #									
Trial #									

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Signed:_____

Procedures for Conducting Percolation Tests

1. LOCATION: Test holes shall be located in an area that complies with the Division of Environmental Health site criteria. Test holes alongside roads or in areas where leach lines cannot be installed will not be accepted.

2. TYPE OF HOLE: Dig, or bore a hole 4 to 14 inches in diameter to the depth of the soil strata to be tested. Carefully scarify the sides of the hole to remove smeared soil, exposing a natural soil surface. Remove all loose material from the hole and place a section of perforated pipe in the hole and fill the annular space with fine gravel. Percolation rate adjustment factors for the addition of a gravel pack and/or smaller hole size must be employed to adjust observed results back to the Ryon Standard Percolation Test (12 inch square or 14 inch round hole with no gravel pack). The observed percolation rate in MPI is multiplied by the adjustment factor to obtain the adjusted percolation rate.

The adjustment factor (AF) can be calculated as follows: (drainable voids = 35%)

$$AF = d_h^2 \div d_p^2 + 0.35(d_h^2 - d_p^2)$$ and see table below

TABLE OF TYPICAL VALUES

d_p	d_h	AF
4	6	1.57
4	8	1.95
4	10	2.20
4	12	2.37
3	5	1.71
3	6	1.95
3	8	2.27
3	10	2.45
3	12	2.56

Percolation tests are to be performed at the depth of the proposed trench bottom. If percolation tests are the only measure of permeability being used in the evaluation, then percolation tests may also need to be performed at a depth of 3 feet below the proposed trench bottom demonstrating adequate permeable soil depth beneath trench bottom. These deeper tests can be accomplished in the bottom of a backhoe excavation.

3. PRESOAK: In order to approximate soil conditions under saturated conditions, it is necessary to presoak the percolation test hole by repeatedly filling the hole with water over a 24 hour period immediately preceding the test, unless tests are performed during wet weather as defined by the Division of Environmental Health.

4. PERCOLATION RATE MEASUREMENT:

4.1 If water is remaining in the percolation test hole 6 hours after the last addition of presoak water, add or remove water to a depth of six (6) inches. From a fixed reference point measure the drop in water level over a 60 minute period. The drop in this 60 minute period is the percolation rate.

4.2 If no water is remaining in the percolation test hole 6 hours after the last addition of presoak water, add water to a depth of six (6) inches. From a fixed reference point measure the drop in water level hourly for at least four (4) hours, adding water each time to bring the level back up to a depth of six (6) inches. The testing periods must be continued until a stabilized percolation rate (ie. Three consecutive trial periods with rates within 10% of each other) is reached. Test results are reported in minutes per inch.

4.3 If no water is remaining after the first 60 minutes of the testing described in 4.2 above, add water to a depth of six (6) inches. From a fixed reference point measure the drop in water level at regular intervals of time (e.g., 10, 15, 30 minute intervals), adding water each time to bring the level back up to a depth of six (6) inches. The testing periods must be continued until a stabilized percolation rate (i.e. three consecutive trial periods with rates within 10% of each other) is reached. Test results are reported in minutes per inch.

