

COMPLETED

Paid: 7-12-07

Recpt #: 2114

PERMIT NO. 07-076D

BEAVERHEAD COUNTY ON-SITE WASTEWATER TREATMENT SYSTEM PERMIT

BEAVERHEAD COUNTY ENVIRONMENTAL HEALTH DEPARTMENT

2 South Pacific

Dillon, Montana 59725

Phone: (406) 683-3770 Fax (406) 683-3769

 Permission is hereby granted to install an on-site wastewater treatment system on property owned by:

NAME OF PROPERTY OWNER:		Clint Sly	
PHYSICAL ADDRESS OF PROPERTY:		1400 Billings Creek Road, Polaris, MT	
MAILING ADDRESS OF PROPERTY OWNER:			
Subdivision Name:	Date Filed	Lot	Acres 94.4
Certificate of Survey	Date Filed	Lot	Acres
<p>*****</p> <p>This system shall be installed in accordance with current DEQ Circular 4 rules governing the on-site treatment of wastewater, and the minimum construction requirements and special requirements provided for this permit. This permit is issued, based on the information provided in the permit application. If any of this information is found incorrect, or if the system is not installed as provided for this permit shall be rendered null and void. This permit is valid for one year from date issued.</p> <p>*****</p>			
Installer:		Phone:	
TYPE AND SIZE OF SYSTEM: <input checked="" type="checkbox"/> New <input type="checkbox"/> Replacement <input type="checkbox"/> Tank <input type="checkbox"/> DF			
CONCRETE TANK		TYPE OF SYSTEM	
<input checked="" type="checkbox"/> Precast 1000 Gallon Concrete	<input checked="" type="checkbox"/> "36 Rated Infiltration Chambers =	100	
Tank, Distribution Box and Effluent Filter	Lineal Feet in	2	Laterals;
<input type="checkbox"/> Lift Station	(or)		
OTHER INSTRUCTIONS:	<input type="checkbox"/> "24 Rated" Infiltration Chambers =	120	
Addition Information:	Lineal feet in	2	Laterals;
	(or)		
	<input type="checkbox"/> Conventional Absorption Field =	120	
	Lineal feet in	2	Laterals.

 Permit Issued By:  Date: 8/21/2007

INSPECTION: Requirements

- ☒ Final inspection by the County Sanitarian or a qualified engineer is required before covering system. (8) working hours notice must be given for inspections. If the inspection cannot be made within (24) working hours of notification the system may be covered up without final inspection by the sanitarian. The written verification procedure below must then be followed.
- ☒ Written verification on the inspection closure form, photographic documentation and final drawing (as installed with dimensions) will be submitted to the County Sanitarian within 14 days of closure.

APPLICATION FOR ON-SITE WASTE WATER TREATMENT PERMIT

Single Family - \$75.00 ===== Multi-Family \$150.00

(No charge for replacement systems)

Beaverhead County Environmental Health Department
406-683-3770

2 South Pacific St #12
Dillon, MT 59725-2799

(Construction or modification of a septic system shall not take place until a permit is issued)

