

FIELD EVALUATION SHEET

Preliminary Evaluation Date _____ Field Evaluation Date _____
 Property Owner _____ Phone _____
 Address _____ City, State, Zip _____
 Legal Desc _____
 PIN # _____ Sec _____ Twp _____ Rng _____ Township Name _____
 Fire # _____ Lake/River _____ Lake Class _____ OHWL _____ ft

Description of Soil Treatment Areas

	Area #1	Area #2	
Disturbed Areas	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Reference BM Elev _____ ft
Commpacted Areas	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Reference BM Description
Flooding	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Run on Potential	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Slope %	_____	_____	
Direction of Slope	_____	_____	
Landscape Position	_____	_____	
Vegetation Types	_____	_____	

Depth (ft) to standing water or mottled soil--Boring 1) _____ 1A) _____ 2) _____ 2A) _____
 Bottom elevation--first trench or bottom of rock bed 1) _____ ft 2) _____ ft
 Soil sizing factor 1) _____ 2) _____

Construction Related Issues _____

Site Evaluator _____ License # _____

Evaluator Signature _____ Telephone _____

System approved by _____

Lug Review _____ Date _____

Comments _____

Soil Boring Logs on Reverse Side

Mound Design Sheet

Property Owner	Township	Fire Number
Permit #	Parcel #	Date
Designer Name	License #	
Signature	Date	Site Evaluation #

Water Use Appliances

Clothes Washer Water Softener Dishwasher
 Whirlpool Humidifier Garbage Disposal

Number of Bedrooms	Bldg Type
Well Depth	<input type="checkbox"/> Air Test
Well to Tank	ft
Well to Drainfield	ft
Well to Sewerline	ft
Well to Central	ft

Flow

(A) Estimated GPD	or measured GPD
(B) Septic Tank Volume	gallons
(C) Min Pump Tank	gallons
Alarm Type	

Soils

(D) Depth to Restricting Layer	ft
(E) Depth of Sand on Upslope Edge	ft
(F) Soil Texture	
(G) Percolation Rate	MPI
(H) Soil Sizing Factor	sq ft/GPD
(I) Land Slope	%

Rock Layer Dimensions

(J) Area [(A) x 0.83] =	sq ft
(K) Select Rock Layer Width	ft
(L) Length of Rock Bed [(J) / (K)] =	ft

Rock Volume

(M) Volume [(J) x 1 ft] =	cu ft
(N) Volume [(M) / 27] =	cu yds
(O) Weight [(N) x 1.4] =	tons

Absorption Width

(P) Select the appropriate absorption width from the table using (F), (G), or (H)

(Q) Absorption Width [(P) x (K)] =	ft
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EST. FLOW IN GALLONS/DAY (GPD)			
# OF BEDROOMS	TYPE I	TYPE II	TYPE III
2	300	225	180
3	450	300	218
4	600	375	256
5	750	450	294
6	900	525	332
7	1050	600	370
8	1200	675	408

SEPTIC TANK CAPACITY		
# OF BEDROOMS	MINIMUM TANK CAPACITY	MINIMUM CAPACITY GARBAGE DISPOSAL
2 OR LESS	1000 gallons	1500 gallons
3 OR 4	1000 gallons	1500 gallons
5 OR 6	1500 gallons	2250 gallons
7 OR 8	2000 gallons	3000 gallons
OVER 9	SEE FIG C-6	(x 1.5)

SIZING FACTORS				
PERC RATE PI	SOIL TEXTURE	SQFT GALLONS /DAY	GALLONS /SQFT	ABSORP WIDTH RATIO
< 0.1	COARSE SAND	----	----	1.00
0.1 TO 5	SAND	0.83	1.20	1.00
0.1 TO 5	FINE SAND	1.67	0.60	2.00
6 TO 15	SANDY LOAM	1.27	0.79	1.52
16 TO 30	LOAM	1.67	0.60	2.00
31 TO 45	SILT LOAM	2.00	0.50	2.40
46 TO 60	CLAY LOAM	2.20	0.45	2.67
60 to 120	CLAY	----	(0.24)	5.00
> 120	CLAY	----	----	6.00