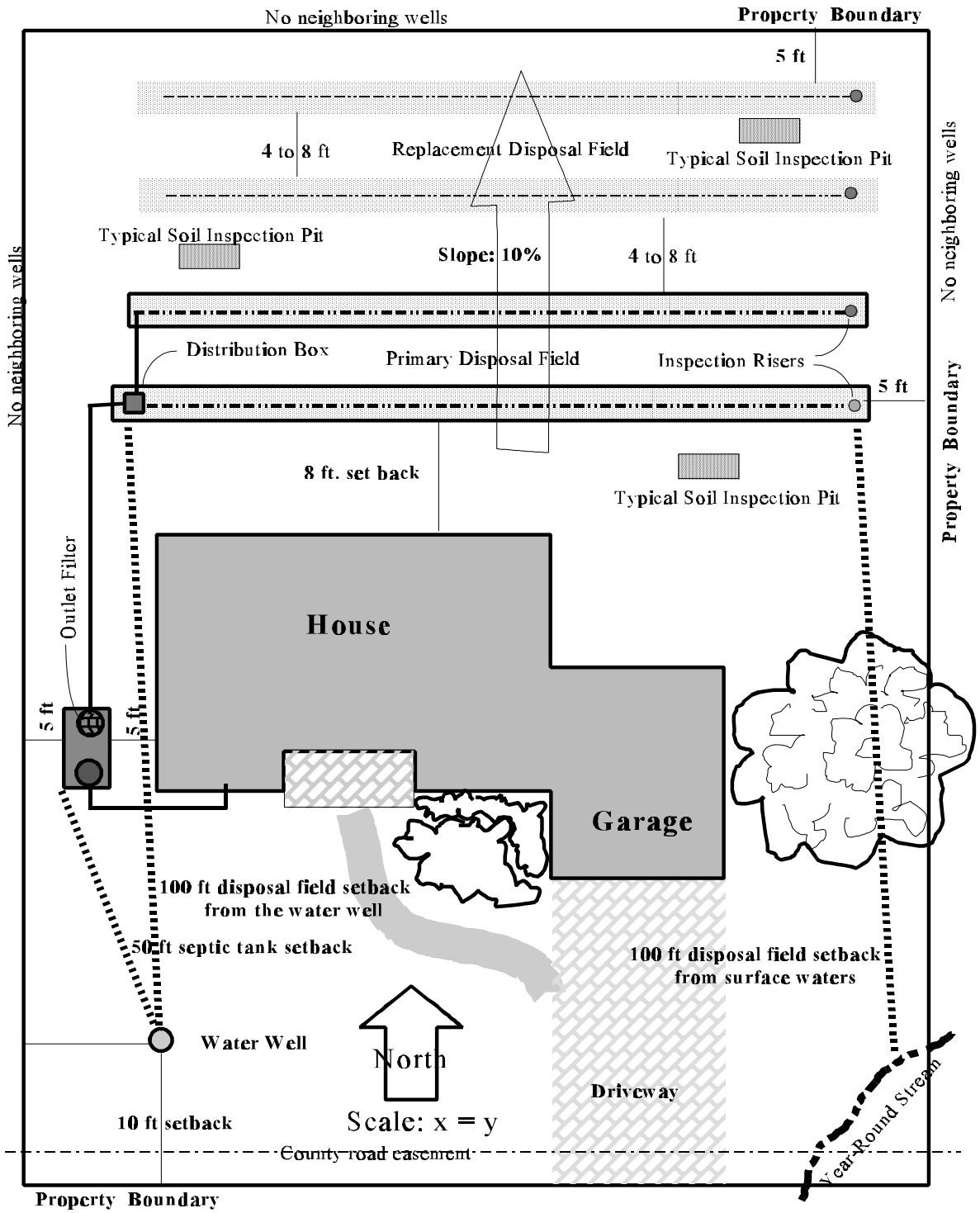
All test holes must be dry within 24 hours of beginning measurements. Final approval of a site for an individual sewage disposal system depends on several factors, and not solely on a percolation test result. Final determination of the suitability of the particular site will be made by the Division of Environmental Health.

PLOT PLAN REQUIREMENTS

A **scaled plot plan** must be submitted with the site evaluation report and show the following:

a. Slope of terrain.
b. Location of all soil tests.
c. Property lines.
d. Location of all ponds, creeks, wells, springs, drainage ditches, swales, or other water sources within 100 feet of the primary septic system and replacement area.
e. Cut banks, sharp breaks in slope, or fill areas.
f. Retaining walls, curtain drains, French drains.
g. Structures, including primary home, garage, sheds, barns, mobile homes, caretakers' homes, agricultural housing, guest cottages, shops, business buildings, Second Residential Units, Family Care Units, travel trailers, and detached bedrooms.
h. Attachments to the home, such as concrete patios or decks.
I. Swimming pools, spas, portable pools, or hot tubs.
j. Roads, driveways, and parking areas.
k. Underground water, power, cable, gas, or other utilities.
l. Easements and Utility lines (right of way, power, sewer, water, gas, etc.)
m. North Arrow and Scale

On larger parcels, it may be necessary to also submit an overall parcel map showing a detail inset for the area of the scaled plot plan, which includes all of the above items.



Sample Plot Plan

MENDOCINO COUNTY Environmental Health

Water Quantity Report

Owner Name
Site
APN
Subdivision #
Well Number

Test Date
Recorded by
Bore Dia.
Casing Dia.
Vol/Ft.

