

# Preliminary & Field Evaluation Form

www.SepticResource.com vers 12.4

Owner Information			
Date	<u>6/22/2019</u>	Sec / Twp / Rng	<u>S-14, T-44, R-25</u>
Parcel ID	<u>16-0-020700</u>	LUG (county, city, township)	<u>Aitkin Co.</u>
Property Owner:	<u>Robert Edmond</u>	Owners address (if different)	
Property Address:	<u>29841 195th LN Isle MN 56342</u>	<u>7835 Groveland RD</u>	
City / State / Zip:		<u>Mounds View MN 55112</u>	

Flow Information and Waste Type / Strength			
Estimated Design flow	<u>300</u>	Anticipated Waste strength	<input type="checkbox"/> Hi Strength <input checked="" type="checkbox"/> Domestic
Comments: Existing System is failing  Type III Mound less than 12" to mottles Constructed on Disturbed Soil ( old Barn Yard )  System will Require Aitkin Co. Operator Permit		Any Non-Domestic Waste	<input type="checkbox"/> Yes (class V) <input checked="" type="checkbox"/> No
		Sewage ejector/grinder pump	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		Water softener	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		Garbage Disposal	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		Daycare / In home business	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

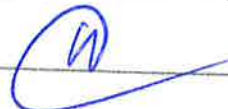
Site Information					
Existing & proposed lot improvements located (see site map)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Well casing depth	Existing deep well ( 522903) 82 ft.	
Easements on lot located (see site map)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Drainfield w/in 100' of residential well	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Property lines determined (see site map) By Owner	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Site w/in 200' of transient noncommunity water supply (TNCWS)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Req'd setbacks determined (see site map)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Site w/in an inner wellhead mgmt zone (CWS/NTNCWS)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Utilities located & identified (gopher state one call)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Buried water supply pipe w/in 50' of system	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Access for system maintenance (shown on site map)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Site located in Shoreland (w/in 1000' of lake, 300' of river)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Soil treatment area protected	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Site map prepared with previous items included	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Construction related issues	<u>Owner will need to remove old junk in yard</u>				

**APPROVED**

**ONSITE INSPECTION**

**NO ONSITE INSPECTION**

SIGN



DATE

6/25/19

### Soil Information

		Evidence of site:	
		Cut	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		Filled	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		Compacted	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
		Disturbed	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Original soils	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Soil logs completed and attached	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Perk test completed and attached (if applicable)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Soil loading rate (gpd/ft <sup>2</sup> )	<u>0.50</u>	Percolation rate (if applicable)	<u>19</u>
Depth/elev to SHWT	<u>10"</u>	Flooding or run-on potential (comments)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Depth to system bottom maximum (or elev minimum)	<u>( +36" )</u>	Flood elevation (if applicable)	_____
Depth/elev to standing water (if applicable)	_____	Elevation of ordinary high water level (if applicable)	_____
Depth/elev to bedrock (if applicable)	_____	Floodplain designation and elev - 100 yr/10 yr (if applicable)	_____
Soil Survey information determined (see attachment)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Differences between soil survey and field evaluation (if applicable)	_____ _____		

*I hereby certify this evaluation was completed in accordance with MN 7080 and any local req's.*

  
 Designer Signature

Brummer Septic LLC.  
 Company

L-1347  
 License #



29841 195th LN Isle MN 56342

**Soil Log #2 & Perk test 1**

		<input checked="" type="checkbox"/> Boring	<input checked="" type="checkbox"/> Pit	Elevation <u>96.7'</u>		Depth to SHWT <u>10"</u>		
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape	
0 - 6	Topsoil Loam	<35	10YR3/2		Loose	Loose	Granular	
6 - 10	Silt Loam	<35	10YR5/3		Friable	Weak	Blocky	
10 - 16	Silt Loam	<35	10YR5/3	7.5YR4/4	Friable	Weak	Blocky	
		<35						
		<35						

29841 195th LN Isle MN 56342

**Soil Log #3**

		<input type="checkbox"/> Boring	<input type="checkbox"/> Pit	Elevation _____		Depth to SHWT _____		
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape	
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive	
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive	
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive	
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive	
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive	

I hereby certify this work was completed in accordance with MN 7080 and any local req's.

  
 Designer Signature

Brummer Septic LLC.  
 Company

L-1347  
 License #

# Percolation Data Sheet

## 1. Contact Information

Property Owner:   
 Site Address:

## 2. General Percolation Information

Diameter  in Date prepared and/or soaked:   
 Method of scratching sidewall:   
 Is pre-soak required?  \* *Not required in sandy soils*  
 Soak\* start time:  Soak\* end time:   hrs of soak  
 Method to maintain 12 in of water during soak

## 3. Percolation Test Data

Test hole:  Location:   
 Date reading taken:  Elevation:   
 Starting time:  Depth\*\*:  inches

Soil texture description:

Depth (in)	Soil Texture
0 - 4	Loam
4 - 12	Silt Loam

**\*\* 12 inches for mounds & at-grades,  
 depth of absorption area for trenches &  
 beds**

Reading	Start Time	End Time	Start Reading (in)	End Reading (in)	Perc rate (mpi)	% Difference Last 3 Rates	Pass
1	10:00	11:00	9.00	5.75	18.5	NA	NA
2	11:05	11:30	9.00	7.68	18.9	NA	NA
3	11:35	11:55	9.00	7.87	17.7	6.5	Yes

Chosen Percolation Rate for Test Hole #1  mpi

Additional percolation test data may be included on attached pages  
 Design Percolation Rate (maximum of all tests) =

mpi

# Mound Design - Aitkin county

Property Owner: Robert Edmond

Date: 6/22/2019

Site Address: 29841 195th LN Isle MN 56342

PID: 16-0-020700

Comments: Type III on soil with less than 12" to Mottling, Disturbed soils

Instructions:  = enter data     = adjust if desired     = computer calculated - DO NOT CHANGE!

- 1)  bedroom    Type  Residential    System
- 2)  GPD design flow
- 3)  Garbage disposal or pumped to septic    Install 1650 Jacobson Compartment tank
- 4)  Gal Septic tank (code minimum)     Gal Septic tank (design size / LUG req'd)  
Tank options: Effluent filter & alarm req'd
- 5)  GPD/ft<sup>2</sup> mound sand loading rate    contour loading rate of  req's a min     ft. long rockbed
- 6)  ft rockbed width     ft rockbed length
- 7)  ft lateral spacing     ft perforation spacing    (maximum of 3 for both)  
 manifold connection
- 8)  laterals     feet long     perfs / lateral     perfs total  
(1/2 a perf means the first perf starts at the middle feed manifold)
- 9)  inch perfs at  feet residual head    gives  gpm flow rate per perforation  
for this perf size & spacing, & pipe size on line 12, max perfs/lateral = , line #8 must be less -->    OK
- 10)  doses per day    ( 4 minimum)
- 11)  gallons per dose    (treatment volume)
- 12)  inch diameter laterals must be used to meet "4x pipe volume" requirement    1.50    5x  
2.00    3x
- 13)  feet of  inch supply line    leads to  gallons of drainback volume  
(Tip: "top feed" manifold to control the drainback)
- 14)  gallons TOTAL pump out volume (treatment + drainback)
- 15)  feet vertical lift from pump to mound laterals, leads to a:
- 16)  GPM @  feet of head, Pump requirement    (note: >50gpm may require an extra 3-6' of head)
- 17)  gal Dose tank (code minimum)     gal Dose tank (design size / LUG req'd)    at  gpi  
leads to a
- 18)  inch swing on Demand float,    or timed dosing of  min ON    (confirm pump rate with drawdown  
(this delivers Average flow, =70% of Peak design flow)     hrs OFF    test and adjust as necessary)
- 19)  inches from bottom of tank to "Pump OFF" float
- 20)  inches from bottom of tank to "Pump ON" float, or  inches to "Timer ON" float if time dosed
- 21)  inches from bottom of tank to "Hi Level" float, or  inches to "Hi Level" float if time dosed
- 22)  gallons reserve capacity    (after High Level Alarm is activated)

System will Require Aitkin Co. Operator Permit

System will require an Event counter on the pump control.