PART 1. TO BE COMPLETED BY APPLICANT

1. Property owner: Clint Sly
2. Mailing Address: _____
Town: _____ State: _____ Zip: _____ Phone: _____
3. Physical Address of Septic System Location: Mill side Polaris Billings creek 1400 Billings creek Rd
4. Legal Description: _____ 1/4 _____ 1/4, Sect. _____ T _____ R _____
5. Name of Subdivision _____ Lot Number _____ (if applicable)
6. Property Size: 9.4 acres. Year survey was filed _____
7. Was survey filed between 1961 and 1973? _____ (State review required for sanitary restrictions)
8. Installer's Name: Bill Hulse Installer's Phone: 683-6557
9. Type of System to be installed: ☒ New _____ Replacement _____
_____ Tank Only _____ Drainfield Only ☒ Both
If replacement, year failing system was installed _____
10. Treatment system to serve: ☒ Single family dwelling _____ Multi-family (duplex)
11. Number of bedrooms: 2 Type of water supply: well
12. Distance to nearest river, stream, drainage, and irrigation ditch: 300'
13. Is this parcel in a floodplain? no
14. Do you have reason to believe that the water table is high (within 7 feet of ground surface during the highest period of the year) no
15. Directions for locating this property. 3 miles up Billings creek from Polaris
16. For lots that do not have a certificate of sanitary approval from DEQ or lots larger than 20 acres.
 - a. Perc tests results (2 minimum) attached _____.
 - b. Test Pit results or call NRCS (SCS) Soils Survey(406) 683-3807 attached _____.
 - c. Well Logs (Mt. Tech. (406) 496-4336) 3 or more attached _____.
 - d. Well background Nitrate-Nitrite Test - Water sample results attached _____.
17. **On attached page, sketch the proposed septic system with lot boundaries.**
Include: all buildings, wells, waterways, drainage-ways, bedrock out-croppings, areas of high groundwater or ponding, driveways and roadways.
 - a. Show direction and degree or percentage of slope in drainfield area.
 - b. Label distances of the septic system from wells, waterways, houses, and property lines.
 - c. Show where a 100% replacement drainfield can be located for future use.
18. The above information is true to the best of my knowledge and I understand that if any of this application is found untrue, my application and permit will not be valid. I further understand that inspection and approval of the above septic system does not constitute assumptions by the County environmental health department or its employees of liability for the system failure. The property owner, shall be responsible for the proper maintenance of the system and for abatement of any nuisance arising from its failure.