Time	Elapsed Time	Total Time	Depth to H20	Draw down	Meter Reading	Total Gallons	GPM	GPM per FT

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I declare under penalty of perjury that the foregoing is true and correct.

Signed:_____

INSTRUCTIONS FOR WATER QUANTITY TESTING

Water wells may be tested by any one of the following four methods:

1) PUMP TEST METHOD: a well may be pumped at any chosen rate until 1200 gallons have been discharged or until dry. The drawdown shall be measured at regular intervals throughout the test period. The recovery shall be measured at regular intervals for at least the first 30 minutes.

2) SUSTAINED YIELD METHOD: a well may be pumped at any chosen rate until 1200 gallons have been discharged and the water level (drawdown) is not lowered any further. That pump rate is the sustained yield for that level of drawdown.

3) BAIL TEST METHOD: a well may be bailed at any chosen rate until 1200 gallons have been discharged or until dry. The drawdown shall be measured at regular intervals throughout the test period. The recovery shall be measured at regular intervals for at least the first 30 minutes. The well yield is calculated from the rate of recovery only. The bail test is not an acceptable method for low producing wells, i.e. less than 5 g.p.m.

4) SEALED WELL METHOD: where drawdown and recovery data can not be obtained the following method may be used:

Where a well log is available

4.11) Calculate the total water available in the casing and gravel pack, assuming the well is completely full.

4.12) Pump the well to obtain at least 1200 gallons in 24 hours after subtracting twice the quantity calculated in step 4.11.

4.13) The person conducting the test must submit a statement certifying that the well is, in their opinion, indicative of water feasibility on the division.

Where NO well log is available

4.21) Calculate the total water available in the casing and gravel pack, assuming the well is completely full.

4.22) Pump the well to obtain at least 1200 gallons in 24 hours after subtracting twice the quantity calculated in step 4.21. This step is to be repeated 24 hours after the first pump test.

4.23) The person conducting the test must submit a statement certifying that the well is, in their opinion, indicative of water feasibility on the division.

5) SPRING TEST METHOD: spring tests may be acceptable under the following conditions:

1) a developed spring must be located on each parcel,
2) each spring is adequately protected,
3) not located in a defined drainage course,
4) water quantity is measured at the source where free flowing water emerges to the surface,
5) Spring tests must be performed between August 1 and September 30.

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NON-STANDARD SYSTEM **BASELINE DATA**

Site: APN: Occupant Name:
Date of Initial Operation: Designer:
Design Flow (G/D): Occupants #: Waste Strength: Res. or Hi-Strength

SOIL PARAMETERS
Soil Suitability Zone: Soil Depth (in): Depth to G/W (in):
Allowed Load Rate (G/D/SF): Design Load Rate (G/D/SF):
Absorption Surface Area (SF): Absorption Area: %Bottom % Sidewall

TANK PARAMETERS Pre-Treatment Unit Dose Tank #1 Dose Tank #2
Total Liquid Capacity Vol (Gals):
Operating Liquid Depth (in):
Drawdown Vol. (Gals/in):
Liquid Level Differential (in):
Dose Vol (Gals):

PUMPS
Design Pump Run Time/Dose:
Design Doses/Day:
Design Recirculation Ratio:

TREATMENT PROCESS TYPES (circle appropriate process)
Septic Tank S/T Effluent Filter S/T Trickling Filter Aerobic Unit
ISF RSF Packed Media Filter
AnoxiBioFilter Denitrofication Unit Other
TREATMENT PROCESS SIZING
Filter Surface Area (SF):
Filter Hydraulic Design Rate (G/D/SF):

DISTRIBUTION NETWORK (circle appropriate method)
Gravity: Parallel Serial Unequal Hydrospliter
or Pressure Distribution:
Residual Pressure: #1 #2 #3 #4 #5 #6 #7 #8 #9 #10
Treatment Unit:
Absorption Unit:

Soil Absorption Media: (circle appropriate type)
Gravel Chamber Geotextile Drip Emitters
Peat Large Dia.Pipe Styrofoam