System will have an Effluent filter and alarm on septic tank outlet, Also alarm on pump tank.


 Minnesota  
 Department of Health  
 656 001

## Minnesota Well Index

## General Information

Unique Well ID:	522903	Well Name:	HEATH, MIKE	County:	Aitkin	Aquifer:	Quat. buried artes. aquifer
Well Elevation (msl in feet):	1321	Drilled Depth (ft):	82	Well Completed (ft):	82	Date Drilled:	03/23/1993
Township:	44	Range:	25	Dir:	W	Section:	14
Subsection:	CBABAB	Use:	domestic	Well Status:	Active	Depth To Bedrock:	
Driller:	Northland Well Co.	Entry Date:	06/25/1993	Update Date:	07/18/2017		

## Related Resources:

[Go to MN Well Index Map](#)  
 [Well Log Report](#)  
 [Scanned Record\(s\)](#)  
 [Stratigraphy Report](#)

[More Details](#)  
[Stratigraphy](#)  
[Address](#)  
[Chemical Data](#)  
[Construction](#)  
[Pump Test](#)  
[Static Water](#)  
[Comments](#)

[Location Changes](#)  
[Overview Map](#)

Description	From(ft)	To(ft)	Color	Hardness	Lith Primary	Lith Secondary	Interpretation
SAND	0	11	BROWN	SOFT	SAND		sand-brown
CLAY	11	44	BROWN	MEDIUM	CLAY		clay-brown
SANDY (MUDDY)	44	57	GRAY	SOFT	SAND		cl/snd/slt-no peb.-gry
CLAY	57	71	GRAY	M.HARD	CLAY		clay-gray
SAND	71	82	GRAY	SOFT	SAND		sand-gray



# Detailed Parcel Report

Parcel Number: 16-0-020700

## General Information

Township/City: LAKESIDE TWP  
 Taxpayer Name: EDMOND, ROBERT & KAREN  
 Taxpayer Address: 7835 GROVELAND ROAD  
 MOUNDS VIEW MN 55112  
 Property Address: 29841 195th Ln  
 Township: 44 Lake Number: 0  
 Range: 25 Lake Name:  
 Section: 14 Acres: 34.50  
 Green Acres: No School District: 473.00  
 Plat:  
 Brief Legal Description: NW-SW AS IN DOC 386288 AND NE-SW LESS THE E 990 FT

## Tax Information

Class Code 1: Non-Homestead Qualifying Single Res Unit  
 Class Code 2: Rural Vacant Land  
 Class Code 3: Unclassified  
 Homestead: Non Homestead  
 Assessment Year: 2018

Estimated Land Value:	\$60,000.00
Estimated Building Value:	\$57,000.00
Estimated Total Value:	<u>\$117,000.00</u>
Prior Year Total Taxable Value:	\$112,500.00
Current Year Net Tax (Specials Not Included):	\$1,112.00
Total Special Assessments:	\$0.00
**Current Year Balance Not Including Penalty:	\$0.00
Delinquent Taxes:	No

\* For more information on delinquent taxes, please call the Aitkin County Treasurer's Office at 218-927-7325.

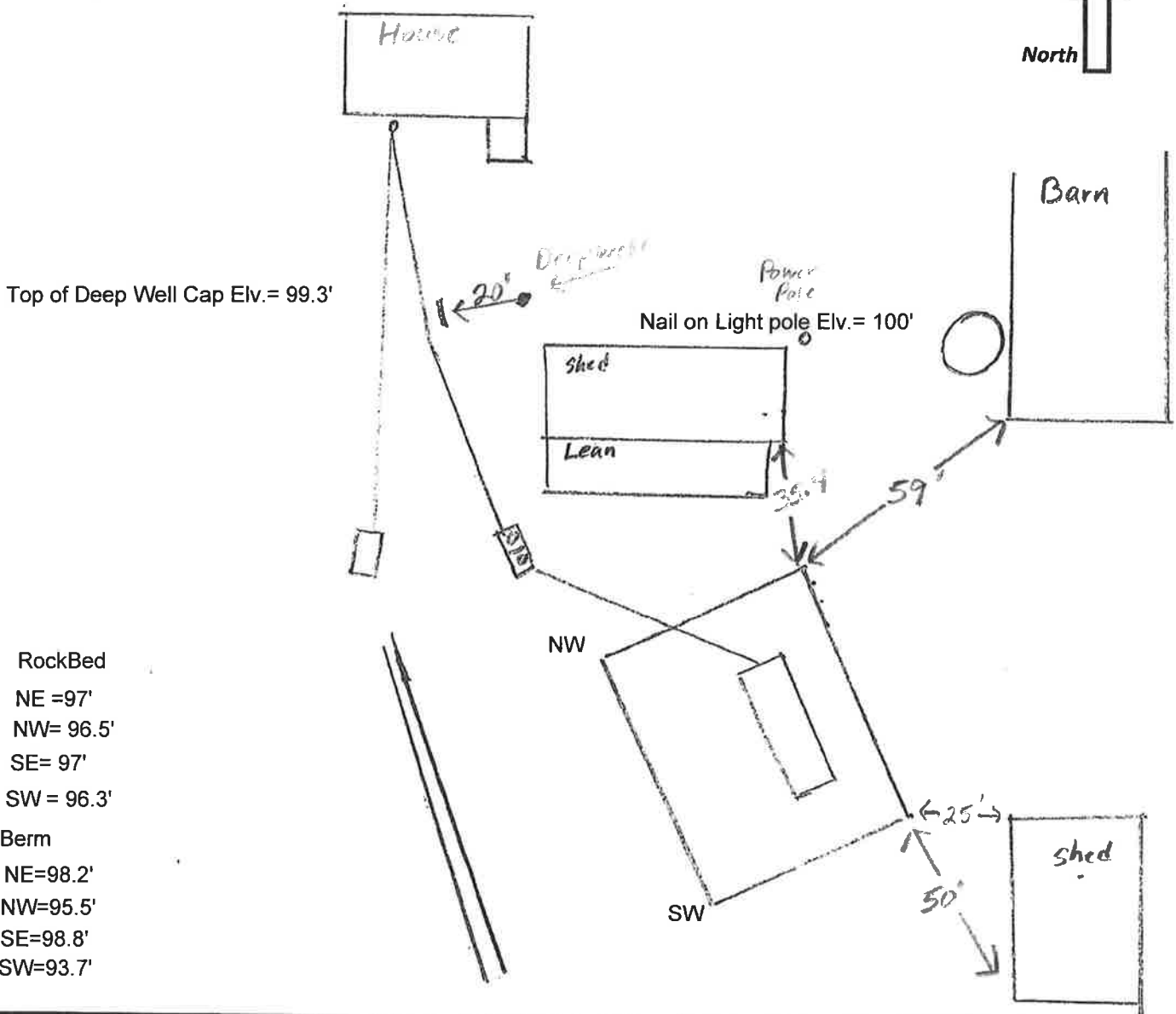
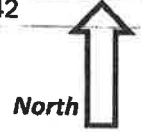
\*\* Balance Due on a parcel does not include late payment penalties.



# Triangulation Measurements

## { Design Drawing }

Property Owner: Robert Edmond Date: 6/22/19 Designer's Initials: JB  
 Parcel ID. Number: 16-0-020700 Address: 29841 195th LN Isle MN 56342  
 one inch = 40ft.