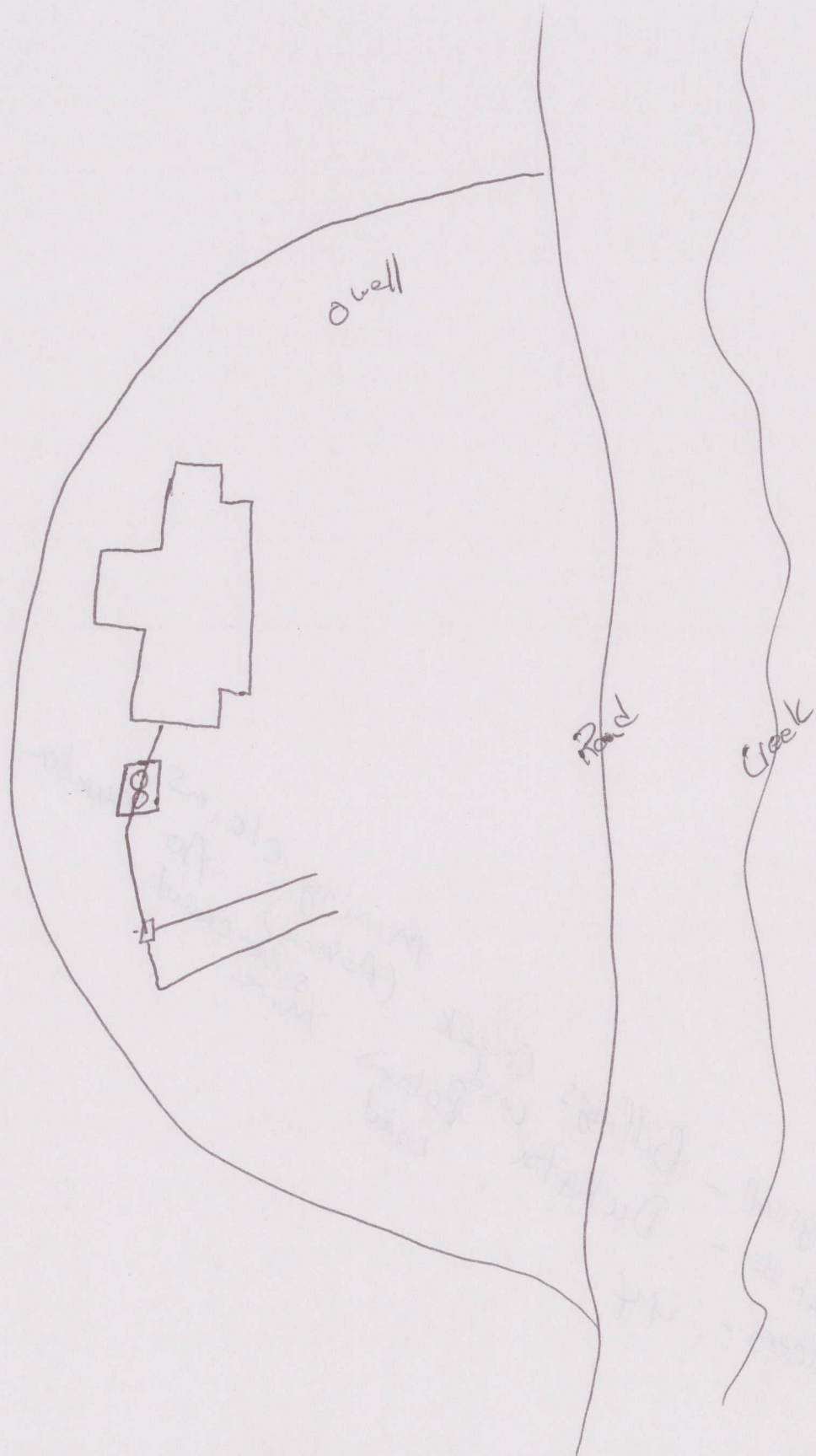
SIGNATURE OF
APPLICANT

Clint Sly

Date: 6/28/02

Proposed System Sketch

Applicants Name: _____



MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
PERCOLATION TEST FORM

Owner Name Clint Sly

Project Name _____

Lot of Tract Number _____ Test Number 1

Diameter of Test Hole 6" Depth of Test Hole 30"

Date and Time Soak Period Began 8:10 Ended 9:14

Date Test Began 7/5/07

Distance of the reference point above the bottom of the hole 20"

Test Results

Start Time of Day	End Time of Day	Time Interval (Minutes)	Initial Distance Below Reference Point	Final Distance Below Reference Point	Drop in Water Level (inches)	Percolation Rate (minutes/inch)
8:10	8:32	22	12"	20"	8"	
8:50	9:14	24	12"	20"	8"	3 $\frac{1}{4}$ inch

I certify that this percolation test was done in accordance with DEQ-4, Appendix A.

Bill Hexterbe [Signature] 7/5/07
Name (printed) Signature Date

Company

**MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
PERCOLATION TEST FORM**

Owner Name Clint sly

Project Name _____

Lot of Tract Number _____ Test Number 2

Diameter of Test Hole 6" Depth of Test Hole 32"

Date and Time Soak Period Began 9:35 Ended 10:35

Date Test Began _____

Distance of the reference point above the bottom of the hole 20"

Test Results

Start Time of Day	End Time of Day	Time Interval (Minutes)	Initial Distance Below Reference Point	Final Distance Below Reference Point	Drop in Water Level (inches)	Percolation Rate (minutes/inch)
9:35	9:57	22	10"	20"	10"	
10:10	10:35	25	10"	20"	10"	2.5 min/inch