Comments

LUG Approval _____ **Date** _____

MINIMUM MOUND SIZE

(1) Absorption Width Rock Layer Width Min. Downslope Berm Toe

ft -	ft =	ft
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(2) Depth of Clean Sand Fill at Upslope Edge of Rock Layer Depth of Sand for Separation

3 ft -	ft =	ft
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(3) Sep. Depth from Step 2 Rock Layer Depth Cover Depth Mound Height at Upslope Edge

ft +	1 ft +	1 ft =	ft
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(4) Select appropriate upslope berm multiplier from Table B

(5) Berm Multiplier from Step 4 Upslope Mound Height Upslope Berm Width

X	ft =	ft
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(6) Rock Layer Width (K) Landslope % (l) Elevation Change

ft X	X 100 =	ft
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(7) Depth of Sand for Elev. Change at downslope edge from Step 6 Mound Height from Step 3 Downslope Height

ft +	ft =	ft
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(8) Select downslope berm multiplier from Table A

(9) Berm Multiplier from Step 8 Downslope Mound Height Downslope Berm Width

X	ft =	ft
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(10) Compare the value from Step 1 with the value from Step 9 and select the larger number as the downslope berm width

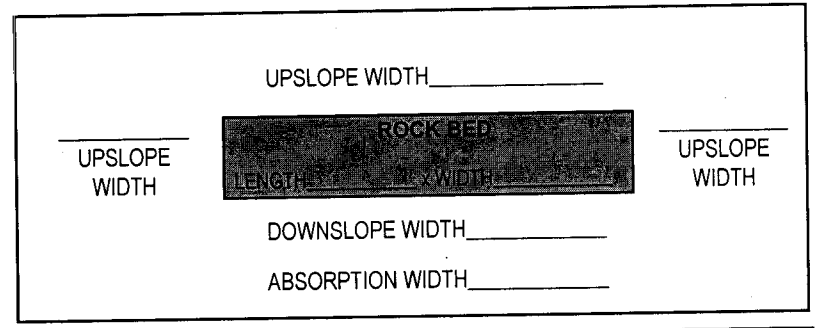
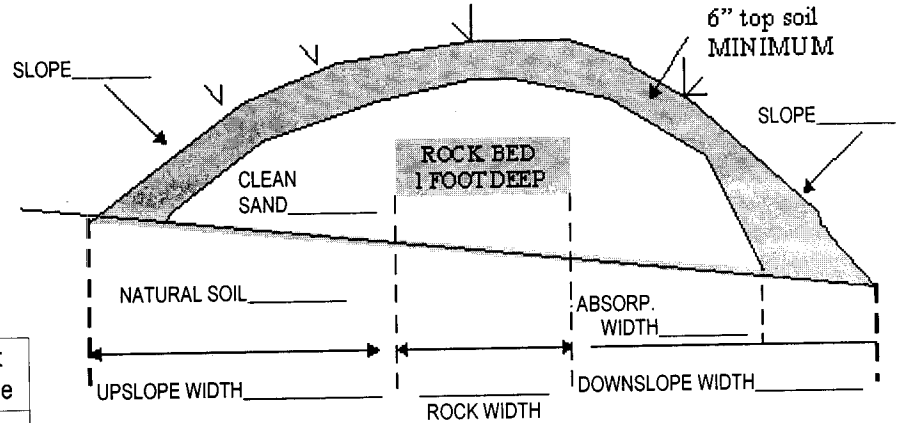
_____	ft
-------	----

