



Becker County Planning & Zoning
 915 Lake Ave
 Detroit Lakes, MN 56501
 (218) 846-7314
 www.co.becker.mn.us



080131000-2024

Certificate of Compliance

Inspection Report - Permit #: SS2024-2082

Owner & Property Information

Owner Name:	LYNN READING	Site Address:	25213 TOWN & COUNTRY ESTATE RD
Mailing Address:	LYNN READING 1030 VILLAGE LN DETROIT LAKES MN 56501	Township - Sec/Twp/Rng:	DETROIT - 09/139/041
Parcel #:	080131000	Legal Description:	PT LOT 5 BEG 135' W & 2134.5' S OF NW COR LOT 1 OAKLAND BCH TH N 75' E 183.6' S 75' AL LK & W 189.1' TO BEG
Secondary Parcel #:		Designer:	Scott's Septic Services LLC, L3947 (Scott Ellingson)
		Installer:	Metry Septic & Excavating LLC (Colin Metry)

Inspector Verified Specifications

Insp- Effluent Screen Installed:	Yes	Insp- Tank Nbr/Size:	2/2250-2 & 625
Insp- Alarm Required:	Yes	Insp- Drainfield Type:	Pressure Bed
Insp- Lift Pump in System:	Yes	Insp- Drainfield Size:	554
Insp- Number of Bedrooms:	4	Insp- Soil Verification:	#1:84" LL #2:N/A #3:N/A

Inspector Verified Setbacks

Insp- Tank Dist to Road	10+	Insp- Drainfield Dist to Road	10
Insp- Tank Dist to Nearest Prop Line	10	Insp- Drainfield Dist to Nearest Prop Line	10
Insp- Tank Dist to Nearest Structure	10	Insp- Drainfield Dist to Nearest Structure	20
Insp- Tank Dist to Well	50+	Insp- Drainfield Dist to Well	50+
Insp- Tank Dist to OHW	75	Insp- Drainfield Dist to OHW	75
Insp- Tank Dist to Pond/Wetland	NA	Insp- Drainfield Dist to Pond/Wetland	NA
Insp- Tank Dist to Pressure Line	NA	Insp- Drainfield Dist to Pressure Line	NA

Certificate of Compliance

(Yes) Certificate is hereby granted based upon the application, addendum from, plans, specifications and all other supporting data. With proper maintenance, this system can be expected to function satisfactory, however this is not a guarantee.

Certification Date: 07/25/2024

Zoning Office Signature:

Jeff Rusness - ISTS Inspector

* Certificate of Compliance is not valid unless signed by a Registered Qualified Employee *

Field Review Form

Permit # SS2024-2082

Property and Owner

Owner: LYNN READING

Parcel Number: 080131000

Site Address: 25213 TOWN & COUNTRY ESTATE RD

Secondary Parcel:

Home Information

Does the structure contain any of the following elements?

Designer submitted

Inspector verified

Garbage disposal: Yes

Garbage disposal? Y N

Dishwasher:

Dishwasher? Y N

Grinder pump:

Grinder pump? Y N

Lift pump in bsmt:

Lift pump in basement? Y N

Number of bedrooms: 4

Review - Number of bedrooms: 4

Effluent screen

Effluent screen installed? Y N Mfr:

Alarm: Yes Type: Electronic

Review - Alarm? Y N Type & Mfr: Alderson - Powell Post

Lift pump in system: Yes

Review - Lift pump in system? Y N Mfr: Zoeller BN 151

Component Information

Tank size: 2250-2 & 625

Review - Tank nbr: 2 size: 2250/2 625 Mfr: Thulek's

Drainfield type: Pressure Bed

Review - Drainfield type: Pressure Bed

Drainfield size: Full size - 544
Reduced/warr. size - 0

Review - Drainfield status: none installed / next spring
Review - Drainfield size: 16x34 Pressure Bed

Absorption area size: 9" below pipe

Review - Absorption area size:

Chamber type/num: NA
Trench sqft/chamber - NA

Review - Chamber type: NA Num: NA
Review - Trench sqft/chamber: NA

Drainfield rock depth: 9" below pipe

Review - Rock depth: 10"

Soil Verification

Vertical separation verified

84 in LL

Boring #1:

Boring #2:

Boring #3:

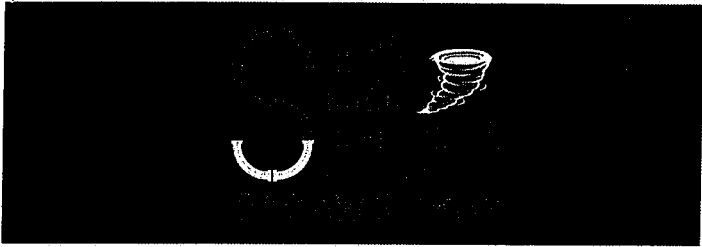
Setback Verification

Distance to...	Designer submitted		Inspector verified	
	Tank	Drainfield	Tank	Drainfield
Road	28	10.5	10	10
Nearest prop line	10	10	10	10
Nearest structure	10	20	10	20
Well	100+	100+	50+	50+
OHW	100+	100+	75+	75+
Pond/Wetland	NA	NA	NA	NA
Pressure line	10+	10+	NA	NA

Date System Installed: 7-23-2024

Installer: Metrix Septic

Inspector: Jack Rusaess



PARCEL# 080131000

← YEAR 2024

SCALE

SKETCH OF PROPERTY

4 beds 600 gpd
 NOG Y-P
 2250-2 Septic
 625 Lift
 Type 1 Pressure Bed

16' X 34' Rock Bed

544"

2" Supply Line

1 1/2" Laterals

3' Holes Apart

7/32" Holes

32 gpm

30.8 fth

Inches per dose 5.5"

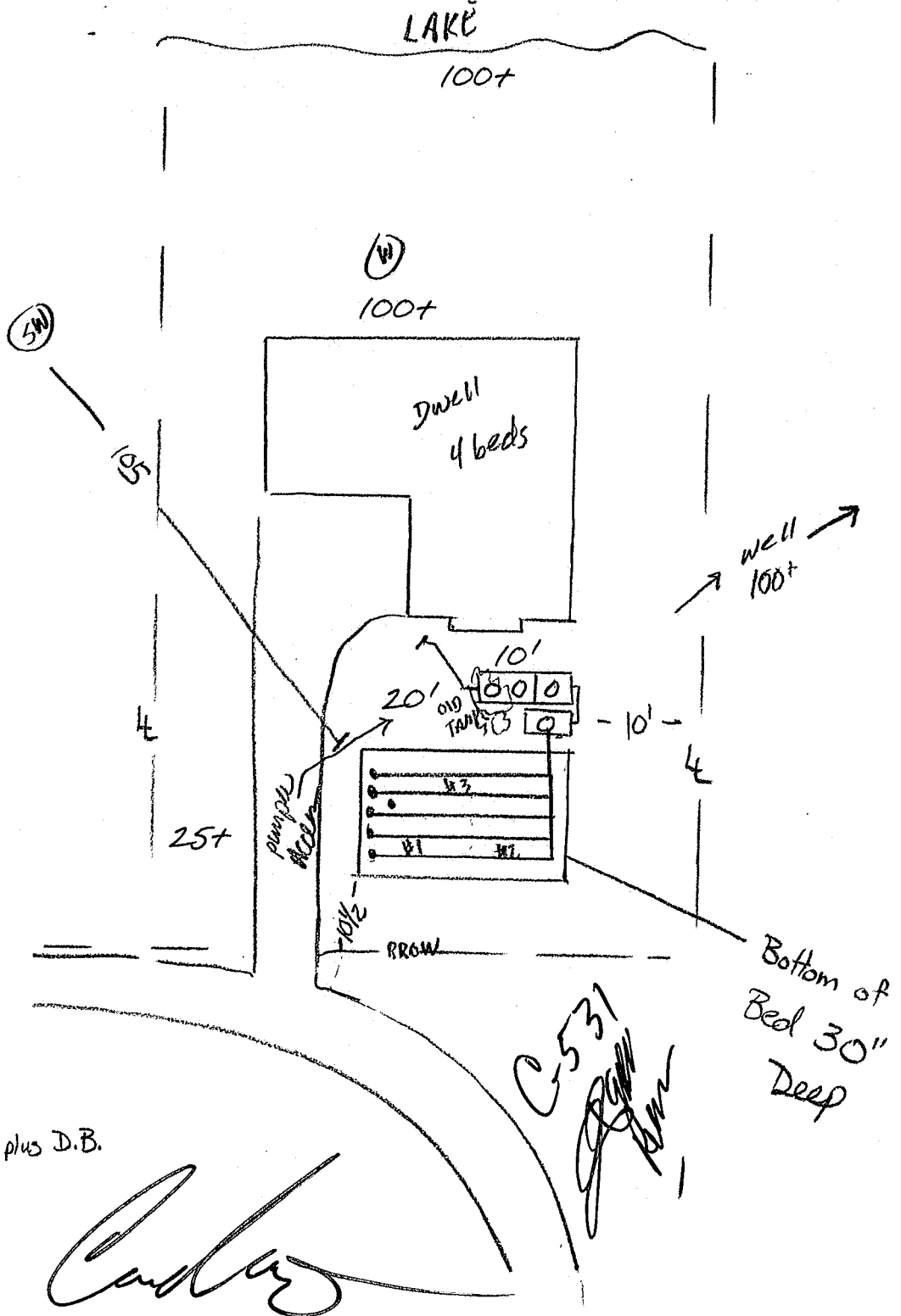
Alarm Depth 26.5"