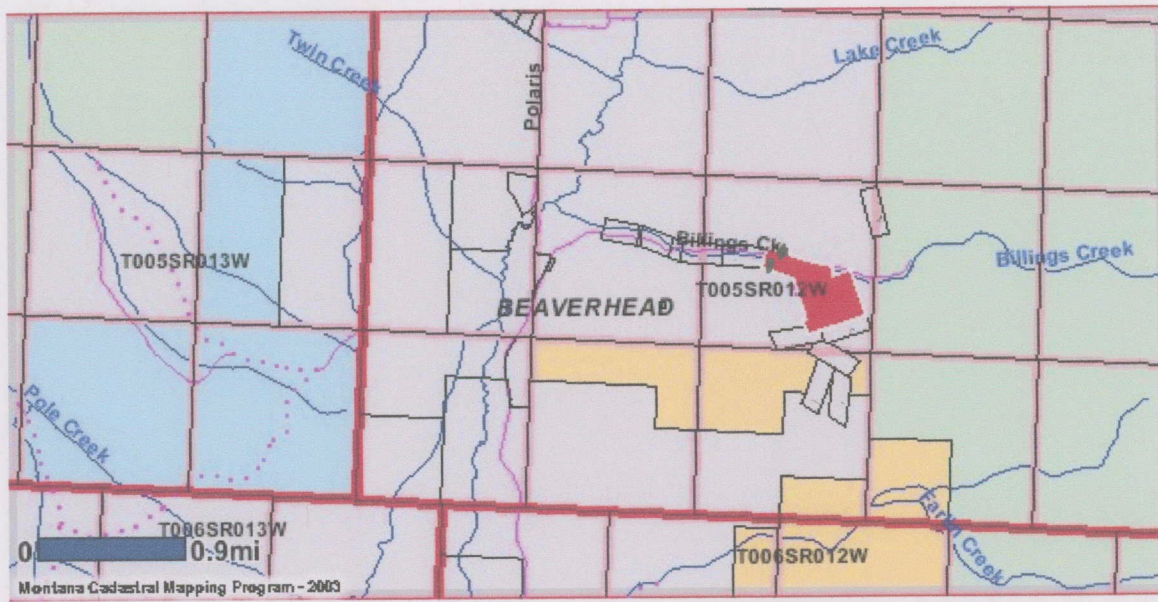
I certify that this percolation test was done in accordance with DEQ-4, Appendix A.

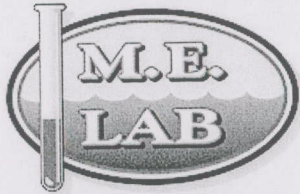
Bill Huxtable
Name (printed)

[Signature]
Signature

7/05/07
Date

Company





ANALYTICAL REPORT

Montana Environmental Laboratory LLC

1170 N. Meridian Rd., P.O. Box 8900, Kalispell, MT 59904-1900

Phone: 406-755-2131 Fax: 406-257-5359

Bill & Penny Huxtable
1284 Driveway Ln
Dillon, MT 59725

PWS ID:

Project: Sly-Billings Cr Mill Site

Client Sample ID: Sly-Billings Creek Mill Site

Matrix: DRINKING WATER

Collected: 07/16/2007 10:00

Lab ID: 0706161-01

Received: 07/17/2007 9:00

<u>Analyses</u>	<u>Result</u>	<u>Units</u>	<u>RL</u>	<u>MCL</u>	<u>Method</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Analyst</u>
Conductivity	612	umhos/cm	0.1		SM2510B		07/18/2007 16:12	MKC
Nitrate	0.77	mg/L	0.01	10	353.2		07/18/2007 16:38	MKC

Other Options

Plot this site on a topographic map
View scanned document (6/13/2006 3:33:20 PM)

Section 7: Well Test Data

Total Depth: 60
Static Water Level: 34
Water Temperature:

Air Test *

10 gpm with drill stem set at _ feet for _ hours.
Time of recovery _ hours.
Recovery water level _ feet.
Pumping water level _ feet.

State	Zip Code
MT	59746

* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.