NON-STANDARD SYSTEM OPERATION & MONITORING DATA

Site: APN: Occupant Name:
Date of Inspection: Recorder: Occupants #
Actual Flow (G/D): Basis of Actual Flow:

TREATMENT UNIT
Operating Liquid Depth (in):
Effluent Filter Condition ?
Scum Depth (in):
Sludge Depth (in):

PUMPS Dose Tank #1 Dose Tank #2
Pump Run Time/Day:
Doses/Day:
Pump Run Time/Dose:
Actual Filter Hydraulic Rate (G/D/SF):
Recirculation Ratio:

DISTRIBUTION NETWORKS
Residual Pressure: #1 #2 #3 #4 #5 #6 #7 #8 #9 #10
Treatment Unit:
Absorption Unit:

FILTER OPERATION
Media Surface Ponding ? Riser #1_____ #2_____ #3_____ #4_____
Filter Effluent Sample Parameters: BOD_____ TSS_____ FC_____ NO3_____

SOIL ABSORPTION
Actual Soil Loading Rate (G/D/SF): _____
Monitoring Wells Depth to Groundwater (in):
Upslope #1 ____ Upslope #2 ____ Downslope #3 ____ Downslope#4 ____ Downslope#5____
Trench Ponding (in): #1 #2 #3 #4 #5 #6 #7 #8 #9 #10

COMMENTS
Liquid Level Alarms Operating?
Effluent Clarity/Odor?
Soil Absorption Unit:
- Selective Fertility?
- Hydrophilic Vegetation?
- Erosion?
- Curtain Drain Outlet Visible & Discharging?

MENDOCINO COUNTY Environmental Health

Pump Meter Data

Owner Name:
Site Address: Recorded by:
APN: Pump Tank Type:

Date	WATER METER				TIMER METER			DOSE COUNTER		
xx/xx	#days	meter	Δgal	G/D	meter	Δhour	H/D	count	Δdose	D/D

MENDOCINO COUNTY Environmental Health

Disposal Trench Liquid Levels

Owner Name:
Site Address: Recorded by:
APN:

Location										
Trench #										
Casing [C]										
Depth [C-H]										
Height [H]										
	Read	water	Read	water	Read	water	Read	water	Read	water
Date	[R]	[C-R]	[R]	[C-R]	[R]	[C-R]	[R]	[C-R]	[R]	[C-R]

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MENDOCINO COUNTY Environmental Health

Monitoring Well Water Levels

Owner Name:
Site Address: Recorded by:
APN:

Location										
Well #										
Casing [C]										
Depth [C-H]										
Height [H]										
	Read	to water	Read	to water	Read	to water	Read	to water	Read	to water
Date	[R]	[R-H]	[R]	[R-H]	[R]	[R-H]	[R]	[R-H]	[R]	[R-H]