pump ON 23.5"

pump OFF 18.0"

min dose 70

max dose 150 (15) plus D.B.



C-531
[Signature]
[Signature]



Preliminary Evaluation Worksheet

1. Contact Information

v 04.01.2021

Property Owner/Client: Date Completed:

Site Address: Project ID:

Email: Phone:

Mailing Address: Alt Phone:

Legal Description:

Parcel ID: SEC: TWP: RNG:

2. Flow and General System Information

A. Client-Provided Information

Project Type: New Construction Replacement Expansion Repair

Project Use: Residential Other Establishment:

Residential use: # Bedrooms: Dwelling Sq.ft.: Unfinished Sq. Ft.:

Adults: # Children: # Teenagers:

In-home business (Y/N): If yes, describe:

Water-using devices: (check all that apply)

<input type="checkbox"/> Garbage Disposal/Grinder	<input checked="" type="checkbox"/> Dishwasher	<input type="checkbox"/> Hot Tub*
<input checked="" type="checkbox"/> Sewage pump in basement	<input checked="" type="checkbox"/> Water Softener*	<input type="checkbox"/> Sump Pump*
<input type="checkbox"/> Large Bathtub >40 gallons	<input type="checkbox"/> Iron Filter*	<input type="checkbox"/> Self-Cleaning Humidifier*
<input checked="" type="checkbox"/> Clothes Washing Machine	<input checked="" type="checkbox"/> High Eff. Furnace*	<input type="checkbox"/> Other: <input type="text"/>

* Clear water source - should not go into system

Additional current or future uses:

Anticipated non-domestic waste:

The above is complete & accurate:
Client signature & date

B. Designer-determined flow Information Attach additional information as necessary.

Design Flow: GPD Anticipated Waste Type:

BOD: mg/L TSS mg/L Oil & Grease mg/L

3. Preliminary Site Information

A. Water Supply Wells

#	Description	Mn. ID#	Well Depth (ft.)	Casing Depth (ft.)	Confining Layer	STA Setback	Source
1	Deep Well						Owner
2							
3							
4							

Additional Well Information:



Preliminary Evaluation Worksheet

Site within 200' of noncommunity transient well (Y/N)	<input type="checkbox"/> No	Yes, source:	<input style="width: 100%;" type="text"/>
Site within a drinking water supply management area (Y/N)	<input type="checkbox"/> No	Yes, source:	<input style="width: 100%;" type="text"/>
Site in Well Head Protection inner wellhead management zone (Y/N)	<input type="checkbox"/> No	Yes, source:	<input style="width: 100%;" type="text"/>
Buried water supply pipes within 50 ft of proposed system (Y/N)	<input type="checkbox"/> No		
B. Site located in a shoreland district/area?	<input type="checkbox"/> Yes	Yes, name:	<input style="width: 100%;" type="text" value="Floyd"/>
Elevation of ordinary high water level:	<input style="width: 50%;" type="text"/>	ft	Source: <input style="width: 100%;" type="text"/>
Classification: <input style="width: 100%;" type="text" value="Lake - General Development"/>	Tank Setback: <input style="width: 50%;" type="text" value="100+"/>	ft.	STA Setbk: <input style="width: 50%;" type="text" value="100+"/>
			ft.
C. Site located in a floodplain?	<input type="checkbox"/> No	Yes, Type(s):	<input style="width: 100%;" type="text" value="N/A"/>
Floodplain designation/elevation (10 Year):	<input style="width: 50%;" type="text"/>	ft	Source: <input style="width: 100%;" type="text" value="N/A"/>
Floodplain designation/elevation (100 Year):	<input style="width: 50%;" type="text" value="N/A"/>	ft	Source: <input style="width: 100%;" type="text" value="N/A"/>
D. Property Line Id / Source:	<input checked="" type="checkbox"/> Owner	<input type="checkbox"/> Survey	<input checked="" type="checkbox"/> County GIS
	<input type="checkbox"/> Plat Map	<input type="checkbox"/> Other:	<input style="width: 100%;" type="text"/>
E. ID distance of relevant setbacks on map:	<input type="checkbox"/> Water	<input type="checkbox"/> Easements	<input checked="" type="checkbox"/> Well(s)
	<input checked="" type="checkbox"/> Building(s)	<input checked="" type="checkbox"/> Property Lines	<input checked="" type="checkbox"/> OHWL
	<input type="checkbox"/> Other:	<input style="width: 100%;" type="text"/>	

4. Preliminary Soil Profile Information From Web Soil Survey (attach map & description)

Map Units:	<input style="width: 100%;" type="text" value="1104C Waukon-Dorset Complex"/>	Slope Range:	<input style="width: 100%;" type="text" value="8-15"/>	%
List landforms:	<input style="width: 100%;" type="text" value="Hillslopes on Moraines"/>			
Landform position(s):	<input style="width: 100%;" type="text" value="Summit"/>			
Parent materials:	<input style="width: 100%;" type="text" value="Till"/>			
Depth to Bedrock/Restrictive Feature:	<input style="width: 50%;" type="text" value="84"/>	in	Depth to Watertable:	<input style="width: 50%;" type="text"/>
				in
Map Unit Ratings	Septic Tank Absorption Field- At-grade:	<input style="width: 100%;" type="text" value="Slightly Limited"/>		
	Septic Tank Absorption Field- Mound:	<input style="width: 100%;" type="text" value="Extremely Limited"/>		
	Septic Tank Absorption Field- Trench:	<input style="width: 100%;" type="text" value="Slightly Limited"/>		

5. Local Government Unit Information

Name of LGU:	<input style="width: 100%;" type="text" value="Becker County Planning & Zoning"/>
LGU Contact:	<input style="width: 100%;" type="text" value="Kyle Vareberg"/>
LGU-specific setbacks:	<input style="width: 100%;" type="text"/>
LGU-specific design requirements:	<input style="width: 100%;" type="text"/>
LGU-specific installation requirements:	<input style="width: 100%;" type="text"/>
Notes:	<input style="width: 100%;" type="text" value="Installing a Type I Pressure Bed."/>



Field Evaluation Worksheet

1. Project Information

v 04.01.2021

Property Owner/Client:

Project ID:

Site Address:

Date Completed:

2. Utility and Structure Information

Utility Locations Identified Gopher State One Call #

Any Private Utilities:

Locate and Verify (see Site Evaluation map)