BEAVERHEAD

Latitude	Longitude	Geomethod	Datum
45.368379	113.118961	TRS-SEC	NAD83
Altitude	Method	Datum	Date

Addition	Block	Lot
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Section 8: Remarks

Section 9: Well Log

Drilling Method: ROTARY

Geologic Source

Date well completed: Thursday, August 20, 1992

Unassigned

Borehole dimensions

From	To	Diameter
0	60	6

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
0	20	6	0.250			STEEL
10	60	4				PVC

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
40	60	4			SCREEN

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	20	BENTONITE	

[illegible]

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name: _____

Company: MORELOCK

License No: WWC-414

Date 8/20/1992

Completed:

Other Options

Plot this site on a topographic map
View scanned document (6/13/2006 3:33:02 PM)

Section 7: Well Test Data

Total Depth: 40
Static Water Level: 15
Water Temperature:

Air Test *

12 gpm with drill stem set at feet for 1.5 hours.
Time of recovery hours.
Recovery water level feet.
Pumping water level 34 feet.

* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.

Section 8: Remarks

Section 9: Well Log

Geologic Source
Unassigned

[illegible]

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:
Company: GRAHAM
License No: WWC-529
Date Completed: 6/25/1997

Borehole dimensions

From	To	Diameter
0	40	6

Casing

From		To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
2	38	6	0.250			WELDED	STEEL

Completion (Perf/Screen)

Completion (Perf/Screen)					
From	To	Diameter	# of Openings	Size of Openings	Description
38	40	6			OPEN BOTTOM

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	18	BENTONITE	

HYDRAULIC TRANSMISSIVITY AND CONDUCTIVITY

Site Name: Clint Sly
 County: Beaverhead
 Lot #:
 Notes: Billings Creek

(re: Applied Hydrogeology, 3rd Edition by C.W. Fetter { $T = (33.6((Q/(192.5/S)^{0.67}) \& K = T/b \& S = PWL-SWL)$ })

Owner's Name Melcher Marchessaul Cox

Total Depth of Well 60 40 74

(Q) Gallons Per Minute 10.00 12.00 10.00

Static Water Level 34.00 15.00 16.00

Pumping Water Level 40.00 34.00 35.00

(b) Aquifer Thickness 20 2 5

Type of well test air air air

(T) Transmissivity (ft²/d) 1605.2642 837.9042 741.5543

(K) Conductivity (ft/d) 80.263212 418.9521 148.3109

Average Conductivity (ft/d) 215.84206

(re: Groundwater and Wells, by F.G. Driscoll) [conf. $T = (Q(2000/S)0.134]$ [unconf. $T = (Q(1500/S)0.134]$

[K=T/b] & S=PWL-SWL

Unconfined Transmissivity (gpd/ft) 2500 947.3684 789.4737 #VALUE! #VALUE! #VALUE!
 Confined Transmissivity (gpd/ft) 3333.3333 1263.158 1052.632 #VALUE! #VALUE! #VALUE!

Unconfined Transmissivity (ft²/d) 335 126.9474 105.7895 #VALUE! #VALUE! #VALUE!
 Confined Transmissivity (ft²/d) 446.6667 169.2632 141.0526 #VALUE! #VALUE! #VALUE!

Unconfined Conductivity (ft/d) 16.75 63.47368 21.15789 #VALUE! #VALUE! #VALUE!
 Confined Conductivity (ft/d) 22.333333 84.63158 28.21053 #VALUE! #VALUE! #VALUE!

Average Conductivity (unconfined) (ft/d) 33.79
 Average Conductivity (confined) (ft/d) 45.06 ✓

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY

NITRATE SENSITIVITY ANALYSIS

Model Updated 01/24/96

SITE NAME: Clint Sly
COUNTY: Bvhd
LOT #: Polaris
NOTES:

<u>VARIABLES</u>	<u>DESCRIPTION</u>	<u>VALUE</u> <u>UNITS</u>
K	Hydraulic Conductivity	45.1 ft/day
I	Hydraulic Gradient	0.010 ft/ft
D	Depth of Aquifer (usually constant)	16.4 ft
L	Mixing Zone Length (see ARM 17.30.517(1)(d)(viii))	500 ft
Y	Width of Drainfield Perpendicular to Ground Water Flow	24 ft
Ng	Background Nitrate (as Nitrogen)	0.77 mg/L
Nr	Nitrate (as Nitrogen) in Precipitation (usually constant)	1.0 mg/L
Ne	Nitrates in Effluent (50 for conventional; 24 for level II)	50 mg/L
#I	Number of Single Family Homes on the Drainfield	1.0
QI	Quantity of Effluent per Single Family Home (constant)	26.70 ft3/day
P	Precipitation	12.0 in/year
V	Percent of Precipitation Recharging Ground Water (usually constant)	0.20

