

Preliminary & Field Evaluation Form

24-025

www.SepticResource.com vers 12.4

Owner Information

Date 4/22/2024 Sec / Twp / Rng S-7, T-46, R-26
 Parcel ID 24-0-013400 LUG (county, city, township) Aitkin Co.
 Property Owner: David Maus Owners address (if different)
 Property Address: 32235 395th Pl. Aitkin MN 56431 32317 395th Pl.
 City / State / Zip: 979-637-0552 Aitkin MN 56431

Flow Information and Waste Type / Strength

Estimated Design flow 450 Anticipated Waste strength Hi Strength Domestic
 Any Non-Domestic Waste Yes (class V) No
 Comments: Proposed house is 2 bedrooms. Sewage ejector/grinder pump Yes No
 Owner wants a 3 bedroom Septic System. No Well on property. Berms are designed at 3.5:1 Ratio to fit on lot. Water softener Yes No
 Garbage Disposal Yes No
 Daycare / In home business Yes No

Site Information

Existing & proposed lot improvements located (see site map) Yes No Well casing depth Proposed deep well
 Easements on lot located (see site map) Yes No Drainfield w/in 100' of residential well Yes No
 Property lines determined (see site map) Yes No By Owner Site w/in 200' of transient noncommunity water supply (TNCWS) Yes No
 Req'd setbacks determined (see site map) Yes No Site w/in an inner wellhead mgmt zone (CWS/NTNCWS) Yes No
 Utilities located & identified (gopher state one call) Yes No Buried water supply pipe w/in 50' of system Yes No
 Access for system maintenance (shown on site map) Yes No Site located in Shoreland (w/in 1000' of lake, 300' of river) Yes No
 Soil treatment area protected Yes No Site map prepared with previous items included Yes No
 Construction related issues Buried Mille-Lacs power across lot, will need to be located.

Soil Information

Original soils	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Evidence of site:		
		Cut	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Soil logs completed and attached	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Filled	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
		Compacted	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Soil loading rate (gpd/ft ²)	<u>0.60</u>	Disturbed	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Depth/elev to SHWT	<u>16"</u>	Perk test completed and attached (if applicable)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Depth to system bottom maximum (or elev minimum)	<u>(+ 24)</u>	Percolation rate (if applicable)	_____	
Depth/elev to standing water (if applicable)	_____	Flooding or run-on potential (comments)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Depth/elev to bedrock (if applicable)	_____	Flood elevation (if applicable)	<u>NA</u>	
Soil Survey information determined (see attachment)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Elevation of ordinary high water level (if applicable)	<u>NA</u>	
Differences between soil survey and field evaluation (if applicable)	_____ _____	Floodplain designation and elev - 100 yr/10 yr (if applicable)	<u>NA</u>	

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 #

Soil Observation Log

www.SepticResource.com vers 12.4

Owner Information

Property Owner / project: David Maus Date 4/22/2024
 Property Address / PID: 32235 395th Pl. Aitkin MN 56431

Soil Survey Information

refer to attached soil survey

Parent mat'l's: Till Outwash Lacustrine Alluvium Organic Bedrock
 landscape position: Summit Shoulder Side slope Toe slope
 soil survey map units: 502 slope 9 % direction- SW

Soil Log #1

Boring Pit Elevation 96.2' Depth to SHWT 16"

Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 6	Topsoil Loam	<35	10YR3/2		Loose	Loose	Granular
6 - 16	Loam	<35	10YR4/4		Loose	Loose	Granular
16 - 19	Silt Loam	<35	10YR4/4	7.5YR4/4	Loose	Loose	Granular

Comments:

32235 395th Pl. Aitkin MN 56431

Soil Log #2

		<input checked="" type="checkbox"/> Boring	<input type="checkbox"/> Pit	Elevation <u>97.2'</u>		Depth to SHWT <u>22"</u>	
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 6	Topsoil Loam	<35	10YR3/2		Loose	Loose	Granular
6 - 22	Loam	<35	10YR4/4		Loose	Loose	Granular
22 - 26	Silt Loam	<35	10YR4/4	7.5YR4/4	Loose	Loose	Granular