(11) Upslope Berm Width from Step 5 Rock Layer Width (K) Downslope Berm Width from Step 10 Total Mound Width

ft +	ft +	ft =	ft
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(12) Upslope Berm Width from Step 5 Rock Layer Length (L) Upslope Berm Width from Step 5 Total Mound Length

ft +	ft +	ft =	ft
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LAND SLOPE IN %	Table A DOWNSLOPE				
	3:1	4:1	5:1	6:1	7:1
0	3.00	4.00	5.00	6.00	7.00
1	3.09	4.17	5.26	6.38	7.53
2	3.19	4.35	5.56	6.82	8.14
3	3.30	4.54	5.88	7.32	8.86
4	3.41	4.76	6.25	7.89	9.72
5	3.53	5.00	6.67	8.57	10.77
6	3.66	5.26	7.14	9.38	12.07
7	3.80	5.56	7.69	10.34	13.73
8	3.95	5.88	8.33	11.54	15.91
9	4.11	6.25	9.09	13.04	18.92
10	4.29	6.67	10.00	15.00	23.33
11	4.48	7.14	11.11	17.65	30.43
12	4.69	7.69	12.50	21.43	43.75

LAND SLOPE IN %	Table B UPSLOPE				
	3:1	4:1	5:1	6:1	7:1
0	3.00	4.00	5.00	6.00	7.00
1	2.91	3.85	4.76	5.66	6.54
2	2.83	3.70	4.54	5.36	6.14
3	2.75	3.57	4.35	5.08	5.79
4	2.68	3.45	4.17	4.84	5.46
5	2.61	3.33	4.00	4.62	5.19
6	2.54	3.23	3.85	4.41	4.93
7	2.48	3.12	3.70	4.23	4.70
8	2.42	3.03	3.57	4.05	4.49
9	2.36	2.94	3.45	3.90	4.30
10	2.31	2.86	3.33	3.75	4.12
11	2.26	2.78	3.23	3.61	3.95
12	2.21	2.70	3.12	3.49	3.80

FINAL DIMENSIONS

_____	X	_____
Step 11		Step 12

Trench Design Sheet

Property Owner	Township	Fire Number
Permit #	Parcel #	Date
Designer Name	License #	
Signature	Site Evaluation #	Date

Water Use Appliances

Clothes Washer Water Softener Dishwasher
 Whirlpool Humidifier Garbage Disposal

Number of Bedrooms _____ Bldg Type _____

Well Depth _____ Air Test

Well to Tank _____ ft

Well to Drainfield _____ ft

Well to Sewerline _____ ft

Flow

(A) Estimated GPD _____ or measured GPD

(B) Septic Tank Volume _____ gallons

(C) Min Pump Tank _____ gallons

Alarm Type _____

Soils

(D) Depth to Restricting Layer _____ ft

(E) Maximum System Depth [(D) - 3] _____ ft or _____ elev.

(F) Percolation Rate _____ MPI

(G) Soil Sizing Factor _____ sq ft/GPD

Pressure Distribution System? Yes No

Trench Bottom Area

(H) 6 in. of rock or gravelless [(A) x (G)] = _____

(I) 12 in. of rock [(A) x (G) x 0.8] = _____

(J) 18 in. of rock [(A) x (G) x 0.66] = _____

(K) 24 in. of rock [(A) x (G) x 0.6] = _____

Bed Bottom Area (6 or 12 inches of rock)

(L) Seepage beds [1.5 x (A) x (G)] = _____

(M) Pressure beds [(A) x (G)] = _____

Rock Volume in cubic feet (bottom area)

(N) Rock depth + 6" x _____ = _____ cu ft
 below pipe (H, I, J, K, L, M)

Rock Volume in cubic yards **Rock Weight**

(O) [(N) / 27] = _____ cu yds (P) [(O) x 1.4] = _____ tons

System Length

(Q) Bottom area [(H) - (K)] / Trench Width = _____ In ft

Lawn Area

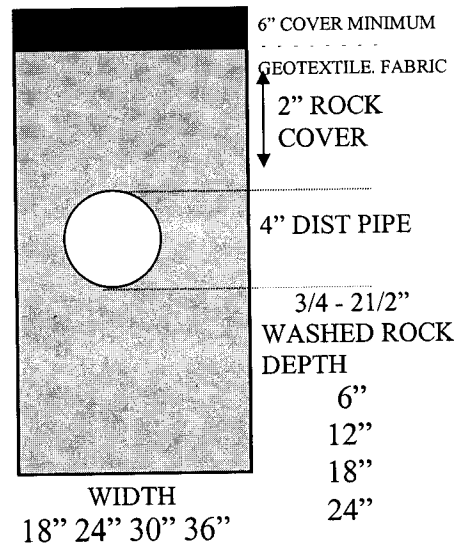
(R). Select trench spacing, center to center = _____ ft