Existing Buildings

Improvements

Easements

Setbacks

3. Site Information

Vegetation type(s):

Landscape position:

Percent slope: %

Slope shape:

Slope direction:

Describe the flooding or run-on potential of site:

Describe the need for Type III or Type IV system:

Note:

Proposed soil treatment area protected? (Y/N):

If yes, describe:

4. General Soils Information

Filled, Compacted, Disturbed areas (Y/N):

If yes, describe:

Soil observations were conducted in the proposed system location (Y/N):

A soil observation in the most limiting area of the proposed system (Y/N):

Number of soil observations:

Soil observation logs attached (Y/N):

Percolation tests performed & attached (Y/N):

5. Phase I. Reporting Information

	Depth		Elevation	
Limiting Condition*:	<input type="text" value="84"/>	in	<input type="text"/>	ft
Periodically saturated soil:	<input type="text" value="84"/>	in	<input type="text"/>	ft
Standing water:	<input type="text"/>	in	<input type="text"/>	ft
Bedrock:	<input type="text"/>	in	<input type="text"/>	ft
Benchmark Elevation:	<input type="text"/>		ft	

**Most Restrictive Depth Identified from List Below*

Soil Texture:

Percolation Rate: min/inch

Soil Hyd Loading Rate: gpd/ft²

Elevations and Benchmark on map? (Y/N):

Benchmark Elevation Location:

Differences between soil survey and field evaluation:

Site evaluation issues / comments:

Anticipated construction issues:



Soil Observation Log

Project ID:

v 04.01.2021

Client: Raymond & Lynn Reading		Location / Address: 25213 Town & Country Estates RD							
Soil parent material(s): (Check all that apply) <input type="checkbox"/> Outwash <input type="checkbox"/> Lacustrine <input type="checkbox"/> Loess <input checked="" type="checkbox"/> Till <input type="checkbox"/> Alluvium <input type="checkbox"/> Bedrock <input type="checkbox"/> Organic Matter									
Landscape Position: (select one) Summit		Slope shape: Linear, Linear							
Vegetation: Lawn		Slope %: 0							
Weather Conditions/Time of Day: Sunny PM		Soil survey map units: 1104C							
Observation #/Location: #1		Date: 07/10/24							
Observation #/Location: #1		Observation Type: Auger							
Depth (in)	Texture	Rock Frag. %	Matrix Color(s)	Mottle Color(s)	Redox Kind(s)	Indicator(s)	Structure		Consistence
							Shape	Grade	
0"-12"	Medium Sandy Loam	<10	10YR 2/1				Blocky	Weak	Friable
12"-16"	Medium Sandy Loam	<10	10YR 4/4				Blocky	Weak	Friable
16"-84"	Coarse Sand	<25	10YR 4/4				Single grain	Structureless	Loose
Comments: 84"									
I hereby certify that I have completed this work in accordance with all applicable ordinances, rules and laws.									
Scott Ellingson		3947		7/18/2024					
(Designer/Inspector)		(License #)		(Date)					

Scott Ellingson
(Signature)

1. PROJECT INFORMATION		v 04.01.2021
Property Owner/Client:	<input type="text" value="Raymond & Lynn Reading"/>	Project ID: <input type="text"/>
Site Address:	<input type="text" value="25213 Town & Country Estates RD"/>	Date: <input type="text" value="07/18/24"/>
Email Address:	<input type="text" value="raymound@rchhomes.com"/>	Phone: <input type="text" value="218-790-1468"/>
2. DESIGN FLOW & WASTE STRENGTH <i>Attach data / estimate basis for Other Establishments</i>		
Design Flow:	<input type="text" value="600"/> GPD	Anticipated Waste Type: <input type="text" value="Residential"/>
BOD:	<input type="text" value="<170"/> mg/L	TSS: <input type="text" value="<60"/> mg/L
		Oil & Grease: <input type="text" value="<25"/> mg/L
Treatment Level:	<input type="text" value="C"/> <i>Select Treatment Level C for residential septic tank effluent</i>	
3. HOLDING TANK SIZING		
Minimum Capacity: Residential =400 gal/bedroom, Other Establishment = Design Flow x 5.0, Minimum size 1000 gallons		
Code Minimum Holding Tank Capacity:	<input type="text"/> Gallons	in <input type="text"/> Tanks or Compartments
Recommended Holding Tank Capacity:	<input type="text"/> Gallons	in <input type="text"/> Tanks or Compartments
Type of High Level Alarm:	<input type="text"/> (Set @ 75% tank capacity)	
Comments:	<input type="text"/>	
4. SEPTIC TANK SIZING		
A. Residential dwellings:		
Number of Bedrooms (Residential):	<input type="text" value="4"/>	
Code Minimum Septic Tank Capacity:	<input type="text" value="2250"/> Gallons	in <input type="text" value="2"/> Tanks or Compartments
Recommended Septic Tank Capacity:	<input type="text" value="2250"/> Gallons	in <input type="text" value="2"/> Tanks or Compartments
Effluent Screen & Alarm (Y/N):	<input type="text" value="No"/> Model/Type: <input type="text"/>	
B. Other Establishments:		
Waste received by:	<input type="text"/>	<input type="text"/> GPD x <input type="text"/> Days Hyd. Retention Time
Code Minimum Septic Tank Capacity:	<input type="text"/> Gallons	in <input type="text"/> Tanks or Compartments
Recommended Septic Tank Capacity:	<input type="text"/> Gallons	in <input type="text"/> Tanks or Compartments
Effluent Screen & Alarm (Y/N):	<input type="text"/> Model/Type: <input type="text"/>	
5. PUMP TANK SIZING		
Pump Tank 1 Capacity (Minimum):	<input type="text" value="625"/> Gal	Pump Tank 2 Capacity (Minimum): <input type="text"/> Gal
Pump Tank 1 Capacity (Recommended):	<input type="text" value="625"/> Gal	Pump Tank 2 Capacity (Recommended): <input type="text"/> Gal
Pump 1 <input type="text" value="32.0"/> GPM	Total Head <input type="text" value="30.8"/> ft	Pump 2 <input type="text"/> GPM
		Total Head <input type="text"/> ft
Supply Pipe Dia. <input type="text" value="2.00"/> in	Dose Vol: <input type="text" value="75.0"/> gal	Supply Pipe Dia. <input type="text"/>
		Dose Vol: <input type="text"/> Gal

6. SYSTEM AND DISTRIBUTION TYPE

Project ID: _____

Soil Treatment Type:

Distribution Type:

Elevation Benchmark: ft

Benchmark Location:

MPCA System Type:

Distribution Media:

Type III/IV/V Details:

7. SITE EVALUATION SUMMARY:

Describe Limiting Condition:

Layers with >35% Rock Fragments? (yes/no) If yes, describe below: % rock and layer thickness, amount of soil credit and any additional information for addressing the rock fragments in this design.

Note:

	Depth	Depth	Elevation of Limiting Condition
Limiting Condition:	<input type="text" value="84"/> inches	<input type="text" value="7.0"/> ft	<input type="text"/> ft
Minimum Req'd Separation:	<input type="text" value="36"/> inches	<input type="text" value="3.0"/> ft	Elevation <i>Critical for system compliance</i>
Code Max System Depth:	<input type="text" value="48"/> inches	<input type="text" value="4.0"/> ft	<input type="text"/> ft

This is the maximum depth to the bottom of the distribution media for required separation. Negative Depth (ft) means it must be a mound.