32235 395th Pl. Aitkin MN 56431

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 #

Mound Design - Aitkin county

Property Owner: David Maus

Date: 4/22/2024

Site Address: 32235 395th Pl. Aitkin MN 56431

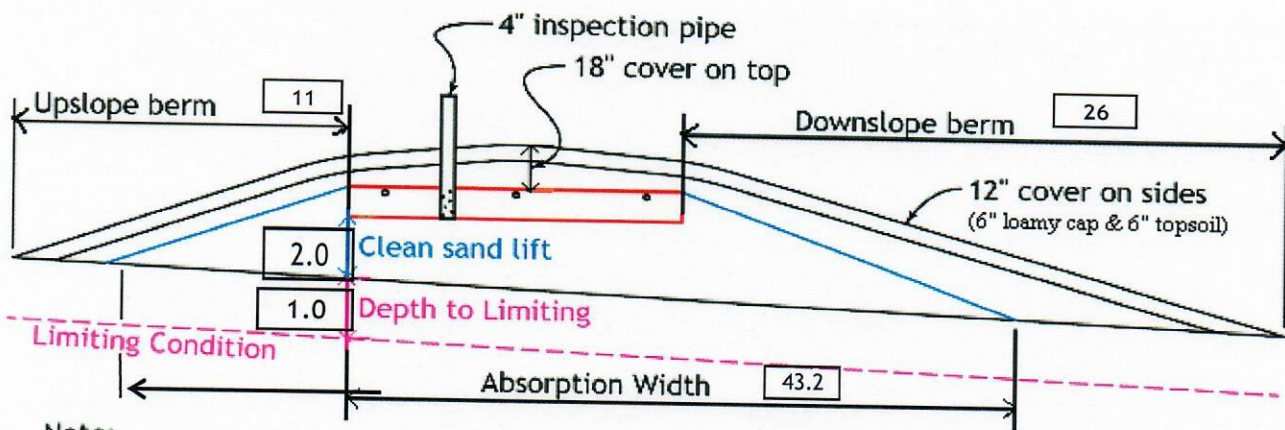
PID: 24-0-013400

Comments: _____

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

- 1) 3 bedroom Type I Residential System
- 2) 450 GPD design flow
- 3) No Garbage disposal or pumped to septic Install 1650 Jacobson 2/Compartment Septic/Pump tank
- 4) 1000 Gal Septic tank (code minimum) 1000 Gal Septic tank (design size / LUG req'd)
Tank options: none
- 5) 1.2 GPD/ft² mound sand loading rate contour loading rate of 12 req's a min 37.5 ft. long rockbed
- 6) 10.0 ft rockbed width 38.0 ft rockbed length
- 7) 3.0 ft lateral spacing 3.0 ft perforation spacing (maximum of 3 for both)
end feed manifold connection
- 8) 3 laterals 36.0 feet long 13.0 perfs / lateral 39 perfs total
(1/2 a perf means the first perf starts at the middle feed manifold)
- 9) 1/4" inch perfs at 1 feet residual head gives 0.74 gpm flow rate per perforation
for this perf size & spacing, & pipe size on line 12, max perfs/lateral = 16, line #8 must be less --> OK
- 10) 7.0 doses per day (4 minimum)
- 11) 64 gallons per dose (treatment volume)
- 12) 1.50 inch diameter laterals must be used to meet "4x pipe volume" requirement 1.50 5x
- 13) 50 feet of 2.0 inch supply line leads to 9 gallons of drainback volume 2.00 3x
(Tip: "top feed" manifold to control the drainback)
- 14) 73 gallons TOTAL pump out volume (treatment + drainback)
- 15) 15 feet vertical lift from pump to mound laterals, leads to a:
- 16) 29 GPM @ 22 feet of head, Pump requirement (note: >50gpm may require an extra 3-6' of head)
- 17) 500 gal Dose tank (code minimum) 533 gal Dose tank (design size / LUG req'd) at 12.69 gpi
leads to a
- 18) 5.8 inch swing on Demand float, or timed dosing of 2.5 min ON (confirm pump rate with drawdown
(this delivers Average flow, =70% of Peak design flow) 5.2 hrs OFF test and adjust as necessary)
- 19) 12 inches from bottom of tank to "Pump OFF" float
- 20) 18 inches from bottom of tank to "Pump ON" float, or 12 inches to "Timer ON" float if time dosed
- 21) 21 inches from bottom of tank to "Hi Level" float, or 31 inches to "Hi Level" float if time dosed
- 22) 267 gallons reserve capacity (after High Level Alarm is activated)