	Surface/ SHWT	Nail on light pole = Bench Mark 100'		Existing Grade	
Soil Bore 1	96.8'/10"	Bench Mark	100'	Upslope edge of Rockbed	Elv.= 97'
Soil Bore 2	96.7'/10"	Ground Elv. BM	98.6'	Bottom of Rockbed	Elv.= 100'
Perk Test	96.7'	Ground Elv. Tank	95.3'	Top of Washed Sand	Elv.= 100'
	Ground at	existing house	98.3'	Sewer pipe at House	Elv.=98.9'

Please show all that apply ( Existing )

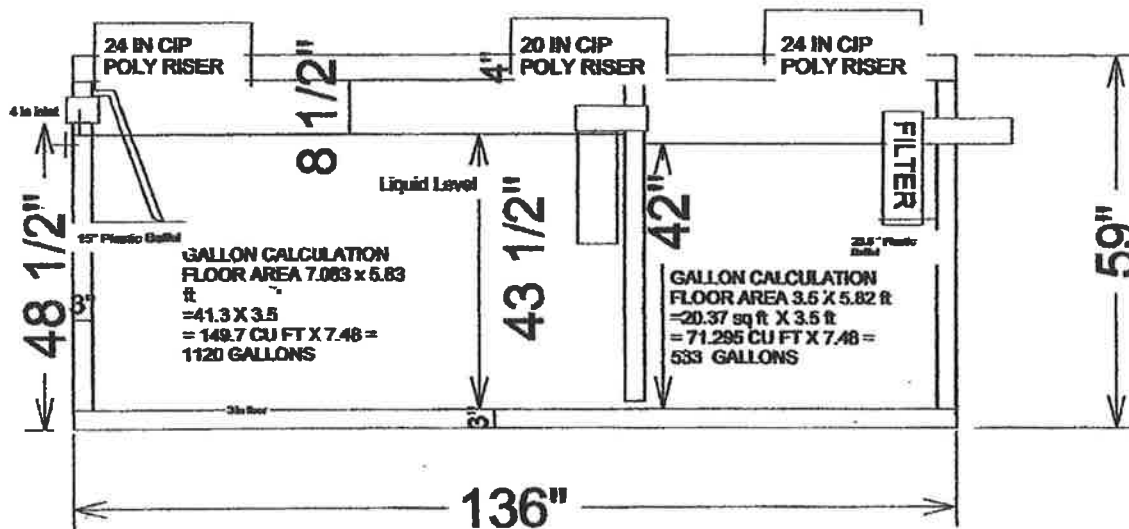
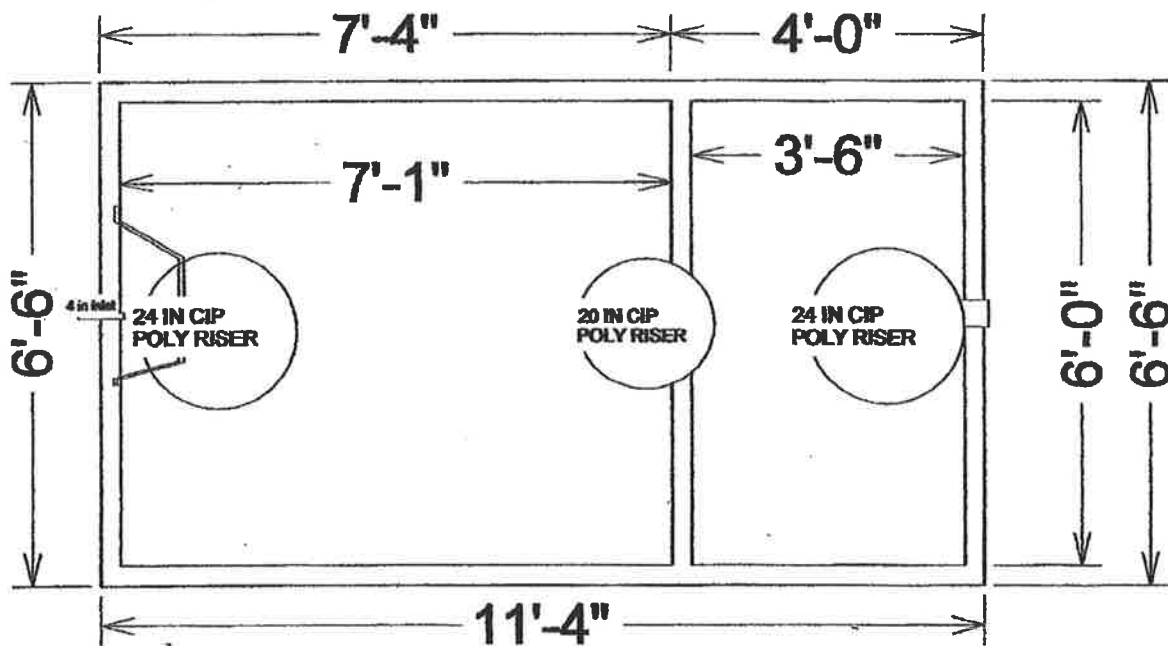
- Wells within 100ft. Of Drain field.
- Water lines within 10 ft. of Drain field.
- Drain field Areas:

Please Draw to Scale with North to Top or Left Side of Page:

- |                           |                                   |
|---------------------------|-----------------------------------|
| Disturbed/Compacted Areas | Access Route for Tank Maintenance |
| Component Location        | Property Lines                    |
| OHW ordinary high water   | Structures                        |
| Lot Easements             | Setbacks                          |