Soil Texture:

Soil Hyd. Loading Rate: GPD/ft²

Percolation Rate: MPI

Contour Loading Rate:

Note:

Measured Land Slope: %

Note:

Comments:

8. SOIL TREATMENT AREA DESIGN SUMMARY

Trench:

Dispersal Area ft²

Sidewall Depth in

Trench Width ft

Total Lineal Feet ft

No. of Trenches

Code Max. Trench Depth in

Contour Loading Rate ft

Minimum Length ft

Designed Trench Depth in

Bed:

Dispersal Area ft²

Sidewall Depth in

Maximum Bed Depth in

Bed Width ft

Bed Length ft

Designed Bed Depth in

Mound:

Dispersal Area ft²

Bed Length ft

Bed Width ft

Absorption Width ft

Clean Sand Lift ft

Berm Width (0-1%) ft

Upslope Berm Width ft

Downslope Berm ft

Endslope Berm Width ft

Total System Length ft

System Width ft

Contour Loading Rate gal/ft



Project ID: _____

At-Grade:

Bed Width ft Bed Length ft Finished Height ft
 Contour Loading Rate gal/ft Upslope Berm ft Downslope Berm ft
 Endslope Berm ft System Length ft System Width ft

Level & Equal Pressure Distribution

No. of Laterals Perforation Spacing ft Perforation Diameter in
 Lateral Diameter in Min Dose Volume gal Max Dose Volume gal

Non-Level and Unequal Pressure Distribution

	Elevation (ft)	Pipe Size (in)	Pipe Volume (gal/ft)	Pipe Length (ft)	Perf Size (in)	Spacing (ft)	Spacing (in)	
Lateral 1								Minimum Dose Volume <input type="text"/> gal
Lateral 2								
Lateral 3								Maximum Dose Volume <input type="text"/> gal
Lateral 4								
Lateral 5								
Lateral 6								

9. Additional Info for At-Risk, HSW or Type IV Design

A. Starting BOD Concentration = Design Flow X Starting BOD (mg/L) X 8.35 ÷ 1,000,000

gpd X mg/L X 8.35 ÷ 1,000,000 = lbs. BOD/day

B. Target BOD Concentration = Design Flow X Target BOD (mg/L) X 8.35 ÷ 1,000,000

gpd X mg/L X 8.35 ÷ 1,000,000 = lbs. BOD/day

Lbs. BOD To Be Removed:

PreTreatment Technology: *Must Meet or Exceed Target

Disinfection Technology: *Required for Levels A & B

C. Organic Loading to Soil Treatment Area:

mg/L X gpd x 8.35 ÷ 1,000,000 ÷ ft² = lbs./day/ft²

10. Comments/Special Design Considerations:

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

(Designer)

(Signature)

(License #)

(Date)



Bed Design Worksheet



1. SYSTEM SIZING: Project ID: _____ v 04.01.2021

A. Design Flow: GPD

B. Code Maximum Depth: inches Designers Maximum Depth: inches

C. Soil Loading Rate: GPD/ft²

D. Required Bottom Area: Design Flow ÷ Soil Loading Rate
 GPD ÷ GPD/ft² = ft²

E. Select Distribution Method: Notes: _____

F. Select Dispersal Media: Product: _____

G. If distribution media is installed in contact with sand or loamy sand or with a percolation rate of 0.1 to 5 mpi indicate distribution or treatment method:

2. BED CONFIGURATION: (Less than 6% slope required)

A. Select size Multiplier: 1.0 = pressurized or 1.5 = gravity

B. Req'd Bottom Area = Bottom Area X Size Multiplier =
 ft² X = ft²

C. Designed Bottom Area: ft² *Optional upsizing of bed area to be larger than 2.B.*

D. Select Bed Width: ft

E. Calculate Bed Length: Designed Bottom Area ÷ Bed Width = Bed Length
 ft² ÷ ft = ft

3. MATERIAL CALCULATION: ROCK

A. If drainfield rock is being used, select sidewall height
 in ft

B. Media Volume: (Media Depth + depth to cover pipe) X Designed Bottom Area = ft³
 ft + ft) X ft² = ft³

C. Calculate Volume in cubic yards: Media volume in cubic feet ÷ 27 = cubic yards
 ft³ ÷ 27 = yd³

4. MATERIAL CALCULATION: REGISTERED PRODUCTS - CHAMBERS AND EZFLOW

A. Registered Product: _____

B. Bed Width: ft

C. Bed Length Minimum ft

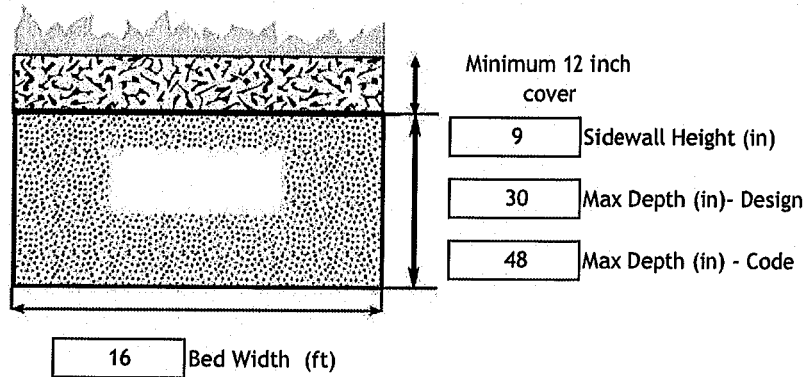
D. Component depth (louver or depth of sidewall loading) in

Check registered product information for specific application details and design

5. Dimension Summary

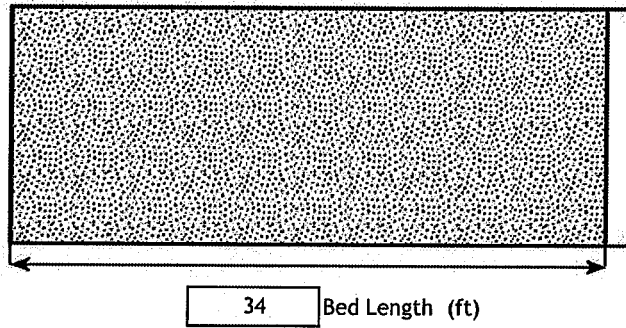
Project ID:

End View



Top View

Distribution Pipes must be no less 12 inches and no more than 24 inches from the edge



One 4" inspection pipe per bed required

Bottom Area (sq ft)
544

Required Separation: 36 (in)

Distribution Media: Rock

Manifold Connection: End

Media Depth: 9.0 (in)

Perforation Size: 7/32 (in)

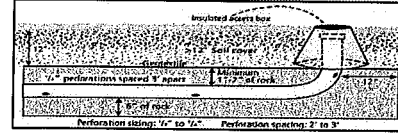
Perforation Spacing: 36 (in)

Comments:

Project ID:

v 04.01.2021

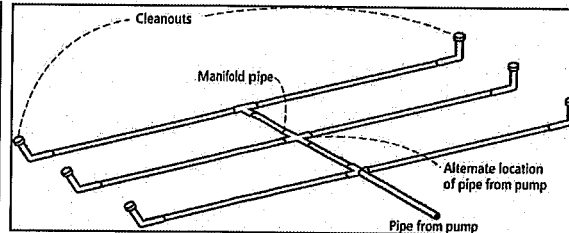
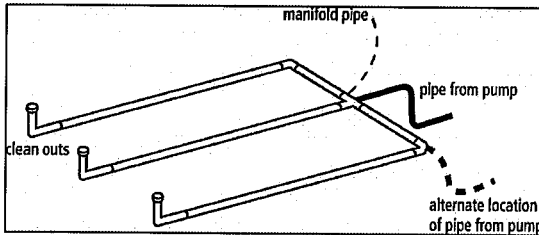
1. Media Bed Width: ft
2. Minimum Number of Laterals in system/zone = Rounded up number of $[(\text{Media Bed Width} - 4) \div 3] + 1$.
 $[(\text{ } \text{ } - 4) \div 3] + 1 =$ laterals *Does not apply to at-grades*
3. Designer Selected Number of Laterals : laterals
Cannot be less than line 2 (Except in at-grades)
4. Select Perforation Spacing : ft
5. Select Perforation Diameter Size: in



6. Length of Laterals = Media Bed Length - 2 Feet.
 - 2ft = ft *Perforation can not be closer than 1 foot from edge.*
7. Determine the Number of Perforation Spaces . Divide the Length of Laterals by the Perforation Spacing and round down to the nearest whole number.
 Number of Perforation Spaces = ft \div ft = Spaces
8. Number of Perforations per Lateral is equal to 1.0 plus the Number of Perforation Spaces . Check table below to verify the number of perforations per lateral guarantees less than a 10% discharge variation. The value is double with a center manifold.