- 23) **0.60** gpd/ft² Absorption area Soil Loading Rate, which gives a mound ratio of **2** (minimum)
 (this must match the soil boring log) desired mound ratio **2.0**
- 24) **9** percent site slope (0-20% range) **9** (% downslope site slope, if different than upslope)
- 25) **12** inches, or **1.0** ft. to Redox or other limiting condition (need at least 12" to be a Type I)
 Treatment zone contains **0** inches of 0% soil credit, and **0** inches of 50% soil credit. Giving a:
- 26) **24** inch, or **2.0** ft. Sand Lift Mound **CRITICAL FOR FUTURE CERTIFICATIONS!!!**
- 27) **20.0** ft. base absorption width (with sand beyond rockbed as follows):
43.2 greater of: absorption width OR sand slope
- 28) **0.0** ft. upslope and sideslope sand upslope **8.8**
10.0 ft. Downslope sand down slope **24.4**
- Individual slope ratios give BERM widths (topsoil beyond rockbed) of:
- 29) **4:1** upslope ratio **11** ft. upslope berm Used 3.5: 1 Ratio for Mound Berms
- 30) **4:1** sideslope **19** ft. sideslope berms
- 31) **4:1** downslope **26** ft. downslope berm
- 32) Overall Dimensions: **10.0** ft. wide by **38.0** ft. long Rock bed
47 ft. wide by **76** 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: **10.0** ft. by **38.0** ft. by **9** inches under pipe, plus 20% gives **17** yd³ or *1.4= **24** 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)
33.3 up + **119.7** downslope + **22.5** ends + **34.5** under rock = **252** yd³ or *1.4= **353** ton
 plus 20%
- 35) Loamy Cap: **43** ft. by **72** ft. 6" deep, plus 20% gives **69** yd³ or *1.4= **97** ton
- 36) Topsoil: **47** ft. by **76** ft. 6" deep, plus 20% gives **80** yd³ or *1.4= **112** ton

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

Designer *[Signature]* Brummer Septic LLC. L-1347 4/22/2024
 Company License# Date

Installer Summary

1000 gallon Septic tank (minimum)

Tank options: none

533 gallon Dose tank (minimum)

Install 1650 Jacobson 2/Compartment Septic/Pump tank at 12.69 gpi

29 GPM @ 22 ft. of head, Pump required

5.8 inch swing on Demand float which translates to roughly 3.9 inches of float tether length

if time dosing is required --> 2.5 minutes ON time & 5.2 hours OFF time

18 inches from bottom of tank to "pump ON" float, or 12 inches to "timer ON" float

21 inches from bottom of tank to "Hi Level Alarm" or 31 inches to "Hi level alarm" if time dosed

50 ft. of 2.0 inch supply line with end feed manifold connection

(Tip: "top feed" manifold to control drainback)

24 inch, or 2.0 ft. Sand Lift Mound

10.0 ft. wide by 38.0 ft. long Rock bed

3 laterals 1.50 inch diameter 36.0 ft. long 3.0 ft. lateral spacing

1/4" inch perfs 3.0 ft. perforation spacing

No Effluent filter & alarm

3 clean out & valve box assemblies

43.2 ft. Total sand ABSORPTION width (minimum)

8.8 ft. upslope and sideslope (sand beyond rockbed, minimum)

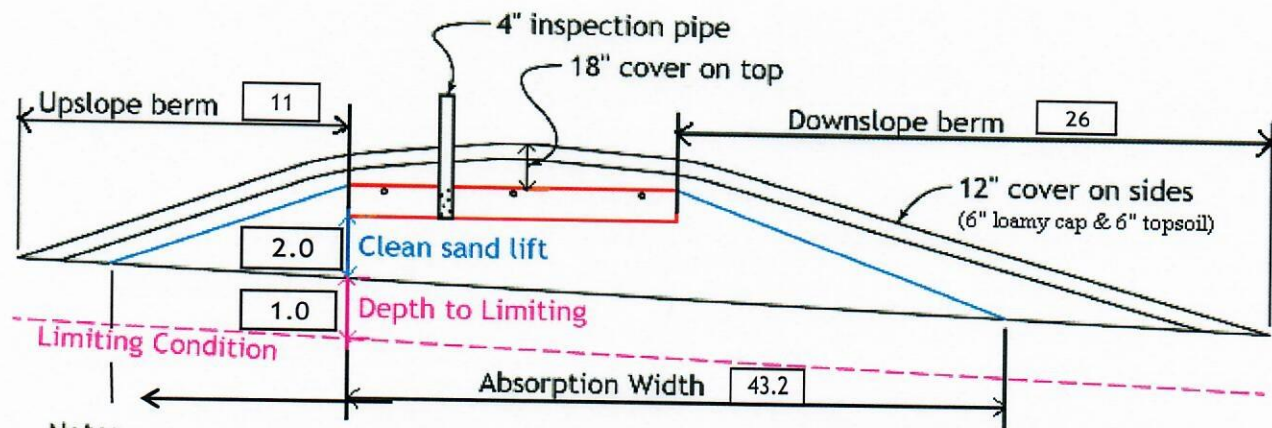
24.4 ft. Downslope (sand beyond rockbed, minimum)