# 1650 Gallon 2 Compartment Septic Tank

## TOP VIEW



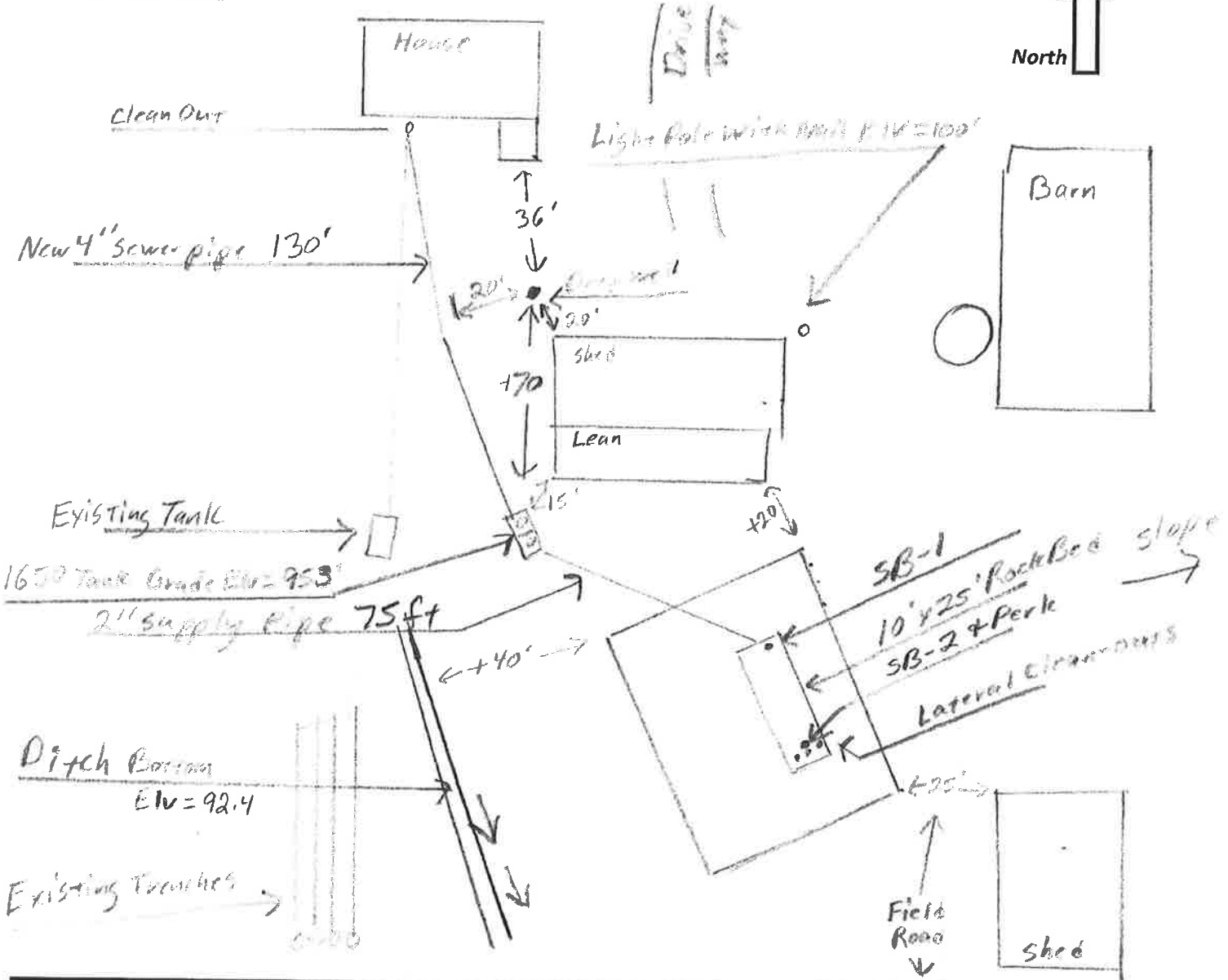
$533 / 42" = 12.69 \text{ GPI}$

## SIDE VIEW

Drawings Owned BY Jacobson Precast, Inc.  
36641 HWY 169, Aitkin, Mn 56431

**{ Design Drawing }**

Property Owner: Robert Edmond      Date: 6/22/19      Designer's Initials: JB  
 Parcel ID. Number: 16-0-020700      Address: 29841 195th LN Isle MN 56342  
 one inch = 40ft.



Surface/ SHWT		Nail on light pole = Bench Mark 100'		Existing Grade	
Soil Bore 1	96.8'/10"	Bench Mark	100'	Upslope edge of Rockbed	Elev. = 97'
Soil Bore 2	96.7'/10"	Ground Elev. BM	98.6'	Bottom of Rockbed	Elev. = 100'
Perk Test	96.7'	Ground Elev. Tank	95.3'	Top of Washed Sand	Elev. = 100'
	Ground at	existing house	98.3'	Sewer pipe at House	Elev. = 98.9'

Please show all that apply ( Existing )  
 Wells within 100ft. Of Drain field.  
 Water lines within 10 ft. of Drain field.  
 Drain field Areas:

Please Draw to Scale with North to Top or Left Side of Page:

- |                           |                                   |
|---------------------------|-----------------------------------|
| Disturbed/Compacted Areas | Access Route for Tank Maintenance |
| Component Location        | Property Lines                    |
| OHW ordinary high water   | Structures                        |
| Lot Easements             | Setbacks                          |

## Mound Design Notes - Aitkin county

Property Owner: Robert Edmond Date: 6/22/19

Site Address: 29841 195th LN Isle MN 56342 PID: 16-0-020700

Comments: Mound design may not follow Aitkin co. Auto fill form for mound design.

- 1 This is a type III mound , ( Soil Separation 10" Disturbed Soil, Farm yard ) sized for a 2 bedroom
- 2 The mound will be constructed on or near old barn yard. ( disturbed soil ).  
Installer will have to remove old hay and manure piles in mound area.( push off site with track skid steer).  
The whole farm area has junk piles that will have to be removed before mound can be installed.
- 3 Existing deep well location is 36 South of house, top of well cap Elv.= 99.3'
- 4 Existing septic tank and drainfield to be abandon. Pump, Collapse, Fill or Remove existing tank.
- 5 Existing house 4" sewer pipe outlet is approx. 6" above grade. Installer to lower or landscape and cover pipe.
- 6 Install clean-out near house. Install 4" sewer pipe for gravity flow to 1650 two compartment tank.
- 7 **Install 4" sewer pipe at least 20 ft. from well, Air test pipe.**
- 8 Install 1650 Jacobson compartment tank low enough for drainback from mound.  
Install effluent filter in septic tank outlet. Install alarm on Effluent filter. Insulate tank tops.
  
- 9 The Upslope and End slope Berms are at 3:1 to make the mound fit in the area between barns and field road.  
Elevation contour of rock bed upslope edge is 97' . Downslope berm is 4:1.  
The area size of the rock bed is 10' x 25' . Absorption area is 25' x 47.9'.  
Sand absorption area is 9.7 ft. up slope + 10 ft. rockbed + 28.2 downslope = approx. 47.9 ft. wide sand base.  
Berms are 12ft. Upslope, 34ft. Down slope, 10ft. Rock bed = approx. 56ft. Wide. End berms are 17 ft.  
Overall mound size is approx. 56' wide x 59' long and approx. 5' high.
- 10 The bench mark is the nail on the Light pole North of mound area, BM = Elv. 100'.  
Installer to double check bench mark. Installer should confirm bench mark and sand height Elv. with inspector.  
Installer should record bench mark Elv. and sand height on installation inspection form.
- 11 The top of the sand and bottom of rock bed is Elv. 100'.
- 12 It is important that the soils do not get compacted, and that clean Washed sand is used.
- 13 The Jacobson 1650 tank will be gravity flow from dwelling. Install the pump for 7 demand doses per day. approx. 56 gallons per dose, 4.4 inches of tank level. Install alarm at 3 inches from pump on level.  
Install all manholes, inspection pipes and clean-outs to grade or above. ( Recommend min. 4" above grade)  
Install a 2" supply pipe from tank to end manifold in rock bed, install so pipe drains back to tank.  
Install 1.5" laterals with 9" of rock under them. Install clean-outs at far end of laterals.
- 14 **Drill 1/4" perf holes spaced 3 ft. on center.**  
Install inspection pipe to bottom of rock bed, secure in rock bed and raise to above final grade.
- 15 Installer will pressure test and squirt height laterals when finished.
- 16 **Install Event counter on Effluent pump, calibrate pump and give gallons per event to Owner.**
- 17 **Owner may install water meter on house water supply, ( must be completed for Certification of system).**
- 18 Designer does not guarantee or warranty any Type III systems.  
Designed to Aitkin Co. and MPCA recommendations and requirements.