EQUATIONS

W	Width of Mixing Zone Perpendicular to Ground Water Flow = (0.175)(L)+(Y)	111.50 ft
Am	Cross Sectional Area of Aquifer Mixing Zone = (D)(W)	1828.60 ft2
As	Surface Area of Mixing Zone = (L)(W)	55750.00 ft2
Qg	Ground Water Flow Rate = (K)(I)(Am)	823.97 ft3/day
Qr	Recharge Flow Rate = (As)(P/12/365)(V)	30.55 ft3/day
Qe	Effluent Flow Rate = (#I)(QI)	26.70 ft3/day

SOLUTION

Nt	Nitrate (as Nitrogen) Concentration at End of Mixing Zone = ((Ng)(Qg)+(Nr)(Qr)+(Ne)(Qe)) / ((Qg)+(Qr)+(Qe))	2.27 mg/L
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BY: Larry Laknar
DATE: August 21, 2007

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REV. 12/98

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY

PHOSPHOROUS BREAKTHROUGH ANALYSIS

SITE NAME: Clint Sly
COUNTY: Beaverhead
LOT #: Polaris
NOTES:

<u>VARIABLES</u>	<u>DESCRIPTION</u>	<u>VALUE</u> <u>UNITS</u>
Lg	Length of Primary Drainfield as Measured Perpendicular to Ground Water Flow	100.0 ft
L	Length of Primary Drainfield's Long Axis	105.0 ft
W	Width of Primary Drainfield's Short Axis	24.0 ft
B	Depth to Limiting Layer from Bottom of Drainfield Laterals*	6.0 ft
D	Distance from Drainfield to Surface Water	150.0 ft
T	Phosphorous Mixing Depth in Ground Water (0.5 ft for coarse soils, 1.0 ft for fine soils)**	0.5 ft
Ne	Soil Weight (usually constant)	100.0 lb/ft3
Sw	Phosphorous Adsorption Capacity of Soil (usually constant)	200.0 ppm
Pa	Number of Single Family Homes on the Drainfield	1.0
#I		
<u>CONSTANTS</u>		
PI	Phosphorous Load per Single Family Home (constant)	6.44 lbs/yr
X	Conversion Factor for ppm to percentage (constant)	1.0E+06
<u>EQUATIONS</u>		
Pt	Total Phosphorous Load = (PI)(#I)	6.44 lbs/yr
W1	Soil Weight under Drainfield = (L)(W)(B)(Sw)	1512000.0 lbs
W2	Soil Weight from Drainfield to Surface Water = [(Lg)(D) + (0.0875)(D)(D)] (T)(Sw)	848437.5 lbs
P	Total Phosphorous Adsorption by Soils = (W1 + W2)[(Pa)/(X)]	472.1 lbs
<u>SOLUTION</u>		
BT	Breakthrough Time to Surface Water = P / Pt	73.3 years

BY:
DATE: August 21, 2007

NOTES:

* Depth to limiting layer is typically based on depth to water in a test pit or bottom of a dry test pit minus two feet to account for burial depth of standard drainfield laterals.

** Material type is usually based on test pit. A soil that contains more than 35% silt and clay sized particles is considered fine grained.