Specific slope ratios give BERM widths (topsoil beyond rockbed) of:

4:1 upslope ratio 11 ft. upslope berm

4:1 sideslope 19 ft. sideslope berms

4:1 downslope 26 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:	17.0 yd ³ or *1.4=	24 ton	9 inches under pipe
Mound Sand:	252 yd ³ or *1.4=	353 ton	
Loamy Cap:	69 yd ³ or *1.4=	97 ton	6" deep
Topsoil:	80 yd ³ or *1.4=	112 ton	6" deep

INSPECTOR CHECKLIST - mound

32235 395th Pl. Aitkin MN 56431

- 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 se 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 _____ 1000 gallons none _____

- Riser over outlet, riser over inlet or center, and 6"+ inspection pipe over any remaining baffles.
- No _____ effluent filter & alarm
- Dose tank risers and piping (water tight, insulated, proper depth, drainback)
mfg _____ 533 gallons

- dose pump _____ 29 gpm 22 head VERIFY PUMP CURVE 2.5 min ON 5.2 hr OFF

- float setting drop 5.8 inches at 12.7 gpi "DESIGNED" 3.9 inches approx float tether length
73.0 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 38.0
Sand lift depth 24 inches. (Jar test : 2" sand leaves < 1/8" silt after 30 min)

- Absorption Sand beyond rock 8.8 upslope 24.4 downslope

- Bermed topsoil beyond rockbed 11 upslope 19 sideslope 26 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

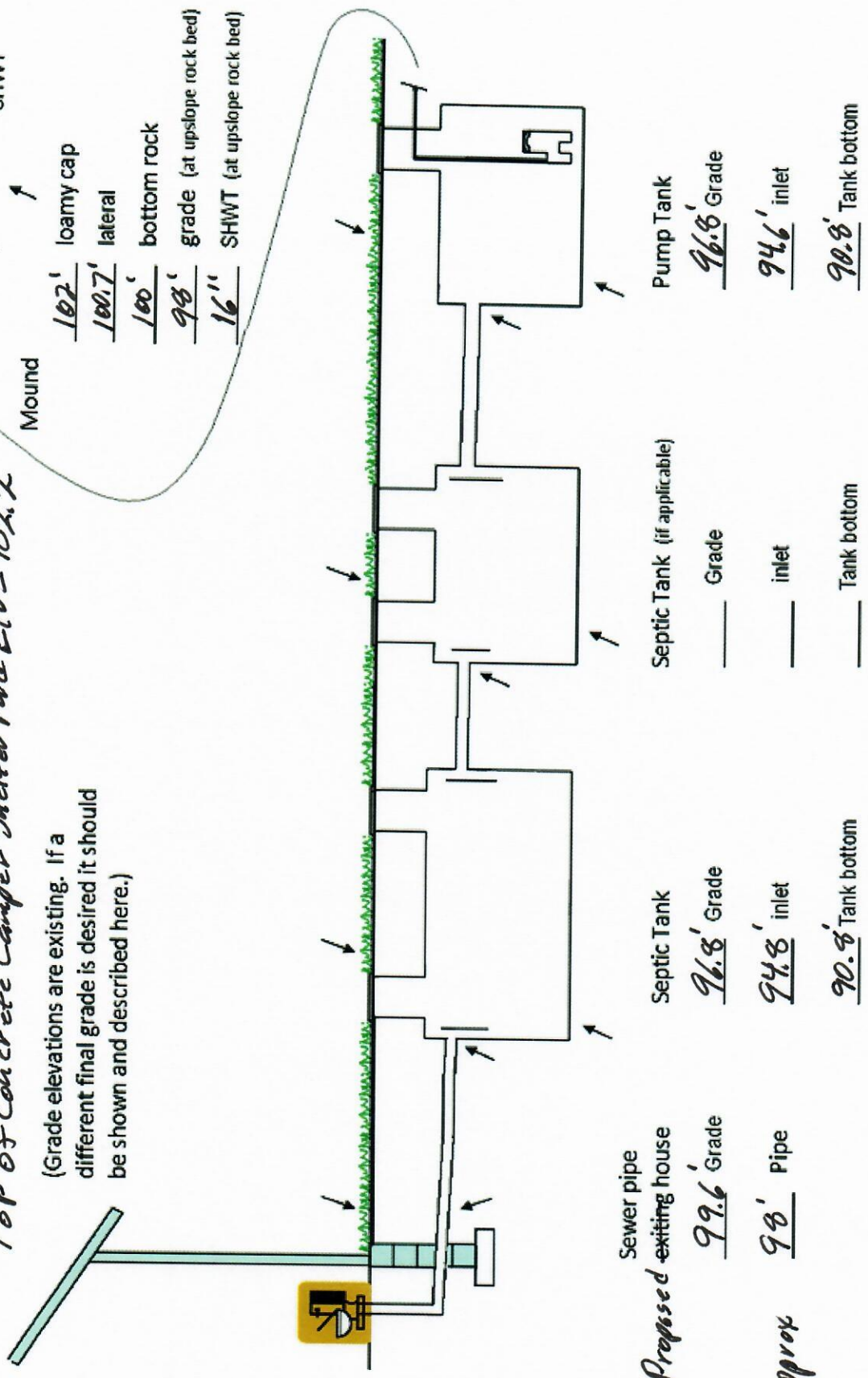
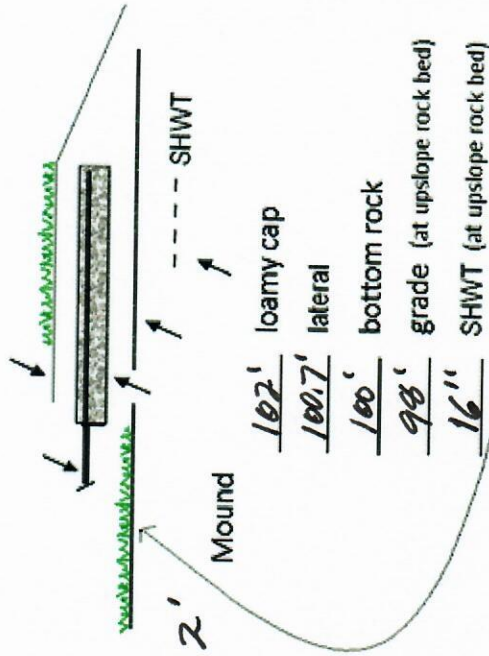
- Air inlet at end of laterals, and at top feed manifold if necessary. VERIFY
- clean outs (no hard 90's)
- 4" inspection pipe to bottom of rock, anchored VERIFY