  
\_\_\_\_\_  
Designer Signature

Brummer Septic LLC.  
Design Company

L-1347  
\_\_\_\_\_  
License#

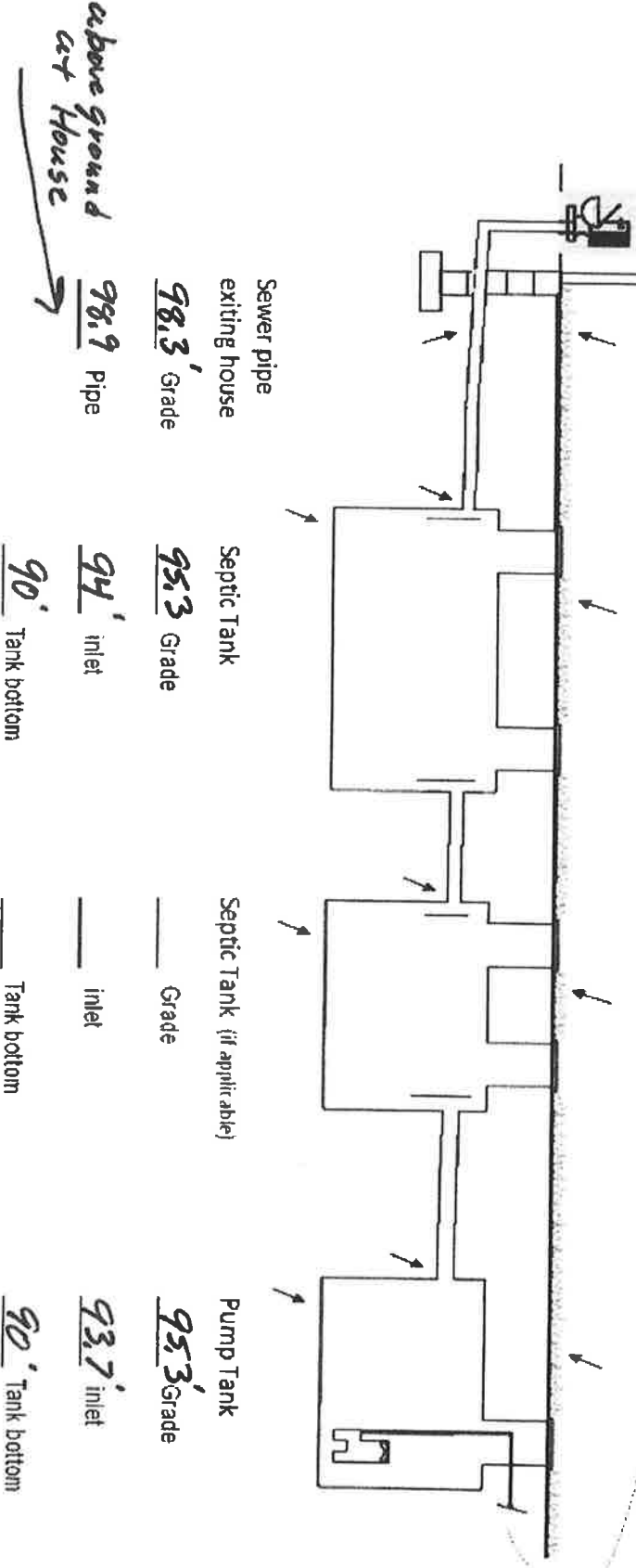
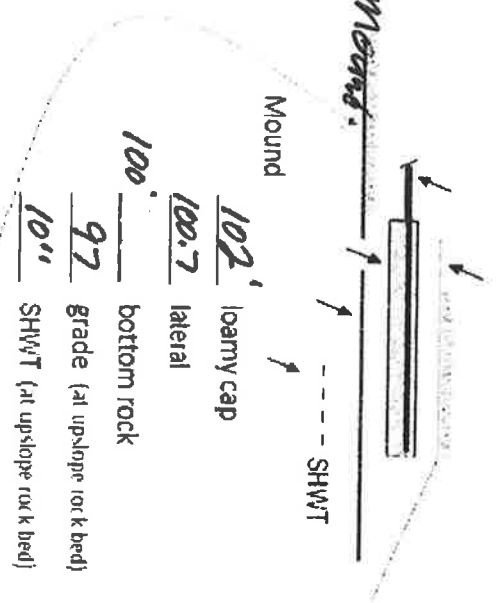
Installer to calibrate pump -out control volume and give number to Owner.

Installer to inform owner on septic system operation.

# System Elevations

ELV = 100' benchmark Nail on Light Pole North of Mound.  
Top of well cap ELV = 99.3

(Grade elevations are existing. If a different final grade is desired it should be shown and described here.)



## INSPECTOR CHECKLIST - mound

29841 195th LN Isle MN 56342

- WELL setbacks: 20' to pressure tested sewer line (5 psi for 15 min)  
50' to everything 100' to dispersal area with shallow well
- PROPERTY LINES setback: 10' to everything
- Road setback: platted: 10' prop line. Metes & bounds: out of road easement, or outer ditch.
- LAKE / BLUFF setback: 20' for bluff. Lakes: GD \_\_\_\_, RD \_\_\_\_, NE \_\_\_\_\_. Protected wetland \_\_\_\_.
- Building setbacks: 10' for everything, 20' for dispersal area.
- WATER LINE under pressure set 10' to bed, tank & sewer line. (else sewer line > 12" below, else ok w/pvc)
  
- Sewer line & baffle connection (no 90's, 3' between 45's, slope min 1" in 8', max 2" in 8')  
(no depth req's, clean out every 100', Sch 40 pipe)
  
- Septic tank and risers (water tight, insulated, proper depth, existing verified by pumping)  
mfg \_\_\_\_\_ 1120 gallons Effluent filter & alarm req'd \_\_\_\_\_
  
- Riser over outlet, riser over inlet or center, and 6"+ inspection pipe over any remaining baffles.  
Yes \_\_\_\_\_ effluent filter & alarm
- Dose tank risers and piping (water tight, insulated, proper depth, drainback)  
mfg \_\_\_\_\_ 533 gallons
  
- dose pump \_\_\_\_\_ 18 gpm 21 head VERIFY PUMP CURVE 3.1 min ON 5.1 hr OFF
  
- float setting drop 4.4 inches at 12.7 gpi "DESIGNED" = 3.2 inches approx float tether length  
56.0 gal dose divided by \_\_\_\_\_ gpi "INSTALLED" = \_\_\_\_\_ inches float drop (field corrected)
- LABEL pump requirements and drawdown on riser or panel
  
- Cam lock reachable from grade - 30" max. J-hook weep hole. Supply line access (no hard 90's)  
2.0 inch supply pipe: Sch40, sloped 1/8"+, supported by 4" sch40 sleeve or compacted, and buried 6"+.
- splice box / control panel / electrical connections
- flow measurement: CT, ETM, time dosed, home water meter
- mound absorption area rough up
- mound rock dimensions 10.0 X 25.0
- Sand lift depth 36 inches. (Jar test : 2" sand leaves < 1/8" silt after 30 min)
  
- Absorption Sand beyond rock 9.7 upslope 28.2 downslope
  
- Bermed topsoil beyond rockbed 12 upslope 17 sideslope 34 downslope
  
- cover depth of 12-18"+ VERIFY
- 3 laterals (1-2' from edge of rock)
- 1.50 inch pipe size (Sch40 pipe & fittings)
- 3.0 ft lateral spacing
  
- 1/4" inch perforations
- 3.0 ft perforation spacing
  
- Air inlet at end of laterals, and at top feed manifold if necessary. VERIFY
- clean outs (no hard 90's)
- 4" inspection pipe to bottom of rock, anchored VERIFY
  
- Abandon existing system - if necessary  Re-use existing tank certification
- monitoring plan and type \_\_\_\_\_
- well abandonment form - if necessary

System will have an Effluent filter and alarm on septic tank outlet, Also alarm on pump tank.

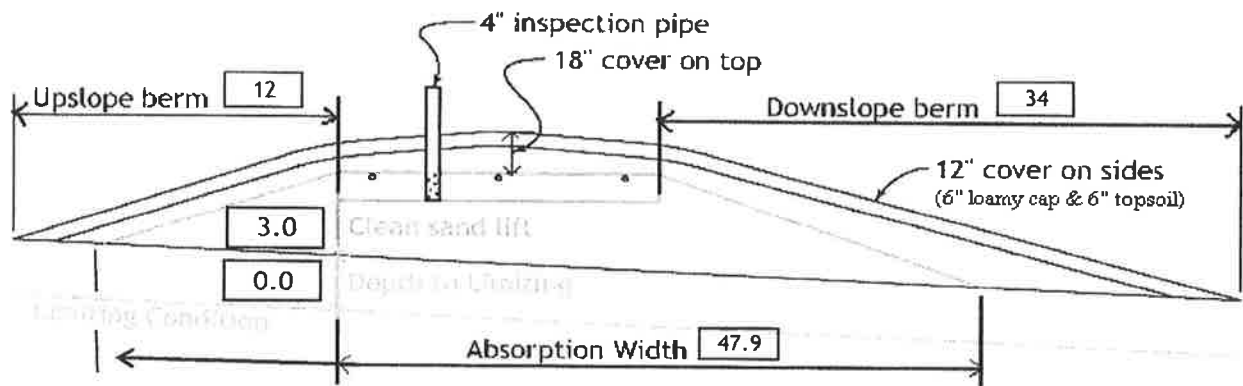
System will require an Event counter on the pump control.