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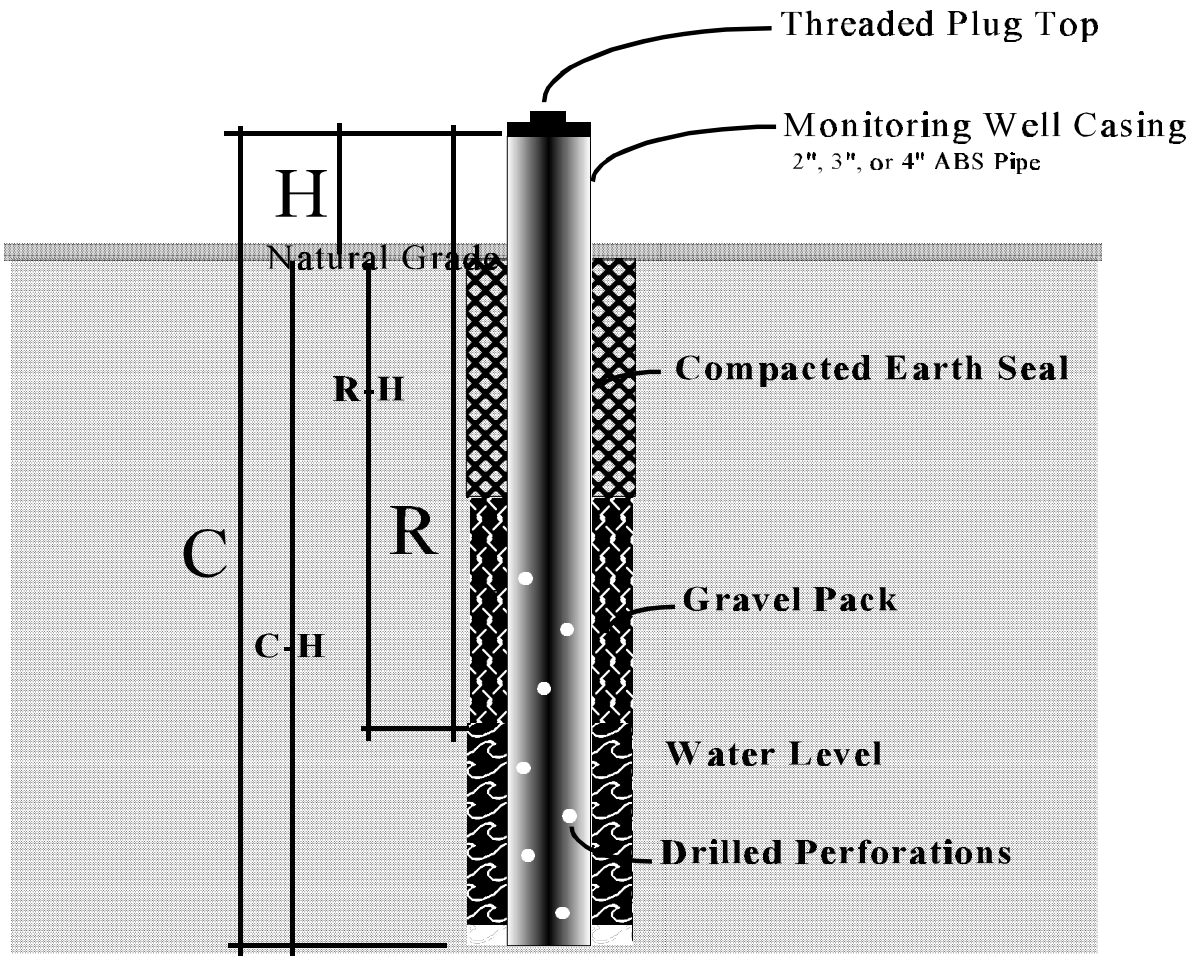
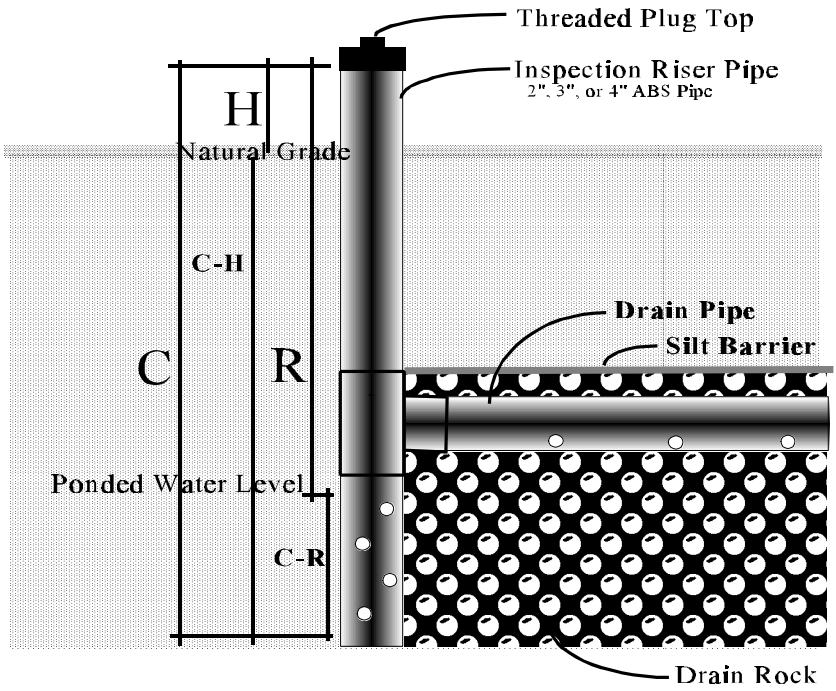


Monitoring Well Liquid Level



Disposal Trench Liquid Levels