- Abandon existing system - if necessary Re-use existing tank certification
- monitoring plan and type _____
- well abandonment form - if necessary _____

System Elevations

Elv = 100' benchmark Nail on Power Meter Post.
TOP of Concrete Camper Shelter Pad Elv = 102.2'

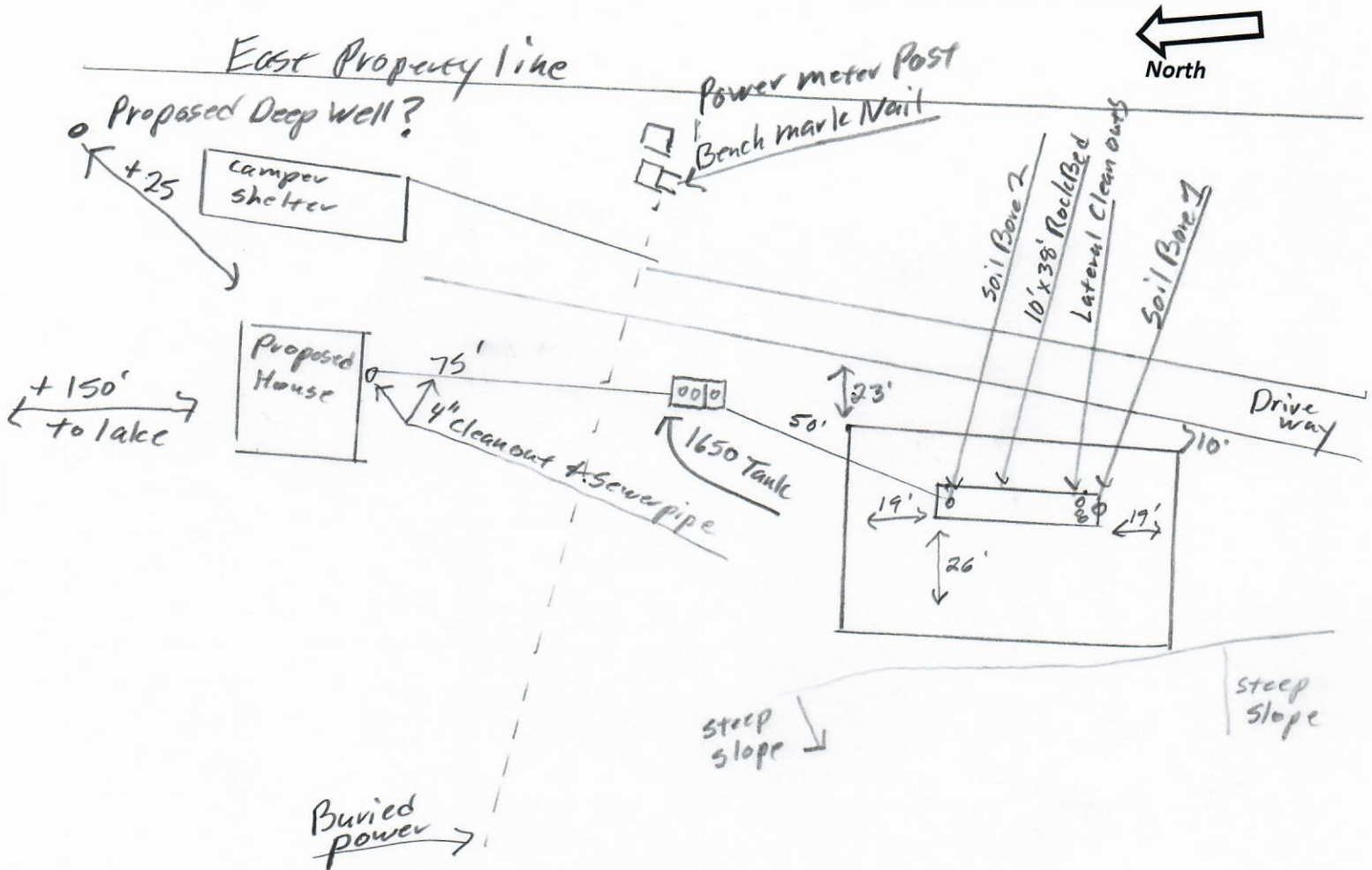
(Grade elevations are existing. If a different final grade is desired it should be shown and described here.)



Sewer pipe	Septic Tank	Septic Tank (if applicable)	Pump Tank
<u>Proposed</u> exiting house	<u>96.8'</u> Grade	Grade	<u>96.8'</u> Grade
<u>approx</u> <u>98'</u> Pipe	<u>94.8'</u> inlet	inlet	<u>94.6'</u> inlet
	<u>90.8'</u> Tank bottom	Tank bottom	<u>90.8'</u> Tank bottom

{ Design Drawing }

Property Owner: David Maus Date: 4/22/24 Designer's Initials: JB
 Parcel ID. Number: 24-0-013400 Address: 32235 395th Pl. Aitkin MN 56431
 one Inch = 40ft.



Approx. Edquist Lake Elev. = 81.2' Bench Mark Nail is on Power Meter Post near camper shelter. Elev. = 100'
 Top of Concrete at Camper shelter Elev. = 102.2' Estimated Sewer pipe at proposed house Elev. = 98'

	Surface/ SHWT	Nail on power meter = Bench Mark 100'		Existing Grade	
Soil Bore 1	96.2' / 16"	Bench Mark	100'	Upslope Edge of Rockbed Elev. = 98'	
Soil Bore 2	97.2' / 22"	Ground Elev. BM	99.8'	Bottom of Rockbed Elev. = 100'	
Soil Bore 3		Ground Elev. Tank	96.8'	Top of Washed Sand Elev. = 100'	
	Ground at Proposed house		99.6'	Estimated Tank In-let Elev. = 94.8'	