Perforations Per Lateral = Spaces + 1 = Perfs. Per Lateral

Maximum Number of Perforations Per Lateral to Guarantee <10% Discharge Variation											
1/4 Inch Perforations						7/32 Inch Perforations					
Perforation Spacing (Feet)	Pipe Diameter (Inches)					Perforation Spacing (Feet)	Pipe Diameter (Inches)				
	1	1 1/4	1 1/2	2	3		1	1 1/4	1 1/2	2	3
2	10	13	18	30	60	2	11	16	21	34	68
2 1/2	8	12	16	28	54	2 1/2	10	14	20	32	64
3	8	12	16	25	52	3	9	14	19	30	60
3/16 Inch Perforations						1/8 Inch Perforations					
Perforation Spacing (Feet)	Pipe Diameter (Inches)					Perforation Spacing (Feet)	Pipe Diameter (Inches)				
	1	1 1/4	1 1/2	2	3		1	1 1/4	1 1/2	2	3
2	12	18	26	46	87	2	21	33	44	74	149
2 1/2	12	17	24	40	80	2 1/2	20	30	41	69	135
3	12	16	22	37	75	3	20	29	38	64	128



9. Total Number of Perforations equals the Number of Perforations per Lateral multiplied by the Number of Perforated Laterals.
 Perf. Per Lat. X Number of Perf. Lat. = Total Number of Perf.

10. Spacing of laterals; Must be greater than 1 foot and no more than 3 feet: ft
11. Select Type of Manifold Connection (End or Center):
12. Select Lateral Diameter (See Table): in



Pressure Distribution Design Worksheet

13. Calculate the *Square Feet per Perforation*.

Recommended value is 4-11 ft² per perforation, Does not apply to At-Grades

a. *Bed Area* = Bed Width (ft) X Bed Length (ft)

ft X ft = ft²

b. *Square Foot per Perforation* = Bed Area ÷ by the Total Number of Perfs

ft² ÷ perf = ft²/perf

14. Select *Minimum Average Head* :

ft

15. Select *Perforation Discharge* based on Table:

GPM per Perf

16. *Flow Rate* = Total Number of Perfs X *Perforation Discharge*.

Perfs X GPM per Perforation = GPM

17. *Volume of Liquid Per Foot of Distribution Piping (Table II)* :

Gallons/ft

18. *Volume of Distribution Piping* =

= [Number of Perforated Laterals X Length of Laterals X (Volume of Liquid Per Foot of Distribution Piping)]

X ft X gal/ft = Gallons

19. *Minimum Delivered Volume* = Volume of Distribution Piping X 4

gals X 4 = Gallons

Perforation Discharge (GPM)				
Head (ft)	Perforation Diameter			
	1/8	3/16	7/32	1/4
1.0'	0.18	0.41	0.55	0.74
1.5	0.22	0.51	0.69	0.9
2.0'	0.26	0.59	0.80	1.04
2.5	0.29	0.65	0.89	1.17
3.0	0.32	0.72	0.98	1.28
4.0	0.37	0.83	1.13	1.47
5.0'	0.41	0.93	1.26	1.65
1 foot	Dwellings with 3/16 inch to 1/4 inch perforations			
2 feet	Dwellings with 1/8 inch perforations Other establishments and MSTs with 3/16 inch to 1/4 inch perforations			
5 feet	Other establishments and MSTs with 1/8 inch perforations			

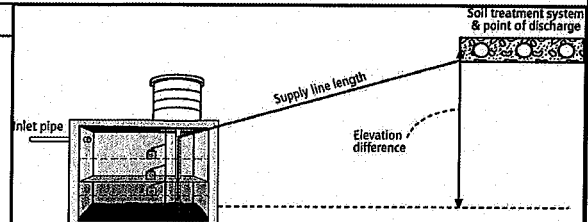
Pipe Diameter (inches)	Liquid Per Foot (Gallons)
1	0.045
1.25	0.078
1.5	0.110
2	0.170
3	0.380
4	0.661

Comments/Special Design Considerations:

1. PUMP CAPACITY Project ID: _____ v 04.01.2021

Pumping to Gravity or Pressure Distribution: GPM (10 - 45 gpm)
 A. If pumping to gravity enter the gallon per minute of the pump:
 B. If pumping to a pressurized distribution system: GPM
 C. Enter pump description:

2. HEAD REQUIREMENTS
 A. Elevation Difference ft between pump and point of discharge:
 B. Distribution Head Loss: ft
 C. Additional Head Loss: ft (due to special equipment, etc.)



Distribution Head Loss	
Gravity Distribution = 0ft	
Pressure Distribution based on Minimum Average Head Value on Pressure Distribution Worksheet:	
Minimum Average Head	Distribution Head Loss
1ft	5ft
2ft	6ft
5ft	10ft

Table I. Friction Loss in Plastic Pipe per 100ft

Flow Rate (GPM)	Pipe Diameter (inches)			
	1	1.25	1.5	2
10	9.1	3.1	1.3	0.3
12	12.8	4.3	1.8	0.4
14	17.0	5.7	2.4	0.6
16	21.8	7.3	3.0	0.7
18		9.1	3.8	0.9
20		11.1	4.6	1.1
25		16.8	6.9	1.7
30		23.5	9.7	2.4
35			12.9	3.2
40			16.5	4.1
45			20.5	5.0
50				6.1
55				7.3
60				8.6
65				10.0
70				11.4
75				13.0
85				16.4
95				20.1

D. 1. Supply Pipe Diameter: in
 2. Supply Pipe Length: ft
 E. Friction Loss in Plastic Pipe per 100ft from Table I:
 Friction Loss = ft per 100ft of pipe
 F. Determine Equivalent Pipe Length from pump discharge to soil dispersal area discharge point. Estimate by adding 25% to supply pipe length for fitting loss. *Supply Pipe Length X 1.25 = Equivalent Pipe Length*

ft X 1.25 = ft

G. Calculate Supply Friction Loss by multiplying Friction Loss Per 100ft by the Equivalent Pipe Length and divide by 100.
 Supply Friction Loss = ft per 100ft X ft ÷ 100 = ft

H. Total Head requirement is the sum of the Elevation Difference + Distribution Head Loss, + Additional Head Loss + Supply Friction Loss
 ft + ft + ft + ft = ft

3. PUMP SELECTION
 A pump must be selected to deliver at least **32.0** GPM with at least **30.8** feet of total head.

Comments:

DETERMINE TANK CAPACITY AND DIMENSIONS

Project ID:

v 04.01.2021

1. A. Design Flow (Design Sum. 1A): GPD C. Tank Use:

B. Min. required pump tank capacity: Gal D. Recommended pump tank capacity: Gal

2. A. Tank Manufacturer: B. Tank Model:

C. Capacity from manufacturer: Gallons

D. Gallons per inch from manufacturer: Gallons per inch

E. Liquid depth of tank from manufacturer: inches

Note: Design calculations are based on this specific tank. Substituting a different tank model will change the pump float or timer settings. Contact designer if changes are necessary.