System will Require Aitkin Co. Operator Permit

# Installer Summary

- 1120 gallon Septic tank (minimum) Tank options: Effluent filter & alarm req'd
- 533 gallon Dose tank (minimum) Install 1650 Jacobson Compartment tank at  12.69 gpi
- 18 GPM @  21 ft. of head, Pump required
- 4.4 inch swing on Demand float which translates to roughly  3.2 inches of float tether length if time dosing is required -->  3.1 minutes ON time &  5.1 hours OFF time
- 16 inches from bottom of tank to "pump ON" float, or  12 inches to "timer ON" float
- 19 inches from bottom of tank to "Hi Level Alarm" or  29 inches to "Hi level alarm" if time dosed
- 75 ft. of  2.0 inch supply line with  end feed  manifold connection (Tip: "top feed" manifold to control drainback)
- 36 inch, or  3.0 ft. Sand Lift Mound
- 10.0 ft. wide by  25.0 ft. long Rock bed
- 3 laterals  1.50 inch diameter  23.0 ft. long  3.0 ft. lateral spacing
- 1/4" inch perfs  3.0 ft. perforation spacing
- Yes Effluent filter & alarm
- 3 clean out & valve box assemblies
- 47.9 ft. Total sand ABSORPTION width (minimum)
- 9.7 ft. upslope and sideslope (sand beyond rockbed, minimum)
- 28.2 ft. Downslope (sand beyond rockbed, minimum)

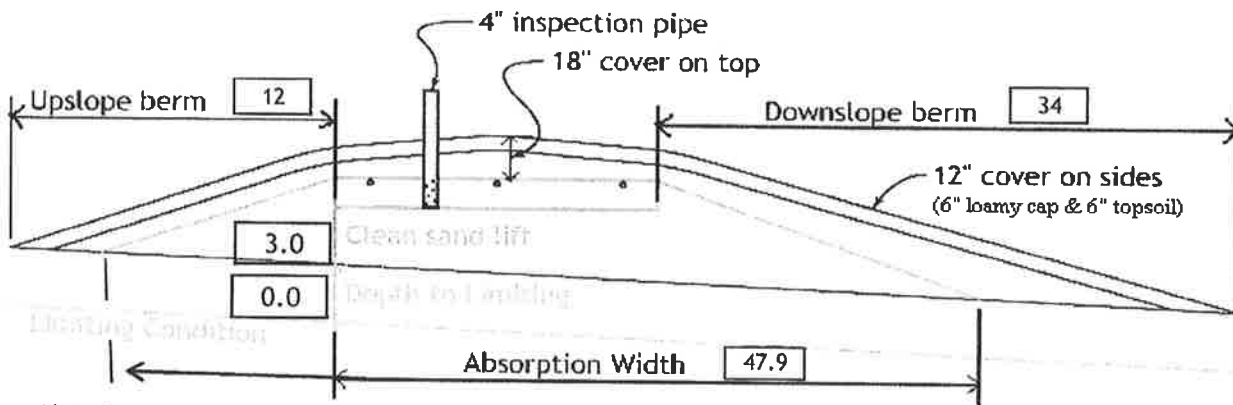
- Specific slope ratios give BERM widths (topsoil beyond rockbed) of:
- 3:1 upslope ratio  12 ft. upslope berm
  - 3:1 sideslope  17 ft. sideslope berms
  - 4:1 downslope  34 ft. downslope berm



**Note:**  
 For 0 to 1% slopes, *Absorption Width* is measured from the *Bed* equally in both directions.  
 For slopes >1%, *Absorption Width* is measured downhill from the upslope edge of the *Bed*.

Rock Bed:	<input type="checkbox"/> 12.0 yd <sup>3</sup> or *1.4=	<input type="checkbox"/> 17 ton	<input type="checkbox"/> 9 inches under pipe
Mound Sand:	<input type="checkbox"/> 268 yd <sup>3</sup> or *1.4=	<input type="checkbox"/> 375 ton	calculation based on 3:1/4:1 slope from top of rockbe
Loamy Cap:	<input type="checkbox"/> 64 yd <sup>3</sup> or *1.4=	<input type="checkbox"/> 90 ton	6" deep
Topsoil:	<input type="checkbox"/> 74 yd <sup>3</sup> or *1.4=	<input type="checkbox"/> 104 ton	6" deep

- 23)  gpd/ft<sup>2</sup> Absorption area Soil Loading Rate, which gives a mound ratio of  (minimum)  
 (this must match the soil boring log) desired mound ratio
- 24)  percent site slope (0-20% range)  (% downslope site slope, if different than upslope)
- 25)  inches, or  ft. to Redox or other limiting condition (need at least 12" to be a Type I)  
 Treatment zone contains  inches of 0% soil credit, and  inches of 50% soil credit. Giving a:
- 26)  inch, or  ft. Sand Lift Mound **CRITICAL FOR FUTURE CERTIFICATIONS!!!**
- 27)  ft. base absorption width (with sand beyond rockbed as follows):  
 greater of: absorption width OR sand slope
- 28)  ft. upslope and sideslope sand upslope   
 ft. Downslope sand down slope
- Individual slope ratios give BERM widths (topsoil beyond rockbed) of:
- 29)  upslope ratio  ft. upslope berm
- 30)  sideslope  ft. sideslope berms
- 31)  downslope  ft. downslope berm
- 32) Overall Dimensions:  ft. wide by  ft. long Rock bed  
 ft. wide by  ft. long Mound footprint



Note:  
 For 0 to 1% slopes, *Absorption Width* is measured from the *Bed* equally in both directions.  
 For slopes >1%, *Absorption Width* is measured downhill from the upslope edge of the *Bed*.

- 33) Rock Bed:  
 ft. by  ft. by  inches under pipe, plus 20% gives  yd<sup>3</sup> or \*1.4=  ton
- 34) Mound Sand: (note: volume is based on 3:1/4:1 slope from top of rockbed, Exchange sand for loamy cap if desired)  
 up +  downslope +  ends +  under rock =  yd<sup>3</sup> or \*1.4=  ton  
 plus 20%
- 35) Loamy Cap:  
 ft. by  ft. 6" deep, plus 20% gives  yd<sup>3</sup> or \*1.4=  ton
- 36) Topsoil:  
 ft. by  ft. 6" deep, plus 20% gives  yd<sup>3</sup> or \*1.4=  ton

I hereby certify that I have completed this work in accordance with all applicable ordinances, rules and laws.

  
 Designer Signature

Brummer Septic LLC.  
 Company

L-1347  
 License#

6/22/2019  
 Date



**{ Type III Design Notes for Owner and Installer }**

Property Owner: Robert Edmond Date: \_\_\_\_\_ Installer's Initials: \_\_\_\_\_  
 PIN: 16-0-020700 Site Address: 29841 195th LN Isel MN 56342

This is a TYPE III Septic System, Operating Permit Required of Owner. Permit # \_\_\_\_\_

Reason for Type III Type III mound because of soil separation less than 12" to mottles.  
Type III Disturbed Soils, old farm yard

Description of System Gravity flow from house to 1650 2/ Compartment tank. Effluent filter on septic tank outlet.