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: David Maus

Date: 4/22/24

Site Address: 32235 395th Pl. Aitkin MN 56431

PID: 24-0-013400

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

- 1 This is a type I mound for a 3 bedroom House sizing. Proposed deep well location will be NE of proposed House. Proposed house elevation was not set at time of design, estimated house pad elevation, and sewer pipe.
- 2 Because the Driveway location of driveway and a steep slope on other side of mound area ..
The designer used 3.5:1 berm ratio's, to keep downslope berm Off the steep slope.
- 3 There is a Mille-Lacs Electric power line buried across the lot, it will have to be located.
- 4 Bench Mark Elevation = 100' is a nail on the Power meter Post near camper shelter.
- 5 Install Jacobson 1650 Compartment tank for gravity flow from Slab on grade house (Elv. not set)
Install clean-out near house. 4" sewer pipe will cross buried power line.
- 6 Elevation contour of rock bed upslope edge is 98'.
The area size of the rock bed is 10' x 38' . Absorption area is 38' x 43.2'.
Sand absorption area is 8.8ft. up slope + 10 ft. rockbed + 24.4 downslope = approx. 43.2 ft. wide sand base.
Berms are 11ft. Upslope, 26ft. Down slope, 10ft. Rock bed = approx. 47ft. Wide.
Overall mound size is approx. 47' wide x 76' long and approx. 4' high. End Berms are 19 ft wide.
- 7 The bench mark is the nail on the power meter post 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.
- 8 The top of the washed sand and bottom of rock bed is Elv. 100'.
It is important that the soils do not get compacted, and that clean washed sand is used.
- 9 The Jacobson 1650 compartment tank will be gravity flow from dwelling. Install the pump for 7 demand doses per day. approx. 73 gallons per dose, 5.8 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, insulate top of tank.
Recommend raising manholes 4" above finished grade.
- 10 Install a 2" supply pipe from tank to end manifold in rock bed, install so pipe drains back to pump tank.
Install 1.5" laterals with 9" of rock under them. (Install Lateral clean-outs at far end of laterals. Recommended)
- 11 **Drill 1/4" holes for Perf sizing, 36" on centers.**
Install 4" inspection pipe to bottom of rock bed, secure in rock bed and raise to above final grade.
MPCA recommends Installing an Effluent filter and Alarm on septic tank outlet.
MPCA recommends installing an event counter on all systems with a pump.

Designed to Aitkin Co. and MPCA recommendations and requirements.

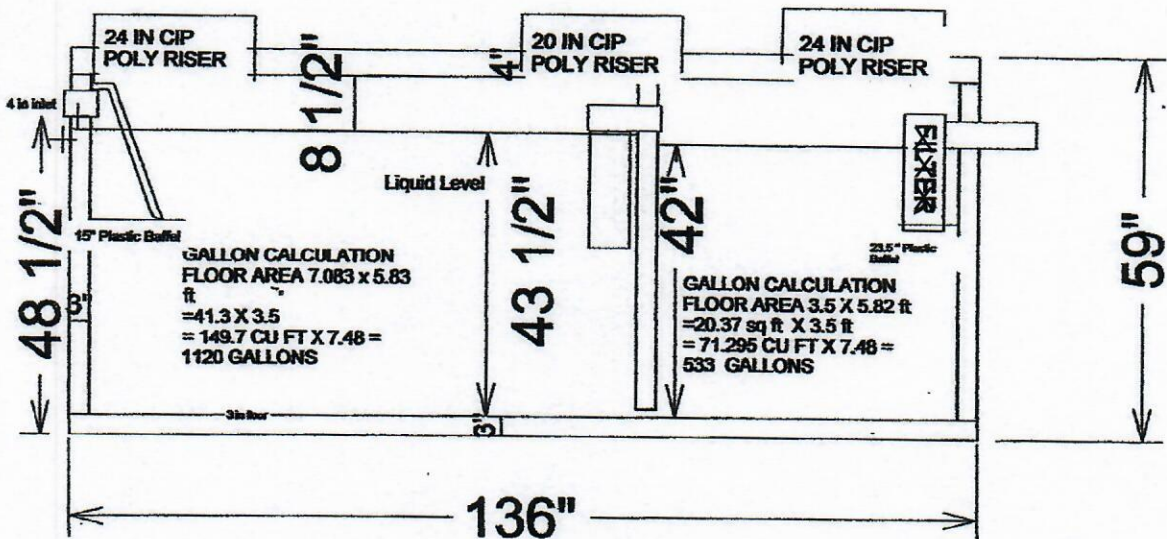
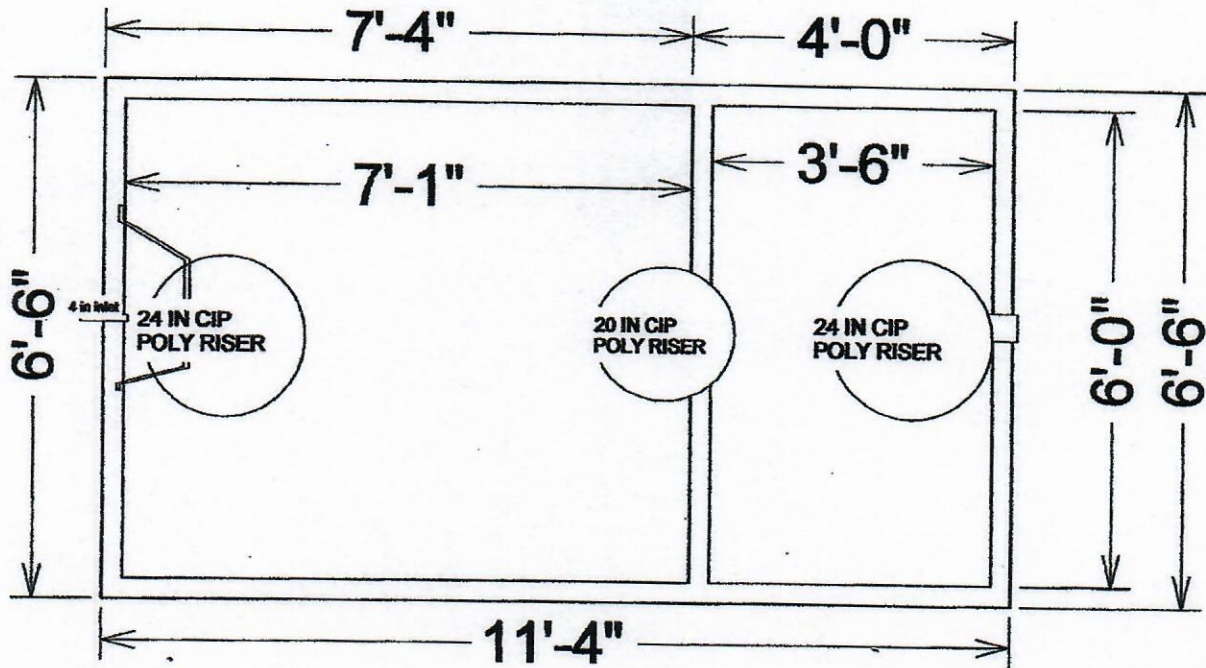