DETERMINE DOSING VOLUME

3 Calculate Volume to Cover Pump (The inlet of the pump must be at least 4-inches from the bottom of the pump tank & 2 inches of water covering the pump is recommended)

(Pump and block height + 2 inches) X Gallons Per Inch

(in + 2 inches) X Gallons Per Inch = Gallons

4 Minimum Delivered Volume = 4 X Volume of Distribution Piping:

-Item 18 of the Pressure Distribution or Item 11 of Non-level Gallons (Minimum dose) inches/dose

5 Calculate Maximum Pumpout Volume (25% of Design Flow)

Design Flow: GPD X 0.25 = Gallons (Maximum dose) inches/dose

6 Select a pumpout volume that meets both Minimum and Maximum: Gallons

7 Calculate Doses Per Day = Design Flow ÷ Delivered Volume

gpd ÷ gal = Doses

8 Calculate Drainback:

A. Diameter of Supply Pipe = inches

B. Length of Supply Pipe = feet

C. Volume of Liquid Per Lineal Foot of Pipe = Gallons/ft

D. Drainback = Length of Supply Pipe X Volume of Liquid Per Lineal Foot of Pipe

ft X gal/ft = Gallons

9. Total Dosing Volume = Delivered Volume plus Drainback

gal + gal = Gallons

10. Minimum Alarm Volume = Depth of alarm (2 or 3 inches) X gallons per inch of tank

in X gal/in = Gallons

Volume of Liquid in Pipe	
Pipe Diameter (inches)	Liquid Per Foot (Gallons)
1	0.045
1.25	0.078
1.5	0.110
2	0.170
3	0.380
4	0.661

DEMAND DOSE FLOAT SETTINGS

11. Calculate Float Separation Distance using Dosing Volume .

Total Dosing Volume / Gallons Per Inch

gal ÷ gal/in = Inches

12. Measuring from bottom of tank:

A. Distance to set Pump Off Float = Pump + block height + 2 inches

in + 2 in = Inches

B. Distance to set Pump On Float = Distance to Set Pump-Off Float + Float Separation Distance

in + in = Inches

C. Distance to set Alarm Float = Distance to set Pump-On Float + Alarm Depth (2-3 inches)

in + in = Inches

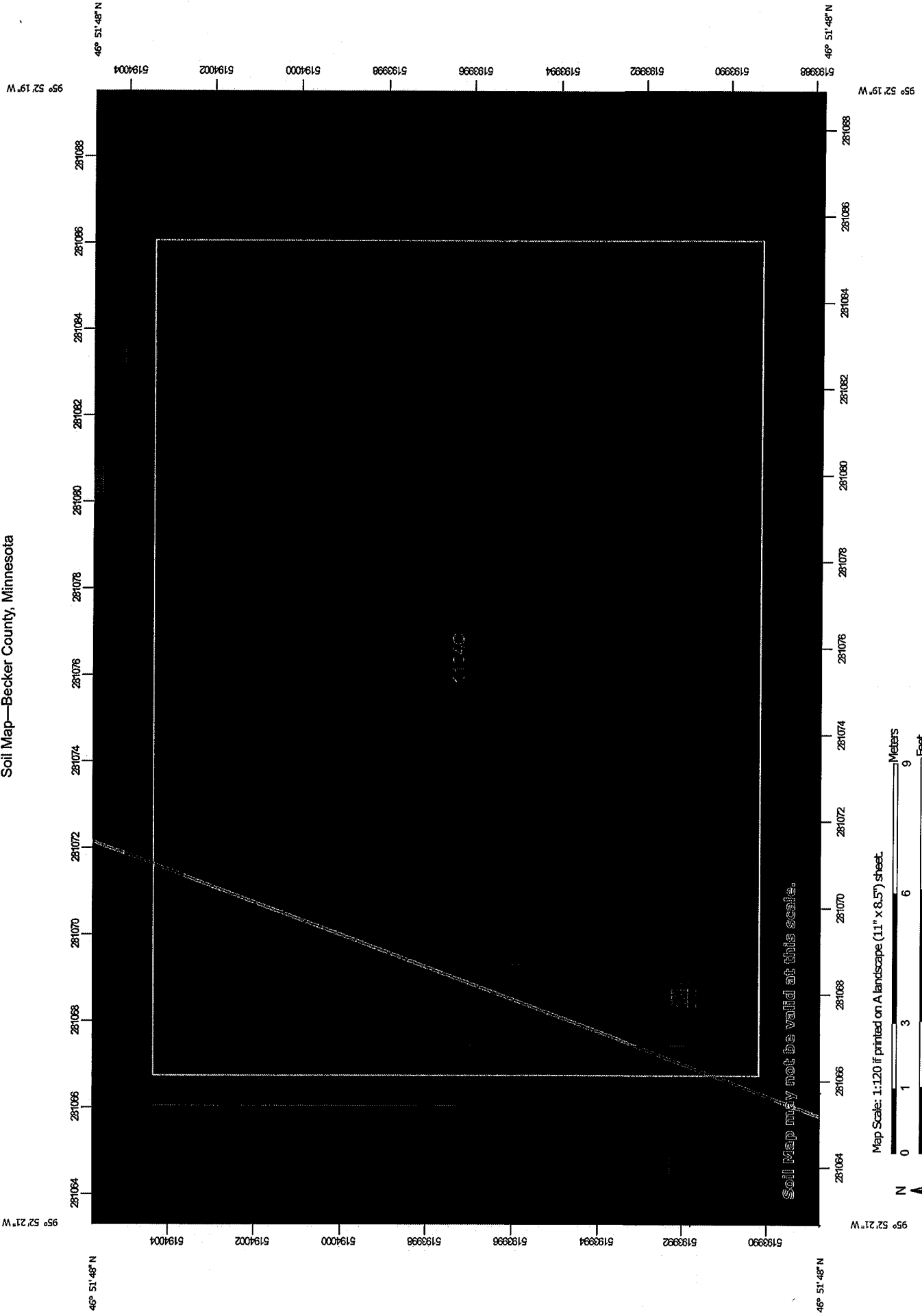
Inches for Dose: in

Alarm Depth: in

Pump On: in

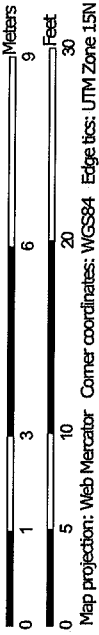
Pump Off: in

Soil Map—Becker County, Minnesota



Soil Map may not be valid at this scale.

Map Scale: 1:120 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

MAP LEGEND

- Area of Interest (AOI)
- Area of Interest (AOI)
- Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points
- Special Point Features
 - Blowout
 - Borrow Pit
 - Clay Spot
 - Closed Depression
 - Gravel Pit
 - Gravelly Spot
 - Landfill
 - Lava Flow
 - Marsh or swamp
 - Mine or Quarry
 - Miscellaneous Water
 - Perennial Water
 - Rock Outcrop
 - Saline Spot
 - Sandy Spot
 - Severely Eroded Spot
 - Sinkhole
 - Slide or Slip
 - Sodic Spot

- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features
- Water Features
 - Streams and Canals
- Transportation
 - Rails
 - Interstate Highways
 - US Routes
 - Major Roads
 - Local Roads
- Background
 - Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this 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.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Becker County, Minnesota
 Survey Area Data: Version 19, Sep 9, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 1, 2021—Oct 1, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1104C	Waukon-Dorset complex, 8 to 15 percent slopes	0.1	100.0%
Totals for Area of Interest		0.1	100.0%

Becker County, Minnesota

1104C—Waukon-Dorset complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: fbjk
Elevation: 700 to 2,000 feet
Mean annual precipitation: 20 to 28 inches
Mean annual air temperature: 37 to 45 degrees F
Frost-free period: 90 to 170 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Waukon and similar soils: 55 percent
Dorset and similar soils: 35 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Waukon

Setting

Landform: Hillslopes on moraines
Landform position (two-dimensional): Backslope, shoulder, summit
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy glacial till

Typical profile

Ap - 0 to 8 inches: loam
Bt - 8 to 21 inches: clay loam
Bk,C - 21 to 60 inches: loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R102AY010SD - Loamy
Forage suitability group: Sloping Upland, Neutral (G057XN002MN)

Other vegetative classification: Sloping Upland, Neutral
(G057XN002MN)

Hydric soil rating: No

Description of Dorset

Setting

Landform: Hillslopes on moraines

Landform position (two-dimensional): Summit, shoulder, backslope

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Loamy mantle over sandy and gravelly outwash deposits

Typical profile

Ap - 0 to 7 inches: sandy loam

Bt - 7 to 16 inches: sandy loam

2BC,2C - 16 to 60 inches: gravelly coarse sand

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): High
(1.98 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 15 percent

Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: A

Ecological site: R102AY014SD - Shallow Gravel

Forage suitability group: Sloping Upland, Low AWC, Acid
(G057XN008MN)

Other vegetative classification: Sloping Upland, Low AWC, Acid
(G057XN008MN)

Hydric soil rating: No

Minor Components

Sandberg

Percent of map unit: 3 percent

Hydric soil rating: No

Gonvick

Percent of map unit: 2 percent

Hydric soil rating: No

Oylen

Percent of map unit: 2 percent

Hydric soil rating: No

Cathro

Percent of map unit: 1 percent

Landform: Depressions

Hydric soil rating: Yes

Smiley

Percent of map unit: 1 percent

Landform: Swales

Hydric soil rating: Yes

Quam

Percent of map unit: 1 percent

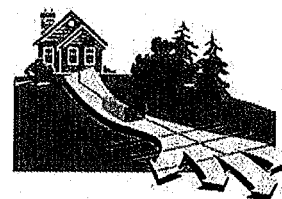
Landform: Depressions

Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Becker County, Minnesota

Survey Area Data: Version 19, Sep 9, 2023



Septic System Management Plan for Below Grade Systems

The goal of a septic system is to protect human health and the environment by properly treating wastewater before returning it to the environment. Your septic system is designed to kill harmful organisms and remove pollutants before the water is recycled back into our lakes, streams and groundwater.

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 maintainer or service provider. However, it is **YOUR** responsibility to make sure all tasks get accomplished in a timely manner.

The University of Minnesota's *Septic System Owner's Guide* contains additional tips and recommendations designed to extend the effective life of your system and save you money over time.

Proper septic system design, installation, operation and maintenance means safe and clean water!

Property Owner **Raymond & Lynn Reading** Email **raymond@rchhomes.com**

Property Address **25213 Town & Country Estates Rd** Property ID **080131000**

System Designer **Scott's Septic Services, LLC** Contact Info **218-205-1667**

System Installer **Metry Septic & Excavating LLC** Contact Info **218-269-5677**

Service Provider/Maintainer Contact Info

Permitting Authority **Becker County Planning & Zoning** Contact Info **218-846-7314**

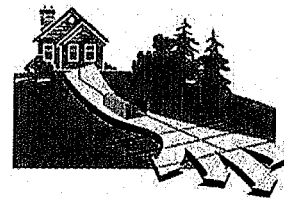
Permit # Date Inspected

Keep this Management Plan with your Septic System Owner's Guide. The Septic System Owner's Guide includes a folder to hold maintenance records including pumping, inspection and evaluation reports. Ask your septic professional to also:

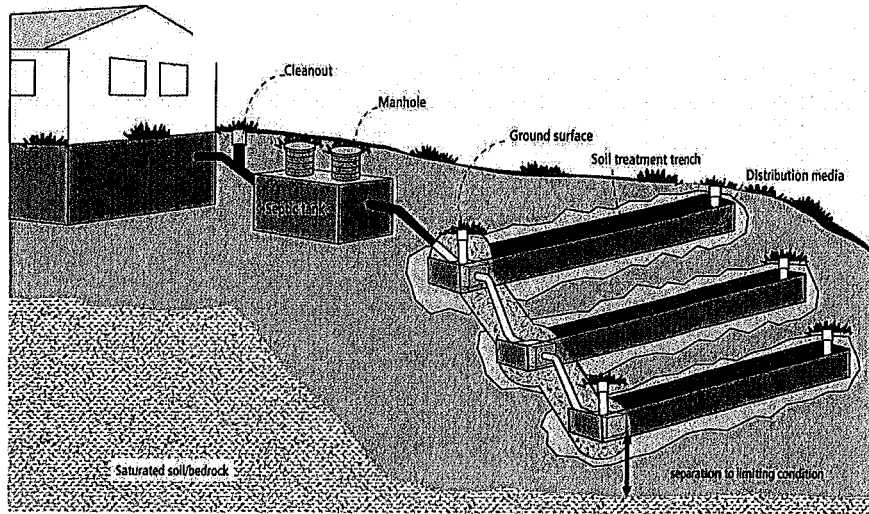
- Attach permit information, designer drawings and as-built of your system, if they are available.
- Keep copies of all pumping records and other maintenance and repair invoices with this document.
- Review this document with your maintenance professional at each visit; discuss any changes in product use, activities, or water-use appliances.

For a copy of the *Septic System Owner's Guide*, visit www.bookstores.umn.edu and search for the word "septic" or call 800-322-8642.

For more information see <http://septic.umn.edu>



Your Septic System



Septic System Specifics	
System Type: <input checked="" type="radio"/> I <input type="radio"/> II <input type="radio"/> III <input type="radio"/> IV* <input type="radio"/> V* (Based on MN Rules Chapter 7080.2200 – 2400) *Additional Management Plan required	<input type="checkbox"/> System is subject to operating permit* <input type="checkbox"/> System uses UV disinfection unit* Type of advanced treatment unit _____

Dwelling Type	Well Construction
Number of bedrooms: <u>4</u> System capacity/ design flow (gpd): <u>600</u> Average daily flow (gpd): <u><600</u> Comments _____ Business? <input type="radio"/> Y <input checked="" type="radio"/> N What type? _____	Well depth (ft): <u>Deep</u> <input type="checkbox"/> Cased well Casing depth: _____ <input type="checkbox"/> Other (specify): _____ Distance from septic (ft): <u>100+</u> Is the well on the design drawing? <input checked="" type="radio"/> Y <input type="radio"/> N

Septic Tank	
<input type="checkbox"/> First tank Tank volume: <u>2250-2</u> gallons Does tank have two compartments? <input checked="" type="radio"/> Y <input type="radio"/> N <input type="checkbox"/> Second tank Tank volume: _____ gallons <input type="checkbox"/> Tank is constructed of <u>Concrete</u> <input type="checkbox"/> Effluent screen: <input type="radio"/> Y <input checked="" type="radio"/> N Alarm <input type="radio"/> Y <input checked="" type="radio"/> N	<input type="checkbox"/> Pump tank (if one) <u>625</u> gallons <input type="checkbox"/> Effluent pump make/model: _____ Pump capacity <u>32</u> GPM TDH <u>30.8</u> Feet of head <input type="checkbox"/> Alarm <input checked="" type="radio"/> Y <input type="radio"/> N Location <u>On Tank</u>

Soil Treatment Area (STA)	
Trenches: _____ total lineal feet Number of trenches: _____ at _____ feet each STA size (width x length): <u>16</u> ft x <u>34</u> ft Location of additional STA: <u>NA</u> Type of distribution media: <u>Rock</u>	<input type="checkbox"/> Gravity distribution <input checked="" type="checkbox"/> Pressure distribution <input checked="" type="checkbox"/> Inspection ports <input checked="" type="checkbox"/> Cleanouts <input checked="" type="checkbox"/> Additional STA not available <input type="checkbox"/> Surface water diversions



Homeowner Management Tasks

These *operation and maintenance* activities are your responsibility. *Chart on page 6 can help track your activities.*

Your toilet is not a garbage can. Do not flush anything besides human waste and toilet paper. No wet wipes, cigarette butts, disposal diapers, used medicine, feminine products or other trash!

The system and septic tanks needs to be checked
every 24 months

Your service provider or pumper/maintainer should evaluate if your tank needs to be pumped more or less often.

Seasonally or several times per year

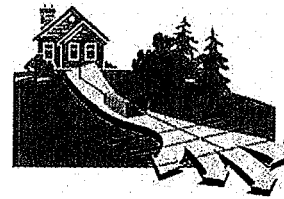
- *Leaks.* Check (listen, look) for leaks in toilets and dripping faucets. Repair leaks promptly.
- *Soil treatment area.* Regularly check for wet or spongy soil around your soil treatment area. If surfaced sewage or strong odors are not corrected by pumping the tank or fixing broken caps and leaks, call your service professional. *Untreated sewage may make humans and animals sick.* Keep bikes, snowmobiles and other traffic off and control borrowing animals.
- *Alarms.* Alarms signal when there is a problem; contact your service professional any time the alarm signals.
- *Lint filter.* If you have a lint filter, check for lint buildup and clean when necessary. If you do not have one, consider adding one after washing machine.
- *Effluent screen.* If you do not have one, consider having one installed the next time the tank is cleaned along with an alarm.