**Alarms on the Effluent filter and the pump tank. Mound is a 10'x25' rockbed with 3 ft. washed sand under rockbed.**

1st Tank Gal. _____	1st compartment gal. _____	2nd Comp _____	3rd _____
2nd Tank Gal. _____	1st compartment gal. _____	2nd Comp _____	3rd _____
3rd Tank Gal. _____	1st compartment gal. _____	2nd Comp _____	3rd _____
1st Pump tank Gal. _____	1st Pump Brand and model # _____		
1st Pump GPM _____	1st Pump Ft. of Head _____	1st Pump Gal. per Dose _____	
1st Pump tank Gal. per inch. _____	1st Pump Inches per Dose _____	1st Pump Doses per Day _____	
1st Pump Design GPD _____	1st Pump Measured dose per day _____	Timed or demand Dose _____	
Time Settings: Minutes ON _____	Minutes OFF _____	Inches Pumped after drainback _____	
Notes : _____			
2nd Pump tank Gal. _____	2nd Pump Brand and model # _____		
2nd Pump GPM _____	2nd Pump Ft. of Head _____	2nd Pump Gal. per Dose _____	
2nd Pump tank Gal. per inch. _____	2nd Pump Inches per Dose _____	2nd Pump Doses per Day _____	
2nd Pump Design GPD _____	2nd Pump Measured dose per day _____	Timed or demand Dose _____	
Time Settings: Minutes ON _____	Minutes OFF _____	Inches Pumped after drainback _____	
Notes : _____			

1st Alarm: Tank \_\_\_\_\_ Reason: \_\_\_\_\_  
 2nd Alarm: Tank \_\_\_\_\_ Reason: \_\_\_\_\_  
 3rd Alarm: Tank \_\_\_\_\_ Reason: \_\_\_\_\_

Water Meter Installed on house hold water: \_\_\_\_\_ Where is it located : \_\_\_\_\_

Event counter Installed on pump: \_\_\_\_\_ Which Pump: \_\_\_\_\_ Gal. Per Event \_\_\_\_\_

Where is Event Counter Located: \_\_\_\_\_

**Requirement of Operating Permit**

Owner to UNDERSTAND System Operation: Required to do monthly readings of water meter or event counter.

Owner to record readings every month that system is being used, should know calculations for Gal. per day.

Owner to REPORT to Aitkin Co. once a year with log of monthly readings and annual Inspection Report

Owner to Hire an Inspector for a Once a year Inspection of the system's, Operation, Mechanical functions, and Compliance with Operating Permit.

## Aitkin County, Minnesota

### 152B—Milaca fine sandy loam, 3 to 8 percent slopes

#### Map Unit Setting

*National map unit symbol:* gjf3  
*Elevation:* 980 to 1,640 feet  
*Mean annual precipitation:* 25 to 30 inches  
*Mean annual air temperature:* 39 to 45 degrees F  
*Frost-free period:* 120 to 140 days  
*Farmland classification:* All areas are prime farmland

#### Map Unit Composition

*Milaca and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Milaca

##### Setting

*Landform:* Moraines  
*Landform position (two-dimensional):* Summit, backslope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Loamy till

##### Typical profile

*A - 0 to 3 inches:* fine sandy loam  
*E1,E2,2E/B - 3 to 22 inches:* fine sandy loam  
*2B/E,2Bt - 22 to 32 inches:* sandy loam  
*2BC - 32 to 48 inches:* sandy loam  
*2Cd - 48 to 60 inches:* sandy loam

##### Properties and qualities

*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* 40 to 60 inches to densic material  
*Natural drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)  
*Depth to water table:* About 24 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 6.3 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2e  
*Hydrologic Soil Group:* B  
*Forage suitability group:* Sloping Upland, Acid (G090AN006MN)  
*Hydric soil rating:* No

### Minor Components

#### **Giese and similar soils**

*Percent of map unit: 3 percent*

*Landform: Depressions*

*Hydric soil rating: Yes*

#### **Ronneby and similar soils**

*Percent of map unit: 3 percent*

*Hydric soil rating: No*

#### **Stones on the surface**

*Percent of map unit: 3 percent*

*Hydric soil rating: No*

#### **Areas of steeper slope**

*Percent of map unit: 2 percent*

*Hydric soil rating: No*

#### **Mora and similar soils**

*Percent of map unit: 2 percent*

*Hydric soil rating: No*

#### **Twig and similar soils**

*Percent of map unit: 2 percent*

*Landform: Depressions*

*Hydric soil rating: Yes*

## Data Source Information

Soil Survey Area: Aitkin County, Minnesota

Survey Area Data: Version 19, Sep 12, 2018



Area of Interest (AOI) [Soil Data Explorer](#) [Download Soils Data](#) [Shopping Cart \(Free\)](#)

[Printable Version](#) [Add to Shopping Cart](#)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
152B	Milaca fine sandy loam, 3 to 8 percent slopes	0.3	100.0%
<b>Totals for Area of Interest</b>		<b>0.3</b>	<b>100.0%</b>



**Warning: Soil Map may not be valid at this scale.**

You have zoomed in beyond the scale at which the soil map for this area is intended to be used. Mapping of soils is done at a particular scale. The soil surveys that comprise your AOI were mapped at 1:20,000. The design of map units and the level of detail shown in the resulting soil map are dependent on that map scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

**Aitkin County**

Zoom In

Zoom Out

Pan

Zoom Prev

Zoom Select

Zoom Extent

Clear

Search

Identify

Commands



Scale 1: 4514

No Tool Active

# Subsurface Sewage Treatment System Management Plan

Property Owner: Robert Edmond Phone: 763-218-8820 Date: 6/22/2019  
Mailing Address: 7835 Groveland RD City: Mounds View MN 55112 Zip: \_\_\_\_\_  
Site Address: 29841 195th LN Isel MN 56342 City: \_\_\_\_\_ Zip: \_\_\_\_\_

This management plan will identify the operation and maintenance activities necessary to ensure long-term performance of your septic system. Some of these activities must be performed by you, the homeowner. Other tasks must be performed by a licensed septic service provider.

System Designer: check every 12 months.  
Local Government: check every \_\_\_\_\_ months.  
State Requirement: check every 36 months.

**My System needs to be checked every 12 months.**

(State requirements are based on MN Rules Chapter 7080.2450, Subp. 2 & 3)

## Homeowner Management Tasks

- Leaks* – Check (look, listen) for leaks in toilets and dripping faucets. Repair leaks promptly.
- Surfacing sewage* – Regularly check for wet or spongy soil around your soil treatment area.
- Effluent filter* – *Inspect and clean twice a year or more.*
- Alarms* – Alarm signals when there is a problem. Contact a service provider any time an alarm signals.

Owner ---> *Event counter or water meter* – Record your water use.

-recommend meter readings be conducted (circle one: DAILY WEEKLY **MONTHLY**)

## Professional Management Tasks

- Check to make sure tank is not leaking
- Check and clean the in-tank effluent filter
- Check the sludge/scum layer levels in all septic tanks
- Recommend if tank should be pumped
- Check inlet and outlet baffles
- Check the drainfield effluent levels in the rock layer
- Check the pump and alarm system functions
- Check wiring for corrosion and function
- Check dissolved oxygen and effluent temperature in tank
- Provide homeowner with list of results and any action to be taken
- Flush and clean laterals if cleanouts exist

"I understand it is my responsibility to properly operate and maintain the sewage treatment system on this property, utilizing the Management Plan. If requirements in the Management Plan are not met, I will promptly notify the permitting authority and take necessary corrective actions. If I have a new system, I agree to adequately protect the reserve area for future use as a soil treatment system."