Designer Signature

Brummer Septic LLC.
Design Company

L-1347
License#

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



Detailed Parcel Report

Parcel Number: 24-0-013400

General Information

Township/City: NORDLAND TWP
 Taxpayer Name: MAUS, DAVID L
 Taxpayer Address: 32317 395TH PL
 AITKIN MN 56431
 Property Address: 32235 395TH PL
 Township: 46
 Range: 26
 Section: 7
 Green Acres: No
 Plat:
 Brief Legal Description: PT W1/2 OF SE1/4 IN DOC 274215 LESS PT IN DOC 275055

Lake Number: 1011900
 Lake Name: EDQUIST LAKE *NE*
 Acres: 4.80
 School District: 1.00

Tax Information

Class Code 1: Non-Comm Seasonal Residential Recreational
 Class Code 2: Unclassified
 Class Code 3: Unclassified
 Homestead: Non Homestead
 Assessment Year: 2023

OHW ?
100 Yr ?

Estimated Land Value: \$53,500.00
 Estimated Building Value: \$0.00
 Estimated Total Value: \$53,500.00
 Prior Year Total Taxable Value: \$46,400.00
 Current Year Net Tax (Specials Not Included): \$256.00
 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.



Map may not be valid at this scale. Data was mapped at an accuracy of 1:24,000 so any representation of the data at a larger scale is not advised.

Maus

12,257 0 0.01 0.02 mi 1 inch = 188 feet

Web App Builder for ArcGIS

These data are provided on an "AS-IS" basis, without warranty of any type, expressed or implied, including but not limited to any warranty as to their performance, merchantability, or fitness for any particular purpose.

Soil Map—Aitkin County, Minnesota
(Maus)



Soil Map may not be valid at this scale.

Map Scale: 1:1,500 if printed on A portrait (8.5" x 11") 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

Aitkin County, Minnesota

502—Dusler silt loam

Map Unit Setting

National map unit symbol: gjh6
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: Prime farmland if drained

Map Unit Composition

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

Description of Dusler

Setting

Landform: Moraines
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loamy till

Typical profile

A - 0 to 5 inches: silt loam
Eg, 2B/E - 5 to 21 inches: fine sandy loam
2Bt1, 2Bt2 - 21 to 50 inches: clay loam
2C - 50 to 60 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F090AY010WI - Moist Loamy Lowland with Carbonates
Forage suitability group: Level Swale, Acid (G090AN005MN)

Other vegetative classification: Level Swale, Acid
(G090AN005MN)
Hydric soil rating: No

Minor Components

Duluth

Percent of map unit: 7 percent
Hydric soil rating: No

Blackhoof

Percent of map unit: 4 percent
Landform: Depressions
Hydric soil rating: Yes

Mahtowa

Percent of map unit: 4 percent
Landform: Swales
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Aitkin County, Minnesota
Survey Area Data: Version 24, Sep 9, 2023