Annually

- *Water usage rate.* A water meter or another device can be used to monitor your average daily water use. Compare your water usage rate to the design flow of your system (listed on the next page). Contact your septic professional if your average daily flow over the course of a month exceeds 70% of the design flow for your system.
- *Caps.* Make sure that all caps and lids are intact and in place. Inspect for damaged caps at least every fall. Fix or replace damaged caps before winter to help prevent freezing issues.
- *Water conditioning devices.* See Page 5 for a list of devices. When possible, program the recharge frequency based on *water demand (gallons)* rather than *time (days)*. Recharging too frequently may negatively impact your septic system. Consider updating to demand operation if your system currently uses time,
- *Review your water usage rate.* Review the Water Use Appliance chart on Page 5. Discuss any major changes with your service provider or pumper/maintainer.

During each visit by a service provider or pumper/maintainer

- Make sure that your service professional services the tank through the manhole. (NOT though a 4" or 6" diameter inspection port.)
- Ask how full your tank was with sludge and scum to determine if your service interval is appropriate.
- Ask your pumper/maintainer to accomplish the tasks listed on the Professional Tasks on Page 4.



Professional Management Tasks

These are the operation and maintenance activities that a pumper/maintainer performs to help ensure long-term performance of your system. At each visit a written report/record must be provided to homeowner.

Plumbing/Source of Wastewater

- Review the Water Use Appliance Chart on Page 5 with homeowner. Discuss any changes in water use and the impact those changes may have on the septic system.
- Review water usage rates (if available) with homeowner.

Septic Tank/Pump Tanks

- *Manhole lid.* A riser is recommended if the lid is not accessible from the ground surface. Insulate the riser cover for frost protection.
- *Liquid level.* Check to make sure the tank is not leaking. The liquid level should be level with the bottom of the outlet pipe. (If the water level is below the bottom of the outlet pipe, the tank may not be watertight. If the water level is higher than the bottom of the outlet pipe of the tank, the effluent screen may need cleaning, or there may be ponding in the soil treatment area.)
- *Inspection pipes.* Replace damaged or missing pipes and caps.
- *Baffles.* Check to make sure they are in place and attached, and that inlet/outlet baffles are clear of buildup or obstructions.
- *Effluent screen.* Check to make sure it is in place; clean per manufacturer recommendation. Recommend retrofitted installation if one is not present.
- *Alarm.* Verify that the alarm works.
- *Scum and sludge.* Measure scum and sludge in each compartment of each septic and pump tank, pump if needed.

Pump

- *Pump and controls.* Check to make sure the pump and controls are operating correctly.
- *Pump vault.* Check to make sure it is in place; clean per manufacturer recommendations.
- *Alarm.* Verify that the alarm works.
- *Drainback.* Check to make sure it is draining properly.
- *Event counter or elapsed time meter.* Check to see if there is an event counter or elapsed time meter for the pump. If there is one or both, calculate the water usage rate and compare to the anticipated use listed on Design and Page 2. Dose Volume: 79 gallons: Pump run time: NA Minutes

Soil Treatment Area

- *Inspection pipes.* Check to make sure they are properly capped. Replace caps and pipes that are damaged.
- *Surfacing of effluent.* Check for surfacing effluent or other signs of problems.
- *Gravity trenches and beds.* Check the number of gravity trenches with effluent ponded in distribution media. Identify the percentage of the system in use. Determine if action is needed.
- *Pressure trenches and beds - Lateral flushing.* Check lateral distribution; if cleanouts exist, flush and clean at recommended frequency.
- *Vegetation* - Check to see that a good growth of vegetation is covering the system.

All other components – evaluate as listed here:



Water-Use Appliances and Equipment in the Home

Appliance	Impacts on System	Management Tips
Garbage disposal	<ul style="list-style-type: none"> • Uses additional water. • Adds solids to the tank. • Finely-ground solids may not settle. Unsettled solids can exit the tank and enter the soil treatment area. 	<ul style="list-style-type: none"> • Use of a garbage disposal is not recommended. • Minimize garbage disposal use. Compost instead. • To prevent solids from exiting the tank, have your tank pumped more frequently. • Add an effluent screen to your tank.
Washing machine	<ul style="list-style-type: none"> • Washing several loads on one day uses a lot of water and may overload your system. • Overloading your system may prevent solids from settling out in the tank. Unsettled solids can exit the tank and enter the soil treatment area. 	<ul style="list-style-type: none"> • Choose a front-loader or water-saving top-loader, these units use less water than older models. • Limit the addition of extra solids to your tank by using liquid or easily biodegradable detergents. Limit use of bleach-based detergents and fabric softeners. • Install a lint filter after the washer and an effluent screen to your tank • Wash only full loads and think even – spread your laundry loads throughout the week.
Dishwasher	<ul style="list-style-type: none"> • Powdered and/or high-phosphorus detergents can negatively impact the performance of your tank and soil treatment area. • New models promote “no scraping”. They have a garbage disposal inside. 	<ul style="list-style-type: none"> • Use gel detergents. Powdered detergents may add solids to the tank. • Use detergents that are low or no-phosphorus. • Wash only full loads. • Scrape your dishes anyways to keep undigested solids out of your septic system.
Grinder pump (in home)	<ul style="list-style-type: none"> • Finely-ground solids may not settle. Unsettled solids can exit the tank and enter the soil treatment area. 	<ul style="list-style-type: none"> • Expand septic tank capacity by a factor of 1.5. • Include pump monitoring in your maintenance schedule to ensure that it is working properly. • Add an effluent screen.
Large bathtub (whirlpool)	<ul style="list-style-type: none"> • Large volume of water may overload your system. • Heavy use of bath oils and soaps can impact biological activity in your tank and soil treatment area. 	<ul style="list-style-type: none"> • Avoid using other water-use appliances at the same time. For example, don’t wash clothes and take a bath at the same time. • Use oils, soaps, and cleaners in the bath or shower sparingly.
Clean Water Uses	Impacts on System	Management Tips
High-efficiency furnace	<ul style="list-style-type: none"> • Drip may result in frozen pipes during cold weather. 	<ul style="list-style-type: none"> • Re-route water directly out of the house. Do not route furnace recharge to your septic system.
Water softener Iron filter Reverse osmosis	<ul style="list-style-type: none"> • Salt in recharge water may affect system performance. • Recharge water may hydraulically overload the system. 	<ul style="list-style-type: none"> • These sources produce water that is not sewage and should not go into your septic system. • Reroute water from these sources to another outlet, such as a dry well, drain tile or old drainfield.
Surface drainage Footing drains	<ul style="list-style-type: none"> • Water from these sources will overload the system and is prohibited from entering septic system. 	<ul style="list-style-type: none"> • When replacing, consider using a demand-based recharge vs. a time-based recharge. • Check valves to ensure proper operation; have unit serviced per manufacturer directions



Homeowner Maintenance Log

Track maintenance activities here for easy reference. See list of management tasks on pages 3 and 4.

Activity	Date accomplished									
Check frequently:										
Leaks: check for plumbing leaks *										
Soil treatment area check for surfacing **										
Lint filter: check, clean if needed *										
Alarms **										
Check annually:										
Water usage rate (max gpd: _____)										
Caps: inspect, replace if needed										
Water use appliances – review use										
Other:										

- *Monthly
- ** Quarterly
- *** Bi-Annually

Notes:

"As the owner of this SSTS, 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 this 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: Raymond Reading Date 07/10/2024

Management Plan Prepared By: Scott Ellingson Certification # 8571

Permitting Authority: Becker County Planning & Zoning

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