(S) Trench spacing (R) x System length (Q) = _____ sq ft

EST. FLOW IN GALLONS/DAY (GPD)			
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4	600	375	256
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OVER 9	SEE FIG C-6	(x 1.5)

SIZING FACTORS			
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0.1 TO 5	SAND	0.83	1.20
0.1 TO 5	FINE SAND	1.67	0.60
6 TO 15	SANDY LOAM	1.27	0.79
16 TO 30	LOAM	1.67	0.60
31 TO 45	SILT LOAM	2.00	0.50
46 TO 60	CLAY LOAM	2.20	0.45
> 60	CLAY	-----	(0.24)



LUG Approval _____ Date _____

Comments _____

PUMP SELECTION PROCEDURE

Determine Pump Capacity

- 1) Gravity Distribution
 - a) Minimum is 10 GPM
 - b) Maximum is 45 GPM
- 2) Pressure Distribution
 - a) Number of perforated laterals _____
 - b) Perforation spacing _____ ft
 - c) Length of lateral
rock layer length: - 2 ft = _____ ft
 - d) Number of spaces between perfs
(2c): _____ / (2b): _____ = _____
 - e) Perforations per lateral
(2d): _____ + 1 = _____
 - f) Total number of perforations
(2e): _____ x (2a): _____ = _____
 - g) Select perf discharge from table _____
 - h) Pump capacity
(2f): _____ x (2g): _____ = _____ GPM

Perforation Discharges (GPM)

Head (ft)	Perforation diameter (in)	
	7"	1"
* 1.0 ft	0.56	0.74
1.5 ft	0.69	0.90
** 2.0 ft	0.80	1.04

* Use 1.0 ft for single homes

** Use 2.0 ft for everything else

Determine Head Requirements

- 1) Elevation difference
 - a) Between pump and point of discharge _____ ft
 - b) If system is pressure distribution (1a) + 5 ft
 - If system is gravity distribution (1a) + 0 ft _____ ft
- 2) Friction loss
 - a) Select value from table _____ ft/100 ft of pipe
 - b) Total pipe length from pump to discharge point
pipe length: _____ x 1.25 = _____ ft
 - d) Total friction loss
(2a): _____ x (2b): _____ / 100 = _____
- 3) Total head required
(1a): _____ (1b): _____ + (2d): _____ = _____

Friction Loss in Plastic Pipe

Flow Rate (GPM)	1.5"	2"	3"
20	2.47	0.73	0.11
25	3.73	1.11	0.16
30	5.23	1.55	0.23
35	6.96	2.06	0.30
40	8.91	2.64	0.39
45	11.07	3.28	0.48
50	13.46	3.99	0.58
55		4.76	0.70
60		5.60	0.82
65		6.48	0.95
70		7.44	1.09

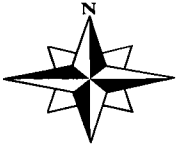
Max number of 1/4" perfs per lateral

Perforation spacing	1-1/4"	1-1/2"	2"
2.5 ft	14	18	28
3.0 ft	13	17	26
3.3 ft	12	16	25
4.0 ft	11	15	23
5.0 ft	10	14	22

Select a pump that can deliver at least _____ GPM with at least _____ feet of total head.

- 1) Minimum lateral diameter
 - a) Select the value from the bottom table _____
 - b) Diameter if a center manifold system _____

SKETCH PLAN



APPLICANT OR AGENT

DATE