Property Owner Signature: Robert G. Edmond Date: 6/28/2019

Designer Signature: Jeff Brummer Date: 6/25/2019

See Reverse Side for Management Log

## Maintenance Log

Activity	Date Accomplished									
<b><i>Check frequently:</i></b>										
Leaks: check for plumbing leaks										
Soil treatment area check for surfacing										
Lint filter: check, clean if needed										
Effluent screen: if owner-maintained										
Water usage rate (monitor frequency _____)										
<b><i>Check annually:</i></b>										
Caps: inspect, replace if needed										
Sludge & Scum/Pump										
Inlet & Outlet baffles										
Drainfield effluent leaks										
Pump, alarm, wiring										
Flush & clean laterals if cleanouts exists										
Other: _____										
Other: _____										

**Notes:** Follow Operating permit requirements. Clean Effluent Filter at least twice a year, may need more often.

Pump septic & pump tanks at least once every three years.

Mow Mound area at least once a year to keep trees and brush from growing in mound area.

No Traffic on mound area, No Snowmobiles, No ATV's, No Parking.

Mitigation/corrective action plan: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**MAINTENANCE SERVICE, MONITORING AND INSPECTION  
CONTRACT  
FOR INDIVIDUAL SEWAGE TREATMENT SYSTEM**

It is hereby agreed this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ by and between  
Jeff Brummer L-1347 (Inspector) and Robert Edmond (client)

(Client) Name & Address Robert Edmond

Street Address 7835 Groveland RD

City, State, Zip Mounds View MN 55112

That in consideration of the payments provided herein, the Inspector shall provide services to perform Preventative Maintenance, Monitoring and Inspection of the Individual Sewage Treatment System (ISTS) located at the property described in the Aitkin County Operating Permit.

Each inspection includes an examination of the ISTS followed by a written report to the client. This inspection report shall contain recommendations for operation and maintenance for failure-preventative measures, if any are deemed appropriate by the inspector and a list of recommended corrective measures or replacement parts. The Inspector is authorized to submit a copy of the report to the Aitkin County Environmental Services Department.

This contract does not assume any responsibilities or obligations, which are normally the responsibilities of the Client, as related to parts or labor and does not extend to cover any costs that may be associated with any recommendations made under this contract.

The Inspector can only contract or subcontract for parts or labor after authorization. Billings for service calls shall be made on a case by case basis. This contract only covers maintenance, monitoring and inspection services per current Aitkin County Operating Permit and does not cover alarm calls of any kind.

The Inspector shall be provided access to the site and the system in order to perform the following services:

**SEPTIC TANK AND LIFT STATIONS INSPECTION**

(check the boxes needed to fill the requirements of the Operating Permit)

Check septic tank and compartments for solids buildup and general appearance. If necessary, have tanks pumped (cost of pumping is the responsibility of the client).

Check effluent filter for buildup and clean, if applicable.



Check pumping system, including control panel and floats.

Owner  Record and date the readings of the elapsed time meter and cycle counter(s), if applicable.

Check dosing settings (in the control panel, if applicable).

Other: \_\_\_\_\_  
\_\_\_\_\_

\*\*If the septic tank or lift stations need pumping to be in compliance with the operating permit the cost of the pumping is the responsibility of the Client.

### TREATMENT DEVICE

Inspect pretreatment unit (aerobic tank, sand filter, etc.) per manufacturer's recommendations, if applicable.

Inspect and clean any parts per manufacturer's recommendations.

Inspect and clean laterals, if applicable.

Inspect the appearance of the wastewater inside the unit for color, turbidity and examination of odors.

Sample effluent per Operating Permit monitoring requirements.

**(Cost of sampling and analysis is the responsibility of the Client)**

Other: \_\_\_\_\_  
\_\_\_\_\_

### DISPERSAL FIELD

Inspect for visible signs of failure (surface discharge, soggy ground, wet spots, settling, etc.)

If liquid level monitors are installed, levels will be observed and recorded.

Flush filters and clean cartridges, if applicable.

Check field control unit solenoid operations or manual control, if applicable.

Other: \_\_\_\_\_  
\_\_\_\_\_

In no event shall the Inspector be responsible for special or consequential damages, including but not limited to, loss of time, injury to personal property or any other consequential damages or incidental or economic loss due to equipment failure or for any other reason. This contract does not assume any responsibilities or obligations, which are normally, the responsibility of the Client or as, related to parts or labor and does not extend to cover any costs that may be associated with any recommendations made under this contract.

This contract shall be effective: Beginning At time of Certificate of Compliance Installation.  
and Ending Annual renewal

**Cost for Maintenance Service, Monitoring and Inspection Contract is:**

\$ \_\_\_\_\_ /yr. For \_\_\_\_\_ years totaling \$ \_\_\_\_\_ To be Determined at time of service

The Inspector agrees to provide inspection, monitoring and routine maintenance service only under this contract. The Client remedies for breach of this contract shall be limited to refund of any of the amounts paid in advance for service. This contract may be renewed 30 days from the ending date.

Payment for all services shall be paid \_\_\_\_\_ at 1st inspection and every one after

**Client:**

**Inspector:**

Sign: \_\_\_\_\_

Sign: Jeff Brummer

Print: Robert Edmond

Print: Jeff Brummer

Date: \_\_\_\_\_

Date: 6/25/2019

Jeff Brummer L-1347

(218) 821- 0704

# AITKIN COUNTY ENVIRONMENTAL SERVICES

## APPLICATION for an OPERATING PERMIT FOR WASTEWATER TREATMENT AND DISPERSAL

PERMITTEE Robert Edmond PARCEL NUMBER 16-0-020700

ADDRESS 29841 195th LN Isel MN 56342

LEGAL DESCRIPTION NW -SW as in Doc 386288

TELEPHONE # 763-780-3257 GIS LOCATION \_\_\_\_\_

**A. DESCRIPTION OF WASTEWATER TREATMENT AND DISPERSAL SYSTEM:  
(Attach ISTS site evaluation and design; estimated cost of system  
construction, operation, monitoring, service, component replacement, and  
management; anticipated system life, hydraulic and organic loading rates)**

\_\_\_\_\_  
Type III mound because of soil separation less than 12" to mottles.  
\_\_\_\_\_  
Type III mound with 3 ft. washed sand under rockbed 10' x 25'  
\_\_\_\_\_  
Type III mound because of Disturbed Soils. ( old farm yard )  
\_\_\_\_\_  
\_\_\_\_\_

**B. MONITORING PLAN AND REPORTING FREQUENCY:**

PARAMETER	COMPLIANCE LIMIT	SAMPLE LOCATION	SAMPLE FREQUENCY	SAMPLE TYPE	REPORTING FREQUENCY
FLOW	300 GPD	Event counter	Once a Month or when present		Send Report to Aitkin Co. Once a year
5-DAY BOD					
TOTAL NITROGEN					
TOTAL PHOSPHORUS					
TSS					
FATS,OILS AND GREASE					
FECAL COLIFORM					
SEPARATION DISTANCE					

*Look for signs of seepage around mound,*

Owner will read event counter once a month or when present. Owner will send monthly readings report to Aitkin co. or the inspector ONCE A YEAR.

\_\_\_\_\_ will perform the monitoring of this septic system.

**C. MAINTENANCE PLANS**

PARAMETER	LOCATION	FREQUENCY
300 GPD	Read Event Counter	Once a month or when present
Calibrate pump out gallons	Measure pump tank and calculate gallons pumped out per event	Calibrate system when installed and in operation. Check calibration number at 1st year inspection and every one after
Report monthly readings to Aitkin Co. Or inspector	Keep records of monthly readings	Once a year submit report to Aitkin Co.

**D. MITIGATION PLAN:**

Have system Inspected

I hereby certify with my signature as the designer, that all data for the operating permit application is true and correct to the best of my knowledge. I agree to indemnify and hold Aitkin County harmless from loses, damages, costs and charges that may be incurred by the County because of the information submitted with this application.

Jeff Brummer  
Signature

L-1347  
License Number

6/25/2019  
Date

Jeff Brummer  
Name (please print)

7540 Burr Ln. Brainerd MN 56401  
Address

(218) 821-0704  
Telephone #