BEAVERHEAD COUNTY SANITARIAN

COURTHOUSE

2 SOUTH PACIFIC

DILLON, MONTANA 59725-2799

PH: (406) 683-3770

FAX: (406) 683-3769

SOILS AND SITE DESCRIPTION

LEGAL DESCRIPTION: _____ section _____, T _____, R _____

SITE ADDRESS _____

TEST PERFORMED FOR: SCY POLARIS - Billing Creek 1400

address: _____ phone: _____

<u>HORIZON</u>	<u>DEPTH</u>	<u>DESCRIPTION</u>	<u>COLOR</u>
<u>D</u>	<u>0-3</u>	<u>Organic Matter</u>	<u>5Yv/4/2</u>
<u>A</u>	<u>3-16"</u>	<u>Silty Sand with Fractured Rock</u>	<u>7Yv/5/2</u>
<u>B</u>	<u>16-55"</u>	<u>Sandy Gravel</u>	
<u>C</u>	<u>55-120"</u>	<u>Gravel & Sandy</u>	

SITE DESCRIPTION: Aspen Bench w- Native Grass & Shrubs
Dry Site. Roots - 36"

SLOPE: 6-8% - Aspect West

FLOOD POTENTIAL: None
(AND STREAMS, WATER BODIES)

BEDROCK: None to 120"

GROUNDWATER: None to 120" - No Evidence of GW

SOILS EVALUATION BY: _____

DATE: 8-17-07

Septic Permit Final Approval Form

To Be Completed By Installer:
Owner's Name: Chad Syl

Permit # 07-076 D

SEPTIC TANK:

Office
Use
Only

Installer
Use

<input checked="" type="checkbox"/>	Distance from nearest live water source min. 50ft.
<input checked="" type="checkbox"/>	Distance from Foundation min. 5 ft.
<input checked="" type="checkbox"/>	What size tank was installed in gallons?
<input checked="" type="checkbox"/>	How many compartments?
<input checked="" type="checkbox"/>	Tank was Pre-Cast Concrete or Other
<input checked="" type="checkbox"/>	Is the tank level?
<input checked="" type="checkbox"/>	The inlet slope is? 1/8" ft. min
<input checked="" type="checkbox"/>	The outlet slope is? 1/8" ft. min

DISTRIBUTION BOX:

<input checked="" type="checkbox"/>	Was a Distribution Box Installed?
<input checked="" type="checkbox"/>	Is the Distribution Box Level?
<input checked="" type="checkbox"/>	Are the Outlets the same level from the bottom?
<input checked="" type="checkbox"/>	Number of Outlets
<input checked="" type="checkbox"/>	Are the Inlets and Outlets sealed?

Inspection Comments:

OK - Photos, As built & Verification

DRAINFIELD:

Office
Use
Only

Installer
Use

<input checked="" type="checkbox"/>	Which Type was used: 36/ 24 rated or conventional.
<input checked="" type="checkbox"/>	Are Laterals Level?
<input checked="" type="checkbox"/>	Distance from live water source 100 ft. min
<input checked="" type="checkbox"/>	Distance from foundation 10 ft. min.
<input checked="" type="checkbox"/>	Total Length of Perforated drainpipe
<input checked="" type="checkbox"/>	Distance between lines 8 ft. min. on centers
<input checked="" type="checkbox"/>	Was 2.5 inch or less washed gravel used?
<input checked="" type="checkbox"/>	Depth of Gravel under pipe 6" min
<input checked="" type="checkbox"/>	Depth of Gravel over pipe 2" min
<input checked="" type="checkbox"/>	Other
<input checked="" type="checkbox"/>	What type of barrier was used? Straw, Semiperm paper, Building paper.
<input checked="" type="checkbox"/>	An As-Built drawing with dimensions and photo's are included with this request for final approval.

I have installed this system as specified in the septic permit to Beaverhead County and DEQ standards.

Installer Signature and Date

Chad Syl 11/5/08

This system by evidence provided or actual inspection is installed to Beaverhead County and DEQ specifications and standards and is approved for closure and cover-up on :

Date:

2-27-08

Signature: [Signature]
(Sanitarian or Environmental Health Department Officer)

Sly

